

**THE RELATIONSHIP BETWEEN FINANCIAL LITERACY AND
STOCK MARKET PARTICIPATION BY RETAIL INVESTORS IN
KENYA**

BY

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DECLARATION

I declare that this research project is my original work and has not been submitted for examination in any other university.

SIGNED

DATE.....

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This research project has been submitted for examination with my approval as the university supervisor

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PROF. JOSIAH ADUDA

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DEDICATION

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LIST OF ABBREVIATIONS

CBD	-	Central Business District
CDSC	-	Central Depository and Settlement Corporation
CMA	-	Capital Markets Authority
CMAC	-	Capital Markets Advisory Council
EGF	-	Equity Group Foundation
EMH	-	Efficient Market Hypothesis
FSD	-	Financial Sector Deepening
GEMS	-	Growth and Enterprise Market Segment
KCB	-	Kenya Commercial Bank
MPT	-	Modern Portfolio Theory
NSE	-	Nairobi Securities Exchange
SHARE	-	Survey on Health Ageing and Retirement in Europe
SME	-	Small and Medium Enterprise
USE	-	Uganda Securities Exchange

ABSTRACT

The main focus of this study was to establish the nature of the relationship between financial literacy and stock market participation by retail investors in Kenya. The study employed a descriptive survey design. The target population was 836,250 retail investors participating in the NSE as at March 2013. A sample of 46 respondents was selected from five major stock brokerage firms based in Nairobi. Data was collected using questionnaires and subsequently analyzed using descriptive statistics. The data is presented in form of charts and tables. The study revealed that retail investors have a high level of financial literacy. Although many of them rate equity stocks as an investment just like others, a majority of them would prefer investing in other asset classes such as real estate. The results indicated that decision to invest in stocks was influenced by various economic factors, such as, expected dividends, capital appreciation, affordability of shares and fluctuations in market indices among other factors. The study also sought to establish effects of financial literacy, gender, age, and income on stock market participation. The findings conclude that these factors strongly influenced the level of stock market participation. This study recommends that the CMA and NSE should implement a comprehensive and public financial literacy programme that targets non-stock market participating public and financial market intermediaries should adopt strategies to bridge age and gender demographics that do not participated in the stock market. The study concluded that there is a positive relationship between financial literacy and stock market participation by retail investors in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Individuals have become increasingly active in financial markets, and market participation has been accompanied or even promoted by the advent of new financial products and services. However, some of these products are complex and difficult to grasp, especially for the financially unsophisticated investors. At the same time, market liberalization and structural reforms in social security and pensions have caused an ongoing shift in decision power, away from the government and employers toward private individuals. Thus, individuals have to assume more responsibility for their own financial well-being.

The question that this study sought to answer was whether retail investors are well-equipped to make financial decisions in stock market participation. Do they possess adequate financial literacy and knowledge? There has been little research on this topic and the few existing studies indicate that financial illiteracy is widespread and individuals lack knowledge of even the most basic economic principles (Lusardi and Mitchell (2006, 2007). Financial literacy in the form of knowledge about the stock market has also been related to stock market participation. In a study of a representative sample of the Dutch population, van Rooijet *al.* (2011) found that many families shy away from the stock market because they have little knowledge of stocks and the stock market.

1.1.1 Financial literacy

Financial literacy has been an issue in many countries including developed and westernized societies. The cost of low financial literacy is substantial for the society and

has been clearly identified by researchers (Joo & Garman 1998, Cuter & Delvin 2000). It helps to make informed decisions and well-being of an individual. Policymakers in both developed and developing countries are increasingly recognizing the importance of financial literacy and of investing resources in financial education programs (Gallery, Newton and Palm, 2010). The term financial literacy can encompass concepts ranging from financial awareness and knowledge, including of financial products, institutions, and concepts; financial skills, such as the ability to calculate compound interest payments; and financial capability more generally, in terms of money management and financial planning (Remund, 2010). In practice, however, these notions frequently overlap. In today's world which has a market with complicated products, the need for financial literacy becomes inevitable. It also impacts the promotion of financial inclusion which ultimately results in financial stability of any economy.

Research has been conducted globally for measuring the level of financial literacy. Financial literacy surveys have also been conducted at country level by the governments. Most of the surveys have thrown light on their poor level of financial literacy. This study will focus on the relationship between financial literacy and stock market participation by retail investors in Kenya.

In Kenya, key efforts have been made by the government through Financial Sector Deepening (FSD), which educates people to enhance financial freedom. Financial literacy enables one to make informed decisions as far as money matters are concerned thus one can borrow, save and invest wisely. The central bank has direct interest in financial education and ensures that commercial banks show the public their charges so as to

enable persons to compare and make decisions. Commercial banks involvement has been relying mainly on their marketing activities. Further financial institutions like Equity Bank and Kenya Commercial Bank (KCB) have made deliberate efforts to educate Kenyans on finance. Equity Group Foundation (EGF) has partnered with The Master Card Foundation while KCB has partnered with Visa International to provide financial literacy programs that are aimed at giving Kenyans opportunity to learn how to effectively manage their finances.

1.1.2 Stock Market Participation

The stock market plays an important role in the financial lives of many individuals. Seeing stocks as a form of investment, many investors use it as a means to generate their asset based income. The capital market plays a fundamental role in stimulating economic growth and development through mobilization of resources in an economy (Yartey & Adjasi, 2007). The markets provide a platform for exchange of financial assets (stocks and bonds), following established regulations to provide continuous liquidity in the market.

The Kenyan capital market is formalized by existence of a securities exchange, the Nairobi Securities Exchange (NSE), consisting of the primary and secondary segments where investors participate. The NSE was informally established in 1954 as a voluntary association of stock brokers registered under the Societies Act with the objective to facilitate mobilization of resources to provide long term capital for financing investments (NSE, 2010). In this formalization stage, a self-regulatory system is adopted while attempts are made to increase the participation of local investors by the post independent government. In the late 1980s liberalization and privatization took centre stage as

development strategies in the Kenyan economy following poor performance of the public sector, characterized with misallocation of resources, market distortions, and negative low economic growth (Kibuthu, 2005).

The NSE is supported by the Central Depository and Settlement Corporation (CDSC) which provides clearing, delivery and settlement services for securities traded at the Exchange. It oversees the conduct of Central Depository Agents comprised of stockbrokers and investments banks which are members of NSE and Custodians (CDSC, 2004). These regulatory frameworks aim to sustain a robust stock market exchange that supports efficient allocation of capital, allowing price discovery to take place freely based on the market forces.

The NSE as at 2013 had 59 companies with equity listings in the Main Investment Market Segment, Alternative Investment Market Segment, Fixed Income Market Segment and Growth Enterprise Segment (NSE, 2014). The frameworks for other segments in the derivatives market and Real Estate Investment Trusts are being streamlined by the Capital Markets Authority (CMA). The NSE currently uses an Automated Trading System (ATS) which is a fully automated screen-based system. The ATS adopts the principles of order-driven market in which the best-buy order is matched with the best-sell order. In July, 2011, the NSE adopted a T+3 settlement system with the expectation that efficiency gains from the shorter settlement cycle will improve liquidity in the market (NSE, 2011).

Several studies have focused on the determinants of stock market participation. One of the variables that have been studied in the recent past is the effect of financial literacy. There is in fact evidence that financial literacy and schooling years are correlated and that the stream of education and effectiveness of education can actually affect financial literacy (Almenberg & Save-Soderbergh 2011), so that, indirectly, affect the stock market participation of retail investors. There is a low level of stock market participation in Kenya which poses a significant problem to the well-functioning of capital market. Stock market participation is an important economic outcome. There can be substantial welfare loss from not participating in the stock market (Cocco *et al.* 2005). Yet, there is substantial variation in stock market participation between individuals, with many households not holding any stocks at all (e.g. Campbell, 2006).

1.1.3 Financial Literacy and Stock Market Participation

The stock market “participation puzzle” was first investigated by Haliassos & Bertaut (1995). An important “puzzle” in the literature is why so few households hold stocks. One explanation about lack of stock ownership that has not yet been well-explored in the literature is that stocks are complex assets, and many households may not know or understand stocks and the working of the stock market. Several studies have also tried to unveil the exact channels by which financial literacy affects the decision to participate in the stock market. For example, the results of the study by Christelis *et al.* (2010) support the hypothesis that higher cognitive abilities, through their association with lower risk aversion, lower information costs, or higher perceived portfolio sharpe-ratio, raise stock market participation. Additionally, Arrondel *et al.* (2012) uncovered that stock ownership strongly correlates with both expectations and realizations of stock market returns, as

well as with measures of financial literacy, ability or trust. This result holds true even among the affluent and the young.

Studies on the effect of human capital (education) on stock market participation are limited. For instance, several authors have shown that college educated individuals are more likely to own stocks (Haliassos & Bertaut 1995; Campbell, 2006; Lusardi & de Bassa Scheresberg, 2013). Cole & Shastry (2009) argued that one year of schooling increases the probability of financial market participation by 7-8%. Looking a step further, empirical studies on stock holding show that including control for educational attainment does enhance the significance of the variable financial literacy (Van Rooij *et al.* 2011, Behrman *et al.* 2012, Lusardi & de Bassa Scheresberg 2013) underlying the fact that general knowledge (education) and specialized knowledge (financial literacy) both contribute for financial decision making, both in Netherlands and United States.

1.1.4 Retail Investors in Kenya

Investopedia defines retail investors as individual investors who buy and sell securities for their personal account, and not for another company or organization. Retail investors unlike institutional investors buy and sell securities in small volumes. On the average, the prices of quoted shares have more than quadrupled in as many years, a performance that is difficult to replicate in conventional types of investments – savings and deposit accounts, real estate, etc. Naturally, this has generated unprecedented interest in the stock market by investors of all kind. In an area traditionally considered the preserve of the sophisticated investor, it is gratifying to see virtually insatiable appetite for investment in stocks and shares from ordinary Kenyans of all social strata.

CMA (2006) It has been noted that small retail investors, do not take the time to understand the companies they are buying into –their management, their products and their competitive environment, their corporate governance, etc. They do not take the trouble to learn the art of investing in stocks and shares. There are 836,250 retail investors participating in NSE as at 31stMarch 2013 (CMA, 2013).

1.2 Research Problem

There exist very few studies that provide information on both financial literacy and variables related to financial decision-making; for example saving, portfolio choice, stock market participation and retirement planning. In this paper, I sought to find the effect financial literacy has on stock market participation by retail investors in Kenya. Thus, the role of financial literacy should not be under-estimated. As more individuals transition to a system where they have to decide how much to save and how to invest their wealth, it is important to consider ways to enhance their level of financial knowledge or to guide them in their financial decisions.

A low level of stock market participation is a significant problem to the well functioning of capital markets. Several studies have focused on the determinants of stock market participation. One of the variables that have been studied in the recent past is the effect of financial literacy. There is in fact evidence that financial literacy and schooling years are correlated and that the stream of education and effectiveness of education can actually affect financial literacy (Almenberg & Save-Soderbergh 2011). Financial literacy in the form of knowledge about the stock market has also been related to stock market participation. In a study of a representative sample of the Dutch population, Van Rooijet *al.* (2011) found that many families shy away from the stock market because they have

little knowledge of stocks and the stock market. It has also been shown that more basic measures of financial literacy, essentially measures of numeracy, can predict stock market participation.

