SOCIALLY RESPONSIBLE INVESTMENT, PORTFOLIO MANAGEMENT, INSTITUTIONAL CHARACTERISTICS AND PERFORMANCE OF MUTUAL FUNDS IN KENYA

BY

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NOVEMBER, 2014

DECLARATION

DECLARATION BY CANDIDATE:

I hereby declare that this PhD research thesis is my original work and has not previously, in part or in its entirety, been presented to any other University towards the award of any degree.

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DEDICATION

I dedicate this Doctoral thesis to my beloved parents Loice Wangui and the late Iraya Kabaiku for giving me the foundation and motivation to seek greater heights academically.

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ABBREVIATIONS AND ACRONYMS

AA - Asset Allocation

ALMR – At Least Market Returns

ANDE - Aspen Network of Development Entrepreneurs

BMR – Below Market Returns

BOP – Bottom Of the Pyramid

CL - Inclusion/Exclusion criteria

CMA – Capital Market Authority

CRSP - Center for Research in Security Prices

DEA - Data Envelopment Analysis

DMU - Decision Making Unit

DSI - Domini Social Index

ER - Efficiency Ratio

ESG - Environmental, Social and Governance

EUROSIF – Europe Social Investment Forum

FA - Firm Age

FCB – First Community Bank

FS - Firm Size

FTSE - Financial Times Stock Exchange Index

IS - Investment Style

KSIF – Kenya Social Investment Forum

KSIX – Kenya Social Investment Exchange

MFI – Micro-Finance Institutions

MPT – Modern Portfolio Theory

NGOs – Non-Governmental Organizations

NSM – New Social Movement

OS - Ownership Structure

PD - Portfolio Diversification

PH - Investment Philosophy

PM - Portfolio Management

PMR – Potential for Market Returns

RC - Research Costs

RBA – Retirement Benefit Authority

SRI – Socially Responsible Investment

ST - SRI Strategies

TF - Transaction Fees

US SIF – United States Social Investment Forum

USA – United States of America

ABSTRACT

This study aimed at establishing the relationship among Socially Responsible Investments (SRI), portfolio management, institutional characteristics and performance of mutual funds in Kenya so as to address the four main gaps identified in literature namely: lack of consensus on why SRI occurs especially in a developing economy like Kenya even when empirical evidence on the impact of SRI on performance is inconclusive; the use of traditional financial analysis methods that have been formulated to measure financial risk and return but which are unable to asses non-financial risk and return created by social, ethical, governance, moral and environmental issues; lack of control for any intervening or moderating variable when analyzing the relationship between SRI and performance; and lastly limited studies on the combined effects of SRI, institutional characteristics and portfolio management on performance.

In order to address these gaps six hypotheses were formulated and tested on a population of one hundred and fourteen (114) mutual funds in Kenya that were either licensed by CMA or were members of Aspen Network of Development Entrepreneurs. A positivistic research philosophy and correlation descriptive research designs were adopted in the study. Preliminary statistical tests were undertaken. These included Cronbatch alpha; descriptive statistics such as the mean, standard deviation, coefficient of variation, kurtosis and skewness; Sharpe ratio, ethical coefficient and DEA technical efficiency coefficient; and correlation analysis. Hierarchical multiple regression analysis was then used to test the hypotheses. The response rate was 60.5%.

The findings are as follows: there is a statistically significant relationship between SRI and performance (Adjusted $R^2 = 0.694$, $F= 52.528$, $p< 0.05$); there is a statistically significant relationship between SRI and portfolio management (Adjusted $R^2 = 0.092$, $F = 7.873$, $p< 0.05$); there is a significant relationship between portfolio management and performance (Adjusted $R^2 = 0.190$, $F = 4.341$, $p< 0.05$); the relationship between SRI and portfolio management is not moderated by institutional characteristics ($\Delta R^2 = 0.026$, $p > 0.05$); portfolio management has an intervening effect on the relationship between SRI and performance (Adjusted $R^2 = 0.469$, $F = 30.975$, $p< 0.05$); and there is a statistically significant combined effect of SRI, institutional characteristics and portfolio management on performance of mutual funds in Kenya (Adjusted $R^2 = 0.826$, $F = 25.604$, $p< 0.05$).

The results of this study add to existing knowledge in the area of SRI, portfolio management, institutional characteristics and performance by showing that the relationship between SRI and performance of mutual funds is not direct but rather is intervened by portfolio management. This has helped in reduction of the controversy existing in literature. Since the findings of this study indicate that there is a positive relationship between SRI and performance, fund managers can justify including SRI in their portfolio. This study helps corporate managers to understand the impact of their corporate social responsibility on the value of the firm which is important because many companies spend part of the shareholders' wealth on social responsibility with the hope of creating social value and attracting socially responsible investors to the firm. The government and investment regulators in the country such as the Capital Market Authority (CMA) and the Retirement Benefit Authority (RBA) can use the findings in guiding the regulation process especially when setting limits on the type of investments fund managers can include in their portfolio and thereby establishing the fund managers' fiduciary responsibility towards their clients.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Investment, in its broad sense, refers to the sacrifice of current cash flow for future cash flow. It involves time, risk and returns since the sacrifice takes place in the present, and is certain, while the rewards come later, and is uncertain (Sharpe *et al.*, 2005). Reilly and Brown (2000) define investments as a tradeoff of present consumption for higher levels of future consumption. According to the above definitions, future higher returns is a key determinant of the amount investors want to commit today. The future returns could be quantifiable in the form of monetary gains or qualitative in the form of social benefits. Rudd (1981) posits that when the returns are mainly social, then the process can be referred to as socially responsible investment (SRI).

