

FACTORS AFFECTING PERFORMANCE OF MUTUAL FUNDS IN KENYA

By:

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DECLARATION

This research project is my original work and has not been submitted for the award of a diploma or degree in any other university or college.

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

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DEDICATION

I dedicate this research project to my parents Mr & Mrs Amunga and my entire family, who have been a constant source of encouragement and inspiration while undertaking the project.

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Firstly, I would like to acknowledge the Almighty God for giving me strength, health and the required resources to be able to complete this program.

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LIST OF ABBREVIATIONS

APT	– Arbitrage Pricing Theory
CAPM	– Capital Asset Pricing Model
CBK	– Central Bank of Kenya
CMA	– Capital Markets Authority
EMH	– Efficient Market Hypothesis
GARP	– Growth at Reasonable Price
GDP	– Gross Domestic Product
ICEA	– Insurance Companies of East Africa
MPT	– Modern Portfolio Theory
SEC	– Securities and Exchange Commission
SPSS	– Statistical Package for Social Sciences
RBA	– Retirement Benefits Authority

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ABSTRACT

The mutual Fund industry in Kenya has developed rapidly over the past two decades. This can be attributed to the various advantages associated with mutual funds as opposed to other investment instruments. Survival if the fund is purely determined by its performance in the market. This is determined by growth of fund investments and amount of periodic returns to investors for growth and value funds respectively. Furthermore, the growth in the mutual funds market in Kenya has led to great interest in the risk – return relationship in the market. Various asset pricing models can be utilized in empirical testing to determine the dominant risk factors affecting funds in the market.

Kenyan fund market is still budding and of late it has not been performing well when compared to other developed fund markets in the world. Despite this, little research has been done to determine the reasons for poor performance and especially in studying the fundamentals that determine the fund performance. They included risk and return, size, investment styles, fund characteristics, behavioural patterns of investors, managerial capabilities and persistence of returns. The study also adopted the arbitrage pricing model to identify these factors. The Treasury bill, GDP growth rate, inflation size and the fund size were the independent variables selected for the model whose beta parameters were analysed.

The research results will be of utmost importance to the fund managers, investors, government and the academic fraternity. The study involved the registered fund managers in Kenya, which stands at 16, according to the Retirements Benefit Authority (RBA). The research design was descriptive and the researcher employed the census method of study where each registered fund manager was issued with two questionnaires; one to the investment manager and the other to the fund administrator. 28 out of 32 questionnaires issued were duly completed and returned. The data collected was first subjected to descriptive statistics including frequencies, percentages, means and standard deviations.

The study found that a positive relationship existed between mutual funds' returns and the Treasury bill rate and the market interest rates. A negative beta was computed for GDP growth rate, inflation rate and fund size factors. These factors represent risk in the mutual funds market and a positive risk return relationship as computed from the model. Inflation rate, market interest rates and GDP growth rate were observed to have the greatest impact on mutual fund returns. The fund size had a lower but significant coefficient while the beta for Treasury bill rate factor was insignificant. It was also found that there is a negative relationship between fund performance and behavioural patterns of investors.

The study recommends that Kenyan fund managers be exposed to the best investment practices including adopting the appropriate styles and changing them frequently, holding the right size of fund, cleverly selecting the funds to invest in, methods of assessing fund performance among other investment style characteristics.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The predictability of mutual fund performance or the performance of any manager has become an important topic in finance. There is vast literature in finance that deals with models to measure portfolio performance. Moreover, financial services devote a huge amount of attention to developing and marketing statistics. While there are many reasons for measuring performance, the most important reason is to tell the investor something about future performance based on past performance of the mutual funds. The fact that the investing public believes that past performance contains useful information about the future can be seen in two ways; the size by which the industry has grown up to supply performance data to the public and the level by which funds invested in mutual funds have changed from year to year as investors seek better returns with relative levels of risk. For this reason, scrutinizing risk and size of fund as factors affecting performance of mutual funds is of importance.

The investment strategy used determines the risk and reward profile for mutual funds and they vary. Mutual funds provide diversification, divisibility, low transaction costs, access to a broader array of assets and professional management for the individual investor, factors that have propelled their popularity in the past decades, according to Saraoglu and Detlzer (2002). Corporate and private investors evaluate risk and return associated with them in comparison with those associated with other investment assets, before allocating their investment in mutual funds. Hence, investor will evaluate the inherent risk and return associated with different asset classes while allocating his assets. According to Markowitz (1952), the higher the risk an investor exposes themselves to, the higher a return they will seek to gain. Hence,

an investor is likely to evaluate the returns offered by the mutual funds in the past and compare these returns with those of other assets before making an investment decision.

Fund performance is measured in terms of capital growth and periodical returns for growth and value funds respectively. The investigation of performance has evolved from the examination of benchmarking and modelling issues to analyses of other factors that may impact performance. Most research documented was based on investment styles which include the size dimension and fundamental attributes of that holding as affecting fund performance. Other factors affecting fund performance include fund characteristics and behavioural patterns, managerial abilities and persistence of return patterns (Oliver, 2009).

1.1.1 Risk and Return

Risk is the possibility of an outcome deviating from the expectation. It is highly likely that the actual returns will deviate from the expected returns in portfolio management. Downside risk is more critical in portfolio management since it's a probability of making a financial loss. This may include getting less return than the expected, making no return at all or even losing the whole investment itself. Variability in return is analysed by calculating the standard deviation thus reflects the inherent risk in an investment. Mutua (2011) noted that the risk in a portfolio is affected by the asset composition and their individual variances.

Returns from financial assets consist of both periodic income and capital gain for traded assets. Periodic income can be measured in terms of the yield rate which is the percentage of the return of the value asset.

$$\text{Income yield} = \frac{CF_1}{P_0} \quad (1)$$

Where CF_1 = the expected cash flow

P_0 = Purchase price

Expected return is the average return in the period under consideration multiplied by their probability percentages.

$$E(r) = \sum p_i r_i \quad (2)$$

Where $E(r)$ = the expected return

p_i = the probability of return

r_i = the return per period

The asset risk is therefore the standard deviation of the returns, which is the square root of its variance.

$$\sigma = \sqrt{(\sum p_i r_i^2 - E(r)^2)} \quad (3)$$

An investor will seek to maximize returns of the asset at minimum possible risk. The investor will consider diversifiable and non-diversifiable risk. Non-diversifiable risk is systematic risk that affects the whole market. Diversifiable risk is non-systematic risk which only affects a certain industry hence can be reduced or eliminated in a portfolio through diversification. Hence a portfolio should contain assets which are negatively correlated. Correlation refers to the degree at which the returns of two assets change in the same direction. Therefore, a portfolio with two perfectly negatively correlated assets would be riskless.

Saraoglu and Detzler (2002) observed that portfolio management by fund managers involves constructing a variety of risky portfolios that maximize returns. They analyse risk factors that affect returns and provide a competitive yield rate for the investors.

1.1.2 Size

How does mutual fund performance depend on the size or asset base of the fund? According to (Gruber, 1996 and Berk & Green, 2002), the issue of the persistence of fund performance depends crucially on the scale-ability of fund investments. The nature of the economies of scale in this industry may also have implications for the agency relationship between

managers and investors and the optimal compensation contract between them (Brown et al, 1996 and Becker & Vaughn, 2001). Thus, understanding the effects of fund size on fund returns is an important first step towards addressing such critical issues.

While the effect of scale on performance is an important question, it has received little research attention to date. Some researchers point out that there are advantages to scale, such as more resources for research and lower expense ratios, while others believe that a large asset base erodes fund performance because of trading costs associated with liquidity or price impact (Perold & Salomom, 1997). Whereas a small fund can easily put all of its money in its best ideas, a lack of liquidity forces a large fund to have to invest in its not-so-good ideas and take larger positions per stock than is optimal, thereby eroding performance.

1.1.3 Mutual Fund Performance

According to the Investment Company Fact Book 2014, the US mutual fund market remained the largest in the world – with \$15 trillion in assets under management at year end 2013- accounting for half of the \$30 trillion mutual funds worth worldwide.

Overall demand for mutual funds as measured by net new cash flow slowed in 2013. Increased demand for equity, hybrid and money market mutual funds are more often offset by lower demand for bond funds. Overall mutual funds hold a net cash inflow of \$167 billion in 2013, down from \$196 billion in 2012. Investors added \$152 billion, on net, to long term funds and \$15 billion, on net, to money market funds. Actions by the Federal Reserve, global economic conditions, evolving investment preferences and ongoing demographic trends appeared to influence mutual fund flows in 2013.

Relative outperformance of equities, together with lower stock market volatility helped to bolster steady demand for equity mutual funds throughout 2013. Bond fund flows in 2013

were easily influenced by developments related to monetary policy. The Federal Reserve held short-term interest rates at a very low level and also continued to make large scale purchases of fixed income securities. In the second half of the year, the markets interpreted the Federal Reserve's action as an indication that the Federal Reserve might begin to curtail its asset purchases. Consequently, long-term interest rates rose sharply, depressing returns in the United States Fixed-Income market.

Hybrid funds ensure that investors achieve a managed balanced portfolio of stocks and bonds. Over the past seven years, a sum of \$384 billion was added by investors to the net new cash and reinvested dividends to these funds. In 2013, investors added a record \$73 billion in net new cash flow to hybrid funds, up from \$47 billion in 2012.

1.1.4 Relationship between Risk and Return and Size of Mutual Funds

Prospective investors need to have a strong understanding of market capitalization ('market cap') in order to effectively begin their search for mutual funds. When a mutual fund is described in terms of market cap, (i.e., small-cap, mid-cap and large-cap), it indicates the size of the companies in which the fund invests, not the size of the mutual fund itself. Market cap is calculated as the number of shares outstanding multiplied by the current market price of one share. Thus, a company with one million shares outstanding selling at \$100 per share would have a market cap of \$100 million.

Small-cap funds typically include companies with market capitalization of less than \$1 billion and are generally those companies in their early stages of business and are presumed to have significant growth potential, but are not as financially strong or established as larger companies. Since small cap funds invest in companies that are less stable than large cap companies, the funds can be quite volatile. This has its pros and cons. In times of market instability, small cap funds can suffer greatly as less established companies go out of

business. On the other hand, small cap funds can be great investments for those who can tolerate more risk and are looking for more aggressive growth. Finally, many mutual funds cannot take substantial positions in small cap stocks without filing with the Securities and Exchange Commission (SEC), and this usually means greater transparency when it comes to funding holdings.

Mid cap funds are those that invest in companies with market caps of \$1 billion to \$8 billion, and is the most popular choice among the general investing public. These companies share some of the growth characteristics of small cap companies, but they entail less risk (at least in theory) because they are slightly larger. These funds don't always move with the broader market, and are usually not as prone to violent swings as small caps. They can be great investment vehicles for investors seeking to fund with great return possibilities – without the risk of small caps and index-related returns like those of large caps.

Large cap funds comprise companies with market caps of \$8 billion or more. However, due to their large size, large cap funds are often forced to imitate a larger index, such as the S & P 500, since mutual funds have restrictions on the level of the ownership they can have in any one company, which is generally no more than 10% of their outstanding shares. This results in large cap funds being forced to buy large companies – the same ones that make up the major market indexes. These funds can be great for investors who have longer-term investment timelines and would like to 'buy and hold'. There are many large cap income funds that are great income vehicles for those who want to take less risk, but not for those seeking greater diversification in smaller, more aggressive companies.

Generally, small and mid-cap companies have the ability to produce greater returns through more agile and dynamic businesses that tend to be more growth oriented than large conglomerates. In simple terms, a company with a \$1 billion market cap can much more

easily double its entire market cap than a large conglomerate of \$50 billion. And because share price is an important factor in measuring market cap, a rapidly growing market cap most often translates to the price of the stock climbing higher as well.

In conclusion, when an investor is considering what type of mutual fund is right for their portfolio, it is crucial that they remember that there are many other factors to consider, e.g., whether the fund specializes in growth, value or another investing style. They should also distinguish between load and no-load funds and determine whether they prefer open or closed end funds.

1.1.5 Mutual Funds in Kenya

In Kenya, the mutual fund industry did not take off as early as in developed countries. However, unit trusts have largely grown in acceptance and popularity over the recent years and this is evidenced by the number of approved trust funds from virtually zero in 2001 to eleven in 2008. According to the Capital Market Authority (CMA) Investor Education handbook (2010), there were eleven functional unit trust schemes, namely; African Alliance Kenya Unit Trust Scheme, Old Mutual Unit Trust Scheme, British American Unit Trust Scheme, Stanbic Unit Trust Scheme, Commercial Bank of Africa Unit Trust Scheme, Zimele Unit Trust Scheme, Suntra Unit Trust Scheme, Insurance Companies of East Africa (ICEA) Unit Trust Scheme, CFC Unit Trust Scheme, Dyer and Blair Unit Trust Scheme and Standard Unit Trust Scheme.

Since the initial work of Sharpe (1966), various research studies have been conducted and various determinants documented as affecting the mutual fund performance. For instance, the works of Brown et al (2009), Rawkoski and Wang (2009), Duan Hu and Mclean (2008) and Cohen et al (2008) have documented investment style, fund characteristic, investors'

behavioural patterns, managerial characteristics and mutual fund risks, as affecting mutual fund performance.

During the 1990's, there was significant growth in the mutual industry worldwide as a result of the advantages associated with mutual funds. This was the period during which individual investors were shifting from real estate and tangible assets to financial assets, and their preference for ownership of stocks and bonds and the growth of tax deferred investing for retirement through pension plans which were used to own mutual funds (Fabbozi and Modigliani, 2002).

There was substantial growth in the number of mutual funds in the United States of America in the 1980's. Towards the end of 2005, the combined assets of the US mutual funds approached \$9 trillion, up from \$370 billion in 1984, while the number of individual funds grew from 1200 to 900 over the same period (Bliss, Potter and Schwarz, 2008). This implies that the investing public relies on non-bank financial institutions and increased sophistication of investors as regards to their knowledge and appreciation of alternatives to commercial bank services (Johnstone, Hatem and Carnes, 2010).

The regulators of the financial industry in Kenya are Capital Markets Authority (CMA), provisions of the Central Bank of Kenya (CBK), Retirement Benefits Authority (RBA), stock exchanges and international institutions. In 2010, the Funds Managers' Association was set up as a self-regulatory initiative.

1.2 Statement of the Problem

Over the last few years, mutual funds have attracted considerable attention due to their increase in funds holding across the globe and as a result, fund managers' operations have been reviewed (Gitagia, 2012). Foreign investors evaluate the risks that range from economic

stability, inflation and other macroeconomic variables against the rate of return available locally relative to the international rates. They evaluate past yields offered by mutual funds with the volatility of such return constituting the inherent risk. Ramasang (2003) observed that robust growth in fund management in emerging markets has resulted in a rapid increase in investment firms offering diversified portfolio funds. However, the investors, while evaluating these factors, do not investigate them conclusively before settling on a fund to invest in.

Mutual funds in Kenya have recorded significant growth in the last two decades and the rapidly growing middle class is gradually gaining interest in them (Kariuki, 2012). The fund management firms play a significant role in boosting national savings and compete for investor funds with other investment assets. Over the last two decades the level of funds invested in mutual funds has changed from year to year as investors seek better returns with relatively low levels of risk (Mutua, 2011). Mutual funds offer different products that yield periodic incomes and capital gains on listed assets. It is also these different products that influence the performance of different funds in the market.

Sharpe (1964) in an investigation into the relationship between risk and the return found a positive relationship. Locally, Muriithi (2005) evaluated the risk return relationship of equity mutual funds and found a positive relationship between the two factors. This concluded that investors in Kenya were highly risk averse and highly prefer low risk assets, demanding higher return if they were to incur more risk. This has an effect on the performance of the mutual funds in that, the low risk securities will be more attractive to the investors as opposed to those with higher risk.

Berk and Green (2004) argued out why past performance should not predict future performance. They argued that a successful manager would capture excess return by charging

more per dollar managed, hence increasing expense ratios, or, on the other hand the fund would increase in size and due to resulting diseconomies of scale, such as, greater transaction costs, organizational diseconomies or the need to add poorer performing investments, excess returns will disappear and eliminate predictability.

Does increase in size of a mutual fund or its good performance lead to an increase in expenses? Pollet and Wilson (2008) examine influences that could lead to diseconomies of scale which in turn increase the expenses. They hypothesize that management can put more money into existing stocks, therefore incurring higher transaction costs or they can increase the number of stocks in the portfolio, thus having to select securities with lower expected returns.

All the above studies were carried out in isolation, hence it cannot be concluded that a particular factor is solely responsible for how a specific mutual fund performs. This implies that limited research was carried out in examining the factors that affect the performance of mutual funds and to what extent. Some factors may be known while others emerge with changing times. It is due to this background that this study sought to fill this knowledge gap by assessing the factors that affect the performance of mutual funds in Kenya.

1.3 Objective of the Study

The objective of the study is to find out the factors that influence the performance of mutual funds in Kenya.

1.4 Importance of the Study

Through its findings, the study will contribute to both the academia and the financial practitioners. To begin with, the study will help fund managers to observe the general view of factors influencing the performance of mutual funds in the past and the decisions investors took using the information that was available to them. It will indicate whether their

predictions materialized and the impact they had on the returns that they generated. It will help fund managers better understand economic factors expectations and choices, hence provide products that cater for their unique preferences.

Secondly, it will aid investors to review their asset allocation methods by highlighting the prevailing factors and the resultant actual market returns. The study will further highlight the critical factors investors should put into consideration and their impact to returns realized. This information will be critical to individual, corporate and private investors making investment decisions against a large field of investment options.

The study will benefit the economic policy makers who seek to boost investment in different sectors. It will highlight the factors that determine mutual funds' performance and thus information on how to boost the industry and consequently domestic investments. It will provide information on how to influence investment towards certain asset classes by determining what factors influence returns in these asset classes over the others, thus formulate policy to direct investments towards the critical asset classes.

The study will be beneficial to the academic sector as it will contribute to the body of knowledge by providing empirical evidence against theoretical factors expected to affect mutual funds' performance in the industry.

