

**EFFECT OF PORTFOLIO DIVERSIFICATION ON EQUITY  
RETURNS OF INDIVIDUAL INVESTORS LISTED AT NAIROBI  
SECURITIES EXCHANGE, KENYA**

**BY**

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## DECLARATION

I hereby declare that this Research Project report is my original work and has been presented to any other University towards the award of any degree.

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## **DEDICATION**

I hereby dedicate this project to my late father Omar Ahmed who inspired me to reach this far. Let it serve as an encouragement as you scale the height in academic.

## TABLE OF CONTENTS

<b>DECLARATION.....</b>	<b>i</b>
<b>ACKNOWLEDGEMENT.....</b>	<b>ii</b>
<b>DEDICATION.....</b>	<b>iii</b>
<b>ABBREVIATIONS &amp; ACRONYMS .....</b>	<b>vii</b>
<b>LIST OF FIGURES .....</b>	<b>viii</b>
<b>LIST OF TABLES .....</b>	<b>ix</b>
<b>ABSTRACT.....</b>	<b>x</b>
<b>CHAPTER ONE: INTRODUCTION .....</b>	<b>1</b>
1.1 Background of the Study.....	1
1.1.1 Portfolio Diversification .....	2
1.1.2 Portfolio Returns.....	3
1.1.3 Portfolio Diversification and Returns.....	4
1.1.4 Individual Investors at the Nairobi Securities Exchange.....	5
1.2 Research Problem.....	5
1.3 Research objective.....	7
1.4 Value of the study .....	7
<b>CHAPTER TWO: LITERATURE REVIEW.....</b>	<b>9</b>
2.1 Introduction .....	9
2.2 Theoretical Review .....	9
2.2.1 Modern Portfolio Theory.....	9
2.2.2 Efficient Market Hypothesis.....	10
2.3 Determinants of Returns.....	12
2.3.1 Diversification .....	12
2.3.2 Demographics .....	12
2.4 Empirical Review .....	13
2.5 Summary of Literature Review .....	16

2.6 Conceptual Framework .....	18
<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>19</b>
3.1 Introduction .....	19
3.2 Research Design.....	19
3.3 Population.....	19
3.4 Sample Design and Sample Size.....	19
3.5 Data Collection.....	20
3.6 Diagnostic tests .....	21
3.7 Data Analysis .....	21
3.7.1 Operationalisation of Variables .....	24
3.7.2 Significance Test .....	24
<b>CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF</b>	
<b>FINDINGS .....</b>	<b>25</b>
4.1 Introduction .....	25
4.2 Response Rate .....	25
4.3 Descriptive statistics.....	25
4.3.1 Gender of the individual investors.....	26
4.3.2 Age of the Respondents .....	26
4.3.3 Level of Education.....	27
4.3.4 Level of Experience.....	27
4.3.5 Normalized Portfolio Variance.....	28
4.3.6 Equity Returns .....	28
4.4 Regression Diagnostics.....	28
4.4.2 Linearity Test .....	29
4.5 Regression Analysis .....	30
4.5.1 ANOVA.....	30
4.6 Correlation Analysis.....	31

4.6.1 Effect of Portfolio Diversification on Equity Returns of Individual Investors .....	32
4.7 Discussion of the Findings .....	34
<b>CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS</b> .....	<b>36</b>
5.1 Introduction .....	36
5.2 Summary of Findings .....	36
5.3 Conclusion of the Study .....	37
5.4 Recommendations of the Study .....	37
5.5 Limitations of the study.....	38
5.6 Suggestions for Further Study.....	39
<b>REFERENCES.....</b>	<b>40</b>
<b>APPENDIX I: Study Questionnaire.....</b>	<b>43</b>
<b>APPENDIX II: List of Trading Participants.....</b>	<b>46</b>
<b>APPENDIX III: Tabulation of Responses from Respondents.....</b>	<b>47</b>
<b>APPENDIX IV: Secondary Data Collection Sheet .....</b>	<b>57</b>
<b>APPENDIX V: Data for the Calculation of Equity Returns.....</b>	<b>59</b>

## **ABBREVIATIONS & ACRONYMS**

**CDS**-Central Depository System

**CMA**-Capital Market Authority

**DPS**- Dividend Per Share

**KASIB**-Kenya Association of Stockbrokers and Investment Banks

**MPS**- Market Price per Share

**MPT**-Modern Portfolio Theory

**NSE**- Nairobi Securities Exchange

**NPV**– Normalised Portfolio Variance



## LIST OF FIGURES

<b>Figure 2.1:</b> Conceptual framework.....	18
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## LIST OF TABLES

<b>Table 3.1:</b> Operationalization of Variables.....	24
<b>Table 4.1:</b> Summary of response rate.....	25
<b>Table 4.3.1:</b> Gender of the respondents.....	26
<b>Table 4.3.2:</b> Age of the respondents.....	26
<b>Table 4.3.3:</b> Level of Education.....	27
<b>Table 4.3.4:</b> Level of Experience.....	27
<b>Table 4.3.5.1:</b> Descriptive Statistics.....	28
<b>Table 4.3.6.1:</b> Descriptive Statistics.....	28
<b>Table 4.4.1:</b> Test for Multicollinearity.....	29
<b>Table 4.4.2:</b> Test for Linearity.....	29
<b>Table 4.5.1:</b> Model Summary.....	30
<b>Table 4.5.2:</b> ANOVA.....	30
<b>Table 4.6.1:</b> Correlation Matrix.....	32
<b>Table 4.6.3:</b> Regression.....	33

## ABSTRACT

The aim of this research project was to establish the effect of portfolio diversification on equity returns of individual investors listed at the Nairobi Securities Exchange, Kenya. This study used descriptive survey research design. The study was analysed using multiple linear regression. Pearson's co-efficient of correlation was used to analyse the relationship between variables used in this study. Regression model was adopted to determine the effect of portfolio diversification on equity returns of individual investors. Normalized Portfolio Variance was used to measure portfolio diversification and four control variables were included, namely; gender, age, education and experience. The statistical significance of each independent variable was tested by performing a t-test at 5% level of significance. Significance of regression model was tested by performing an F-test at 5% significance level. The independent variables explanatory power was evaluated using the coefficient of determination,  $R^2$ . The variables portfolio diversification, gender, age, education and experience were found to have a negative linear relationship with equity returns of individual investors. The result showed a negative effect between portfolio diversification and equity returns of individual investors. Result of t-test indicated that the effect was statistically significant. It was also found that gender, education and experience had a negative effect on equity returns of individual investors but not statistically significant. Age was found to have a positive effect on equity returns of individual investors but was not statistically significant. The adjusted  $R^2$  was found to be 0.084. This depicts that the independent variables used jointly explained just 8.4% of variation in the equity returns of individual investors. The study concluded that holding a diversified portfolio is inappropriate to individual investors since diversification had a negative effect on equity returns. It also concluded that gender, education and experience had a negative effect on equity returns of individual investors while age had a positive effect on the equity returns of individual investors. The study recommends that, individual investors should hold concentrated portfolio rather than diversified portfolio because diversification results to negative equity returns. The study proposes that financial managers in the stock brokerage firms should give guidance to their customers on how to select concentrated stocks that are highly performing rather than trading in many stocks that will end up giving them negative returns. The limitation that arised from this study is that it focused only on the individual investors and the findings cannot be used by other institutional investors on decision making. Further the study suggests that other researchers should consider portfolio diversification and equity returns of institutional investors listed at the NSE.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the Study**

Subrata (2003) defined portfolio diversification as the practice of distributing an investor's income in many different stocks. Diversification is a risk management skill which involves investing in different types of stocks. This is done to decrease the risk profile of the portfolio. This will mean that the negative performance of some stocks will be annulled by the positive performance of other stocks. Hence, this in turn will lead to reduction of unsystematic risk. According to Pula, Berisha and Ahmeti, (2012) diversification is an investment practice attained through creation of investment portfolio by buying non concentrated asset in an industry, state, or a company. Brentani (2004) defined investors as retail investors who have savings in their bank accounts.

The theories that anchor this study are Modern Portfolio theory (Markowitz, 1952) and Efficient Market Hypothesis (Fama, 1970). According to Markowitz (1952), investors can improve their performance as well as limit the volatility of their portfolio by spreading the risk among different securities which behave differently. This theory helps in quantifying the risk-return relationship and the hypothesis that investors will be reimbursed for accepting the risk. According to Efficient Market Hypothesis stock prices reflect all the relevant information hence it is not possible to defeat such a market. Since all the information is included in the stock prices, the prices of today are self-sufficient of the prices of tomorrow hence news and price changes are unpredictable. In regards to the theory no matter how much information the buyer gets from the market he cannot achieve above average returns.

The Nairobi Securities Exchange (NSE) was formed informally in 1954 with the main aim of enabling the mobilization of funds as a way of providing sustainable capital for financing investments in the future (NSE, 2010). The Capital Markets Authority was established in 1989 as a regulatory body to create an environment which will favor the progress and as well as improve the capital market in Kenya (CMA, 2010). According to the CMA, (2017) the number of local individual investors was 1,188,037 and the listed companies are 65. Individual investors go through the stock brokers who advise them on how to trade in the securities market. There are only 24 licensed stock brokers in Kenya. All the financial information regarding the capital market operations, product available, associated risk and possible returns are provided by the NSE, CMA and KASIB in carrying out investor education programs. The findings of Aduda et al. (2012) show that individual investors in Kenya depict varying behaviours and financial performance when it comes to making investment decisions, with some investors exhibiting rational behavior.

### **1.1.1 Portfolio Diversification**

Portfolio diversification is the act of distributing an investor's income among many different stocks (Subrata, 2003). Investor's goals of wealth maximisation are met easily with the correct combination of asset allocation (Campbell, 2002). Some assets do better than others but since the investors do not get the information on time they can diversify their portfolio and reduce the chance of having invested solely in the assets that are not performing well.

Investment theory has well established the benefits of portfolio diversification. One of the benefit is that diversification reduces unpriced idiosyncratic risks and improves future expected returns. Consequently, it improves the expectation of future risk-adjusted returns. Statman (1987) stated that for a portfolio to be optimally diversified it

must contain at least 30 stocks. Goetzmann and Kumar (2001) found that a diversified portfolio contains 4 stocks and has a median of 3.

Goetzmann and Kumar (2008) measures portfolio diversification by using normalized portfolio variance method. The portfolio variance is measured in a normalized unit hence the different sizes of portfolio can be aggregated. This method sorts investors portfolio according to their diversification level. The Blume and Friend (1975) use two measures. The first one is the portfolio's number of stocks and the second measure is the sum of squared deviations of portfolio weights from market weights, essentially a market-adjusted Herfindahl index.

### **1.1.2 Portfolio Returns**

Nigel and David (2002) defined Portfolio return as the overall reward that an investor gets by investing in a certain pool of assets or securities within a given environment or market risk. The income gained from investing in a portfolio and is calculated by converting it to a percentage of the capital spent. Investors increase their expected returns by investing in portfolios which have suitable degree of portfolio risk (Modigliani & Pogue, 1974). An optimal portfolio results from high returns for any specified risk and lower returns for lower risk.

Portfolio returns can be measured through various methods such as the Jensen's Alpha, Sharpe's Ratio and Treynor's Ratio. Jensen (1968) observes that the portfolio performance is measured by computing the Jensen alpha or ratio. The ratio computes the risk adjusted performance of a portfolio that delivers returns above the average. As indicated by the Jensen's alpha, a positive alpha denotes positive portfolio returns while a negative alpha denotes negative portfolio returns. The second measure is the Sharpe ratio which tests the performance of a financial portfolio and adjusts for its risk. It

examines the surplus portfolio return received per unit of standard deviation of returns. It was developed by Sharpe (1964). The Sharpe ratio is preferred as a measure of risk adjusted return since it is a simple measure and adjust for both systematic and idiosyncratic risks. It thus tells investors the return the portfolio has earned in respect to the entire portfolio risk. Treynor measures portfolio performance by computing the treynor's ratio. It is a risk adjusted ratio that adjusts excess portfolio return for market risk. The Treynor ratio is preferred because it attempts to measure the successful of an investment manager in providing investors' compensation for the risk inherent an investment portfolio.

### **1.1.3 Portfolio Diversification and Returns**

Markowitz (1952) observes that by investing in several stocks, an investor can harvest the benefits of diversification as well as reduce the risk in a portfolio. When investing in diverse individual stocks the risk tend to be lower than investing in a single stock so long as the risks of various stocks are not related. Assets with higher expected returns are found to be more risky (Taleb, 2007).

The performance of investments made by concentrated household that hold one or two stocks is better than the performance of investors who are less concentrated that are holding more than three stocks (Irkovic, Sialm & Weisbenner, 2008). High degree of portfolio diversification earns higher risk adjusted returns whereas lower degree of portfolio diversification earns lower risk adjusted returns (Kumar & Goetzmann, 2008). Mitton and Vorlink (2007) established that investors who are under-diversified tend to have higher level of skewness in their returns and have a very high payoff probability.

### **1.1.4 Individual Investors at the Nairobi Securities Exchange**

It is crucial to identify the economic and behavioral conditions that affect purchasing decision of individual investors who buy and sell different stocks in the stock market (Wairungi, 2011). There are 1,245,502 equity individual investors at the Nairobi Securities Exchange, CMA 2017. These comprises of 1,188,037 local individual investors, 41,110 local corporate investors, 8,708 foreign investors and 7,647 East African investors. The quantity of equity shares held as at 2017 were 11,216,752,687.

