

**DETERMINANTS OF INVESTMENT INTENTIONS OF  
INDIVIDUAL RETAIL STOCK MARKET INVESTORS  
ON THE NAIROBI SECURITIES EXCHANGE IN  
KENYA**

**PETER KAMAU NJUGUNA**

**DOCTOR OF PHILOSOPHY**

**(Business Administration)**

**JOMO KENYATTA UNIVERSITY OF  
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**Peter Kamau Njuguna**

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Philosophy in Business Administration (Finance) in the Jomo  
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## DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Peter Kamau Njuguna**

This thesis has been submitted for examination with our approval as University Supervisors.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Prof. Gregory Namusonge, PhD**

**JKUAT, Kenya**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Prof. Christopher Kanali, PhD**

**JKUAT, Kenya**

## **DEDICATION**

This thesis is dedicated to my wife Lucy Wangari for her love, support and encouragement during the entire duration of the course. Further dedication is to my parents the late Joseph Njuguna and Jane Wangui who taught me perseverance, discipline and value of hard work when I least knew the world. I also dedicate it to my children; Claire, Cyprian and Cyril for understanding, love and unwavering support.

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## **ABBREVIATIONS AND ACRONYMS**

<b>ANOVA</b>	Analysis of variance
<b>APT</b>	Arbitrage Pricing Model
<b>CAPM</b>	Capital Asset Pricing Model
<b>CDSC</b>	Central Depository Systems Corporation
<b>CFA</b>	Confirmatory Factor Analysis
<b>CMA</b>	Capital Market Authority
<b>EMH</b>	Efficient Market Hypothesis
<b>EUT</b>	Expected Utility Theory
<b>FTSE</b>	Finance Times Stock Exchange
<b>IPO</b>	Initial Public Offering
<b>KASIB</b>	Kenya Association of Stock Brokers and Investment Bankers
<b>NSE</b>	Nairobi Securities Exchange
<b>SPSS</b>	Statistical Package for Social Sciences
<b>TPB</b>	Theory of Planned Behavior

## DEFINITION OF TERMS

**Compatibility:** Investor's perception of the investment securities' consistency with his or her past experiences, values, and needs (Rogers, 1995).

**Expected sacrifices:** Dimensions that decrease investor's expected investment value (Huber et al., 2001).

**Individual retail investor:** An individual who purchases securities for his or her own personal account rather than for an organization. Retail investors typically trade in much smaller amounts than institutional investors such as mutual funds (Barber & Odean, 2008).

**Investment:** Commitment of funds for a period of time in order to derive a rate of return that would compensate the investor for the time during which the funds are invested, for the expected rate of inflation during the investment horizon and for the uncertainty involved (Reilly & Brown, 2006).

**Investment Intention:** Individuals' resolutions to act in particular manner Angelle (2006). It is a purposeful and lucid attitudinal construct and an individual's intrinsic values provide the basis to this attitude.

**Perceived behavioral control:** Investor's perception of ability including resources and opportunities to perform the given behavior (Ajzen, 2008).

**Perceived Investment Value:** Investor's pre-purchase anticipations and beliefs concerning the process and outcome of investing taking into account both benefits and sacrifices one expects to incur (Puustinen 2012).

**Subjective investment knowledge:** Investors perceived knowledge about investing which is a combination of knowledge and self-confidence also termed as self-perceived knowledge (Raju et al., 1995).

## ABSTRACT

The purpose of this thesis was to assess the determinants of investment intentions among the individual retail investors in Nairobi Securities Exchange. The specific objectives were; to investigate the influence of Perceived Investment Value on investment intention of individual retail investors in Kenya; to investigate the influence of expected sacrifices on investment intention of individual retail investors in Kenya; to investigate the influence of subjective investment knowledge on investment intention of individual retail investors in Kenya, to investigate the influence of compatibility on investment intention of individual retail investors in Kenya and to investigate the influence of expected perceived behavioral control on investment intention of individual retail investors in Kenya. In addition, the study sought to build a theoretical model to predict investment intentions in financial securities by individual investors by examining the relationships between subjective investment knowledge, expected sacrifice, Perceived Investment Value, compatibility, perceived behavioral control and investment intentions. The philosophical base of the research was realism while the research design was both explanatory and descriptive. A cross sectional survey, multi-stage sampling technique involving three hundred and eighty five randomly selected individual investors participated. A pilot test on a different sample gave a Cronbach's alpha greater than 0.8 for all the variables. Data analysis was by descriptive statistics and inferential statistics using Statistical Packages for Social Sciences (SPSS). Analysis of variance (ANOVA) was used to establish the level of statistical significance of difference between the observed and expected values. Regression analysis was used to estimate the model coefficients while Pearson coefficient of correlation was used to establish the strength of relationship among the variables, Test of hypothesis was also carried out. The results indicated that subjective investment knowledge, Perceived Investment Value, compatibility, perceived behavioral control had a positive and statistically significant effect on investment intentions of individual investors. The result further confirmed by the combined variables explains twenty eight point three percent of the investment intention of individual retain investors in Kenya. The effect of expected sacrifices on investment intention of individual investors was positive but statistically not significant. The limitations of the study included the fact that topic is quite sensitive and most of the respondents viewed such information as confidential. The respondents were assured that the information provided was to be used for academic purpose and would therefore be treated with confidentiality. The study recommends increased investor education to build self-assessed knowledge and investor confidence that will enhance their performance through improved judgement and help in transforming Kenya into a middle-income country with a vibrant financial services sector as envisaged by vision 2030. Additionally, to stimulate investments in financial securities, empowering individual investors with financial knowledge and demonstrating economical value would yield an increase in investments by individual investors. This is also in addition to ensuring that the investment option is compatible with the investor's lifestyle and aligns well with their perceived behavior.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the study**

Economic and financial theories presume that individuals act rationally and would consider all available information in the investment decision-making process. Behavioral finance therefore has been used to throw more light on why people buy or sell stocks and even why they do not buy stocks at all (Thaler, 2003). Investment behaviors of investor are defined as how the investors judge, predict, analyze and review the procedures for decision making, which includes investment psychology, information gathering, defining and understanding, research and analysis (Alfredo & Vicente, 2010). Standard finance is built on rules on how investors should behave rather than trying to observe how they actually behave (Pompian, 2011) and the traditional finance theories derived from neo-classical economic theory assumes investors to be rational and competent (Popescu, 2008). The market actor makes decisions according to the axioms of expected utility theory. In this equilibrium securities are priced according to the efficient market hypothesis (EMH).

Whereas traditional financial and economic theories assume that investors are rational problem solvers, the decision-making theories in behavioral finance and economics study the limitations of one's decision making (bounded rationality) that affect the investment behavior (Puustinen, 2012). Particularly the works of Kahneman and Tversky in the 1970s played an important role in the development of behavioral finance theory (Pompian, 2011). They created one of the most important theories in behavioral finance, the prospect theory, to explain how people are assumed to make choices under risk (Kahneman & Tversky, 1979). Their research showed that mental illusions are actually the rule rather than the exception when making decisions under uncertainty. Furthermore, their theories suggest that an individual's investment decision-making process is influenced by social, cognitive, and emotional factors (Tversky & Kahneman, 1986).

Decision theorist Howard Raiffa introduced to the analysis of decisions three approaches that provided a more accurate view of a real person's thought process and thus challenged the prevailing decision making models (Raiffa 1968, in Pompian 2011). Kahneman and Riepe (1998) tied together Raiffa's decision theory and financial advising. In their research, they stated that advisors need to have a clear understanding of the emotional as well as cognitive weaknesses of investors that affect their decision-making. Owen (2002) contends that people are irrational and make decisions for many reasons, few of which involve a judicious analysis of available data. Popescu (2008) opines that individual behavior dwells on the fact that people fall into psychological traps including over confidence, anchoring and adjustment, improper framing, irrational commitment escalation and the confirmation trap.

Majority of investors tend to utilize a limited subset of information in the markets hence having uninformed competing investors (Glosten & Milgrom, 1985). In reality, investors do not receive all information freely; they have to decide whether and which information to gather prior to trading. Investors end up staying afloat in a sea of uncertainty (Gary & Uri, 2003) which in turn affects their level of awareness. According to Luigi, Sapienza and Zingales (2005), individuals who are knowledgeable are significantly more likely to buy stocks and risky assets and also invest in stock. Most individual investors hold undiversified portfolios.

The disposition effect is among the most widely replicated observations regarding the behavior of individual investors. Choe and Eom (2009) expected that investors who are sophisticated and have more trading experience to have a lower disposition effect because they have a better understanding of the market, are more aware of such a tendency, and hence likely to correct it. Barber and Odean (2008) tested and confirmed the hypothesis that individual investors are net buyers of attention grabbing stocks. Individuals are more likely to invest in those stocks that attract their attention and this lead investors to trade too speculatively and potentially influencing pricing of stocks.



The investors' limited knowledge of the investment process can compromise the risk management mechanisms available today. Better decisions are made by knowing the mechanism for making investment decision and it does constitute an important step to risk control management. Harbaugh (2003) affirms that simple economic models are often poor predictors of human behavior. The need for more detailed studies of human behavior in the process of making investment decisions cannot be underscored in order to improve theory.

### **1.1.1 Investment intentions**

Reilly and Brown (2006) define investment as a commitment of funds for a period of time in order to derive a rate of return that would compensate the investor for the time during which the funds are invested, for the expected rate of inflation during the investment horizon and for the uncertainty involved. It is argued that people's behaviors can be predicted by their intentions which lie immediately prior to subsequent behavior (Ajzen, 1991). Hence, intentions (for example the intention to invest) could highlight the directions of individuals regarding their future behavior. Similarly, Bird (1988) argued that intentions of owner/founder establish the directions and form of a venture at the time of its start-up. The study also anticipated that successive growth, change and success of organizations are dependent on embodied, modified or transformed future intentions. Various scholars defined intentions in varying ways. Generally, intention is considered as an individual's indication of the future action.

The intention of an individual is the wish or plan to perform the intended action in future. As intentions present the intelligent account of peoples' future directions, thus, attitudes, beliefs and intentions normally correspond. Bird (1988) presents intention as a "state of mind directing a person's attention (and therefore experience and action) towards a specific object (goal) or a path in order to achieve something (means)". Whereas, according to Angelle (2006), intentions of individuals' are their resolutions to act in particular manner. The study argued that intention is a purposeful and lucid attitudinal construct and an individual's intrinsic values provide the basis to this attitude. Some other scholars deemed intention as earlier

part of behavior. This argument is based on the contention that intentions are essential predictor of individual behaviors (Ajzen 1991). Conversely, Greve (2001) argued that individuals' actions are intentional which are apparently done for particular reasons and thus, it is more accurate to consider behavior as action as it is basically intentional.

Beck (2004) also considered intention as a person's own adoption of an action over some other actions whereby the likely results are known for each of the action. Bird (1988) argued that intentions steer investors in their goal setting, commitments, general and organizational work and even communication. According to her, intentions chalk out the direction of entrepreneurial ventures at the time of its start-up and also throughout its survival, sustainability, expansion and transformation stages. Hence, future intentions of entrepreneurs (for example intention to invest) are crucial attributes of entrepreneurial behavior, which play critical role in upcoming actual direction of ventures (Sadler-Smith et al., 2003; Wiklund & Shepherd, 2003).

### **1.1.2 Overview of Kenya Securities Market**

The Nairobi Securities Exchange (NSE) was established informally in 1954 with the main aim of enabling the mobilization of funds as a way of providing sustainable capital for financing investments in the future (NSE, 2010). The Capital Markets Authority was established in 1989 as a regulatory body to oversee the creation of an environment favorable for growth and development of the country's capital markets (CMA, 2010). Olweny *et al.*, (2011) conducted a research on the relationship between the securities market and economic growth in Kenya and the conclusion of their study was a positive relationship between the two variables. The findings of Aduda *et al.* (2012) show that individual investors in Kenya depict varying behaviors and financial performance when it comes to making investment decisions, with some investors exhibiting rational behavior. It is therefore necessary to understand how the level of awareness and proper understanding of the securities market influences the decision making process of investors (Kimani, 2011).

According to Irungu (2011), the Kenya Electricity Generating Company (KenGen) IPO in 2006 opened the door for retail investors at the NSE. The number of individual investors surpassed the one million mark, with Safaricom alone bringing in 860,000 new accounts in 2008. In the past few years, individual investors have sold nearly half of their stocks at the NSE, leaving institutions firmly in control of the market. Two thirds of NSE listed companies have recorded net exits of individual shareholders, leaving room for institutional investors to increase their stake (Mulwa, 2011).

Trades by the investors have to go through the stock brokers who may also act as advisors to the investors. There are only 23 licensed stock brokers who have to serve a total of over 2.4 million retail investors in addition to other institutional investors. This workload makes it almost impossible for the stock brokers to provide adequate advice and education to their clients. The NSE, CMA and KASIB usually carry out investor education programs to provide investors with financial information regarding the capital markets operations as well as the products available plus the associated risks and possible returns.

## **1.2 Statement of the Problem**

The securities market has for long been perceived as a preserve of the elite rich, however it has lately witnessed even the ordinary in society flocking its corridors for business. Kenyan people are now more aware of equity securities as an investment asset and as an alternative to real estate and other ventures as highlighted by the oversubscription in initial public offerings (IPOs) in the recent past. When making investment intentions, it is important for an investor to choose the most viable option from the many available alternative options. Several factors influence such decisions and it was of great importance to carry out research on the factors that majorly influence these investment decisions.

In recent past, there has been a relative increase of enthusiasm in the securities market by individual investors. However, it is alarming that the enthusiasm is again fading away with many firms experiencing net exit of individual shareholders. As a result of this, institutional investors have taken control of the stock market and are

dominating as they are the majority investors. Individual retail investor's holding trend in equities has been fluctuating from 14.9% in 2008 to 26.05 in 2016 with a low of 12.01 in 2012 as per the capital market authority 2016 Q4 report. Trading activities by individual retail investor in 2016 increased to 17.05% in Q4 from a low of 6.95% in Q3 as per the capital market report. Individual investors engage in the stock market by buying and selling different stocks and it is crucial to identify various economic and behavioral motivations that affect their purchasing decisions (Waruingi, 2011). Past experiments (Sehgal & Singh 2012, Phan & Zhou 2014a) show that psychological factors have a significant and direct influence on attitude towards investment behavior made by individuals.

Most studies that have been carried out in the past have often focused on institutional investors while less attention has been given to small scale or retail investors. Moreover, almost all previous studies have been carried out in developed countries of Europe and America where the securities market is more vibrant and enthusiasm of individual investors is high. It was therefore necessary to investigate the determinants that affect the individual retail investors' intention to participation in stock market in developing countries like Kenya. The studies that have been done in Kenya such as Waweru, Munyoki, and Uliana (2008) investigated the role of behavioural finance in investment decision making at the Nairobi Securities Exchange (NSE) and concluded that behavioural factors affected the decisions of the institutional investors. The study focused on institutional and not individual investors which is the focus of the current study. Olweny, Namusonge and Onyango (2012) established that financial knowledge is a major determinant of risk tolerance. The study however did not focus on what motivates the investor to enter or exit the stock market. The study by Nagib, Namusonge, and Sakwa (2017) on influence of financial literacy on growth of family business in Kenya showed that financial literacy was key to making better financial decisions. However, the study did not focus on other factors influences the participation of individual retail investors in the stock market. The above studies did not consider the relationship between the various determinants and investment intention and how the relationship is moderated by the investor's demographic characteristics. The lack of readily available empirical findings on determinants of investment intention amongst individual retail investor,

the different methodological approaches, and the narrow approach to the study variables and the different economies studied provided research gaps that the current study sought to fill. The study sought to answer the question: what are the determinants of investment intentions of individual retail investors of securities in the Nairobi Securities Exchange, Kenya?

### **1.3 Research Objectives**

#### **1.3.1 General Objective**

The general objective of the study was to assess the determinants of investment intentions of individual investors of securities in the Nairobi Securities Exchange, Kenya.

#### **1.3.2 Specific Objectives**

The study was guided by the following specific objectives: -

1. To evaluate the influence of Perceived Investment Value on investment intentions of individual retail stock market investors in NSE.
2. To assess the influence of expected sacrifices on investment intentions of individual retail stock market investors in NSE.
3. To evaluate the influence of subjective investment knowledge on investment intentions of individual retail stock market investors in NSE.
4. To assess the influence of compatibility on investment intentions of individual retail stock market investors in NSE.
5. To determine the influence of behavioral control investment intentions of individual retail stock market investors in NSE.

## **1.4 Hypotheses**

The study was guided by the following null hypotheses derived from the specific objectives:

- 1.H<sub>0</sub>: There is no significant influence of Perceived Investment Value on investment intention of individual stock market investors in NSE.
- 2.H<sub>0</sub>: There is no significant influence of Expected sacrifice on investment intentions of individual stock market investors in NSE.
- 3.H<sub>0</sub>: There is no significant influence of Subjective investment knowledge on investment intention of individual stock market investors in NSE.
- 4.H<sub>0</sub>: There is no significant influence of Compatibility on investment intention of individual stock market investors in NSE.
- 5.H<sub>0</sub>: There is no significant influence of Perceived behavioral control on investment intention of individual stock market investors in in the NSE.

## **1.5 Justification of the study**

Stock markets have become a permanent feature in our social-economy lives. They play a critical role in the growth and development of economies world over. The government of Kenya have also recognized the pivotal role played by the stock market and a good catalyst for transforming Kenya into a middle-income country with a vibrant financial services sector as envisaged by vision 2030. Amongst the key stakeholders who plays in these markets are the individual retails investors. These individual retail investors are motivated by different factors and have varied views of the securities market. This study intends to demonstrate how different factors have influenced the intentions to invest of the individual retail investors in stock market securities in Kenya.

## **1.6 Significance of the Study**

This study makes contribution in several ways. These are: -

### **1.6.1 Theoretical contributions**

The study makes a theoretical contribution in that it integrates existing theories, that is., the Theory of Planned Behaviour and the theories relating to the independent variables. The conceptual model is therefore based on a firm foundation of extant theory. Rather than focus on the main effects (direct relationship between the independent and dependent variables), the study further examine interactions under different conditions regarding investor income, investor experience and investor education as moderating variables. This offers a deeper insight than existing studies on investment intentions have done so far.

### **1.6.2 Empirical contributions**

Secondly, the study makes an empirical contribution by employing existing theories in a different environment. As most studies that employ the TPB in the domain of investments have been undertaken in highly industrialized countries, it is imperative that similar studies are undertaken in emerging market's (or developing country) contexts such as Kenya. This is in line with Solomon et al. (2006) who agree that TPB has been widely applied in Western cultures; however it is not clear that the assumptions underpinning it are well suited to other cultures. The importance of considering contextual and institutional factors is well acknowledged in the literature. For example, Burgess and Steenkamp (2006) argue that the institutional contexts in highly industrialized countries where most of the academic research is undertaken are different from those obtaining in emerging market (EM) countries such as Kenya. Burgess and Steenkamp (2006) go further to argue for the need to test even our most established theories in EMs on meaningful data collected in the contexts.

### **1.6.3 Contribution to Policy decisions**

Given that intention is likely to be a dynamic concept, as more information becomes available (Suttan, 1998), the new data from the Kenyan investors regarding intention to invest in securities adds an important empirical contribution. This study's empirical contribution is amplified when one takes into consideration the policy and practical contributions in the following aspects; for example. The results are of benefit to the Kenyan government in its effort to ensure vibrant financial markets to put in place the required legislation and additional procedures needed to make the security market more investor-friendly and also to give more supports to market efficiency from government perspective (Warneryd, 2001).

### **1.6.4 Contribution to Management decisions**

The findings of study are useful in guiding portfolio allocation decisions and aids in understanding how to locate profit opportunities for investment managers. The study also contributes to an understanding of market microstructure and help in designing policies and investor education initiatives with a balanced approach where individual investors are viewed as equally significant player in the security market.

### **1.6.5 Contribution to Research**

The findings of the study are useful to future financial studies that are likely to use them in developing financial market opportunities, and formulating market driven strategies for profitable business in the dynamic investment environments.

## **1.7 Scope of the Study**

The study focused on the determinants of investment intentions of individual investors of securities in the Nairobi Securities Exchange. Though there are other determinants of investment intentions of individual investors of equity securities, the study was undertaken to research on activities within the scope of the issues addressed by the research objectives. The study was limited to the specific objectives and the data was obtained on Perceived Investment Value, expected sacrifices, subjective investment knowledge, compatibility and perceived behavioral control.



The study covered Nairobi County since it provides a well-established investment brokerage network and high concentration of individual retail investors compared to other counties. The study focuses on all the 2.4 million individual retail investors and 23 stock market brokers. The statistical scope was limited to 1-level analysis as proposed by Anderson et al, (2007). The research hypotheses were tested using the analysis of variance (ANOVA) and the t-test. The t-test was based on the coefficient of determination ( $R^2$ ) as indicator of goodness of fit of the full models.

### **1.8 Limitations of the Study**

The main limitation of this study was that the individual investors considered some information was confidential and hence were not willing to reveal most of it. The study however overcame the limitation by having a letter of introduction from the university to assure the respondents that the information provided was to be used for academic purpose and would thereby be treated with confidentiality.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter deals with the theoretical framework that presents the theories underlying the research, conceptual framework, review of empirical literature relating to investment behavior and gaps that exist in the research.

#### **2.2 Theoretical Framework**

Mathooko and Mathooko (2011), highlights that a theoretical framework is the foundation in which the entire project research is based and this is where major theories and concepts that exist on tackling the problems are explained. According to Njue (2011) theoretical framework is a set of assumptions about the nature of phenomena. Various theories have been advanced in an attempt to explain the investor's behavior and investment decisions making and the link to the investor's intentions. The models and theories referred to in this study are as outlined below.

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

The portfolio theory is based on the expected utility model of Neumann and Morgenstern (1953). According to the theory, the great tradeoff in investing is between risk and return. Markowitz (1952), Roy (1958), and Tobin (1958) advocate the wisdom of holding a diversified portfolio. Their mean variance analysis is concerned with how an investor should allocate his wealth among various assets available in the market given that he is a one period utility maximizer. An efficient portfolio is one that has maximum expected return for a given variance or minimum variance for a given expected return. By selecting assets with low correlation of returns, it is feasible to reduce overall risk of the portfolio. This occurs because as the returns of one asset go down, they would be offset by the returns of another asset going up. This is more likely to happen with securities from firms in different industries especially if those industries move differently against macroeconomic

business cycles. Markowitz (1952) offers a good explanation of the phenomena of portfolio through diversification.

Sharpe (1964), Lintner (1965) and Mossin (1966) making a number of assumptions have extended the Markowitz mean variance framework to develop a relation for expected return. Given that investors are risk averse, it seems intuitively sensible that high risk stocks should have high expected returns. The work of Sharpe, Lintner and Mossin has resulted in the capital asset pricing model (CAPM). The CAPM model provides a simplified device by comparing each security's return with a single yardstick, the return on the market portfolio. This device is the beta ( $\beta$ ) coefficient, thus the CAPM is a single factor model depending only upon the security market. The model is founded on the assumption that the market is efficient and investors' measure returns and risk by means and variances. Consequently, it is possible for a range of investments in both individual stocks and portfolios to be plotted in terms of mean-variance characteristics.

Given that investors prefer higher expected returns and lower risk, portfolios which are efficient should dominate those that are inefficient. The competing model of CAPM is a three factor model of Fama and French (1992). Both are linear regression based models used for the calculation of expected returns. Ross (1976) has developed an alternative model, the arbitrage pricing theory (APT) in response to the criticisms of CAPM. Whereas CAPM is a single factor model relating a stock (or portfolio) to the market portfolio alone, APT is a multifactor model which effectively includes CAPM as a special case. In addition to the market portfolio APT makes use of advanced statistical technique known as factor analysis to identify other factors that affects the pricing of a security. Like CAPM, APT is founded on the assumption that capital markets are perfect and investors prefer more wealth to less wealth under uncertainty. APT suggests that returns on any given asset would be determined by a series of factors which are common to all assets and factors unique to the given asset. Market equilibrium occur when arbitrage no longer yield better returns or lower risks.

### **2.2.2 Efficient Market Hypothesis theory**

The last pillar of the modern portfolio theory is the efficient market hypothesis. The efficient market hypothesis is based on the notion that people behave rationally, maximize expected utility accurately and process all available information (Shiller, 1998). Fama (1965) defines an efficient market as a market for securities where given the available information, actual prices at every point in time represent very good estimates of intrinsic values. In this market, there are large numbers of rational profit maximizers actively competing with each other trying to predict future market values of individual securities and where important current information is freely available to all participants (Fama, 1965). When information arises, the news spreads very quickly and is incorporated into the prices of securities without delay. Neither technical analysis nor even fundamental analysis would enable an investor to achieve returns greater than could be obtained by holding a randomly selected portfolio of individual stocks with comparable risk.