Aroni (2014) studied the effects of financial information on investment in shares in Kenya. The results revealed that financial information variable had significant influence on decisions to invest in shares with p-value ($p < 0.05$). Wachira & Kihui (2012) conducted a study to establish the impact of financial literacy on access to financial services in Kenya. The study established that the probability of a financially illiterate person remaining financially excluded is significantly high calling for increased investment in financial literacy programs to reverse the trend. Githui & Ngare (2014) in their study on financial literacy and retirement planning postulated that financial literacy is one of the main causes of poor retirement planning in the informal sector in Kenya. Clement (2012) sought to investigate factors influencing investment decisions in equity stocks at the Nairobi securities exchange among teachers in Kisumu. The results indicated that decisions to invest in equity stocks are influenced by economic and behavioral factors. Tenai & Bitok *et al* (2014) investigated the factors influencing the development of capital markets in a developing economy. The study established that the greatest impediment to the NSE is the level of knowledge of the local investors.

Several studies have produced contradictory results, such as a study by Mwangi (2012) which found that financial literacy remains low in Kenya. However the results indicated that households' access to financial services is not based on levels of financial literacy but rather on factors such as income levels, distance from banks, age, marital status, gender, household size and level of education. However, the study established that there

was a probability of a financially illiterate person remaining financial excluded. Contrasting results are also found by Cole & Shastri (2009); using a sample from the 1980-1990-2000 Public Use US Census Data to study the determinants of financial market participation. They found that education positively affected the probability of holding investment income. In investigating the determinants of this result, they show that cognitive abilities increase participation, while financial literacy education (measured by variations in state-mandated financial education in high schools, as in Bernheim *et al.* (2001)) does not.

Previous studies have focused on advanced financial literacy. This study sought to take departure from that and focused on both basic and advanced financial literacy to explain the relationship between financial literacy and stock market participation by retail investors in Kenya. The study used a standard measure of stock market participation: direct stock market participation through ownership of stocks which was measured through the volume of shares traded by the respondent over the last one year. The measures of financial literacy used in existing studies are often crude. For example, Lusardi and Mitchell (2006, 2007a) relied on only three questions to measure financial literacy, and Stango and Zinman (2007) rely on one question. In this paper, the researcher overcame this shortcoming with some of the previous studies by providing comprehensive measures of financial literacy. In addition, the study linked financial literacy with an important economic outcome: participation in the stock market. From the studies reviewed, it is evident that little has been done in relation to financial literacy effect on stock market participation in Kenya. Most of the studies have focused on the relationship between financial literacy and other variables such as retirement planning, personal financial management, access to financial services and savings level among

many other factors. This study is therefore geared towards investigating the nature and extent of the relationship between financial literacy and stock market participation by retail investors in Kenya. The research question can therefore be posed as: What is the relationship between financial literacy and stock market participation by retail investors in Kenya?

1.3 Research Objectives

1.3.1 Main Objective

The main objective of this study was to determine the relationship between financial literacy and stock market participation by retail investors in Kenya.

1.4 Value of the Study

The findings of this study will be useful to various industry stakeholders among them the Capital Markets Authority, The Nairobi Securities Exchange, Academia, Policy Makers and individual retail investors among many others.

The Capital Markets Authority which is tasked with supervision, licensing and monitoring the activities of market intermediaries will find the results of this study useful, as stock market participation levels are an indicator of a well functioning capital markets in any country. It will also provide a clear indication, whether there is a need for thorough collaboration with other market stakeholders to implement a comprehensive awareness and public education programme that targets both supply and demand of securities. Reviewed studies have recommended that it should implement a specialized proficiency certification programme targeting both the market intermediaries and the general public to enhance financial literacy.

This research paper will make a contribution to academia as it extends current research on the effects of financial literacy on stock market participation. This study, sought to establish the nature of the relationship between financial literacy and stock market participation. The researchers and academicians will find this study useful for further discussion and research so that they can explore and further develop their studies on financial literacy and stock market participation. The study will help tertiary education institutions in understanding the significance of financial literacy. It will also help academicians in evaluating the relevance of curriculum taught in business schools to the actual business world.

Financial institutions such as stock brokerage firms, asset managers and investment banks will understand financial literacy effect on stock market participation. As intermediaries between the NSE and retail investors they will formulate targeted financial literacy programmes, especially on stock market and its dynamics to enable understanding of investing in various financial assets. Retail investors will find the results of this paper useful, as it will indicate their level of financial literacy and identify areas that they need to improve on. This has the potential of increasing stock market participation especially by local investors, unlike the current situation which is largely dominated by foreign investors. The Nairobi Securities Exchange (NSE) stands to benefit as levels of participation in stock markets is a good indicator of well performing securities exchange. Recommendation from this study will help improve the low levels of stock market participation among retail investors in Kenya, and hopefully see the number of firms listing on the NSE increase. With introduction of new market segments such as the Growth Enterprise Market Segment (GEMS) and the yet to be introduced derivatives market, the relationship between financial literacy and stock market participation, could be the determinant of their success.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, literature which is related and consistent with the objectives of this study is reviewed. This section will review selected literature that summarizes the theoretical review, empirical studies by bringing out relevant literature on the aspects pertaining to the relationship between financial literacy and stock market participation.

2.2 Review of Theories

The section will review key theories that explain financial literacy and stock market participation. These theories are; modern portfolio theory, efficient markets hypothesis and awareness of stock market.

2.2.1 Modern Portfolio Theory

The choice between the wide varieties of investment alternatives to achieve optimal personal portfolios ushers in the role of modern portfolio theory (MPT). Studies that are centered on the investment aspect of personal wealth tend to be dominated by modern portfolio theory as championed by Professor Harry Markowitz.

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

annual inflation rates. A central aspect of MPT is that the enthusiasts proposed that every investor should hold an optimal portfolio that is fully diversified.

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

2.2.2 The Efficient Market Hypothesis (EMH)

The most important 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 maximizing investors 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.

Efficient Market Hypothesis 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 will reflect only tomorrow's news and will 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 will 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 researchers 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 longhorizon returns when purchasing in the market stocks at relatively low price-earnings multiples.

2.2.3 Awareness of Stock Market

The extent to which consumers are aware of available financial assets depends on the incentives of asset suppliers to spread the information about the instruments they issue (Guiso & Jappelli, 2002). Merton (1977) pointed out that awareness affects asset prices because those that are less widely known, and thus less commonly selected, pay a premium. Besides Merton’s paper, Guiso & Jappelli, (2003) related three further strands of the literature: Financial information, social learning and advertisement. On the

determinants of awareness, (Guiso & Jappelli, 2005) presented a simple model where investors can learn about assets from distributors or through social interaction. They further held that the probability of becoming aware depends on distributor's incentives to inform investors and that people buy assets when they are aware of it.

Guiso & Jappelli, (2003) offered a direct test on the effect of social learning on awareness by providing insights into the mechanism by which social learning affects stockholding. They further observed that besides learning from signals and contacts with issuers and distributors, individuals often learn about investment opportunities from peers who have been informed by financial intermediaries. Therefore social learning changes distributor's incentives and hence the optimal signal policy.

Grossman & Stiglitz (1980) and Verrecchia (1980) in their examination of how information on asset returns effect portfolio choice established that differences among investors are endogenous, and financial information reduces subjective uncertainty on returns. Rooij & Lusardi (2007) showed that, lack of understanding of economic and financial information is a significant deterrent to stock ownership and that lack of literacy prevents households from participating in the stock market. Awareness of the existence of stock (financial asset) is exogenous to the investors' choice set. Issuers and distributors of financial assets have strong incentives to inform the pool of potential investors; broadening the investor base lowers the cost of raising external capital for issuers and increases revenue for distributors and this can be done by mailing, advertising in the financial press or with direct contact to potential investors.

Guiso & Jappelli, (2005) used data to construct summary indicators of financial awareness, where one of the measures of financial awareness is the number of assets that each individual knows divided by the number of potential assets. The second measure is an index that gives less weight to popular assets (such as checking accounts) than other assets that are less widely known (such as corporate bonds and mutual funds) and they weighted the index by the inverse of the proportion of people aware of the assets and scaled it by the sum of the weights. Issuers will target the individual (groups) that have a greater probability of investing in the stock market. Secondly, individuals are more likely to be aware where the cost of sending signals is lower, for instance in areas where the cost of contacting investors is relatively low. Thirdly, awareness should be higher in areas where one can learn from peers as well as from the general media and from intermediaries.

2.3 Determinants of Stock Market Participation

Besides financial literacy there are other determinants of financial literacy provided by researchers in the reviewed literature. Rooijet *al* (2007) noted that stock market participation increases with age/cohorts; stock ownership is concentrated among those 40 and older. The large proportion of stock ownership among those older than 70 is the result of differential mortality between richer and poorer households Hurd (1990).Rooijet *al* (2007) further noted that Stock market participation increases strongly with both income and wealth levels of individuals.

Stock market participation is much lower among women than means reported in a study by Haliassos and Bertaut (1995), which is consistent with the sharp differences in literacy between women and men as observed by Lusardi and Mitchell (2006).

Laakso (2010) analyzed a comprehensive list of stock market participation drivers and compared their explanatory power. This study focused both on the established drivers of stock ownership, that is, wealth, risk aversion and education, and on the more recently studied drivers of stock ownership, which are, social interaction, trust, personal values, cognitive skills and health. In addition, this study introduced two new stock market participation drivers to household finance, that is, life satisfaction and conservatism, and was the first to analyze the direct effect of religiousness on the probability of holding stocks.

The researcher found that, in addition to demographic variables and risk aversion, sociability, personal values, cognitive skills, health, life satisfaction and religion play a statistically significant role in stock market participation. Risk aversion stands out as the single most economically significant driver of stock market participation, and furthermore, all characteristics included in this study seem to explain the level of individual risk aversion. After risk aversion and demographic variables, sociability and political orientation have the most explanatory power in the probability of holding stocks. Surprisingly, trust has an insignificant effect on stockholding throughout the study. Cognitively able persons are more likely to participate in the stock market but none of the individual skills, numerical skills, recall ability and verbal fluency, stand out from the rest. Life satisfaction increases the likelihood of holding stocks, whereas poor health, religiousness and conservatism have an adverse effect on stock market participation.

2.4 Review of Empirical Studies

There has been a rising interest in financial literacy from the academic community, international organizations and governments recently. Most of the recent studies have concentrated on the relationship between financial literacy and other variables such as personal financial management, savings, entrepreneurial success and financial performance of firms among other variables. This paper deviates from this and focuses on an area that has not been widely researched.

Moore (2003) carried out a study on the effect of financial literacy on investment decisions, a sample of twenty companies was surveyed in Washington DC, a descriptive survey research design was used and data was analyzed by using a regression model, the results of the analysis showed that there was a positive correlation between the level of financial literacy and investment decisions of firms. It was concluded that financial literacy had a significant effect on the financial performance of firms since firms that had access to financial information and training invested in profitable investments.

Similar findings were reported by Agnew and Szykman (2005), who devised a financial literacy survey as part of an experiment held at a mid-size public university in the Southeast designed in the spirit of a John Hancock Financial Services Defined Contribution Plan Survey (2002). Their respondents produced similar patterns: college employees, tourists, parents of students, and local construction workers, all knew little about mutual funds and they could not explain even simple differences between stocks, bonds, and money market mutual funds.

Amisi (2012) in his study examined the relationship between financial literacy and the influence of the factors that affect the investment decision by pension fund managers in Kenya. A modified likert scale questionnaire was used and the results of the study indicated that the financial literacy was far from the needed level. The financial literacy level was found to have a significant effect on investment decision making by fund managers, since these decisions are ongoing, requiring members to periodically monitor and evaluate the performance of their chosen fund and investment option, and decide whether to switch to another fund and/or investment option.

In his study Miles (2004) investigated the link between financial literacy and investment decision based on priorities. A cross sectional survey was conducted among customers of twenty five sampled banks. A structured questionnaire was used for data collection and descriptive statistics was used for data analysis. The results of the analysis showed that most customers that had access to financial information invested on profitable investments unlike the customers who were ignorant about financial instruments and investments.