Finally, the study will recommend new areas for further study that influence the mutual fund industry. It will highlight currently available information, expected changes in the market and possibility of more research as the mutual fund market grows in Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter explores the theories associated with the mutual fund performance. Section 2.2 discusses the theoretical literature. Section 2.3 presents the empirical literature to the study. Section 2.4 outlines other relevant factors that determine mutual fund performance. Finally, section 2.5 summarises all the discussions in the chapter and the way forward.

2.2 Theoretical Literature Review

The theoretical review will provide some theories related to mutual fund performance and in particular those that are linked to risk and size as factors affecting mutual fund performance. Some of the theories explored include Efficient Market Hypothesis (EMH), Modern Portfolio Theory (MPT), Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT)

2.2.1 Efficient Market Hypothesis

The Efficient Market Hypothesis (EMH) created by Fama (1970) states that, the security prices reflect all publicly available information. Trading based on insider knowledge is illegal, and even if it were possible, not enough investors would be privy to such non-public information to make any significant impact on the overall returns of any stock. Most financial products available to the investors today assume the sanctity of the EMH. Passive investing, diversification and overall market index as a benchmark for performance are all a result of blind faith in the EMH.

The EMH assumes three things: First, that all investors perceive all information available in the same manner. Second, under the EMH, no single investor is able to gain greater profitability than the other with the same amount of invested funds, their equal possession of

information means they can only achieve equal returns. Thirdly, no investor should ever be able to beat the market, or the average annual returns that all investors and funds are able to achieve using their best efforts.

However, the EMH does not give strict definition of how much time prices need to revert to fair value. In addition, under the efficient market, random events are entirely acceptable but will always be ironed out as prices revert to the norm.

2.2.2 Modern Portfolio Theory (MPT)

Modern Portfolio Theory (MPT) is a hypothesis put forward by Harry Markowitz (1952), which was based on the idea that risk-averse investors can construct portfolios to optimize or maximize expected return based on a given level of market risk, emphasizing that risk is an inherent part of higher reward. It suggests that it is not enough to look at the expected risk and return of one particular stock, rather, by investing in more than one stock, an investor can reap the benefits of diversification (also known as not putting all your eggs in one basket), particularly a reduction in the riskiness of the portfolio.

One of the basic assumptions in this theory is that an investor seeks to maximize discounted expected returns and variance of returns is undesirable. Variance is a measure of dispersion from the expected. Expected returns can be measured by the yield of the asset while the variance of return is considered as a risk. The choice of portfolio is separated from beliefs using the expected return-variance of returns rule. Hence, the evaluation of this relationship is the basis of the choice made by investors, thus eliminating decisions made of beliefs.

MPT suggests that it is possible to construct an 'efficient frontier' of optimal portfolios, offering the maximum possible expected return for a given level of risk. The efficient frontier

can be defined as a combination of assets with maximum expected returns that is superior to any other combination and gives the highest level of returns at the lowest level of risk.

Return on the portfolio is the weighted sum of expected return of the component assets, i.e,

$$E(R_p) = \sum w_i E(R_i) \quad (1)$$

Where R_p is the return on the portfolio, R_i is the return on asset i and w_i is the weighting of component asset i (i.e., the share of asset i in the portfolio).

Portfolio return variance is calculated as follows:

$$\sigma_p^2 = \sum w_i^2 \sigma_i^2 + \sum_i \sum_{j \neq i} w_i w_j \sigma_i \sigma_j \rho_{ij} \quad (2)$$

Where ρ_{ij} is the correlation coefficient between the returns on assets i and j . alternatively, the expression can be written as:

$$\sigma_p^2 = \sum_i \sum_j w_i w_j \sigma_i \sigma_j \rho_{ij} \quad (3)$$

Where $\rho_{ij} = 1$; for $i=j$.

The theory concludes that diversification provides a superior portfolio. It minimizes the variance with caution being placed on ensuring that the assets don't have a high covariance with each other.

Weaknesses in the MPT emerge from the difficulty in estimating the correlation coefficient for two assets. It is even harder for multiple assets which require complex tools, thus it is not practical. In reality, unlimited range of possibilities of investments exists.

2.2.3 Capital Asset Pricing Model (CAPM)

The CAPM model was the work of financial economist (and later Nobel Laureate in Economics), William Sharpe, 1970, as set out in his book, 'Portfolio Theory and Capital Markets.' He put forth the idea that individual investment contains two types of risk:

systematic Risk which is market risk that cannot be diversified away. They include interest rates, recessions, wars, etc., and unsystematic Risk/specific risk which is risk specific to individual stocks and can be diversified away as the investor increases the number of stocks in his/her portfolio. In other words, it represents the component of a stock's return that is not related with general market moves.

Even though MPT shows that specific risk can be removed through diversification, diversification still does not solve the problems of systematic risk; even if a portfolio contains all the shares in the stock market, that risk cannot be eliminated. Therefore, CAPM offers a way to measure this systematic risk when calculating a deserved return.

Sharpe (1964) found that the return on an individual stock, or a portfolio of stocks, should equal its cost of capital. The standard CAPM formula which describes the relationship between risk and expected return is given by:

$$R_a = R_f + \beta_a (R_m - R_f) \quad (4)$$

Where; R_f = Risk free rate

β_a = Beta of the security

R_m = Expected market return

$(R_m - R_f)$ = Equity market premium

CAPM's starting point is the risk-free rate, typically, a 10-year government bond yield. A premium demanded by equity investors is added to this to compensate them for the extra risk they accept. This 'equity market premium' consists of the expected return from the market as a whole less the risk-free rate of return. The 'equity risk premium' is multiplied by a coefficient called "beta", as called by Sharpe (1964).

Beta measures a stock's relative volatility, i.e., it shows how much the price of a particular stock jumps up and down. A beta greater than one means that the asset is more sensitive than the market portfolio thus has a greater variance. A beta less than one means the asset is less sensitive, thus has a low systematic risk. For instance, if a share price moves exactly in line with the market, then the stock beta is 1. A stock with a beta of 1.5 would rise by 15% if the market rose by 10% and fall by 15% if the market fell by 10%.

The beta formula is given by:

$$\beta_i = \text{Cov}(R_i, R_m) / \text{Var} R_m \quad (5)$$

CAPM uses various assumptions about markets and investor behaviour to give a set of equilibrium conditions that allow us to predict the return of an asset for its level of systematic (or undiversifiable) risk. By using a measure of a systematic risk that can be compared with other assets in the market, theoretically, investors are allowed to improve their portfolios and fund managers to find their required rate of return. However, there are infinite assets in the market portfolio, making it unobservable – only an index can be used, hence limiting its testability.

2.2.4 Arbitrage Pricing Theory (APT)

Ross (1976), created the arbitrage pricing theory, which is an asset pricing model based on the idea that an asset's return can be predicted by using the relationship between that same asset and many common risk factors. The theory predicts a relationship between the returns of a portfolio and the returns of a single asset through a linear combination of many independent macro-economic variables. Where the price of an asset is mispriced, APT describes where it is expected to be. APT is viewed as an alternative to CAPM, since it has more flexible assumption requirements. While the CAPM formulae requires the market's expected return, APT uses the risky asset's expected return and the risk premium of a number

of macro-economic factors, such as, changes in the gross domestic product, inflation and the structure of the interest rate.

The fundamental logic is that arbitrageurs use the APT model by taking advantage of mispriced securities to make a theoretic risk-free profit, since a mispriced security will have a price that differs from the theoretic price predicted by the model.

The APT model is derived from the unpredictable components of asset return as follows:

$$E (R_j) = R_f + UR \quad (6)$$

Where; $E (R_j)$ = the expected return of asset j

R_f = the risk free rate of return

UR = the unpredictable rate of return

The unpredictable component depends on economic factors which are identified and represented as follow:

$$UR = \beta_1 F_1 + \beta_2 F_2 + \beta_3 F_3 + \dots + \beta_n F_n \quad (7)$$

Where: β_i = the beta of the factors

$$\beta = b (R_{\text{factor1}} - R_f)$$

The beta measures the sensitivity of each stock to the factor. $(R_{\text{factor1}} - R_f)$ estimates the risk premium on each factor. This is the difference between the factors rate of return and the risk free rate of return. Hence;

$$E (R_j) = R_f + \beta_1 F_1 + \beta_2 F_2 + \beta_3 F_3 + \dots + \beta_n F_n \quad (8)$$

The APT model does not require the market portfolio to be measured and can be used when only data from a sample of risky assets is available.

2.3 Empirical Literature Review

There have been large numbers of studies published about mutual fund performance in general. However, the number of empirical studies on the performance of mutual funds in fund markets is relatively small. These section of the study attempts to summarize the conclusions of some selected studies.

2.3.1 Risk and Return

Gaumnitz (1970) evaluated the portfolio return variability and market price. He concluded that portfolio managers are better off maximising the portfolio market prize to maximise returns rather than try to minimise its variability. The returns on a portfolio vary more significantly than the portfolio market price. Hence, the return measures dominated the risk measures in calculation of the market price of risk than consideration of the variability.

Black, Jensen and Scholes (1972) improved the precision of the CAPM in estimating the beta by working with portfolios rather than individual assets. The evaluation was not purely for the pricing of a single asset but the pricing of a portfolio of assets. Jensen (1968) highlighted the fact that a time-series regression test would prove the accuracy of the capital asset pricing model. His evaluation considered the CAPM parameters and their estimation concluding that a regression analysis would provide the estimate which would be used in the model. Actual returns would then be compared with forecasts generated from the model. Significance test proved that the beta was significant in explaining changes in explaining changes in expected returns and estimates were within close range to the actual returns earned.

Taylor & Yoder (1994) investigated whether mutual fund trading activity by managers of high-risk mutual funds make a positive contribution to investor utility. Stochastic dominance is used to compare the returns of high-turnover funds with those of low-turnover funds. This approach avoids the limitations of a mean/variance or regression approach and minimizes

problems of survivorship bias. The results show that high-turnover groups dominate low-turnover groups, or at least are equally attractive to risk-averse investors. Active portfolio management can enhance investor utility, even when the cost of obtaining and exploiting costly information are taken into account.

Grinblatt & Titman (1989) analysed mutual fund performance using quarterly portfolio holdings. They employed the 1975-85 quarterly holdings of a sample of mutual funds to construct an estimate of their gross returns. The sample which was not subject to survivorship bias was used in conjunction with a sample that contains the actual (net) returns of the mutual funds. In addition to allowing estimation of the bias in measured performance that is due to the survival requirement it also afforded estimates of total transaction costs, and the sample was used to test for existence of abnormal performance. The test indicated that the risk-adjusted gross returns of some funds were significantly positive.

Roll (1997) however heavily criticised the Capital Asset Pricing Model due to the fact that the market portfolio was unidentifiable. A market portfolio would include all risky assets available in the market and would be infinite. He was in support of the arbitrage pricing theory that evaluated more factors and included economic risk factors. This multifactor model was derived by Ross (1990). In this theory the level of risk in an asset and therefore its average expected return is directly related to anticipate changes in economic variables. These factors include inflation, industrial productivity, risk premiums, slope of the term structure of interest rates among others.

Ngene (2002) investigated the portfolio performance measures used by pension managers and the challenges they face in portfolio management in Kenya. He established that most investment managers are aware of the portfolio performance measures yet only one of the nine respondents used the measures in pension fund management.

Maina (2003) researched on the risk and return of the investments held by insurance companies in Kenya from January 1997 to December 2001. He concluded that there is very little correlation between return and risk of investment held by Kenyan insurance companies. Investment in secured loans however had a positive relationship between risk and returns.

Mutua, (2010) evaluated the relationship between portfolio composition, risk and return among fund management firms in Kenya. He concluded that asset selection affects the risk and return associated with a portfolio. He found that portfolio composition was evaluated by fund managers in determining acceptable risk and achievable returns by the fund.

2.3.2 Size

Indro, Jiang, Hu & Lee (1999) evaluated whether fund size affects a mutual fund's performance. They found that the fund size, which is the value of net assets under management, affects the mutual funds' performance. Mutual funds must attain a minimum fund size in order to achieve sufficient returns to justify their costs of acquiring and trading on information. Furthermore, there are diminishing marginal returns to information acquisition and trading, and the marginal returns become negative when the mutual fund exceeds its optimal size. In a sample of 683 non-indexed American equity funds over the 1993-95 periods, they found that 20 per cent of the mutual funds were smaller than the breakeven-cost fund size and 10 per cent of the largest funds overinvested in information acquisition and trading. In addition, they found that value funds and blend (value-and-growth) funds have more to gain than growth funds from these information activities.

O'Neal (1997) researched on how many mutual funds constitute a diversified mutual fund portfolio. Using simulation analysis he found that time-series diversification benefits are minimal but the expected dispersion in terminal-period wealth can be substantially reduced by holding multiple funds. Portfolios with as few as four growth funds halve the dispersion in

terminal-period wealth for 5 to 19-year holding periods. In addition, downside risk measures decline as funds are added to portfolios. These advantages to multiple-fund portfolios are especially meaningful for investors funding fixed-horizon investment goals such as retirement or college savings.

2.3.3 Market Timing

Merton (1981) developed a framework for evaluating market timing ability that does not require knowledge of the distribution of returns on the market or any particular model of security valuation. It takes the simple form that the investment manager either forecasts that the stock market will provide a greater return than riskless securities. The forecaster does not attempt to predict, or is not able to predict, by how much stocks will perform better or worse than riskless securities, but s/he will adjust the relative proportions of the market portfolio and riskless securities that are held in the fund.

Comer (2006) examined the stock market timing ability of two samples of hybrid mutual funds. He found that the inclusion of bonds indices' and a bond timing variable in a multifactor Treynor-Mzuy model framework leads to substantially different conclusions concerning the stock market timing performance of these funds relative to the traditional Treynor-Mazuy model. Results from this multifactor model find less stock timing ability over the 1981-91 time periods and provide evidence of significant stock timing ability across the second fund sample during the 1992-2000 time periods.

Market timing ability is based on the notion that the decision to issue equity depends on market performance (Lucas and McDonald (1990) and Korajczyk, Lucas and McDonald (1992)). Empirical evidence supports the prediction that mutual fund price performance is important for equity issues decisions (Rajan and Zingales (1995), Baker and Wurgler (2002), and Entrepreneurs' Survey by Kamath's (1997) and Graham and Harvey (2001)). Mixed

evidence exists regarding whether investors overpay for shares or not. Some researchers argue that investors tend to be overoptimistic during new issues and the analysts' forecasts are inadequately high and that managers manipulate earnings prior to going public. (Baker and Wurgler (2002), Teoh, Welch and Wong (1998)).

Additionally, some research argues in favour of efficient market version of the market timing argument (Hansen and Savin (1998), Knill and Lee (2006)). Still, some research suggests that market timing is not based on good market performance as compared to firm's predicted performance. Instead it is based on the market performance prior to the issue ("pseudo-market timing, Schultz (2003) and Butter, Grullon and Weston (2005)).

Evidence mostly supports the market timing theory in that managers wait until the market conditions are better, that stocks have high return prior to equity issues and that prior to issues firms window-dress or improve their performance. Mixed evidence exists regarding whether investors overpay for mutual funds and shares. Also can the market timing theory be used to explain numerous phenomena about mutual fund performance? The fact is that we lack theoretical models on market timing. As a result, the authors have sometimes different opinion about the interpretation of market timing.

2.3.4 Investment Styles

Funds' preference for one investment style over another (due to behavioural or agency reasons) may affect the structure of asset prices. Barberis and Shleifer (2000) show how funds' pursuit of styles can account for observed patterns in stock returns. For instance, if funds favour a style and allocate more resources to that style than is warranted by underlying fundamentals, the prices of stocks belonging to that style category may temporarily deviate from fair values. Chan, Karceski and Lakonishok (2000) provided evidence on the operating performance of size-value equity asset classes.

Though many style dimensions might be used, in practice, investment managers generally tend to break the domestic equity investment universe down into four classes: large capitalization or small capitalization growth stocks and large capitalization and small capitalization value stocks. Academic research by Fama and French (1992, 1993) and Chan, Karceski and Lakonishok (1998), found that size and book-to-market are important for capturing the variation in stock returns.

Models vary with respect to the choice of style indices. Fama and French (1992, 1993) found that three factors – the market and mimicking portfolios for size and book-to-market – can explain the cross-section of average returns and common variation in returns. Accordingly, the Fama-French factors are used as style indices, hence a fund’s loadings on the factors provide one way for identifying a fund’s style. Alternatively, the style indices are either used for the first three or four statistical factors extracted from stock returns used as the asymptotic principal components method of Connor and Korajczyk (1991). Brown and Goetzmann (1997) performed a cluster analysis on fund returns and identified eight style dimensions.

Sharpe (1992) provided a different style classification procedure that is widely used in the investment management industry. This procedure regresses a fund’s return on the returns to cash and a variety of equity classes. The model thus yields the fund’s effective asset mix.

2.3.5 Fund Characteristics

Numerous studies generally indicate that mutual funds as a group do not outperform passive benchmarks (Jensen (1968), Ippolito (1989), Elton et al. (1993) and Malkiel (1995)). This finding is even more striking when juxtaposed against the voluminous research documenting various return anomalies. For example, a portfolio of “value” stocks (with high ratios of book-to-market value of equity) generated on paper, returns that have in the past substantially exceeded the return on the Standard and Poor’s (S&P) 500 index. The puzzle then is why so

few funds consistently generate superior performance. One explanation borrows from related research on the pension fund industry (which generally has not displayed superior performance either). Although there are important differences in the structure of the pension and the mutual fund industries, the conjecture is that mutual fund managers' behaviour may be coloured by considerations beyond the maximization of portfolio return or diversification. Khorana (1996), Chavelier and Ellison (1997) and Karceski's (1998). Insofar as these choices degrade performance, the result is the general underperformance in mutual funds.

On the methodological front, existing literature directly confronts the size-value style classification scheme with several alternatives based on expanded style dimensions. Previous research, Brown and Goetzmann (1997), Carhart (1997), show that size and value help account for differences in fund performance. Instead of basing a fund's style on the sensitivity of its return to factors, an alternative approach uses the characteristics of the fund holdings. Grinblatt and Titman (1989) and Daniel et al. (1997) use such an approach to evaluate fund performance. On a related note, Daniel and Titman (1997) found that fund characteristics do better than factor loadings in explaining the cross-sectional behaviour of average returns.