According to the CMA, 2017 there are 65 stocks from which the individual investors can form their portfolio. The 13 segments of the listed companies at the NSE will enable the investors to diversify their portfolio. These segments include; agricultural, banking, insurance, manufacturing and allied, commercial and services, investment services, automobiles & accessories, telecommunication & technology, construction & allied, investment, energy & petroleum, real estate investment trust & exchange traded funds.

## **1.2 Research Problem**

Diversification of risk is a key concept in the investment industry and thus making portfolio diversification an important issue for investors to achieve so as to reduce risk and have better returns. Individual diversification decisions are likely to be affected by the approach towards risk. Mitton and Vorking (2007) noted that under-diversification increased the level of skewed returns by shifting to assets which have higher expected returns therefore sacrificing diversification. The number of stocks of the retail investors increases as their account balance increases, and that the level of risk and return increases and sharpe ratio decreases with concentrated portfolios than diversified portfolios, (Ivkovi'c, Sialm & Weisbenner, 2008). In another study



conducted by Goetzmann and Kumar (2008) the diversification of household increases with increase in age and income, and that household with a retirement account are under diversified than household with extra non-retirement accounts. Holding diversified portfolio maximizes return and minimizes risk, (Soderblom, 2011).

Individual investors are diversified and hold shares in different sectors at the Nairobi Securities Exchange market (Mwangi, 2017). A large percentage of individual investors have bought stocks in the agricultural sector as well as in the other segments. The Kenya Electricity Generating Company (KenGen) IPO freed access for retail investors at the NSE in 2006 and the number surpassed one million mark, with Safaricom having 860,000 new accounts in 2008 (Irungu, 2011). Trading volumes have increased and level of service to stockholders enhanced due to the automation of trading system, Central depository System (CDS) and opening of the NSE to the foreign portfolio investment. Many companies that are headed for diversification are investing in the real estate properties because of the rise in the home prices and rental income which has led to investors earning high margins.

Most studies that have been carried out in the past have often focused on institutional investors and few studies have been carried out on small scale or retail investors. King and Leape (1987) suggest that portfolio diversification increases with age as older people have more experience and also enquire more about the market information. He also found that young investors are less diversified because of overconfidence. Wangui (2016) studied the relationship between portfolio diversification and financial performance of Centum Ltd and established that Centum portfolio diversification had a positive and significant relationship with performance in real estate and infrastructure and marketable securities portfolio but had no significant relationship with financial

services, fast moving consumer goods and unquoted equity portfolios. Wafula (2014) conducted a research on the influence of diversification on portfolio returns of Mutual funds in Kenya and establish that portfolio returns are positively influenced by diversification. The above studies focused on institutional and not individual investors which is the focus of the current study. In addition to the different result in the studies, majority of the documented empirical evidence regarding portfolio diversification was on financial markets, with much less discussion and insight on the influence of diversification on individual investors in the financial market. It is this knowledge gap that this study addressed hence the question; what is the effect of diversification on portfolio return of individual investors in Kenya?

### **1.3 Research objective**

To establish the effect of portfolio diversification on equity returns of individual investors listed at the Nairobi Securities Exchange, Kenya.

### **1.4 Value of the study**

The study will be of value to individual investors since they will understand the relationship between portfolio diversification and returns. This would probably help them know the extent to which they can diversify their portfolio across industries so as to reap maximum returns at any given level of risk and in the long-run achieve efficient portfolios in their investment decisions.

The study will be a source of reference to the financial analysts carrying out a study on related topics. Future researchers concerned about the relationship between portfolio diversification and investors' return can utilize these findings as a basis for further research on the subject matter so that they can compare and see whether the outcome of this study and the earlier studies correspond to the study that they will carry.

Findings from the study will help them give sound information that will enable them to give informed decisions and offer appropriate advice to investors to make sound investment decisions.

The study will also be of significant interest to the Capital Market Authority and the Nairobi Securities Exchange. They will use the results from this study to offer informed advices to the relevant authorities and investors and come up with important policy and regulatory framework to guide the individual investors markets and create a level playing ground to all the sector players.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter was arranged into four parts. It begins with the theories which link accounting variables and financial performance later followed by the determinants of equity return. Then empirical studies on the relationship between diversification and portfolio return will be reviewed. Lastly there will be the conceptual framework.

### **2.2 Theoretical Review**

This section examined theoretical foundation where the following theories which the study anchors on have been discussed: Modern Portfolio Theory (Markowitz, 1952), and Efficient Market Hypothesis (Fama, 1970).

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

Modern Portfolio Theory is a finance theory put forward by Markowitz (1952) which depends on the concept that investors who are risk averse can create portfolios to optimize the returns that the investors expect depending on a certain degree of market risk and therefore underlining that, for an investor to achieve higher reward then risk is an essential part of it. The MPT, an upgrade upon the old investing models, is a significant improvement on the investment models of finance. It supports diversification of assets so as to evade both the market risk and the unique risks that affect specific type of companies. The theory (MPT) is a complex investment model that helps in classifying, estimating, and controlling both the type and rate of expected returns and risks and thus known as Portfolio Management Theory. Portfolio theory aids in quantifying the risk-return relationship together with the hypothesis that investors will be reimbursed for accepting the risk.

Portfolio theory moved from the characteristic analysis of single investments to establishing the statistical correlation between the individual investments which make up the portfolio (Edwin and Martins 1997). It is one of the important and significant theories which deal with investment and finance (Kaplan & Schoar, 2005). It is a mathematical model for constructing a portfolio of investments in a way that the returns that are expected is optimized for a certain rate of risk, known as variance. The likelihood of this to happen can be brought by the differences in the types of assets which often differ in value in contradicting manner (Markowitz, 1959). MPT came up with portfolio assumptions that include; determination of asset allocation by investors is taken under a single period perspective, investors are rationale and risk averse, markets are efficient, assets return are normally distributed, probability distribution of expected returns over some holding period represents investment alternative to the investors.

Risk averse investors in a portfolio theory select the optimal portfolio (Weston & Copeland, 1998). A portfolio with highest possible return for any specified degree of risk or lower risk for any specified return is referred as an optimal portfolio. An optimal portfolio is a well –diversified portfolio (Markowitz, 1952). The modern portfolio theory is hinged to this study because by diversifying the investment, investors can optimize the portfolio return of the portfolio for a certain rate of risk, or subsequently reducing the risk for a certain rate of portfolio return, by carefully selecting the dimensions of a variety of assets.

### **2.2.2 Efficient Market Hypothesis**

Efficient market hypothesis is derived from the research work of Fama in the 1970. Luckily on an investment an investor can buy stocks that have huge short-term profits while in the long term he cannot earn higher returns than the market average. Efficient market is market which all information about security prices are reflected, (Malkiel

2003). Fama's theory carries the same implication for investors as the random walk theory. One critical assumption about the efficient market hypothesis is the belief that investors can get all the relevant information about the stocks prices readily available in the market. Hence, stocks are always trading at their current fair market value. According to this theory undervalued stocks are impossible to buy as well as overvalued stocks are impossible to sell at an extra profit.

Fama noted that market efficiency is of three forms: strong form, semi strong form and weak form. Weak form is where today's price reflects all the prices of the previous stocks, Semi strong efficiency is where the share prices of today reflects all publicly available information and strong efficiency is where the share prices reflects all public, personal and confidential information. Empirical theory has attracted some controversies and criticisms which has led to stock market anomalies. One of the critic is assuming that investors are rational and hence valuing investment rationally by computing net present value of future cash flows suitably discounted for risk. The stock market anomalies include; January effect, small size effect and the mean reversion (Banz, 1981). In accordance with the theory even though Investors get all information about the stock prices they cannot attain profit above the market average.

One of the problems that investors are faced with is the asymmetric information. This theory helps investors to use the available information to make appropriate investment decisions and hence will be able to diversify their portfolio using the same information in the market. Assymmetric information may impact the investors' decision making when choosing the stocks to buy.

## **2.3 Determinants of Returns**

This segment discusses determinants of equity portfolio returns which include; Diversification, Demographic factors.

### **2.3.1 Diversification**

Diversification is an essential factor in formulating the returns of an equity portfolio. To gain diversification, the venture manager's strategy is to invest in diverse belongings that may generate best returns even as keeping risks at the lowest. In their study, Gregory and Whittaker (2007) reported that venture managers look for appropriate number of assets in an inefficient market where information obstacles on threats and return evaluation can offer essential problems to the management of the investment. In addition, within the property portfolio the switching of funing among resources is multifaceted via excessive transfer prices which need to be taken into consideration inside the putting of policy.

Gregory and whittaker, (2007) argues investing in different assets by one company, which are not perfectly correlated gives a standardized returns whereby when one asset is declining in performance returns, another asset in the portfolio in increasing in the returns for the same time period.

### **2.3.2 Demographics**

The level of diversification tends to be higher for the old investors than for the young ones. Older investors are more mature and risk averse than younger investors. In a study conducted by Kumar and Goetzmann (2002) the degree of diversification had a positive relation with the age of the investors. High degree of over-confidence makes young investors to be less diversified and hence the trading frequency decreases. Their study concluded that over-focused, active and young investors hold portfolios that are

concentrated and under-diversified. Persons with low education level were found to have higher undiversified portfolio. In a different study conducted by Clotfelter and Cook (1989) the ratio of risky investment was higher among investors with low level of education than those with high levels. 49% of the investors with lower education level gambled during the week and only 30% of college graduate gambled during the time of the survey.

Non professional investors are least diversified while retired investors are more diversified, (Kumar & Goetzmann, 2002). In their findings non-professional investors hold 4.56 stocks on average while the retired investors hold 6.89 stocks. Higher income household hold more diversified portfolios than those with low income (Kumar & Goetzmann, (2002). On average investors with low income hold 4.71 stocks while investors with high income hold 5.84 stocks. Ivkovi'c, Sialm, and Weisbenner (2008) concur with the preceding study and noted that the no. of stocks in a portfolio increase as the account balance increases. Low income investors are also more risky in their investment decisions than high income investors, (Clotfelter & Cook, 1989).

## **2.4 Empirical Review**

Milton and Vorkink (2007) conducted a study on equilibrium under-diversification and the preference for skewness. They tested the implications on a large discount brokerage house with the portfolio holdings of 60,000 household over the period 1991-1996. Diversified and underdiversified investors are different in their level of skewness. Diversified investors exhibit very little skewness in their portfolios which implies that they have a probability of very low payoffs. Consequently underdiversified investors exhibit substantial skewness in their portfolio which implies that they have a greater probability of very high payoffs.



Ivkovic, Sialm and Weisbenner (2008) studied the relation between portfolio concentration and performance of individual investors and noted that individuals who hold few stocks perform better than individuals with more stocks. The data captured the entire 78000 household with investments stock from January 1991 to December 1996. Investors hold small portfolio because of fixed transaction cost which makes holding many stocks very costly. Wealthy household hold concentrated portfolio because they have the skill to identify superior stock picks. Investors with concentrated portfolios have higher information ratios whereas investors with diversified portfolios have lower information ratios.

Kumar and Goetzmann (2008) evaluated the equity portfolio diversification of individual investors at the US brokerage firm. The data comprised of more than 60,000 individual investors from 1991 to 1996 which was analyzed using the normalized portfolio variance. They found that the individual household holds under-diversified portfolios. Younger, less educated, low-income earners & less sophisticated investors were found to be under-diversified. The study also revealed that trend following behavior, overconfidence & local bias influenced the investment choices of the household. Investors whose stocks are overweight with high skewness and volatility are also less diversified.

Ahuja (2011) evaluated portfolio diversification in the Karachi Stock Exchange using mean variance model. He used data on daily returns for 15 randomly selected securities over three year period 2007 to 2009. From the results he concluded that the theory is applicable in the Karachi Stock Exchange and a percentage risk drop of 52.25% of risk was realized. Investors at the Karachi Stock Exchange can decrease their portfolio risk by holding a diversified portfolio of 10 securities.

Nyaraji (2001) evaluated the risk reduction benefits of portfolio diversification at the NSE. The study used mean-variance analysis model and the period of study was 1996 to 2000. He used a census of 49 companies listed on the NSE. The study used weekly returns computed from secondary data on share prices and dividend distributions of the quoted securities. The study indicated a significant risk reduction at the NSE as the portfolio grew in size up to 13 securities after which risk reduction becomes insignificant. He concluded that 13 securities were the risk minimizing portfolio size at the NSE. The study applied correlation empirical model and was done over twelve years ago when few firms were listed and few investors participating. The current study will apply regression empirical model to determine the optimal portfolio size for investors in Kenyan stock market and to contribute in bridging the knowledge gap that exists.

Kamanda (2001) evaluated quoted equity portfolios held by Kenyan insurance companies and the extent of their diversification. He determined the relationship between different equity portfolios of respective insurance companies and the NSE-20 share index. To generate portfolio returns the author used both primary & secondary data. Regression analysis was used to derive the beta. Four models: Sharpe, Treynor, Jensen and coefficient of variation were used to determine the relative performance and the extent of diversification. From the study he concluded that quoted equity portfolios held by Kenyan insurance companies were poorly diversified and the insurance industry portfolio performed much worse than the market portfolio. If the optimal portfolio size at the NSE is determined, it will help insurance managers in their decision making and improve performance.