A key theme that underpins most SRI funds is that they market themselves as having ethical values of a higher standard than their conventional counter parts. Investors may be attracted to SRI funds because they possess personal values that are consistent with the underlying philosophy of these funds (Chandler, 2001). In such cases, the investors are making a deliberate choice to concentrate on a sub-set of investment assets. According to modern portfolio theory of Markowitz (1952), such a strategy can result in a sub-optimal portfolio due to restrictions on diversification. This may therefore result in SRI funds underperforming conventional funds or even the market benchmark.

Investment companies continually introduce new types of funds in an effort to attract investor capital and maximize assets under management. The decision to introduce a new type of fund is affected by a number of variables, including investor demand for the fund's attributes. As argued by Khorana and Servaes (1999), new fund types in high demand generate capital inflows and

incremental revenue for the mutual fund. For this reason, mutual funds are more likely than individual investors to have introduced socially responsible investments constraints in their portfolio.

1.1.1 Socially Responsible Investment

Lozano (2006) defines SRI as an investment, which combines investors' financial objectives with their concerns about Social, Environmental and Ethical (SEE) issues where investor's practices align those concerns with their investment strategies. Dunfee (2003) refer to SRI as any investment strategy based upon identifiable non-financial criteria incorporating a social or religious dimension. Statman (2000) definition, which is more encompassing and thus adopted in this study, is that SRI is any investment which meets certain baseline standards of social and environmental responsibility (social screening), actively engages those companies to become better, more responsible corporate citizens (shareholders activism), and dedicates a portion of assets to community economic development (community development).

Socially responsible investment can be looked at by considering the philosophy of investment, SRI exclusion or inclusion criteria and the SRI strategies. The investment philosophy helps in categorizing investors on a spectrum of expected financial returns including philanthropic focus, social investors and mainstream investors as shown in Table 1.1 below. The extent to which an investor is concerned with social values as opposed to financial returns helps in fitting the investor within the spectrum (Allavida, 2011).

Table 1.1 Spectrums of Social Investors

PHILANTHROPIC FOCUS	SOCIAL INVESTORS			PROFIT FOCUS
Only interested in social returns with no interest in any type of financial returns	**Possible Market Return (PMR)** Social investors predominantly interested in social returns but also interested in potential of profit making by the investee	**Below Market Return (BMR)** Social investors interested in social returns and below market rate of financial returns	**At Least Market Returns (ALMR)** Social investors interested in social returns and at least market rate of financial returns	Mainstream investors solely interested in financial returns with no interest in social returns

Source: Allavida (2011, 21)

The inclusion or exclusion criteria depend on the factors considered by socially responsible investors. Kempf and Osthoff (2007) indentify three of these categories to include social, environmental and ethical factors. Schwartz (2003) adds two other categories of moral and governance principles. Individuals wanting to invest in a socially responsible way have mainly three SRI strategies they can pursue including social screening, shareholders' activism and community investing (See figure 1.1 below). Social screening involves either positive or negative screening. Haigh and Hazelton (2004) describe positive screens as those identifying, and including in the portfolio, companies with superior social or environmental performance while negative screens are those identifying, and excluding from the portfolio, companies engaged in targeted undesirable activities. O'Brien (2002) defines shareholder activism as the process by which shareholders of a listed company, under the provision of securities legislation in various jurisdictions, can requisition its members to meet and vote on specified resolutions while community investing describes the practice of providing capital to people in low-income or at-risk communities who have difficulty accessing it through conventional channels.

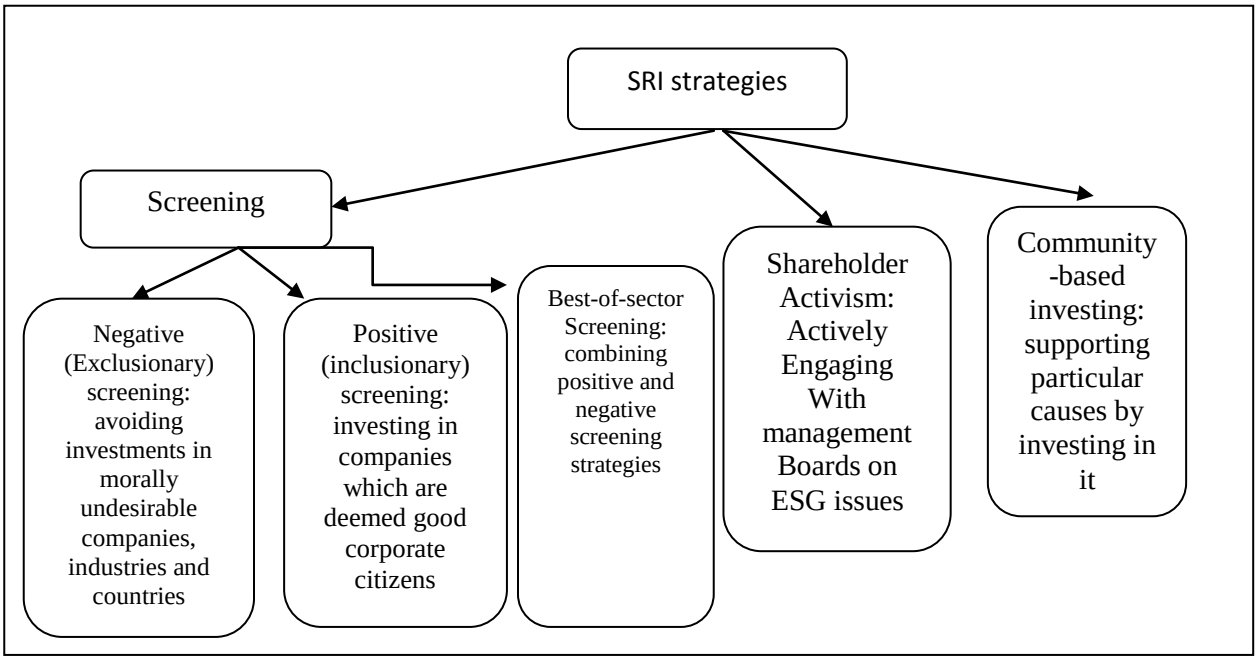

Figure 1.1: Prominent SRI Strategies

Adapted from Geczy *et al.* (2005), O'Brien (2002) and Schueth (2003)