EMH is associated with the idea of random walk which characterizes price series where all subsequent price changes represent random departures from previous prices. If the flow of information is unimpeded and information is immediately reflected in stock prices, then tomorrow's price change would reflect only tomorrow's news and would be independent of the price changes today. But news by definition is unpredictable and the resulting price changes must be unpredictable and random. Malkiel (2003) concludes that as a result, prices fully reflect all known information and even uninformed investors buying a diversified portfolio at a tableau of given prices given by the market would obtain a rate of return as generous as that achieved by experts.

There are reasons to believe that markets do experience inefficiencies or inadequacies that would contradict the principle implied in the efficient market hypothesis (EMH). One such reason is the so called short term momentum and under reaction to news. Lo and Mackinlay (1999) have found that short term serial correlations are not zero and that existence of many moves in the same direction enable them to reject the hypothesis that stock prices behave as a random walk.

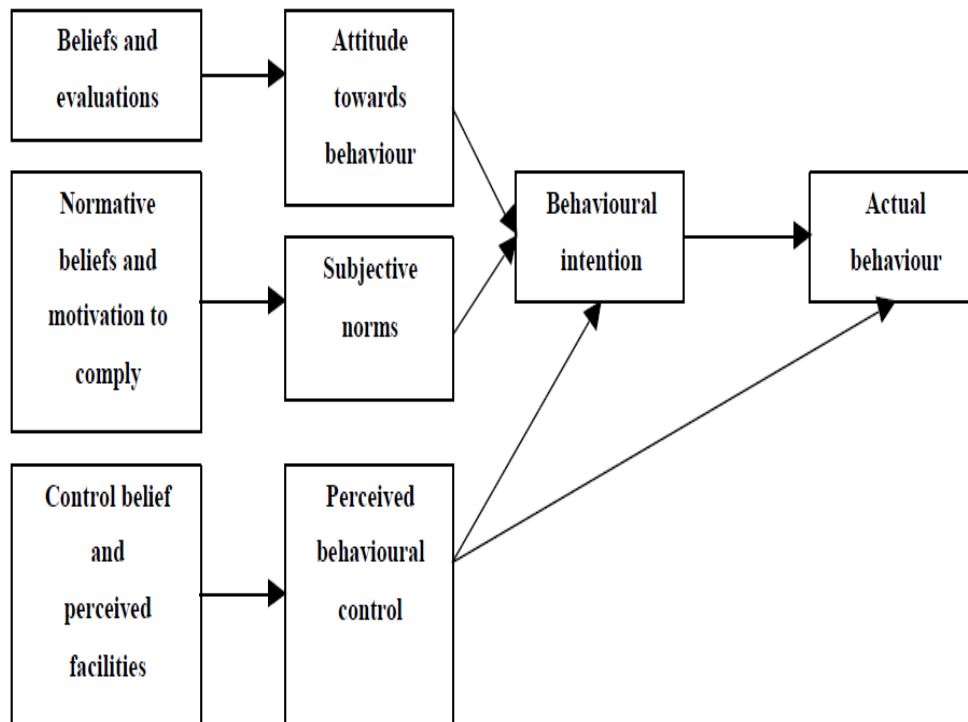
Whereas in the short run stock returns may show positive serial correlation, evidence from studies show negative serial correlation (return reversal) over longer holding period. Investors are subject to optimism and pessimism that cause prices to deviate systematically from their fundamental values and later exhibit mean reversion. This is consistent with behavioral decision theory where investors are systematically over confident in their ability to forecast either future stock prices or future corporate earnings.

A number of previous studies have found some seasons and days of the week to have unusual returns in the stock markets. Haugen and Lakonishok (1998) document the high January returns in the book entitled “The incredible January effect”. There also appears a number of day of the week effects. For example French (1980) documents significantly higher Monday returns. Another challenge to EMH is the predictability of future returns from initial dividend yields and market returns from initial price-earnings multiples. Formal statistical tests of the ability of dividend yield to forecast future returns have been conducted by Fama and French (1988). Depending on the forecasts horizon involved, as much as 40% of the variance of future returns for the stock market as a whole can be predicted on the basis of initial dividend yield of the market index. Investors have tended to earn larger long horizon returns when purchasing in the market stocks at relatively low price-earnings multiples.

### **2.2.3 Theory of Planned Behavior Theory**

The theory of planned behavior (TPB) refers to an individual’s perception of the presence or absence of requisite resources or opportunities necessary for performing a specific behavior (Ajzen & Madden, 1986). Thus, in TPB, behavioral intention acts as a mediator of three distal constructs’ effects on actual performance (Figure 2.1). Further, these three distal constructs also mediate the effects of three conceptually distinct sets of beliefs. Perceived behavioral control mediates the effects of control belief and perceived facilitation. Control belief is defined as individual’s self-confidence in his or her ability to perform a behavior, similar to self-efficacy (Bandura, 1977) and perceived facilitation, which is defined as individual’s

assessment of the importance of those resources to the achievement of outcomes (Ajzen & Madden, 1986).



**Figure 2.1: Theory of Planned Behavior** (Source: Ajzen, 1991)

In TPB, Ajzen (2006) hypothesized that perceived behavioral control has both an indirect effect on behavior through behavioral intention and a direct effect on actual behavior. In Figure 2.1, the direct path from perceived behavioral control to actual behavior is hypothesized to represent the actual control one possesses over a particular behavior. For example, when people believe that they have little control over performing the behavior because of a lack of requisite resources such as skill, hardware or software knowledge, money, time, documentation, data and human assistance that are needed to use an information system (Mathieson, Peacock, & Chin, 2001), then their intentions to perform the behavior may be low even if they have favorable attitude and /or subjective norms concerning performance of the behavior (Ajzen, 2006).

#### 2.2.4 Prospect Theory

Expected Utility Theory (EUT) and prospect theory are considered as two approaches to decision-making from different perspectives. Prospect theory focuses on subjective decision-making influenced by the investors' value system, whereas EUT concentrates on investors' rational expectations (Filbeck, Hatfield & Horvath, 2005). EUT is the normative model of rational choice and descriptive model of economic behavior, which dominates the analysis of decision making under risk. Nonetheless, this theory is criticized for failing to explain why people are attracted to both insurance and gambling. People tend to under-weigh probable outcomes compared with certain ones and people respond differently to the similar situations depending on the context of losses or gains in which they are presented (Kahneman & Tversky, 1979). Prospect theory describes some states of mind affecting an individual's decision-making processes including regret aversion, loss aversion and mental accounting (Waweru *et al.*, 2008).

Regret is an emotion that occurs after people make mistakes. Investors avoid regret by refusing to sell decreasing shares and willing to sell increasing ones. Moreover, investors tend to be more regretful about holding losing stocks too long than selling winning ones too soon (Forgel & Berry, 2006; Lehenkari & Perttunen, 2004). Loss aversion refers to the difference level of mental penalty people have from a similar size loss or gain (Barberis & Huang, 2001). There is evidence showing that people are more distressed at the prospect of losses than they are pleased by equivalent gains (Barberis & Thaler, 2003). Moreover, a loss coming after prior gain is proved less painful than usual while a loss arriving after a loss seems to be more painful than usual (Barberis & Huang, 2001). In addition, Lehenkari and Perttunen (2004) find that both positive and negative returns in the past can boost the negative relationship between the selling trend and capital losses of investors, suggesting that investors are loss averse.

Risk aversion can be understood as a common behavior of investor, nevertheless it may result in bad decision affecting investor's wealth (Odean, 1998). Mental accounting is a term referring to "the process by which people think about and

evaluate their financial transactions” (Barberis & Huang, 2001). Mental accounting allows investors to organize their portfolio into separate accounts (Barberis & Thaler, 2003; Ritter, 2003). From own empirical study, Rockenbach (2004) suggests that connection between different investment possibilities is often not made as it is useful for arbitrage free pricing.

### **2.2.5 Heuristic Theory**

Heuristics are defined as the rules of thumb, which makes decision making easier, especially in complex and uncertain environments (Ritter, 2003) by reducing the complexity of assessing probabilities and predicting values to simpler judgments (Kahneman & Tversky, 1974). In general, these heuristics are quite useful, particularly when time is limited (Waweru *et al.*, 2008), but sometimes they lead to biases (Ritter, 2003). Kahneman and Tversky seem to be one of the first writers studying the factors belonging to heuristics when introducing three factors namely representativeness, availability bias, and anchoring (Kahneman & Tversky, 1974). Waweru *et al.*, 2008 also list two factors named Gambler’s fallacy and Overconfidence into heuristic theory (Waweru *et al.*, 2008).

Representativeness refers to the degree of similarity that an event has with its parent population (DeBondt & Thaler, 1995) or the degree to which an event resembles its population (Kahneman & Tversky, 1974). Representativeness may result in some biases such as people put too much weight on recent experience and ignore the average long-term rate (Ritter, 2003). A typical example for this bias is that investors often infer a company’s high long-term growth rate after some quarters of increasing (Waweru *et al.*, 2008). Representativeness also leads to the so-called “sample size neglect” which occurs when people try to infer from too few samples (Barberis & Thaler, 2003). In stock market, when investors seek to buy “hot” stocks instead of poorly performed ones, this means that representativeness is applied. This behavior is an explanation for investor overreaction (DeBondt & Thaler, 1995).



The belief that a small sample can resemble the parent population from which it is drawn is known as the “law of small numbers” (Rabin, 2002) which may lead to a Gamblers’ fallacy (Barberis & Thaler, 2003). More specifically, in stock market, Gamblers’ fallacy arises when people predict inaccurately the reverse points which are considered as the end of good (or poor) market returns (Waweru *et al.*, 2008). In addition, people subject to status quo bias tend to select suboptimal alternative simply because it was chosen previously (Kempf & Ruenzi, 2006).

Anchoring is a phenomena used in the situation when people use some initial values to make estimation, which are biased toward the initial ones as different starting points yield different estimates (Kahneman & Tversky, 1974). In financial market, anchoring arises when a value scale is fixed by recent observations. Investors always refer to the initial purchase price when selling or analyzing. Thus, today prices are often determined by those of the past. Anchoring makes investors to define a range for a share price or company’s income based on the historical trends, resulting in under-reaction to unexpected changes. Anchoring has some connection with representativeness as it also reflects that people often focus on recent experience and tend to be more optimistic when the market rises and more pessimistic when the market falls (Waweru *et al.*, 2008). When people overestimate the reliability of their knowledge and skills, it is the manifestation of overconfidence (Hvide, 2002).

Many studies show that excessive trading is one effect of investors. There is evidence showing that financial analysts revise their assessment of a company slowly, even when there is a strong indication proving that assessment is no longer correct. Investors and analysts are often overconfident in areas that they have knowledge (Evans, 2006). Overconfidence is believed to improve persistence and determination, mental facility, and risk tolerance. In other words, overconfidence can help to promote professional performance. It is also noted that overconfidence can enhance other’s perception of one’s abilities, which may help to achieve faster promotion and greater investment duration (Oberlechner & Osler, 2004). Availability bias happens when people make use of easily available information excessively.

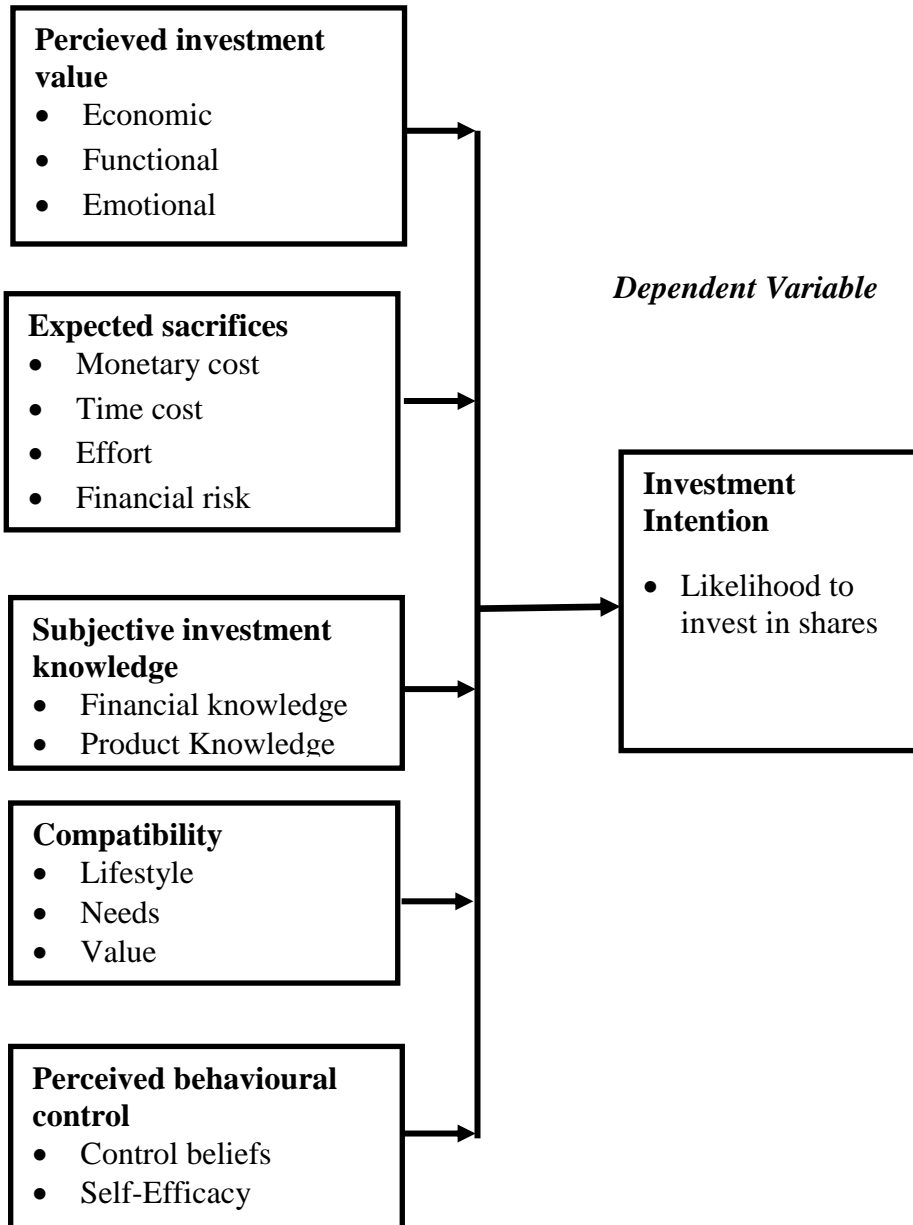
In stock trading area, this bias manifest itself through the preference of investing in local companies which investors are familiar with or easily obtain information, despite the fundamental principles so-called diversification of portfolio management for optimization (Waweru *et al.*, 2003).

### **2.3 Conceptual Framework**

The conceptual framework (Figure 2.2) was developed on the basis of the theoretical framework explained in the immediate previous section and the literature reviewed. The conceptual framework is in line with the efficient market hypothesis theory, which operates on the assumption of rational economic investor who is trying to maximize value in the presence of perfect market information. This theory together with prospect theory that suggest that an individual's investment decision-making process is influenced by social, cognitive, and emotional factors contributes the first variable in the conceptual framework that is perceived investment value. Similarly, the portfolio theory that operates on an assumption that the tradeoff in investing is between risk and return given that investors are risk averse together with the prospect theory contributes the second variable in the conceptual framework that is the expected sacrifices.

The heuristic theory contributes the third variable of subjective investment knowledge. The heuristic theory together with additional literature contributes to fourth variable compatibility. The perceived behavior control theory, the dominant predictor of behavioral intention and actual behavior contributes the fifth variable perceived behavior control variable. In addition, the literature also supports perceived investment value, expected sacrifices, subjective investor knowledge, compatibility and perceived behavior control as determinant of investment intention.

*Independent Variables*



**Figure 2.2: Conceptual Framework**

### **2.3.1 Intention to Invest**

The theory of planned behavior considers behavioral intention as immediate antecedent right before the future behavior. Behavioral intention is assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior”. This makes behavioral intention a common dependent variable in many experimental studies that use theory of planned behavior as theoretical background. Many studies also claim the strong involvement of intention in behavior performance in a way that increases the chance of the behavior being conducted. At the same time, they also agree that individual’s intention strongly affect behavior and may lead him/she will perform his/her behavior. (Michael 2011). In the case of investment on stock market, behavioral intention is considered to present individual investor’s motivation to make a specific investing decision.

### **2.3.2 Perceived Investment Value**

In an efficient market, there are large numbers of rational profit maximizers actively competing with each other trying to predict future market values of individual securities and where important current information is freely available to all participants (Fama, 1965). Investors prefer higher expected returns and lower risk and portfolios which are efficient should dominate those that are inefficient. Both CAPM and APT are founded on the assumption that capital markets are perfect and investors prefer more wealth to less wealth under uncertainty. APT suggests that returns on any given asset would be determined by a series of factors which are common to all assets and factors unique to the given asset.

### **2.3.3 Expected sacrifice**

The prospect theory by Tversky and Kahneman claims that people tend to be risk averse in the “profitable zone” and risk seeking in the “losing zone” (Tversky & Kahneman 1992). Therefore, deviating from the standpoint of standard finance, behavioral finance also examines subjective factors, where observed risks include

both emotional and perceptual aspects. Investors have an anticipation of the give components of the value formulation they expect to decrease their perception of value. The sacrifices involves the monetary price of the product or service and non-monetary that includes time, effort, perceived risk and emotions (Cronin *et al.*, 2000). Most commonly used non-monetary sacrifices include time and effort, yet many academics differentiate also psychological costs (Zeithaml, 1988), even though the constructs are conceptually related. Psychological costs refer to the investor's emotional investment or mental stress, while time and effort costs refer to non-emotional sacrifices (Baker *et al.*, 2002). Grönroos (1997) divides sacrifices into price, direct, indirect and psychological costs.

#### **2.3.4 Subjective investment knowledge**

Individual retail investors with higher perceived financial knowledge were more likely to engage in financial planning and financial preparations for retirement (Lusardi & Mitchell, 2005). This is consistent with the familiarity heuristic, according to which people are more likely to involve in a behavior if they feel more competent (Ackert & Deaves, 2010). According to empirical results from earlier research, financial literacy was considered significant in lowering information asymmetry and allowing investors to invest in risky instruments.

#### **2.3.5 Perceived behavioral control**

The control belief in the theory of perceived behavior is represented by perceived behavioral control. Within theory of perceived behavior model, the stronger one's perceived behavioral control is, for instance that of an individual investor, the more likely they would conduct the behavior (Ajzen 2005). And vice versa, the chances will be less. Consequently, the performance of behavior is correlated with one's confidence in their ability to conduct the behavior.

Many experimental studies show that perceived behavioral control could be accounted for considerable variance in intention and behavior, and also prove positive link between PBC and intention (Farn et al., 2006). In this research, it is expected that individual with higher perceived behavioral control would be more likely to have investing intention than those with less perceived behavioral control.

### **2.3.6 Compatibility**

Investor's intention to invest is affected by his or her perception of the degree to which the investment alternative fits his or her life. After all, compatibility is perceived to be higher when using or purchasing the product is perceived to require only little learning or change in behavior (Chakravarty & Dubinsky, 2005). If the investor feels that there exists an option for wealth allocation that is more compatible with his or her current needs or situation and which requires less change in one's existing habits, then he or she is more likely to invest in that particular investment alternative. This causes investors to become locked-in to certain products (Murray & Häubl, 2007) in line with heuristic bias.

## **2.4 Empirical Literature Reviewed**

The study having laid a theoretical foundation setting the justification of the study arguments and a conceptual framework showing the variable relationship, a review of empirical evidence on the determinants influencing investment intention of individual retail investors is essential in order to explain the interactions and interrelationships evidenced by different scholars. This study considered perceived investment value, expected sacrifices, subjective investment knowledge, compatibility and perceived behavior control in relation to Kenya's environment.

### **2.4.1 Perceived Investment Value and Investment Intention**

In an efficient market, there are large numbers of rational profit maximizers actively competing with each other trying to predict future market values of individual securities and where important current information is freely available to all participants (Fama, 1965). Investors prefer higher expected returns and lower risk

and portfolios which are efficient should dominate those that are inefficient. Both CAPM and APT are founded on the assumption that capital markets are perfect and investors prefer more wealth to less wealth under uncertainty. APT suggests that returns on any given asset would be determined by a series of factors which are common to all assets and factors unique to the given asset.

In standard finance, it's assumed that one would (or at least should) make investment decisions based on the trade-offs between expected returns and the risk associated with different investment alternatives such as individual stocks or mutual funds. The Perceived Investment Value is usually defined as the probability weighted average of all possible monetary outcomes. However, in this study the concept denotes the investor's pre-investment assessment of the overall value of the investment product, determined by the investor's anticipations regarding the benefits and sacrifices related to the investment.

Perceived value in the pre-purchase stage is based on investors' expectations (Karkkila 2008), and thus the pre-purchase value-ratio is the investor's belief about what he or she expects to receive in comparison to what needs to be given up (Woodruff & Gardial, 1996). According to Zeithaml and Bitner (2003), expectations can be separated into desires and predictions. The predicted and desired expectations are influenced by past experience, word-of-mouth communications, as well as explicit and implicit promises (ibid). Whereas the first two are self-explanatory, the explicit promises refer to the personal and non-personal statements about the service or product made by the organization and implicit promises are service or product related cues such as price (Zeithaml & Bitner, 2003).

Ojasalo (2001) categorized different types of expectations into fuzzy, explicit-implicit, and unrealistic-realistic. When investors have fuzzy expectations, they have an unclear understanding of the value in an offering and they are not sure what they even want. Explicit expectation refers to precise assumptions or desires relating to the product or service, whereas implicit expectation refers to something that is not actively or consciously thought of but rather taken as self-evident. Unrealistic expectations are unlikely for any service provider to fulfill whereas realistic

expectations are likely to come across (ibid). Building on this idea, value can be seen as a continuum of different types of expectations (Heinonen, 2004).

Expected value consists of two elements: expected (that is, anticipated) benefits and sacrifices, between which investor's make a trade-off as they are comparing the alternatives. Expected benefits refer to the utility the customer anticipates before the purchase or use of the product or service (Komulainen, 2010). This study adopts the value dimensions suggested in the research of Puustinen (2012). Investor's might perceive the monetary savings of the products or services differently, thus they might think that other investment products offer more for the same price (management fees). Consequently, when investors are sensitive to monetary savings, companies should focus on monetary promotions rather than nonmonetary, that is., hedonic (Chandon *et al.*, 2000). Thus, expected economic value is higher when the investor's considers the premiums and management fees to be low (Puustinen, 2012), and consequently expected value is predicted to increase as investor's consider the investment alternative to be a cost effective way to invest.

Moreover, investors desire monetary profits from investing, that is, to increase their wealth by investing. Accordingly, a favorable monetary return within a certain time frame is expected as a result from investing in a specific product (Puustinen, 2012). Risk-adjusted return refers to the ratio of profit to risk (ibid.). According to standard finance (for example., Markowitz, 1952) in order to get a perspective on the relative performance of the investment alternatives, investors should compare the same risk measure to each alternative. Thus, expected economic value also includes the expected efficiency of the investment alternative, which refers to the investor's expectation of the potential monetary gain in comparison to the risk of the investment.

Functional value refers to the investor's expectation of the convenience, that is, the easiness of investing in a given investment alternative. Some investors might enjoy investment related activities whereas some prefer alternatives that require less involvement, and thus expected convenience is valued differently by investor's who prefer dedicating more or less time and effort in investment matters (Puustinen,



2012). Emotional value consists of happiness-related metrics, and is thereby more abstract and subjective than the economic and functional aspects of investing. Emotional value refers to the positive emotions and experiences that investors expect to encounter during the investment process. Thus, investors might expect investing to deliver positive emotions, such as enjoyment, excitement, or thrills from investing in a given alternative (Puustinen, 2012).

Moreover, investors might expect investing to offer experiences such as reading and chatting about investment related issues or taking part in investment-focused events (Puustinen, 2012). According to happiness economics and Hedonomics, individuals try to maximize their happiness (that is., positive aspects of hedonic experience) instead of wealth or monetary profit (Hsee *et al.*, 2008). Thus, the expected emotional benefits refer to the experiential (fantasies, feelings, and fun) aspects of investing (Holbrook & Hirschman, 1982).

Products and services can carry and communicate symbolic meanings, which can be significant determinants in product selection (Hirschman & Holbrook, 1982) and therefore investors might choose alternatives that are inferior in their characteristics and performance (Creusen & Schoormans, 2005). Whereas in economics self-interest has been considered as the main motivation, also selfless behaviors (that is, altruism) can be a consequence of individual rationality (Becker, 1976). For example, most people tend to give money for charity (Mullainathan & Thaler, 2000) without expecting any compensation or recognition from their act. Thus, if an investor believes that investing in a given alternative provides an opportunity to demonstrate one's benevolence, the Perceived Investment Value is predicted to be higher.