Olima (2013) investigated the effect of financial literacy on saving practices and social security planning of Kenya Revenue Authority employees. The study used primary data collected from semi-structured questionnaires. Quantitative data was analyzed using descriptive statistics while qualitative data was analyzed using content analysis. The study also used multiple regression analysis to establish the relationship between financial literacy and personal financial management. The study findings indicated that generally financial literacy to a great extent affects personal financial management among the respondents.

A study done by Nyamute and Monyoncho (2008) surveyed employees of finance and banking institutions and concluded that the practices of those perceived to be financially literate seem to agree with the current literature. However survey findings also showed that even those perceived not to be financially literate exhibit some strong characteristics of personal financial management implying that probably, formal college education and employment environment may not be the only source of financial education.

Nyamute & Maina (2011) examined the personal financial management practices that encompasses savings practices, expenditure practices, debt management, investment, money management, retirement and unexpected practices of both employees who are financially educated verses those who are not. The survey data were obtained from 192 employees using a structured questionnaire. This study focused on the effect of financial education on personal financial management practices. The results have shown that those who are financially educated do practice to an extent the standard financial behaviors. It further observes that one can still practice financial management behaviors whether or not they are financially literate. This is as a result of other available avenues of acquiring financial knowledge. These results show that there is a significant difference between the personal financial management practices of the finance and the non-finance literate respondents. The financially literate had a better appreciation and application of the financial management practices. It can be concluded that financial literacy influences personal financial management practices.

Tenaiet *al* (2014) investigated the factors influencing the development of capital markets in a developing economy. The target population were all the 53 firms listed at N.S.E. Stratified random sampling based on the segmentation of the trading counters was used for sampling the population of the study. A sample of 30 firms was selected. Data was summarized using the inferential statistical methods. Descriptive research design was adopted and used for the study. The study established that the greatest impediment to the NSE is the level of knowledge of the local investors, and recommended that the CMA in collaboration with other market stakeholders should implement a comprehensive awareness and public education programme that targets both supply and demand of securities. It should implement a specialized proficiency certification programme targeting both the market intermediaries and the general public to enhance financial literacy. A program of education for the investors' particularly educational tours and short courses offered on a continuous basis is very crucial in helping to educate the public about securities.

A study by Mwangi (2012) found that financial literacy remains low in Kenya. The results indicated that households' access to financial services is not based on levels of financial literacy but rather on factors such as income levels, distance from banks, age, marital status, gender, household size and level of education. However, the study established that there is a probability of a financially illiterate person remaining financially excluded. The study recommends the development of a curriculum on financial education and administers it in local, middle level and higher learning institutions.

In Rwanda a study by Sindambiwe (2014) used a sample of 126 respondents who were managing directors and directors of finance. The results indicated that the extent of directors' awareness of stock market functioning is moderate with a mean of 2.40 on average. Regarding the directors' stock market awareness, they have high financial literacy regarding interest rate calculation, exchange rate calculation, business diversification and portfolio management and the location of stock market while they have a little awareness of existence of brokerage services where the mean is only 2.05. In conclusion, the study confirmed that there is a significant relationship between the directors' awareness of the stock market functioning and the level of organizations' participation in the Rwandan stock market. The study recommended that the Capital Markets Advisory Council (CMAC) should prepare a development program or public awareness and financial literacy training targeting large industries to increase the level of their stock market awareness, awareness of existing policies, incentives, laws and regulations and this will attract them to the stock market.

Thomas and Spataro (2015) studied financial literacy, human capital and stock market participation in Europe by conducting a survey of 9 countries categorized into Continental Europe, Scandinavian countries and Southern European countries based on geographical proximity. They found out that higher financial literacy is associated with higher probability to participate in the stock market. Additionally, human capital (schooling years) and effectiveness of education (student-teacher ratio) are positively associated with stock market participation. Moreover, the financial attractiveness of the country also positively influenced the participation of workers in stocks.

Xia, Wang and Li (2014) examined the association between financial literacy overconfidence and stock market participation. Financial literacy overconfidence was measured by the difference between an individual's subjective and objective financial literacy scores. Data was from the 2012 China Center for Financial Research obtained from a nationwide online household consumption and finance survey. The researchers divided China into seven geographical regions and selected cities from each of these regions. In total, 24 cities across China were selected to be included in the survey. At the end, 3,122 valid samples were obtained. The results showed that financial literacy overconfidence is positively correlated with stock market participation. On the other hand, under-confidence is negatively correlated to stock market participation.

Murungi (2011) sought to find the relationship between awareness, trust and stock market efficiency in the Uganda securities market. The population included 63 employees from seven brokers, 20 employees and board members of CMA and 29 employees and board members from Uganda Securities Exchange (USE). The respondents were selected using stratified sampling and simple random sampling. The population of 112 was divided into three categories, Capital Markets Authority, Uganda Securities Exchange and Brokers and consequently a sample of 80 was selected from the population through simple random sampling technique. A self administered questionnaire was used to collect data from the listed companies on the USE and market intermediaries. The findings revealed a strong positive correlation between awareness and trust among the investing public. The study also revealed a strong positive correlation between trust and stock market efficiency. Both awareness and trust had an impact on stock market efficiency but from the simultaneous multiple regression model the findings revealed that trust was a more

important predictor of stock exchange performance. The study recommends the stepping of awareness campaigns and restructuring of the curricular to have stock market studies at A-level and to make incomes on stock trading tax free.

Rooij, Lusardi&Allesie (2007) sought to find the relationship between financial literacy and stock market participation in the Netherlands. The researchers used data from the 2005 De Nederlandsche Bank (DNB) Household Survey (DHS). The DHS is an annual household survey covering information about demographic and economic characteristics and focusing on wealth and saving data. The data set is representative of the Dutch population, and it contains over 2,000 households. Survey participants are interviewed via the internet. The questionnaire which was divided into two parts; basic and advanced financial literacy section was used to collect data from respondents. The study reported evidence of an independent effect of financial literacy on stock market participation: Those who have low financial literacy are significantly less likely to invest in stocks.

Wachira and Kihiu (2012) conducted a study to establish the impact of financial literacy on access to financial services in Kenya using the 2009 National Financial Access (FinAccess) survey data. Using a multinomial logit approach to explain access the four major financial service access strands, the study found that financial literacy remains low in Kenya. Besides, regression results indicated that households' access to financial services is not based on levels of financial literacy but rather on factors such as income levels, distance from banks, age, marital status, gender, household size and level of education. However, the study established that the probability of a financially illiterate person remaining financial excluded is significantly high calling for increased investment in financial literacy programs to reverse the trend. The study recommended the

development of a curriculum on financial education to be administered in local, middle level and higher learning institutions.

Almenberg and Dreber (2012) explored the link between the gender gap in stock market participation and financial literacy. They obtained data from the 2010 consumer survey conducted by the Swedish Financial Supervisory Authority. The participants constituted a random sample of 1,300 adults in Sweden aged 18-79, approximately representative of the Swedish population. The study showed that controlling for basic financial literacy, essentially a measure of numeracy that does not require knowledge about the stock market, may explain a large part of the gender gap in stock market participation. The researchers also found that women reported being less risk taking than men. In conclusion their results suggested that gender differences in financial literacy can explain a significant part of the gender gap in stock market participation.

Clement (2012) sought to investigate factors influencing investment decisions in equity stocks at the NSE among teachers in Kisumu. The study employed a descriptive survey design. A sample of 250 was selected. Data were collected using questionnaires and subsequently analyzed using descriptive statistics and factor analysis techniques. The study revealed that teachers in Kisumu Municipality had low financial literacy. Although many of them rate equity stocks as an investment just like others, a majority of them would prefer investing in other asset classes such as real estate. Only a small percentage (28%) of the study population had invested in the stock market. The results indicated that decisions to invest in equity stocks are influenced by economic and behavioral factors. The key economic factors influencing decisions to invest in equity stocks were found to

be expected dividends, capital appreciation and affordability of shares. Among behavioral factors were herd behavior, depicted by decision to invest based on popular opinion or shares in high demand and friends and co-workers recommendation, and overconfidence depicted in the respondents belief that they are better than others; forming the basis of self attribution bias.

Njoroge (2013) investigated the relationship between financial literacy and entrepreneurial success in Nairobi County. The researcher interviewed a sample of 79 entrepreneurs who are registered and operate in Nairobi County. The samples were randomly picked from a population of 27,485 SMEs where questions in both financial literacy and SMEs success were asked. From the research findings, all the SMEs interviewed were found to have some level of financial literacy and on average most entrepreneurs scored well above average in financial literacy. Highly successful entrepreneurs scored highly in financial literacy and demonstrated high understanding of finance. In contrast, less successful entrepreneurs exhibited stagnant growth, and low level of financial literacy majority of who were found to be in informal sector.

This study concludes that there is a positive relationship between financial literacy and entrepreneurial success in Nairobi County. It further suggests that financial literacy plays a key role in SMEs success both in formal and informal sectors.

Onyango (2014) studied the effects of financial literacy on management of personal finances among employees of commercial banks in Kenya. Purposive sampling was used to select the major banks in Nairobi while simple random sampling technique was used to select 100 respondents from five commercial banks in Nairobi. A self-administered

questionnaire was delivered to the respondents and collected after completion. The student t-test was used to examine the data with the objective of determining whether there is a significant relationship between financial literacy and personal financial management practices. The findings shows that most respondents had financial literacy acquired through training or work experience and that it affects personal financial management among the commercial banks in Kenya. The researcher also sought to establish effects of gender, age, level of education and specialization on personal financial management. In conclusion, the results indicated that financial literacy has a positive influence on personal financial practices.

Aroni (2014) studied the effects of financial information on investment in shares in Kenya. The main objective of this study was to examine the effect of financial information on investment in shares for Kenyan retail investors, applying the behavioral finance theory. Primary data was collected from 311 respondents randomly sampled from the population of 836,250 investors participating at the Nairobi Securities Exchange as at March, 2013. Data analysis was done applying descriptive and linear regression statistical data analysis. The results revealed that financial information variable had significant influence ($p < 0.05$) on decisions to invest in shares. Acquiring financial information therefore has the potential to improve investors' decision making resulting in improved overall portfolio performance. On formulating policy, he recommended that both the stock market regulators and financial advisers should make strategic frameworks to educate investors to improve their financial analysis knowledge, economic, and commercial skills as a means to encourage more participation in the securities markets.

2.5 Summary of Literature Review

From the reviewed studies in this chapter, it can be inferred that financial literacy is highly influenced by age, region or country in which the individual resides, the financial environment which he experiences, the level of income, socio demographic factors like his family, number of dependents, mother's education, financial advice etc. The need to know the level of financial literacy of various groups is inevitable.

It is also evident that most individuals' lack adequate financial information on matters of investing and financial products and services .This negatively affects peoples' ability to properly manage their money and make investment choices. A large proportion of the empirical evidence has shown that there is a direct relationship between financial literacy and stock market participation, while some have attributed stock market participation to other factors such as risk aversion, demographic variable and cognitive ability.

It is therefore, important for Kenyan investors to be financially literate to increase their participation in the stock market. This study finds it necessary to address this issue by evaluating the relationship that exists between financial literacy and stock market participation by retail investors in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the procedures that were used by the researcher to collect and analyze data collected from the field in the study. It includes the research design, target population, sampling method used, data collection instrument and procedure and analysis, interpretation and presentation.