1.1.2 Portfolio Management

Jolion (1992) define portfolio management as the art and science of making decisions about investment mix and policy, matching investments to objectives, asset allocation for individuals and institutions, and balancing risk against performance. It is an ongoing process in which investment objectives and constraints are identified and specified, investment strategies are developed, portfolio composition is decided in detail, portfolio decisions are initiated by portfolio managers and implemented by traders, performance is measured and evaluated, investor and market conditions are monitored and any necessary rebalancing is implemented. Portfolio management process outlines the steps in creating a portfolio, and emphasizes the sequence of actions involved from understanding the investor's risk preferences to asset allocation and selection to performance evaluation. By emphasizing the sequence, it provides for an orderly way in which an investor can create his or her own portfolio or a portfolio for someone else. The portfolio management process involve mainly four steps including specifying

investment objectives, specifying investment constraints, formulating an investment policy and finally monitoring and updating portfolio as shown by figure 1.2 below (Bodie, Kane and Marcus, 2002).

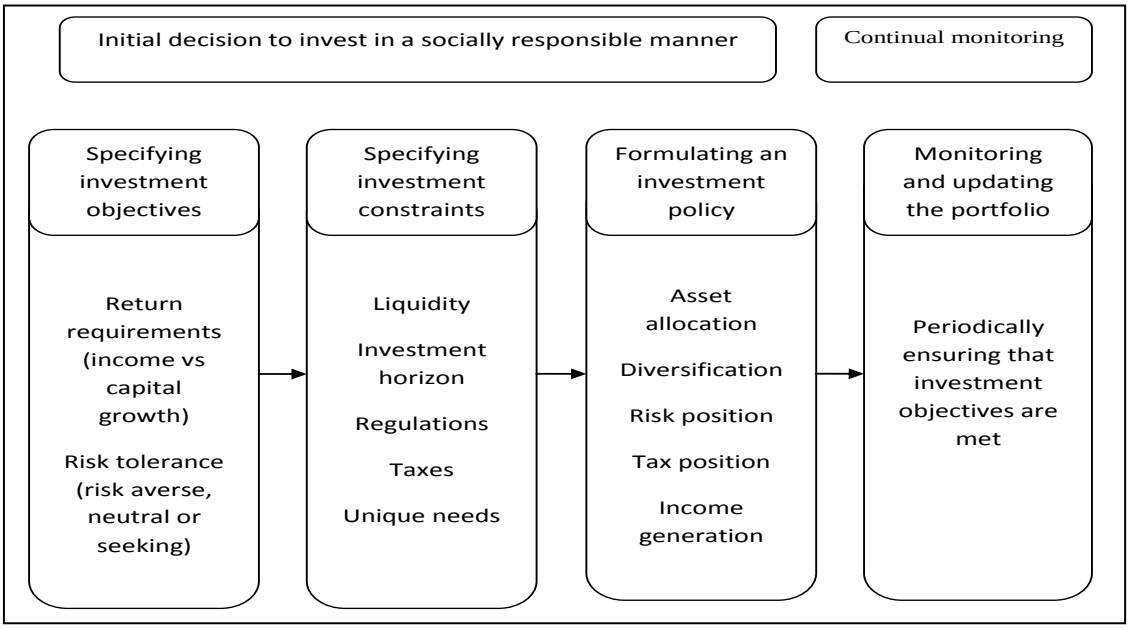

FIGURE 1.2: Stages in Socially Responsible Portfolio Management Process
Source: Bodie *et al.* (2002, 940)

The difference between SRI and conventional portfolio management process occurs in the first three steps. Firstly, SRI investment objectives are defined to include both social and financial returns and a higher risk tolerance since social investors are willing to take a higher risk so as to accommodate their investment philosophy (Statman, 2000). Secondly, in specifying investment constraints, socially responsible investors include social, environmental, ethical, moral and governance constraints (Kempf & Osthoff, 2007; Schwartz, 2003). Thirdly, the investment policy will be different due to reduced diversification as a result of reduction in the investable universe and differences in the size and structure of the portfolio. There will also be increased research costs to determine investment candidates (Haigh & Hazelton, 2004). Langbein and Posner (1980) also observed that social screening tends to eliminate large firms from the

investment universe and as a result remaining firms tend to be smaller and have more volatile returns. Further, diversification may be hindered to the extent that social criteria eliminates or favors certain industries. Moreover, socially responsible investment may involve higher risk but should not yield significantly worse returns since SRI investors do not invest in clearly unprofitable stock.

Havemann and Webster (1999) identify five factors in portfolio management that are affected by SRI. These are diversification, the size and structure of the investable universe, concentration and the research costs incurred in monitoring the investee companies. Socially responsible investment funds exhibit a smaller-companies effect since they tend to invest in smaller or medium size companies given that larger companies are more likely to be ruled out by social screening as they tend to be involved in a larger number of areas of which investors might disapprove. On the structure of the investable universe, SRI tends to eliminate some sectors such as tobacco, pharmaceuticals, engineering and banks, depending on the screening criteria used. In the short term these sectoral effects will come into play as some sectors do better than others. This can have a positive or negative effect depending on the balance of sectors in the portfolio compared with the unconstrained universe.