Wangui (2016) assessed the relationship between portfolio diversification and financial performance of Centum Ltd. The study collected secondary data from the audited financial and published statements covering 2007 to 2016, a period of 10 years from Centum Ltd. The study used multiple regression model which had one dependent variable ( $Y_t$ )-financial performance/profitability (ROAt) of Centum and three independent variables including asset portfolios, inflation rate and Gross domestic product represented by  $X_1$ ,  $X_2$  and  $X_3$  respectively. The study established that Centum portfolio diversification had a positive and significant relationship with performance in real estate and infrastructure and marketable securities portfolio but had no significant relationship with financial services, fast moving consumer goods and unquoted equity portfolios. On the area of real estate and infrastructure, the company is focusing on being part of the rising opportunities from the high demand in the sector of housing sector in Kenya.

## **2.5 Summary of Literature Review**

From the above review both the theoretical and empirical, it's evident that there is need for further research to be done on diversification, risk and return on individual investors. This has been evident by the increased desire of both mutual fund holders and individual investors desire to grow their level of return at the same time managing the level of risk and hence a clear study needs to be conducted to give guidance on ways and means of improving their portfolio returns. One of this strategy is diversification.

There has been no study carried out on the effect of diversification on portfolio returns of individual investors. Thus a research gap exists which needs to be filled by doing a thorough study on this topic. In the financial markets investors are faced with the dilemma of how to strike a balance between risk and return and on choosing the most

efficient investment vehicle they can put in place in order to realize their financial freedom. There has not been a conclusive study that has been carried out that advises investors on the ideal number of equity stocks they have to hold in a portfolio so as to reduce risk and earn the highest return and at the same time guiding them on the requisite level of risk they should assume for a given investment they venture into. This research will help address some of this pertinent concerns that have faced investors at the market place.

## 2.6 Conceptual Framework

The figure below shows the independent and dependent variables, where the portfolio diversification was measured by normalized portfolio variance (NV) formula, and the individual investor's returns measured using Sharpe's Ratio, Gender is the sex of the individual investors, Age is the age of the individual investors, Education represents the level of education and experience represents the level of experience.

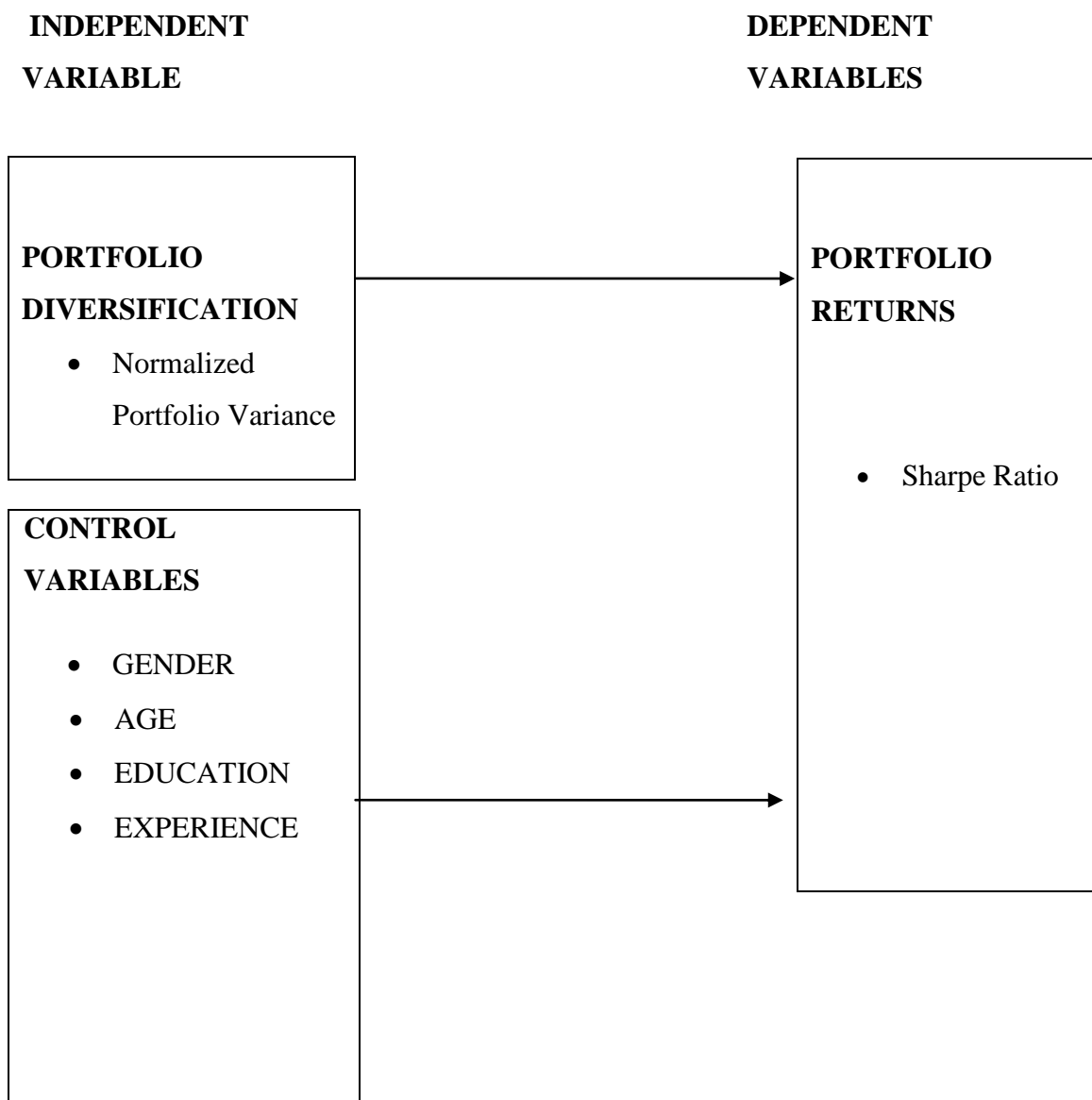


Figure 2.1: Conceptual model

Source: Author (2018)

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter explains the research design which was adopted in the study. The chapter provides an insight into research design, the study population, sample size and design, data collection methods, data analysis techniques & regression diagnostics test that were used during the study.

### **3.2 Research Design**

The descriptive survey research design was used for this study. A descriptive research design is suitable where data collected is used to describe persons, firms, settings or phenomena (Creswell, 2013). It is used to depict specific behavior in an environment (Greener, 2008). A descriptive survey establishes the relationship between variables that describes a population with respect to important variables. This research design is suitable for this type of study because the main aim is to find out how portfolio diversification will affect the returns of the individuals.

### **3.3 Population**

The study population entailed of all the local individual investors drawn from the Nairobi Securities Exchange which were 1,188,037 (CMA, 2017).

### **3.4 Sample Design and Sample Size**

The study adopted purposive and quota sampling designs. The study used purposive sampling design to select the Brokerage firms which were used by the individual investors for buying and selling of shares and that conform to the purpose of the study which are the 24 firms listed at the NSE during the study period 2017. The study also used quota sampling design to divide the individual investors according to the brokerage firms they trade in. The target population was classified into 24 quotas

which were the brokerage firms from which the 384 respondents were chosen proportionately, each quota having 16 respondents as per Bryman and Bell (2007).

The sample size of the study was found by using the formula adopted by Jones (2015). The formula is more often applied when the population of interest is 10,000 units or more and where the variability of the proportion is not clear. Shiundu (2012) and Lee et al. (2013) also used the same formula to compute sample size in their study.

$$n = z^2 * \frac{p*q}{d^2}$$

Where:

n = sample size

z = linked to 95% confidence interval (use 1.96)

p = expected prevalence (as fraction of 1)

q = 1- p (expected non-prevalence)

d = relative desired precision (0.05)

$$n = \frac{1.96^2 * (0.5)(0.5)}{0.05^2} = 384$$

Therefore the sample size obtained was 384 individual investors.

### **3.5 Data Collection**

The data used in this research was both primary and secondary data. The primary data was collected using a structured and closed-ended questionnaire. The items in the questionnaire represented the respondent gender, age, education level, experience, and information on stocks invested. The questionnaires were administered through a pick and drop method, which was followed by personal interviews. The methodology was suitable since it encouraged quick responses from the respondents. The questionnaire

was modeled into two sections. Section 1 sorts to derive the general data about the investor while Section II is concerned with the stocks that are invested at the NSE.

The study also used secondary data to measure the equity returns of the individual investors. Secondary data collected was the stock market prices per share from the stock market, dividend per share issued obtained from the CMA annual report during the period 2017 and their 364- day Treasury bill rate for the year 2017 obtained from the Central Bank of Kenya which was used to stand for the risk free rate.

### **3.6 Diagnostic tests**

Diagnostic tests assist in verifying the nature of the data and aids in specifying the model applicable for the study to ensure that the regression results are unbiased, consistent and efficient (Yihua, 2010). The test was composed of linearity and multicollinearity. Multicolliniarity was used in this study to measure the relationship between independent variables. Size of the VIF obtained from the SPSS was used to analyse the magnitude of multicollinerity. According to Rouse (2010), linearity is defined as the circuit's behavior whereby the signal strength of output differs in direct proportion to the signal strength of input.

### **3.7 Data Analysis**

The data obtained from the questionnaires and secondary sources were coded and inputted in the SPSS software for analysis. The study used tables and frequency charts to present the findings which helped in the discussion of the results and to draw conclusion on the individual diversification decision and equity returns. Data was analysed through multiple regression to analyse the effect of portfolio diversification on equity returns of individual investors. The relationship of the equation is a multiple linear where the equity return is the dependent variable and Normalized Portfolio



Variance was used to measure the portfolio diversification which is the independent variable. Gender, age, education and experience were the control variables. The equation is as follows:

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

Where;

Y = Equity Return

$\beta_0$  = constant term

$\beta_1 - \beta_4$  = Beta coefficients (Intercepts for independent variables);

$X_1$  = Normalised Portfolio Variance

$X_2$  = Gender

$X_3$  = Age

$X_4$  = Education

$X_5$  = Experience

$\varepsilon$  = Error term.

The main measure of portfolio diversification is the normalized portfolio variance that is found by dividing the portfolio variance by the average variance of stocks in the portfolio:

$$D_1 = NV_{EWP} = \frac{\sigma_P^2}{\bar{\sigma}^2} = \frac{1}{N} + \left(\frac{N-1}{N}\right) \left(\frac{\overline{COV}}{\bar{\sigma}^2}\right) = \frac{1}{N} + \left(\frac{N-1}{N}\right) \overline{corr}$$

**Where:**

N = No. of stocks in a portfolio

$\overline{\text{corr}}$  = average correlation among stocks in the portfolio.

The equity returns of the individual investors were measured by the Sharpe ratio. A positive (+ve) and high Sharpe ratio denotes a positive return while a negative (-ve) and low Sharpe ratio denotes a negative return.

$$\text{Sharpe Ratio} = \frac{R_p - R_f}{\sigma_{p_i}}$$

$R_p$  = portfolio return,

$R_f$  = risk free rate,

$\sigma_{p_i}$  = standard deviation of the returns,

### 3.7.1 Operationalisation of Variables

The dependent and independent variables used in this study are as follows:

Indicator	Operational Definition	Scale	Empirical Study adapted from	Questionnaire
Returns	The level of return	Ratio	Kamwaro (2008)	PART B
Diversification	The level of normalized portfolio variance.	Ratio	Ahuja (2011).	PART B
Gender	The gender of the investor	Nominal	K. Mitra, 2003	PART A-Q1
Age	The age of the Investor	Interval	K. Mitra, 2003.	Part A-Q2
Education	Level of education	Interval	Goetzmann and Kumar, 2008.	PART A-Q3
Experience	Level of experience	Ratio	Goetzmann and Kumar, 2008	PART A-Q4, Q5

**Table 3.1: Operationalization of Variables**

### 3.7.2 Significance Test

The statistical significance of each independent variable explaining portfolio return was tested using student t-test at 5% level of significance. F-test evaluates the general significance of the regression model. The coefficient of determination,  $R^2$  explained the variability of the overall regression model.

## **CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF FINDINGS**

### **4.1 Introduction**

This chapter focused on analyzing the data and interpreting the findings captured from the SPSS. This chapter will explain the response rate, data reliability descriptive statistics, correlation analysis, regression analysis and summary of the findings.

### **4.2 Response Rate**

From the intended 384 respondents, 271 questionnaires were properly filled by the individual investors and returned. This totaling to a response rate of 70.57% which is above the accepted threshold in other studies. The below table summarises the report.

**Table 4.1 Summary of response rate**

	<b>F</b>	<b>Percent</b>
Questionnaires issued and returned	271	70.57%
Questionnaires issued but not returned	113	29.43%
Total	384	100

Source: Author 2018

### **4.3 Descriptive statistics**

This segment analyses the variables of the study. The individual investors were asked to state their gender, age, level of education, period of investment which stands for the experience and the stocks they have traded in.