3.2 Research Design

Research design refers to how data collection and analysis are structured in order to meet the research objectives through empirical evidence (Cooper & Schindler, 2006). The study used descriptive survey research design. This method was found appropriate because the research intended to explore the relationship between the different variables forming the study that's the relationship between financial literacy and stock market participation. There are several arguments for choosing descriptive statistics. Gay (1981) defines descriptive research as a process of collecting data in order to test hypotheses or to answer questions concerning the current status of the subjects in the study.

According to Lockesh (1984) descriptive research studies are designed to obtain pertinent and precise information concerning the status of phenomena and whenever possible to draw valid general conclusions from the facts discovered. According to Mugenda and Mugenda (2003) descriptive survey design is considered to be relevant in a survey because it involves collecting data which can then be used to answer the research question in the current state of the object of the study.

3.3 Population

According to Mugenda and Mugenda (2003) population is the entire group of individuals, events or objects having common observable characteristic while the target population refers to the population to which the researcher wants to generalize the results to absolute population of a study. There are 836,250 retail investors participating in NSE as at 31st March 2013 (CMA, 2013).

For the purpose of determination of the relationship between financial literacy and stock market participation in Kenya, it was not practical to study the entire population of the individual investors owing to a number of constraints which include; time shortage, huge costs involved, human effort required to collect information among others. As a result the researcher selected a sample of 50 retail investors to represent all the retail investors' in the country. The sample was obtained by presenting 10 questionnaires each to 5 identified stock brokerage firms. This sample was considered appropriate as the variability of retail investors is usually deemed to be low. Aduda *et al* (2012) in their study on the behaviour and financial performance of individual investors in the trading of shares listed at the N.S.E, selected a sample of 50 individual investors to represent all the individual investors' in the country.

3.4 Sample Design

A sample is a statistical process of selecting and studying the characteristics of a relatively small number of items from a relatively large population of such items to draw statistically valid inferences about the characteristics about the entire population. Aroni (2014) studied the effects of financial information on investment in shares by retail investors in Kenya and adopted purposeful random sampling. This study adopted

purposeful random sampling to collect data from the respondents. Purposeful in the sense that five major stock brokerage firms with offices located at the Nairobi Central Business District (CBD) had 10 questionnaires each dropped in their offices for completion by retail customers transacting through their offices. This was expected to result in a sample of 50 respondents. As proposed by Roscoe (1975), a sample size of 30 to 500 is appropriate for most researches.

As suggested by Aduda J. *et al* (2012) the study adopted a probability sampling technique whereby systematic sampling technique will be used to randomly select 10 respondents from each of the 5 selected brokerage firms. A respondent will be selected after every three customers had been served in a brokerage firm in a given day.

The respondents sampled from investors within the city of Nairobi were presumed to be representative of retail investors participating in the NSE. This is because Nairobi is the commercial centre of Kenya, and the NSE is situated in Nairobi, as are the reputable stock brokerage firms. The city being a metropolis has a mix of all the ethnic groups in Kenya, hence a good representation of the population.

3.5 Data Collection

The study used primary data since it provides relevant and current data in the subject of study. The data was collected by using questionnaires. The questionnaires were administered on a 'drop and pick later' technique.

The data for analysis was obtained by means of a research questionnaire distributed through five brokerage firms which are authorized to trade in the NSE. The questionnaires were randomly administered on customers that visited their offices over a

period of two weeks to attain the required sample size. The questionnaires consisted of two parts: Part one addressing profile of the respondents, and Part two focusing on both basic and advanced financial literacy questions.

3.6 Data Analysis

The completed questionnaires were edited for completeness and consistency. Data collected was edited to ensure that it was correct and complete thus reducing biases, increasing the precision and achieving consistency. Data was then analyzed using regression analysis and descriptive statistics. The results of analysis were then visually displayed using graphs, frequency tables and charts.

Stock market participation was measured by the volume of traded equity stocks an investor has trade over the last year, while financial literacy was measured as a score of both basic and financial literacy questions. A multiple regression model was applied to analyze the relationship between the various variables. The model treated stock market participation as the dependent variable while the independent variables were financial literacy, age, gender and income of respondents.

The variables under study were analyzed applying the following modified econometric model adopted from Chong & Lal, (2011) given as;

$$Y = \beta_0 + \beta_1 + \beta_2 + \beta_3 + \beta_4 + \epsilon$$

Where: Y = Stock market participation.

β_0 = constant term

β_1 = Financial Literacy Score

β_2 = Age of respondent

β_3 = Gender of respondent

β_4 = Income of respondent

ϵ = disturbance term with an expected value of zero.

The model helps better understand how the independent variables are related to the dependent variable and explored the form of their relationship.

3.7 Data Validity and Reliability

Reliability is a way of determining the study's authenticity, where a high level of reliability implies that it is replicable. To ensure validity of the instruments, content validity was established (Cozby, 1977) from the pretest and re-test method that were done before the actual research. The research instrument was pre-tested on 10 retail investors to establish its validity and reliability. The research instrument also sought opinions of experts in the field of study. This facilitated the necessary revision and modification of the research instrument thereby enhancing validity.

The research project supervisor and the research experts in the School of Business administration and social sciences were used to evaluate the applicability and appropriateness of the content, clarity and adequacy of the research instrument from a research perspective. Borg and Gall (1985) points out that validity of an instrument is improved through expert judgment.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents analysis and findings of the study as set out in the research methodology. The results are presented on the relationship between financial literacy and stock market participation by retail investors in Kenya. The target population was 836,250 retail investors. Sample size was 50 respondents from the stock brokerage firms located in Nairobi which are authorized to transact at the NSE. Out of 50 questionnaires issued, 46 were filled and returned making a response rate of 92%. According to Mugenda and Mugenda (1999), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent, so from Mugenda (1999), the response was excellent.

4.2 Data Presentation

4.2.1 Age of the Respondent

The findings show that, 31 male respondents represented 67.4% of the sampled retail investors, while 15 were female representing 32.6%. (Figure 4.1) This shows that the number of male respondents is twice as large as that of female respondents.

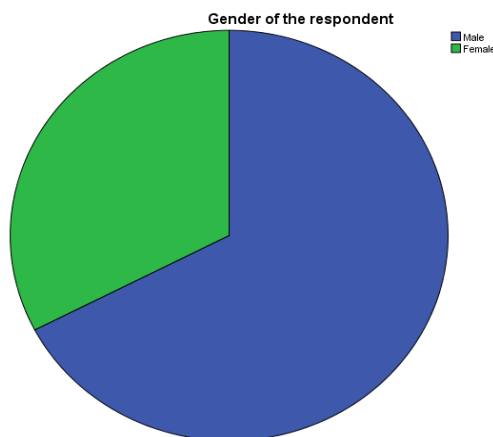


Figure 4.1 Gender of the Respondents

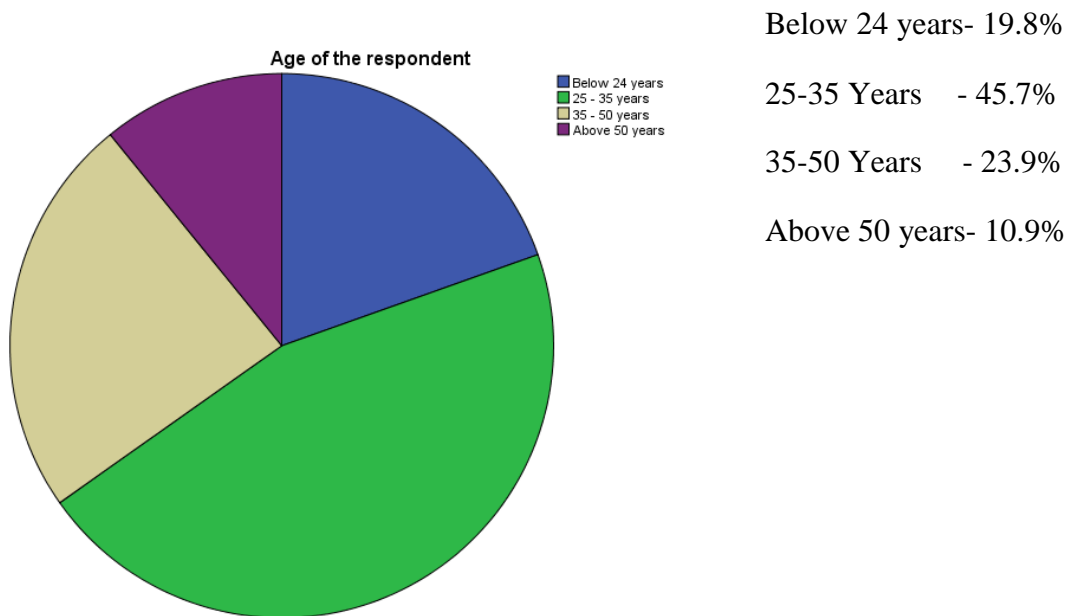
Male 67.4%

Female 32.6%

4.2.2 Age of the Respondents

The findings showed that 45.7% of the respondents were aged between 25-35 years, while those between 35-50 years were 23.9% of the respondents. 19.8% and 10.9% of the respondents were aged below 24 years and above 50 years respectively. (Figure 4.2) This shows that most of the retail investors' respondents were in their prime ages between 25-35 years old which falls in the category of the youth.

Figure 4.2 Ages of the Respondents

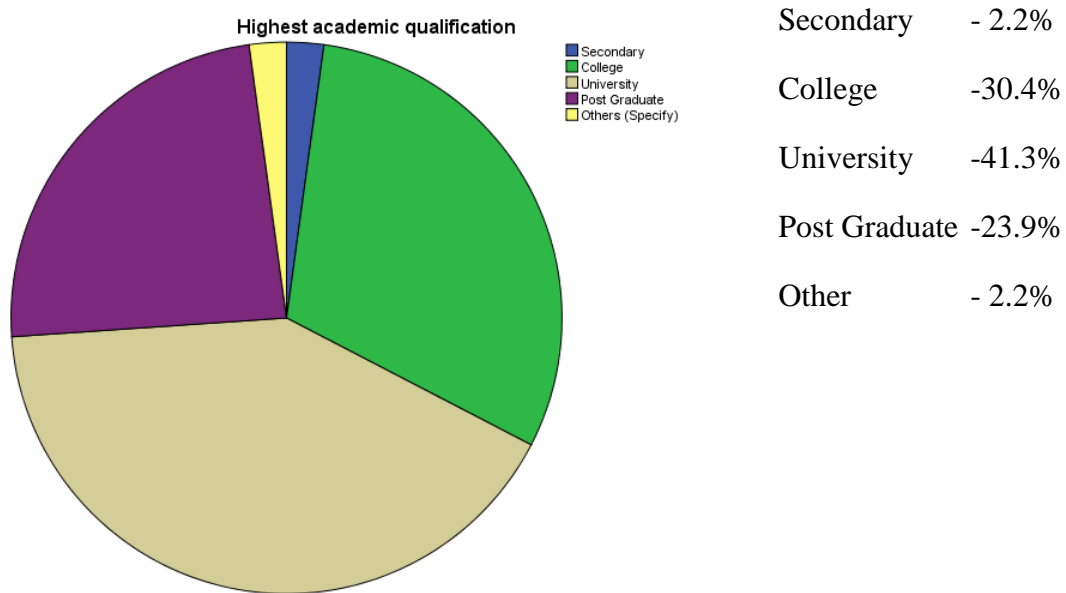


4.2.3 Highest Academic Qualification of the Respondent

From the results, majority (41.3%) of the respondents had university education, 30.4% had college level of education, 23.9% had post graduate level of education, 2.2% of the respondents had secondary level of education and 2.2% had other academic qualification. (Figure 4.3) This implies that most of the respondents were literate and this forms a good

foundation for financial literacy. As will be demonstrated later in this chapter this explains the level of high financial literacy.