Havemann and Webster (1999) further suggest that some socially responsible funds claim that because they have fewer companies to invest in, they know them better and are more focused on their activities, and as they are often long-term investors this pays off over time. If ethical funds have fewer companies to invest in and a tendency to invest in them for longer, then the portfolio will be more concentrated and hence will incur lower trading costs. Stone et al. (1997) however, argued that ethical funds attract higher transaction costs and management fees due to the

relatively small size of the funds, and the need to collect specialized information data concerning the ethical practices of firms. On this last point, managers responsible for implementing social screens do indeed consult a wide range of sources of information, and do this on a regular basis.

1.1.3 Institutional Characteristics

Mutual funds are operated by management companies whose resources, policies, and culture play an important role in the determination of individual funds' performance and investment strategies. Management companies differ in their ability to attract and retain talented managers, the incentives provided to these managers, the availability of supporting staff, their technology, their ability to negotiate prices with other service providers (such as brokers), their advertising policies, and the governance of their funds (Benson et al., 2006).

Institutional characteristics of fund managers are likely to play a significant role in shaping their perceptions and behavior concerning socially responsible investments. In particular, McLachlan and Gardner (2004) found a statistically significant difference between SRI and conventional investors in the fund's age and size. They measured fund's size by the amount of money under management and found that managers of large funds are more likely to believe that companies should be as responsible to their shareholders as to the broader society. Mutual fund's age referred to the number of years the fund had been in operation with the results being that younger funds were more likely to be socially responsible. The ownership structure may also influence the mutual funds investment strategies. For instance Heinkel et al. (2001) found that institutional investors are more likely to invest in SRI funds than individual investors. They also found that foreign owned mutual funds are more likely to invest in SRI due to the influence from their home market. This is mainly true since foreign owned mutual funds in Kenya are subsidiaries of well established funds in developed markets.

1.1.4 Mutual Fund Performance

The main idea in most of the classical measures of investment performance is essentially to compare the return of a managed portfolio over some evaluation period to the return of a benchmark portfolio. The benchmark portfolio should represent a feasible investment alternative to the managed portfolio being evaluated. The main composite performance measures include the Sharpe ratio (Sharpe, 1966), Treynor index (Treynor, 1965) and Jensen ratio (Jensen, 1968). The Treynor index and the Jensen ratio both use the beta as the measure of risk with the assumption that the portfolio is fully diversified while the Sharpe ratio makes no assumption on portfolio diversification and therefore uses standard deviation to measure risk.

Financial portfolio theory and the classical theory of the firm suggest that including non-financial restrictions will not benefit performance. Portfolio theory implies that the criteria that constrain an investor's investment possibilities result in lower diversification and greater risk exposure or additional costs. The classical theory of the firm implies that SRI will be less financially efficient than non-restricted investments, since the firms that responsible investors do invest in may incur higher costs. This would make these firms less profitable (Schwartz, 2003).

Several methods can be used to measure performance of socially responsible mutual funds with explicit consideration of their social and financial costs and benefits. The main methods include Cost-Effectiveness Analysis (CEA) which involves the calculation of a ratio of cost to a non-monetary benefit or outcome, Cost-benefit analysis (CBA) which monetizes the benefits and costs associated with an intervention and then compares them to see which one is greater, Social Return on Investment (SROI) which compares the social, enterprise, and blended value accrued to society with the total investments for each mutual fund or the Data Envelopment Analysis

(DEA) methodology, which is more robust than the other methods, and can be used to define mutual fund performance measures that allow to take into consideration several input and output variables (Murthi et al., 1997).

DEA considers several input variables such as different risk measures and the initial and exit fees of the investment, as well as several output variables, such as a financial return indicator and also indicators related to other objectives of the investors (Murthi et al., 1997). Basso and Funari (2003) presents some DEA models specifically designed to evaluate the performance of SRI funds, which explicitly consider the ethical level of the mutual funds among the outputs.

1.1.5 Mutual Funds in Kenya

Boasson *et al.* (2006) define a mutual fund as an investment company whose objective is to achieve a satisfactory level of return for its clients at a predefined level of risk. Mutual fund managers have the fiduciary responsibility to serve its clients by managing the money contributed by the fund holders with prudence and market wisdom. Saraoglu and Detzler (2002) note that mutual funds provide diversification, divisibility, low transaction costs, record keeping, and professional management for the individual investor.

Mutual funds are also referred to as unit trusts and they offer each contributor a certain yield or rate of return in percentage form that is often variable. To invest, one either buys units in the fund and thus becomes a unit holder or places their cash directly with the fund manager; depending on the type of fund invested in. Returns are periodically distributed to investors, for example monthly or every six months, and some funds allow investors to redeem their funds at

any time within a few days' notice. The terms of investing and the rates of return vary based on the type of mutual fund and the company offering them (Abacus, 2012).

Mutual Funds in Kenya fall into various categories including money market fund, fixed income fund, balanced fund, equity fund and managed fund. Money market funds are made up of short-term treasury bills & bonds, cash deposits and call accounts; Fixed income funds invest in securities that give specific returns on specific dates such as treasury bills, bonds and cash deposits; Balanced funds invest in a diversified portfolio of shares, bonds and the money markets; Equity funds invest in company shares through the stock market; Managed funds pool the collective investments of the employees in a company with returns made available upon their retirement (CMA, 2014).

Mutual funds in Kenya can also be categorized into those licensed by the Capital Market Authority (CMA) and those operating outside the CMA framework. As of 31st December 2013, there were 58 mutual funds licensed by the CMA (CMA, 2014). The unlicensed mutual funds operate only under the companies Act (CAP 486 of the laws of Kenya). Some of the unlicensed mutual funds are members of ASPEN Network of Development Entrepreneurs (ANDE) which had 56 Kenyan members as at 31st December 2013 (Aspen, 2014).