### 4.3.1 Gender of the individual investors

The findings indicate that from the individual investors that were interviewed, majority of them were male that is 61.30% and 38.70% were female. The chart below summarizes the findings

Gender of Respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	166	61.30%	61.30%	61.30%
	Female	105	38.70%	38.70%	100%
	Total	271	100	100	

**Table 4.3.1 Gender of the respondents**

### 4.3.2 Age of the Respondents

According to the findings from the questionnaires on the age range, 38.70% of the respondents were aged between 25-35years, followed by 37% who were aged between 35-45years, 10.70% of the respondents were aged between 45-55years while 7.00% were aged between 55-65years and 3.30% were above 65years. 3.00% of the respondents failed to indicate their age range.

Age of the Respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	8	3.00%	3.00%	3%
	25-35yrs	105	38.70%	38.90%	42%
	35-45yrs	100	36.90%	37.00%	79%
	45-55yrs	29	10.70%	10.70%	90%
	55-65yrs	19	7.00%	7.00%	97%
	65 And Above	9	3.30%	3.30%	100%
	Total	270	99.60%	100%	
Missing	System	1	0.40%		
Total		271	100%		

**Table 4.3.2 Age of the respondents**

### 4.3.3 Level of Education

According to the findings a big percentage of respondents that is 35.80% were found to have bachelor's degree level of education followed by 24% of respondents having diploma, 22.90% of respondents attaining master's degree, 15.10% of respondents reaching secondary level and 2.20% of respondents with other level of education.

Level Of Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary	6	2.20%	2.20%	2.20%
	Diploma	65	24.00%	24%	26.20%
	Bachelor's Degree	97	35.80%	35.80%	62%
	Master's Degree	62	22.90%	22.90%	84.90%
	Other	41	15.10%	15.10%	100%
	Total	271	100%	100%	

**Table 4.3.3 Level of Education**

### 4.3.4 Level of Experience

The level of experience was represented by how long the investor has traded at the NSE. The findings indicate that 36.20% of the respondents have an experience level of less 3 years, 34.70% of the respondents have 3-7years of experience, followed by 20.30% of the respondents with 8-12 years level of experience and 8.90% of the respondents have over 13years level of experience. The chart below summarizes the findings.

EXPERIENCE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less Than 3 Years	98	36.20%	36.20%	36.20%
	3-7years	94	34.70%	34.70%	70.80%
	8-12years	55	20.30%	20.30%	91.10%
	Over 13years	24	8.90%	8.90%	100%
	Total	271	100%	100%	

**Table 4.3.4 Level of Experience**

### 4.3.5 Normalized Portfolio Variance

The normalized portfolio variance was used in this study to measure the portfolio diversification of the individual investors listed at the NSE. According to the findings the portfolio diversification had a mean of 0.4673 and a standard deviation of 0.3065.

**Table 4.3.5.1 Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Normalized Portfolio Variance	271	0.0705	1	0.4673	0.3065
Valid N (listwise)	271				

### 4.3.6 Equity Returns

The findings indicate that the respondents get a mean of 3.2564 equity returns and a standard deviation of 5.8390.

**Table 4.3.6.1 descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Equity Returns	271	-19.1913	42.4903	3.2564	5.8390
Valid N (listwise)	271				

## 4.4 Regression Diagnostics

The study adopted multiple linear regression model and therefore some diagnostics test had to be done to test some of its basic assumptions. Some of the diagnostics test used included the multicollinearity test and linearity test

### 4.4.1 Multicollinearity

Variance inflation Factor (VIF) was adopted for testing multicollinearity. The VIF for diversification, gender, age, education and experience were 1.163, 1.020, 1.666, 1.026,

1.821, meaning that the VIF obtained were between 1 and 10. It was concluded that no excessive multicollinearity was present amongst the biases (Joshi, 2012).

The Durbin Watson results were 1.991 showing the autocorrelation in the variables from a statistical regression analysis. Durbin Watson test measures autocorrelation and the statistic lies between 0 and 4. Hence the result of 1.991 shows that there was no autocorrelation in the sample.

**Table 4.4.1 Coefficients**

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Normalized Portfolio Variance	0.860	1.163
	Gender	0.981	1.020
	Age Range	0.600	1.666
	Level Of Education	0.974	1.026
	Experience	0.549	1.821

a. Dependent Variable: EQUITY RETURNS

#### 4.4.2 Linearity Test

Table 4.4.2 below indicates that the value significance deviation from linearity is greater than 0.05 that is 0.285 which concludes that there is a linear relationship between equity returns and diversification.

**Table 4.4.2 Test for Linearity**

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Equity Returns * Normalized Portfolio Variance	Between Groups	(Combined)	1239.04	14	88.50	2.844	0.001
		Linearity	756.834	1	756.83	24.321	0.000
		Deviation from Linearity	482.205	13	37.09	1.192	0.285
	Within Groups		7966.31	256	31.12		
	Total		9205.35	270			



## 4.5 Regression Analysis

The regression analysis was done to understand how diversification, gender, age, education and experience affected equity returns. The study came up with a model summary on ANOVA and regression model. The adjusted coefficient of determination  $R^2$  was found to be 0.084. This depicts that the independent variables used jointly explained just 8.4% of variation in the equity returns. The model therefore explains only 8.4% of the variation while the other remaining variation is explained by other variables.

**Table 4.5.1 Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin - Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.318 <sup>a</sup>	0.101	0.084	5.5946	0.101	5.953	5	264	0.000	1.991

a. Predictors: (Constant), Experience, Gender, Level Of Education, Normalized Portfolio Variance, Age Range

b. Dependent Variable: Equity Returns

### 4.5.1 ANOVA

The ANOVA result confirms that the regression model was adequate. The F ratio was found to be 5.953 with a significance probability of  $P < 0.05$  that is 0.000. This shows that the effect of diversification, gender, age, education and experience on equity returns was statistically significant.

**Table 4.5.2 ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	931.578	5	186.316	5.953	.000 <sup>b</sup>
	Residual	8263.13	264	31.300		
	Total	9194.7	269			

a. Dependent Variable: Equity Returns

b. Predictors: (Constant), Experience, Gender, Level Of Education, Normalized Portfolio Variance, Age Range

## **4.6 Correlation Analysis**

Correlation coefficient was applied to analyse the relationship between variables used in this study. This study applied Pearson's coefficient of correlation to measure the relationship between variables. The variable diversification had a slightly negative linear relationship of  $-0.287$  with equity returns which explains that the more diversified an investor is the less the returns, gender had a low negative linear relationship of  $-0.078$  with equity returns, age had a low negative linear relationship of  $-0.034$  with equity returns, education had a low negative linear relationship of  $-0.030$  with equity returns, and experience had a low negative linear relationship of  $-0.030$  with equity returns, this shows that gender, age, education and experience do not affect the equity returns.

**Table 4.6.1 Correlation Matrix**

		Equity Returns	Normalized Portfolio Variance	Gender	Age Range	Level Of Education	Experience
Equity Returns	Pearson Correlation	1					
	Sig. (1-tailed)						
	N	271					
Normalized Portfolio Variance	Pearson Correlation	-.287**	1				
	Sig. (1-tailed)	0.000					
	N	271	271				
Gender	Pearson Correlation	-0.078	.117*	1			
	Sig. (1-tailed)	0.100	0.027				
	N	271	271	271			
Age Range	Pearson Correlation	-0.034	-.172**	0.059	1		
	Sig. (1-tailed)	0.291	0.002	0.168			
	N	270	270	270	270		
Level Of Education	Pearson Correlation	-0.030	-0.023	0.022	.158**	1	
	Sig. (1-tailed)	0.313	0.356	0.360	0.005		
	N	271	271	271	270	271	
Experience	Pearson Correlation	-0.024	-.353**	-0.015	.622**	.117*	1
	Sig. (1-tailed)	0.345	0.000	0.401	0.000	0.028	
	N	271	271	271	270	271	271

#### **4.6.1 Effect of Portfolio Diversification on Equity Returns of Individual Investors**

To evaluate the effect of portfolio diversification on equity returns normalized portfolio variance was regressed against equity returns. Four control variables namely; gender, age range, level of education and experience were included.

**Table 4.6.3 Regression**

## Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.979	1.73		5.191	0.000
	Normalized Portfolio Variance	-6.331	1.205	-0.331	-5.256	0.000
	Gender	-0.498	0.706	-0.042	-0.705	0.481
	Age Range	0.019	0.404	0.003	0.046	0.963
	Level Of Education	-0.113	0.328	-0.02	-0.343	0.732
	Experience	-0.864	0.478	-0.142	-1.806	0.072

**Source: Author 2018**

Table 4.6.3 above indicates the regression coefficients for the regression of equity returns on portfolio diversification, gender, age, education level and experience. The regression model had a constant of 8.979 while portfolio diversification, gender, age, education level and experience had coefficients of -6.331, -0.498, 0.019, -0.113 and -0.864 respectively. The resulting regression equation was:

$$Y = 8.979 - 6.331X_1 - 0.498X_2 + 0.019X_3 - 0.113X_4 - 0.864X_5$$

Portfolio diversification had a regression coefficient of -6.331. This indicates that, portfolio diversification had a negative effect on equity returns which implies that the more diversified an individual investor is the lesser the rate of equity returns. The coefficient of portfolio diversification had a significance probability of 0.00; since the p-value is less than 0.05 then the effect of portfolio diversification on equity returns was statistically significant.

Gender had a coefficient of -0.498 with a significance probability of 0.481. This result indicated that gender had a negative correlation with equity returns and its effect was

not statistically significant as p-value was more than 0.05. Age had a coefficient of 0.019. This indicates positive impact on equity returns. Age had a significance probability of 0.963 and thus showing that its effect on equity returns was not statistically significant.

Level of education had a coefficient of -0.013 with a significance probability of 0.732. Thus level of education had a negative effect on equity returns, It had a significance probability of 0.732, since the p-value is more than 0.05, then the effect of level of education on equity returns is not statistically significant. Experience had a coefficient of -0.864 with a significance probability of 0.072. Thus experience had a negative effect on equity returns of individual investors and its effect was not statistically significant given that the p-value was more than 0.05.

#### **4.7 Discussion of the Findings**

The study investigated the effect of portfolio diversification on equity returns of individual investors listed at the NSE. The result showed a negative correlation between portfolio diversification and equity returns of individual investors. This shows that the more diversified the individual is the less the equity returns. This also implies that buying more stocks is more costly and the returns are lower. These findings support the study of Mitton and vorkink (2007) who found that diversified investors exhibit very little skewness in their portfolios which implies that they have a probability of very low payoffs.

The results also indicate that the majority of individual investors are male, between 25-35 years, have a bachelor's degree and have an experience of less than 3 years. According to the results 124 investors hold 1 to 2 stocks while 147 respondents hold more than 2 stocks. This indicates that 147 respondents are diversified while 124

respondents are not diversified. The findings support the study of Irkovic, Sialm and Weisbenner (2008) who found that household with concentrated portfolio perform well than household with more diversified accounts. According to the scholars investors who hold only a few stocks (one or two) are referred as concentrated while investors who hold 3 or more stocks are referred as diversified.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter discusses the summary, conclusion, recommendations, limitation and suggestion for further study.

### **5.2 Summary of Findings**

The study sought to determine the effect of portfolio diversification on equity returns of individual investors listed at the NSE. The equity returns as measured by the Sharpe ratio had an average of 3.2564 and a standard deviation of 5.8390. Portfolio Diversification as measured by normalized portfolio variance had a mean of 0.46723 and a standard deviation of 0.3065.

This study indicated that portfolio diversification had a negative effect on equity returns of individual investors and its effect is statistically significant. Gender had a negative effect on equity returns and its effect was not statistically significant. Age had a positive effect on equity returns and its effect was not statistically significant. Level of education had a negative effect on equity returns and its effect was not statistically significant. Experience had a negative effect on equity returns and its effect was not statistically significant.

The adjusted coefficient of determination  $R^2$  was found to be 0.084. This depicts that diversification, gender, age, education and experience jointly explained just 8.4% of variation in the equity returns of individual investors while the other remaining variation is explained by other variables. The analysis of variance showed that F ratio was 5.953 with a significance probability of 0.000. This indicated that the effect of portfolio diversification, gender, age, education and experience on equity returns of

individual investors was statistically significant. Hence the model was appropriate to explain the effect of portfolio diversification on equity returns of individual investors listed at the NSE, Kenya.

### **5.3 Conclusion of the Study**

This study sought to establish the effect of portfolio diversification on equity returns of individual investors listed at the NSE. The result of regression indicated that diversification of portfolio had a negative effect on equity returns of individual investors and thus the more the investor is diversified the lower the equity returns. Thus, the study concluded that portfolio diversification has a negative effect on the equity returns of individual investors listed at the NSE.

The study also established that most of the individual investors were male and attained a bachelor's degree level of education. Hence the study concludes that most individual investors who are diversified are of male gender and also highly educated. Hence education is a key principle in the stock investment sector. The study also sought to understand the aspect of age within the individual investors. It is clear from the findings that majority of the investors were aged between 25-35years. This imply that majority of the stockholders are youth and hence stock brokers should focus more on the youth to convince them to engage in the buying and selling of stock.