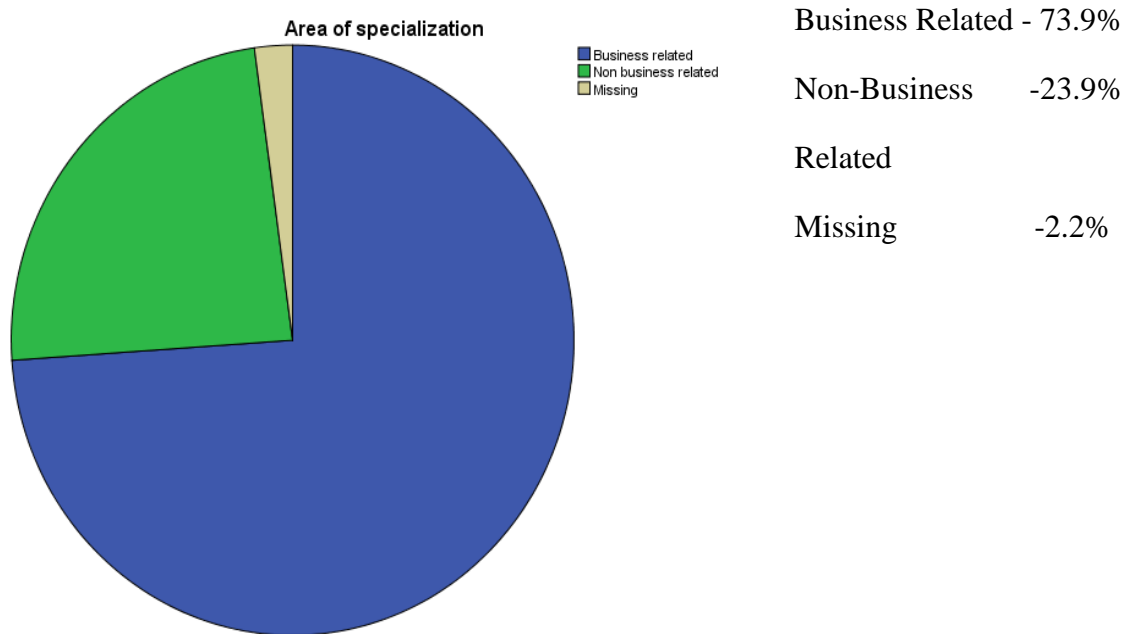
Figure 4.3 Highest Academic qualification of the Respondents



4.2.4 Area of Specialization of the Respondent

Most of the respondents (73.9%) had taken business related courses while 23.9% had courses from non-business related disciplines. (Figure 4.4) This implies that majority of the respondents have training on finance concepts hence better financial literacy.

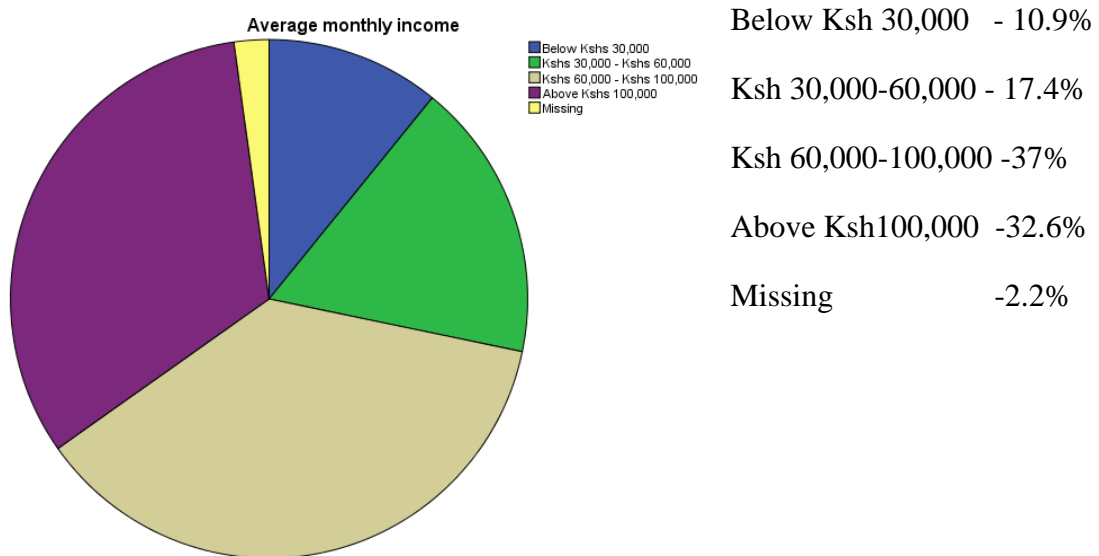
Figure 4.4 Area of Specialization



4.2.5 Respondents Average Monthly Income

According to the findings, 37% of respondents have an average monthly income of Kshs.60,000- Ksh 100,00, 32.6% earn above Kshs100,000 per month, 17.4% between Kshs 30,000 – 60,000 and 10.9 % earn below Kshs. 30,000. (Figure 4.5) This showed that 69.6% of the respondents earn between Kshs.60, 000 and above Ksh 100,000.

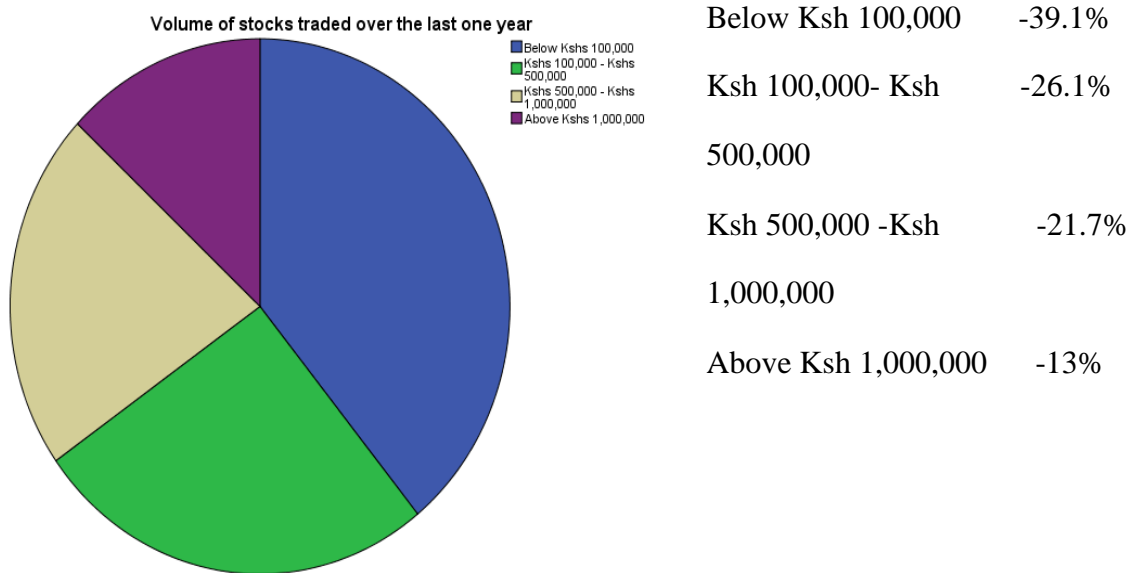
Figure 4.5 Average Monthly Income



4.2.6 Volume of Stocks Traded Over the Last One Year

The volume of stock traded by the respondent retail investors over the last one year, as shown in the figure 4.6 was used as the variable measure of stock market participation among retail investors. Most of the respondents (39.1%) had traded stock volume below Ksh 100,000, 26.1% of them had traded stock worth between Ksh 100,000- Ksh 500,000, 21.7% traded stocks worth between Ksh 500,000- Ksh 1,000,000, and 13% traded stock worth above Ksh 1,000,000. (Figure 4.6)

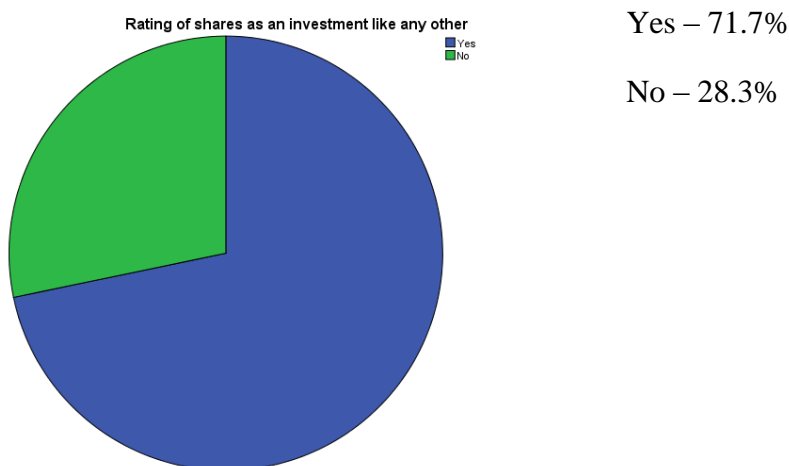
Figure 4.6 Volume of Stocks Traded



4.2.7 Rating of Shares as an Investment like Any Other

Respondents were asked whether they rate equity securities (shares) as an investment just like any other investment venture; 71.7% of the respondents were positive that equity securities are an investment just like others, while 28.3% could not rate equity shares as an investment. (Figure 4.7) The fact that some people do not rate equity shares as an investment shows that they do not fully understand what shares are or they would prefer investing in other types of investment vehicles.

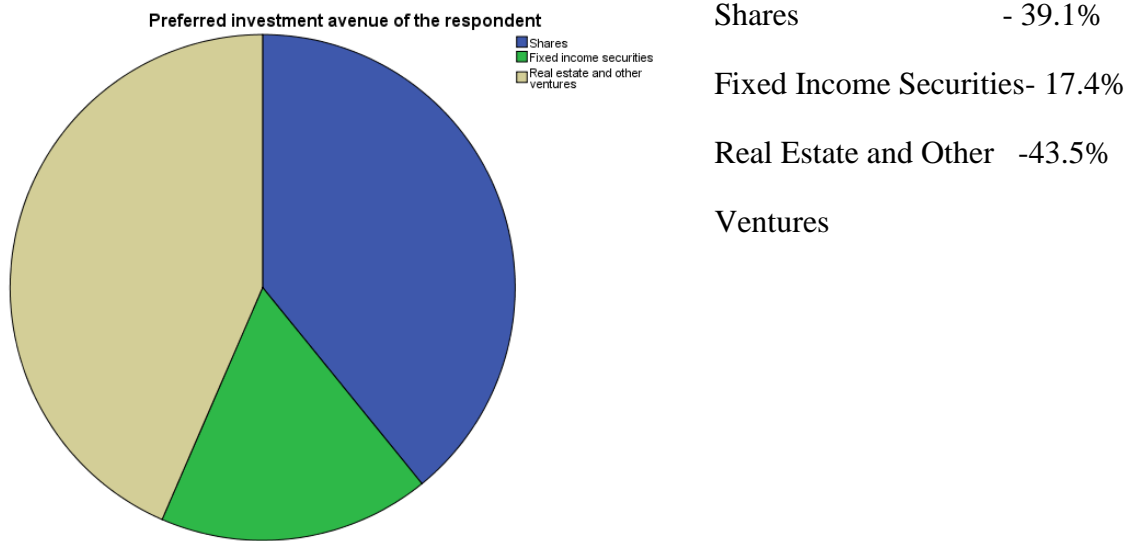
Figure 4.7 Rating of share as an investment like any other



4.2.8 Respondents Preferred Investment Avenue

The study sought to find out the respondents preferred investment avenue. 39.1% of the respondents prefer shares, 17.4% fixed income securities while 43.5% preferred real estate and other ventures. (Figure 4.8) This is an indication that 60.8% of the respondents would not invest their money in shares but elsewhere.