Since investing also tests investor's financial capabilities, he or she might expect investing in a given investment alternative to enhance his/her status or self-esteem (Puustinen, 2012). Thus, investing might be related to one's status or self-esteem. Since the choice of a product might reflect the kind of a person the investor's wants to be (Creusen & Schoormans, 2005), products are purchased and possessed in order to express one's ideal identity and to give a certain kind of impression to others (Belk, 1988). Therefore, forecasting future behavior is without a doubt difficult.

However, in this study the purpose is not to measure to what extent intentions lead to subsequent behavior, but rather to reveal factors (beliefs) that affect investment intentions, regardless of whether those intentions cause behavior or not.

#### **2.4.2 Expected Sacrifice and Investment Intention**

The prospect theory by Tversky and Kahneman claims that people tend to be risk averse in the “profitable zone” and risk seeking in the “losing zone” (Tversky and Kahneman 1992). Therefore, deviating from the standpoint of standard finance, behavioral finance also examines subjective factors, where observed risks include both emotional and perceptual aspects. Investors have an anticipation of the give components of the value formulation they expect to decrease their perception of value. The dimensions of expected sacrifice represent the investor’s anticipation of the give components of the value formulation, and thus are expected to decrease the investor’s perception of value. The sacrifices involves the monetary price of the product or service and non-monetary that includes time, effort, perceived risk and emotions (Cronin *et al.*, 2000). Most commonly used non-monetary sacrifices include time and effort, yet many academics differentiate also psychological costs (Zeithaml, 1988), even though the constructs are conceptually related. Psychological costs refer to the investor’s emotional investment or mental stress, while time and effort costs refer to non-emotional sacrifices (Baker *et al.*, 2002). Grönroos (1997) divides sacrifices into price, direct, indirect and psychological costs.

It has also been argued that perceived risk should be included in the value models (Huber *et al.*, 2007) because risk is an essential part of the cost of the acquisition and use of any good or service. After all, as investors make purchase decisions, they need to consider the long-term effects of the ownership including potential losses (Sweeney *et al.*, 1999). In marketing research, the topic of perceived risk has been employed since 1960’s (Bauer, 1960); however no general agreement on the concept’s definition still exists today (Mitchell, 1999). According to Taylor (1974), in a choice situation, risk can be interpreted in terms of possible loss. The loss can be psycho/social terms or in functional economic terms or in some combination of both forms of loss. Thus, whereas in many disciplines, such as economics, statistical

decision theory and game theory, risk refers to potential positive and negative outcomes in a choice situation, the definitions in behavior literature refer only to negative outcomes (Stone & Gronhaug, 1993). Perceived risk has proven to be powerful in explaining investors' behavior; after all, investors are more inclined to avoid mistakes than to obtain additional benefits (Mitchell, 1999).

More recently also behavioral finance has acknowledged the importance of investor's perception of different types of risks in his or her decision-making (Sachse *et al.*, 2012) instead of only considering objective risk measures such as beta, standard deviation, variance that have generally been used in traditional finance. Ricciardi (2004) defined investor risk as situational and dependent on the characteristics of the investment product or service. Thus, whereas in standard finance the value of an investment is seen to be dependent on risks such as liquidity risk, interest rate risk, inflation risk, and default risk, in behavioral finance and marketing literature risk is subjective in nature. Both disciplines define risk as individual's subjective evaluations (perceptions) that are based on beliefs and feelings towards risk in a specific situation rather than on any kind of mathematical calculations or statistical evidence.

Investors have a tendency to misperceive risk because they lack information; however, findings have revealed that perceived risk has a stronger influence on investment decisions than actual risks (Ricciardi, 2008). A closer look at the subjective risks can provide additional insights for the modeling of economic judgments (Weber, 2004, in Ricciardi, 2008). This discussion should justify the addition of risk components in the investment value model. As a result, in this study the sacrifice dimensions are defined as monetary costs, time costs and effort together with financial, source and psychological risks (Diacon & Ennew 2001; Huber *et al.* 2001).

Monetary costs refer to the investor's perception of the monetary expenses of the investment alternative, such as management fees, subscription fees, redemption fees, as well as trading, custody and termination expenses. Research in economics has shown that there are other significant costs to investor than monetary, which are

acknowledged in the full price models and one of these costs is time (Zeithaml, 1988). In the theory of allocation of time, Becker (1965), argued that the cost of a service is generally simply said to equal their market prices, however consumption takes time – “time that could have been used productively”. In a similar manner, it is expected that investors allocate their time wisely when making investment decisions.

Since some individuals have a higher cost for their time, it makes sense that they are not interested in spending time doing investment research and consequently prefer to delegate their portfolios to professionals (Zhu, 2005). The research of Zhu (2005) provided evidence that the cost of time affects a household’s decision between direct and delegated investing. Individuals with higher cost of time, that is, higher family responsibilities, less leisure time, and greater professional engagement, invested a higher portion of their wealth through delegated portfolio management (ibid).

Expected effort consists of the investor’s expectation of the amount of searching, learning and cognitive effort prior and during the investment process. After all, investors cannot collect and process information about performance, fees, and other investment characteristics at zero cost (Sirri & Tufano, 1998). Comparing alternatives requires information searching on commissions and fees, growth figures in the economy, financial figures of companies, and reputation of the seller, for example (Sunikka *et al.*, 2009). Accordingly, gathering and analyzing information about different investment alternatives consume individual investors’ time and money. Thus, these activities constitute costly search (Hortaçsu & Syverson, 2004). Therefore, it can be predicted that investors tend to purchase those investment products that are less costly or easier for them to identify.

According to behavior literature, investors gather information on the product class of interest from both internal (memory and past experience) and external (advertising, articles) information sources to form a consideration set (Capon *et al.*, 1996). Investors tend to form this consideration set of alternatives from which they choose the product or service (Eliaz & Spiegler, 2011), their decisions between different investment alternatives can be affected by advertising, personal selling, journalism, peer recommendations amongst others.

According to Sirri and Tufano (1998), Jain and Wu (2000) and Zhu (2005), search cost influences individual decision-making in the financial markets. The findings of the first two studies (Sirri & Tufano 1998; Jain & Wu 2000) showed that individuals tend to choose mutual funds with lower search costs rather than funds with higher future returns.

Zhu (2005) found out that search cost does not only influence the choice between funds, but also the choice between investing directly in stocks and indirectly through mutual funds. Also, Capon *et al.* (1996) noticed that investors had invested in funds that they had seen in advertisements, indicating that many investors tend to avoid investment related search. Moreover, as investors have too many investment choices, they might consider the cost of searching the right one too high. Even though the basic assumption of economic theory is that investors are better with more options, too many investment alternatives can cause information overload, creating investor confusion, and consequently, lead to declining investment intentions or choosing the default option (Tapia & Yermo, 2007).

Another cost for the investor to obtain the benefits of the purchase is the cost of learning (Huber *et al.*, 2001). Investors might expect that they have to do a lot of learning in order to familiarize with the investment alternative. Since learning takes time and effort, investors are likely to perceive it as a sacrifice lowering their overall utility from investing. Thus, investors have a tendency to avoid the learning process (Yang & Peterson, 2004). Cognitive effort can be defined as the cost of thinking (Cooper-Martin, 1994), and thus, investors allocate their cognitive resources with deliberation. Individuals have a tendency to only expend the effort that is necessary to make a satisfactory decision rather than an optimal one (Garbarino & Edell, 1997). When decisions require more cognitive effort, decision-makers often use heuristics and strategies that make the situation easier, and therefore often result in biased or inaccurate decisions. Thus, decision-makers are willing to give up benefits in order to keep the required cognitive effort low. In view of that, it is predicted that the higher the investor expects the required cognitive effort; the lower is his or her expectation of the investment's value.

Conventional financial theory assumes that financial risk is objective and thus determined by the volatility of yields (Diacon & Ennew, 2001). Another assumption is that individual investors trade off this measurable risk with the potential monetary return as they are pondering whether to purchase the investment product or not (ibid). However, according to Capon et al. (1996) and MacGregor *et al.* (1999) return and risk do not fully explain the decision-process, but suggest that perceived risk is a better predictor of an investor's behavior. Since individuals have an ability to only process a limited amount of information in a given time, significant amount of facts is ignored (Ricciardi, 2008). This, then again, leads to the misperception of risks and improper financial judgments (Ricciardi, 2004). After all, an individual's behavior is based on his or her perception of the reality – even if it has nothing to do with the reality itself. Therefore, in this study, financial risk is defined as the investor's subjective evaluation (perception) of the potential monetary loss, the uncertainty in terms of return, and the risk of not obtaining expected returns.

In some markets, sellers have more and superior information than buyers, thus a conflict of interest exists in the provision of information by the sellers (Bolton *et al.*, 2007). Thus, if the assumption is made that not all investors are perfectly informed, and hence do not know which investment product would best serve their needs, the potential to mis-sell financial products rises. Due to the conflict of interest in providing advice and selling financial products, it has been argued that these activities should be separated (Bolton *et al.*, 2007). Particularly, when it comes to mutual funds, problems arise because firms tend to push their own products over alternatives (Sirri & Tufano, 1998). Thus, there exists a conflict of interest of whether an advisor should tell the client that another financial company might be offering a better suitable product.

According to Diacon and Ennew (2001) a dimension of perceived risk that has not gained much attention is the role of distrust in products, their providers and salesforces of investment products and services (i.e., source risk). From the investor's perspective, the purchase of an investment product is quite different from buying daily products or durable goods since they do not come with any guarantees with fixed period (Pellinen *et al.*, 2011). Thus, investors with low investment

knowledge are almost enforced to trust bank personnel or other investment advisors. Yet, investor's risk perceptions might be inflated as they think their lack of knowledge would be used against them (Diacon & Ennew, 2001). Also, if sellers and financial advisers do not have a trustworthy reputation, investor's perception of risk is clearly higher. Campbell *et al.* (2011) note that despite the disclosure rules, lack of investor trust is a problem that affects usage of certain financial products. Moreover, according to one of the latest investment researches conducted in Finland (Norvestia, 2012), 28% of the respondents do not want to invest because they do not trust the investment service provider to act in their best interest. Therefore those who offer financial planning should have a clear understanding of investor's perceptions of risk.

Perceived social risk can be defined as the extent that the investor believes that other people judge him or her by his or her investment decision (Brody & Cunningham, 1968). In general, people's decisions are often similar to the choices made by those around them (Bursztyn *et al.*, 2012). As they become faced with risky decisions, they may seek others' opinions for the purpose of lowering risk (Hansen, 2005). In recent years several studies within the field of behavioral finance have examined whether peer effects influence investors' financial decisions (Benartzi & Thaler, 2007). Peer effects refer to situations where one's purchase of an asset leads to another's similar choice (Bursztyn *et al.*, 2012). Furthermore, the research of Fong and Wyer (2003) showed that individuals with only little investment experience, tended to use other's decisions as bases for their own, and especially the willingness to take risk was affected by the decisions of others. Consistent with this, Campbell (2006) argued that unsophisticated households have a tendency to purchase financial products that are the standard in their country, because they tend to follow the example of their relatives and neighbors.

Therefore, it can be inferred that social acceptance has a major impact on investment decisions. Thus, one might be afraid of looking foolish, untrendy or loosing status in one's social group as a result of investing in a certain way (Herrero Crespo *et al.*, 2009). Perceived social risk therefore discourages one from engaging in activities which are not accepted by others or are in conflict with his or her self-image or

personality (Hoffman & Broekhuizen, 2009). After all, even though investment products are low in visibility, investment decisions are not made in social isolation and thus investors might be concerned whether their investments are socially acceptable and whether they make a good impression on others (ibid).

According to Ricciardi (2008), risk is also determined by different types of behavioral risk characteristics such as the degree of dread, worry, familiarity, and controllability. Psychological cost can be defined as the emotional labor or mental stress during the purchase process (Baker *et al.*, 2002) or as the uncertainty, frustration, fear or anger experienced by the investor (Broekhuizen, 2006). Herrero Crespo *et al.* (2009) define psychological risk as the potential loss of self-esteem that stems from the frustration of not achieving one's buying goal. Thus, when an individual considers the exchange as risky, it creates tension for him or her, that is, he or she experiences psychological discomfort (Stone & Gronhaug, 1993). Therefore, it is suggested that when an investor is afraid of the psychological cost of investing, the overall expected sacrifice is higher and he or she is less willing to invest.

### **2.4.3 Subjective Investment Knowledge and Investment Intention**

During the past decades, the complexity of financial instruments has increased and forced individuals to cope with new and more sophisticated investment products (Lusardi & Mitchell, 2006). Consequently, investors are now facing difficulties in understanding investments, and within the European markets, only one third of investors feels themselves capable of understanding which investment would give the best return (Chater *et al.*, 2010). One in five claimed that they were really confused with the investment alternatives and were unable to understand the jargon that was used in the description and therefore did not know which option to choose. Only two in five felt that they understood the information regarding their investment options (ibid).

According to behavioral economics, the amount, source, and nature of the information individuals receive about saving and investing are likely to influence their financial decisions. After all, to be able to make a decision between investment



products, an investor is expected to possess a clear understanding of the characteristics of the alternatives as well as their own preferences (Costanzo & Ashton, 2006). Lusardi and Mitchell (2005) detected that investors with higher perceived financial knowledge were more likely to engage in financial planning and financial preparations for retirement. Thus, their findings highlight the connection between knowledge, intentions, and behavior. Their results are consistent with the familiarity heuristic, according to which people are more likely to involve in a behavior if they feel more competent (Ackert & Deaves, 2010).

Whereas the ambiguity aversion heuristic refers to a situation where people prefer risk to uncertainty, Heath and Tversky (1991) found that individuals do not prefer an option with known risk to an option with unknown risks when the choice options are familiar. According to Fox and Tversky (1995), this is due to comparative ignorance. The comparative ignorance hypothesis proposes that people's confidence is weakened as individuals compare their limited knowledge in the relevant domain with their superior knowledge about another domain, or when they compare themselves with more informed individuals (Fox & Tversky 1995). This causes the feeling of ignorance, which makes people judge the situation ambiguous and to avoid it. Therefore, investors who are aware of their limited investment skills are less likely to participate in risky asset markets, (Campbell 2006), and might even avoid investment/savings decisions altogether (Lusardi & Mitchell 2005).

This was also confirmed in the research of Lusardi and Mitchell (2005), where it was found that objective financial knowledge and confidence had a positive impact on the investor's financial planning intentions. However, their results suggested that confidence played a greater role. In 2007, Lusardi and Mitchell examined the influence of self-assessed, for example, subjective financial literacy on financial planning and on objective knowledge. According to their findings, objective and subjective measures were positively related and both had a great influence on financial planning behavior.

Accordingly, investors with higher level of investment knowledge are more likely to invest than investors with lower level of knowledge. However, in this study knowledge is not expected to impact investment intentions directly, but rather indirectly through the investors' evaluations of the investment.

After all, several studies within the field of investor behavior have concluded that the investors with higher product knowledge use different evaluative strategies and decision processes than investors with less knowledge (Bettman & Park 1980; Brucks, 1985). Moreover, Rao and Monroe (1988) found out that those investors with high product knowledge used extrinsic cues when evaluating a product whereas investors with less knowledge relied on intrinsic attributes. Biswas and Sherrell (1993) studied the influence of product knowledge on investor internal price standards, and their findings suggested that investors estimated prices and acceptable prices differently according to their degree of product knowledge. Moreover, recent research has shown that product knowledge reduces investor's perception of risk (Nepomuceno *et al.*, 2013). Thus, it has been suggested that product knowledge is an important factor affecting the evaluation of a product, and subsequently influencing investor's purchase intentions.

#### **2.4.4 Perceived Behavioral Control and Investment Intention**

The control belief in the theory of perceived behavior is represented by perceived behavioral control. Within theory of perceived behavior model, the stronger one's perceived behavioral control is, for instance that of an individual investor, the more likely they would conduct the behavior (Ajzen 2005). And vice versa, the chances will be less. Consequently, the performance of behavior is correlated with one's confidence in their ability to conduct the behavior. Many experimental studies show that perceived behavioral control could be accounted for considerable variance in intention and behavior, and also prove positive link between PBC and intention (Farn *et al.* 2006). In this research, it is expected that individual with higher perceived behavioral control would be more likely to have investing intention than those with less perceived behavioral control.

Since the theory of planned behavior is one of the most significant and popular behavioral model among previous studies (Ajzen, 2002) and has been found to explain intentions and different behaviors quite well (Karjaluoto, 2002), there exists plenty of evidence on the relationship between perceived behavioral control and behavioral intention. Armitage and Conner (2010) conducted a literature review on 185 independent studies using TPB that were published before 1998, and found that generally perceived behavioral control (PBC) accounted for substantial amounts of variance in intention and behavior. Moreover, in the research of East (1993) on investor motivations to make applications for shares in privatized British industries, perceived behavioral control was found to affect one's investment intention. As already discussed, in this research the limiting factor is defined as the investor's perception of his or her financial resources. Thus, it is predicted that individual would only invest when he or she perceives the current financial resources to be sufficient for investing. Therefore, an individual is more likely to invest when he perceives to have sufficient financial resources.

#### **2.4.5 Compatibility and Investment Intention**

Among diffusion research, there is plenty of evidence that compatibility affects and individual's adoption of a product or a service (Rogers, 1995). Moore and Benbasat (1991) found that usage was significantly affected by investor's perceptions of the products usefulness, ease of use and compatibility. Tornatzky and Klein (1982) conducted a meta-analysis of 100 innovation research papers and concluded that relative advantage, compatibility and complexity were the three major determinants behind investor utilization decisions. Moreover, compatibility has been found to affect investors' intentions in several other studies (Taylor & Todd, 1995; Agarwal & Prasad, 1997).

In this study it is predicted that investor's intention to invest is also affected by his or her perception of the degree to which the investment alternative fits his or her life. After all, as compatibility is perceived to be higher, using or purchasing the product is perceived to require only little learning or change in behavior (Chakravarty & Dubinsky, 2005). Hence, if the investor feels that there exists an option for wealth

allocation that is more compatible with his or her current needs or situation (e.g., investment time) and which requires less change in one's existing habits, then he or she is more likely to invest in that particular investment/saving alternative. This causes investors to become locked-in to certain products (Murray & Häubl, 2007). For example, if investors consider that keeping their assets on a bank account requires the least amount change in behavior, they perceive bank accounts more compatible than stocks or investment funds. After all, investors tend to follow habits and are prone to choosing solutions that require the least amount of effort (Collan, 2007; Collan & Tetard, 2007). This discussion leads us to the conclusion that if investment and saving decisions are similar to other consumption choices, compatibility should have a positive relationship with an individual's intention to invest.

## **2.5 Critique of the existing literature relevant to the study**

The empirical studies that were reviewed focused on the retail individual investors' investment behavior and what influences them in making decisions to invest in securities markets. Waweru, Munyoki, and Uliana (2008) investigated the role of behavioural finance in investment decision making at the Nairobi Securities Exchange (NSE) and concluded that behavioural factors affected the decisions of the institutional investors. The study focused on institutional and not individual retail investors which is the focus of the current study. The study also fails to capture what drives the investors into and out of the stock markets.

Kimani (2011) surveyed the influence of behavioral factors on individual investors' choices of securities at the Nairobi Securities Exchange. The findings indicate that investors suffered from behavioral biases in their decision-making. The study did not evaluate what motivates the individual investors' to make the decisions and the considerations thereof. Hsu and Shiu (2010) study on the effect of investor's financial literacy on behavioural in the Chinese market found that an investor's financial literacy in the Chinese market does not necessarily mitigate behavioural biases, nor improve trading performance centrally to Sung and Hanna (1996) who concluded that financial literacy was significant in determining investors'

willingness to assume greater risk. The conflicting findings, the different contextual set ups and methodological approaches provide a research gap.

Agarwal and Teas (2002) in their study operationalized the perceived investment value as a single overall concept that can be measured by means of a self-reported item (or set of items) that evaluates the investor's perception of value. The perspective includes the possibility that the effects of multiple antecedents might produce this uni-dimensional construct, but it does not include the view that value is an aggregate concept formed from several components. Accordingly, although value is formally defined in terms of the quality-price relationship, the empirical operationalization of the construct treats these elements as antecedents rather than as formative components of value.

Diacon and Ennew (2001) in their detailed investigation of the factors that characterize the perceived risk in various personal financial services, pensions, life insurance and banking products currently available to individual savers in the United Kingdom found out that although investors need to be compensated for some aspects of perceived risk (such as the possibility of adverse consequences and poor information) this does not apply to all dimensions of perceived risk. In particular, there is little evidence that individual investors want compensation for volatility of returns. Additionally, the research failed to consider an array of other factors like time, effort involved, that constitutes the sacrifices that the individual retail investors needs to put into consideration, and which often demotivates investment in the securities market.

Studies by Puustinen (2012) and Puustinen *et al.* (2013) on determinants of investment intention of individual retail investors operationalizes Perceived Investment Value and expected sacrifices especially in the context of the retail individual investors as a unidimensional construct. While they have demonstrated that each of the determinants can influence the investment intention of individual retail investors, the study failed to demonstrate that the multidimensional performance measure fully captures the effects of these determinants given that are

likely to manifest through different aspects of investment intention especially in developing countries like Kenya.

The empirical studies that have been reviewed were conducted in the developed economies of US and Europe. Based on the fact that financial markets in the developed country differs significantly with those in developing countries such as Kenya in terms of financial products, number of market participants and formalization, it follows therefore that the impact of the Perceived Investment Value, expected sacrifices, subjective investment knowledge, compatibility and perceived behavior control in the context of the developing economies may not have been considered. Consequently, the impact of these constructs in respect to investment intentions by individual retail investors may yield different results between developing and developed economies.

This study empirically tested the determinants influencing investment intention of retail investors identified by the various studies and tested in Kenya's environment. This research therefore adds value to the existing body of knowledge on the investment intention influencing investment intentions among individual retail investors in Kenya and similar countries.

## **2.6 Research Gaps**

The reviewed literature reveals research gaps in several areas. The study reviewed focus on the role of Perceived Investment Value, expected sacrifices, subjective investment knowledge, compatibility and perceived behavior control on the investments intention of individual retail investor's decision to invest in stock markets. This creates a knowledge gap regarding how these constructs influences the investment intention of individual retail investors. The study assessed the relationship between Perceived Investment Value, expected sacrifices, subjective investment knowledge, compatibility and perceived behavior control on the investment intention of individual retail investors and the decision to invest in stock markets.

In terms of context a number of studies (Puustinen, 2012; Puustinen *et al.*, 2013; Lounio, 2014) on the role of Perceived Investment Value, expected sacrifices, subjective investment knowledge, compatibility and perceived behavior control have been conducted in the developed economy such as US and Europe. Therefore, a knowledge gap exists on the role of these constructs in the context of the developing economies. This is based on the fact that financial markets in the developed country differs significantly with those in developing countries such as Kenya in terms of financial products, number of market participants and formalization. It follows therefore that Perceived Investment Value, expected sacrifices, subjective investment knowledge, compatibility and perceived behavior control might be more pronounced and entrenched within the financial markets in developed countries than in the developing economies. Consequently, the effects of these constructs in respect to investment intentions by individual retail investors may differ between developing and developed economies. The study filled this knowledge gap by assessing the influence of these constructs on investment intentions by individual retail investors and their decision to invest in stock markets.

Studies on determinants of investment intention of individual retail investors reviewed operationalizes Perceived Investment Value and expected sacrifices especially in the context of the retail individual investors as a unidimensional construct (Puustinen, 2012; Puustinen *et al.*, 2013; Lounio, 2014). While they have demonstrated that each of the determinants can influence the investment intention of individual retail investors, there is a need to demonstrate that the unidimensional performance measure fully captures the effects of these determinants given that they are likely to manifest through different aspects of investment intention especially in developing countries like Kenya. The study filled the gap by operationalizing both Perceived Investment Value and expected sacrifices as multidimensional constructs to fully capture the effects of these determinants.

The lack of readily available empirical findings on determinants of investment intention amongst individual retail investor especially in developing countries like Kenya, the different methodological approaches, and the narrow approach to the

study variables and the different economies studied provided the research gaps that the current study sought to fill.

## **2.7 Summary**

This chapter explored the literature pertaining to the definition and theoretical underpinnings on investment intentions of individual investors. The constructs and their dimensions were identified and the variables that represent each dimension were reviewed in terms of the research that exists in the domains. The interactions of the constructs and the variables in terms of work done by the previous studies were explored to highlight key relationships and establish knowledge gaps that formed the basis for the development of the hypotheses. The research methodology following in chapter 3, describes the philosophy and design of the research investigating whether tangible evidence exists to support the proposal that there are factors that determine the investment intention of an individual Kenyan investor who invests in securities traded at the NSE.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter describes the research philosophy and methodology of this study. The objective of the study was to assess the determinants of investment intentions of individual investors of securities in Nairobi Securities Exchange, Kenya. The presentation of the research methodology includes discussions on research design, the source of data, the data gathered, how they were collected and the methods of data analysis.