### **5.4 Recommendations of the Study**

The study recommends that individual investors ought to hold concentrated portfolio rather than diversified portfolio because diversification affects returns negatively. The study also recommends that investors monitor the performance of the listed companies as highly performed companies tend to have better dividends compared to companies which perform poorly. The study also recommends the investors to monitor share price



fluctuations so that they can know when is the right time to sell or to buy shares. Share prices movements are due to information and any changes will affect the value of the investment. The study proposes that financial managers in the stock brokerage firms should give guidance to their customers on how to select concentrated stocks that are highly performing rather than trading in many stocks that will end up giving them negative returns.

### **5.5 Limitations of the study**

The study was carried for 2017, One year' time period due to the cost of obtaining the data and analyzing data for a longer period proved a challenge. In analyzing the effect of portfolio diversification on equity returns of individual investors listed at the Nairobi Securities Exchange, an elongated duration would guarantee robustness of the results. The study was also carried on a single country due to time and resource limitations, therefore using broader sample would enable in getting wider understanding of the subject matter.

The limitation in this study is that it was carried out on the local individual investors only listed at the NSE. The data results may also not be applicable to other institutional investors as the focus in this study was on local individual investors and this because of the differences that are found between individual investors and other institutional investors. While it can offer important insights to other institutional investors, such conclusions should be approached with care given the variations in the way investors operate and the way other institutional investors operate. To eradicate this limitation, it may be significant to carry this study on other institutional investors.

## **5.6 Suggestions for Further Study**

Based on the findings, the study suggests that a study should be carried out on a larger scope of individual investors and also to increase the period of study to 5 years so as to enhance the results acquired. The study also suggest that similar study to be carried out by using other return measures such as Jensen's alpha and Treynor's ratio to enable comparison. Further research may assess the effect of portfolio diversification on the equity returns of institutional investors listed at the NSE to ascertain the effect of diversification on the returns.

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6. Kindly select the stocks you have invested in:

1. Eaagads Ltd [ ]
2. Kakuzi Ltd [ ]
3. Kapchorua Tea Co. Ltd [ ]
4. The Limuru Tea Co. Ltd [ ]
5. Sasini Ltd Ord [ ]
6. Williamson Tea Kenya Ltd [ ]
7. Car & General (K) Ltd [ ]
8. Marshalls (E.A) Ltd [ ]
9. Sameer Africa Ltd [ ]
10. Barclays Bank Of Kenya Ltd [ ]
11. Stanbic Holdings PLC [ ]
12. Diamond Trust Bank Kenya Ltd [ ]
13. Equity Bank Ltd Ord [ ]
14. Housing Finance Co. Kenya Ltd [ ]
15. I & M Holdings Ltd [ ]
16. Kenya Commercial Bank Ltd [ ]
17. National Bank Of Kenya Ltd [ ]
18. Nic Bank Ltd [ ]
19. Standard Chartered Bank Kenya Ltd [ ]
20. The Co-Operative Bank Of Kenya Ltd [ ]
21. Express Kenya Ltd [ ]
22. Kenya Airways Ltd [ ]
23. Longhorn Kenya Ltd(aims) [ ]
24. Nation Media Group Ltd [ ]
25. Scangroup Ltd [ ]
26. Standard Group Ltd [ ]
27. TPS East Africa (Serena) Ltd [ ]
28. Uchumi Supermarket Ltd [ ]
29. Deacons (Aims) [ ]
30. Athi River Mining [ ]
31. Bamburi Cement Ltd [ ]
32. Crown Berger Kenya Ltd [ ]

33. E.A Cables Ltd	[ ]
34. E.A Portland Cement Co. Ltd	[ ]
35. KenGen Co. Ltd	[ ]
36. KenolKobil Ltd	[ ]
37. Kenya Power & Lighting Co. Ltd	[ ]
38. Total Kenya Ltd	[ ]
39. Umeme Ltd	[ ]
40. Britam Holdings PLC	[ ]
41. CIC Insurance Group Ltd	[ ]
42. Jubilee Holdings Ltd	[ ]
43. Kenya Re Insurance Corporation Ltd	[ ]
44. Liberty Holdings Ltd	[ ]
45. Sanlam Kenya PLC	[ ]
46. Centum Investment Co Ltd	[ ]
47. Olympia Capital Holdings Ltd	[ ]
48. Trans-Century Ltd	[ ]
49. B.O.C Kenya Ltd	[ ]
50. British American Tobacco Kenya Ltd	[ ]
51. Carbacid Investments Ltd	[ ]
52. East African Breweries Ltd	[ ]
53. Eveready East Africa Ltd	[ ]
54. Kenya Orchards Ltd	[ ]
55. Mumias Sugar Co. Ltd	[ ]
56. Unga Group Ltd	[ ]
57. Safaricom Ltd	[ ]
58. Nairobi Securities Exchange	[ ]
59. Kenya Power & Lighting Ltd 4% Pref 20.00	[ ]
60. Atlas African Industries	[ ]
61. Flame Tree Group Holdings Ltd 0.825	[ ]
62. Home Afrika Ltd	[ ]
63. Kurwitu Ventures	[ ]
64. Nairobi Business Ventures	[ ]
65. Stanlib Fahari I Reits	[ ]



## **APPENDIX II: List of Trading Participants**

1. Dyer & Blair Investment Bank Ltd
2. Francis Drummond & Company Ltd
3. Ngenye Kariuki & Co. Ltd
4. Suntra Investment Bank Ltd
5. Old Mutual Securities Ltd
6. SBG Securities Ltd
7. Kingdom Securities Ltd
8. AIB Capital Ltd
9. ABC Capital Ltd
10. Sterling Capital Ltd
11. ApexAfrica Capital Ltd
12. Faida Investment Bank Ltd
13. NIC Securities Ltd
14. Standard Investment Bank Ltd
15. Kestrel Capital (E.A) Ltd
16. African Alliance Securities
17. Renaissance Capital (Kenya) Ltd
18. Genghis Capital Ltd
19. CBA Capital Ltd
20. Equity Investment Bank Ltd
21. KCB Capital
22. Barclays Financial Services Ltd
23. Securities Africa Kenya Ltd
24. EFG Hermes Kenya Ltd

### APPENDIX III: Tabulation of Responses from Respondents

SNO	GEN	AGE	EDU	PNSE	NOS	EQRN	NPV
1	Male	25-35yrs	Secondary	Less Than 3 Years	1	1	1
2	Female	25-35yrs	Bachelor's Degree	Less Than 3 Years	1	0	1
3	Male	35-45yrs	Bachelor's Degree	Over 13years	4	7.5996	0.2619
4	Male	25-35yrs	Diploma	Less Than 3 Years	15	9.1003	0.0815
5	Female	35-45yrs	Diploma	3-7years	2	1.6225	0.5079
6	Male	25-35yrs	Master's Degree	Less Than 3 Years	1	1.06	1
7	Female	35-45yrs	Diploma	Less Than 3 Years	1	1.0124	1
8	Male	45-55yrs	Master's Degree	8-12years	1	-2.509	1
9	Male	35-45yrs	Bachelor's Degree	Less Than 3 Years	1	0.4458	1
10	Female	25-35yrs	Bachelor's Degree	Less Than 3 Years	1	1.0713	1
11	Female	25-35yrs	Diploma	Less Than 3 Years	2	5.2794	0.5079
12	Female	35-45yrs	Bachelor's Degree	3-7years	1	1.0713	1
13	Male	45-55yrs	Bachelor's Degree	3-7years	3	5.2422	0.3439
14	Female	35-45yrs	Bachelor's Degree	3-7years	2	0.589	0.5079
15	Male	35-45yrs	Master's Degree	8-12years	2	2.8386	0.5079
16	Male	25-35yrs	Bachelor's Degree	3-7years	2	2.698	0.5079
17	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	7	3.556	0.1565
18	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	2	42.0047	0.5079
19	Female	35-45yrs	Master's Degree	8-12years	1	1.0713	1
20	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	2	1.3134	0.5079
21	Female	35-45yrs	Bachelor's Degree	Less Than 3 Years	1	0.8687	1
22	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	2	2.8386	0.5079
23	Male	25-35yrs	Bachelor's Degree	3-7years	4	7.6797	0.2619
24	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	1	0.589	1
25	Female	25-35yrs	Bachelor's Degree	Less Than 3 Years	8	8.6118	0.1389

SNO	GEN	AGE	EDU	PNSE	NOS	EQRN	NPV
26	Female	35-45yrs	Master's Degree	Less Than 3 Years	1	1.0713	1
27	Male	25-35yrs	Bachelor's Degree	3-7years	1	-1.6875	1
28	Male	25-35yrs	Master's Degree	Less Than 3 Years	1	1.0713	1
29	Male	45-55yrs	Master's Degree	Over 13years	5	3.2407	0.2127
30	Female	35-45yrs	Bachelor's Degree	8-12years	5	4.9122	0.2127
31	Male	35-45yrs	Master's Degree	8-12years	8	5.6915	0.1389
32	Female	25-35yrs	Bachelor's Degree	Less Than 3 Years	10	3.8503	0.1143
33	Male	25-35yrs	Master's Degree	3-7years	8	7.0963	0.1389
34	Male	35-45yrs	Bachelor's Degree	8-12years	6	3.2874	0.1799
35	Male	25-35yrs	Diploma	Less Than 3 Years	8	8.3297	0.1389
36	Female	35-45yrs	Diploma	3-7years	9	15.8509	0.1252
37	Male	35-45yrs	Diploma	8-12years	18	11.0959	0.0705
38	Male	35-45yrs	Bachelor's Degree	3-7years	8	3.3351	0.1389
39	Female	35-45yrs	Diploma	3-7years	4	4.308	0.2619
40	Female	25-35yrs	Master's Degree	Less Than 3 Years	2	1.3134	0.5079
41	Male	25-35yrs	Diploma	3-7years	6	1.7445	0.1799
42	Female	35-45yrs	Diploma	Less Than 3 Years	12	10.0426	0.0979
43	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	14	9.7804	0.0862
44	Male	55-65yrs	Other	Over 13years	2	2.9913	0.5079
45	Male	65 And Above	Other	Over 13years	1	-2.509	1
46	Female	0	Other	Less Than 3 Years	2	1.0884	0.5079
47	Male	35-45yrs	Bachelor's Degree	8-12years	3	6.5162	0.3439
48	Male	35-45yrs	Master's Degree	3-7years	3	5.0218	0.3439
49	Female	25-35yrs	Secondary	Less Than 3 Years	1	-2.7257	1
50	Male	0	Diploma	8-12years	2	13.5076	0.5079
51	Male	65 And Above	Diploma	Over 13years	3	0.7792	0.3439
52	Male	0	Other	8-12years	1	0.9959	1
53	Male	45-55yrs	Other	Over 13years	5	5.9182	0.2127

SNO	GEN	AGE	EDU	PNSE	NOS	EQRN	NPV
54	Female	55-65yrs	Diploma	Over 13years	4	3.7064	0.2619
55	Male	35-45yrs	Secondary	Less Than 3 Years	1	1.0713	1
56	Male	65 And Above	Other	8-12years	8	1.6697	0.1389
57	Female	35-45yrs	Master's Degree	Less Than 3 Years	5	3.6516	0.2127
58	Female	35-45yrs	Other	3-7years	8	7.2172	0.1389
59	Male	55-65yrs	Other	3-7years	6	3.9202	0.1799
60	Female	35-45yrs	Diploma	8-12years	2	-0.3972	0.5079
61	Male	45-55yrs	Diploma	3-7years	2	0.5561	0.5079
62	Female	0	Bachelor's Degree	8-12years	3	6.5162	0.3439
63	Male	35-45yrs	Other	3-7years	3	3.0651	0.3439
64	Female	55-65yrs	Other	Over 13years	3	-0.3561	0.3439
65	Female	25-35yrs	Master's Degree	3-7years	3	4.2839	0.3439
66	Male	35-45yrs	Bachelor's Degree	8-12years	7	2.7604	0.1565
67	Male	45-55yrs	Diploma	8-12years	9	7.3774	0.1252
68	Male	35-45yrs	Master's Degree	8-12years	3	-0.4263	0.3439
69	Female	45-55yrs	Other	Less Than 3 Years	2	0.5213	0.5079
70	Male	65 And Above	Diploma	Over 13years	9	5.4613	0.1252
71	Male	25-35yrs	Diploma	Less Than 3 Years	3	4.7797	0.3439
72	Male	35-45yrs	Master's Degree	3-7years	12	9.5422	0.0979
73	Female	55-65yrs	Bachelor's Degree	Over 13years	6	6.0023	0.1799
74	Male	45-55yrs	Master's Degree	8-12years	7	-1.1911	0.1565
75	Male	45-55yrs	Bachelor's Degree	8-12years	7	8.8365	0.1565
76	Male	25-35yrs	Diploma	3-7years	3	4.176	0.3439
77	Female	25-35yrs	Master's Degree	3-7years	2	7.7247	0.5079
78	Male	25-35yrs	Master's Degree	3-7years	3	25.6277	0.3439
79	Female	25-35yrs	Master's Degree	Less Than 3 Years	3	2.1756	0.3439
80	Male	25-35yrs	Diploma	Less Than 3 Years	2	8.9362	0.5079
81	Female	55-65yrs	Bachelor's Degree	Over 13years	3	-0.8702	0.3439
82	Male	45-55yrs	Master's Degree	8-12years	6	2.4946	0.1799
83	Male	25-35yrs	Master's Degree	3-7years	3	1.9355	0.3439