Figure 4.8 Preferred Investment Avenue



4.2.9 Factors Considered Important When Buying Shares

According to the findings, respondents considered economic factors which include dividends preciously paid, expected dividends, capital appreciation, current economic indicators and attractiveness on non –stock investments as important. Dividends preciously paid were considered important by 93% of the respondents, expected dividends 84.4%, capital appreciation 100%, current economic indicators 63.4% and expected return of non-stock investments 44.4% of the respondents. (Table 4.1).

This shows that respondents want to make rational decision by looking for returns from dividends and increased wealth from capital appreciation but at the same time speculative factors such as stock marketability, affordability of shares, recent price movements, and fluctuations in market indices were also considered important when deciding which shares to buy. Stock marketability was considered important by 81.8%, affordability of shares 86.4%, recent price movements 95.2%, while fluctuation in market indices is considered important by 51.2% of the respondents. The implication of this is that respondents want to gamble incase an opportunity could arise for them to make a return that is above average.

Capital appreciation had the highest level of consideration 100% among the respondents as a factor that retail investors considered important when deciding to buy shares, while expected return on non-stock investment had the lowest consideration at 44.4%.

Table 4.1 Factors Importance When Buying Shares

Respondents were asked to say whether the factors listed will be considered important when deciding to buy shares.

Factor	Yes	No
Dividends previously paid	93.3%	6.7%
Stock marketability	81.8%	18.2%
Expected dividends	84.4%	15.6%
Capital appreciation	100%	-
Affordability of shares	86.4%	13.6%
Recent price movements in shares	95.2%	4.8%
Current economic indicators	63.4%	36.6%
Expected return on non-stock investment	44.4%	55.6%
Fluctuations in market indices	51.2%	48.8%

4.2.10 Measures of Financial Literacy

As previously mentioned, the study designed two modules to measure and evaluate financial literacy. The financial literacy questions are composed of two parts. The first set of questions aimed to assess basic financial literacy. These questions cover topics ranging from the working of interest rates and interest compounding to the effect of inflation, discounting and money illusion. The second set of questions aimed to measure more advanced financial knowledge and covers topics such as the difference between stocks and bonds, the function of the stock market, and the working of risk diversification.

4.2.11 Basic Financial Literacy

The questions in this section measured the ability to perform simple calculations (in the first question), the understanding of how compound interest works (second question), and the effect of inflation (third question). The researcher also designed questions to assess the knowledge of time value of money (fourth question) and whether respondents suffer from money illusion (fifth question). These concepts form the basis of basic financial transactions, financial planning, and day-to-day financial decision-making.

Most respondents answer the first question testing numeracy correctly, where the percentage of incorrect responses is only 6.7%. Time value of money and money illusion testing questions had a correct response rate of 93.2% and 84.1% respectively. However, the proportion of correct answers decreases considerably, to 75.6% and 72.7%, when the study considers questions on interest compounding and inflation respectively. (Table 4.2)

Table 4.2 Basic Financial Literacy

Response	Numeracy	Interest Compounding	Inflation	Time value of money	Money Illusion
Correct	93.3%	75.6%	72.7%	93.2%	84.1%
Incorrect	6.7%	22.2%	13.6%	2.3%	13.6%
Do not know		2.2%	13.6%	4.5%	2.3%

4.2.12 Advanced Financial Literacy

This section includes question that are much more complex than the previous set. The purpose of these questions is to measure more advanced financial knowledge related to investment and stock market knowledge. Specifically, these questions were devised to assess knowledge of financial assets, such as stocks, bonds and mutual funds, the returns and riskiness of different assets, as well as the working of the stock market. Moreover, the study attempts to measure whether respondents understand the concept of risk diversification and the working of mutual funds.

The pattern of answers is much different than in the previous set of questions. Most of the respondents in this section scored highly on most of the questions. The first question on the function of the stock market had 95.5% of the respondents giving a correct answer, the second question also the nature of share holders in a firm had 93.2% correct responses, and the third question on the nature of bond holders in a firm had 86.4% correct responses. Most of the respondents could not state the asset which gives the highest return in the long run with 38.6% correct answers, 13.7% had incorrect responses and 47.7% of the respondents do not know the answer. (Table 4.3)

On which asset displays the highest fluctuation over time 86.7% of the respondents got a correct answer, on risk diversification by spreading money among different assets 97.8% of the respondent gave the correct answer, and on whether stocks are riskier than bonds

88.9% of the respondents gave the correct answer. On whether a company stock provides a safer return than a mutual fund 57.8% of the respondents answered correctly, while 42.2% did not know the answer. (Table 4.3)

From the results the respondent retail investors do not know have adequate knowledge on mutual funds which is shown by 42.2% who admit not to know if mutual funds are safer than stock mutual funds. A similar trend is also observed in the question asking the respondents which asset gives the highest return in the long term with 47.7% of the respondents indicating not to know the correct answer. On risk diversification and the function of the stock market the respondents scored highly with 97.8% and 95.5% respectively. (Table 4.3)

Table 4.3 Advanced Financial Literacy

	Correct	Incorrect	Do not Know
Which statement describes the main function of the stock market	95.5%	2.2%	2.3%
What happens is somebody buys the stock of firm B in the stock market	93.2%	6.8%	-
What happens if somebody buys a bond of firm B	86.4%	13.6%	-
Considering a long period (10 or 20 years) which asset normally gives the highest return	38.6%	13.7%	47.7%
Which asset displays the highest fluctuation over time	86.7%	8.9%	4.4%
When an investor spreads his money among different asset, does the risk of losing money increase, decrease, stay the same or don't know	97.8%	2.2%	-
Stocks are normally riskier than bonds	88.9%	8.9%	2.2%
Buying a company stock usually provides a safer return than a stock mutual fund	57.8%	-	42.2%

4.2.13 Regression Analysis

In this study, a multiple regression analysis was conducted to test the influence among predictor variables. The research used statistical package for social sciences (SPSS V 21.0) to code, enter and compute the measurements of the multiple regressions. The model summary is presented in the table below.

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.819 ^a	.671	.653	.37290

a. Dependent Variable: stock market participation

b. Predictors: (Constant), financial literacy score, gender of the investor, age of the investor and average monthly income

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the above table the value of adjusted R squared was 0.653 an indication that there was variation of 65.3 percent on Stock market participation due to changes in financial literacy score, gender of the investor, age of the investor and average monthly income. This shows that 65.3 percent changes in stock market participation could be accounted to financial literacy score, gender of the investor, age of the investor and average monthly income. R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table above is notable that there exists strong positive relationship between the study variables as shown by 0.819

4.2.14 ANOVA

The study further tested the significance of the model by use of ANOVA technique. The findings are tabulated in table below.

Table 4.5: Summary of One-Way ANOVA results

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	3.772	4	.943	6.784	.000 ^b
1	Residual	5.699	41	.139		
	Total	9.471	45			

a. Dependent Variable: stock market participation

b. Predictors: (Constant), financial literacy score, gender of the investor, age of the investor and average monthly income

From the ANOVA statistics, the study established the regression model had a significance level of 0.000% which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value ($6.784 > 2.53$) an indication that Financial literacy score, gender of the investor, age of the investor and average monthly income all have a significant effect on stock market participation. The significance value was less than 0.05 indicating that the model was significant.

4.2.15: Coefficients of Determination

In addition, the study used the coefficient table to arrive at the study model. The findings are presented in the table below.

Table 4.6: Coefficients

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	.176	.327		.538	.001
Financial Literacy Score	.456	.134	.423	3.403	.000
1 Gender of the investor	.231	.061	.213	3.787	.003
Age of the investor	.412	.097	.446	4.247	.020
Average monthly income	.469	.114	.0434	4.114	.001

As per the SPSS generated output as presented in table above, the equation

($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$) becomes:

$$Y = 0.176 + 0.456X_1 + 0.231X_2 + 0.412X_3 + 0.469X_4$$

From the above regression equation it was revealed that holding financial literacy, gender of the investor, age of the investor and average monthly income to a constant zero, the level of stock market participation among retail investors in Kenya would be at 0.176

The coefficient 0.456 X_1 denotes that if all other independent variables are rated as zero, a change of magnitude 0.456 in X_1 (financial Literacy) lead to a unit change in Y (stock market participation). Similarly a change of magnitude 0.231 in gender of the investor, 0.412 in age of the investor and 0.469 in average monthly income leads to a unit change in stock market participation.

The magnitudes of the coefficients of regression also show the strength of the influence and the nature of relationship between the variables. Therefore, there exists direct

positive relationship between stock market participation among retail investors and financial literacy (coefficient 0.456), gender of the investor (coefficient 0.231), age of the investor (coefficient 0.412), and average monthly income (coefficient 0.469).

The findings show that financial literacy had the highest influence on stock market participation among retail investors (p value = 0.000) followed by average monthly income (p value 0.001) then gender of the investor (p value = 0.003) and finally age of the investor (p value 0.020). It was an implication that financial literacy score, gender of the investor, age of the investor and average monthly income all had positive influence on stock market participation among retail investors and vice versa.

The findings conform with Rooij & Lusardi (2007) that lack of understanding of economic and financial information is significant deterrent to stock ownership and that lack of literacy prevents households from participating in the stock market. Rooij *et al* (2007) further noted that Stock market participation increases strongly with both income and wealth levels of individuals. The findings concur with Haliassos and Bertaut (1995), that stock market participation increases with age/cohorts; stock ownership is concentrated among those 40 and older.

The analysis was undertaken at 5% significance level. The criteria for comparing whether the predictor variables were significant in the model was through comparing the obtained probability value and $\alpha=0.05$. If the probability value was less than α , then the predictor variable was significant otherwise it wasn't. All the predictor variables were significant in the model as their probability values were less than $\alpha=0.05$.

4.3 Summary and Interpretation of Findings

On gender the findings of the study showed that there are wide gender disparities hence deducing that there may be need to address these disparities in stock market participation. This is important since the risk averseness of male respondents differs from that of their female counterparts. Almenberg and Dreber (2012) obtained similar results which suggested that gender differences in financial literacy can explain a significant part of the gender gap in stock market participation.

Most respondents were aged between 25-35 years hence less worried about retirement as they are still far away from the statutory retirement age of 60 years. The impact of this is that since they are more willing to take risks by investing in stocks. The number of older retail investors reduces as they require investments that generate regular income. In the regression equation obtained age has a positive effect on stock market participation with a coefficient of 0.231.

The findings of the study show that most of the respondents (95.6%) had post secondary, tertiary level education which is considered reasonable to make prudent financial decisions. On the area of specialization in academic qualification of the respondent a majority of them (73.9%) had business related qualifications. This means that they had knowledge of basic financial principles required in decision making.

Stock market participation (the dependent variable) in this study was measured by the volume of stocks traded over the last one year by the retail investors. Retail investors by their definition do not trade large volumes of stocks as is reported in this study where a majority of respondents (86.9%) traded shares worth below Ksh. 1,000,000, while only

13.1% traded shares worth more than Ksh. 1,000,000. On average monthly income of the respondents most of them (69.6%) had an income of Ksh. 60,000 and above ksh. 100,000. Income was one of the independent variables in the regression model used to obtain the multiple regression model.

The research questionnaire sought to determine if retail investors rated shares as investment like any other. The results showed that a majority of retail investors (71.7%) rated shares as investment like any other. A follow up question to show respondents preferred investment avenue, and this showed that 60.8% of respondents would not invest their money in shares but elsewhere in other investment ventures such as, fixed income securities, real estate and other ventures.