2.3.6 Investor Behavioural Patterns

"Prospect Theory", (Kahneman and Tversky, 1979), found that individuals were much more distressed by prospective losses than they were happy by an equivalent gain. Some economists have concluded that investors typically consider the loss of \$1 twice as painful as the pleasure received from a \$ gain. The implication is that individuals will respond differently to equivalent situations depending on whether it is presented in the context of losses or gains.

Pogue (1974) observed that most investors are risk averse and will maximise their level of expected return while minimising the level of risk in their investment. Bowman (1980) however took exception where he noted a negative relationship between risk and returns. This however occurred in cases where risk aversion was low such as in cases of troubled firms. Such cases are driven by more long run expectation in turnaround of the troubled firms.

Fear of regret theory, developed by Bell (1982), Fishburn (1983) and Loomes and Sugden (1982, 1983, 1987), deals with the emotional reaction people experience after realizing they've made an error in judgement. Investors become emotionally affected by the price at which they purchased the stock when faced with the prospect of selling that stock. As a result, they avoid selling it as a way of avoiding the regret that comes with making a bad investment decision, as well as the embarrassment of reporting a loss.

People have a tendency to place particular events into mental compartments, and the difference between these compartments may sometimes impact on their behaviour more than the events themselves. This concept of mental accounting was first named by Thaler (1999). An investing example of mental accounting is illustrated by the hesitation to sell an investment that once had huge gains and now has very little gain.

According to Langer (1983), when mutual fund preference is based on choices, there is more ego involvement and attachment to the preferences, hence suggesting heightened level of preference bias. This phenomenon is consistent with that prediction from Cognitive Dissonance theory of Festinger (1957).

Many investors do not have any data analysis and interpretation skills Shiller (1993). This is because data from the market supports the merits of index investing, passive investors are more likely to base their investment choices on information received from objective or

scientific sources. Philip (1995) reported that there is a change in financial decision-making and investor behaviour as a result of participating in investor education programmes sponsored by employees. Berheim and Garnette (1996) affirmed Phillip's findings and further stated that a serious national campaign to promote savings through education and information could have a measurable impact on financial behaviour.

Alexander et al., (1996) reported that only 18.9% of respondents could provide an estimate of expenses for their largest mutual fund holding. 57% stated that they did not know what the expenses were even at the time they made the mutual fund purchase. This suggested insensitivity to costs and many investors do not use fund cost as an evaluative criterion in making investment decisions. Finally, Hirshleifer (2001) categorized different types of cognitive errors that investors make i.e. self-deception occur because people tend to think that they are better than they really are; heuristic simplification which occurs because individuals have limited attention, memory and processing capabilities; disposition effect, individuals are prone to sell their winners too quickly and hold their losers too long.

2.3.7 Persistence of Returns

Mutual fund persistence is well documented in finance literature, but not well explained. Hendricks, Patel and Zeckhauser (1993), Goetzmann and Ibbotson (1994), Brown and Goetzmann (1995), and Wermers (1996) find evidence of persistence in mutual fund performance over short-term horizons of one to three years, and attribute the persistence to "hot-hands" or common investment strategies. Grinblatt and Titman (1992), Elton, Gruber, Das and Hlavka (1993) and Elton, Gruber, Das and Blake (1996) document mutual fund return predictability over long-term horizons of five to ten years, and attribute this to manager differential information or stock-picking talent. Contrary evidence comes from Jensen (1969), who does not find that good subsequent performance follows good past performance. Carhart

(1992), shows that persistence in expense ratios drives much of the long-term persistence in mutual fund performance.

There is analysis indicating that Jegadeesh and Titman's (1993) one-year momentum in stock returns accounts for Hendricks, Patel and Zeckhauser's (1993) hot hands effect in mutual fund performance. However, funds that earn higher one-year returns do so not because fund managers successfully follow momentum strategies, but because some mutual funds just happen by chance to hold relatively a larger position in last year's winning stocks. Hot-hands funds infrequently repeat their abnormal performance. This is in contrast to Wermers (1996), who suggested that it is the momentum strategies themselves generate short-term persistence. Grinblatt, Titman and Wermers (1995) found that funds following momentum strategies realize better performance before management fees and transaction expenses.

2.3.8 Other Factors

An individual's prior educational background can be a predictor of occupational performance, as suggested by a substantial amount of recorded evidence. With higher education, there is increased knowledge and skill set needed to systematically search for new opportunities, (Hambrick and Mason, 1984), and the ability for tolerating ambiguity and handling complexity, (Dollinger, 1984). In addition, Wiersema and Bantel (1992), suggested that education is positively associated with high capacity for information processing and tolerance for ambiguity. Furthermore, Golec (1996), analysed the fund managers' age, tenure and whether or not they possessed an MBA degree. He concluded that younger managers with MBA degrees, who had longer tenure in their funds, had better risk adjusted performance. However, he found no significant relationship to age.

Focus on fund managers' international studying experience was an area that had previously not been studied. Black, Gregersen and Mendenhall (1992) argued that managers with

previous international assignment experiences could help their companies achieve global competitiveness. This was majorly because these managers are able to learn and transfer knowledge about various foreign markets and competitors. Further, Sambharya (1996) argued that international experience is a proxy for the reduction of uncertainty.

According to Oakley (2000), women are often stereotyped as being less competent and effective managers when compared to their male counterparts. Powel and Ansie (1997), also suggested that men and women use different strategies in their financial decision making processes. Furthermore, they suggested that these differences in strategies may reinforce stereotypical beliefs that women are less able financial decision makers. But according to Lundeberg et al (1994), both men and women are overconfident but more so men when incorrect. Other studies suggested women are less confident about investment decisions (Barber and Odean, 2001; Estes and Hosseini, 1998). Researchers also found the risk characteristic may differ owing to the gender difference. Bliss and Potter (2002), concluded that women fund managers, both domestic and international, hold portfolios with marginally more risk than men. This was after their evaluation on whether gender affects fund manager performance. In addition, measures of raw return showed that female fund managers outperform their male counterparts at domestic equity funds and not at international funds.

Managers' tenure refers to the length of time a professional money manager has been working or worked as a fund manager. It determines one's expertise and experience, hence tenure is beneficial to performance, Adrangi, Chatrath and Shank (2002) and Goetzmann and Ibbotson (1994). On the contrary, longer tenured top fund managers are likely to have narrower past experiences and knowledge base, consequently resulting in a limited search for alternatives (Pfeffer, 1983), and less engagement in information gathering and analysis

(Miller, 1991). In addition, managers' tenure has been associated with reduced learning and increased inertial responses (Virany et al, 1992).

A total of 313 mutual funds were studied by Lemak and Satish (1996) and they found that more stable returns are produced by long term managers than short-term fund managers. This was due to the fact that longer-term fund managers construct less volatile portfolios. Hence, they came to a conclusion that there is a negative relationship between manager's tenure and performance, in terms of return. According to Fortin and Michelson (1999) and Porter and Trifts (1998), fund managers' experience is not an advantageous factor in fund performance. Cross-sectional data over a nine-year span from 1992-2000, as examined by Peterson et al (2001), further revealed that mutual fund managers with longer tenures construct less risky portfolios and lead to lower portfolio returns. Costa and Porter (2003) found that expertise is not a result of experience or tenure of mutual fund managers. However, they did not suggest relationship between performance and managers' tenure is necessarily negative. Hsu (2001), found that mutual fund managers' tenure related positively to fund size and related negatively to funds' turnover ratio in Taiwan's mutual fund market.

2.4 Summary

From the literature discussed above, it is evident that the mutual fund industry in Kenya is at its early stages. Several factors have been found to affect the fund in different ways. Throughout the literature, it is evident that very little attempts have been carried out in trying to determine how the fundamentals identified affect the fund performance in Africa and particularly in Kenya.

The theoretical literature indicates the relationship between risk factors and mutual fund performance developed over the years. Theories put in perspective include efficient market hypothesis, modern portfolio theory, capital asset pricing model and the arbitrage pricing

theory. Also discussed is the Prospect theory and regret theory. Empirical research outlines the studies conducted over the years and has tested the applicability of these models in actual mutual fund performance. Factors that have been put in perspective include risk and return, size of mutual fund, market timing ability, investment styles, fund characteristics, investor behavioural patterns and persistence of returns.

The researchers have employed quantitative methods based on financial statements of certain funds and no attempt has been made to get information regarding various fundamentals from different fund managers despite the fact that they are the ones entrusted with the role of investing investors' funds. It is also evident that the mutual funds in Kenya are not as common as other securities despite their advantages over other securities. This raises the question on their performance given the fact that investors are assumed to be rational and will always go for any investment so long as there are high returns.

Therefore, the study seeks to fill these gaps by studying the various factors that predict mutual fund performance in Kenya and relate the findings to other studies in order to determine the stability of the Kenyan fund market.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides the methodology to be used in the research. Section 3.2 discusses the research design applied in this study. Section 3.3 talks about the target population and the sampling techniques used. Section 3.4 outlines the type of data and data collection instruments used. Section 3.5 presents the data and analysis of the same data.

3.2 Target Population

The registered fund managers in Kenya were the main target population of interest in this study. There are sixteen registered fund managers according to the Retirement Benefits Authority of Kenya (RBA). Their schedule, location and contact persons were available and obtained from the RBA website. All the investment managers and fund administrators of registered funds were the target population of this study.

The researcher adopted census method of study in order to increase the accuracy of the data collected in this research. Census method refers to data collection about everyone or everything in a group or population. It has the advantage of accuracy and detail. Since the target population was small, the census method was chosen and hence a sample selected from such a population would be meaningless (Mugenda and Mugenda, 2003). Two questionnaires were issued to the sixteen fund managers in Kenya; one to the investment manager and the other to the fund administrators. Hence a total of 32 surveys were administered.

3.3 Research Design and Sampling Techniques

This study adopted a descriptive survey design. The descriptive survey research study was preferred since it has the dimension of investigating possible relationships between two or more variables (Mugenda and Mugenda, 2003). The descriptive survey design is ideal since it

is concerned with making accurate assessment of the inference, distribution and relationship of the phenomenon (Edwards, 2006).

The population of fourteen mutual fund managers provided a sample of fourteen fund managers, out of the total of sixteen. A few of the funds operated for the period of the seven years with the shortest fund period sampled operating for four years. This ensured that the funds could be comparatively reviewed.

3.4 Data and Data Collection Instruments

This study used both primary and secondary data to test the relationship between the key variables. Primary data was collected from each registered fund manager who was issued with two questionnaires (Appendix 1). The questionnaire was made up of both open and close ended questions. The items on the questionnaire were developed on the basis of the objectives of the study. The questionnaire contained three sections consisting of background information, investment style, fund characteristics, behavioural pattern, managerial skills and persistence of returns.

Published financial statements from fund managers provided secondary data for fourteen mutual funds. Secondary data was also collected from officially published statistical data on national statistics such as GDP growth rate, inflation rate and interest rates for the seven year period between 2008 and 2014. Sources include the Economic Survey, the World Bank online database and the African Development Bank database.

3.5 Data Analysis

Before processing, the questionnaires were edited for completeness and consistency and later edited to detect and correct errors and omissions to ensure maximum data quality standards were achieved. Data was then coded to enable responses to be grouped into categories.

Coding involved assigning numbers so that the responses could be grouped into number of classes or categories.

Data analysis was carried out using Statistical Package for Social Sciences (SPSS). The data collected was first subjected to descriptive statistics which included frequencies, percentages, means and standard deviations. Inferential statistics was also employed in the study. In this case, Pearson's moment correlation coefficient was used to determine the magnitude of relationship between two variables. A positive relationship means that an increase in one variable leads to an increase in another variable and vice versa.

3.5.1 Conceptual Model

The basis for developing this conceptual framework is the documented relationship between mutual fund performance and certain characteristics (Melih, 2010). This function can be represented as:-

$$\text{MFP} = f \{A + \text{RR} + \text{IS} + \text{FC} + \text{FCBP} + \text{PR} + \text{MS}\}$$

Where MFP = Mutual Fund Performance

A = Constant

RR = Risk and Return

IS = Investment Style

FCBP = Fund Characteristics and Behavioural Pattern

PR = Persistency of Returns

MS = Managerial Skills/Styles

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter contains the primary and secondary data collected for the dependent and independent variables and is analysed to determine the magnitude of parameters determining the relationship between size, risk and return of mutual funds in Kenya. Section 4.2 contains the summary statistics of the study conducted. Section 4.3 analyses the response rate from the questionnaires. Section 4.4 consists of the regression analysis mode of the study and Section 4.5 bears the summary for the data collected and the analysis they have been subjected to.

4.2 Data Presentation

4.2.1 Rate of Return

The rate of return of mutual funds is the dependent variable in the analysis model with the average rate of return for each mutual fund being collected. Data for the rates of return for a period of seven years was collected. Some funds only operated for four years (2009-2012). The rate of return in published statements is the gross return before management fees are charged and the net remitted to investors.

This rate of return represents the return on the fund that is dependent on economic variables and investment decisions by the fund managers. The average returns for balanced funds are the highest compared to other funds but also represent greater volatility. They range from a high of 60.4% to a low of -39%. The average rate of returns has changed over the seven years and the model analyses its relationship with the independent variables. The average rates of return are illustrated in appendix 3.

4.2.2 Treasury bill Rate

The 182 day Treasury bill rate represents the risk free rate of government borrowing. An average of this rate was obtained per year for the period of seven years. The highest rate was 13.54% in 2012 and the lowest rate being 3.81% in 2010. Money market and balanced funds by definition have investments in treasury bills.

The mutual funds market performance is influenced by the Treasury bill rate since the rate is used by the fund managers as the baseline rate. The Treasury bill rates for the period are illustrated in appendix 4.

4.2.3 GDP Growth Rate

The GDP growth rate indicates the changes in the economy and is main indicator for expansion or recession. It is therefore a key indicator of the economic risk prevalent in an economy affecting the returns to mutual funds and other investments.

The highest GDP growth rate was recorded in 2007 at 6.99% and the lowest in 2008 at a rate of 1.53%. The average growth rate for the period is 4.56% and a median of 4.38%. The GDP growth rates for the period are illustrated in appendix 4.

4.2.4 Inflation Rate

Data on the annual inflation rate for the period of seven years (2006 - 2012) was collected for the second independent variable in the model. The inflation rate reduces the real returns to the investor as the time value of money diminishes. Investors adjust their expected rate of return depending on the prevailing inflation rate.

The highest inflation rate for the period was 16.20% in 2008 and the lowest rate at 4.08% in 2010. The median inflation rate is 9.65 with an average rate of 9.25%. The inflation rates are illustrated in appendix 4.

4.2.5 Market Interest Rates

The market interest rate represents the average lending rate offered by commercial banks. Data was collected on the average market interest rates per year for the seven year period. Market interest rates represent the cost of financing and hence affect the rates of return.

The highest market interest rate for the period was at 19.63% in 2012 and the lowest at 13.30% in 2007. The average rate for the period is at 14.96 with a median of 14.40. The market interest rates are illustrated in appendix 4.

4.2.6 Fund Size

The size of the fund represents the internal factor that is unique to each fund. Data on mutual fund size was collected from both primary and secondary sources. Published financial statements were available for twelve funds while a data form was used to collect primary data from eleven funds. The fund size is the fifth independent variable in the model representing the risk return relationship whose beta parameter is analysed.

The equity fund has the biggest fund size with the Old Mutual Equity Fund of 5.8 billion shillings in 2007. Money market fund follows in fund size with the balanced fund and bond fund following in rank. The fund size generally rises with time hence funds that have existed for a long time are bigger. This variable helped determine whether fund size affects the rate of return and how much inherent risk it represents. The mutual fund sizes are illustrated in appendix 3.

4.3 Response Rate from Questionnaire

A total of 32 questionnaires were issued and out of those issued, 28 were returned duly filled as presented in the figure below. 2 questionnaires were rejected for failing reliability test while 2 questionnaires were never returned by the respondents.

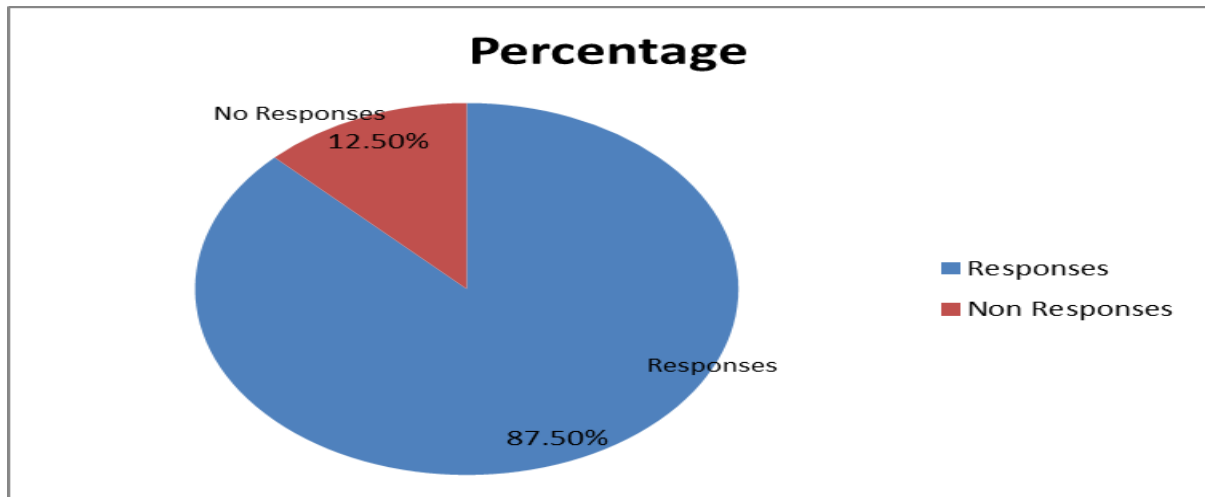


Fig 1: Response Rate

4.3.1 Biographical Information of the Respondents

The fund managers' biographical information was important and was sought in the study. Area studied included their gender, age, academic qualifications and experience.