SNO	GEN	AGE	EDU	PNSE	NOS	EQRN	NPV
84	Female	25-35yrs	Master's Degree	Less Than 3 Years	2	9.661	0.5079
85	Female	25-35yrs	Master's Degree	Less Than 3 Years	2	-0.562	0.5079
86	Male	25-35yrs	Master's Degree	Less Than 3 Years	2	8.2358	0.5079
87	Male	35-45yrs	Master's Degree	3-7years	11	6.0998	0.1053
88	Male	25-35yrs	Master's Degree	3-7years	2	2.7035	0.5079
89	Female	55-65yrs	Master's Degree	Over 13years	7	-1.139	0.1565
90	Male	25-35yrs	Master's Degree	Less Than 3 Years	3	1.4909	0.3439
91	Male	25-35yrs	Diploma	Less Than 3 Years	1	1.3338	1
92	Female	35-45yrs	Master's Degree	3-7years	3	1.8399	0.3439
93	Female	25-35yrs	Diploma	Less Than 3 Years	1	0.589	1
94	Male	25-35yrs	Diploma	Less Than 3 Years	1	0.589	1
95	Male	25-35yrs	Master's Degree	Less Than 3 Years	1	1.0713	1
96	Female	35-45yrs	Master's Degree	8-12years	5	-0.0654	0.2127
97	Male	35-45yrs	Master's Degree	3-7years	4	-2.0115	0.2619
98	Male	25-35yrs	Master's Degree	Less Than 3 Years	2	2.1756	0.5079
99	Female	25-35yrs	Master's Degree	3-7years	2	2.9913	0.5079
100	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	2	1.2683	0.5079
101	Female	55-65yrs	Bachelor's Degree	Over 13years	7	2.6616	0.1565
102	Male	45-55yrs	Bachelor's Degree	8-12years	11	3.2243	0.1053
103	Female	35-45yrs	Master's Degree	3-7years	5	-2.2321	0.2127
104	Female	25-35yrs	Bachelor's Degree	Less Than 3 Years	1	1.3338	1
105	Male	25-35yrs	Diploma	Less Than 3 Years	2	2.4339	0.5079
106	Male	35-45yrs	Master's Degree	3-7years	4	2.3651	0.2619
107	Female	25-35yrs	Diploma	Less Than 3 Years	4	-3.3491	0.2619
108	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	4	-1.9987	0.2619
109	Male	25-35yrs	Diploma	Less Than 3 Years	2	42.4903	0.5079
110	Male	35-45yrs	Master's Degree	3-7years	5	3.0521	0.2127
111	Male	25-35yrs	Diploma	Less Than 3 Years	1	1.0713	1

SNO	GEN	AGE	EDU	PNSE	NOS	EQRN	NPV
112	Male	65 And Above	Master's Degree	Over 13years	9	7.8276	0.1252
113	Female	55-65yrs	Diploma	Over 13years	7	2.9848	0.1565
114	Female	25-35yrs	Diploma	Less Than 3 Years	2	2.8386	0.5079
115	Female	45-55yrs	Bachelor's Degree	8-12years	5	2.033	0.2127
116	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	3	2.6312	0.3439
117	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	1	1.0713	1
118	Female	35-45yrs	Master's Degree	3-7years	4	3.1769	0.2619
119	Male	55-65yrs	Bachelor's Degree	Over 13years	10	8.9549	0.1143
120	Male	45-55yrs	Master's Degree	8-12years	9	8.9177	0.1252
121	Female	45-55yrs	Diploma	8-12years	7	3.9827	0.1565
122	Female	35-45yrs	Master's Degree	3-7years	4	2.1224	0.2619
123	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	2	2.8386	0.5079
124	Male	35-45yrs	Bachelor's Degree	3-7years	4	3.7118	0.2619
125	Female	25-35yrs	Other	Less Than 3 Years	1	1.0713	1
126	Male	35-45yrs	Bachelor's Degree	3-7years	1	0	1
127	Female	25-35yrs	Other	3-7years	2	0.2151	0.5079
128	Female	35-45yrs	Master's Degree	8-12years	3	3.4041	0.3439
129	Male	25-35yrs	Diploma	3-7years	2	1.2683	0.5079
130	Male	35-45yrs	Other	8-12years	4	4.0541	0.2619
131	Male	35-45yrs	Bachelor's Degree	8-12years	3	3.0501	0.3439
132	Male	35-45yrs	Bachelor's Degree	3-7years	7	5.8028	0.1565
133	Female	25-35yrs	Diploma	Less Than 3 Years	1	1.0713	1
134	Female	45-55yrs	Other	Less Than 3 Years	1	0	1
135	Female	35-45yrs	Master's Degree	8-12years	7	3.9261	0.1565
136	Female	35-45yrs	Other	Less Than 3 Years	2	7.2992	0.5079
137	Male	45-55yrs	Diploma	8-12years	3	2.2717	0.3439
138	Male	35-45yrs	Bachelor's Degree	3-7years	2	1.0124	0.5079
139	Female	55-65yrs	Other	Less Than 3 Years	2	42.0047	0.5079
140	Male	45-55yrs	Diploma	3-7years	12	7.634	0.0979

SNO	GEN	AGE	EDU	PNSE	NOS	EQRN	NPV
141	Male	65 And Above	Bachelor's Degree	Over 13years	1	0.5443	1
142	Male	25-35yrs	Other	Less Than 3 Years	1	0	1
143	Male	25-35yrs	Diploma	Less Than 3 Years	4	7.5309	0.2619
144	Male	0	Master's Degree	3-7years	2	2.8386	0.5079
145	Female	35-45yrs	Bachelor's Degree	3-7years	6	3.2508	0.1799
146	Female	25-35yrs	Diploma	Less Than 3 Years	1	1.0713	1
147	Female	25-35yrs	Bachelor's Degree	Less Than 3 Years	1	-0.475	1
148	Male	25-35yrs	Bachelor's Degree	3-7years	2	2.6886	0.5079
149	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	2	2.9913	0.5079
150	Male	55-65yrs	Diploma	Over 13years	11	8.1643	0.1053
151	Female	25-35yrs	Master's Degree	Less Than 3 Years	2	2.9144	0.5079
152	Male	35-45yrs	Master's Degree	3-7years	8	-2.638	0.1389
153	Female	25-35yrs	Bachelor's Degree	3-7years	5	0.6381	0.2127
154	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	3	5.5487	0.3439
155	Male	25-35yrs	Bachelor's Degree	3-7years	3	5.7286	0.3439
156	Male	35-45yrs	Bachelor's Degree	3-7years	4	-2.0002	0.2619
157	Male	45-55yrs	Bachelor's Degree	8-12years	7	1.6367	0.1565
158	Male	35-45yrs	Bachelor's Degree	3-7years	6	4.9063	0.1799
159	Female	35-45yrs	Master's Degree	3-7years	4	1.7441	0.2619
160	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	2	15.5589	0.5079
161	Female	25-35yrs	Bachelor's Degree	3-7years	2	2.9913	0.5079
162	Male	35-45yrs	Master's Degree	3-7years	5	3.0791	0.2127
163	Female	25-35yrs	Bachelor's Degree	3-7years	4	0.7265	0.2619
164	Male	25-35yrs	Bachelor's Degree	3-7years	6	1.644	0.1799
165	Male	25-35yrs	Bachelor's Degree	3-7years	3	1.3951	0.3439
166	Male	35-45yrs	Master's Degree	8-12years	2	-0.1867	0.5079

SNO	GEN	AGE	EDU	PNSE	NOS	EQRN	NPV
167	Female	65 And Above	Other	Less Than 3 Years	1	1.0713	1
168	Male	55-65yrs	Other	Over 13years	7	2.9966	0.1565
169	Female	35-45yrs	Master's Degree	3-7years	3	7.7795	0.3439
170	Male	35-45yrs	Master's Degree	8-12years	3	-0.0855	0.3439
171	Male	35-45yrs	Bachelor's Degree	3-7years	6	6.1495	0.1799
172	Female	35-45yrs	Other	3-7years	2	5.2794	0.5079
173	Female	25-35yrs	Secondary	Less Than 3 Years	1	1.0713	1
174	Female	25-35yrs	Other	Less Than 3 Years	2	4.5028	0.5079
175	Male	45-55yrs	Other	3-7years	2	0.5281	0.5079
176	Male	35-45yrs	Other	Less Than 3 Years	2	2.9721	0.5079
177	Male	55-65yrs	Other	3-7years	2	0.7061	0.5079
178	Male	35-45yrs	Bachelor's Degree	Less Than 3 Years	2	-0.5191	0.5079
179	Female	45-55yrs	Diploma	8-12years	8	3.538	0.1389
180	Male	35-45yrs	Other	Less Than 3 Years	2	2.4339	0.5079
181	Male	25-35yrs	Diploma	Less Than 3 Years	1	1.0713	1
182	Male	35-45yrs	Bachelor's Degree	3-7years	4	6.0069	0.2619
183	Female	65 And Above	Other	Less Than 3 Years	1	1.0713	1
184	Male	45-55yrs	Other	8-12years	1	0.9344	1
185	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	3	3.2932	0.3439
186	Male	45-55yrs	Master's Degree	Over 13years	4	7.2242	0.2619
187	Male	35-45yrs	Master's Degree	8-12years	5	1.4513	0.2127
188	Male	55-65yrs	Diploma	8-12years	2	3.3257	0.5079
189	Male	35-45yrs	Secondary	3-7years	1	1.0713	1
190	Female	65 And Above	Other	Over 13years	1	-4.1947	1
191	Female	35-45yrs	Bachelor's Degree	3-7years	5	5.3159	0.2127
192	Male	35-45yrs	Bachelor's Degree	8-12years	9	5.7637	0.1252
193	Male	35-45yrs	Bachelor's Degree	8-12years	10	5.6847	0.1143
194	Male	45-55yrs	Master's Degree	Over 13years	12	6.2592	0.0979
195	Female	45-55yrs	Diploma	8-12years	4	0.9903	0.2619



SNO	GEN	AGE	EDU	PNSE	NOS	EQRN	NPV
196	Female	45-55yrs	Diploma	8-12years	11	3.0334	0.1053
197	Female	35-45yrs	Diploma	3-7years	4	8.1195	0.2619
198	Male	35-45yrs	Diploma	8-12years	7	-2.6356	0.1565
199	Female	55-65yrs	Other	Over 13years	3	2.8879	0.3439
200	Male	25-35yrs	Bachelor's Degree	3-7years	4	3.1171	0.2619
201	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	5	1.1886	0.2127
202	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	11	9.084	0.1053
203	Male	45-55yrs	Master's Degree	8-12years	5	3.782	0.2127
204	Female	35-45yrs	Bachelor's Degree	3-7years	2	-2.2766	0.5079
205	Male	35-45yrs	Diploma	Less Than 3 Years	2	0.7756	0.5079
206	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	1	-2.7202	1
207	Female	25-35yrs	Bachelor's Degree	3-7years	1	-2.7257	1
208	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	2	2.4868	0.5079
209	Male	25-35yrs	Other	3-7years	3	10.7223	0.3439
210	Female	35-45yrs	Diploma	Less Than 3 Years	4	3.5171	0.2619
211	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	3	2.8468	0.3439
212	Male	25-35yrs	Diploma	3-7years	1	1.062	1
213	Female	0	Other	3-7years	2	-2.3978	0.5079
214	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	1	0.5443	1
215	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	3	1.2664	0.3439
216	Male	0	Diploma	Less Than 3 Years	2	-0.4783	0.5079
217	Female	35-45yrs	Diploma	3-7years	1	-2.7202	1
218	Male	35-45yrs	Bachelor's Degree	3-7years	2	1.8193	0.5079
219	Male	35-45yrs	Other	3-7years	1	-2.6211	1
220	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	3	1.3942	0.3439
221	Female	35-45yrs	Bachelor's Degree	3-7years	4	1.3656	0.2619
222	Male	45-55yrs	Other	3-7years	2	-19.191	0.5079
223	Female	35-45yrs	Master's Degree	3-7years	1	0.589	1
224	Male	35-45yrs	Bachelor's Degree	3-7years	2	-2.1726	0.5079