Respondents were asked about factors they considered important when buying shares. According to the findings, respondents considered economic factors which include dividends precisely paid, expected dividends, capital appreciation, current economic indicators and attractiveness on non –stock investments as important. This shows that respondents want to make rational decision by looking for returns from dividends and increased wealth from capital appreciation but at the same time speculative factors such as stock marketability, affordability of shares, recent price movements, and fluctuations in market indices were also considered important when deciding which shares to buy. These factors had varying percentage of preference but were on average rated highly by respondents.

This research adopted two measures of financial literacy, that is, basic and advanced financial literacy. The questions cover a range of financial principles such as numeracy skills, inflation, time value of money, money illusion, knowledge on stocks, mutual funds, and risk diversification concept. On average respondent scored highly on financial literacy, which is explained by the high academic qualification and that most of the respondent had business related courses which equip them with the finance knowledge and concepts required in decision making.

The regression model summary shows a goodness of fit as indicated by the coefficient of determination (R Squared) with a value of 0.653. This implies that the independent variables financial literacy, age, income and gender of the respondents explain 65.3% of the variations of stock market participation. The study therefore identifies financial literacy, age, income and as critical factors for stock market participation and various financial market stake holders should adopt strategies to enhance these four areas.

From the regression equation it was revealed that holding financial literacy, gender of the investor, age of the investor and average monthly income to a constant zero, the level of stock market participation among retail investors in Kenya would be at 0.176

The magnitudes of the coefficients of regression also show the strength of the influence and the nature of relationship between the variables. Therefore, there exists direct positive relationships between stock market participation among retail investors and financial literacy score (coefficient 0.456), gender of the investor (coefficient 0.231), age of the investor (coefficient 0.412).and average monthly income (coefficient 0.469).

The findings show that financial literacy had the highest influence on stock market participation among retail investors followed by average monthly income then gender of the investor and finally age of the investor. It was an implication that financial literacy, gender of the investor, age of the investor and average monthly income all had positive influence on stock market participation among retail investors and vice versa.

The findings conform with Rooij & Lusardi (2007) that lack of understanding of economic and financial information is significant deterrent to stock ownership and that lack of literacy prevents households from participating in the stock market, Rooij *et al* (2007) further noted that stock market participation increases strongly with both income and wealth levels of individuals, The findings concur with Haliassos and Bertaut (1995), that stock market participation increases with age/cohorts; stock ownership is concentrated among those 40 and older.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is divided into the following sections; summary of the study, conclusions, recommendations to policy and practice, limitations of the study and suggestions for further study.

5.2 Summary

The main objective of the study was to establish the relationship between financial literacy and stock market participation by retail investors in Kenya.

Descriptive research design was adopted for this study. The population of the study was the retail investors at the N.S.E. To obtain a representative sample of retail investors, the study used purposive random sampling. The study used primary data collected from questionnaires. Data was analyzed using descriptive statistics by coding it into Statistical Packages for Social Scientists (SPSS Version 21.0). Multiple regression analysis was done to establish the relationship between financial literacy and stock market participation.

From the study findings, the number of male respondents was larger than their female counterparts and many of them aged between 25-35 years. On the level of education most of the respondents had a post secondary level of education, with a large proportion of them being trained in a business related discipline.

The findings showed that on the aspects of financial literacy, the respondents were ‘to a great extent’ literate and displayed knowledge of both basic and advanced finance

principles. On the relationship between financial literacy and stock market participation it was established that the relationship was positive. Other factors considered as determinants of stock market participation, such as, age, income and gender of respondents also displayed a positive impact on stock market participation.

5.3 Conclusion

The main objective of the study was to determine the relationship between financial literacy and stock market participation. According to the findings of the study, it can be concluded that there is a strong positive relationship between financial literacy and stock market participation. It is also clear that the respondents were to a great extent financially literate.

The study also sought to establish effects of other variables such as age, income, and gender on the level of stock market participation of the respondents. The finding showed that financial literacy had the highest influence on stock market participation, followed by the average monthly income, then the gender of retail investors and finally age of the investor.

Financial literacy which is the main independent variable in this study was high which could be explained by the fact that majority of the respondents had a tertiary level of education. This can further be attributed to the fact that a majority of the respondents had business related training, which equips them with basic financial principles, which explains the high financial literacy rates.

From the findings it also emerges that most of the respondent retail investors (65.5%) are below 35 years, which means that a significant majority of respondents are in their youth. With an increasing number of youth participating in the stock market, is an indication of increased economic productivity among them. This can also be attributed to the fact that they possess a better understanding of how the stock market works. The findings of this study agree with other studies on stock market participation and financial literacy.

5.4 Recommendations to Policy and Practice

This study was conducted among retail investors who are already investing in the stock market. From the findings their level of financial literacy was high; deducting from this it is expected that financial literacy would be lower among those individuals who are not exposed to financial markets. The researcher recommends that the Capital Markets Authority, which is tasked with supervision, licensing and monitoring the activities of market intermediaries, should implement a comprehensive awareness and public education programme that targets the wider non-stock market participating public. This will increase participation which is an indicator of well functioning financial markets in any country.

This study adds to the growing literature on financial literacy and stock market participation. Future studies on the topics can focus on other classes of population besides retail investors to ensure comparability of results. The findings of this research project will help tertiary education institutions in understanding the significance of financial literacy and assist academicians in evaluating the relevance of curriculum taught in business schools to the actual business world.

Financial institutions such as stock brokerage firms, asset managers and investment banks will understand financial literacy effect on stock market participation. As intermediaries between the NSE and retail investors they will formulate targeted financial literacy programmes, especially on stock market and its dynamics to enable understanding of investing in various financial assets. They will also use the findings of this study to attract more female retail investors as their number is lesser than that of male retail investors. Additionally they will also realize that there are certain age groups that are not well represented among the investors and will formulate policies to attract them.

From the findings of the study most retail investors do not consider investing in shares as an investment like any other, and that given a choice most of the would rather invest in other financial assets. The N.S.E should take this further and seek to find the explanation for this phenomenon which has the capability to increase participation in the stock market.

5.5 Limitations of the Study

The study was met with various challenges when conducting the research where some of the respondents were unwilling to give personal information they considered private. Naturally people feel that revealing information that shows inadequacies in understanding of finance concepts can be embarrassing. Some respondents may have felt uncomfortable giving information on their age, level of education, and monthly income which means that some respondents may have been dishonest in their answers.

The research targeted the retail investors transacting through the major stock brokerage firms in Nairobi, thereby providing a limit in terms of the limited number of retail investors that could participate in the study. The decision to focus on Nairobi was due to the fact that it is a metropolitan city providing a representative sample of the country.

Since more respondents from across the country would have been essential to increase the representation of the retail investors in this study and to allow for better reliability and consistency of the information given, a lot of time and finances were needed to collect information from the respondents. Time and financial limitations made it impractical to include more respondents in the study.

5.6 Suggestion for Further Studies

This study focused on the relationship between financial literacy and stock market participation by retail investors in Kenya. It is therefore recommended that similar researches should be replicated in various organizations and different groups, and the results compared so as to establish whether there is consistency on the relationship between financial literacy and stock market participation among respondents in the various organizations and groups.

Since this study covers only retail investors in Nairobi, there is need for further study that will cover other urban areas in the country and indeed the entire country. It's also recommended to conduct the same study in other countries to enable comparability across regions.

This study covers both basic and advanced financial literacy, which covers a limited number of finance concepts such as money illusion, time value of money, inflation and

function of stock market participation among others. The researcher suggests that the question measuring financial literacy should be formulated on other finance concepts and to further study relationship between financial literacy and stock market participation.

It is also recommended that similar studies to this one on retail investors be carried out over a period of time. This is important in order to capture their financial literacy levels and stock market participation over a period of time to enhance comparability and observe trends over time.

REFERENCES

- Aduda, J., Oduor, O., & Onwonga, M., (2012). The Behaviour and Financial Performance of Individual Investors in the Trading of Shares Listed at the Nairobi Securities Exchange. *Journal of Finance and Investment Analysis*, 3: 33-60
- Agnew, R. & Szykman, R. (2005). Asset allocation and information overload: The Influence of information display, asset choice, and investor experience. *Journal of Behavioral Finance*, 6, 57-70
- Almenberg J. & Dreber A. (2012), Gender, Stock Market Participation and Financial Literacy, SSE/EFI Working Paper Series in Economics and Finance No 737
- Almenberg, J. and Säve-Söderbergh, J., (2011), "Financial literacy and retirement planning in Sweden", *Journal of Pension Economics and Finance*, 10(04), pp. 585-598.
- Amisi, S. (2012). The effect of financial literacy on investment decision making by pension fund managers in Kenya, *Unpublished MBA Project*, University of Nairobi
- Ando, A., and Modigliani, F. (1963). "The Life-Cycle Hypothesis of Saving: Aggregate Implications and Tests." *American Economic Review* 53 (1963): 55-84.
- Aroni J, (2014). The Effect of Financial Information on Investment In Shares - A Survey Of Retail Investors In Kenya. *International Journal of Business and Commerce* 3: 58-69
- Arrondel, L., Calvo-Pardo, H., Derya T., (2012). Subjective return expectations, information and stock market participation: Evidence from France Discussion Paper on Economics and Econometrics, University of Southampton.
- Behrman, J. R., Mitchell, O. S., Soo, C. K., & Bravo, D. (2012). How financial literacy affects household wealth accumulation. *The American Economic Review*, 102(3), 300-304.
- Bernheim, D., Garrett, D. & Maki, D. (2001), Education and Saving: The Long-term Effects of High School Financial Curriculum Mandates, *Journal of Public Economics*, 85: 435-565.

- Campbell, J., (2006). Household Finance, *Journal of Finance*, 61, pp.1553-1604
- Capital Markets Authority (2013). *The CMA Quarterly Statistical Bulletin*. Nairobi: Capital Markets Authority.
- Central Depository Clearing System (2004). *Legal and Regulatory Framework*. Retrieved August 1st, 2011, from Central Depository Clearing System: <http://www.cdskenya.com/legal-framework/legal-and-regulatory-framework/>
- Chong, T. P., & Lal, M. M. (2011). *An Empirical Evidence of Factors in Equity Selection Process In Malaysia*. *African Journal of Business Management* , 5 (15), 6221-6232 .
- Clement N. O (2012). Factors influencing investment decision in equity stocks at The Nairobi securities exchange among teachers in Kisumu Municipality, Kenya *Unpublished MBA Project*, University of Nairobi
- Cocco, J.F., Gomes, F.J., Maenhout, P.J., (2005). Consumption and portfolio choice over the life cycle. *Review of Financial Studies* 18(2), 491-533.
- Cole, S., Shastry, G., (2008). If you are so smart, why aren't you rich? The effects of education, financial literacy and cognitive ability on financial market participation. *Working Paper# 09-071*. Harvard Business School, Wellesley College (unpublished).
- Cooper, C.R., & Schindler, P.S. (2006). *Business research methods (10 ed.)*. Boston: McGraw-Hill. Pauline's Publications
- Fama, E., & French K., (1992). The cross-section of expected stock returns. *The Journal of Finance*, 47,2:427-465, June
- Fama, E., (1965). The Behavior of Stock Market Prices .*The Journal of Business*, 38, 1:34-105 January
- Gallery, N., Newton, C., & Palm, C. (2011). Framework for Assessing Financial Literacy & Superannuation Investment Choice Decisions, *Australasian Accounting Business and Finance Journal*, 5(2), 3-22.
- Githui J & Ngare P (2014) Financial Literacy and Retirement Planning in the Informal Sector in
- Guiso, L., & Jappelli, T. (2004). Awareness and stock market participation. Centre for Studies in Economics and Finance (CSEF) Working Paper No. 110. <http://www.csef.it/WP/wp110.pdf>.