4.3.1.1 Gender of Fund Managers

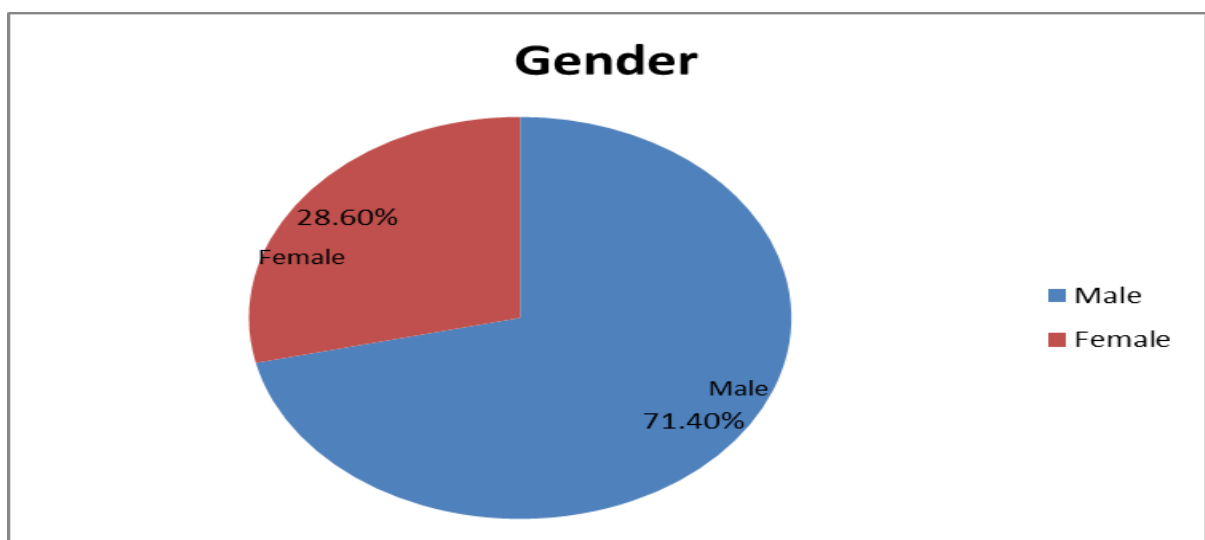


Figure 2: The Gender of Respondents

Information on gender, age, academic qualification and experience was sought. 71.4% of the respondents were found to be male while 28.6% were female. This implies that most fund managers are male and are likely to take active strategies in investing the investors' funds while their female counterparts were more likely to take passive strategies in investing.

4.3.1.2: Age Bracket

Information on the age of the fund managers was sought. The study established that most of the fund managers in Kenya are below 40 years of age. This shows that fund managers are young and as such they lack the experience that comes with many years of practice and are likely to undertake active strategies which adversely affect the fund market.

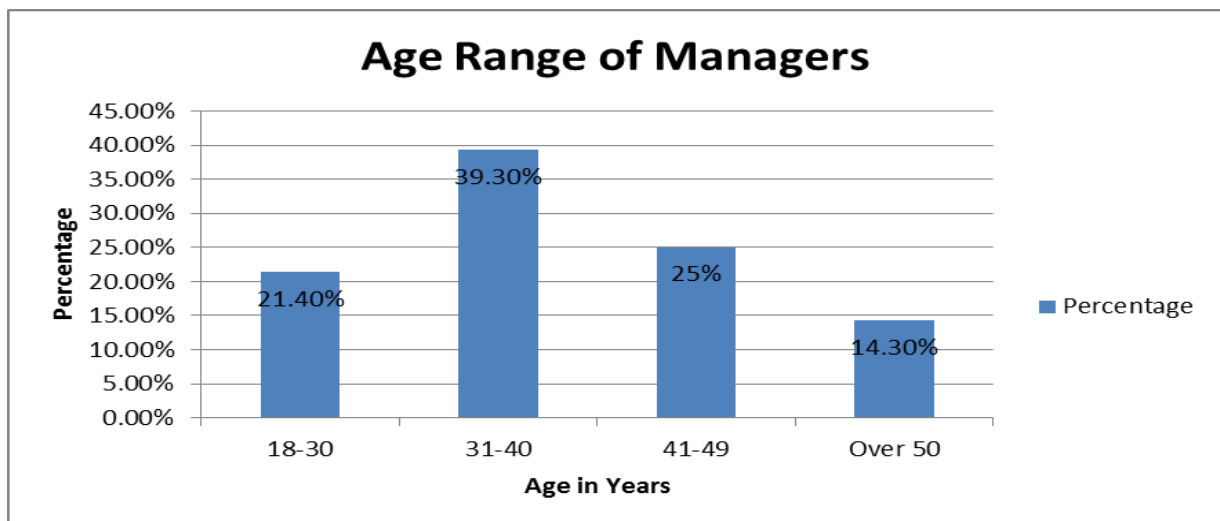


Figure 3: Age Brackets of the Fund Managers

4.3.1.3 Academic Qualifications

Information on fund managers' academic qualifications was sought. Most of the respondents were found to have a bachelor's degree. The literacy level of fund managers in Kenya highly favours the growth of the fund market.

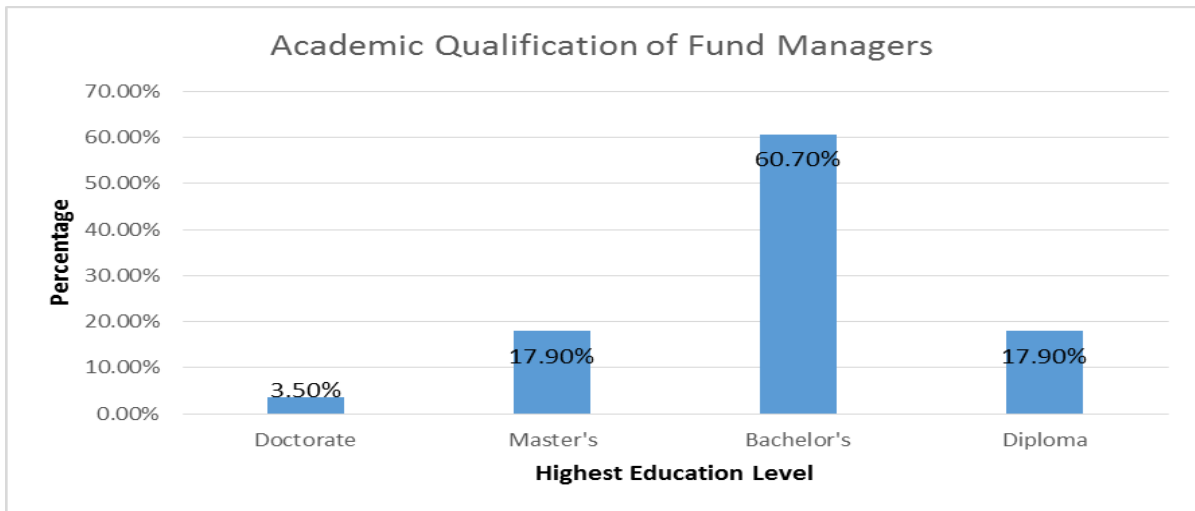


Figure 4: Fund Managers' Education Level

4.3.1.4 Fund Managers' Experience

The research findings established that while some of the managers accounting for 7.1% were found to have less than one year experience, most of the managers accounting for over 90%

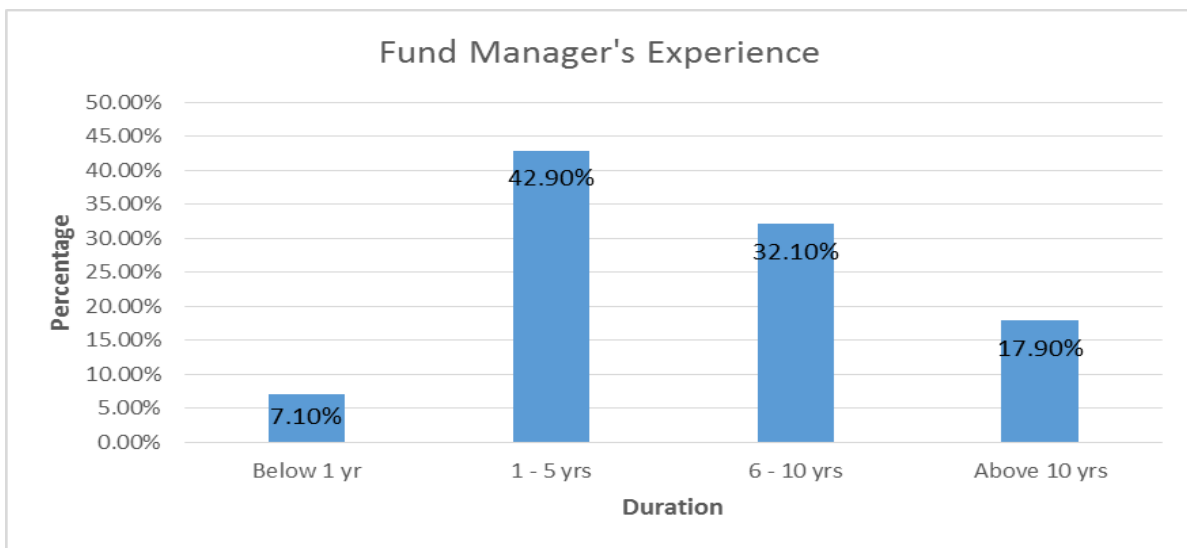


Figure 5: Fund Managers' Experience

have over one year experience. 50% of the respondents were found to have experience of less than five years. This may be attributed to a high number of young fund managers in the Kenyan market. This experience, though adequate, may negatively affect the fund market.

4.3.2 Investment Style and Fund Performance

Various investment styles used by fund managers in Kenya were studied. They included:-

4.3.2.1 Types of Funds

The researcher sought to determine the types of funds the fund managers have invested in.

The results indicated that most fund managers in Kenya invest in the blend of both growth and value funds accounting for 67.8%. This makes it favourable for the fund market to perform well in Kenya. The results are as presented in Figure 6.

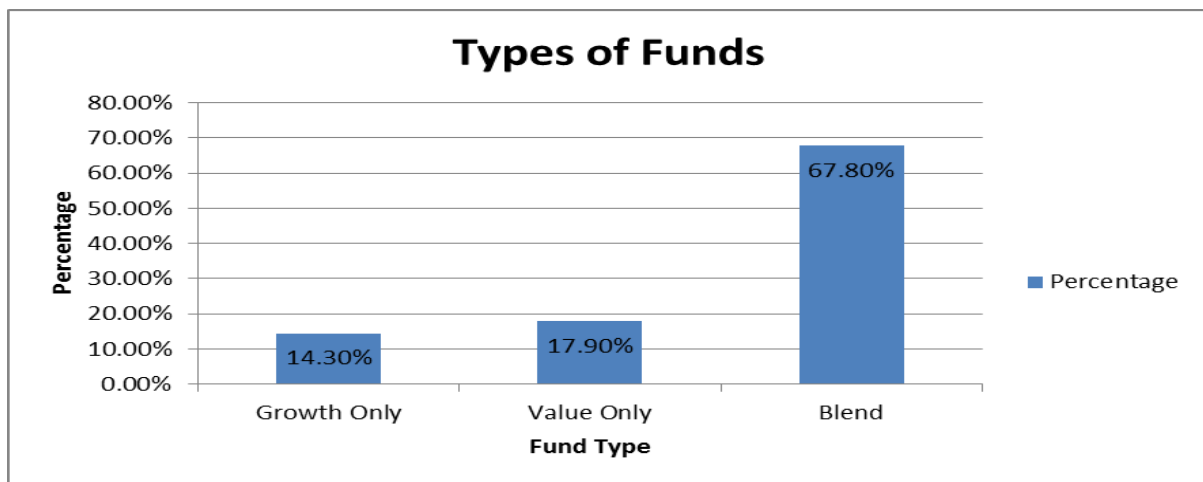


Figure 6: Type of Funds Invested by the Fund Managers

4.3.2.2: Average Value of the Fund

The study sought information regarding the average value of the funds invested in and

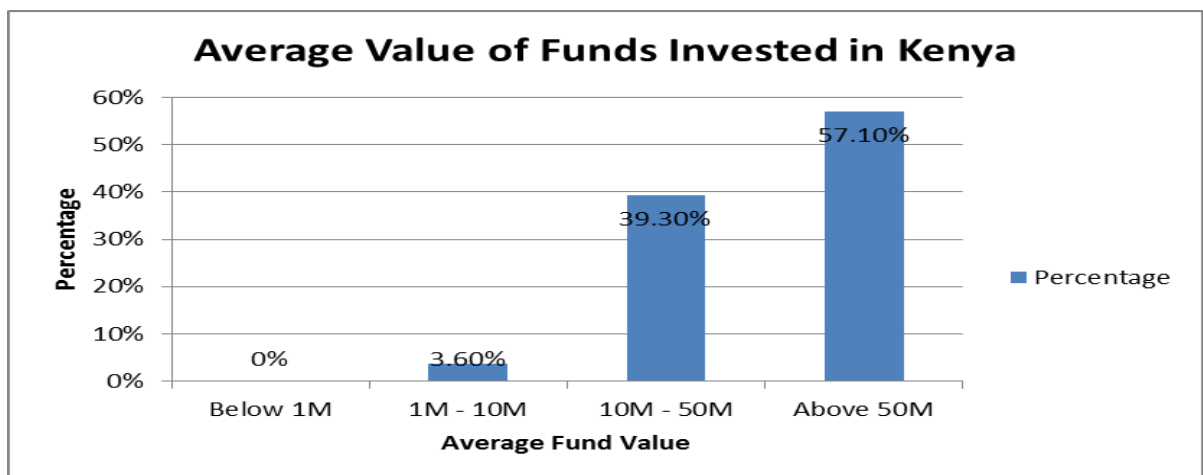


Figure 7: Value of the Funds Invested by Fund Managers

established that most funds in Kenya lie under medium fund. This fact may adversely affect the fund performance because small growth funds have been found to perform better than large and medium funds. The following graph summarizes these findings.

4.3.2.3 Frequency of Change in Investment Style

Information regarding frequency of change in investment style was sought in the study. 75%

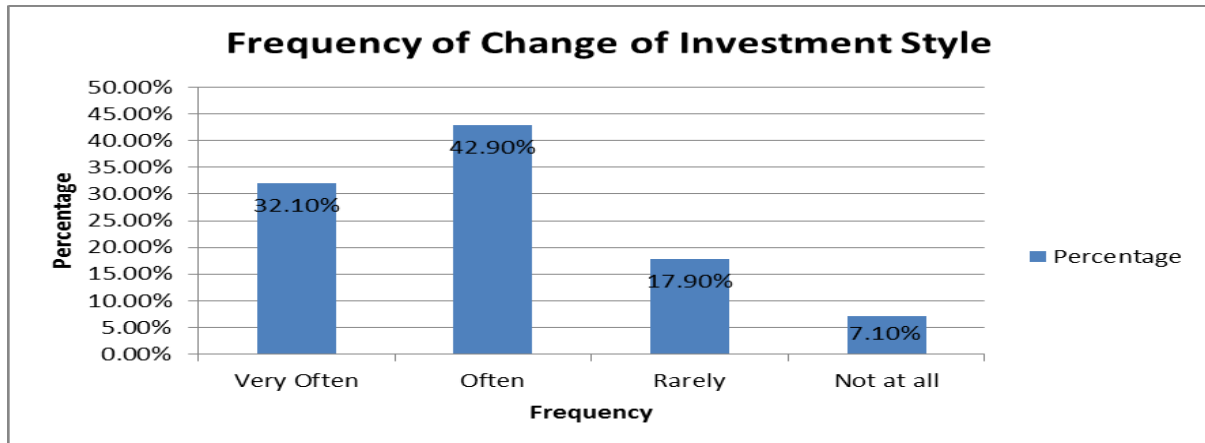


Figure 8: Frequency of Change in Investment Style

of the fund managers were found to change their investment styles. These style drifts have been found to negatively affect the fund performance and as such the Kenyan market may be negatively affected. The summary of the finding are as in the figure below.

4.3.2.4 Method of Assessing Fund Performance

Most fund managers (55.6%) were found to use a combination of methods in assessing fund

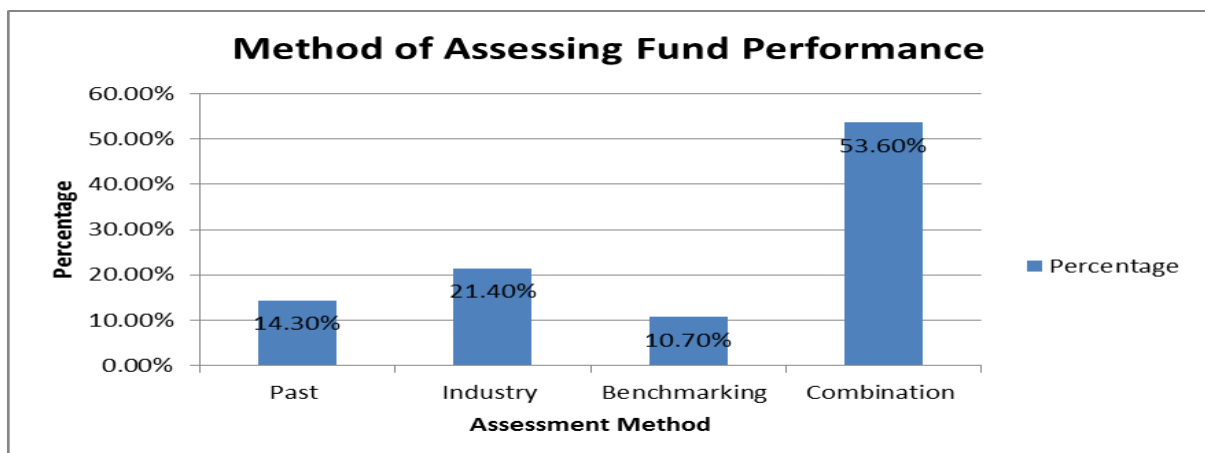


Figure 9: Method of Assessing Fund Performance

performance. The use of combination of methods to predict the market was found to have a positive correlation with fund performance and hence favoured the Kenyan fund market.