#### **3.2 Research Paradigm**

The study was anchored on a positivism research philosophy as it is based on existing theories and it formulates quantitative hypotheses to be tested. The choice is based on the fact that in order to empirically establish the relationships between the variables, hypotheses were formulated and tested and findings generalized. Positivism adopts a philosophical stance of the natural scientist who works with an observable social reality (Remenyi et al., 1998) as cited in Holden and Lynch (2004). Positivists use existing theories to develop hypotheses which are tested and confirmed, in whole or part, or refuted, leading to further development of theory which then may be tested by further research. It is concerned with facts other than impressions and this is consistent with the notion of observable social reality (Mugenda, 2008).

Positivistic research is undertaken in a value-free way as the study is external to the process of data collection as there is little that can be done to alter the substance of the data collected (Saunders et al., 2009). The study was independent of and neither affected or was affected by the subject of the research. Emphasis was on quantifiable observations that lend themselves to statistical analysis.

### **3.3 Research Design**

This study sought to establish relationships among retail individual investor Perceived Investment Value, expected sacrifice, subjective information knowledge, compatibility and perceived behavior control on investment intentions of individual retail investors in Kenya. A descriptive cross-sectional design was appropriate to use for collecting data from a cross section of investors to determine the linkages between the study variables. Creswell (2013) asserts that a descriptive research design is used when data is collected to describe persons, organizations, settings or phenomena. The design also has enough provision for protection of bias and maximized reliability (Kothari, 2012). Houser (2011) notes that a descriptive cross-sectional design provides in-depth information about the characteristics of subjects within a particular field of study, thus, it can help identify relationships between variables. According to Sekaran (2003), this design offers this study a profile to describe relevant aspects of the phenomena of interest for an individual, organization or other perspectives.

The research design also enabled the study to combine both quantitative and qualitative research approaches in assessing the contributions of predictor variables. The mixed research design that consist both qualitative and quantitative approaches allows the study to collect information from the people on their habits, opinions, attitudes and any other educational or social issues (Namusonge, 2010). Mugenda and Mugenda, (2008) asserts that qualitative methods can be used to gain more in depth information that may be difficult to convey quantitatively. Quantitative approach strives for precision by focusing on items that can be counted into predetermined categories and subjected to statistical analysis (Simiyu, 2012). The quantitative data were obtained by administering the questionnaire to individual retail investors. A cross sectional survey was used and the study assumed that the investment intentions could be well understood only from the point of view of individuals directly involved in the activities in question.

### **3.4 Target Population**

The study was carried out in Nairobi County that is the capital city of Kenya because there is a high concentration of individual retail investors due to the high population in the county and ease of access to investment banks, stock brokerage firms and the NSE. The target population of the study was the 2.4 million individual retail investors who have registered with Central Depository Systems Corporation (CDSC) investor database as on December 31, 2014. The CDSC classifies investors who have not traded for a period of more than one year as dormant investors while the rest are assumed active investors. The study focused on these two categories of investors in order to establish what determines their intention to invest in the securities market. The individual retail investors provided information on what motivates them to invest in the Nairobi Securities Exchange.

### **3.5 Sample Frame**

The sampling frame according to Kothari (2012) consists of the list of elements that are in the population. Mugenda and Mugenda, (2008) defined a sampling frame as a list, directory or index of case from which a sample can be selected. The study focused on investors trading in shares on the Nairobi Securities Exchange. Investors can only trade in shares via stock brokerage firms and the 23 operational stock brokerage firms formed the sampling frame. The CDSC data was also used as a sampling frame. The study covered the period up to December 31st, 2015. The period was relevant since the capital markets had been quite active and the CDSC had also kept investor data comprehensively after dematerializing share ownership and this is also the most recent period covering five years.

### **3.6 Sampling Technique and Sample size**

The sample was decided on by use of a multi-stage sampling technique where in the first stage, stratified sampling technique was used. Stratified sampling ensured that sub-groups in the population were adequately represented in the sample (Orotho, 2009). The individual retail investors were stratified based on whether they are actively investing in the stock market or they are inactive and from each stratum,

using proportional allocation the proportion of the size for each strata was computed. This was adapted because it is considered most efficient, optimal and there is no difference in within-stratum variances (Kothari, 2012).

In the second stage, simple random sampling technique using random numbers (Cooper & Emory, 2000) was used to select the individual investors from each of the stratum to be involved in the study. This fulfilled the requirements of efficiency, representativeness, reliability and flexibility taking care of systematic bias that may result from non-respondents (Kothari, 2012).

$$n_0 = \frac{z^2 p(1-p)}{e^2} \quad (3.1)$$

Equation (3.1) and the procedures for determining sample size for categorical data (Bartlett *et al.*, 2001) was adopted. In the equation,  $n_0$  is the required sample size for the study,  $z$  is the Z-value from the Z-test which is 1.96 at 95% confidence level for this study,  $p$  is estimated adoption of picking a choice expressed as a decimal (0.5) that was used for this study and  $e$  is the confidence interval expressed as decimal (e.g., 0.05 =  $\pm 5$ ). Based on the equation and the stated parameters a sample size of 385 participants was computed for this study.

The Sample was allocated to both active and inactive individual retail investors using equation 3.2 as provided by Kothari (2012)

$$n = \frac{N(\text{subsector}) * n(\text{allsubsector})}{N(\text{allSubsector})} \quad (3.2)$$

Where:

n (subsector) is the sample size at subsector level.

N (subsector) is the population of a subsector.

n (all sectors): is the sample size of the two (active and inactive) sub sectors combined.

N (all Sectors) is the population of the two subsectors.

Using equation 3.2, the size for each subsector was calculated as follows:

$$\text{Active Investors} = \frac{102,094 * 385}{170,156} = 231$$

$$\text{Inactive Investors} = \frac{68,062 * 385}{170,156} = 154$$

The sample size for the study was therefore 385.as shown in Table 3.1.

**Table 3.1: Distribution of the sample size of the individual retail investors**

Category	Population	Sample size
Active retail investors	102,094	231
Inactive retail investors	68,062	154
Total	170,156	385

The active investors were approached from the stock brokerage firm as they visited and requested to consider filling the questionnaire (appendix 1) in full. Those who agreed formed part of the sample and were handed the questionnaires to fill. The questionnaires were emailed to randomly selected investors from the stockbrokers' investor database who were inactive.

### **3.7 Data Collection Methods**

The study used a structured questionnaire to collect data from the respondents. Mugenda and Mugenda (2008) asserts that questionnaire is designed to address specific objective, research question or test hypothesis. This study used questionnaire because of its ability to collect large amount of information in a reasonably quick space of time and also made the analysis of data simpler based on the research objective of the study. In addition, all questions were standardized and anonymity of the respondent was maintained for the purpose of increasing the response rate. This mix of sources allowed for additional cross-checking of the findings for the purpose of evaluating the internal consistency and to increase reliability. The questionnaire was structured and made up of close ended questions that were used to collect data on independent variable and dependent variable as well. The measurement was done using a seven item Likert scale.

Permissions to conduct the research was obtained from relevant authorities. Research assistants were engaged at a fee based on the level of maturity, past experience, current preparation related to expected role, interviewing skills, resourcefulness, and ability to adapt to and respond to unexpected situations as they carry out the data collection. The research assistants then administered the questionnaires to the selected individual investors and brokers.

### **3.8 Pilot Study**

To ascertain the validity and reliability of questionnaire, it was pretested with individual investors that were selected to match the true sample. Pretesting is the final stage of the questionnaire development process and its aim is to ascertain how well the questionnaire works. The purpose of the pretest is mainly to check the comprehensibility and layout of the questionnaire that is to ensure that the language and the structure of the questionnaire are appropriate, and that the meanings of the questions are the same to the respondents as they are to the study. Thus, in order to uncover problems in answering the questions prior to sending the actual survey, the

questionnaire was pretested with 31 individuals who were allowed to freely comment on the questions, the format and flow of the survey.

Cronbach's alpha determines the internal consistency or average correlation of items in a survey instrument to gauge its reliability. After filling out the questionnaire, many of the pre-testers pointed out that answering to almost similar questions three or four times was frustrating. However, this was necessary in order to ensure the reliability of the measurement.

Moreover, few mentioned that they did not really know anything about investing and also considered the subject uninteresting. Some of the pilot testers also commented on the length of the survey, though it was acknowledged that the pilot test answering time was approximately 14 minutes. Thus, as all items were all considered to be significant for the research and testing of hypotheses, no questions was removed from the survey after the pilot testing. However, based on the pilot respondents' comments, two of the statements were reconsidered and their wording slightly rearranged.

### **3.9 Data Analysis and presentation**

#### **3.9.1 Introduction**

Kothari (2012) defines data analysis as an application of logic to understand and interpret data collected. Hosmer and Stanley (2002) opine that, data analysis involves reducing accumulated data to a manageable size, developing summaries, looking for patterns and applying statistical techniques. According to Sekaran (2003) as cited by Njuguna (2008), there are three objectives in data analysis: getting a feel for the data, testing the goodness of the data and testing hypothesis developed for the research.

The study examined all the questionnaires for completeness and consistency and then categorized all the items before coding. The collected data was analyzed using SPSS version 23 (Statistical Package for Social Science) as the study data was obtained using a standard questionnaire. The statistical package was chosen due to its good ability for nonparametric designs and ease of use. Descriptive statistics was used to

examine the characteristics of the population. It enabled the study to meaningfully describe a distribution of scores using statistics that is depends on the type of variables in the study and the scale of measurement. Mugenda and Mugenda (2008) assert that descriptive statistics enable the study to describe distribution of scores. Variable aggregation for different variables was undertaken in facilitation of further statistical analysis.

### 3.9.2 Model Specification

A system of multiple linear regression equations formed the analytical framework for this study. This approach has been used in past research (Leung, Daouk & Chen., 2000; Rapach & Wohar, 2006; Todd & Correa, 2007) in the areas of finance and investment behavior and are similar to the current study in that the study variables exhibit a linear relationship which is also expected in the current study. In arriving at the inferential statistics, a simple linear regression model was used to analyze the data using statistical package for the social sciences (SPSS). Before running the multiple linear regression model for all the study variables, classical or univariate regressions were conducted to test the effect of each predictor variable on the dependent variable as follows:

$$Y = \alpha_0 + \alpha_1 \text{PIV} + \pi \quad (3.2)$$

$$Y = \beta_0 + \beta_1 \text{ES} + \theta \quad (3.3)$$

$$Y = \sigma_0 + \sigma_1 \text{SIK} + \lambda \quad (3.4)$$

$$Y = \eta_0 + \eta_1 \text{COM} + \mu \quad (3.5)$$

$$Y = \omega_0 + \omega_1 \text{PBC} + \psi \quad (3.6)$$

Where,

$Y = \text{Investment Intention}$

$\text{PIV} = \text{Perceived Investment Value,}$



ES = *Expected sacrifices*,

COM = *Compatibility*,

SIK = *Subjective investment knowledge*,

PBC = *Perceived behavioral control*

In the equations,  $\beta$ ,  $\alpha$ ,  $\eta$ ,  $\sigma$ , and  $\omega$  are regression coefficients while  $\pi$ ,  $\theta$ ,  $\mu$ ,  $\lambda$ , and  $\psi$  are random error terms of the models. The models were used to test each of the below null hypotheses as follows: -

- H<sub>1</sub>. Expected sacrifice has no significant effect on investment intentions of individual stock market investors in Nairobi Stock Exchange.

(i.e.  $\alpha_1 = 0$ ). Equation 3.2 was used to test the hypothesis.

- H<sub>2</sub>. Perceived Investment Value does not significantly affect investment intention of individual stock market investors in Nairobi Stock Exchange.

(i.e.  $\beta_1 = 0$ ). Equation 3.3 was used to test the hypothesis.

- H<sub>3</sub>. Subjective investment knowledge has no significant influence on investment intention of individual stock market investors in Nairobi Stock Exchange.

(i.e.  $\eta_1 = 0$ ). Equation 3.4 was used to test the hypothesis.

- H<sub>4</sub>. Perceived behavioral control has no significant effect on investment intention of individual stock market investors in Nairobi Stock Exchange.

(i.e.  $\sigma_1 = 0$ ). Equation 3.5 was used to test the hypothesis.

- H<sub>5</sub>. Compatibility has no significant influence on investment intention of individual stock market investors in Nairobi Stock Exchange.

(i.e.  $\omega_1 = 0$ ). Equation 3.6 was used to test the hypothesis.

Multiple regressions followed to test the combined influence of the variables using the following model:

$$Y = \beta_0 + \beta_1 \text{PIV} + \beta_2 \text{ES} + \beta_3 \text{SIK} + \beta_4 \text{COM} + \beta_5 \text{PBC} + e \quad (3.7)$$

Where,

*Y = Investment Intention*

*PIV = Perceived Investment Value,*

*ES = Expected sacrifices,*

*COM = Compatibility,*

*SIK = Subjective investment knowledge,*

*PBC = Perceived behavioral control*

*e = random error terms of the models*

### **3.9.3 Factor Analysis**

Factor analysis was chosen as the appropriate method identifying underlying structures in data set for investment intentions. This method has been used in studies on investment behavior and intentions by (Puustinen, 2012; Puustinen *et al.*, 2013; Lounio, 2014). It entailed examination of underlying pattern of variables that fall under each of the dimensions of investment intention namely; perceived investment value, expected sacrifices, compatibility, subjective investment knowledge, perceived investment behavior and investment intention. The factor loading score indicated how well a variable coincided with a ‘factor’ or ‘dimension’. In order to facilitate interpretation, the solution is ‘rotated’ so that items are re-arranged under the respective dimensions of investment intention.

Factor analysis can either be exploratory or confirmatory (Hair *et al.*, 2010). In the confirmatory approach, the purpose is to assess the degree of match between the data and structure derived from the theory. Exploratory factor analysis brings out patterns in collected data and reveals the structure of variables in each component, or the number of components to be extracted. In this study, the factors that constitute each of the dimensions of investment intention have been pre-determined and extensively applied by previous studies (Puustinen, 2012; Puustinen *et al.*, 2013; Lounio, 2014). However, there was a need to confirm whether the emerging pattern in this study is similar to that of previous studies to enable comparability of results.

Thus, the individual dimensions of investment intention were analyzed using both exploratory factor analysis and confirmatory factor analysis employing the principle component method with varimax rotation analysis to assess the discriminant validity of the individual constructs (Perceived Investment Value, expected sacrifices, compatibility, subjective investment knowledge, and perceived investment behavior and investment intention).

Exploratory factor analysis, employing the principle component method with varimax rotation analysis was used to reduce data which did not account for the variance of the constructs from the scales. Any construct with a component loading below 0.4 was excluded from the investment intention construct according to suggestions by Anderson and Gerbing (1982).

#### **3.9.4 Regression Analysis**

Hair *et al.* (2010) observed that regression analysis is the logical choice of methods for evaluation of individual effects of a variable on the other. In addition, Pallant (2007) suggests that multiple regression is a statistical technique that can be used to explore the predictive ability of a set of independent variables on one dependent measure. Multiple regression also provides an assessment about the model as a whole (as subscales) and the relative contribution of each variable that make up the model (Individual subscales).

The general objective of the study was to assess the determinants of investment intentions of individual stock market investors in Nairobi stock exchange. Hierarchical regression analysis was used to test the five null hypothesis. Variables other than the independent variables were used to control for factors that have a significant relationship with the dependent and independent variables. This helped control for spurious relationships between variables. The variables were both included in the hierarchical regression analysis to partial out their effects of independent variables on the investment intentions of individual stock market investors. The investor characteristics were held constant at each stage of regression when testing the hypotheses. Hierarchical approach has been found appropriate when analyzing highly correlated independent variables.

In testing hypotheses, an effect exist if, and if, the variable of principles interest gives significant contribution over and above the direct effects of other independent variables. The results were interpreted and discussed. Estimates of the regression parameters were made by ordinary least squares (OLS), considered as the best linear unbiased estimators for the parameters under the following conditions: linearity in parameters, random sampling, zero conditional mean (of error term), no perfect collinearity, and homoscedasticity. During the analysis, tests made to verify if data suffered from problems regarding these criteria showed no signs of such problems emerged.

In the regression analysis, tests of normality, homoscedasticity and multicollinearity were performed to ensure that the models were well specified, reliable and valid. The Bartlet's test of sphericity and Kaiser-Meyer-Oklin (KMO) test was carried out to establish whether the results meets the appropriateness of sample for exploratory factor analysis. The common threshold levels for the KMO value is that it should be at least be over 0.5 but preferably 0.6. The Bartlet's test is a statistical test for non-zero correlations among variables, and the Chi-square value should be high and significant.

Each of the principle regression models used for testing the hypotheses were tested for multicollinearity which exists when there is high correlation among variables

used in that analysis. The collinearity diagnostic that yields a Variance Inflation Factor (VIF) of 5 and above indicates a multicollinearity problem. Multicollinearity statistics for both, VIF that is close to 1 are considered as good indicators of low multi-collinearity (Gujarati, 2005).

### **3.9.7 Tests of Hypotheses**

The research questions addressed in this study had hypotheses developed. To test these hypotheses, the analysis of variance (ANOVA) and therein the t-test was carried out. The t-test that constituted the test of the hypotheses was based on statistical significance of the coefficient of determination ( $R^2$ ) as indicator of goodness of fit of the model. However, it was only considered when statistical significance was  $p < 0.05$ .

### **3.9.8 Correlation Analysis**

To get the linear relationships and measure of the strength and direction of association that exists between the various independent variables and the dependent variables of investment intention; Pearson's product moment correlation was used. The designation  $r$  symbolizes the correlation coefficient. This varies over a range of +1 to -1, whereby the sign signifies the direction of the relationship. This coefficient was only true in situations where the significance level was  $p < 0.05$  and  $p < 0.01$ . The absence of a relationship as was indicated by the null hypotheses of the study was expressed by a correlation coefficient of zero.

### **3.10 Measurement of Variables**

Panneerselvam (2006) defines measurement as the assignment of a number to an object which reflects the degree of possession of characteristics by that object. All the questions and statements related to the study variables were answered on a seven-point Likert scale. The statements ranged from "strongly disagree" to "strongly agree". A seven-point Likert scale is an effective way of collecting data because it minimizes the response time and effort and thus increases the chances of getting enough completed questionnaires and it is actually the sum of responses to several

Likert items (Knight & Cavusgil, 2004). The scales used in this study were either developed specifically for this study or adapted from existing scales to suit the context of the study. The proposed model for the relationship between independent and dependent variable were as follows:

**a) Perceived Investment Value**

The 18 measure items of Perceived Investment Value were adapted from the study of Puustinen *et al.* (2013). The statements have been altered in a way that they would better reflect the individual investors' pre-purchase expectations (i.e., beliefs) about the value of a given investment alternative. In the research of Puustinen *et al.* (2013) the Cronbach alpha's for the measurement items ranged from .82 to .92, indicating good internal consistency. Thus, each item statement was rephrased in a way that it refers to the investor's expectation rather than his or her post-investment experience. Likert scale (with 1= strongly disagree, 2= disagree, 3= somewhat disagree, 4= Not sure, 5= somewhat agree, 6= Agree , 7= Strongly agree) was used for each of the statements corresponding where 7 indicates that you strongly agree and 1 you strongly disagree.

**b) Expected sacrifices**

The 12 measure items of Perceived Investment Value were adapted from the study of Lounio (2014). In the research of Lounio (2014) the coefficient alpha was over .70, indicating good internal consistency. Thus, each item statement was rephrased in a way that it refers to the investor's expectation rather than his or her post-investment experience. Likert scale (with 1= strongly disagree, 2= disagree, 3= somewhat disagree, 4= Not sure, 5= somewhat agree, 6= Agree , 7= Strongly agree) was used for each of the statements corresponding where 7 indicates that you strongly agree and 1 you strongly disagree.

**c) Compatibility**

The scale is adapted from Moore and Benbasat (1991), consisting of four items. Their scales have been widely accepted and used within the innovation diffusion

research, and shown good internal consistencies in later studies. The statements were slightly modified so that they would better suit the purpose of this research. In the research of Moore and Benbasat (1991), the coefficient alpha was 0.84, indicating good internal consistency. Seven-point Likert-scale (with 1= strongly disagree, 2= disagree, 3= somewhat disagree, 4= Not sure, 5= somewhat agree, 6= Agree , 7= Strongly agree ) was used for each of the statements corresponding where 7 indicates that you strongly agree and 1 you strongly disagree.

**d) Perceived behavioral control**

Perceived behavioral control is measured by using three items, which ask the subjects to rate how easy they think it would be for them to find the financial resources to invest in a given investment alternative. The measure is adopted from the research of Sahni (1995), who, however, used the measurement scale in a consumption context. In the research of Sahni (1995) the standardized alpha for the financial resource items was 0.92, indicating good internal consistency. The statements deal with the respondents perceptions of his or her financial resources and the scale used was a seven-point Likert-scale (with 1= strongly disagree, 2= disagree, 3= somewhat disagree, 4= Not sure, 5= somewhat agree, 6= Agree , 7= Strongly agree ) where 7 indicates that you strongly agree and 1 you strongly disagree.

**e) Subjective investment knowledge**

Subjective knowledge is measured by using three items which ask the subjects to rate how much they feel they know about investing in general, compared to friends and acquaintances, and compared to experts. The measure is consistent with past research of Park *et al.* (1994). In the research of Park *et al.* (1994) standardized alpha was 0.91 and total correlations ranged from 0.82 to 0.83, indicating good internal consistency. Seven-point Likert-scale (with 1= Nothing at all, 2= very little, 3= little, 4= Not sure, 5= much, 6= very much, 7= everything) was used for each of the statements corresponding where 7 indicates that you strongly agree and 1 you strongly disagree.

**f) Investment intention**

The five items operationalizing the investment intention measure are consistent with the research of Davis *et al.* (1989). In the research of Davis *et al.* (1989) the standardized alpha was 0.83, indicating good internal consistency. These five items represent the investor’s perception of the likelihood that he or she will invest in the chosen investment alternative within the subsequent year. The scale used was a seven-point Likert-scale (with 1= totally not true, 2= not true, 3= somewhat not true, 4= not sure, 5= somewhat true, 6= true , 7= totally true ) thus high values represent high intention.

**Table 3.2: Operationalization of Study Variables**

<b>Types of variables</b>	<b>Variable name</b>	<b>Operationalizing indicators of variables</b>
Dependent variable	Investment intention	Number of individual retail investors willing to invest in shares at a given period.
Independent variables	1. Perceived Investment Value	Levels of return judgements Levels of risk judgements Levels of Monetary costs judgements Levels of time cost judgement Levels of judgement on effort required
	2. Expected sacrifices	Levels of financial risk judgement
	3. Subjective investment knowledge	Levels of financial investment Knowledge
	4. Compatibility	Levels of investment product knowledge Levels of fit judgement in terms of investor lifestyle, needs and value
	5. Perceived control behavior	Levels of control beliefs judgements Levels of judgement of investor’s self-efficacy



## CHAPTER FOUR

### RESEARCH FINDINGS AND DISCUSSIONS

#### 4.1 Introduction

In this chapter, the results obtained from the study are discussed. The chapter begins with description of data collected, correlation analysis and qualitative data analysis. Thereafter each Null hypothesis is tested using the model specified in equations (3.2-3.6) to meet the objective of the study. This chapter also presents the data analysis results and discusses the key research findings for each specific objective as stated in each section.

#### 4.2 Response Rate

Out of the sample of 385 respondents, only 316 responded. This translated to an overall response rate of 82.08% as shown in Table 4.1. Rogers, Miller and Judge (2005) posit that, a response rate of 50% is acceptable in descriptive social sciences. Mugenda and Mugenda (2008) observed that 50% response rate is adequate, 60% good and above, while over 70% is rated very good. Of the 316 response, only 313 of the questionnaires were fully completed, yielding the final response rate of 81.3%, making the final sample size n=313. In this thesis a list wise deletion (a complete case approach) was used for solving the missing data problem (Hair *et al.*, 2010). List wise deletion is a method in which respondents are eliminated if they are missing data on any variable.

**Table 4.1: Response rate**

<b>Response rate</b>	<b>Sample size</b>	<b>Percentage</b>
Returned questionnaires	316	82.08
Un-returned questionnaires	69	17.92
Total	385	100.0

### 4.3 Reliability and validity tests

#### 4.3.1 Reliability analysis

The reliability test of Cronbach's Alpha is used to examine internal consistency of the constructs. As can be seen from the reliability coefficients reported in Table 4.2, each of the constructs demonstrates high reliability, as all Alpha coefficients are above the 0.7 threshold suggested by Nunnally (1978).