- Guiso, L., Haliassos, M., Jappelli, T., (2003). Household stockholding in Europe: where do we stand and where do we go? *Economic Policy* 18(36): 123-170.
- Guiso, L., Jappelli, T., (2005). Awareness and stock market participation. *Review of Finance* 9(4), 537-567.
- Guiso, L.; M, Haliassos; and T Jappelli. "Equity Culture: Theory and Cross-Country Evidence. " *Economic Policy*, (2003).123-170.
- Haliassos, M., Bertaut, C., (1995). Why do so few hold stocks? *Economic Journal* 105(432), 1110–1129.
- Haugen, R. and J. Lakonishok, (1988). *The incredible January effect*. Irwin. Homewood Dow Jones
- Hong, H., J. D. Kubik, and J. C. Stein (2004). Social interaction and stock market participation. *The Journal of Finance* 59 (1), 137–163.
- Joo, S.H. and Garman, E.T. (1998). The Potential Effects of Workplace Financial Education Based on the Relationship between Personal Financial Wellness and Worker Job Productivity. *Personal Finances and Worker Productivity*.2,1.
- Kibuthu, G. W. (2005). *Capital Markets in Emerging Economies - A case study of the Nairobi Stock Exchange*. Massachusetts: Tufts University.
- Kothari, R. (2004). *Research Methodology: Methods and techniques*. New Delhi: Age publishers.
- Laakso E. (2010), Stock market participation and household characteristics in Europe, *Unpublished Master of Finance Thesis*, Aalto School of Economics
- Lo, A. & C. Mackinlay, (1999). *A non-random walk down Wallstreet*. Princeton. Princeton University Press
- Lusardi A. & Oliver, M. (2006). Financial Literacy and Planning; Implications for Retirement wellbeing, *Pension Research Council Working Paper 1*, The Wharton School
- Lusardi, A. & Mitchell, O. (2005). Financial Literacy and Planning: Implications for Retirement Wellbeing. *DNB Working Paper*, No 78, Amsterdam
- Lusardi, A., & Mitchell, O. S. (2007). Baby boomer retirement security: The role of Planning, financial literacy, and housing wealth. *Journal of Monetary Economics*, 54(1), 205–224.

- Lusardi, A., & Mitchell, O. S. (2007). Baby boomer retirement security: The role of planning, financial literacy, and housing wealth. *Journal of Monetary Economics*, 54(1), 205–224.
- Lusardi, A., Bassa Scheresberg, C., (2013). Financial literacy and high-cost borrowing in the United States. *No. w18969. National Bureau of Economic Research*.
- Malkiel, B.G., (2003). Efficient market hypothesis and its critics. *CEPS Working Paper Number 91*, Princeton University.
- Markowitz, H.M. (April 1952). "The Utility of Wealth". *The Journal of Political Economy* (Cowles Foundation Paper 57) LX (2): 151–158
- Miles, D. (2004). The UK Mortgage Market: Taking a Longer-Term View. *Working Paper*, UK Treasury.
- Moore, D. (2003). Survey of Financial Literacy in Washington State: Knowledge, Behavior, Attitudes and Experiences of Listed firms, *Technical report 03-39, Social and Economic Sciences Research Center*, Washington State University
- Mugenda, O. and Mugenda, A. (2003). Research methods: *Quantitative and qualitative approaches*. 2nd. Rev. Ed. Nairobi: Act press.
- Murungi L. J (2011), Awareness, Trust and Stock Market Efficiency: The Case of Uganda Securities Market. *Unpublished Master of Finance Project*, Makerere University.
- Mwangi, W. (2013). Impact of Financial Literacy On Access To Credit By Households In Informal Settlements In Nairobi, *Unpublished MBA Project*, University of Nairobi
- Nairobi Securities Exchange. (2011). *Regulatory Framework*. Retrieved August 1st , 2011, from Nairobi Stock Exchange: <http://www.nse.co.ke/regulatory-framework/category/42-nairobi-stock-exchange-nse.html>
- National Securities Exchange. (2010). *History of organisation*. Retrieved November 5th , 2011, from Nairobi Stock Exchange: <http://www.nse.co.ke/about-nse/history-of-organisation.html>
- Njoroge R. M (2013). Relationship Between Financial Literacy and Entrepreneurial Success in Nairobi county Kenya, *unpublished MBA Project*, University of Nairobi.

- Nyamute, W. & Maina, M. (2011). Effect of Financial Literacy on Personal Financial Management Practices, *Unpublished MBA Project*, University of Nairobi
- Nyamute, W. & Monyoncho, J. (2008). Effect of Financial Literacy on Personal Financial Management Practices: A case Study of Employees of Finance and Banking Institutions. *Paper presented at African International Business and Management (AIBUMA) conference*, Nairobi.
- Olima, B. (2013). Effect of Financial Literacy On Personal Financial Management On Kenya Revenue Authority Employees In Nairobi, *Unpublished MBA Project*, University of Nairobi,
- Onyango S. (2014). Effect of Financial Literacy on Management of Personal Finances Among Employees of Commercial Banks in Kenya. *Unpublished MBA Project*, University of Nairobi.
- Remund, D. L. (2010). Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy. *Journal of Consumer Affairs*, 44(2), 276-295.
- Rooij, V. M, Lusardi, A., & Alessie, R. (2007). Financial literacy and stock market Participation. National Bureau of Economic Research (NBER), Working Paper No. 13565, <http://www.nber.org/papers/w13565n>.
- Shiller, R.J., (1998). Human behavior and the efficiency of financial systems. *Working Paper No. 6375*, National bureau of economic research, Cambridge.
- Sindambiwe P. (2014) Financial Literacy, Stock Market Awareness and Capital Market Participation of an Emerging Stock Market, University of Rwanda, College of Business And Economics. *International Journal of Multidisciplinary Approach and Studies* ISSN NO:: 2348 – 537X
- Stango, K. Victor, B. & Jonathan, Z. (2007). Fuzzy Math and Red Ink: Opportunity Cost of Consumption is Not What It Seems, *Working Paper: 1(2)*: Dartmouth College.
- Tenai S. K, Bitok J, Chenuos J. K, Kosgei N. (2014) Factors Influencing the Development of Capital Markets in a Developing Economy: A Case Study of Nairobi Securities Exchange in Kenya. *European Journal of Business and Management*. Vol.6, No.16, 2014

- Thomas A. & Spataro L. (2015), Financial Literacy, Human Capital and Stock Market Participation in Europe: An Empirical Exercise under Endogenous Framework. *Discussion Paper* n. 194 2015
- Van Rooij, M., Lusardi, A., Alessi, R., (2011). Financial literacy and stock market participation, *Journal of Financial Economics*, 101(2), 449–472.
- Wachira. M. I & Kihiu E. N (2012) Impact of Financial Literacy on Access to Financial Services in Kenya. *International Journal of Business and Social Science Vol. 3 No. 19; October 2012*
- Xia T., Wang Z, and Li K. (2014), Financial Literacy Overconfidence and Stock Market Participation, *Soc Indic Res* (2014) 119:1233–1245
- Yartey, A. (2007). Well Developed Financial Intermediary Sector Promoted Stock Market Development. *Journal of Emerging Markets Finance*

APPENDIX I: LETTER OF INTRODUCTION

Mwangi Patrick Muchiri
P.O. Box 612-10300
Kerugoya, Kenya.

March 2014

Dear Sir/Madam,

REQUEST FOR RESEARCH ASSISTANCE

I am a postgraduate student at The University of Nairobi, pursuing a Master of Business Administration. I am undertaking a research project in partial fulfillment of the Masters Degree on: The Relationship between Financial Literacy and Stock Market Participation by Retail Investors in Kenya. I am kindly inviting you to participate in this research study by completing the attached questionnaire as accurately as possible. In order to ensure that all information will remain confidential, please do not include your name anywhere on the research questionnaire. The data collected will be useful in providing information that will enable investors appreciate financial literacy and its effect on stock market participation in Kenya.

Your assistance and cooperation will be highly appreciated.

Yours faithfully,

.....

Mwangi Patrick Muchiri
Researcher

5. What is your average monthly income?

Below Ksh. 30,000

Ksh. 30,000- Ksh. 60,000

Ksh. 60,000- Ksh. 100,000

Above Ksh. 100,000

6. State the volume in Kenya shillings of equity stocks you have traded over the last one year.

Below Ksh 100,000

Ksh. 100,000 – Ksh. 500,000

Ksh. 500,000 – Ksh. 1,000,000

Above Ksh. 1,000,000

8. Do you rate equity securities/shares as an investment just like any other?

Yes

No

9. What would be your preferred investment avenue?

Shares

Fixed income securities e.g. Government bonds and fixed deposit account

Real estate and other ventures

10. Indicate whether the factors listed in the table will be considered important when deciding to buy shares. Tick against your correct response.

Factor	Yes	No
Dividends previously paid		
Stock marketability		
Expected dividends		
Capital appreciation		
Affordability of shares		
Recent price movement in shares		
Current economic indicators		
Expected return on non-stock investment		
Fluctuations in market indices		

SECTION B: BASIC FINANCIAL LITERACY QUESTIONS

(1) Numeracy:

Suppose you had Ksh 100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- (i) More than Ksh102
- (ii) Exactly Ksh102
- (iii) Less than Ksh102
- (iv) Do not know

(2) Interest compounding:

Suppose you had ksh100 in a savings account and the interest rate is 20% per year and you never withdraw money or interest payments. After 5 years, how much would you have on this account in total?

- (i) More than Ksh200
- (ii) Exactly Ksh200
- (iii) Less than Ksh200
- (iv) Do not know

(3) Inflation:

Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

- (i) More than today
- (ii) Exactly the same
- (iii) Less than today
- (iv) Do not know

(4) Time value of money:

Assume a friend inherits Ksh10, 000 today and his sibling inherits Ksh10,000 3 years from now.

Who is richer because of the inheritance?

- (i) My friend
- (ii) His sibling
- (iii) They are equally rich
- (iv) Do not know

5) Money illusion

Suppose that in the year 2015, your income has doubled and prices of all goods have doubled too. In 2015, how much will you be able to buy with your income?

- (i) More than today
- (ii) The same
- (iii) Less than today
- (iv) Do not know

SECTION C: ADVANCED FINANCIAL LITERACY

6) Which of the following statements describes the main function of the stock market?

- (i) The stock market helps to predict stock earnings
- (ii) The stock market results in an increase in the price of stocks
- (iii) The stock market brings people who want to buy stocks together with those who want to sell stocks
- (iv) None of the above
- (v) Do not know

7) Which of the following statements is correct? If somebody buys the stock of firm B in the stock market:

- (i) He owns a part of firm B
- (ii) He has lent money to firm B
- (iii) He is liable for firm B's debts
- (iv) None of the above
- (v) Do not know

8) Which of the following statements is correct? If somebody buys a bond of firm B:

- (i) He owns a part of firm B
- (ii) He has lent money to firm B
- (iii) He is liable for firm B's debts;
- (iv) None of the above
- (v) Do not know

9) Considering a long time period (for example 10 or 20 years), which asset normally gives the highest return?

- (i) Savings accounts
- (ii) Bonds
- (iii) Stocks
- (iv) Do not know

10) Normally, which asset displays the highest fluctuations over time?

- (i) Savings accounts
- (ii) Bonds
- (ii) Stocks
- (iv) Do not know

11) When an investor spreads his money among different assets, does the risk of losing money:

- (i) Increase
- (ii) Decrease
- (iii) Stay the same
- (iv) Do not know

(12) Stocks are normally riskier than bonds.

- (i) True
- (ii) False
- (iii) Do not know

(13) Buying a company stock usually provides a safer return than a stock mutual fund.

True

or false?

- (i) True
- (ii) False
- (iii) Do not know