4.3.2.5 Types of Securities Fund Managers Invest In

The study established that most fund managers were found to diversify the risk by investing in several securities. According to research results, diversification is shown by a high of

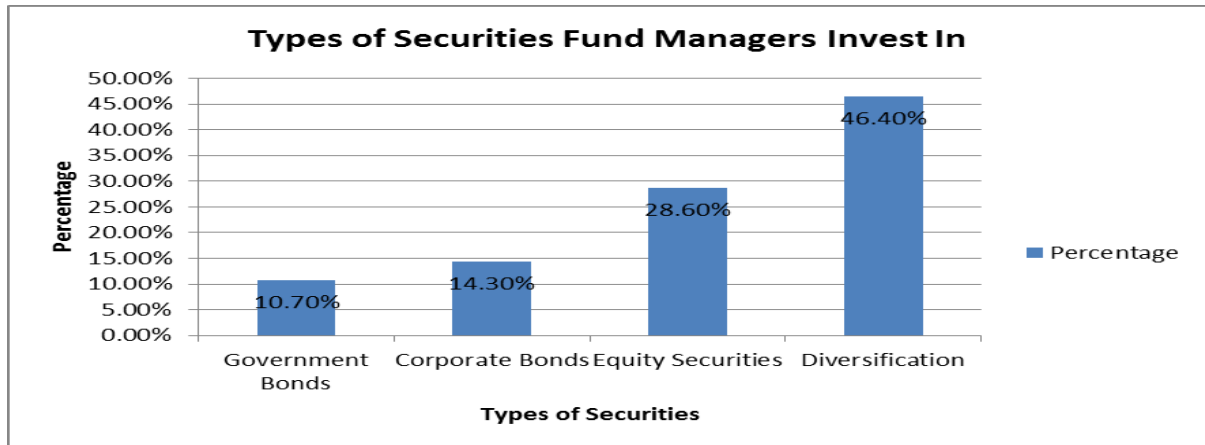


Figure 10: Types of Securities Fund Managers Invest In

48.1%. It has been found to be one of the best methods of mitigating risk and hence high performance. The findings are summarized in the figure below.

4.3.2.6 Frequency of Disposing Investments

Information regarding how frequently the fund managers disposed of investments was also sought in the study.

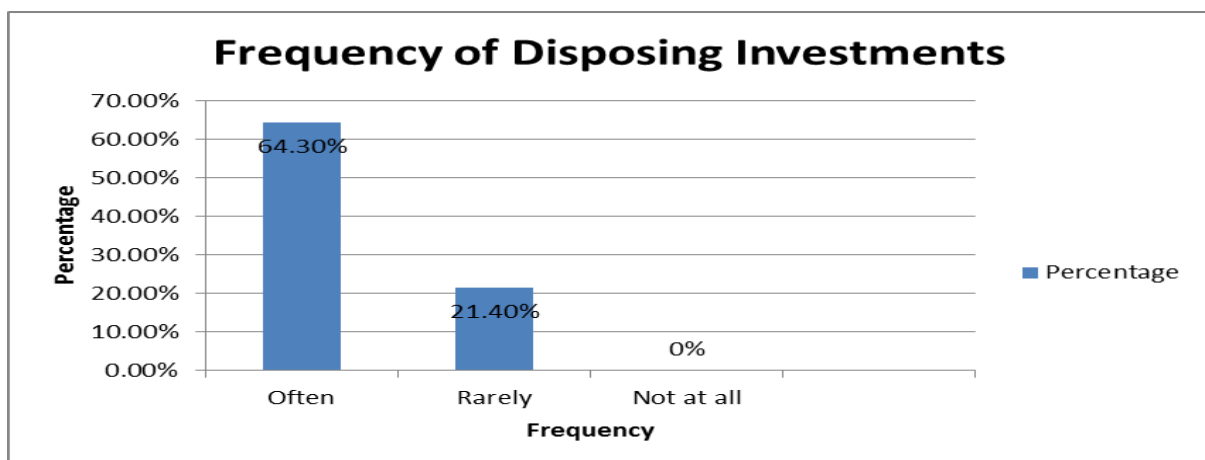


Figure 11: Frequency of Disposing Investments

Most were found to frequently dispose investments. This implies that there is a high probability of better performance of the fund market since high turnover is related to great fund performance.

4.3.2.7 Method of Buying and Disposing Stocks

Information regarding frequency of methods of buying and disposing stock was investigated.

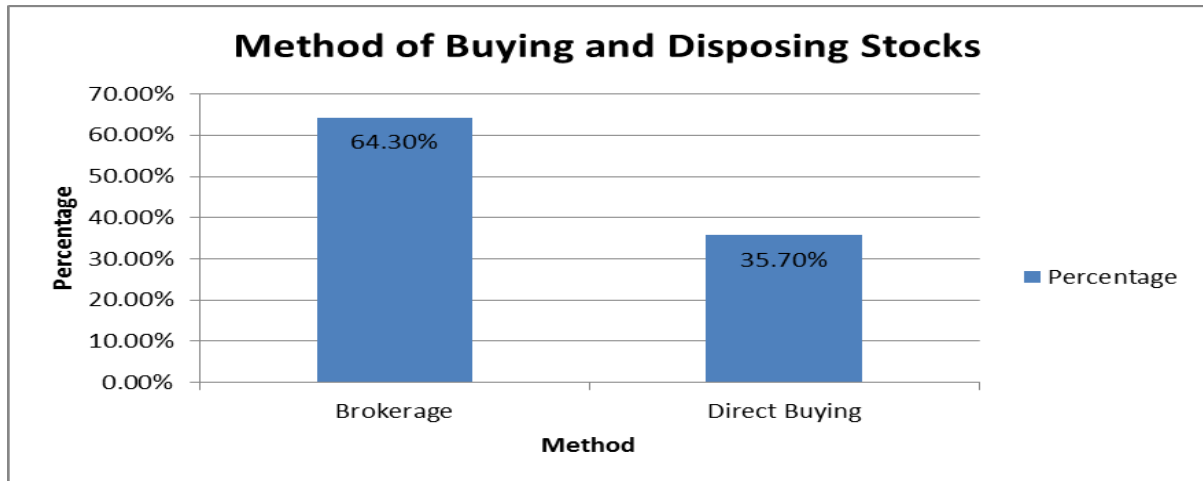


Figure 12: Method of Buying and Disposing Stocks

From the findings, it was established that most stocks are bought through the help of a broker. It gave the fund managers the opportunity to utilize the expertise of registered brokers in buying and selling of stocks, hence implying better performance in the Kenyan fund market. The findings are summarized in the figure below.

4.3.2.8 Investment Style Measures of Dispersion

The table below shows the measures of dispersion as regards to the investment styles. From the below measures of dispersion, it's clear that most of the investment styles highly favour the fund market in Kenya; as shown by the mean, median and modes. A mean of 2.67 on type of fund shows that on average, most fund managers invest in blend of growth and value fund. Most funds were found to be of mid capital as shown by mean and mode of average value of fund of 2.92 and 2.00 respectively. On average and as shown by mean of 1.55 and mode of 3.00, most fund managers were found to dispose their investments frequently.

Table 1: Measure of Dispersion of Investment Styles

	Type of Fund	Average Value of the Fund	Frequency of Change in Investment Style	Method of Assessing Fund Performance	Types of Securities Invested In	Frequency of Disposing Investments	Methods of Buying and Disposing Stock
Mean	2.67	2.92	1.55	1.00	1.6	2.5	1.9
Median	3.0	2.0	3.0	4.0	4.0	3.0	4.0
Mode	4.0	2.0	4.0	4.0	4.0	4.0	4.0
Std. Deviation	1.01202	1.15272	1.35860	1.00261	0.97195	1.00342	1.6720
Variance	1.02418	1.32875	1.84579	1.00523	0.94469	1.6342	1.77561
Skewness	-0.362	0.924	-0.012	-0.493	-0.751	0.763	-0.234
Std. Error of Skewness	0.236	0.236	0.236	0.237	0.236	0.236	0.236
Kurtosis	-0.823	0.107	-1.297	-0.822	-0.039	-0.102	0.106

Methods of assessing performance and securities invested in were found to be a combination of methods and a combination of securities as shown by an average of 1.00 and 1.6 respectively. Most fund managers were found to buy and dispose their securities by use of brokers, shown by a mean of 1.9 and mode of 4.0. All these investment styles favour the fund market in Kenya. The standard deviation ranges from 9% to 16.7%. This may be interpreted to mean that most responses were found to be within a small range that is not very highly dispersed making the data more reliable. This has further been shown by measures of skewness and kurtosis.

4.3.3 Fund Characteristics and Fund Performance

Information on the various fund characteristics displayed by various funds in Kenya was investigated. Some of the characteristics studies included:

4.3.3.1: Regulation of the Fund Industry

Regarding regulation of the fund industry, 92.9% (26 respondents) felt it was not well regulated while 7.1% (2 respondents) felt that it was well regulated. Lack of or poor fund industry regulations effects the fund performance negatively. Therefore, absence or poor regulations of the fund industry in Kenya is likely to affect the fund performance negatively.

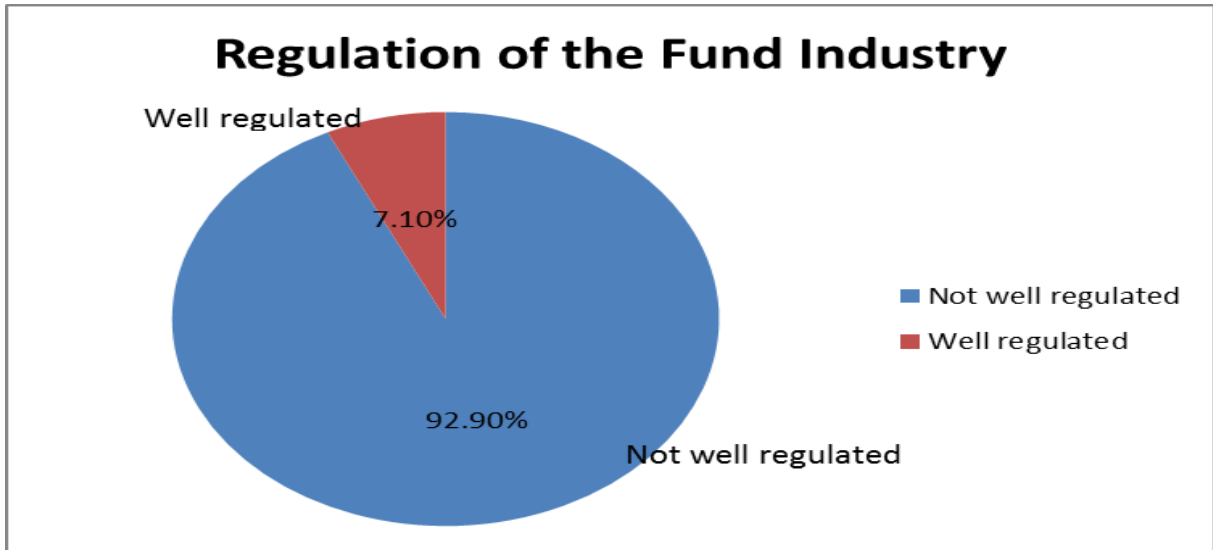


Figure 13: Regulation of Fund Market

4.3.3.2: Average Age of Fund

Seeking information regarding average age of the fund, the study established that most funds were less than 10 years, hence young. Young funds have been found to be more active as they try to outperform the market. This may consequently make them lose much investment attributable to active investment strategies. The findings are summarized in the figure below.

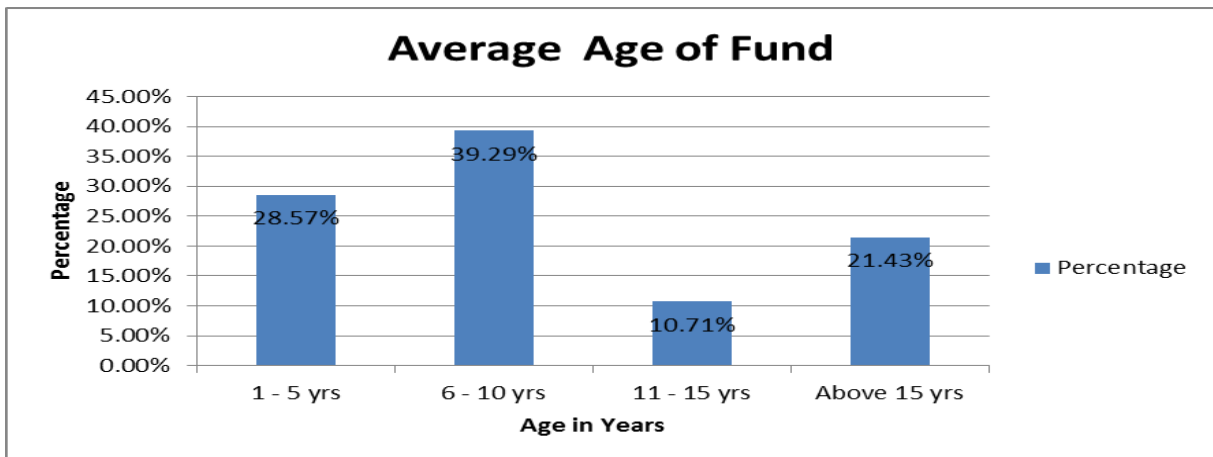


Figure 14: Average Age of Fund

4.3.3.3: Clientele Type

Most fund managers serve both the corporate and individual investors. The implication is that the fund market in Kenya stands a better chance to perform the market given the fact that the

fund managers serving both the individual and corporate clients have been found in most occasions to outperform the market. Findings are summarised in the figure below.

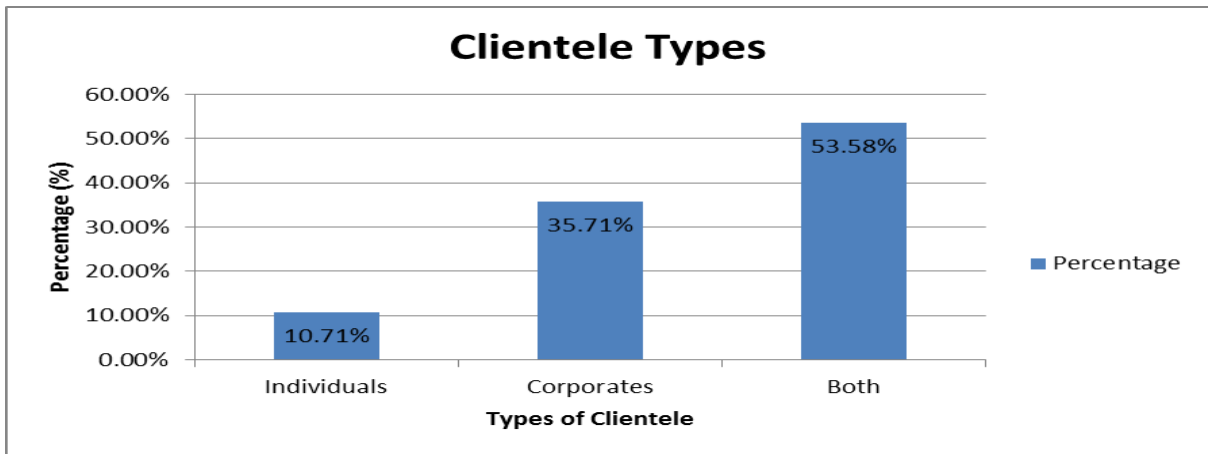


Figure 15: Clientele Type

4.3.3.4: Average Net Assets

Information regarding average net assets established that net assets ranged from medium to high. This is of importance to investors when taking investment opportunities available. This implies that given the levels of resources invested in assets, the fund market stands a better chance of performing very well. The figure below summarises the findings.

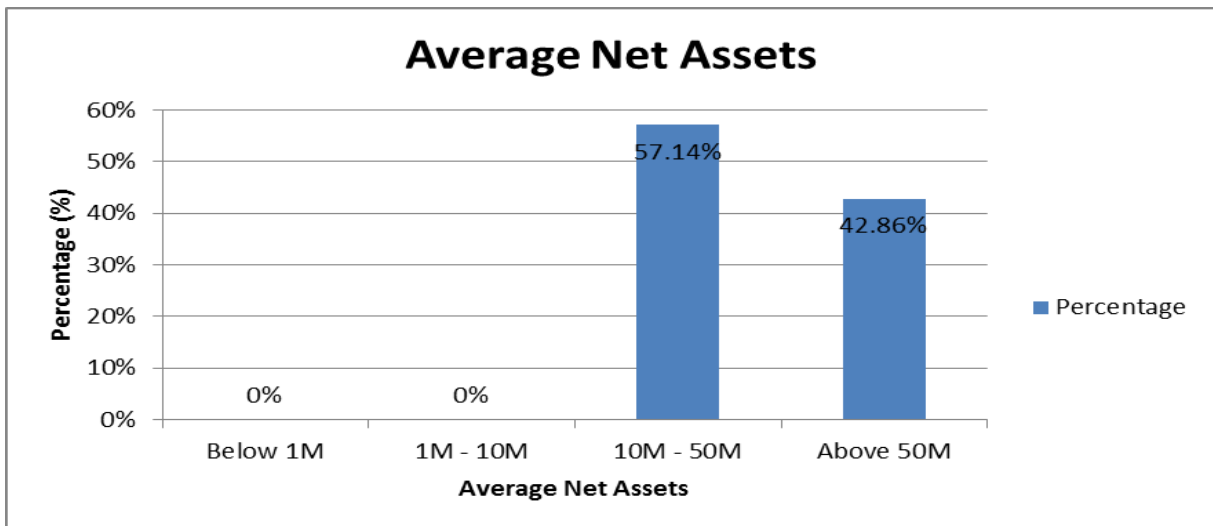


Figure 16: Average Net Assets

4.3.3.5: Judicial System

Information regarding the opinion of fund managers regarding Kenyan judicial system was sought. 2% of the respondents felt that the system was excellent, others totalling to 8%, 45%,

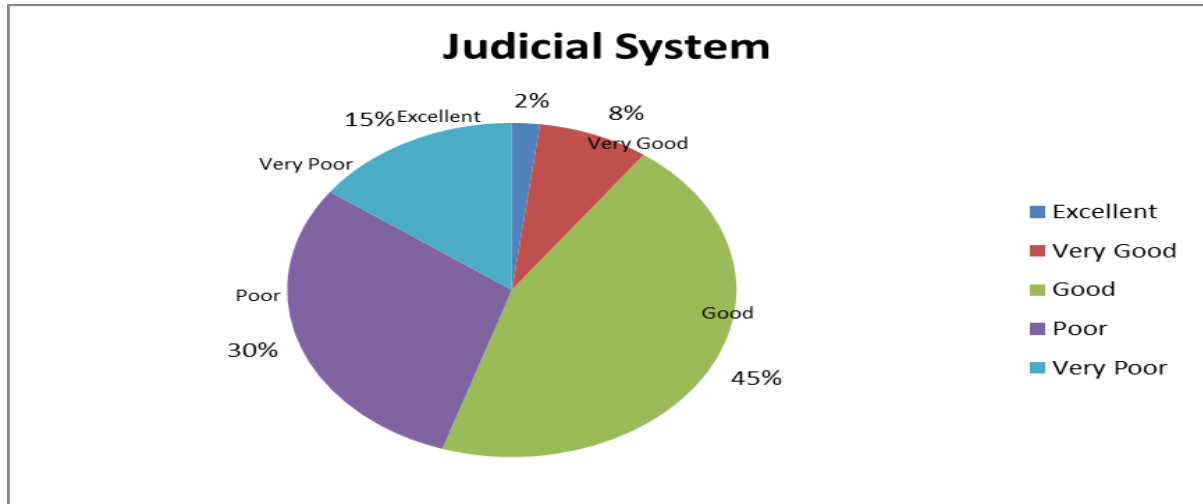


Figure 17: Judicial System in the Country

30% and 15% were of the opinion that it was very good, good, poor and very poor respectively. This implies that most fund managers have confidence in the judiciary. This is vital for performance of the fund market and as such the Kenyan fund market stands a chance of good performance.