1.2 Research Problem

From a financial point of view, investing in SRI funds raises the question as to whether the social aim has to be pursued at the expense of the financial performance of the investment. In theory, it would be generally expected that the SRI funds underperform non SRI funds, since they select their portfolio of assets with social restrictions. In such cases, the investors are making a

deliberate choice to concentrate on a sub-set of investment assets. In a mean-variance theoretical framework, such a strategy can result in a sub-optimal portfolio. Rudd (1981) argues that a constrained portfolio such as one constructed through a socially responsible strategy will suffer poor performance as a result. Nevertheless, such a portfolio may be a rational outcome if the investor derives sufficient compensatory utility from holding SRI assets.

Interest for social, environmental and ethical issues is increasing in Kenya on a daily basis among different stakeholders, including general public, society, media, government, corporations and financial community. This has made it difficult for mutual funds in Kenya to attract investors unless they address those social, environmental and ethical issues (Ponnu & Okoth, 2009). The desire to attract additional funding has pushed mainstream mutual funds in Kenya to consider introducing socially responsible investment compliant products such as the licensing by CMA of First Ethical Opportunity Fund and Gencap Iman Fund. These two funds offer purely shariah compliant products.

The empirical analysis of the relationship between SRI and performance of mutual funds has yet to provide a convincing causal link between the two variables. Most of the studies have mainly focused on whether there is a difference between the performance of socially screened portfolios and that of conventional funds. Results of these studies are conflicting, for example Jones (1996), Diltz (1995), Kempf and Osthoff (2007) and Brzeszczynski and Mclntosh (2011) concluded that SRI investors earn higher abnormal returns than conventional investors due to the fact that investing in SRI funds promote normatively desirable activities while discouraging relatively detrimental activities. These studies found that fund managers claim SRI affect corporate change by reducing the cost of capital for 'good' companies relative to 'bad' ones.

Hamilton et al. (1993), Stone et al. (1997), Statman (2000), and Cortez et al. (2012) found no significant difference between the performance of SRI and conventional mutual funds. While Mallin et al. (1995) found a negative relationship between SRI and risk-adjusted performance of mutual funds mainly due to incremental cost incurred by mutual funds in complying with SRI requirements. Such costs include research cost to identify SRI compliant investments and the cost incurred to continuously monitor these firms.

One explanation into the conflicting results is that the relationship between SRI and portfolio performance may not be direct but perhaps is affected by other variables such as portfolio management and institutional characteristics. There are also methodological differences in the empirical studies for example Kempf and Osthoff (2007) used the Carhart model to analyze portfolio returns while Hamilton et al. (1993) used Jensen alpha for the same analysis. Studies such as Hamilton et al. (1993), Brzerszczynski and Mcintosh (2011), and Mill (2006) used CAPM based models which assume that the portfolio being analyzed is efficient. SRI mutual funds may not be efficient due to the screening process adopted. These studies also did not incorporate non financial measures of the benefit of SRI which is limiting since socially responsible investors are mainly attracted to a fund largely due to its social benefits.

Although several studies on socially responsible investments have been undertaken internationally, social investment in Kenya is at its early stages of development and remains understudied. However a survey on social investment in Kenya was undertaken by Allavida (2011) to support the development of the Kenya Social Investment Exchange. The study was based on a survey of 40 investors: 21 from Kenya, 10 from South Africa and nine from the UK.

Of the 21 Kenyan investors studied 17 were categorized as social investors. Iraya and Musyoki (2013) found that a virtual portfolio of socially screened stocks at the Nairobi Securities Exchange underperforms the NSE 20 share index and attributed the result to the additional costs socially responsible companies incur such as pollution control, environment, labour relation and governance expenditures. These studies however did not consider the relationship between SRI and portfolio performance and how this relationship is intervened by portfolio management or moderated by institutional characteristics.

1.3 Research Questions

The general research question was: What is the relationship among socially responsible investment, portfolio management, institutional characteristics and performance of mutual funds in Kenya? This study therefore undertook to answer the following specific research questions:

(i) What is the relationship between socially responsible investment and performance?

(ii) What is the relationship between socially responsible investment and portfolio management?

(iii) What is the relationship between portfolio management and performance?

(iv) What is the effect of institutional characteristics on the relationship between socially responsible investment and portfolio management?

(v) What is the effect of portfolio management on the relationship between socially responsible investment and performance?

(vi) What is the combined effect of socially responsible investment, institutional characteristics and portfolio management on performance?

1.4 Research Objectives

The general objective of this study was to determine the relationship among socially responsible investment, portfolio management, institutional characteristics and performance of mutual funds in Kenya. The specific objectives were to determine:

(i) The relationship between socially responsible investment and performance.

(ii) The relationship between socially responsible investment and management.

(iii) The relationship between portfolio management and performance.

(iv) The effect of institutional characteristics on the relationship between socially responsible investment and portfolio management.

(v) The effect of portfolio management on the relationship between socially responsible investment and performance.

(vi) The combined effect of socially responsible investment, institutional characteristics and portfolio management on performance.

1.5 Value of the Study

The results of this study add to existing knowledge in the area of SRI, portfolio management, institutional characteristics and performance of mutual funds in five main ways: the determination of the relevant factors among SRI philosophy, SRI inclusion and exclusion criteria and SRI strategies that are important in defining SRI in Kenya; the use of DEA methodology for evaluating and comparing performance of mutual funds based on their financial and social costs and benefits; the determination of the relevant factors that are important in defining portfolio management in Kenya among asset allocation, investment style, diversification, research costs and transaction fees charged; the test of the moderating effect of institutional characteristics on the relationship between SRI and portfolio management; and lastly, the test of the mediating

effect of portfolio management on the relationship between SRI and performance of mutual funds in Kenya.