SNO	GEN	AGE	EDU	PNSE	NOS	EQRN	NPV
225	Male	25-35yrs	Diploma	Less Than 3 Years	2	-0.5839	0.5079
226	Male	35-45yrs	Diploma	Less Than 3 Years	2	-1.0481	0.5079
227	Male	35-45yrs	Bachelor's Degree	3-7years	4	3.946	0.2619
228	Male	35-45yrs	Other	Less Than 3 Years	2	1.2651	0.5079
229	Male	45-55yrs	Master's Degree	3-7years	5	1.2611	0.2127
230	Female	55-65yrs	Bachelor's Degree	8-12years	4	0.8	0.2619
231	Female	25-35yrs	Bachelor's Degree	3-7years	3	7.7208	0.3439
232	Male	25-35yrs	Other	3-7years	3	15.3768	0.3439
233	Female	35-45yrs	Bachelor's Degree	8-12years	3	4.1558	0.3439
234	Female	25-35yrs	Diploma	8-12years	2	1.3338	0.5079
235	Male	35-45yrs	Diploma	3-7years	4	4.6292	0.2619
236	Male	35-45yrs	Master's Degree	3-7years	4	10.7384	0.2619
237	Female	55-65yrs	Bachelor's Degree	3-7years	4	-0.5561	0.2619
238	Male	25-35yrs	Bachelor's Degree	3-7years	3	2.381	0.3439
239	Male	35-45yrs	Diploma	Less Than 3 Years	3	1.5517	0.3439
240	Male	35-45yrs	Bachelor's Degree	3-7years	4	3.2124	0.2619
241	Male	0	Master's Degree	3-7years	5	3.0212	0.2127
242	Male	35-45yrs	Diploma	8-12years	4	2.2501	0.2619
243	Female	35-45yrs	Diploma	8-12years	4	2.9812	0.2619
244	Female	25-35yrs	Other	3-7years	2	-1.0927	0.5079
245	Male	35-45yrs	Master's Degree	8-12years	3	1.0719	0.3439
246	Female	35-45yrs	Master's Degree	8-12years	3	11.8036	0.3439
247	Female	25-35yrs	Bachelor's Degree	3-7years	3	0.7089	0.3439
248	Female	25-35yrs	Diploma	Less Than 3 Years	3	1.905	0.3439
249	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	2	0.5098	0.5079
250	Female	35-45yrs	Secondary	Less Than 3 Years	1	-2.2876	1
251	Female		Bachelor's Degree	3-7years	1	0	1
252	Male	35-45yrs	Diploma	Less Than 3 Years	1	0	1
253	Female	35-45yrs	Diploma	3-7years	3	3.1073	0.3439
254	Male	35-45yrs	Diploma	8-12years	2	3.5881	0.5079

SNO	GEN	AGE	EDU	PNSE	NOS	EQRN	NPV
255	Male	25-35yrs	Other	8-12years	3	2.3573	0.3439
256	Female	35-45yrs	Bachelor's Degree	8-12years	4	2.1633	0.2619
257	Male	35-45yrs	Diploma	8-12years	3	0.848	0.3439
258	Female	25-35yrs	Bachelor's Degree	3-7years	1	-2.1952	1
259	Female	35-45yrs	Bachelor's Degree	3-7years	2	20.7733	0.5079
260	Male	35-45yrs	Bachelor's Degree	Less Than 3 Years	3	12.1492	0.3439
261	Male	35-45yrs	Master's Degree	3-7years	3	3.0942	0.3439
262	Male	25-35yrs	Diploma	Less Than 3 Years	3	2.9407	0.3439
263	Male	25-35yrs	Bachelor's Degree	Less Than 3 Years	1	0.5443	1
264	Female	55-65yrs	Bachelor's Degree	Over 13years	1	1.1418	1
265	Female	35-45yrs	Diploma	8-12years	2	-2.2766	0.5079
266	Female	25-35yrs	Other	Less Than 3 Years	1	-4.5244	1
267	Male	25-35yrs	Diploma	Less Than 3 Years	1	0.9959	1
268	Male	35-45yrs	Diploma	8-12years	1	1.0124	1
269	Female	45-55yrs	Bachelor's Degree	Less Than 3 Years	1	-2.3978	1
270	Male	25-35yrs	Other	3-7years	1	-2.1952	1
271	Female	25-35yrs	Other	Less Than 3 Years	2	0.8244	0.5079

## APPENDIX IV: Secondary Data Collection Sheet

LISTED FIRMS	MPS 03/01/2017	MPS 29/12/2017	DVP
Eaagads Ltd	27.75	22.75	0
Kakuzi Ltd	280	329	7
Kapchorua Tea Co. Ltd	80	65.5	3
The Limuru Tea Co. Ltd	530	500	0
Sasini Ltd Ord	19.9	29.5	1
Williamson Tea Kenya Ltd	178	159	10
Car & General (K) Ltd	27	21	0.6
Barclays Bank Of Kenya Ltd	8.7	9.6	0.8
The Co-Operative Bank Of Kenya Ltd	13	15.95	0.8
Diamond Trust Bank Kenya Ltd	118	192	2.6
Equity Bank Ltd Ord	30	39.75	2
Housing Finance Co. Kenya Ltd	13.65	10.4	0.5
I & M Holdings Ltd	88	127	3.5
Kenya Commercial Bank Ltd	29	42.75	3
National Bank Of Kenya Ltd	7.5	9.35	0
Nic Bank Ltd	25.25	33.75	1
Stanbic Holdings	70.5	81	1.77
Standard Chartered Bank Kenya Ltd	188	208	14
Deacons (Aims)	6.05	3.5	0
Eveready East Africa Ltd	2.35	2.4	1
Express Kenya Ltd	3.55	3.75	0
Kenya Airways Ltd	5.8	17.15	0
Longhorn Kenya Ltd(aims)	4.8	5.35	0.29
Nairobi Business Ventures Ltd	7.9	3.35	0
Nation Media Group Ltd	93	116	7.5
Sameer Africa Ltd	2.8	2.8	0
Standard Group Ltd	18	37	0
TPS East Africa (Serena) Ltd	20.5	32.5	0.35
Uchumi Supermarket Ltd	3.75	4.6	0
Scangroup Ltd	17.65	19	0.5
Athi River Mining	23.5	13	0
Bamburi Cement Ltd	160	180	6
Crown Berger Kenya Ltd	42	80	0.6
E.A Cables Ltd	5.95	5.45	0
E.A Portland Cement Co. Ltd	23.5	27	0
KenolKobil Ltd	14.95	14	0.3
KenGen Co. Ltd	5.75	8.55	0
Kenya Power & Lighting Co. Ltd	8	9.1	0.5
Total Kenya Ltd	17.05	23.5	1.06

<b>LISTED FIRMS</b>	<b>MPS 03/01/2017</b>	<b>MPS 29/12/2017</b>	<b>DVP</b>
Umeme Ltd	13	13.4	7.8
Britam Holdings PLC	12.6	13.35	0.3
CIC Insurance Group Ltd	3.95	5.6	0.105
Jubilee Holdings Ltd	490	499	7.5
Kenya Re Insurance Corporation Ltd	22.5	18.1	0.8
Liberty Holdings Ltd	13.45	12.2	0
Sanlam Kenya PLC	27.75	27.75	0
Centum Investment Co Ltd	37.75	43.75	1.2
Home Afrika Ltd	1.2	1.35	0
Kurwitu Ventures	1500	1500	0
Olympia Capital Holdings Ltd	2.85	3.5	0
Trans-Century Ltd	7.35	6	0
Nairobi Securities Exchange	14.6	19.7	0.27
B.O.C Kenya Ltd	83	107	3
British American Tobacco Kenya Ltd	909	760	39.5
Carbacid Investments Ltd	13	12.1	0.7
East African Breweries Ltd	240	238	5.5
Flame Tree Group Holdings Ltd 0.825	4.8	4.55	0
Kenya Orchards Ltd	95	97	0
Mumias Sugar Co. Ltd	1.25	1.1	0
Unga Group Ltd	34.5	29	1
Safaricom Ltd	19	26.75	0.97
Stanlib Fahari I Reits	11.95	10.7	0.5
Barclays Newgold Eft	0	1265	0

### APPENDIX V: Data for the Calculation of Equity Returns

<b>Respondents</b>	<b>NPV</b>	<b>Total Returns</b>	<b>364-day Treasury Bill Rate</b>	<b>Std Deviation</b>	<b>Equity Returns</b>
1	0.5079	0.475	11.128%	0.2181	1.6679
2	1.0000	0.00	11.128%	0.0000	0.0000
3	0.2619	1.4424	11.128%	0.1752	7.5996
4	0.0815	4.7575	11.128%	0.5106	9.1003
5	0.5079	0.5422	11.128%	0.2656	1.6225
6	1.0000	0.4443	11.128%	0.3142	1.0600
7	1.0000	0.3917	11.128%	0.2770	1.0124
8	1.0000	-0.1438	11.128%	0.1016	-2.5090
9	1.0000	0.1625	11.128%	0.1149	0.4458
10	1.0000	0.4589	11.128%	0.3245	1.0713
11	0.5079	0.7474	11.128%	0.1205	5.2794
12	1.0000	0.4589	11.128%	0.3245	1.0713
13	0.3439	1.0948	11.128%	0.1876	5.2422
14	0.5079	0.1907	11.128%	0.1348	0.5890
15	0.5079	0.6496	11.128%	0.1896	2.8386
16	0.5079	2.6061	11.128%	0.9247	2.6980
17	0.1565	1.1372	11.128%	0.2885	3.5560
18	0.5079	0.9459	11.128%	0.0199	42.0047
19	1.0000	0.4589	11.128%	0.3245	1.0713
20	0.5079	0.6829	11.128%	0.4352	1.3134
21	1.0000	0.2885	11.128%	0.2040	0.8687
22	0.5079	0.6496	11.128%	0.1896	2.8386
23	0.2619	1.4975	11.128%	0.1805	7.6797
24	1.0000	0.1907	11.128%	0.1348	0.5890
25	0.1389	1.8568	11.128%	0.2027	8.6118
26	1.0000	0.4589	11.128%	0.3245	1.0713
27	1.0000	-0.5759	11.128%	0.4072	-1.6875
28	1.0000	0.4589	11.128%	0.3245	1.0713
29	0.2127	1.10295	11.128%	0.3060	3.2407
30	0.2127	1.1492	11.128%	0.2113	4.9122
31	0.1389	2.33365	11.128%	0.3905	5.6915
32	0.1143	2.73845	11.128%	0.6823	3.8503
33	0.1389	1.8238	11.128%	0.2413	7.0963
34	0.1799	1.3576	11.128%	0.3791	3.2874
35	0.1389	1.7034	11.128%	0.1911	8.3297
36	0.1252	4.2846	11.128%	0.2633	15.8509
37	0.0705	5.5004	11.128%	0.4857	11.0959
38	0.1389	1.26305	11.128%	0.3453	3.3351

<b>Respondents</b>	<b>NPV</b>	<b>Total Returns</b>	<b>364-day Treasury Bill Rate</b>	<b>Std Deviation</b>	<b>Equity Returns</b>
39	0.2619	1.2319	11.128%	0.2601	4.3080
40	0.5079	0.6829	11.128%	0.4352	1.3134
41	0.1799	0.56075	11.128%	0.2577	1.7445
42	0.0979	5.1229	11.128%	0.4990	10.0426
43	0.0862	5.5588	11.128%	0.5570	9.7804
44	0.5079	0.6589	11.128%	0.1831	2.9913
45	1.0000	-0.1438	11.128%	0.1016	-2.5090
46	0.5079	0.48295	11.128%	0.3415	1.0884
47	0.3439	0.8822	11.128%	0.1183	6.5162
48	0.3439	1.0963	11.128%	0.1961	5.0218
49	1.0000	-0.12	11.128%	0.0849	-2.7257
50	0.5079	0.7197	11.128%	0.0450	13.5076
51	0.3439	0.38895	11.128%	0.3564	0.7792
52	1.0000	0.3762	11.128%	0.2660	0.9959
53	0.2127	1.4276	11.128%	0.2224	5.9182
54	0.2619	0.8586	11.128%	0.2016	3.7064
55	1.0000	0.4589	11.128%	0.3245	1.0713
56	0.1389	0.61955	11.128%	0.3044	1.6697
57	0.2127	1.02362	11.128%	0.2498	3.6516
58	0.1389	2.0282	11.128%	0.2656	7.2172
59	0.1799	1.0793	11.128%	0.2469	3.9202
60	0.5079	-0.0015	11.128%	0.2839	-0.3972
61	0.5079	0.3389	11.128%	0.4093	0.5561
62	0.3439	0.8822	11.128%	0.1183	6.5162
63	0.3439	1.7194	11.128%	0.5247	3.0651
64	0.3439	0.02475	11.128%	0.2430	-0.3561
65	0.3439	0.8121	11.128%	0.1636	4.2839
66	0.1565	2.2921	11.128%	0.7900	2.7604
67	0.1252	2.09725	11.128%	0.2692	7.3774
68	0.3439	0.0354	11.128%	0.1780	-0.4263
69	0.5079	0.3285	11.128%	0.4167	0.5213
70	0.1252	1.4855	11.128%	0.2516	5.4613
71	0.3439	0.845	11.128%	0.1535	4.7797
72	0.0979	2.7118	11.128%	0.2725	9.5422
73	0.1799	1.59275	11.128%	0.2468	6.0023
74	0.1565	-0.2158	11.128%	0.2746	-1.1911
75	0.1565	2.2423	11.128%	0.2412	8.8365
76	0.3439	0.7833	11.128%	0.1609	4.1760
77	0.5079	0.3396	11.128%	0.0296	7.7247