**Table 4.2: Reliability tests**

Aggregated Variable	No. of items	Cronbach's Alpha
Perceived Investment Value	18	0.907
Expected sacrifices	12	0.825
Subjective investment knowledge	6	0.896
Compatibility	6	0.881
Perceived behavior control	6	0.874
Investment intention	5	0.945

#### 4.4.2 Validity tests

Factor analysis is used to examine convergent validity. In this kind of analysis, loadings are employed to detect appropriate loading on the predicted construct. All of the construct items have been extracted into two factors using the Principal Component Analysis and rotated using the Varimax rotation method with Kaiser normalization. It should be noted that factor analysis is generally regarded as a techniques for large sample size (N), with N=200 as reasonable absolute minimum (Comrey and Lee, 1992). However, Winter *et al.* (2009) recently suggest N=50 as a sensible absolute minimum for factor analysis, it is well under the minimum number of 100 samples proposed by Mundrom *et al.* (2005) and Gorsuch (1983). Thus the number of sample in this research (N=313) is acceptable. The result of factor analysis for all of the survey items are presented in Tables 4.3 to 4.10.

(i) Perceived Investment Value

Table 4.3: Factor loading-Perceived Investment Value

Variable	Item	Loading
Perceived Investment Value	EM1	.594
	EM2	.795
	EM3	.751
	EM4	.585
	EM5	.718
	EM6	.672
	FC1	.695
	FC2	.638
	FC3	.604
	EE1	.642
	EE2	.543
	EE3	.632
	SA1	.829
	SA2	.847
	SA3	.795
	SA4	.589
	SA5	.821
	SA6	.786

Table 4.3 shows that the items loaded appropriately on the expected investment factor using a cut-off score of 0.4 (Anderson & Gerbing, 1982). In terms of the total variance, 69.6% of the cumulative variance is explained by five components as shown in Table 4.4. The eigen-value for these component was over the threshold of 1.00, which is typical for this type of analysis.

**Table 4.4: Factor analysis-Perceived Investment Value**

Component	Initial Eigenvalues			Rotation Sums of Squared		
	Total	% of Variance	Cumulative %	Total	Loadings % of Variance	Cumulative %
1	7.139	39.662	39.662	3.180	17.664	17.664
2	1.948	10.824	50.486	2.952	16.403	34.067
3	1.265	7.026	57.512	2.847	15.817	49.884
4	1.102	6.122	63.634	1.858	10.323	60.207
5	1.081	6.005	69.639	1.698	9.432	69.639
6	.986	5.476	75.115			
7	.748	4.156	79.270			
8	.594	3.298	82.568			
9	.488	2.714	85.282			
10	.472	2.622	87.904			
11	.387	2.152	90.056			
12	.382	2.121	92.176			
13	.325	1.808	93.984			
14	.299	1.664	95.648			
15	.257	1.427	97.075			
16	.246	1.365	98.440			
17	.152	.845	99.285			
18	.129	.715	100.000			

Extraction method: principal component analysis

In addition, KMO and Bartlett's Test strongly support the measure of the sampling adequacy (sig.  $p < 0.005$ ) as shown in Table 4.5. The KMO value of 0.871 is well

above 0.6 which is the minimum threshold and Chi-square value was high and significant.

**Table 4.5: KMO and Bartlett's test-Perceived Investment Value**

Kaiser-Meyer-Oklin Measure of Sampling Adequacy.		.871
Bartlett's Test of Sphericity	Approx. Chi-Square	3108.918
	Df	153
	Sig.	.000

(ii) **Expected Sacrifices**

**Table 4.6: Factor loading-expected sacrifices**

<b>Variable</b>	<b>Item</b>	<b>Loading</b>
Perceived Investment Value	MC1	.753
	MC2	.710
	TC1	.752
	TC2	.675
	TC3	.736
	TC4	.819
	TC5	.608
	TC6	.420
	CE1	.691
	CE2	.646
	FR1	.674
	FR2	.807

In addition, KMO and Bartlett's test strongly support the measure of the sampling adequacy (sig.  $p < 0.005$ ) as shown in Table 4.8. The KMO value of 0.779 is well above 0.6 which is the minimum threshold and Chi-square value was high and significant.

**Table 4.7: Factor analysis-expected sacrifices**

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.197	34.975	34.975	2.932	24.434	24.4
2	1.922	16.016	50.991	1.890	15.753	40.2
3	1.112	9.269	60.259	1.773	14.776	55.0
4	1.059	8.826	69.085	1.695	14.121	69.1
5	.782	6.516	75.601			
6	.680	5.670	81.271			
7	.534	4.447	85.718			
8	.432	3.599	89.317			
9	.400	3.330	92.647			
10	.367	3.056	95.702			
11	.304	2.532	98.234			
12	.212	1.766	100.000			

Extraction method: principal component analysis

**Table 4.8: KMO and Bartlett's test-expected sacrifices**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.779
Bartlett's Test of Sphericity	Approx. Chi-Square	1385.599
	df	66
	Sig.	.000

**(iii) Compatibility**

**Table 4.9: Factor loading-compatibility**

<b>Variable</b>	<b>Item</b>	<b>Loading</b>
Compatibility	COND1	.620
	COND2	.766
	COLS1	.750
	COLS2	.524
	COVS1	.515

Table 4.9 shows that the items loaded appropriately on the compatibility factor using a cut-off score of 0.4 (Anderson & Gerbing, 1982). In terms of the total variance, 63.0% of the cumulative variance is explained by one component, and the eigenvalue for this item was over the threshold of 1.00 as shown in Table 4.10, which is typical for this type of analysis.

**Table 4.10: Factor analysis-compatibility**

<b>Component</b>	<b>Initial Eigenvalues</b>		
	<b>Total</b>	<b>% of Variance</b>	<b>Cumulative %</b>
1	3.782	63.0	63.0
2	.821	13.7	76.7
3	.570	9.5	86.2
4	.354	5.9	92.1
5	.284	4.7	96.9
6	.189	3.2	100.0

Extraction method: principal component analysis

**Table 4.11: KMO and Bartlett's test-compatibility**

Kaiser-Meyer-Oklin Measure of Sampling Adequacy.		
		.837
Bartlett's Test of Sphericity	Approx. Chi-Square	1048.400
	Df	15
	Sig.	.000

In addition, KMO and Bartlett's test strongly support the measure of the sampling adequacy (sig.  $p < 0.005$ ) as shown in Table 11. The KMO value of 0.837 is well above 0.6 which is the minimum threshold and Chi-square value was high and significant.

(iv) **Perceived Behavioral Control**

**Table 4.12: Factor loading-perceived behavioral control**

Variable	Item	Loading
Perceived behavioural control	PBSE1	.711
	PBSE2	.590
	PBSE3	.745
	PBCB1	.505
	PBCB2	.596

Table 4.12 shows that the items loaded appropriately on the perceived behavioral factor using a cut-off score of 0.4 (Anderson & Gerbing, 1982). In terms of the total variance, 62.1% of the cumulative variance is explained by one component, and the eigen-value for this component was over the threshold of 1.00 as shown in Table 4.13.



**Table 4.13: Factor analysis-perceived behavior control**

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.724	62.059	62.1
2	.647	10.782	72.8
3	.546	9.104	82.0
4	.475	7.919	89.9
5	.420	7.002	96.9
6	.188	3.134	100.0

Extraction method: principal component analysis

**Table 4.14: KMO and Bartlett's test-perceived behavioral control**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.861
Bartlett's Test of Sphericity	Approx. Chi-Square
	930.009
	Df
	15
	Sig.
	.000

Additionally, the KMO and Bartlett's test strongly support the measure of the sampling adequacy (sig.  $p < 0.005$ ) as shown in Table 4.14. The KMO value of 0.861 is well above 0.6 which is the minimum threshold and Chi-square value was high and significant.

#### (v) Subjective Investment Knowledge

Table 4.15 shows that the items loaded appropriately on the subjective investment knowledge factor using a cut-off score of 0.4 (Anderson & Gerbing, 1982). In terms of the total variance, 66.3% of the cumulative variance is explained by the set of items, and the eigen-value for this item was over the threshold of 1.00 (Table 4.16).

**Table 4.15: Factor loading-subjective investment knowledge**

Variable	Item	Loading
Subjective investment knowledge	SKFK1	.732
	SKFK2	.669
	SKFK3	.600
	SKPK1	.753
	SKPK2	.774

**Table 4.16: Factor analysis-subjective investment knowledge**

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.975	66.246	66.5
2	.662	11.032	77.3
3	.519	8.642	85.9
4	.386	6.438	92.4
5	.238	3.974	96.3
6	.220	3.668	100.0

Additionally, the KMO and Bartlett's test strongly support the measure of the sampling adequacy (sig.  $p < 0.005$ ) as shown in Table 4.17. The KMO value of 0.874 is well above 0.6 which is the minimum threshold and Chi-square value was high and significant.

**Table 4.17: KMO and Bartlett's test-subjective investment knowledge**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.874
Bartlett's Test of Sphericity	Approx. Chi-Square
	Df
	Sig.
	1109.266
	15
	.000

In summary, the item scales employed in this study were suitably reliable and valid indicators of the constructs' measure. The reliability coefficients reported in Table

4.3 demonstrate the high level of reliability of each construct, as all Alpha coefficients are above the 0.7 threshold suggested by Nunnally (1978). The loading coefficients reported in Tables 4.3 to 4.20 provide evidence of well convergent validity, as all coefficients are above the 0.5 cut-off suggested by Tosi *et al.* (1973) and sufficient sampling adequacy.

#### 4.4 Descriptive statistics

This section provides the description of the quantitative data collected via the questionnaire from the individual stock market in Kenya. Descriptive statistics were used to describe the phenomenon in question and enable the study to come up with conclusions about the characteristics of data used in order to progress to inferential statistics.

##### 4.4.1 Individual Retail Investors Characteristics

###### (i) Investor income

**Table 4.18: Respondents Gross Monthly Income**

Monthly income	Frequency	Percentage
Below Kshs 20,000	13	4.2
Btwn Kshs 20,000 to 50,000	44	14.1
Btwn Kshs 50,001 to 80,000	61	19.5
Btwn Kshs 80,001 to 100,000	54	17.3
Above Kshs 100,000	141	45.0

Income has long been an important variable for distinguishing investment segments. It is known that affluent investors are much enthusiastic in investment and need better returns. The respondents are divided into four income groups according to their annual income. Income is the most important factor for all the investors to allot separate amount for the investment, which will be used for their future purpose. Table 4.18 explicitly shows the income of the respondents. It could be observed

from the table that an overwhelming majority (81.8%) of the respondents were earning decent salaries of above Ksh 50,000. The significance of this is that the investors would have sufficient disposable capital which they can allocate to investment in shares.

## **(ii) Investor Education**

Education expresses the values of investment, creates attitudinal changes among investors, and more broadly, it reflects a life style with many investment options in the equity shares. It is a powerful background for the investor's analysis about the pros and cons of investment in equity shares.

**Table 4.19: Respondents Education Level**

<b>Education level</b>	<b>Frequency</b>	<b>Percentage</b>
Primary	1	0.3
Secondary	11	3.5
Tertiary	30	9.6
Undergraduate	168	53.7
Post Graduate	103	32.9

Table 4.19 presents education wise distribution of the investors. The distribution shows that most of the individual retail investors have a good education background. 53.7% of the individual retail investors had a bachelor's degree while 32.9% had a postgraduate level degree. This shows that the educated individual retail investors are able to analyze the advantages and disadvantages of investment in equity shares and can comprehend information about investment in shares from various sources. The significance of this high education level of the investors suggests that relatively experienced retail investors are dominating the Nairobi Securities Market.

**(iii) Investor's experience**

**Table 4.20: Respondents Investment Experience**

<b>Experience</b>	<b>Frequency</b>	<b>Percentage</b>
Less than 1 year	28	8.9
1-5 years	123	39.3
5-10 years	83	26.5
Over 10 years	25	8.0
I have never invested in NSE	54	17.3
Total	313	100.0

Investment behavior of the individual retail investor can easily be analyzed through the number of years of dealing with securities markets. In fact, the experience makes an investor perfect by dealing in the securities markets so that the investor may come to know the changes in securities markets. In this study five classification have been considered namely: below 1 year, 1- 5 years, 6 – 10 years, above 10 years and those who have never invested in shares.

The respondents were also asked whether they had previously invested in securities such as stocks and 82.7% of the respondents had the experience while 17.3% had never invested in stocks as shown in Table 4.20. From the results, it can observed that the majority of respondent understood the investment market and were more informed about trading in shares. This is consistent with the findings of Choe and Eom (2009) that investors who have experience are more likely to trade. Accordingly, investors with higher level of investment knowledge are more likely to invest than investors with lower level of knowledge (Lusardi & Mitchell, 2005).

**Table 4.21: Respondents Investor Status**

<b>Currently an investor</b>	<b>Frequency</b>	<b>Percentage</b>
No	125	39.9
Yes	188	60.1
Total	313	100.0

The results shown in Table 4.21 also show that a majority (60.1%) of the respondents are currently investing in Nairobi Securities exchange market. The percentage analysis revealed that most of the investors are having the experience in the securities market just below 5 years, which shows that young investors and educated person are now entering into the securities markets.

#### **4. 4.2 Descriptive Analysis of Perceived Investment Value**

The study sought to find out whether perceived investment value influences the individual retail investors to invest into stocks of the companies listed at the NSE. The study believed that perceived investment value might persuade the individual retail investor to desire higher returns. The respondents were requested to indicate their level of agreement on the statements on of perceived investment value .The agreement index was calculated by subtracting the total percentage of those respondents who disagreed from the total percentage of those respondents who agreed.

##### **(i) Economic Value**

The study required the respondents to indicate their level of agreement on whether the perceived monetary value is influenced by the monetary prices. The economic value is the perceived economic value that accrues when premiums and management fees (the monetary price) of investment alternative are perceived to be low and the perceived benefits accruing from investment efficiencies therefore increases.

**Table 4.22: Economic value**

<b>Statement</b>	<b>T D</b>	<b>S D</b>	<b>D</b>	<b>N S</b>	<b>A</b>	<b>S A</b>	<b>T A</b>
I expect investing in shares to be an inexpensive way to invest.	10.9%	11.8%	12.5%	16.9%	15.7%	24.6%	7.7%
I believe the cost of investing in shares is fair.	6.4%	12.5%	13.1%	22.4%	23.6%	16.6%	5.4%
I believe in investing in shares that are reasonably priced	3.8%	11.8%	16.9%	25.6%	20.1%	16.0%	5.8%
I expect investing in shares to be a sufficiently good way of satisfying my investing needs	7.3%	14.4%	12.5%	23.0%	15.3%	19.8%	7.7%
I expect investing in shares to be an efficient way of investing	5.8%	10.5%	13.1%	17.6%	23.0%	23.3%	6.7%
I expect investing in shares will increase my wealth adequately in view of the risk I bear.	6.1%	12.5%	11.5%	22.7%	21.4%	16.6%	9.3%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

Results in Table 4.22 revealed that majority of the respondents who were 48% agreed that they expect investing in shares to be an inexpensive way to invest. 45.6% of the respondents also agreed that they believe investing in shares to be an inexpensive way to invest while 41.9% of the respondent also agreed that they believe in investing in shares that they consider reasonably priced. The results also revealed that majority of the respondents who were 45.6% agreed that they expect investing in shares to be a sufficiently good way to satisfy my investing requirements. 45.6% of the respondents agreed with the statement that they expect investing in shares to be efficient while 47.3% of the respondent also agreed that they expect investing in shares would increase their wealth in view of the risk they bear.

**(ii) Functional Value**

The study required the respondents to indicate their level of agreement on whether the perceived functional value is influenced by expectation of the convenience, that is, the easiness of investing in a given investment alternative. Some investors might enjoy investment related activities whereas some prefer alternatives that require less involvement, and thus expected convenience is valued differently by investors who prefer dedicating more or less time and effort in investment matters.

Results in Table 4.23 revealed that majority of the respondents who were 60.1% agreed that they expect the process of investing in shares to be convenient. 55.9% of the respondents also agreed that they expect the process of investing in shares to be easy while 61.4% of the respondent also agreed that they expect the process of investing in shares to be unnecessarily time-consuming.



**Table 4.23: Functional value**

<b>Statement</b>	<b>T D</b>	<b>S. D</b>	<b>D</b>	<b>N S</b>	<b>A</b>	<b>S A</b>	<b>T A</b>
I expect process of investing in shares to be convenient.	5.1%	4.8%	12.1%	17.9%	20.4%	28.8%	10.9%
I expect process of investing in shares to be easy.	5.7%	8.0%	10.9%	18.5%	21.4%	27.8%	6.7%
I expect process of investing in shares to be unnecessarily time consuming.	6.4%	9.9%	7.7%	14.7%	16.6%	29.1%	15.7%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

### (iii) Emotional Value

The study required the respondents to indicate their level of agreement on whether the perceived emotional value is influenced by the positive emotions and experiences that investors expect to encounter during the investment process. Emotional value consists of happiness-related metrics, and is thereby more abstract and subjective. Thus, investors might expect investing to deliver positive emotions, such as enjoyment, excitement, or thrills from investing in a given alternative. Investors will expecting to derive the expected emotional benefits of the experiential (fantasies, feelings, and fun) aspects of investing.

**Table 4.24: Emotional Value**

<b>Statement</b>	<b>T D</b>	<b>S D</b>	<b>D</b>	<b>N S</b>	<b>A</b>	<b>S A</b>	<b>T A</b>
I expect investing in shares to be a nice way to spend time	13.7%	20.1%	12.1%	24.3%	12.5%	11.5%	5.8%
I expect investing in shares to be exciting	7.7%	10.9%	9.3%	21.4%	23.3%	19.8%	7.7%
I expect investing in shares to be entertaining.	12.8%	17.3%	14.1%	23.6%	19.5%	9.6%	3.2%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

Results in Table 4.24 revealed that majority of the respondents who were 55.9% agreed that they expect investing in shares to be a nice way to spend time. 50.8% of the respondents also agreed that they expect investing in shares to be exciting while 44.2% of the respondent also agreed that they expect investing in shares to be entertaining.

#### **(iv) Symbolic Value**

The study required the respondents to indicate their level of agreement on whether the perceived symbolic value is influenced by the selfless behaviors and self-esteem that investors expect to realize through the investment process. Products and services can carry and communicate symbolic meanings, which can be significant determinants in product selection. People tend to give money for charity without expecting any compensation or recognition from their act. Thus, if an investor believes that investing in a given alternative provides an opportunity to demonstrate one's benevolence, the expected investment value is predicted to be higher. Investing

also tests investor's financial capabilities and might expect investing in a given investment alternative to enhance his/her status or self-esteem.

**Table 4.25: Symbolic Value**

<b>Statement</b>	<b>T D</b>	<b>S D</b>	<b>D</b>	<b>N S</b>	<b>A</b>	<b>S A</b>	<b>T A</b>
I expect investing in shares will give me an opportunity to support my fellow men.	13.1%	13.7%	15.7%	20.8%	16.6%	12.8%	7.3%
I expect investing in shares will give me an opportunity to support the well-being of other people.	13.1%	14.7%	14.1%	21.7%	15.7%	14.4%	6.4%
I expect investing in shares will give me an opportunity to express benevolence toward other people.	16.3%	17.9%	16.0%	21.4%	12.1%	11.8%	4.5%
I expect investing in shares will make me feel valuable.	13.7%	13.4%	10.2%	19.8%	21.1%	14.1%	7.7%
I expect investing in shares would boost my self-esteem.	15.3%	16.9%	7.7%	21.7%	16.3%	14.1%	8.0%
I expect investing in shares would increase my self-confidence.	15.0%	13.7%	8.0%	21.7%	19.2%	13.1%	9.3%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

Results in Table 4.25 revealed that majority of the respondents who were 42.5% disagreed that they expect investing in shares will give them an opportunity to serve their fellow men. 41.9% of the respondents also disagreed that they expect investing in shares will give me an opportunity to support the well-being of other people while 50.2% of the respondent also disagreed that they expect investing in shares will give them an opportunity to express benevolence toward other people. The results also revealed that majority of the respondents who were 42.9% agreed that they expect investing in shares will make me feel valuable. 39.9% of the respondents disagreed with the statement that they expect investing in shares would boost their self-esteem while 41.6% of the respondent also agreed that they expect investing in shares would increase my self -confidence.

**(v) Overall Expected Investment Value**

**Table 4.26: Results of descriptive statistics – Expected Investment Value**

<b>Expected Investment Value</b>	<b>Statistic</b>
Mean	4.1134
Std. Error of Mean	.07728
Median	4.0000
Mode	4.00
Std. Deviation	1.36723
Variance	1.869
Skewness	-.312
Kurtosis	-.469
Range	6.00
Minimum	1.00
Maximum	7.00
Sum	1287.50
Count	313

The weighted average mean was calculated using the responses from variables explained in the subsections above. The descriptive analysis of the weighted average responses is as indicated in table 4.26. The results showed a weighted mean of 4.11 which is above the average mark of 3.0. The standard deviation and standard error were also small implying that most of the responses scores were not far from the mean score. This skewness statistic shows the perceived investment value data is a negatively skewed distribution meaning that it's skewed to the left-hand side. The kurtosis of the distribution was -0.469 with a standard error of .07728. The kurtosis statistic indicates that the perceived value data distribution was platykurtic, indicating that the distribution curve was flatter than the Gaussian (normal) distribution. This generally meant that more than half of the respondents agreed that perceived investment value could influence investment intention of individual retail investors. This evidences show that perceived value among individual investors in Kenya is high and motivates their intention to invest in a given alternative.

#### **4. 4.3 Descriptive Analysis of Expected sacrifice**

The study sought to find out whether expected sacrifice influences the individual retail investors to invest into stocks of the companies listed at the NSE. The dimensions of expected sacrifice represent the investor's anticipation of the give components of the value formulation, and thus are expected to decrease the investor's perception of value.

##### **(i) Monetary costs**

The study required the respondents to indicate their level of agreement on whether the perception of the value is influenced by the monetary expenses that investors expects to incur through the investment process. Monetary expenses includes management fees, subscription fees, redemption fees, as well as trading, custody and termination expenses. The responses are analyzed as below: -

**Table 4.27: Monetary expenses**

<b>Statement</b>	<b>T D</b>	<b>S D</b>	<b>D</b>	<b>N S</b>	<b>A</b>	<b>S A</b>	<b>T A</b>
I expect investing in shares to be expensive	17.9%	17.3%	18.2%	20.1%	14.1%	8.6%	3.8%
I expect expenses of investing in shares to be high	16.0%	23.3%	23.3%	15.3%	12.1%	6.7%	3.2%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

Results in Table 4.27 revealed that majority of the respondents who were 53.4% disagreed that they expect investing in shares to be expensive while 62.6% of the respondents also disagreed that they expect expenses of investing in shares to be high.

**(ii) Time costs**

The study required the respondents to indicate their level of agreement on whether the perception of the value is influenced by the time costs that investors expects to incur through the investment process. Research in economics has shown that there are other significant costs to investor other than monetary costs. In a similar manner, it is expected that investors allocate their time wisely when making investment decisions.

**Table 4.28: Time cost**

<b>Statement</b>	<b>T D</b>	<b>S D</b>	<b>D</b>	<b>N S</b>	<b>A</b>	<b>S A</b>	<b>T A</b>
I expect investing in shares to be time-consuming	18.2%	30.0%	18.5%	16.3%	8.6%	6.7%	1.6%
I expect investing in shares to require time out of my other activities	18.2%	29.1%	16.0%	12.1%	10.9%	9.9%	3.8%
I expect investing in shares would require a lot of information searching prior to investing	4.8%	6.1%	8.0%	10.5%	14.7%	28.1%	27.8%
I expect investing in shares would require a lot of searching in order to find the right shares.	4.5%	5.8%	7.0%	9.6%	19.5%	24.3%	29.4%
I expect investing in shares would require self-studying.	6.4%	6.1%	9.6%	14.1%	21.7%	22.7%	19.5%
I expect investing in shares would require learning new skills and absorbing new information.	3.2%	6.7%	8.6%	16.3%	22.4%	25.6%	17.3%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

Results in Table 4.28 revealed that majority of the respondents who were 66.7% disagreed that they expect investing in shares to be time-consuming. 63.3% of the respondents also disagreed that they investing in shares to require time out of other activities while 70.6% of the respondents agreed that they expect investing in shares would require a lot of information searching prior to investing. Results also revealed that majority of the respondents who were 73.2% agreed with the statement that they expect investing in shares would require a lot of searching in order to find the right shares. 41.8% of the respondent agreed with the statement that they expect investing in shares would require self-studying while 48.9% of the respondent agreed with the statement that they expect investing in shares would require learning new skills and absorbing new information.