Secondly, the study helps corporate managers to understand the impact of their corporate social responsibility on the value of the firm. This is important because many companies spend part of the shareholders' wealth on social responsibility with the hope of creating social value and attracting socially responsible investors to the firm. Since the effect of the company's shares being screened out of many SRI funds is negative, corporate managers will do everything to ensure their company shares remain candidates for inclusion by many fund managers.

Thirdly, investment regulators in the country such as the Capital Market Authority (CMA) and the Retirement Benefit Authority (RBA) benefit from the study by understanding the relationship among SRI, institutional characteristics, portfolio management and performance of mutual funds in Kenya. This helps in guiding the regulation process especially when setting limits on the type of investments fund managers can include in their portfolio and thereby establishing the fund managers' fiduciary responsibility towards their clients. The government can use the findings of this study as an input in policy formulation on SRI especially because of the potential contribution of the much needed capital by the sector.

1.6 Organization of the Thesis

This thesis is organized into six chapters: introduction; literature review; research methodology; descriptive data analysis and presentation; hypotheses testing and discussion of findings; and summary of findings, conclusion and implications. The coverage of each of these chapters is discussed below.

Chapter one introduces the main concepts of the study including socially responsible investments, portfolio management, institutional characteristics and performance before presenting a contextual discussion on the mutual funds in Kenya. This forms the basis for presenting the research problem, the research questions and the research objectives. The chapter also covers the value of the study to justify the research.

Chapter two provides a review of both theoretical and empirical literature that explains the interrelationships among the key variables of the study. The theories covered include the modern portfolio theory of Markowitz (1952), the stakeholder theory of Freeman (1984), the institutional theory of DiMaggio and Powell (1983), the new social movement theory of Benford and Snow (2000) and the cost benefit analysis theory of Marshall (1920). A summary of empirical studies is also provided followed by a discussion of the conceptual framework and research hypotheses.

Chapter three presents the research methodology used in the study including a discussion of the research philosophy adopted, the research design, the study population, data collection methods, operationalization of the research variables, reliability and validity tests, and data analysis techniques. Chapter four covers descriptive data analysis for each response variable using means, standard deviation, frequencies and correlation coefficient. The Cronbach alpha for the pilot test is also presented in the chapter.

Chapter five presents the tests of hypotheses and discussion of findings. This includes relationship between SRI and performance, SRI and portfolio management, portfolio management and performance, moderating effect of institutional characteristics and the mediating effect of portfolio management. Chapter six covers the summary of findings,

conclusion, contribution of the study findings which is divided into the contribution to knowledge and contribution to managerial policy and practices. The chapter also covers limitations of the study and future research directions.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter examines both conceptual and empirical literature on socially responsible investment, portfolio management, institutional characteristics and performance of mutual funds. It covers theoretical foundation focusing on the modern portfolio theory, the stakeholder theory, the institutional theory, new social movement theory and cost benefit analysis. The chapter also covers review of empirical literature, summary of previous studies and research gaps, conceptual framework and research hypotheses.

2.2 Theoretical Foundation

There are several theories that can explain the relationship between SRI and performance of mutual funds including the modern portfolio theory of Markowitz (1952) which this study is anchored on, the stakeholder theory of Freeman (1984), the institutional theory of DiMaggio and Powell (1983), the new social movement theory of Benford and Snow (2000) and the cost benefit analysis theory of Marshall (1920). These theories are discussed below.

2.2.1 The Modern Portfolio Theory

Modern Portfolio Theory (MPT) proposes that investors expect to be compensated for taking additional risk, and that an infinite number of "efficient" portfolios exist along a curve defined by three variables: standard deviation, correlation coefficient, and return. The efficient-frontier curve consists of portfolios with the maximum return for a given level of risk or the minimum risk for a given level of return. The algorithm used to generate the curve is known as mean variance optimization (MVO), since what is being optimized is return versus standard deviation (Markowitz, 1952).

MPT is a mathematical formulation of the concept of diversification in investing, with the aim of selecting a collection of investment assets that has collectively lower risk than any individual asset. That this is possible can be seen intuitively because different types of assets often change in value in opposite ways. For example, to the extent prices in the stock market move differently from prices in the bond market, a collection of both types of assets can in theory face lower overall risk than either individually. But diversification lowers risk even if assets' returns are not negatively correlated—indeed, even if they are positively correlated (Bhalla, 2010).

According to MPT, an investment bears two types of risk: systematic and unsystematic (Markowitz, 1952; Sharpe, 1964). Systematic risk is the risk inherent in the volatility of the entire capital market, while specific (unsystematic) risk is associated with the volatility of an individual security. Investors may assemble portfolios in such a way that the specific risk carried by any individual security within the portfolio is offset by the specific risk carried by another. This is referred to as diversification. Sharpe (1964) holds that efficient capital markets reward investors for bearing systematic risk, but because diversification is possible, investors are not rewarded for bearing specific risk. That is, when a fund carries specific risk, it fails to reach the efficient frontier, wherein the risk/return trade-off is optimized.

Despite its theoretical importance, Brodie et al. (2009) indicate that critics of MPT question whether it is an ideal investing strategy, because its model of financial markets does not match the real world in many ways. Efforts to translate the theoretical foundation into a viable portfolio construction algorithm have been plagued by technical difficulties stemming from the instability of the original optimization problem with respect to the available data. Murphy (1977) noted that realized returns appear to be higher than expected for low-risk securities and lower than expected

for high-risk securities implying that the risk-reward relationship was far weaker than expected. He concludes that there often may be virtually no relationship between return achieved and risk taken; and that high volatility unit trusts were not compensated by greater returns.