4.3.3.6: Fund Expenses

Information on fund expenses, such as management and advertising fees, was investigated.

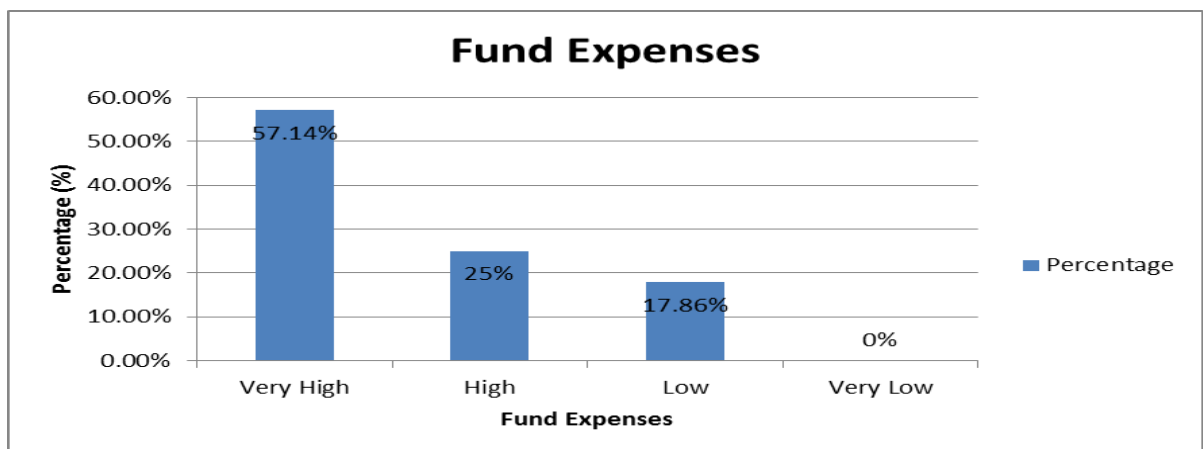


Figure 18: Fund Expenses

57.14% (16 respondents) felt that the expenses were very high, 25% (7 respondents); 17.86% (5 respondents) and 0% of the respondents felt that they were very high, low and very low respectively. There is a positive correlation between advertising expenses and performance. This makes Kenyan fund market favourable since most incur high expenses.

4.3.3.7: Method of Charging Load Fees

From findings, it was established that 42.86% (12 respondents) charge front end load while 57.14% (16 respondents) back end load fees. Funds charging back end load attract more investors and as such the Kenyan fund market which is dominated by fund managers charging back end load fees has high chances of performance.

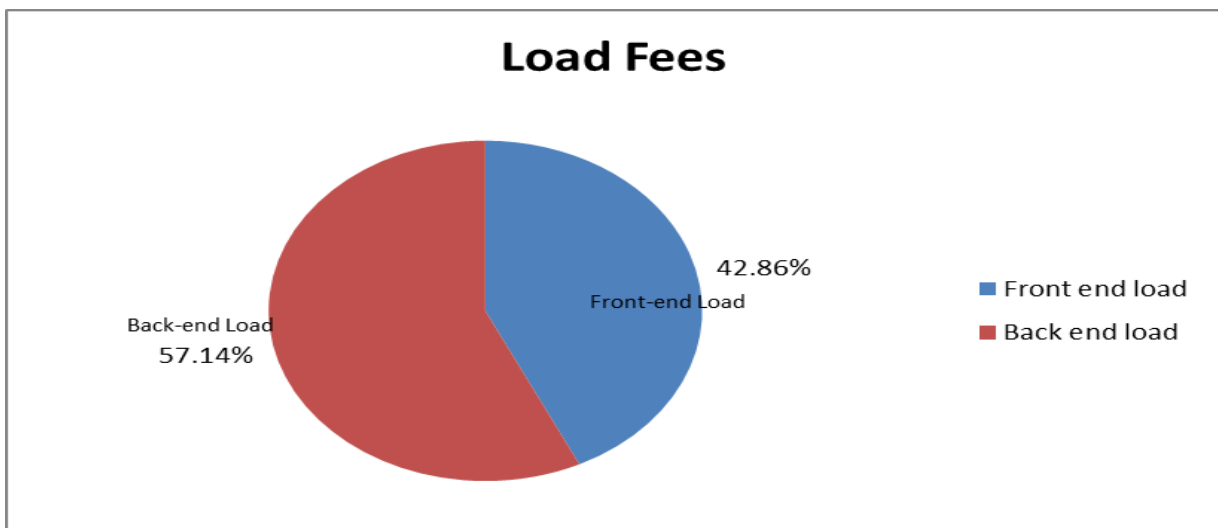


Figure 19: Method of Charging Load Fees

The research found that most characteristics of Kenyan fund market favour the fund performance. The mean, mode and median shown in the table above clearly shows; clientele type with mean, median and mode of 1.4, 4.0 and 4.0 favours both corporate and individual clients. Average age of the fund was found to be between 6 and 10 years as shown by a mean of 2.8, expenses with mean of 3.0 means that the fund expenses were found to be high, which means that the fund industry stands a better chance of good performance since high

advertising expenses have been linked to high performance. The load fees with mean of 2.3 means that most funds charge end load fees; this is related to good fund performance.

Table 2: Measures of Dispersion of Fund Characteristics and Performance

	Regulation	Average Age of Funds	Clientele	Average Net Assets	Judicial Systems	Expenses	Load Fees
Mean	1.0685	2.806	1.867	2.0683	3.0086	3.0608	2.3606
Median	4.0	3.0	3.0	4.0	3.0	3.0	4.0
Mode	4.0	2.0	2.0	4.0	4.0	4.0	3.0
Std. Dev	1.10303	1.20970	1.26172	1.05716	1.07775	1.3643	1.0067
Variance	1.21667	1.46337	1.59194	1.11758	1.16154	1.86131	1.0134
Skewness	-1.820	0.308	0.000	-0.584	-0.081	-0.684	-1.720
Std. Error of Skewness	0.236	0.236	0.236	0.236	0.236	0.235	0.233
Kurtosis	2.839	-0.933	-1.252	-0.451	-0.944	-0.833	1.823
Std. Error of Kurtosis	0.467	0.467	0.467	0.467	0.467	0.467	0.467

However, the regulation of the fund industry was found to be unfavourable as shown by mean of 1.06 which shows that the fund industry as not well regulated. This affects the fund performance negatively. The judicial system was found to be very good as shown by mean and mode of 3.00. 3.00 and 4.00 respectively. This implies that the judicial system in Kenya highly favours fund performance. In understanding the level of dispersion, standard deviation and variance from the mean was also computed. The dispersion was found to be between 10.0% and 12.6%. This can be interpreted to mean that the response from the respondents were reliable since they were not highly dispersed for each response. This was also shown by measures of skewness and kurtosis which shows the dispersion in most cases skewed to the left.

4.3.4: Behavioural Patterns and Fund Performance

Information on the behavioural patterns displayed by investors in Kenya was investigated. Behavioural patterns of investors have been found to affect the fund performance. The researcher established that most investors display behaviours such as overconfidence, excessive trading, buying attention grabbing stocks, selling winning stocks earlier and selling losing stocks late. This implies that the Kenyan fund market has been negatively affected by these behavioural patterns and inability to predict the market.

Most investors end up losing most of their investments due to these behavioural aspects. The study established that the most prevalent behavioural characteristic in Kenya is buying the attention grabbing stocks accounting for 99.6% which makes most investors lose their investments.

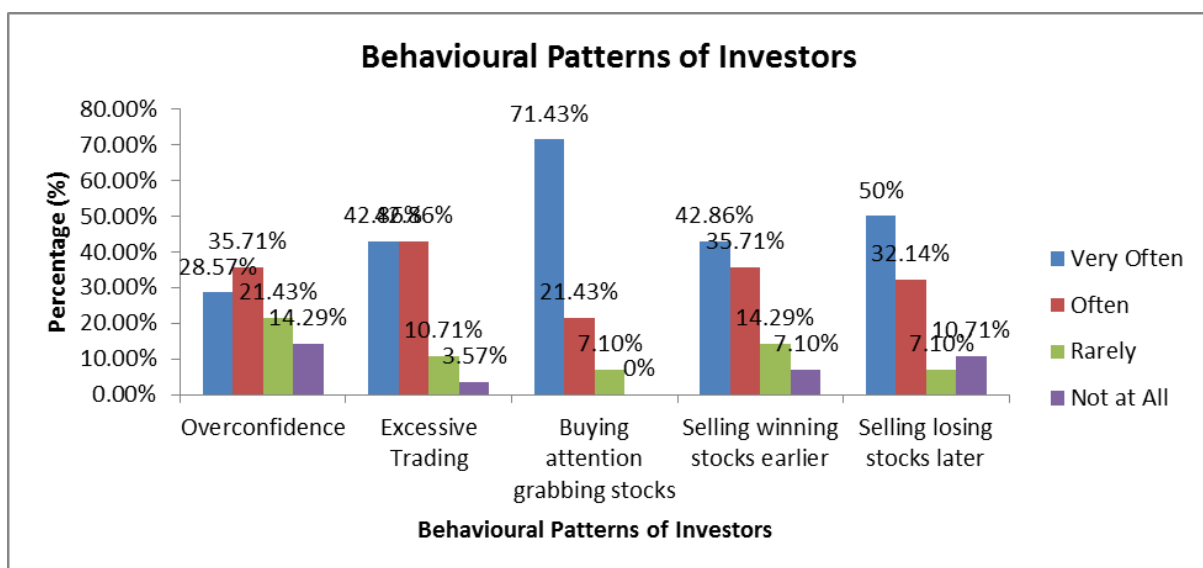


Figure 20: Behavioural Pattern Displayed by Investors

From the table below, it is clear that most investors display negative behavioural characteristics that negatively affect the fund performance. A likert was used to determine the frequency with which such behaviours are shown by investors. The mean from the responses was found to be within the range of 2.8 and 3.48.

Table 3: Behavioural Patterns and Fund Performance

	Overconfidence	Excessive Trading	Buying attention grabbing stocks	Selling winning stocks earlier	Selling losing stocks late
Mean	3.2667	2.8095	3.1524	3.4857	3.2000
Median	3.00	3.00	3.00	4.00	3.00
Mode	4.00	2.00	2.00	4.00	4.00
Std. Dev	1.12609	1.23577	1.26342	1.12345	1.77689
Variance	1.20232	1.87654	1.30862	1.54320	1.37543
Skewness	-1.820	0.308	0.000	-0.584	-0.081
Std. Error of Skewness	0.226	0.246	0.246	0.246	0.246
Kurtosis	2.938	-0.922	-1.356	-0.438	-0.944
Std Error of Kurtosis	0.330	0.330	0.330	0.330	0.330

This can be interpreted to mean that most investors often practice these behavioural patterns. The practice of this behaviour negatively affects the fund performance. The level of dispersion was found as measured by standard deviation and variance and was found to range between 11.2% and 17.7%. This implies that the levels of responses were within reliable range and hence the findings were reliable. This is further shown by measures of skewness and kurtosis.

4.3.5: Managerial Capabilities and Fund Performance

The study investigated the managerial capabilities displayed by fund managers.

4.3.5.1: Investment Strategies Employed by Fund Managers

In the study, it was found that 20 (71.43%) respondents employ active strategies in investing the funds while 8 (28.57%) use passive strategies in investing the funds. Active strategies have been found to negatively affect the fund market whereby most investors undertake to carry out their market research before investing in any stock. This is as opposed to passive strategies involving limited on-going buying and selling actions. Passive investors purchase

investments with the intention of long-term appreciation and limited maintenance. The fund market is likely to be negatively affected by these negative strategies of investment.

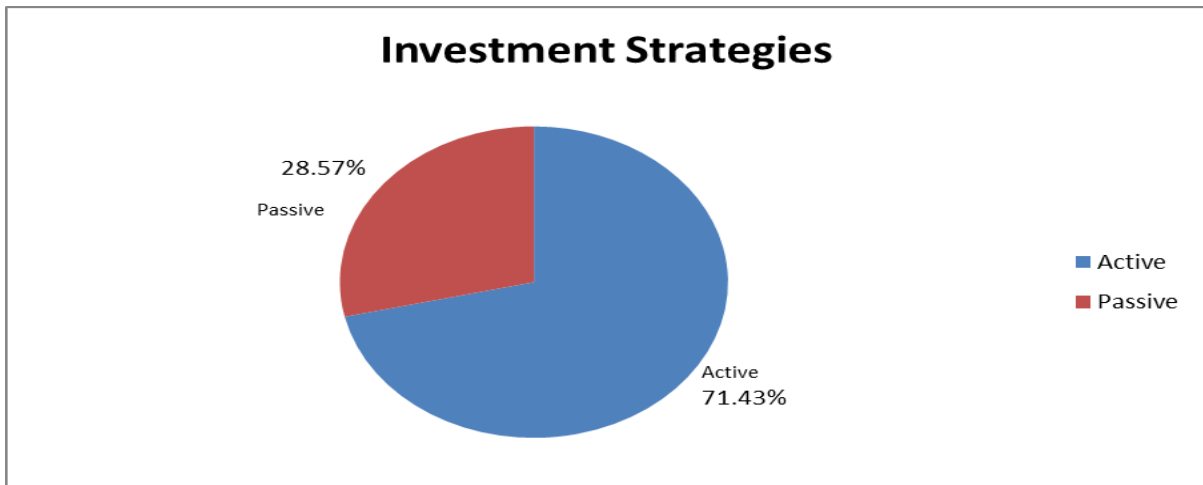


Figure 21: Strategies Employed by Fund Managers

4.3.5.2: Market Timing and Stock Picking Abilities

The stock picking abilities of fund managers was investigated by the researcher and it was established that 18 (64.29%) respondents possess market timing and stock picking abilities, while 10 (35.71%) do not possess the abilities. This implies that the Kenyan fund market is likely to perform very well since the market and stock picking abilities has been positively associated with good fund performance.

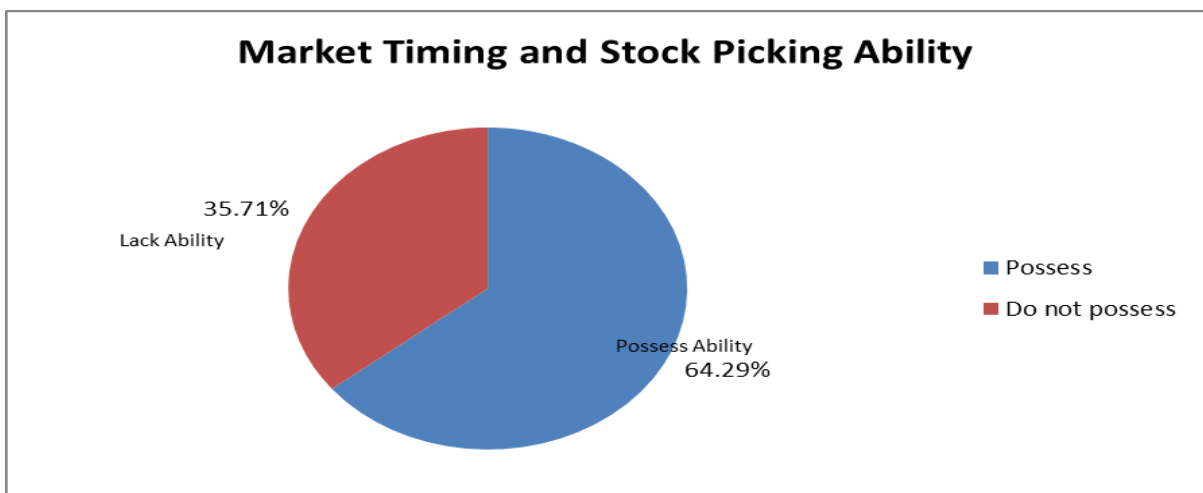


Figure 22: Market Timing and Stock Picking Abilities

4.3.5.3: Education Skills and Experience

Investigation on whether education skills matter in determining fund performance was

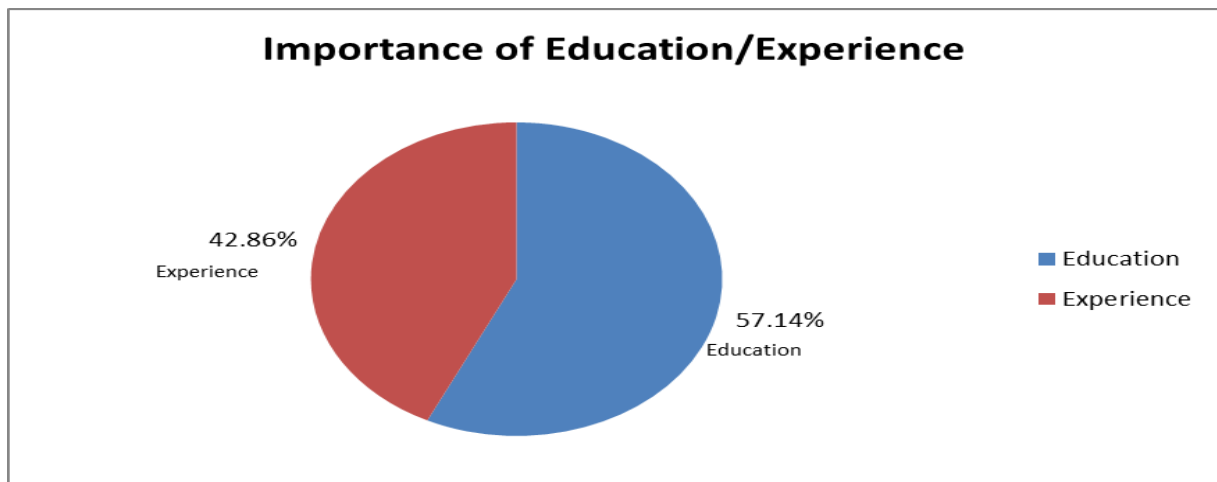


Figure 23: Education and Experience

conducted. The study established that 16 (57.14%) respondents consider experience as the key determinant while 12 (42.86%) consider education as the key determinant of fund performance. Since the fund market in Kenya is young, experience largely lacks amongst several fund managers but education level has played a positive role in the fund industry.