<b>Respondents</b>	<b>NPV</b>	<b>Total Returns</b>	<b>364-day Treasury Bill Rate</b>	<b>Std Deviation</b>	<b>Equity Returns</b>
78	0.3439	0.6128	11.128%	0.0196	25.6277
79	0.3439	2.4158	11.128%	1.0592	2.1756
80	0.5079	1.1362	11.128%	0.1147	8.9362
81	0.3439	0.0523	11.128%	0.0678	-0.8702
82	0.1799	1.0113	11.128%	0.3608	2.4946
83	0.3439	0.7122	11.128%	0.3105	1.9355
84	0.5079	1.0219	11.128%	0.0943	9.6610
85	0.5079	-0.2479	11.128%	0.6392	-0.5620
86	0.5079	0.4374	11.128%	0.0396	8.2358
87	0.1053	2.37325	11.128%	0.3708	6.0998
88	0.5079	0.6777	11.128%	0.2095	2.7035
89	0.1565	-0.1684	11.128%	0.2455	-1.1390
90	0.3439	0.4926	11.128%	0.2558	1.4909
91	1.0000	1.9569	11.128%	1.3837	1.3338
92	0.3439	0.78185	11.128%	0.3645	1.8399
93	1.0000	0.1907	11.128%	0.1348	0.5890
94	1.0000	0.1907	11.128%	0.1348	0.5890
95	1.0000	0.4589	11.128%	0.3245	1.0713
96	0.2127	0.0865	11.128%	0.3791	-0.0654
97	0.2619	-0.0431	11.128%	0.0767	-2.0115
98	0.5079	2.4158	11.128%	1.0592	2.1756
99	0.5079	0.6589	11.128%	0.1831	2.9913
100	0.5079	0.4926	11.128%	0.3007	1.2683
101	0.1565	0.7165	11.128%	0.2274	2.6616
102	0.1053	1.35617	11.128%	0.3861	3.2243
103	0.2127	-927.61	11.128%	415.62	-2.2321
104	1.0000	1.9569	11.128%	1.3837	1.3338
105	0.5079	0.6214	11.128%	0.2096	2.4339
106	0.2619	0.67865	11.128%	0.2399	2.3651
107	0.2619	-0.2179	11.128%	0.0983	-3.3491
108	0.2619	-928.47	11.128%	464.59	-1.9987
109	0.5079	0.3907	11.128%	0.0066	42.4903
110	0.2127	1.7479	11.128%	0.5362	3.0521
111	1.0000	0.4589	11.128%	0.3245	1.0713
112	0.1252	3.23465	11.128%	0.3990	7.8276
113	0.1565	0.89	11.128%	0.2609	2.9848
114	0.5079	0.6496	11.128%	0.1896	2.8386
115	0.2127	0.71172	11.128%	0.2953	2.0330
116	0.3439	2.6112	11.128%	0.9501	2.6312



<b>Respondents</b>	<b>NPV</b>	<b>Total Returns</b>	<b>364-day Treasury Bill Rate</b>	<b>Std Deviation</b>	<b>Equity Returns</b>
117	1.0000	0.4589	11.128%	0.3245	1.0713
118	0.2619	2.8019	11.128%	0.8469	3.1769
119	0.1143	5.3332	11.128%	0.5831	8.9549
120	0.1252	3.34885	11.128%	0.3631	8.9177
121	0.1565	3.19405	11.128%	0.7740	3.9827
122	0.2619	0.4379	11.128%	0.1539	2.1224
123	0.5079	0.6496	11.128%	0.1896	2.8386
124	0.2619	0.8168	11.128%	0.1901	3.7118
125	1.0000	0.4589	11.128%	0.3245	1.0713
126	1.0000	0	11.128%	0.0000	0.0000
127	0.5079	0.1494	11.128%	0.1772	0.2151
128	0.3439	0.9151	11.128%	0.2361	3.4041
129	0.5079	0.4926	11.128%	0.3007	1.2683
130	0.2619	1.0963	11.128%	0.2430	4.0541
131	0.3439	0.9916	11.128%	0.2886	3.0501
132	0.1565	3.8012	11.128%	0.6359	5.8028
133	1.0000	0.4589	11.128%	0.3245	1.0713
134	1.0000	0.4589	11.128%	0.0000	0.0000
135	0.1565	3.1668	11.128%	0.7783	3.9261
136	0.5079	0.7869	11.128%	0.0926	7.2992
137	0.3439	0.7776	11.128%	0.2933	2.2717
138	0.5079	0.3917	11.128%	0.2770	1.0124
139	0.5079	0.9459	11.128%	0.0199	42.0047
140	0.0979	3.12082	11.128%	0.3942	7.6340
141	1.0000	0.1809	11.128%	0.1279	0.5443
142	1.0000	0.4589	11.128%	0.0000	0.0000
143	0.2619	1.1401	11.128%	0.1366	7.5309
144	0.5079	0.6496	11.128%	0.1896	2.8386
145	0.1799	0.90785	11.128%	0.2450	3.2508
146	1.0000	0.4589	11.128%	0.3245	1.0713
147	1.0000	0.0833	11.128%	0.0589	-0.4750
148	0.5079	0.6398	11.128%	0.1966	2.6886
149	0.5079	0.6589	11.128%	0.1831	2.9913
150	0.1053	2.73855	11.128%	0.3218	8.1643
151	0.5079	0.6543	11.128%	0.1863	2.9144
152	0.1389	-926.57	11.128%	351.28	-2.6380
153	0.2127	0.22842	11.128%	0.1836	0.6381
154	0.3439	0.8963	11.128%	0.1415	5.5487
155	0.3439	1.2319	11.128%	0.1956	5.7286

<b>Respondents</b>	<b>NPV</b>	<b>Total Returns</b>	<b>364-day Treasury Bill Rate</b>	<b>Std Deviation</b>	<b>Equity Returns</b>
156	0.2619	-928.98	11.128%	464.50	-2.0002
157	0.1565	0.6147	11.128%	0.3076	1.6367
158	0.1799	1.06585	11.128%	0.1946	4.9063
159	0.2619	1.0673	11.128%	0.5482	1.7441
160	0.5079	0.8506	11.128%	0.0475	15.5589
161	0.5079	0.6589	11.128%	0.1831	2.9913
162	0.2127	0.9324	11.128%	0.2667	3.0791
163	0.2619	0.2185	11.128%	0.1476	0.7265
164	0.1799	0.3151	11.128%	0.1240	1.6440
165	0.3439	0.5052	11.128%	0.2824	1.3951
166	0.5079	0.0702	11.128%	0.2201	-0.1867
167	1.0000	0.4589	11.128%	0.3245	1.0713
168	0.1565	1.0739	11.128%	0.3212	2.9966
169	0.3439	0.9104	11.128%	0.1027	7.7795
170	0.3439	0.0867	11.128%	0.2876	-0.0855
171	0.1799	2.0259	11.128%	0.3113	6.1495
172	0.5079	0.7474	11.128%	0.1205	5.2794
173	1.0000	0.4589	11.128%	0.3245	1.0713
174	0.5079	1.6332	11.128%	0.3380	4.5028
175	0.5079	0.2379	11.128%	0.2398	0.5281
176	0.5079	0.5667	11.128%	0.1532	2.9721
177	0.5079	0.3351	11.128%	0.3170	0.7061
178	0.5079	-0.026	11.128%	0.2645	-0.5191
179	0.1389	2.5816	11.128%	0.6982	3.5380
180	0.5079	0.6214	11.128%	0.2096	2.4339
181	1.0000	0.4589	11.128%	0.3245	1.0713
182	0.2619	1.9603	11.128%	0.3078	6.0069
183	1.0000	0.4589	11.128%	0.3245	1.0713
184	1.0000	0.328	11.128%	0.2319	0.9344
185	0.3439	1.6223	11.128%	0.4588	3.2932
186	0.2619	1.5986	11.128%	0.2059	7.2242
187	0.2127	1.46625	11.128%	0.9336	1.4513
188	0.5079	1.5145	11.128%	0.4219	3.3257
189	1.0000	0.4589	11.128%	0.3245	1.0713
190	1.0000	-0.0566	11.128%	0.0400	-4.1947
191	0.2127	1.3946	11.128%	0.2414	5.3159
192	0.1252	2.0853	11.128%	0.3425	5.7637
193	0.1143	1.80615	11.128%	0.2981	5.6847
194	0.0979	1.58742	11.128%	0.2358	6.2592

<b>Respondents</b>	<b>NPV</b>	<b>Total Returns</b>	<b>364-day Treasury Bill Rate</b>	<b>Std Deviation</b>	<b>Equity Returns</b>
195	0.2619	0.3975	11.128%	0.2890	0.9903
196	0.1053	2.02812	11.128%	0.6319	3.0334
197	0.2619	1.7576	11.128%	0.2028	8.1195
198	0.1565	-925.85	11.128%	351.33	-2.6356
199	0.3439	0.9941	11.128%	0.3057	2.8879
200	0.2619	0.9213	11.128%	0.2599	3.1171
201	0.2127	0.44292	11.128%	0.2790	1.1886
202	0.1053	5.3027	11.128%	0.5715	9.0840
203	0.2127	1.7514	11.128%	0.4337	3.7820
204	0.5079	-0.1054	11.128%	0.0952	-2.2766
205	0.5079	0.3839	11.128%	0.3515	0.7756
206	1.0000	-0.1205	11.128%	0.0852	-2.7202
207	1.0000	-0.12	11.128%	0.0849	-2.7257
208	0.5079	0.6068	11.128%	0.1993	2.4868
209	0.3439	1.0727	11.128%	0.0897	10.7223
210	0.2619	1.8297	11.128%	0.4886	3.5171
211	0.3439	1.5247	11.128%	0.4965	2.8468
212	1.0000	0.4468	11.128%	0.3159	1.0620
213	0.5079	-0.16	11.128%	0.1131	-2.3978
214	1.0000	0.1809	11.128%	0.1279	0.5443
215	0.3439	0.444	11.128%	0.2627	1.2664
216	0.5079	-0.0097	11.128%	0.2529	-0.4783
217	1.0000	-0.1205	11.128%	0.0852	-2.7202
218	0.5079	1.2365	11.128%	0.6185	1.8193
219	1.0000	-0.1304	11.128%	0.0922	-2.6211
220	0.3439	0.4717	11.128%	0.2585	1.3942
221	0.2619	0.5198	11.128%	0.2991	1.3656
222	0.5079	-0.2904	11.128%	0.0209	-19.1913
223	1.0000	0.1907	11.128%	0.1348	0.5890
224	0.5079	-0.4974	11.128%	0.2802	-2.1726
225	0.5079	-0.039	11.128%	0.2574	-0.5839
226	0.5079	-0.0471	11.128%	0.1511	-1.0481
227	0.2619	0.9847	11.128%	0.2213	3.9460
228	0.5079	1.0556	11.128%	0.7464	1.2651
229	0.2127	0.59005	11.128%	0.3796	1.2611
230	0.2619	0.409	11.128%	0.3722	0.8000
231	0.3439	1.9555	11.128%	0.2389	7.7208
232	0.3439	1.2247	11.128%	0.0724	15.3768
233	0.3439	1.1397	11.128%	0.2475	4.1558

<b>Respondents</b>	<b>NPV</b>	<b>Total Returns</b>	<b>364-day Treasury Bill Rate</b>	<b>Std Deviation</b>	<b>Equity Returns</b>
234	0.5079	1.9569	11.128%	1.3837	1.3338
235	0.2619	1.3347	11.128%	0.2643	4.6292
236	0.2619	3.0643	11.128%	0.2750	10.7384
237	0.2619	0.0236	11.128%	0.1577	-0.5561
238	0.3439	1.3778	11.128%	0.5319	2.3810
239	0.3439	0.6058	11.128%	0.3187	1.5517
240	0.2619	1.04015	11.128%	0.2891	3.2124
241	0.2127	1.8658	11.128%	0.5807	3.0212
242	0.2619	1.2548	11.128%	0.5082	2.2501
243	0.2619	0.8785	11.128%	0.2574	2.9812
244	0.5079	-0.0767	11.128%	0.1720	-1.0927
245	0.3439	0.8484	11.128%	0.6877	1.0719
246	0.3439	0.6092	11.128%	0.0422	11.8036
247	0.3439	0.3205	11.128%	0.2951	0.7089
248	0.3439	1.2718	11.128%	0.6092	1.9050
249	0.5079	0.174	11.128%	0.1230	0.5098
250	1.0000	-0.1802	11.128%	0.1274	-2.2876
251	1.0000	0	11.128%	0.0000	0.0000
252	1.0000	0	11.128%	0.0000	0.0000
253	0.3439	1.0335	11.128%	0.2968	3.1073
254	0.5079	0.502	11.128%	0.1089	3.5881
255	0.3439	0.3579	11.128%	0.1046	2.3573
256	0.2619	1.239	11.128%	0.5213	2.1633
257	0.3439	0.3816	11.128%	0.3188	0.8480
258	1.0000	-0.2015	11.128%	0.1425	-2.1952
259	0.5079	1.1351	11.128%	0.0493	20.7733
260	0.3439	2.6238	11.128%	0.2068	12.1492
261	0.3439	0.7188	11.128%	0.1963	3.0942
262	0.3439	0.301	11.128%	0.0645	2.9407
263	1.0000	0.1809	11.128%	0.1279	0.5443
264	1.0000	0.5776	11.128%	0.4084	1.1418
265	0.5079	-0.1054	11.128%	0.0952	-2.2766
266	1.0000	-0.0506	11.128%	0.0358	-4.5244
267	1.0000	0.3762	11.128%	0.2660	0.9959
268	1.0000	0.3917	11.128%	0.2770	1.0124
269	1.0000	-0.16	11.128%	0.1131	-2.3978
270	1.0000	-0.2015	11.128%	0.1425	-2.1952
271	0.5079	0.4083	11.128%	0.3603	0.8244