Based on this theory SRI funds should experience decreased risk-adjusted returns since they exclude certain firms, industries, and sectors, and thus bearing a substantial degree of specific risk (Barnett & Salomon, 2006; Kurtz, 2002). Portfolio management process and mutual fund performance will be affected by adoption of socially responsible investments mainly due to reduction in the structure and size of the investable universe. However, a mutual fund can achieve diversification to effectively eliminate most specific risk even if it does not select the entire universe of securities. Barnett and Salomon (2006) hold that a fund can closely approximate a well-diversified portfolio with as few as 20 or 30 randomly selected stocks. SRI portfolios are not randomly chosen but rather are intentionally selected based on a set of screening criteria. Thus, one can expect SRI funds, even those with large and relatively diverse holdings, to bear specific risk. Temper (1991) estimated that funds that chose their portfolios based on social criteria bore a one percent loss in returns relative to diversified funds while Rudd (1981) found a four percent loss in returns for portfolios that screened out firms with holdings in South Africa.

Critics to the use of MPT in explaining the performance of SRI funds points to several researchers who found that SRI funds yield returns that equal or exceed those of conventional mutual funds. For example, Diltz (1995), Guerard (1997), and Hamilton et al. (1993) all found that there were no significant differences between the risk-adjusted returns of SRI portfolios and conventional portfolios. Barnett and Salomon (2006) argue that, though modern portfolio theory

rightfully assesses the costs to limiting investment choices through social screening, it does not account for the benefits that social screening may bring. Portfolio theory assesses only the ability of a given stock to push a portfolio toward or away from the efficient frontier, wherein risk-adjusted return is maximized (Markowitz, 1952). However, it takes no account of any variation in the ability of a firm, upon which a stock's value is based, to create value. Rather, under the assumption of perfectly efficient markets, each stock is treated as homogeneous in all factors but its volatility relative to the market.

SRI proponents hold that while SRI portfolio managers are constrained from choosing amongst the entire universe of stocks, the pool of stocks from which they do choose is superior to that of the overall market and therein more likely to provide favourable financial returns over time. Firms are embedded in a social environment and must build favourable relations with those groups that compose this environment so as to maintain legitimacy and attract resources (Granovetter, 1985). Strong social performance is an indicator that a firm possesses superior management talent that understands how to improve internal and external relationships through socially responsible activities (Moskowitz, 1972).

2.2.2 The Stakeholder Theory

Stakeholder theory posits that firms possess both explicit and implicit contracts with various constituents, and are responsible for honoring all contracts (Freeman, 1984). As a result of honoring contracts, a company develops a reputation that helps determine the terms of trade it can negotiate with various stakeholders. While explicit contracts legally define the relationship between a firm and its stakeholders, implicit contracts have no legal standing and are referred to in the economic literature as self-enforcing relational contracts. Since implicit contracts can be

breached at any time, Telser (1980) argues that they become self-enforcing when the present value of a firm's gains from maintaining its reputation (and, therefore, future terms of trade) is greater than the loss if the firm reneges on its implied contracts.

Jones (1995) concludes that firms that contract with their stakeholders on the basis of mutual trust and cooperation will have a competitive advantage over firms that do not. This advantage comes from reduced agency costs, transaction costs, and costs associated with team production. More specifically, monitoring costs, bonding costs, search costs, warranty costs, and residual losses will be reduced.

The introduction of stakeholder theory allows these seemingly opposing views of management's responsibility to be combined (Freeman, 1984). Stakeholder theory places shareholders as one of the multiple stakeholder groups that must be considered by managers in their decision making process. These stakeholder groups include internal, external, and environmental constituents. Like shareholders, the other stakeholders may place demands upon the firm, bestowing societal legitimacy. Firms must address these demands or else face negative confrontations from non-shareholder groups, which can lead to diminished shareholder value, through boycotts, lawsuits, or protests.

The appeal of stakeholder theory for management theorists is both empirical and normative (Cragg, 2002). Empirically, stakeholder theory rests on an observation of what we might call a fact since organizations have stakeholders that have the potential to influence them both positively and negatively. Likewise, the activities of organizations impact on individuals whose interests may be affected either favourably or adversely. According to Freeman (1999)

stakeholder management is fundamentally a pragmatic concept since an effective firm will manage the relationships that are important regardless of its purpose. Cragg (2002) further asserts that stakeholder theory may also be considered to be normative if it conveys the notion that fundamental moral principles may influence corporate activities. This holds the universal appeal of the attribution of morality to both actors and subjects in that it requires that we respect others as human beings and account for our actions towards them. SRI proponents believe that this aspect of the theory is what is fundamental in determining the firm's performance.

Thus, even though SRI funds must draw from a limited pool of firms, they draw from a richer pool—one that is more likely to contain well-run, stable firms that outperform the broader market over the long run (Barnett and Salomon, 2006). According to this theory therefore, SRI results in superior portfolio performance by reducing costs incurred in portfolio management such as monitoring costs, bonding costs or search costs.

Opponents of Stakeholder theory include classical economics, industrial relations and management. Sternberg (1997) argues that the principles of stakeholder theory undermine the property rights of the owners of the company, compromise the mechanism of the free market, destabilize the operations of governments and thus subvert the very nature of capitalism. Stoney and Winstanley (2001) holds that stakeholder theory is limited in its explanation of how the different interests of stakeholder groups arise and are generated in society; that stakeholder theory provides an overly-simplistic conceptualization of power as a commodity that can be negotiated between the organization and the stakeholder groups; and that stakeholder theory assumes the separation of economic and political processes.

2.2.3 The Institutional Theory

Institutional theory adopts a sociological perspective to explain organizational structures and behavior. It draws attention to the social and cultural factors that influence organizational decision-making, and in particular how rationalized meanings or myths are adopted by organizations (DiMaggio and Powell, 1991). These myths may be taken for granted and so are followed in a rule-like fashion when making decisions. They become the institutionalized logic that guides organizational behavior (Meyer & Rowan, 1977).