Table 4: Analysis of Managerial Capabilities

	Investment Strategies	Market Timing and Picking Abilities	Education Skills	Experience
Mean	2.6	2.33	3.067	1.4332
Median	3.00	3.00	3.00	2.00
Mode	4.00	4.00	4.00	2.00
Std. Deviation	1.12318	1.12375	1.21106	1.20081
Variance	1.26154	1.26282	1.46667	1.44194
Skewness	-0.898	-0.278	-0.097	-0.486
Std. Error of Skewness	0.236	0.236	0.236	0.236
Kurtosis	0.007	-1.020	-1.281	-0.697
Std. Error of Kurtosis	0.467	0.467	0.467	0.467

From the table above, most fund managers were found to practice active strategies when investing. This is shown by a mean, median and mode of 2.6, 3.0 and 4.0. Most fund

managers were found to possess market timing and stock picking abilities as shown by mean of 2.33, median of 3.0 and mode of 4.0. This highly favours the performance of the fund market. Level of education was also found to affect the performance of fund market positively as shown by a mean of 3.066. However, the experience of most fund managers was found to be inadequate as shown by a mean of 1.4. This negatively affects the fund performance in the Kenyan market. The measure of dispersion from the mean was found to lie between 11% and 12%. This can be interpreted to mean that the responses from the fund managers were found to be reliable hence the credibility of data collected.

4.3.6: Persistence of Returns and Fund Performance

The researcher investigated the persistence of returns and how they affect fund performance. The particular areas investigated were: the trends in performance of the fund, reasons for such trends, relevance of past information, ability to predict the market

4.3.6.1: The Trends in Performance

The following table summarizes the findings of information regarding the trends in performance as investigated by the researcher.

Table 5: Trends in Performance

Trend	Frequency	Percentage	Cumulative %age
Constantly increasing	16	57.14	57.14
Constantly decreasing	0	0	57.14
Same returns	1	3.57	60.71
Varying with time	11	39.29	100

The study established that most funds' performance has been experiencing constantly increasing returns. Funds with such persistency have been found to outperform the market as opposed to funds with drifting returns. This makes it suitable for the Kenyan fund market.

4.3.6.2: The Use of Past Performance

The following figure summarizes the findings of information regarding the extent of use of past information to predict the future performance of funds.

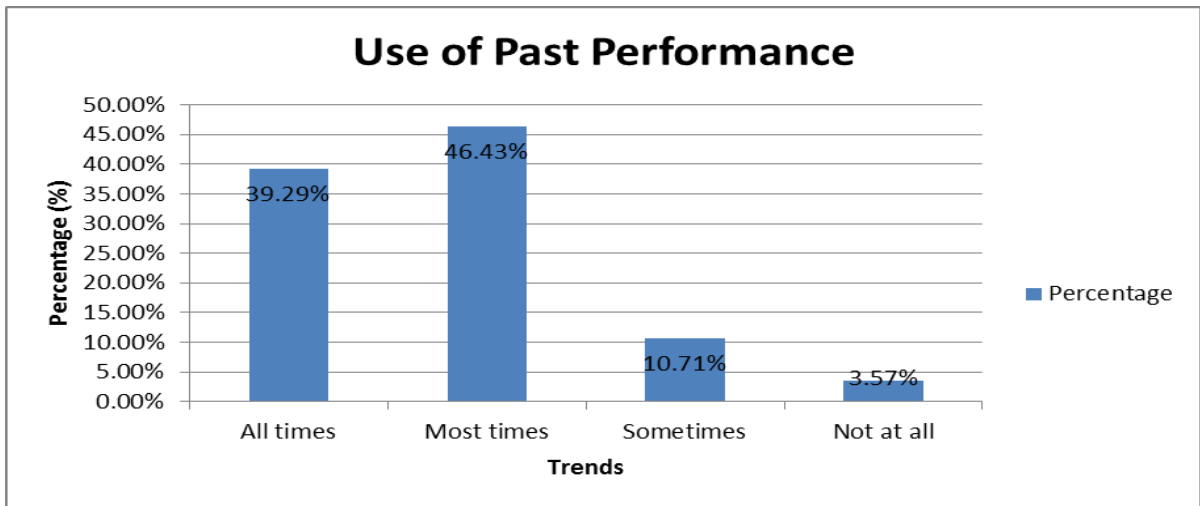
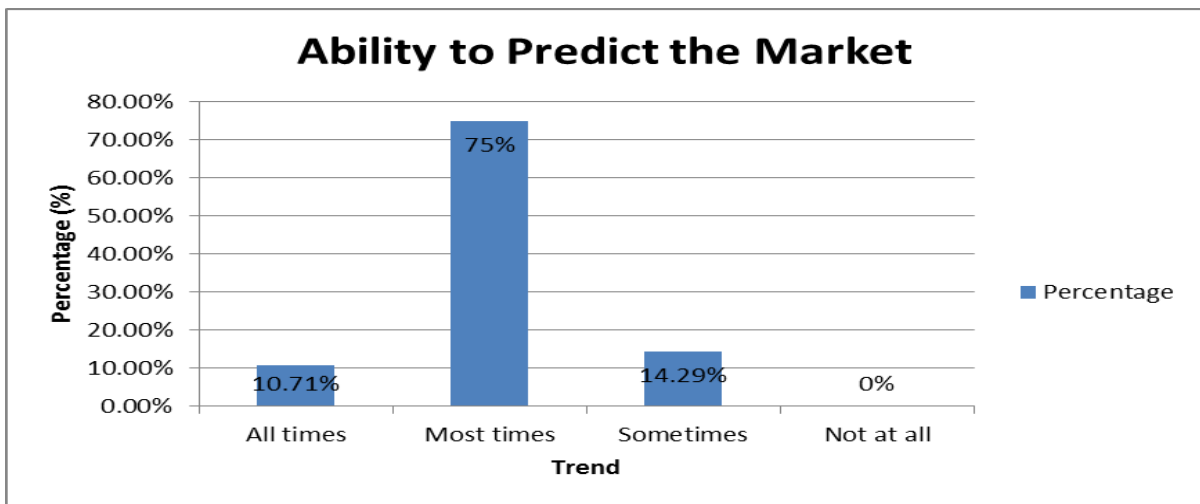


Figure 24: Use of Past Information

4.3.6.3: Ability to Predict the Future

The figure below summarizes findings on ability to predict the future of fund performance.

Figure 25: Ability to Predict the Market



Most of the fund managers were found to possess the ability to predict the market, which is a key factor in determining the fund performance. Thus, the Kenya fund market with most of its fund managers with the ability to predict the market stands a better chance of performance.

The research established that the trends in fund performance are constantly increasing. This is shown by a mean of 1.667 and median and mode of 3.0. This gives the fund manager predictive abilities and hence improved the fund performance. The reasons for such trends

have been attributed to market timing and stock picking abilities as shown by a mean of 1.332 and median of 2.000.

Table 6: Measures of Dispersion

	Trends in Performance	Reasons for such trends	Relevance of Past Information	Ability to Predict the Market
Mean	1.6667	1.3222	2.5564	1.3354
Median	3.00	2.00	3.00	2.00
Mode	3.00	3.00	2.00	2.00
Std. Dev	1.6532	1.5437	1.1342	1.4537
Variance	1.3427	1.4537	1.6342	1.346
Skewness	-0.798	-0.278	-0.134	0.342
Std. Error of skewness	0.246	0.234	0.243	0.236
Kurtosis	0.007	-1.020	-1.281	0.467
Std. Error of Kurtosis	0.467	0.467	0.467	0.467

Since fund managers were found to have these skills, there is increased possibility of fund performance. Use of past information was also found to be prevalent among fund managers as shown by the means of 2.556. This highly increases the fund performance since managers are capable of using past information to predict the future. The measure of dispersion as shown by deviations from the mean were found to range from 11% to 18%, which implies the responses were reliable since they are not highly dispersed from the mean.

4.4. Regression Analysis

Regression analysis was used to estimate the effect of independent variables (factors affecting fund performance) and the dependent variable (fund performance). Karl Pearson moment correlation was used to determine this relationship. The model is represented by:

$$MFP = f(A + IS + FC + FCBP + PR + MS)$$

Where:

MFP = Mutual Fund Performance

A = Constant

IS = Investment Style

FCBP = Fund Characteristics and behavioural patterns

PR = Persistency Returns

MS = Managerial Skills

Using the values of the coefficients from the regression table below, the established regression equations take the form of:

$$FP = 0.227 + (0.643 \times IS) + (0.571 \times FC) + (0.543 \times BP) + (0.809 \times MC) + (0.436 \times PR)$$

Table 7: Regression Analysis

	Unstandardized Coefficients		Standardized Coefficients	t	Sig
Model	B	Std. error	beta		
Constant	0.227	0.114		3.985	0.000
Investment Styles	0.643	0.298	0.350	1.386	0.005
Fund Characteristics	0.571	0.213	0.214	1.452	
Behavioural Patterns	-0.543	0.080	-0.381	-1.033	
Managerial Capabilities	0.809	0.343	0.363	1.462	
Persistence of Returns	0.436	0.211	0.253	1.564	

This can be interpreted to mean, in the absence of various fundamentals of fund performance, the fund performance will change by magnitude of 0.227. The results further indicate that there is a positive correlation between fund performance and the investment style adopted; a unit change in investment style will result in 64.3% change in fund performance.

Similarly, the research establishes a positive correlation between fund performance and fund characteristic, managerial capabilities and persistence of returns. This means that a unit change in fund characteristic, managerial capabilities and persistence of returns will result in 57.1%, 80.9% and 43.6% change in fund performance. The research further established that there is a negative correlation between the fund performance and behavioural characteristics,

meaning, a unit increase in behavioural characteristic will lead to a reduced fund performance by 43.6%. The results also show that all variables are significant as the p-values are less than 0.05 ($p < 0.05$).

4.5 Summary

This chapter was based on the analysis of how various factors affect fund performance. Factors studied included economic variables such as the Treasury bill rate, GDP growth rate, Inflation rate, market interest rates and fund size. Other factors analysed from information collected from the questionnaire included the investment styles, fund characteristics, investor behavioural patterns, managerial capabilities and persistence of returns. Some of these factors were found to have a positive correlation with fund performance while others were found to have a negative correlation with fund performance. The details will be discussed in the next chapter.

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1: Introduction

In this chapter, section 5.2 contains the summary of findings. Section 5.3 outlines conclusively the factors that impact directly on fund performance. Section 5.4 outlines the suggestions put across by the researcher. Section 5.5 discusses the limitations to the study. Finally, section 5.6 puts across suggestions for further research.

5.2. Summary of Findings

Regarding the economic factors, the objective of this part of the study was to analyse the beta parameters of factors that define risk-return relationship in the Kenya mutual funds market. A descriptive research design was used to collect and analyse data which involves observing and describing the relationship between variables. The arbitrage pricing model was used to select economic variables that define risk and the mutual fund market. The economic variables selected included the Treasury bill rate, GDP growth rate, inflation rate, market interest rate and fund size.

Data was collected from various mutual fund managers operating different mutual funds. The funds included the money market fund, equity fund, balanced fund and bond fund. Both primary and secondary data was collected and analysed through linear regression. The average rate of returns was observed to be negatively related to the GDP growth rate, inflation rate and fund size.

The relationship between average rate of returns and market interest rates and the Treasury bill rate was found to be positive. The beta parameter for the GDP growth rate, inflation rate and market interest rate are statistically significant while the beta parameter for the Treasury bill rate was found to be statistically insignificant. These beta variables were found to

represent a positive relationship in the risk-return relationship with unique magnitudes for each factor. The market interest rates, GDP growth rate and inflation rate have the greatest impact on rates of return. The fund size has slightly weaker but significant beta with the Treasury bill rate being insignificant.

In the investment styles and fund performance section, the study established that the performance of mutual funds is highly dependent on the investment style employed by fund managers. This is shown by the positive Pearson coefficient of correlation of 0.643. Most fund managers invest in a blend of funds. The average value of fund was found to be 50 million and above and most investors often dispose of their investments. In assessing the performance of funds, most fund managers combine benchmarking and industry performance to determine the performance of their fund. In investing the investors' wealth, the fund managers purchase and sell a diversified portfolio as shown by a high percentage of 66.7% of fund managers who invest in diversified portfolio. The investors frequently purchase and sell their securities. A high number of fund managers, 62.9%, were found to use brokers in purchasing and selling securities.

On fund characteristics and fund performance, the study established that fund characteristics are positively correlated to fund performance. This is shown by the positive correlation of 0.571. Most respondents, accounting to 85%, felt that the fund industry is not well regulated. The average age of funds was found to be 6-10 years while the average net assets were found to be between Kshs10 and 50 million accounting for 59.2%. Most fund managers serve a combination of individual and corporate clients, accounting for 55.6%. Most fund managers felt that the Kenyan judicial system is good, accounting for 45%. The fund managers were also found to incur high expenses in administration and advertising the funds. This is shown by a percentage of 59.3% of those who incur very high expenses.

A correlation was established between behavioural patterns displayed by investors and fund performance. This is shown by a negative correlation of -0.543. The study also established that investors often portray overconfidence, excessive trading, buying attention grabbing stocks, selling winning stocks earlier and selling losing stock later. All of these affect the fund performance negatively.

The study further established that there is a correlation between managerial capabilities and fund performance. This is shown by the positive correlation of 0.809. 74% were found to employ active strategies in fund investment while most fund managers were found to have market timing and stock picking abilities as shown by a high of 62.9%. Most managers consider education as opposed to experience as a key determinant of fund performance.

Also established in the study was that there is a positive correlation of 0.436 between the persistence of returns and fund performance. The trend in performance has been constantly increasing as shown by high frequency rate of 81.5%. Most fund managers were found to use past information to predict the future as shown by frequency rate of 44.4%. Most fund managers were found to have the ability to predict the market, accounting for 74.1% of the managers.

5.3 Conclusion

A negative beta which is statistically significant was obtained for the GDP growth rate. This implies that a decrease in the economic growth rate is an increase in the risk faced by investors and hence they will demand a high rate of return. The drop in the GDP growth rate represents worsening of the economic condition. Hence, it can be concluded that a positive relationship exists in the risk – return variables where the GDP growth rate variable is used to evaluate the risk changes in an economy.

A statistically significant beta was obtained for the inflation rate variable in this model. This implies that an increase in the price level results in a lower rate of return to mutual funds. Where inflation results in product prices rising higher than input prices, a higher return would be realized, as is the case in most Kenyan markets. Consequently, a rise in the inflation rate would result in a drop in the market risks, hence a drop in the rate of return required by the investors.

The market interest rate beta obtained is positive and statistically significant. This implies that an increase in the cost of borrowing is a risk faced by investors since it reduces their profit margins. Hence, when the market interest rate increases, the investor will demand a higher rate of return as compensation for the higher risk undertaken. A slightly weaker, statistically significant negative beta for the fund size was obtained for this model. The implication is that the smaller the fund size, the higher the inherent risk in a mutual fund. Therefore, an investor will demand a higher rate of return for the higher risk. The conclusion from this model is that a positive risk return relationship exists in the mutual fund market agreeing with theory but with different impact of variables on risk and returns.

From the research, it can be concluded that the performance of the fund will be greatly determined by the factors of fund performance in the following ways:

In relation to the findings of this research, it can be concluded that there is high positive correlation between fund performance and investment style adopted. It can also be concluded that the investment styles adopted by fund managers in Kenya is perfect for fund performance. Most of the investment style characteristics favour fund performance.

The type of funds invested in Kenya was found to be a blend of growth and value fund, thus favouring the fund market. Other investment styles found to favour the fund market in Kenya included the average value of the fund, frequency of investments, methods of assessing fund

performance, securities invested in and frequency of buying and selling investments. All these characteristics work in favour of the Kenyan fund market.

Fund characteristics were found to have a positive correlation with fund performance. Most of the fund characteristics were found to be favourable to fund performance. These include clientele type, average net assets, judicial system, advertising expenses and commissions charging. However, the regulation and the age of the fund in Kenya were found to be unfavourable. Largely, characteristics of Kenyan fund market were found to be favourable for fund performance.

The study established that there is a negative correlation between behavioural patterns and fund performance. The study established that there are negative behavioural patterns portrayed by investors in the Kenyan fund market. Behaviour patterns such as overconfidence, excessive trading, buying attention grabbing stocks, selling winning stocks earlier and selling losing stocks later were found to be prevalent in the Kenyan market. This has negatively affected the fund market in Kenya as investors lose their investments to these behavioural characteristics.

Investigations in the study established that there is a positive correlation between managerial capabilities and fund performance. Market timing, stock picking abilities as well as education skills were found to be prevalent in the Kenyan market. These highly favour the fund market in Kenya and as such, the fund market has greater chances of better performance. However, the fund managers' experience was found to be highly inadequate owing to the average age of the fund market in Kenya.