**(iii) Effort cost**

The study required the respondents to indicate their level of agreement on whether the perception of the value is influenced by the effort costs that investors expects to incur through the investment process. Expected effort consists of the investor’s expectation of the amount of searching, learning and cognitive effort prior and during the investment process. After all, investors cannot collect and process information about performance, fees, and other investment characteristics at zero cost.

**Table 4.29: Effort cost**

<b>Statement</b>	<b>T D</b>	<b>S D</b>	<b>D</b>	<b>N S</b>	<b>A</b>	<b>S A</b>	<b>T A</b>
I expect investing in shares to require a lot of mental effort.	9.3%	16.0%	17.9%	18.2%	17.6%	13.4%	7.7%
I expect investing in shares to require continuous thinking and deliberation.	5.4%	9.6%	13.7%	17.9%	15.7%	22.7%	15.0%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree



Results in Table 4.29 revealed that majority of the respondents who were 48.9% disagreed that they expect investing in shares to require a lot of mental effort while 53.4% of the respondents agreed that they expect investing in shares to require continuous thinking and deliberation.

**(iv) Financial risk**

The study required the respondents to indicate their level of agreement on whether the perception of the value is influenced by the financial risks that investors expects to face through the investment process. Individual investors are assumed to trade off this measurable risk with the potential monetary return as they ponder whether to purchase the investment product or not (ibid). However, according to MacGregor et al. (1999) return and risk do not fully explain the decision-process, but suggest that perceived risk is a better predictor of an investor’s behavior. After all, an individual’s behavior is based on his or her perception of the reality – even if it has nothing to do with the reality itself.

**Table 4.30: Financial cost**

Statement	T D	S D	D	N S	A	S A	T A
I expect Investing in shares to be risky that the monetary return from investing would fall below my expectations.	6.4%	10.9%	15.0%	18.2%	22.0%	13.7%	13.7%
I expect to be a high risk losing money by investing in shares.	12.8%	14.7%	13.4%	18.8%	16.0%	13.1%	11.2%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

Results in Table 4.30 revealed that majority of the respondents who were 49.4% agreed that they expect investing in shares to be risky that the monetary return from investing would fall below expectations while 40.9% of the respondents disagreed that they expect investing in shares to require continuous thinking and deliberation.

(v) **Overall expected sacrifice**

**Table 4.31: Results of descriptive statistics – Expected Sacrifice**

<b>Expected Sacrifice</b>	<b>Statistic</b>
Mean	4.2428
Std. Error of Mean	.08320
Median	4.5000
Mode	4.00
Std. Deviation	1.47201
Variance	2.167
Skewness	-.297
Kurtosis	-.386
Range	6.00
Minimum	1.00
Maximum	7.00
Sum	1328.00
Count	313

The weighted average mean was calculated using the responses from variables explained in the subsections above. The descriptive analysis of the weighted average responses is as indicated in table 4.31. The results showed a weighted mean of 4.24 which is above the average mark of 3.0. The standard deviation and standard error were also small implying that most of the responses scores were not far from the mean score. This skewness statistic shows the expected sacrifices data is a negatively skewed distribution meaning that it's skewed to the left-hand side. The kurtosis of the distribution was -0.386 with a standard error of .08320. The kurtosis statistic indicates that the expected sacrifices data distribution was leptokurtic, indicating that

the distribution curve was peaked as compared to the Gaussian (normal) distribution. This generally meant that more than half of the respondents agreed that expected sacrifices could influence investment intention of individual retail investors. This evidence show that expected sacrifices among individual investors in Kenya is high and may deter their intention to invest in a given alternative.

#### **4. 4.4 Descriptive Analysis of Subjective investment knowledge**

The study sought to find out whether subjective investment knowledge influences the individual retail investors to invest into stocks of the companies listed at the NSE. Complexity of financial instruments has increased and forced individuals to cope with new and more sophisticated investment products. Consequently, investors are facing difficulties in understanding investments, and few investors feels capable of understanding which investment would give the best return.

##### **(i) Financial Knowledge**

The study required the respondents to indicate their level of agreement on whether the perception of their subjective investment knowledge is influenced by the financial knowledge that investors expects to have during the investment process. According to behavioral economics, the amount, source, and nature of the information individuals receive about saving and investing are likely to influence their financial decisions.

**Table 4.32: Financial Knowledge**

<b>Statement</b>	<b>N A.</b>	<b>V.L</b>	<b>L</b>	<b>N S</b>	<b>M</b>	<b>V.M</b>	<b>E</b>
How much do you know about investing in shares	2.6%	6.4%	18.8%	11.2%	45.4%	14.4%	1.3%
Compared to your friends and acquaintances, how much do you feel you know about investing in shares	2.2%	6.1%	20.4%	20.1%	33.9%	14.7%	2.6%
Compared to expert investors, how much do you feel you know about investing in shares	7.7%	18.8%	26.2%	22.7%	18.5%	5.4%	0.6%

**Note:** N A – Nothing at All, V.L – Very Little, L – Little, N S - Not sure, M – Much, V M – Very Much, E - Everything

Results in Table 4.32 revealed that majority of the respondents who were 61.1% agreed that they know much do you know about investing in shares. 52.3% of the respondents agreed that compared to friends and acquaintances, they feel they know much about investing in shares while 52.7% of the respondents disagreed that compared to expert investors, they feel that they know much about investing in shares.

#### **(ii) Product Knowledge**

The study required the respondents to indicate their level of agreement on whether the perception of their subjective investment knowledge is influenced by the product knowledge that investors expects to trade in through the investment process. To be able to make a decision between investment products, an investor is expected to possess a clear understanding of the characteristics of the alternatives as well as their own preferences. The responses were evaluated as follows:-

**Table 4.33: Financial Knowledge**

<b>Statement</b>	<b>N A</b>	<b>V.L</b>	<b>L</b>	<b>N S</b>	<b>M</b>	<b>V.M</b>	<b>E</b>
How much do you know about products you have invested in	3.5%	8.6%	26.5%	16.0%	32.6%	11.5%	1.3%
How much do you understand about shares	2.2%	6.4%	20.4%	11.8%	41.9%	14.4%	2.9%
How much do you understand about other products that you can invest in	3.2%	6.4%	18.8%	19.5%	38.0%	12.1%	1.9%

**Note:** N A – Nothing at All, V.L – Very Little, L – Little, N S - Not sure, M – Much, V M – Very Much, E - Everything

Results in Table 4.33 revealed that majority of the respondents who were 45.4% agreed that they know much do you know about the products they have invested in. 59.2% of the respondents agreed that they know much about investing in shares while 45.4% of the respondents agreed that they know much about other products that they can invest in.

**(iii) Overall subjective investment knowledge**

Table 4.34: Result of descriptive statistics - Subjective Investment Knowledge

<b>Subjective investment knowledge</b>	<b>Statistic</b>
Mean	4.1917
Std. Error of Mean	.06716
Median	4.5000
Mode	5.00
Std. Deviation	1.18821
Variance	1.412
Skewness	-.454
Kurtosis	-.270
Range	6.00
Minimum	1.00
Maximum	7.00
Sum	1312.00
Count	313

The weighted average mean was calculated using the responses from variables explained in the subsections above. The descriptive analysis of the weighted average responses is as indicated in table 4.34. The results showed a weighted mean of 4.19 which is above the average mark of 3.0. The standard deviation and standard error were also small implying that most of the responses scores were not far from the mean score. This skewness statistic shows the subjective investment knowledge data is a negatively skewed distribution meaning that it's skewed to the left-hand side. The kurtosis of the distribution was -0.270 with a standard error of .06716. The kurtosis statistic indicates that the subjective investment knowledge data distribution was leptokurtic, indicating that the distribution curve was peaked as compared to the Gaussian (normal) distribution. This generally meant that more than half of the respondents agreed that subjective investment knowledge could influence investment intention of individual retail investors. This evidence show that subjective investment knowledge among individual investors in Kenya is high and might influence their intention to invest in a given alternative.

#### 4. 4.5 Descriptive Analysis of Compatibility

The study sought to find out whether compatibility influences the individual retail investors to invest into stocks of the companies listed at the NSE. How they perceive an investment to be consistent with their individual’s prevailing needs, values, and past experience. Consequently, investors are evaluate how the investment is compatible with their preferred work style, compatibility with existing work practices, compatibility with prior experience and compatibility with values.

##### (i) Compatibility with Needs

The study required the respondents to indicate their level of agreement on whether the perception of the investment compatibility is influenced by the more convenience, fun and exciting, and self-esteem enhancement that one considers to realize by investing into the product. The perception of compatibility is greater as the expectation of the investment’s economic, functional, emotional, and symbolic value is higher. Accordingly, one’s perception of the investment’s compatibility with his or her current situation and needs is anticipated to increase as one expects the monetary gains of investing to be greater.

**Table 4.35: Compatibility with needs**

<b>Statement</b>	<b>T D</b>	<b>S D</b>	<b>D</b>	<b>N S</b>	<b>A</b>	<b>S A</b>	<b>T A</b>
Investing in shares is completely compatible with my current situation	8.3%	9.6%	15.7%	27.2%	17.3%	14.1%	8.0%
I think that investing in shares fits well with my way of living	5.1%	9.3%	18.5%	20.8%	22.4%	18.8%	5.1%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

Results in Table 4.35 revealed that majority of the respondents who were 39.4% agreed that they investing in shares is completely compatible with their current situation. 45.3% of the respondents agreed that they think that investing in shares fits well with my way of living.

**(ii) Compatibility with Lifestyle**

The study required the respondents to indicate their level of agreement on whether the perception of the investment compatibility is influenced by the lifestyle as the investors expects to trade in through the investment process. To be able to make a decision between investment products, an investor is expected to evaluate the investment’s compatibility with values and preferred work style on the individual’s belief that the product offers positive value, helps promote deeply held values and achieve the self-concept of the way the individual would like to work.

**Table 4.36: Compatibility with needs**

<b>Statement</b>	<b>T D</b>	<b>S D</b>	<b>D</b>	<b>N S</b>	<b>A</b>	<b>S A</b>	<b>T A</b>
Investing in shares fits into my lifestyle	5.4%	11.2%	15.0%	22.0%	22.9%	14.7%	5.8%
Investing in shares is compatible with all aspects of my life.	8.3%	10.5%	19.2%	25.9%	20.4%	12.5%	3.2%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

Results in Table 4.36 revealed that majority of the respondents who were 46.4% agreed that investing in shares fits into their lifestyle. 38.0% of the respondents disagreed that investing in shares is compatible with all aspects of my life.



**(iii) Compatibility with Value**

The study required the respondents to indicate their level of agreement on whether the perception of the investment compatibility is influenced by the value that investors expects to derive through the investment process. The perception of value is connected with the investor’s perception of the extent to which the product would satisfy their needs. To be able to make a decision between investment products, an investor is expected to evaluate the investment’s compatibility with values on the individual’s belief that the product offers positive value, helps promote deeply held values and achieve the self-concept of the way the individual would like to work.

**Table 4.37: Compatibility with value**

<b>Statement</b>	<b>T D</b>	<b>S D</b>	<b>D</b>	<b>N S</b>	<b>A</b>	<b>S A</b>	<b>T A</b>
I value investing in shares	3.5%	5.4%	10.2%	22.7%	21.1%	21.4%	15.7%
Investing in shares is valuable to my current situation	3.8%	9.3%	13.4%	22.7%	24.9%	17.3%	8.6%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

Results in Table 4.37 revealed that majority of the respondents who were 58.2% agreed that they value investing in shares. 46.4% of the respondents agreed that Investing in shares is valuable to my current situation.

**(iv) Overall Compatibility**

The weighted average mean was calculated using the responses from variables explained in the subsections above. The descriptive analysis of the weighted average responses is as indicated in table 4.67. The results showed a weighted mean of 4.28, which is above the average mark of 3.0. The standard deviation and standard error were also small implying that most of the responses scores were not far from the mean score. This skewness statistic shows the data on compatibility is a negatively skewed distribution meaning that it is skewed to the left-hand side. The kurtosis of the distribution was -0.403 with a standard error of .07892. The kurtosis statistic indicates that the distribution of compatibility data was leptokurtic, indicating that the distribution curve was peaked as compared to the Gaussian (normal) distribution. This generally meant that more than half of the respondents agreed that compatibility could influence investment intention of individual retail investors. This evidence show that compatibility among individual investors in Kenya is high and might influence their intention to invest in a given alternative.

**Table 4.38: Results of descriptive statistics - Compatibility**

<b>Compatibility</b>	<b>Statistic</b>
Mean	4.2796
Std. Error of Mean	.07892
Median	4.0000
Mode	5.00
Std. Deviation	1.39630
Variance	1.950
Skewness	-.266
Kurtosis	-.403
Range	6.00
Minimum	1.00
Maximum	7.00
Sum	1339.50
Count	313

#### 4. 4.6 Descriptive Analysis of Perceived Behavioral Control

The study sought to find out whether perceived behavior control influences the individual retail investors to invest into stocks of the companies listed at the NSE. The aim was to understand how they perceive sufficiency of financial resources and opportunities available for performing an investment in stock. Consequently, investors evaluate capability to perform the investment given the set of control beliefs regarding the factors that might enable or prevent one to perform the behavior.

##### (i) Self- efficacy

The study required the respondents to indicate their level of agreement on whether the perception of the perceived behavior control is influenced by the self-efficacy in engaging in the investment process. The perception of one’s self-efficacy is connected with the investor’s perception of the capability to engage or not on undertaking the investment. To be able to make a decision between investment products, an investor is expected to evaluate the financial resources and the opportunities in relation to the investment and how it helps enhance the value.

**Table 4.39: Self - efficacy**

<b>Statement</b>	<b>T D</b>	<b>S D</b>	<b>D</b>	<b>N S</b>	<b>A</b>	<b>S A</b>	<b>T A</b>
I believe I have the ability to invest in shares	2.6%	2.6%	2.2%	15.3%	21.1%	27.2%	29.1%
If it was entirely up to me, I am confident that I can invest in shares	4.5%	4.5%	5.8%	13.4%	22.0%	25.2%	24.6%
I know I am capable of investing in shares	2.6%	1.0%	5.4%	13.1%	21.7%	31.9%	24.3%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

Results in Table 4.39 revealed that majority of the respondents who were 77.4% agreed that they believe I have the ability to invest in shares. 71.8% of the respondents agreed that if it were entirely up to them, they were confident that they could invest in shares while 77.9% of the respondent agreed with the statement that they know I am capable of investing in shares.

**(ii) Control beliefs**

The study required the respondents to indicate their level of agreement on whether the perception of the perceived behavior control is influenced by the control beliefs in engaging in the investment process. The perception of control beliefs is connected with the investor’s perception of the factors that might enable or prevent undertaking the investment. To be able to make a decision between investment products, an investor is expected to evaluate the beliefs in relation to the investment and how it helps promote deeply held beliefs. The responses were evaluated as follows:-

**Table 4.40: Control beliefs**

Statement	T D	S D	D	N S	A	S A	T A
Whether or not I invest in shares, it is entirely up to me.	2.6%	2.2%	3.5%	16.3%	14.4%	23.3%	37.7%
There is likely to be plenty of opportunities for me to invest in shares	2.2%	3.2%	5.4%	15.7%	20.8%	24.6%	28.1%
I feel I have enough personal control in investing in shares	3.5%	4.2%	4.5%	16.0%	18.5%	28.4%	24.9%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

Results in Table 4.40 revealed that majority of the respondents who were 75.4% agreed that whether or not to invest in shares, it is entirely up to them. 73.5% of the respondents agreed that there is likely to be plenty of opportunities for them to invest in shares while 71.8% of the respondent agreed with the statement that they feel they have enough personal control in investing in shares.

**(iii) Overall perceived behavior control**

**Table 4.41: Results of descriptive statistics – Perceived Behavior control**

<b>Perceived behavioral control</b>	<b>Statistic</b>
Mean	5.5367
Std. Error of Mean	.07324
Median	6.0000
Mode	6.00
Std. Deviation	1.29574
Variance	1.679
Skewness	-.958
Kurtosis	.827
Range	6.00
Minimum	1.00
Maximum	7.00
Sum	1733.00
Count	313

The weighted average mean was calculated using the responses from variables explained in the subsections above. The descriptive analysis of the weighted average responses is as indicated in table 4.41. The results showed a weighted mean of 5.54, which is above the average mark of 3.0. The standard deviation and standard error were also small implying that most of the responses scores were not far from the mean score. This skewness statistic shows the data on perceived behavior control is a negatively skewed distribution meaning that it is skewed to the left-hand side. The

kurtosis of the distribution was -.958 with a standard error of .07324. The kurtosis statistic indicates that the distribution of perceived behavior control data was leptokurtic, indicating that the distribution curve was peaked compared to the Gaussian (normal) distribution. This generally meant that more than half of the respondents agreed that perceived behavior control could influence investment intention of individual retail investors. The evidence show that perceived behavior control among individual investors in Kenya is high and might influence their intention to invest in a given alternative.

#### 4.4.7 Descriptive Analysis of Investment Intention

The study sought to find out the expectancies of the individual retail investors to invest into stocks of the companies listed at the NSE. The aim was to understand if they were motivated to undertake the investment activities and the likelihood that they had planned to invest in future.

**Table 4.42: Investment intention**

Statement	T D	S D	D	N S	A	S A	T A
I plan to invest in shares within the next year	10.2%	10.9%	10.5%	24.6%	16.3%	13.7%	13.7%
I intend to invest in shares within the next year	9.6%	7.0%	10.9%	25.2%	18.5%	15.0%	13.7%
I predict I would invest in shares within the next year	12.1%	6.7%	13.7%	19.2%	21.4%	12.5%	14.4%
I hope I will invest in shares within the next year	9.3%	6.1%	9.6%	23.3%	20.1%	14.7%	16.9%
I think I will invest in shares within the next year	10.5%	7.3%	10.2%	22.7%	20.4	11.8%	16.9%

**Note:** T D - Totally Disagree, S D - Strongly Disagree, D – Disagree, N S - Not sure, A – Agree, S A - Strongly Agree, T A - Totally Agree

Results in Table 4.42 revealed that majority of the respondents who were 43.7% agreed that they plan to invest in shares within the next year. 43.7% of the respondents agreed that they intend to invest in shares within the next year while 48.3% of the respondent agreed with the statement that they predict they would invest in shares within the next year. 51.7% of the respondents agreed that they hope to invest in shares within the next year while 49.1% of the respondent agreed with the statement that they will invest in shares within the next year.

**(ii) Overall investment intention**

**Table 4.43: Results of descriptive statistics – Investment intention**

<b>Investment intention</b>	<b>Statistic</b>
Mean	4.3259
Std. Error of Mean	.10274
Median	4.0000
Mode	4.00
Std. Deviation	1.81761
Variance	3.304
Skewness	-.280
Kurtosis	-.801
Range	6.00
Minimum	1.00
Maximum	7.00
Sum	1354.00
Count	313

The weighted average mean was calculated using the responses from variables explained in the subsections above. The descriptive analysis of the weighted average responses is as indicated in table 4.43. The results showed a weighted mean of 4.3259, which is above the average mark of 4.0. The standard deviation and standard error were also small implying that most of the responses scores were not far from the mean score. This skewness statistic shows the data on perceived behavior control

is a negatively skewed distribution meaning that it is skewed to the left-hand side. The kurtosis of the distribution was -.801 with a standard error of .10274. The kurtosis statistic indicates that the distribution of perceived behavior control data was leptokurtic, indicating that the distribution curve was peaked compared to the Gaussian (normal) distribution. This generally meant that more than half of the respondents agreed that they are likely to investment in shares within the next year.

#### **4.5 Correlation Analysis**

Correlation analysis was conducted in order to determine the direction and the strength of the relationship between the dependent variable and independent variable(s). In this study Pearson correlation coefficient was used to determine the magnitude and the direction of the relationships between the dependent variable and independent variables. The values of the correlation coefficient (R) are supposed to be between -1 and +1. A value of 0 implies no relationship, +1 correlation coefficient indicates that the two variables are perfectly correlated in a positive linear sense, that is, both variables increase together while a values of -1 correlation coefficient indicates that two variables are perfectly correlated in a negative linear sense, that is, one variable increases as the other decreases (Collis & Roger, 2013; Neuman, 2006; Sekeran, 2008; Kothari, 2012).

Pearson Correlation Coefficient was computed to show the relationship existing between the variables and the results were presented in Table 4.44. The study dependent variable was the investment intention by individual retail investors in NSE and the independent variables were percieved investment value, expected sacrifices, subjective investment knowledge, compatibility and perceived behavior control.



**Table 4.44: Correlations Matrix**

	Perceived Investment Value	Expected Sacrifices	Compatibility	Perceived Behavior Control	Subjective Investment Knowledge	Investment Intention
Perceived Investment Value	1.00					
Expected Sacrifices	.003	1.00				
Compatibility	.412**	-.026	1.00			
Perceived Behavior control	.265**	.014	.498**	1.00		
Subjective Investment Knowledge	.164**	-.068	.269**	.193**	1.00	
Investment Intention	.297**	.003	.383**	.313**	.433**	1.00

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

#### 4.5.1 Correlation analysis for Perceived investment value

The results presented in Table 4.44 revealed that there is a significant correlation between perceived investment value and investment intention of individual retail investors in NSE, with p- value of 0.000 which is less than 0.01 and Pearson Correlation coefficient was 0.297 while other independent variables were held constant. This implies that there was a significant relationship between perceived investment value and investment intention of individual retail investors in NSE. According to Mugenda and Mugenda (2008) a correlation coefficient (R) of 0.3 is enough to conclude that there is a significant relationship between the dependent variable and independent variable. The positive correlation coefficient value implies that there is a positive relationship between the perceived investment value and investment intention of individual retail investors in NSE in Kenya, that is, as the perceived investment value by the individual retail investor increases the investment intention increases. The study concluded that there is a significant strong positive

relationship between perceived investment value and investment intention of individual retail investors in NSE in Kenya.

#### **4.5.2 Correlation analysis for Expected Sacrifices**

The results presented in Table 4.44 revealed that there is no significant correlation between expected sacrifices and investment intention of individual retail investors in NSE, with p- value of 0.962 that is higher than 0.01 and Pearson Correlation coefficient was 0.003 while other independent variables were held constant. This implies that there was no significant relationship between expected sacrifices and investment intention of individual retail investors in NSE. The positive correlation coefficient value implies that there is a positive relationship between the expected sacrifices and investment intention of individual retail investors in NSE in Kenya, that is, as the expected sacrifices by the individual retail investor increases the investment intention increases. The study concluded that there is no significant positive relationship between expected sacrifices and investment intention of individual retail investors in NSE in Kenya.

#### **4.5.3 Correlation analysis for Subjective Investment Knowledge**

The results presented in Table 4.44 revealed that there is a significant correlation between subjective investment knowledge and investment intention of individual retail investors in NSE, with p- value of 0.000 which is less than 0.01 and Pearson Correlation coefficient was 0.433 while other independent variables were held constant. This implies that there was a significant relationship between subjective investment knowledge and investment intention of individual retail investors in NSE. The positive correlation coefficient value implies that there is a positive relationship between the subjective investment knowledge and investment intention of individual retail investors in NSE in Kenya, that is, as the subjective investment knowledge by the individual retail investor increases the investment intention increases. The study concluded that there is a significant strong positive relationship between subjective investment knowledge and investment intention of individual retail investors in NSE in Kenya.

#### **4.5.4 Correlation analysis for Compatibility**

The results presented in Table 4.44 revealed that there is a significant correlation between compatibility and investment intention of individual retail investors in NSE, with p- value of 0.000, which is less than 0.01, and Pearson Correlation coefficient was 0.383 while other independent variables were held constant. This implies that there was a significant relationship between compatibility of the investment and investment intention of individual retail investors in NSE. The positive correlation coefficient value implies that there is a positive relationship between the compatibility and investment intention of individual retail investors in NSE in Kenya, that is, as the compatibility of the investment by the individual retail investor increases the investment intention increases. The study concluded that there is a significant strong positive relationship between compatibility of the investment and investment intention of individual retail investors in NSE in Kenya.

#### **4.5.4 Correlation analysis for Perceived Behavior Control**

The results presented in Table 4.44 revealed that there is a significant correlation between perceived behavior control and investment intention of individual retail investors in NSE, with p- value of 0.000, which is less than 0.01, and Pearson Correlation coefficient was 0.313 while other independent variables were held constant. This implies that there was a significant relationship between perceived behavior control and investment intention of individual retail investors in NSE.

The positive correlation coefficient value implies that there is a positive relationship between the perceived behavior control and investment intention of individual retail investors in NSE in Kenya, that is, as the perceived behavior control of the investment by the individual retail investor increases the investment intention increases. The study concluded that there is a significant strong positive relationship between perceived behavior control of the investment and investment intention of individual retail investors in NSE in Kenya.

## **4.6 Testing for Regression Analysis Assumptions**

This section tests the various assumptions of the research model. After confirming the normality test results, the other tests that were carried out were homoscedasticity and multicollinearity.