Finally, the study established that the performance of the fund market in Kenya has been consistently increasing. This positively impacts the Kenyan fund market since it enables the

fund managers to predict the market and hence increasing its performance. The researcher further established that there is a positive correlation between performance and persistence of returns. The persistency of returns which was found to be constantly increasing enables the fund managers to predict the market and hence the fund performance

5.4 Limitations to the Study

When conducting this research study, a number of limitations were encountered. The first limitation was the existence of low informational efficiency in the mutual funds market. The Nairobi Securities Exchange market has grown tremendously but still has not achieved high information efficiency where prices of an asset reflect all information available. Most mutual funds invest in the stock market and also publish the rate of returns they offer on a daily basis. However, price change with a lag effect as the economic variable change.

The second limitation is the possibility of different mutual funds being affected by the various factors differently. The money market fund is affected by the Treasury bill rate by a greater magnitude than the balanced fund. Similarly, variables affecting the equity fund and Kenyan shillings fund will be affected by the economic growth rate and inflation by a different magnitude.

Thirdly, the research is limited to data provided by mutual fund which conforms to periodic financial reporting statements. This implies that the cut off of a period can be in the middle of an economic cycle hence provides return statistics before the market corrects itself. This can be observed in the data where the return could drop drastically for one year and rise drastically the next year providing a normal average return for the two years.

5.5 Recommendations and Suggestions for Further Research

The conclusions made from this research study support the following government and mutual fund policy recommendations. The government should adopt expansionary economic policies

that ensure high GDP growth rate to ensure that returns in each sector increase and reduce the risk prevalent in the economy. This will result in higher returns to the mutual funds since they are invested in different sectors of the economy.

The Central Bank of Kenya should control the base lending rate to commercial banks to control inflation and ensure appropriate cost of borrowing in the market. High inflation reduces the real returns to mutual funds and other investments. Hence, when the inflation rate is rising, the base lending rate should be raised to reduce the money supply and reduce the purchasing power. On the other hand, the base lending rate to commercial banks should be regulated to ensure that the cost of borrowing remains low enough to stimulate more investment and better returns.

Mutual fund policies and business strategies should be tailored to address the factors that determine the risks and returns in the market. Mutual fund managers should adopt diversification policies to mitigate economic changes in different industries. Investing in different industries that are negatively correlated eliminates systematic risk. The inflation rate is less felt in some industries than others hence a diversified portfolio will achieve better returns than undiversified ones.

A large fund size enjoys economies of scale and broader diversification options. This study found that bigger funds earned higher returns than small ones. Effective marketing strategies should be adopted to attract more investors and merging of smaller funds.

In light of the research findings, the study established a positive relationship between investment style and fund performance. It recommends that the Kenyan fund managers be trained on the best investment styles including the size of fund to hold, types of funds to invest in, frequency of change of investment style, methods of assessing fund performance among other investment style characteristics.

Further, the study established a positive relationship between fund characteristics and performance. Most characteristics in Kenya were found to favour fund performance. However, regulation of fund industry was found to be greatly lacking as one of the characteristics. It is recommended that the various regulators of the fund industry come up with the necessary regulations to control the fund market and hence fund improved performance.

The behavioural characteristics were found to have a negative relationship with fund performance. This factor has been found to be prevalent in Kenya. The research there for recommends that fund investors and managers be trained on the best practices to avoid such negative behaviours.

Finally, persistence of returns and managerial capabilities were found to have a positive relationship with fund performance. In this regard, the researcher recommends time to time training of fund managers to enhance these vital skills and hence remove the element of 'luck' when investing.

Further studies relating to this research topic can be undertaken in the following areas. Firstly, a comparative study on the performance of mutual funds relative to pension funds and the factors that are unique to each of them can be analysed. Both of these funds invest in different sectors but with different investment objectives. The marketing and investment strategies differ resulting in risks and returns that are unique to each type of fund.

Secondly, further studies can be conducted to analyse risk factors that are unique to sectors that individual mutual funds are invested in. Bond funds, equity funds and Kenya shilling funds can be affected by different magnitudes of the economic factors. Some funds may be highly influenced by a certain factor hence policies and business strategies are unique to them.

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APPENDICES

APPENDIX1: RESEARCH QUESTIONNAIRE

Please tick the most appropriate answers

PART A: BACKGROUND INFORMATION

Section 1

1. Gender

(a) Male (b) Female

2. Age Bracket

(a) 18 -30 yrs (b) 31 – 40 yrs

(c) 41 – 49 yrs (d) Above 50 yrs

3. Highest Education Level

(a) Doctorate (b) Masters

(c) Bachelors (d) Diploma

4. How many years have you been in the fund management profession?

(a) Below 1 yr (b) 1- 5 yrs

(c) 6 – 10 yrs (d) Above 10 yrs

Section 2

5. What type of fund do you invest the funds?

(a) Growth (b) Value (c) Combination

6. What is the estimate of the average value of funds you manage?

Kshs 1M – 10M Kshs 10M – 100M Above Kshs 100M

7. How often do you change your investment style?

Very Often Often Rarely Not at all

8. Which criteria do you use in assessing the performance of the fund?

Past Performance Industry Performance

Benchmarking Combination of methods

9. What kind of instruments do you prefer when investing?

Government Bonds Corporate Bonds

Equity Securities Combination

10. How often do fund investors dispose their holdings in the fund you are managing?

Very Often Often Rarely Not at all

11. How do you buy and sell your securities?

(a) Through a Broker (b) Direct Buying

PART B: FUND CHARACTERISTICS AND BEHAVIORAL PATTERNS

Fund Characteristics

12. Is the fund industry well regulated, in your opinion?

Yes No

13. What is the average age of the funds you are managing?

Below 5 years 6-10 years

11-15 years Above 15 years

14. What type of clients do you serve?

Corporate Individuals Both

15. What is the average net assets estimate of the funds you manage?

Below Kshs 1M Kshs 1M – 10M

Kshs 10M – 50M Above Ksh 50M

16. How do you rate the judicial system in terms of competence and equity?

Excellent Very good Good Poor Very Poor

17. How do you rate your advertising expenses?

Very high High Low Very Low

18. What is your main objective when investing funds?

(a) High monthly/annual return to investors

(b) Growth of investors' wealth

(c) Both value and growth

19. When do you charge your commission charges?

(a) When investing in the fund (Front End Load)

(b) When selling your investments (Back End Load)

20. In administration of the fund, how would you rate the expenses incurred (Management Fees)?

Very High High Low Very Low

21. Does the mutual fund industry have the necessary and supportive regulations in Kenya?

Yes No

If the answer is no above, please indicate the area, in your opinion, should be improved.

22. Certain factors may make investors irrational when investing and disposing off their investments. In the following list, indicate how often these factors are displayed by investors in the funds you are managing (tick as appropriate).

	Very Often	Often	Rarely	Not at all
Overconfidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Excessive trading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buying attention-grabbing stocks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Selling winning stocks earlier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Selling losing stocks late	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. How would you describe the investor's investment strategies?

Passive (advice from experts)

Active (trying on their own while carrying out analysis)

24. On a daily basis, you buy and sell securities. Which is the most prevalent activity, in your opinion, in terms of time and cost?

Buying Selling

25. In the fund market, some securities outperform others while others do not do well. In your opinion, which is the major contributing factor amongst those listed below?

Managerial Capabilities differences

Net Assets amount of the fund

Luck

Combination of the above

PART C: PERSISTENCE OF RETURNS AND MANAGERIAL CAPABILITIES

26. In your opinion, how would you describe the performance of your fund over the period in operation?

Constantly Increasing Constantly Decreasing

Constant (same returns) Varying from time to time

27. If the answer in number 26 above is constantly increasing, how would you explain it?

Superior Managerial Capabilities and skills

Experience

Luck

28. In trying to outperform the market, how often do you use past performance information of the fund to predict performance of stocks?

All the time Sometimes

Rarely Not at all

29. How would you describe your investment strategies as the fund manager?

Passive (use of a selected benchmark)

Active (make attempt to get best securities)

30. How often do you succeed in market timing and picking the right stock for investment?

Always Most of the time

Half of the time Never

31. In assessing managerial capabilities, educational skills and experience matters, which of these two, in your opinion, matters the most?

Education Experience

32. In your opinion, which area in fund management requires improvement?

APPENDIX 2: REGISTERED FUND MANAGERS IN KENYA – 2014

- 1) African Alliance Kenya Investment Bank Limited
- 2) Amana Capital Limited
- 3) Apollo Asset Management Company Limited
- 4) British-American Asset Managers Limited
- 5) Co-op Trust Investment Services Limited
- 6) Dry Associates Limited
- 7) Genesis Kenya Investment Management Limited
- 8) ICEA Asset Management Limited
- 9) Jubilee Financial Services Limited
- 10) Kenindia Asset Management Company Limited
- 11) Madison Asset Management Services Limited
- 12) Old Mutual Asset Managers (Kenya) Limited
- 13) Pinebridge Investment East Africa Company Limited
- 14) Sanlam Investment Management Kenya Limited
- 15) Stanbic Investment Management Services (EA) Limited
- 16) Zimele Asset Management Company Limited

Source: Retirement Benefits Authority, 2013

APPENDIX 3: MUTUAL FUNDS DATA

No.	Rate of Return	TB Rate	GDP Growth Rate	Inflation Rate	Market Interest Rate	Fund Size (millions)
1	6.85	7.69	6.32	6.06	13.60	260.00
2	6.76	7.89	6.99	4.27	13.30	385.00
3	7.63	8.52	1.53	16.20	14.00	288.00
4	7.30	8.15	2.74	10.53	14.80	350.00
5	5.90	3.81	5.76	4.06	14.40	500.00
6	5.50	8.89	4.38	13.98	15.00	396.00
7	12.00	13.54	4.22	9.65	19.63	300.00
8	7.80	7.69	6.32	6.06	13.60	144.00
9	8.20	7.89	6.99	4.27	13.30	264.00
10	8.60	8.52	1.53	16.20	14.00	190.00
11	18.00	8.15	2.74	10.53	14.80	270.00
12	2.90	3.81	5.76	4.06	14.40	450.00
13	3.40	8.89	4.38	13.98	15.00	425.00
14	25.00	13.54	4.22	9.65	19.63	280.00
15	15.45	7.69	6.32	6.06	13.60	312.00
16	15.20	7.89	6.99	4.27	13.30	565.00
17	13.00	8.52	1.53	16.20	14.00	400.00
18	22.00	8.15	2.74	10.53	14.80	550.00
19	24.90	3.81	5.76	4.06	14.40	891.00
20	8.52	8.89	4.38	13.98	15.00	1000.00
21	31.00	13.54	4.22	9.65	19.63	1300.00
22	8.30	7.89	6.99	4.27	13.30	2073.00
23	-29.38	8.52	1.53	16.20	14.00	2005.00
24	2.33	8.15	2.74	10.53	14.80	2830.00
25	21.39	3.81	5.76	4.06	14.40	4250.00
26	-31.37	8.89	4.38	13.98	15.00	3360.00
27	22.10	13.54	4.22	9.65	19.63	4763.00
28	6.53	7.89	6.99	4.27	13.30	551.00
29	-10.44	8.52	1.53	16.20	14.00	757.00
30	3.73	8.15	2.74	10.53	14.80	857.00
31	18.70	3.81	5.76	4.06	14.40	1273.00
32	-25.83	8.89	4.38	13.98	15.00	1115.00
33	18.66	13.54	4.22	9.65	19.63	1447.00
34	5.70	7.89	6.99	4.27	13.30	982.00
35	8.10	8.52	1.53	16.20	14.00	1197.00
36	9.25	8.15	2.74	10.53	14.80	1253.00
37	9.18	3.81	5.76	4.06	14.40	2299.00
38	-11.11	8.89	4.38	13.98	15.00	2376.00
39	15.32	13.54	4.22	9.65	19.63	2265.00
40	5.30	7.89	6.99	4.27	13.30	132.00
41	5.64	8.52	1.53	16.20	14.00	177.00

42	6.07	8.15	2.74	10.53	14.80	247.00
43	5.06	3.81	5.76	4.06	14.40	435.00
44	6.08	8.89	4.38	13.98	15.00	493.00
45	7.30	13.54	4.22	9.65	19.63	397.00
46	4.50	7.89	6.99	4.27	13.30	355.00
47	-12.53	8.52	1.53	16.20	14.00	375.00
48	8.13	8.15	2.74	10.53	14.80	541.00
49	25.17	3.81	5.76	4.06	14.40	711.00
50	-18.08	8.89	4.38	13.98	15.00	686.00
51	17.75	13.54	4.22	9.65	19.63	428.00
52	7.00	7.89	6.99	4.27	13.30	96.00
53	8.00	8.52	1.53	16.20	14.00	90.00
54	8.50	8.15	2.74	10.53	14.80	135.00
55	8.50	3.81	5.76	4.06	14.40	316.00
56	7.50	8.89	4.38	13.98	15.00	274.00
57	9.00	13.54	4.22	9.65	19.63	297.00
58	60.40	7.89	6.99	4.27	13.30	496.00
59	-39.50	8.52	1.53	16.20	14.00	307.00
60	-8.10	8.15	2.74	10.53	14.80	274.00
61	30.70	3.81	5.76	4.06	14.40	339.00
62	-8.90	8.89	4.38	13.98	15.00	253.00
63	23.20	13.54	4.22	9.65	19.63	217.00
64	7.52	8.15	2.74	10.53	14.80	12.00
65	6.56	3.81	5.76	4.06	14.40	20.00
66	9.08	8.89	4.38	13.98	15.00	27.50
67	9.42	13.54	4.22	9.65	19.63	22.00
68	-5.40	8.52	1.53	16.20	14.00	6.00
69	-1.87	8.15	2.74	10.53	14.80	7.25
70	4.75	3.81	5.76	4.06	14.40	9.00
71	7.09	8.89	4.38	13.98	15.00	16.00
72	5.69	13.54	4.22	9.65	19.63	7.00
73	5.01	8.52	1.53	16.20	14.00	265.00
74	6.66	8.15	2.74	10.53	14.80	258.00
75	2.75	3.81	5.76	4.06	14.40	453.00
76	5.45	8.89	4.38	13.98	15.00	495.00
77	9.60	13.54	4.22	9.65	19.63	1059.00
78	1.18	8.52	1.53	16.20	14.00	106.00
79	1.22	8.15	2.74	10.53	14.80	88.00
80	54.31	3.81	5.76	4.06	14.40	76.00
81	-18.59	8.89	4.38	13.98	15.00	47.00
82	41.60	13.54	4.22	9.65	19.63	52.00
83	5.40	7.69	6.32	6.06	13.60	2020.00
84	6.14	7.89	6.99	4.27	13.30	2665.00
85	6.69	8.52	1.53	16.20	14.00	2309.00
86	8.03	8.15	2.74	10.53	14.80	3460.00

87	6.21	3.81	5.76	4.06	14.40	3648.00
88	6.17	8.89	4.38	13.98	15.00	3800.00
89	12.64	13.54	4.22	9.65	19.63	5378.00
90	0.54	7.69	6.32	6.06	13.60	713.00
91	8.07	7.89	6.99	4.27	13.30	1222.00
92	-11.00	8.52	1.53	16.20	14.00	991.00
93	2.10	8.15	2.74	10.53	14.80	802.00
94	29.16	3.81	5.76	4.06	14.40	881.00
95	-13.23	8.89	4.38	13.98	15.00	529.00
96	35.06	13.54	4.22	9.65	19.63	458.00
97	0.92	7.69	6.32	6.06	13.60	4326.00
98	4.88	7.89	6.99	4.27	13.30	5818.00
99	-22.12	8.52	1.53	16.20	14.00	4461.00
100	1.56	8.15	2.74	10.53	14.80	3338.00
101	34.82	3.81	5.76	4.06	14.40	3895.00
102	-19.96	8.89	4.38	13.98	15.00	2064.00
103	49.06	13.54	4.22	9.65	19.63	1896.00
104	0.27	8.52	1.53	16.20	14.00	15.00
105	6.03	8.15	2.74	10.53	14.80	97.00
106	17.94	3.81	5.76	4.06	14.40	226.00
107	-9.28	8.89	4.38	13.98	15.00	118.00
108	18.94	13.54	4.22	9.65	19.63	80.60
109	0.15	8.52	1.52	16.20	14.00	11.00
110	3.05	8.15	2.74	10.53	14.80	16.00
111	31.09	3.81	5.76	4.06	14.40	32.00
112	-14.90	8.89	4.38	13.98	15.00	28.00
113	28.62	13.54	4.22	9.65	19.63	25.00
114	8.67	8.52	1.53	16.20	14.00	453.00
115	8.56	8.15	2.74	10.53	14.80	583.00
116	9.17	3.81	5.76	4.06	14.40	1059.00
117	9.37	8.89	4.38	13.98	15.00	874.00
118	10.74	13.54	4.22	9.65	19.63	953.00
119	2.10	8.15	2.74	10.53	14.80	140.00
120	20.91	3.81	5.76	4.06	14.40	235.00
121	-11.23	8.89	4.38	13.98	15.00	210.00
122	32.20	13.54	4.22	9.65	19.63	340.00
123	6.04	8.15	2.74	10.53	14.80	45.00
124	8.70	3.81	5.76	4.06	14.40	52.00
125	5.20	8.89	4.38	13.98	15.00	49.00
126	10.80	13.54	4.22	9.65	19.63	38.00
127	5.20	8.15	2.74	10.53	14.80	57.00
128	18.70	3.81	5.76	4.06	14.40	148.00
129	-16.49	8.89	4.38	13.98	15.00	134.00
130	15.31	13.54	4.22	9.65	19.63	175.00

Source: African Development Bank online database (2006 - 2012); Economic Survey

APPENDIX 4: ECONOMIC FACTORS

YEAR	Treasury Bill Rate	GDP Growth Rate	Inflation Rate	Market Interest Rate
2008	8.52	1.53	16.20	14.00
2009	8.15	2.74	10.53	14.80
2010	3.81	5.76	4.06	14.40
2011	8.89	4.38	13.98	15.00
2012	13.54	4.22	9.65	19.63
2013	8.52	2.74	10.53	14.00
2014	8.15	5.76	4.06	14.80

Source: The World Bank and Central Bank of Kenya online databases