### **4.6.1 Normality**

Regression assumes normality between the variables under analysis (Hair *et al.*, 2010). Normality can be defined as the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution, the benchmark for statistical methods (Hair *et al.*, 2010). Skewness and kurtosis measures of the distributions should be calculated (Tabachnick & Fidell, 2007). Where skewness describes how symmetrical the distribution is around the centre, kurtosis describes how flat or peaked the distribution is (Cohen *et al.*, 2013). A variable with perfect normal distribution has zero skewness and kurtosis (Hair *et al.*, 2010). To assess how far the value of skewness and kurtosis depart from normality, a rule of thumb suggests that the value for skewness and kurtosis should be between  $\pm 1$ . The results obtained from the normality tests indicates that all models met the assumptions of normality as reflected by multivariate distributions of the independent variables which closely overlapped the diagonals.

### **4.6.2 Homoscedasticity**

The results of homoscedasticity assumption indicates that error variances of the independent variables are not correlated. In other words, the standardized predicted values are not correlated with standardized residuals. It was noted that almost all the plots of the equations have random distribution and the patterns within these plots do not reflect pronounced correlation. Although this was the case, some caution was exercised while interpreting the results of these models. The random distribution indicates homoscedasticity, which was met in the case of most models.

### 4.6.3 Multicollinearity

Multicollinearity is concerned with high correlation between independent variables that are supposed to predict a certain dependent variable(s). Ideally there should be a high correlation between the dependent variable(s) and the independent variables, while the independent variables exhibit low correlation with each other (Hair *et al.*, 2010). Table 4.82 indicates that all multicollinearity measure by Variance Inflation Factor (VIF) ranged between 2.57 and 4.08. According to Gujarati (2005), a VIF exceeding 5 reflects a multicollinearity problem while a score of 1 indicates low multicollinearity. VIFs were therefore within tolerable levels. Durbin-Watson test for auto-correlation was also calculated and yielded values that were within the acceptable range of 0 to 4.

**Table 4.45: Results of multicollinearity tests**

Equation	Regression equation	VIF
3.2	$Y_1 = \alpha_0 + \alpha_1 \text{PIV} + \alpha_2 \text{EXP} + \alpha_3 \text{INCOME} + \alpha_4 \text{EDUC} + \varepsilon$	4.08
3.3	$Y_2 = \beta_0 + \beta_1 \text{ES} + \beta_2 \text{EXP} + \beta_3 \text{INCOME} + \beta_4 \text{EDUC} + \varepsilon$	2.57
3.4	$Y_3 = \sigma_0 + \sigma_1 \text{SIK} + \sigma_2 \text{EXP} + \sigma_3 \text{INCOME} + \sigma_4 \text{EDUC} + \varepsilon$	3.47
3.5	$Y_4 = \eta_0 + \eta_1 \text{COM} + \eta_2 \text{EXP} + \eta_3 \text{INCOME} + \eta_4 \text{EDUC} + \varepsilon$	3.63
3.6	$Y_5 = \omega_0 + \omega_1 \text{PBC} + \omega_2 \text{EXP} + \omega_3 \text{INCOME} + \omega_4 \text{EDUC} + \varepsilon$	2.70

### 4.7 Regression Analysis

In this section, the research hypothesis were tested based on the formulae from Section 3.9.2 in chapter 3. This was to determine if there is a significant relationship between the research independent variables and the investment intention. The research used multiple linear regression analysis to determine the linear statistical relationship between the independent and dependent variables for this study. All the five null hypotheses were tested using the simple linear regression models. For each hypothesis, the regression equations were first obtained using the beta coefficients on the line of best fit.

#### 4.7.1 Regression analysis for Perceived Investment Value

The first research objective was to investigate the effect of Perceived Investment Value on investment intention of individual stock market investors in Kenya. Data was collected and analyzed based on this objective. Perceived Investment Value had a mean score of 4.1134 and standard deviation of 1.36723 while investment intention reflected a mean score of 4.3259 and standard deviation of 1.81761.

##### **Ho1. Perceived Investment Value has no significant effect on investment intentions of individual stock market investors in Nairobi Stock Exchange**

Results from Pearson's coefficient of correlation indicated that Perceived Investment Value had a significant positive relationship with investment behavior ( $r=0.297$ ,  $p<0.01$ ). Perceived Investment Value (PIV) was regressed as the independent variable and the results are show in Table 4.46 and the results indicate that the Perceived Investment Value increased the adjusted coefficient of determination ( $R^2$ ) by 0.085 therefore explaining 8.5% of the variation in investment intention

**Table 4.46: Regression analysis for Perceived investment value**

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<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adj. R Square</b>	<b>Std. Error</b>
1	.297 <sup>a</sup>	.088	.085	1.73827

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a. Predictors: (Constant), Education Level, Investors experience , Income

b. Dependent Variable: Investment intention

The results for Analysis of Variance (ANOVA) for Perceived Investment Value, experience, income and education with investment intention is shown in Table 4.47 in which computed F-Statistics value was 30.131 and p value was 0.000 which was less than 0.05 meaning that the relationship between Perceived Investment Value and investment intention is significant. The linear regression's F-test has the null hypothesis that there is no linear relationship between the variables Perceived Investment Value and investment intention of individual investor (in other words  $R^2=0$ ).

**Table 4.47: ANOVA Test of Perceived investment value**

<b>Model</b>		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	91.043	1	91.043	30.131	.000 <sup>b</sup>
	Residual	939.717	311	3.022		
	Total	1030.760	312			

a. Dependent Variable: Investment intention

b. Predictors: Perceived Investment Value, Education Level, Experience , Income

Table 4.48 shows beta coefficient summary in which the t-values for the model are 8.657 and 5.489 for the constant and Perceived Investment Value respectively with p-values being 0.000 for the constant and the Perceived Investment Value respectively. The model was defined as  $Y_2 = 2.701 + .395\alpha_1$  indicating that for every unit increase in Perceived Investment Value leads to a 0.395 increase in investor's intention of individual retail investor in Kenya. This implies that Perceived Investment Value positively affects investment intention of individual retail investor in Kenya.

**Table 4.48: BETA Coefficients of Perceived investment value**

<b>Model</b>	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>		<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>	<b>t</b>	
1 (Constant)	2.701	.312		8.657	.000
PIV	.395	.072	.297	5.489	.000

a. Dependent Variable: Investment intention

The t-test was used to test the null hypothesis that there is no statistically significant relationship between Perceived Investment Value and investment intention of individual, i.e., the true slope coefficient  $\alpha_1=0$ . The results indicate that the standardized regression coefficient ( $\alpha_1=0.297$ ) for perceived investment value had

positive sign, pointing to the positive direction and was statistically significant ( $t=5.489$ ,  $p<0.001$ ). Thus, the null hypothesis was not accepted and the results confirms that Perceived Investment Value has an effect on investment intention of individual stock market investor.

#### 4.7.2 Regression analysis for Expected Sacrifice

The second research objective was to investigate the effect of expected sacrifices on investment intention of individual stock market investors in Kenya. Data was collected and analyzed based on this objective. Expected sacrifice had a mean score of 4.2428 and standard deviation of 1.47201 while investment intention reflected a mean score of 4.3259 and standard deviation of 1.81761. Results from Pearson’s coefficient of correlation indicated that expected sacrifice had no significant relationship with investment intention of individual ( $r=0.003$ ,  $p>0.01$ ).

#### **Ho<sub>2</sub>. Expected sacrifice has no significant effect on investment intentions of individual stock market investors in Nairobi Stock Exchange**

Results from Pearson’s coefficient of correlation indicated that Expected sacrifices had an insignificant positive relationship with investment behavior ( $r=0.003$ ,  $p>0.01$ ). The results of the regression analysis in Equation 3.3 indicate that the expected sacrifice variable increased the adjusted coefficient of determination ( $R^2$ ) by  $-0.003$  as shown in Table 4.49 suggesting that expected sacrifice explains 0.3% of the variation in investment intention.

**Table 4.49: Regression Analysis for Expected Sacrifice**

Model	R	R Square	Adjusted R Square	Standard Error
1	.003 <sup>a</sup>	.000	-.003	1.82053

a. Predictors: (Constant), Expected Sacrifice, Experience , Income, Education

b. Dependent Variable: Investment intention



The linear regression's F-test has the null hypothesis that there is no linear relationship between the variables expected sacrifice and investment intention of individual investor (in other words  $R^2=0$ ). The results for Analysis of Variance (ANOVA) for expected sacrifices and investment intention is shown in Table 4.50 in which computed F-Statistics value was .002 and p value was .962 which was more than 0.05 meaning that the relationship between expected sacrifices and investment intention was not significant.

**Table 4.50: ANOVA Test of Expected Sacrifices**

		<b>Sum of</b>	<b>Mean</b>			
<b>Model</b>		<b>Squares</b>	<b>df</b>	<b>Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	.007	1	.007	.002	.962 <sup>b</sup>
	Residual	1030.753	311	3.314		
	Total	1030.760	312			

a. Dependent Variable: Investment intention

Table 4.51 shows beta coefficient summary in which the t-values for the model are 13.715 and .047 for the constant and expected sacrifices respectively with p-values being 0.000 and .962 for the model constant and the expected sacrifices respectively. The model was defined as  $Y = 4.312 + .003\beta_1$ , indicating that for every unit increase in expected sacrifices leads to 0.003 increase in investor's intention of individual retail investor in Kenya. This implies that expected sacrifices positively affects investment intention of individual retail investor in Kenya.

**Table 4.51: BETA Coefficients of Expected Sacrifice value**

<b>M</b>	<b>Model</b>	<b>Unstandardized</b>		<b>Standardized</b>	<b>t</b>	<b>Sig.</b>
		<b>Coefficients</b>		<b>Coefficients</b>		
		<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
1	(Constant)	4.312	.314		13.715	.000
	Expected Sacrifice	.003	.070	.003	.047	.962

a. Dependent Variable: Investment intention

The t-test was used to test the null hypothesis that there is no statistically significant relationship between expected sacrifice and investment intention of individual, that is, the true slope coefficient  $\beta_1=0$ . The results indicate that the standardized regression coefficient ( $\beta_1=.003$ ) for expected sacrifice had positive sign, pointing to the positive direction and was not statistically significant ( $t= .047$ ,  $p= .962$ ). Thus, the null hypothesis was accepted and the results confirms that expected sacrifice does not have a significant effect on investment intention of individual stock market investor.

#### **4.7.3 Regression Analysis for Subjective Investment Knowledge**

The third research objective was to investigate the effect of subjective investment knowledge on investment intention of individual stock market investors in Kenya. Data was collected and analyzed based on this objective. Subjective investment knowledge had a mean score of 4.1917 and standard deviation of 1.18821 while investment intention reflected a mean score of 4.3259 and standard deviation of 1.81761.

**H<sub>03</sub> Subjective investment knowledge has no significant influence on investment intention of individual stock market investors in Nairobi Stock Exchange.**

Results from Pearson's coefficient of correlation indicated that Subjective investment knowledge had a significant positive relationship with investment behavior ( $r=0.433$ ,  $p<0.01$ ). The regression analysis for subjective investment knowledge and the value of the adjusted coefficient of determination ( $R^2$ ) is .185 as shown in Table 4.52 suggesting that subjective investment knowledge explains 18.5 percent of the variation in investment intention.

**Table 4.52: Regression Analysis for Subjective investment knowledge**

Model	R	R Squared	Adjusted R <sup>2</sup>	Standard Error
1	.433 <sup>a</sup>	.188	.185	1.64079

- a. Predictors: (Constant), Expected Sacrifice, Investors experience , Income, Education Level
- b. Dependent Variable: Investment intention

The linear regression's F-test has the null hypothesis that there is no linear relationship between the variables subjective investment knowledge and investment intention of individual investor (in other words  $R^2=0$ ). The results for Analysis of Variance (ANOVA) for subjective investment knowledge and the investment intention is shown in Table 4.53. The computed F-Statistics value was 19.227 and p value was 0.000, which was less than 0.05 meaning that the relationship between subjective investment knowledge and investment intention was significant thus; there was a linear relationship between the variables in the model.

**Table 4.53: ANOVA Test of Subjective investment knowledge**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	193.493	1	193.493	71.872	.000 <sup>b</sup>
	Residual	837.268	311	2.678		
	Total	1030.760	312			

- a. Dependent Variable: Investment intention
- b. Predictors: Subjective investment Knowledge, Experience , Education, Income

Table 4.54 shows beta coefficient summary in which the t-values for the model are 4.545 and 8.478 for the model constant and subjective investment knowledge respectively with p-values being 0.000 for the model constant and subjective investment knowledge respectively. The model was defined as  $Y = 1.548 + .663\alpha_1$ , indicating that for every unit increase in subjective investment knowledge leads to a

0.663 increase in investor's intention of individual retail investor in Kenya. This implies that subjective investment knowledge positively affects investment intention of individual retail investor in Kenya.

**Table 4.54: BETA Coefficients of Subjective investment knowledge**

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	1.548	.341			4.545	.000
SIK	.663	.078	.433		8.478	.000

a. Dependent Variable: Investment intention

The t-test was used to test the null hypothesis that there is no statistically significant relationship between subjective investment knowledge and investment intention of individual investors, that is, the true slope coefficient  $\sigma_1 = 0$ . The results indicate that the standardized regression coefficient ( $\alpha_1 = 0.433$ ) for subjective investment knowledge had positive sign, pointing to a positive direction and was statistically significant ( $t = 8.478$ ,  $p < 0.010$ ). Thus, the null hypothesis was not accepted and the results confirmed that subjective investment knowledge has a significant effect on investment intention of individual stock market investor.

#### 4.7.4 Regression Analysis for Compatibility

The fifth research objective was to investigate the effect of compatibility on investment intention of individual stock market investors in Kenya. Data was collected and analyzed based on this objective. Compatibility had a Mean score of 4.2796 and Standard Deviation of 1.39630 while investment intention reflected a Mean score of 4.3259 and Standard Deviation of 1.81761. Results from Pearson's coefficient of correlation indicated that compatibility had a significant relationship with investment intention of individual investors ( $r = 0.383$ ,  $p < 0.01$ ).

**Ho4. Compatibility has no significant influence on investment intention of individual stock market investors in Nairobi Stock Exchange**

The null hypothesis was tested using equation 3.5 from section 3.9.2 in chapter 3.

The results of the regression analysis indicate that the value of the adjusted coefficient of determination ( $R^2$ ) is 0.144 as shown in Table 4.55 indicating that compatibility explains 14.4 percent of the variation in investment intention among the individual retail investors in Kenya. The linear regression's F-test has the null hypothesis that there is no linear relationship between the variables compatibility and investment intention of individual investor (in other words  $R^2=0$ ).

**Table 4.55: Regression Analysis for Compatibility**

Model	R	R Square	Adjusted R Square	Standard Error
1	.383 <sup>a</sup>	.147	.144	1.68151

- a. Predictors: Compatibility
- b. Dependent Variable: Investment intention

The results for Analysis of Variance (ANOVA) for compatibility and investment intention is shown in Table 4.56. The computed F-Statistics value was 53.551 and p value was 0.000, which was less than 0.05 meaning that the relationship between compatibility, experience, income and education with investment intention was significant thus; there was a linear relationship between the variables in the model.

**Table 4.56: ANOVA Test of Compatibility**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	151.414	1	151.414	53.551	.000 <sup>b</sup>
	Residual	879.346	311	2.827		
	Total	1030.760	312			

- a. Dependent Variable: Investment intention
- b. Predictors: Compatibility

Table 4.57 shows beta coefficient summary in which the t-values for the model are 2.191 and .499 for the model constant and compatibility respectively with p-values being 0.000 for the model constant and compatibility respectively. The model was defined as  $Y = 2.191 + .499\eta_1$ , indicating that for every unit increase in compatibility leads to 0.499 increase in investor's intention of individual retail investor in Kenya. This implies that compatibility positively affects investment intention of individual retail investor in Kenya.

**Table 4.57: BETA Coefficients of Compatibility**

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	2.191	.307		7.139	.000
Compatibility	.499	.068	.383	7.318	.000

a. Dependent Variable: Investment intention

The t-test was used to test the null hypothesis that there is no statistically significant relationship between compatibility and investment intention of individual investors, that is, the true slope coefficient  $\eta_1 = 0$ . The results indicate that the standardized regression coefficient ( $\eta_1 = 0.383$ ) for compatibility had positive sign, pointing to a positive direction and was statistically significant ( $t = 7.318$ ,  $p < 0.010$ ). Thus the null hypothesis was not accepted and the results confirmed that compatibility had an effect on investment intention of individual stock market investor.

#### 4.7.5 Regression Analysis for Perceived Behavioral Control

The fourth research objective was to investigate the effect of Perceived behavioral control on investment intention of individual stock market investors in Kenya. Data was collected and analyzed based on this objective. Perceived behavioral control had a Mean score of 5.5367 and Standard Deviation of 1.29574 while investment intention reflected a Mean score of 4.3259 and Standard Deviation of 1.81761.

**H<sub>05</sub> Perceived behavioral control has no significant effect on investment intention of individual stock market investors in Nairobi Stock Exchange**

Results from Pearson’s coefficient of correlation indicated that Perceived behavioral control had a significant relationship with investment intention of individual investors ( $r=0.313$ ,  $p<0.01$ ). The null hypothesis was tested using equation 3.6 from section 3.9.2 in chapter 3. The results of the regression analysis indicate that the value of the adjusted coefficient of determination ( $R^2$ ) is 0.095 as shown in Table 4.58 suggesting that Perceived behavioral control explains 9.5 percent of the variation in investment intention among the individual retail investors in Kenya. The linear regression's F-test has the null hypothesis that there is no linear relationship between the variables compatibility and investment intention of individual investor (in other words  $R^2=0$ ).

**Table 4.58: Regression Analysis for Perceived Behavior Control**

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adj. R Square</b>	<b>Std. Error</b>
1	.313 <sup>a</sup>	.098	.095	1.70018

a. Predictors: Perceived behavior control

b. Dependent Variable: Investment intention

The linear regression's F-test has the null hypothesis that there is no linear relationship between the variables Perceived behavioral control and investment intention of individual investor (in other words  $R^2=0$ ). The results for Analysis of Variance (ANOVA) for perceived behavior control, experience, income and education with investment intention shown in Table 4.59. The computed F-Statistics value was 33.862 and p value was 0.000, which was less than 0.05 meaning that the relationship between perceived behavior control, experience, income and education with investment intention was statistically significant thus; there was a linear relationship between the variables in the model.

**Table 4.59: ANOVA Test of Perceived Behavior Control**

<b>Model</b>		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	101.209	1	101.209	33.862	.000 <sup>b</sup>
	Residual	929.551	311	2.989		
	Total	1030.760	312			

a. Dependent Variable: Investment intention

b. Predictors: Perceived behavior control

Table 4.60 shows beta coefficient summary in which the t-values for the model are 4.406 and 5.819 for the model constant and perceived behavior control respectively with p-values being 0.000 for both the model constant and Perceived behavior control respectively. The model was defined as  $Y = 1.892 + .440\omega_1$ , indicating that for every unit increase in Perceived behavior control leads to 0.440 increase in investor's intention of individual retail investor in Kenya. This implies that Perceived behavior control positively affects investment intention of individual retail investor in Kenya.

**Table 4.60: BETA Coefficient for Perceived Behavior Control**

<b>Model</b>		<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>
		<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
1	(Constant)	1.892	.429		4.406	.000
	PBC	.440	.076	.313	5.819	.000

a. Dependent Variable: Investment intention

The t-test was used to test the null hypothesis that there is no statistically significant relationship between Perceived behavioral control and investment intention of individual investors, that is, the true slope coefficient  $\omega_1 = 0$ . The results indicate that the standardized regression coefficient ( $\omega_1 = 0.313$ ) for Perceived behavioral control had positive sign, pointing to a positive direction and was statistically significant ( $t=5.819, p<0.010$ ).



Thus the null hypothesis was not accepted and the results confirmed that Perceived behavioral control has a significant effect on investment intention of individual stock market investor.

#### 4.7.6 Multiple Linear Regression

The regression analysis in table 4.61 shows a strong linear relationship.  $R = 0.543$  and adjusted  $R$  squared = 0.283 which means that 28.3% of every change in investment intention by the individual retail investors is accounted for by all the predictor variables jointly. A further test on the beta coefficients of the resulting model, the Expected Sacrifices ( $ES = 0.035$ ) is not significantly different from 0 as the  $p$  value  $p = 0.554$  is greater than  $p = 0.05$ . The coefficients Perceived investment value ( $PIV = 0.181$ ), Subjective Investment Knowledge ( $SIK = 0.523$ ), Compatibility ( $COMP = 0.227$ ) and Perceived Behavior Control ( $PBC = 0.174$ ) are however significantly different from 0, with  $p$  values 0.010, 0.000, 0.004 and 0.027, respectively which are all less than  $p = 0.05$ .

**Table 4.61: Multiple linear regression of predictor variables**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.543a	.294	.283	1.53921

a. Predictors: (Constant), PBC, ES, SIK, PIV, COMP

b. Dependent Variable: Investment intention

**Table 4.62: ANOVA Analysis of predictor variables**

Model		Sum of	df	Mean	F	Sig.
		Squares		Square		
1	Regression	303.422	5	60.684	25.614	.000 <sup>b</sup>
	Residual	727.339	307	2.369		
	Total	1030.760	312			

a. Dependent Variable: Investment intention

b. Predictors: (Constant), PBC, ES, SIK, PIV, COMP

**Table 4.63: BETA Coefficients of predictor variables**

Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	-.695	.541		-1.283	.200
	PIV	.181	.070	.136	2.580	.010
	ES	.035	.059	.028	.593	.554
	SIK	.523	.077	.342	6.829	.000
	COMP	.227	.078	.174	2.920	.004
	PBC	.174	.078	.124	2.229	.027

a. Dependent Variable: Investment intention

#### 4.7.7 The Optimized Model

Based on the results in Table 4.63 a model optimization was conducted. The aim of model optimization was to guide in derivation of the final model (revised conceptual framework) where only the significant variables are included for objectivity. Thus the specific model was;

$$Y = -0.695 + 0.181PIV + 0.523SIK + 0.227COM + 0.174PBC + e$$

Where,

$Y = \textit{Investment Intention}$

$PIV = \textit{Perceived Investment Value,}$

$COM = \textit{Compatibility,}$

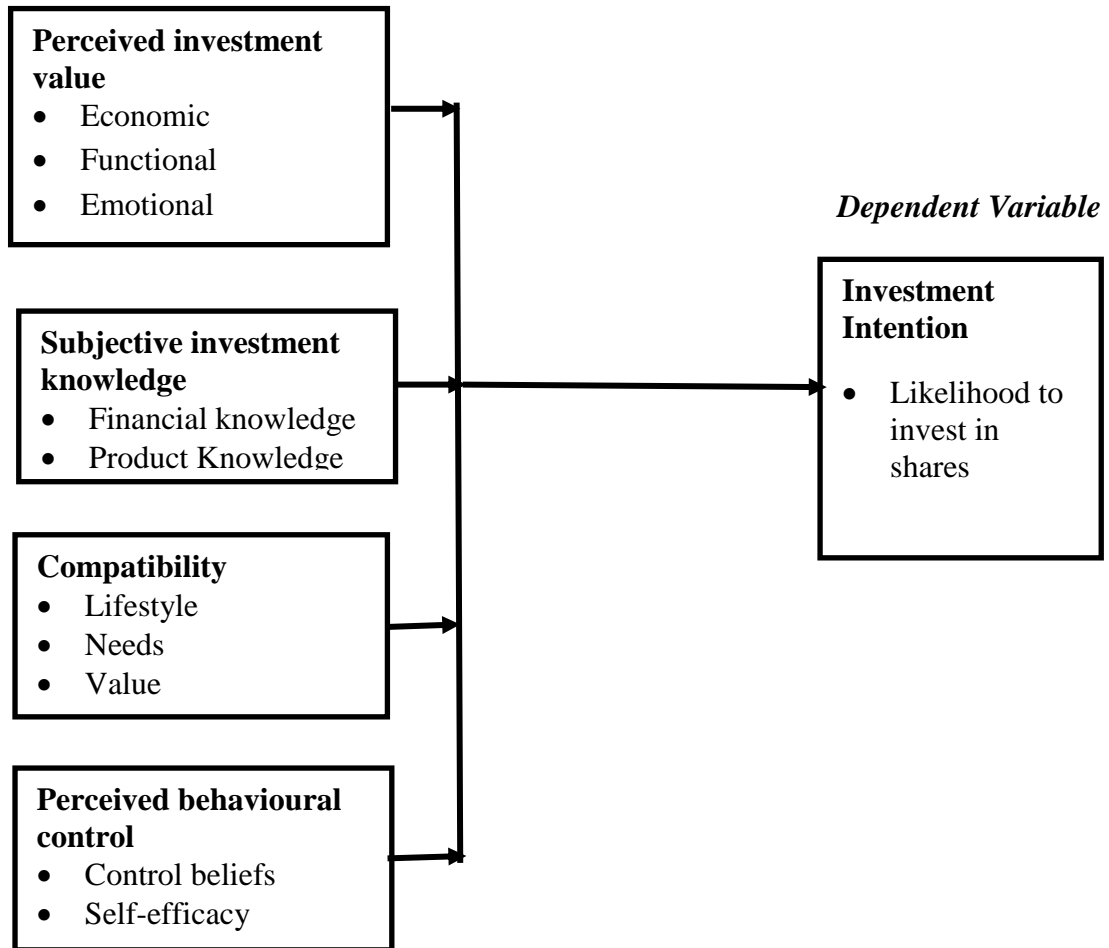
$SIK = \textit{Subjective investment knowledge,}$

$PBC = \textit{Perceived behavioral control}$

$e = \textit{random error terms of the models}$

The Expected sacrifices variable was dropped from the model since it was not significant with p value 0.554 that is greater than 0.05, which is this studies significance level. The modified conceptual model is as shown in Figure 4.4 below.

*Independent Variables*



**Figure 4.1: The revised Conceptual Framework**

## **4.8 Discussions of the Findings**

This research study set out to determine the extent to which expected investment value, expected sacrifice, subjective investment knowledge, compatibility and perceived behavioral control influences investment intention using cross sectional data set of individual stock market investors in Kenya. In order to do so, the theoretical constructs of expected investment value, expected sacrifice, subjective investment knowledge, compatibility and perceived behavioral control were clearly defined and operationalized. The descriptive and statistical measures were presented and variables of interest analyzed and used to test the five null hypotheses using regression equation models set out under Section 3.9.2 to meet the specific objective of the study. The section that follows discusses the findings.

### **4.8.1 Expected Investment Value**

The multi-item measurement of expected investment value appeared to be one homogeneous construct with an Alpha value of 0.907 level considered for a 'reliable' scale. This Alpha score is well above the prescribe threshold of 0.7 and hence strengthens the efficacy of the results. The expected investment value had a mean score of 4.11 and standard deviation of 1.367. A positive relationship was found between the expected investment value and investment intention. The Pearson Correlation coefficient 0.297 was significant ( $p < 0.01$ ) to support this conclusion. Empirical results from regression analysis indicated that expected investment value is a significant predictor ( $t = 5.49$ ,  $p = 0.000$ ) of investment Intention. While controlling for the effect of investor experience, investor income and education levels, expected investment value explained 8.5% variation in investment intention of individual investors. It implies that, on average, individual investors consider the pre-investment assessment of the overall value of the investment product in regard to the anticipated benefits and sacrifices related to the investment. This finding is in agreement with the theoretical framework on portfolio theory that an individual investor will consider an efficient portfolio that has maximum expected return for a given variance or minimum variance for a given expected return. The finding is consistent with earlier findings by Karkkila (2008), Komulainen, (2010) and

Puustinen (2012) that perceived value in the pre-investment stage is based on investors' expectations.

#### **4.8.2 Expected Sacrifices**

The dimensions of expected sacrifices had an Alpha value of 0.825 and this was considered very reliable. The mean score was 4.24 and a standard deviation of 1.472. This points to the fact that, on average, individual investors consider the sacrifices they have to make in order to invest. A positive relationship was found between the expected sacrifices and investment intention. The Pearson Correlation coefficient 0.003 was not significant ( $p < 0.01$ ) to support this conclusion. Empirical results from regression analysis indicated that expected sacrifices is not a significant predictor ( $t = 0.047$ ,  $p = 0.962$ ) of investment intention of individual investors in Kenya. While controlling for the effect of investor experience, investor income and education levels, expected sacrifices explained 0.3% variation in investment intention of individual investors. The above results were consistent with the observations of Diacon and Ennew (2001) and Huber et al. 2001, who established that investors evaluate the expected sacrifices of each alternative in order to maximize their investment returns.

#### **4.8.3 Subjective Investment Knowledge**

The subjective investment knowledge had an Alpha value of 0.896 and this was considered very reliable. The mean score was 4.19 and a standard deviation of 1.188. This points to the fact that, majority of individual investors consider the investment knowledge that the need to have in order to make a successful investment. A positive relationship was found between the subjective investment knowledge and investment intention. The Pearson Correlation coefficient 0.433 was significant ( $p < 0.01$ ) to support this conclusion. Empirical results from regression analysis indicated that subjective investment knowledge is a significant predictor ( $t = 8.478$ ,  $p = 0.000$ ) of investment intention of individual investors in Kenya. While controlling for the effect of investor experience, investor income and education levels, expected sacrifices explained 18.5% variation in investment intention of individual investors. The study findings were consistent with the observations of

Lusardi (2007), Chater et al. (2010), Costanzo and Ashton (2006), Lusardi and Mitchell (2005) and Ackert and Deaves (2010) who found that investors' subjective investment knowledge of each alternative had a great influence on financial planning behavior. Accordingly, investors with higher level of investment knowledge are more likely to invest than investors with lower level of knowledge.

#### **4.8.4 Compatibility**

The compatibility had an Alpha value of 0.881 and this was considered very reliable. The mean score was 4.28 and a standard deviation of 1.396. This points to the fact that, majority of individual investors consider the investment knowledge that the need to have in order to make a successful investment. Individual investors also seem to be more concerned about the changes in behavior that stock investing would require. A positive relationship was found between the compatibility and investment intention. The Pearson Correlation coefficient 0.383 was significant ( $p < 0.01$ ) to support this conclusion. Empirical results from regression analysis indicated that compatibility is a significant predictor ( $t = 7.318, p = 0.000$ ) of investment intention of individual investors in Kenya. While controlling for the effect of investor experience, investor income and education levels, expected sacrifices explained 14.4% variation in investment intention of individual investors. The study findings were consistent with the observations of Karahanna et al. (2006), Chakravarty and Dubinsky (2005), Murray and Häubl (2007), Collan (2007), Collan and Tetard (2009) who found that the degree of consistency of each alternative to the investor's way of life had a great influence on financial planning behavior. Accordingly, investors with higher degree of perceived compatibility are more likely to invest.

#### **4.8.5 Perceived Investment Behavior**

The perceived behavioral control had an Alpha value of 0.874 and this was considered very reliable. The mean score was 5.54 and a standard deviation of 1.296. This points to the fact that, majority of individual investors consider the investment knowledge that the need to have in order to make a successful investment. Individual investors also seem to be more concerned about the changes in behavior that stock investing would require. A positive relationship was found between the perceived behavioral control and investment intention. The Pearson Correlation coefficient 0.313 was significant ( $p < 0.01$ ) to support this conclusion. Empirical results from regression analysis indicated that perceived behavioral control is a significant predictor ( $t = 5.819$ ,  $p = 0.000$ ) of investment intention of individual investors in Kenya. While controlling for the effect of investor experience, investor income and education levels, expected sacrifices explained 9.5% variation in investment intention of individual investors. The study findings were consistent with the observations of Ajzen (2006), Karjaluoto (2002), Armitage and Conner (2010), Karahanna et al. (2006), and East (1993) who found that generally perceived behavioral control accounted for substantial amounts of variance in intention and behavior. Accordingly, perceived behavioral control was found to affect one's investment intention and investors who perceive to have higher self-efficacy are more likely to invest.



## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter presents the summary of findings, conclusions and recommendations based on the empirical results of the study as guided by the specific objectives. Suggested areas of future research are also presented.

#### 5.2 Summary

**Specific Objective 1:** To evaluate the influence of perceived investment value on investment intentions of individual retail stock market investors in Nairobi Securities Exchange.

The research results showed that Perceived Investment Value is an important determinant of investment intentions of individual retail stock market investors in Nairobi Securities Exchange. A significant ( $p < 0.01$ ) positive correlation was found to exist between Perceived Investment Value, a multi-dimensional construct and investment intention. Results from regression analysis indicate that Perceived Investment Value explained eight point five percent variation in investment intention of individual investors. In addition, Perceived Investment Value had a positive statistically significant effect ( $t = 5.489$ ,  $p = 0.000$ ) on investment intention of individual investors in Nairobi Securities Exchange.

**Specific Objective 2:** To determine the influence of expected sacrifices on investment intentions of individual retail stock market investors in Nairobi Securities Exchange.

The research results showed that expected sacrifices is not an important determinant of investment intentions of individual retail stock market investors in Nairobi Securities. An insignificant positive correlation was found to exist between expected sacrifices, a multi-dimensional construct and investment intention. Results from regression analysis indicate that expected sacrifices explained zero point three percent variation

in investment intention of individual investors. In addition, expected sacrifices had a positive but statistically not significant effect ( $t=0.047$ ,  $p=0.962$ ) on investment intention of individual investors in Nairobi Securities Exchange.

**Specific Objective 3:** To assess the influence of subjective investment knowledge on investment intentions of individual retail stock market investors in Nairobi Securities Exchange.

The research results showed that subjective investment knowledge is a key determinant of investment intentions of individual retail stock market investors in Nairobi Securities Exchange. A significant ( $p<0.01$ ) positive correlation was found to exist between subjective investment knowledge and investment intention. Results from regression analysis indicate that subjective investment knowledge explained eighteen point five percent variation in investment intention of individual investors. In addition, subjective investment knowledge had a positive statistically significant effect ( $t=8.478$ ,  $p=0.000$ ) on investment intention of individual investors in Nairobi Securities Exchange.

**Specific Objective 4:** To evaluate the influence of compatibility on investment intentions of individual retail stock market investors in Nairobi Securities Exchange.

The research results showed that compatibility is an important determinant of investment intentions of individual retail stock market investors in Nairobi Securities Exchange. A significant ( $p<0.01$ ) positive correlation was found to exist between compatibility and investment intention. Results from regression analysis indicate that compatibility explained fourteen point four percent variation in investment intention of individual investors. In addition, compatibility had a positive statistically significant effect ( $t=7.318$ ,  $p=0.000$ ) on investment intention of individual investors in Nairobi Securities Exchange.

**Specific Objective 5:** To assess the influence of perceived behavior control on investment intentions of individual retail stock market investors in Nairobi Securities Exchange.

The research results showed that perceived behavioral control is an important determinant of investment intentions of individual retail stock market investors in Nairobi Securities Exchange. A significant ( $p < 0.01$ ) positive correlation was found to exist between perceived behavioral control and investment intention. Results from regression analysis indicate that perceived behavioral control explained nine point five percent variation in investment intention of individual investors. Additionally, perceived behavioral control had a positive statistically significant effect ( $t = 5.819$ ,  $p = 0.000$ ) on investment intention of individual investors in Nairobi Securities Exchange.

### **5.3 Conclusions**

**Specific Objective 1:** To evaluate the influence of perceived investment value on investment intentions of individual retail stock market investors in Nairobi Securities Exchange.

Pre-investment value assessment of expected returns from investing in stocks by the average individual retail investors is a critical step in their investment decision-making process. The results from regression analysis supported the existence of a strong influence of perceived investment value on investment intention of individual investors. From the study results, it is evident that expected value is an important factor in shaping investment intention of individual investors in pursuit of improved economic status. Moreover, the promise of economic benefits was found to have the highest impact in stimulating the intentions to invest. Additionally, the findings also shows that functional, emotional and symbolic benefits indicators have very little or no effect in determining whether to invest in stock or not. This multi-dimensional view of perceived investment value has an important implication in investment management. The unique influence of the dimension of perceived investment value revealed how each of them helped stimulate investment intention of individual investors in Kenya.

**Specific Objective 2:** To evaluate the influence of expected sacrifices on investment intentions of individual retail stock market investors in Nairobi Securities Exchange.

The influence of expected sacrifices on investment intention of individual investors was insignificant according to the study. The results from regression analysis did not support expected sacrifices as a key contributing factor to investment intention. Investors expect less value from investing when they anticipate investing to require a lot of sacrifices. Of the dimensions of expected sacrifices, monetary cost and time cost were found to explain the highest variations in investor's intention to invest while effort and financial risk were found to explain very little variation in investment intention. Moreover, whereas standard finance considers financial risk as objective and measurable, the results of this research suggest that investor's base their decisions on their perceptions of the risk, which might sometimes be quite far from the reality. Whereas the results from regression analysis presents a pessimistic view on influence of expected sacrifices on investment intention, evidence from both quantitative data analysis supports the importance of the expected sacrifices in stimulating the investment intention of individual investors in Kenya.

**Specific Objective 3:** To evaluate the influence of subjective investment knowledge on investment intentions of individual retail stock market investors in Nairobi Securities Exchange.

Individual investors with higher subjective investment knowledge were more likely to engage in stock investment. The results from regression analysis supported the existence of a strong influence of subjective investment knowledge on investment intention of individual investors. The findings of this study highlight the connection between knowledge, intentions, and behavior and are consistent with the familiarity heuristic, according to which people are more likely to involve in a behavior if they feel more competent. Subjective investment knowledge was found to have a very strong direct influence on investment intentions. Additionally, the study results shows that knowledge level has an impact on individual investor's evaluative processes and thereby affect their product assessments. Accordingly, both objective and subjective measures were positively related and both had a great influence on investment intention. Therefore, it could be concluded that investors with higher level of investment knowledge were more likely to invest than investors with lower level of knowledge.

**Specific Objective 4:** To determine the influence of compatibility on investment intentions of individual retail stock market investors in Nairobi Securities Exchange.

Compatibility had a somewhat stronger effect on investment intentions of individual investor as per the findings of the study. The influence of compatibility on investment intention of individual investors is significant. The results from regression analysis supported the existence of the influence of compatibility as a key contributing factor to investment intention. Accordingly, the results suggests that even though a consumer would expect to receive value from investing, he or she will not invest if the investment alternative is not perceived to be compatible with his or her current life. Therefore, investing needs to match with the individual investor's past experiences, existing values and practices, to boost investment intentions. Thus, individual investors are prone to choosing investment options that are easily assimilated with their life. From the results, it can therefore be concluded that if individual investors consider that investing in stock requires the least amount change in behavior, they perceive investing in stock to be more compatible than keeping their assets on a bank account. After all, investors tend to follow habits and are prone to choosing solutions that require the least amount of effort.

**Specific Objective 5:** To assess the influence of perceived behavior control on investment intentions of individual retail stock market investors in Nairobi Securities Exchange.

Individual investors' self-assessed wealth (perceived behavioral control) had a positive influence on their investment intentions, as the relationship was significant. The influence of perceived behavioral control on investment intention of individual investors was strong. The results from regression analysis supported the existence of the effect of perceived behavioral control as a key contributing factor to investment intention. The findings of this research established that there is a significant influence of perceived behavioral control on investment intention of individual investors. These results leads to a conclusion that the limiting factor is the investor's perception of his or her financial resources. Thus, it is expected that one would only invest when he or she perceives his or her current financial resources to be sufficient

for investing. Therefore, when one perceives his or her self-efficacy higher, he or she is more likely to invest. Accordingly, even if investors would have the money to invest and acknowledge it, they do not necessarily invest it.

The results also concludes that individual investors with and without prior investment experience evaluate the dimensions of perceived investment value and expected sacrifices, as well as the compatibility, behavioral control, subjective investment knowledge and investment intentions differently. The largest effects was both in subjective investment knowledge and in investment intention, implying that individual investors with no investment experience are significantly less likely to invest than those with prior investment experience.

## **5.4 Recommendations**

### **5.4.1 Policy recommendations**

Looking at the investment intention against the individual retail investor's education and income, it is clear that those with higher education and relatively good income have a higher intention to invest. It is therefore recommended that individual retail investors who have higher education and more so have higher incomes be encouraged and motivated to invest in stock markets as this will give them a good experience, exposure and more choices and help them understand the investment environment. This will intern enhance their performance through improved judgement and help in transforming Kenya into a middle income country with a vibrant financial services sector as envisaged by vison 2030.

From the findings of this study, the investment intention of the individual retail investors was greatly affected by investment knowledge especially of the investment products. Investors with higher investment knowledge were more likely to invest. It is therefore recommended that sufficient capacity building through provision of financial related training especially in investment areas be carried out to inform, skill-build, and enhance competency of the retail investors.

### **5.4.2 Managerial recommendations**

From the findings of this study, individual retail investors who are able to see value to be realized by investing in stock have a higher intention to invest. It is therefore recommended that investment managers should device investment products that promise to deliver economic value that can be demonstrated to the individual retail investors. It is also recommended that financial companies to create more diverse investment products and devise more effective marketing and selling strategies by focusing on value delivery.

Based on the study findings, the individual retail investors are attracted to the investments that compatible with their status. The recommendation therefore is devise investment options that would be a good fit with the individual retail investors' especially in status and compatibility with their past behavior, current needs and requires the least amount of change in behavior. Investment managers should endeavor to provide individual investors with investment services and products which require the least amount of change in their behavior and which are easily assimilated into one's life.

### **5.5 Areas of Further Research**

This study did not include all determinants of investment intention of individual retail investors and a further study is recommended to include other determinants that may influence investment intentions of individual retail investors. The results of the regression analysis showed that all the independent variables combined explained twenty eight point three percent of the variation in investment intentions by individual retail investors, thus there remains seventy one point seven percent variation that is explained by other variables. The study recommends that future research should be directed towards validating the results of this study by conducting a similar research in Kenya by collecting data from a different area other than Nairobi County because the individual retail investors in rural areas may have different investment characteristics. Additionally, a comparative study based on responses from rural individual retail investors and responses collected from urban investors is recommended.

Additionally, as mentioned in the theoretical part, perceived value is dynamic in nature and this research only gives a static pre-investment view on individual investor's value perceptions. In order to see how investor's evaluations change during the investment process, a longitudinal study would offer new insights to investment research. Moreover, the results suggested that subjective investment knowledge significantly affects investor's evaluations of investment products and investment intentions, future research could focus on determining the antecedents of subjective investment knowledge.



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## APPENDICES

### Appendix A: Cover Letter

Peter Kamau Njuguna,

JKUAT Main Campus,

Juja, Thika.

21<sup>st</sup> January, 2016.

Dear Respondent,

#### RE: ASSISTANCE WITH STUDY FOR PHD RESEARCH DISSERTATION

My name is Peter Kamau Njuguna, a PhD student at JKUAT. The assistance of your organization is requested in a study entitled “DETERMINANTS OF INVESTMENT INTENTIONS OF INDIVIDUAL RETAIL STOCK MARKET INVESTORS ON THE NAIROBI SECURITIES EXCHANGE IN KENYA”. This research project is a requirement for the award of a PhD in Business Administration in Finance of Jomo Kenyatta University of Agriculture & Technology.

Please take a few minutes to complete this questionnaire. Your specific answers will be completely anonymous, but your views, in combination with those of others, are extremely important. The information generated using this questionnaire will be treated confidentially and will not be in any way used against the respondent. The information obtained will be used purely for the intended academic purposes and for the benefit of the readers and indeed all the stakeholders in investment industry.

Thanking you in advance for your support.

Peter Kamau Njuguna

E-mail: [pknjuguna2000@gmail.com](mailto:pknjuguna2000@gmail.com)

## Appendix B: Questionnaire

The aim of this questionnaire is to collect data on investment intentions of individual investor. It is meant purely for study purposes. The study seeks to establish the determinants of investment intentions of individual investor of securities in NSE, Kenya. The information you give will be treated with utmost confidentiality. Your identification will not be required for this questionnaire.

### Section I: Demographic Profile

Answer the following questions by marking in the spaces provided.

1. Are you currently holding shares of companies listed in NSE?

- a) Yes  b) No

2. How long is your experience as an investor?

- a) Less than 1 year  b) 1 -5 years  c) 5 – 10 years   
d) More than 10 years  e) I have never invested in NSE

3. Indicate your monthly income bracket

- Below Ksh. 20,000
- Ksh. 20,000 – 50,000
- Ksh. 50,000 – 80,000
- Ksh. 80,000 – 100,000
- Above Ksh.100, 000

4. Indicate your highest education level

- a) Primary   
b) Secondary   
c) Tertiary   
d) Undergraduate

e) Post graduate

[     ]

## Section II: Basic information

Using the following scale below, rate the extent to which you agree or disagree with the following statements regarding investment intentions of individual investors of securities in NSE by marking the appropriate box.

**Key:**

**1. Strongly disagree**

**2. Disagree**

**3. Somewhat disagree**

**4. Not sure**

**5. Somewhat agree**

**6. Agree**

**7. Strongly agree**

### 1. Perceived Investment Value

This section will assess your opinions on the extent to which you think Perceived Investment Value, influences your intention to invest in securities at NSE.

Strongly disagree → strongly agree

Item	Statement	1	2	3	4	5	6	7
EM1	I expect investing in shares to be an inexpensive way to invest.							
EM2	I believe investing in shares is fairly priced							
EM3	I believe investing in shares is reasonably priced							
EM4	I expect investing in shares to be a sufficiently good way to satisfy my investing requirements							
EM5	I expect investing in shares to be an efficient way to invest							
EM6	I expect investing in shares increases my wealth adequately in view of the risk I bear.							
FC1	I expect investing in shares to be a convenient way to invest							
FC2	I expect investing in shares to be an							

	easy way to invest							
FC3	I expect investing in shares not to be unnecessarily time-consuming							
EE1	I expect investing in shares to be a nice way to spend time							
EE2	I expect investing in shares to be exciting in a good way							
EE3	I expect investing in shares to be entertaining							
SA1	I expect investing in shares to give me an opportunity to support my fellow men							
SA2	I expect investing in shares to give me an opportunity to support the well-being of other people							
SA3	I expect investing in shares to give me an opportunity to express benevolence toward other people							
SA4	I expect investing in shares would make me feel valuable							
SA5	I expect investing in shares would boost my self-esteem							
SA6	I expect investing in shares would increase my self-confidence							

## 2. Expected sacrifices

This section will assess your opinions on the extent to which you think expected sacrifices, influences your intention to invest in securities at NSE.

Strongly disagree → strongly agree

Item	Statement	1	2	3	4	5	6	7
MC1	I expect investing in shares to be an expensive way to invest							
MC2	I expect the expenses of investing in shares to be high							
TC1	I expect investing in shares be time-consuming							
TC2	I expect investing in shares to require time out of my other activities							
TC3	I expect investing in shares would require a lot of information searching prior to investing.							
TC4	I expect investing in shares would require a lot of searching in order to find the right shares.							
TC5	I expect investing in shares to require self-studying.							
TC6	I expect investing in shares to require learning new skills and absorbing new information.							
CE1	I expect investing in shares to require a lot of mental effort.							
CE2	I expect investing in shares to require continuous thinking and deliberation.							
FR1	I expect there to be a high risk that the monetary return from investing in would fall below my expectations.							
FR2	I expect there to be a high risk of losing money in investing in share							



### 3. Compatibility

This section will assess your opinions on the extent to which you think compatibility, influences your intention to invest in securities at NSE.

Strongly disagree → strongly agree

Item	Statment	1	2	3	4	5	6	7
COND	Investing in shares is completely compatible with my current situation.							
COND	I think that investing in shares fits well with my way of living							
COLS	Investing in shares fits into my lifestyle.							
COLS	Investing in shares is compatible with all aspects of my life.							
COVS	I value investing in shares							
COVS	Investing in shares is valuable to my current situation							

#### 4. Perceived behavioral control

This section will assess your opinions on the extent to which you think perceived behavioral control, influences your intention to invest in securities at NSE.

Totally disagree → totally agree

Issues	1	2	3	4	5	6	7
a) I believe I have the ability to invest in shares							
b) If it was entirely up to me, I am confident that I can invest in shares							
c) I know I am capable of investing in shares							
d) Whether or not I invest in shares, it is entirely up to me.							
e) There is likely to be plenty of opportunities for me to invest in shares							
f) I feel I have enough personal control in investing in shares							

## 5. Subjective investment knowledge

This section will assess your opinions on the extent to which you think subjective investment knowledge influences your intention to invest in securities at NSE.

**Key:** 1. Nothing at all                      2. Very little                      3. Little    4. Not sure

5. Much                                      6. Very Much                      7. Everything

Nothing at all                      →                      Everything

Item	Statement	1	2	3	4	5	6	7
SKFK	How much do you know about investing in shares							
SKFK	Compared to your friends and acquaintances, how much do you feel you know about investing in shares							
SKFK	Compared to expert investors, how much do you feel you know about investing in shares							
SKPK	How much do you know about products you can invest in							
SKPK	How much do you understand about shares							
SKPK	How much do you understand about other products that you can invest in							

## 6 Investment intention

This section assesses your opinions on your intention to invest in securities at NSE.

Totally not true → totally true

Item	Statement	1	2	3	4	5	6	7
II1	I plan to invest in shares within the next year							
II2	I intend to invest in shares within the next year							
II3	I predict I would invest in shares within the next year.							
II4	I hope I will invest in shares within the next year							
II5	I think I will invest in shares within the next year							

**Thank You for Your Responses.**