Part of the embedded logic of socially responsible mutual funds is that they will screen potential investments based on environmental, social and governance variables. Furthermore, socially responsible mutual funds advocate that their investees strengthen their corporate governance by increasing their transparency. O'Neill and Cook (2009) found that mutual funds tend to vote in a management-friendly manner, with the exception of socially responsible funds that show strong support for shareholder resolutions requiring more disclosure concerning executive compensation, board of director voting, and firm behaviour, especially with respect to human rights. These additional disclosure requirements reduce the research costs incurred by SRI mutual funds in monitoring the activities of the investee companies and thereby affecting the portfolio management process.

DiMaggio and Powell (1983) argue that firms facing similar environmental forces will adopt similar organizational structures. Becoming aligned to its environment increases the perceived legitimacy of the firm, and so its behaviour is less likely to be challenged and questioned. Lounsbury (2008) holds that such firms will become members of a professional networks. The underlying assumption is that the firms that are members of these professional networks

passively accept the norms provided by the network. The impetus is from the network and the firm then accepts it.

Socially responsible mutual funds develop a rationalized logic that uses environmental, social, governance, moral and ethical factors in selecting and managing their investments. These social criteria become the technical means for choosing their investments. They are the rationalized investment-making perceptions of the socially responsible mutual fund. This is consistent with Meyer and Rowan (1977) definition of rationalized myths as rationalized and impersonal prescriptions that identify various social purposes as technical ones and specify in a rule-like way the appropriate means to pursue these technical purposes rationally. For these mutual funds, socially responsible factors are taken for granted as being legitimate criteria, and they become part of the normal evaluation process for identifying potential investments. Based on this theory, SRI results in superior risk adjusted returns than conventional mutual funds since the firm is perceived as legitimate by all its stakeholders. The rationalized investment making process also improves the portfolio management process of mutual funds by providing the appropriate steps to be followed.

2.2.4 New Social Movement Theory

New social movement theory has been defined by Benford and Snow (2000) as a collective action theory which studies how and why social movements aim at changing existing institutions. Unlike collective institutional entrepreneurship, social movement theory enables the theorization of collective agency at stake in a process of institutional change. It also allows the introduction of higher motivations than personal interests in conducting institutional change. Over the past decades, a new generation of social movements has appeared. It includes

movements like recycling militants, shareholder activism and civil society organizations. They mainly differentiate from previous social movements by their focus on economic institutions, from which they can originate (e.g. shareholder activism).

These new social movements strive to restore social responsibility within economic institutions: they are known as Corporate Social Responsibility (CSR) movements (Scherer & Palazzo, 2007). Scherer and Palazzo (2007) further argue that CSR movements gather the four features of the new social movements including: a collective identity, the share of individual resources for a common purpose, an opposition to existing institutions and the research of a new general orientation for the society. The Socially Responsible Investment (SRI) movement which aims at bringing social responsibility within the asset management sector is one of them. While historically the SRI movement appeared as a marginalized movement composed by ethical activists, it has achieved in the last few years a rise in influence and credibility. By aligning itself with new social movements, a firm gets less opposition to its activities by social activists and thus may result in superior risk adjusted returns.

2.2.5 Cost Benefit Analysis Theory

Cost–benefit analysis (CBA), which is attributed to works of Marshall (1920), is often used by governments and other organizations, such as private sector businesses, to evaluate the desirability of a given policy. It is an analysis of the expected balance of benefits and costs, including an account of foregone alternatives and the *status quo*. CBA helps predict whether the benefits of a policy outweigh its costs, and by how much relative to other alternatives (Weimer, 2008). Generally, accurate cost-benefit analysis identifies choices that increase welfare from a utilitarian perspective. Assuming an accurate CBA, changing the status quo by implementing the

alternative with the lowest cost-benefit ratio can improve pareto efficiency. An analyst using CBA should recognize that perfect evaluation of all present and future costs and benefits is difficult, and while CBA can offer a well-educated estimate of the best alternative, perfection in terms of economic efficiency and social welfare are not guaranteed.

The belief that corporations can be both profitable and socially responsible underlies the concept of socially responsible investment (SRI). Investors who are attracted to SRI tend to fall into two often complimentary categories: those who want to feel socially good about their investments and those who are concerned with effecting social change (Schueth, 2003). The "feel good" investors, commit to put their money to work in a manner that is more closely aligned with their values to feel better about themselves and their portfolios. The other group commits to put their investment capital to work in a way that brings about "social change" and improvements to the quality of life.

Investors require companies to pass both qualitative and quantitative tests. The quantitative analysis gauges corporate profitability and performance, while the qualitative analysis reviews corporate policies and practices. The screening process, therefore, introduces subjectivity into the equation. As Waddock and Graves (1997) explain, the difficulty in measuring corporate social responsibility is further compounded by the diverse nature of issues that fall under it. They summarized key multiple factors to consider namely inputs (e.g. investments in pollution control equipment or other environmental strategies), internal behaviour and processes (e.g. treatment of women and minorities, nature of the products produced), and outputs (community relations, and philanthropic programs). These dimensions occur across a range of distinctive industries with significantly different characteristics and make screening decisions less clear cut. Therefore, it is

the goal of investors and money managers to seek out, not the perfect companies, which do not exist, but the better managed companies. The shortcomings of these screens make it nearly impossible to develop a standard system for ranking firms with respect to corporate social responsibility.

In a cost and benefit analysis, SRI implies short-term expenditures, but grants long-term sustainable investment streams. In the short run, screened funds have a higher expense ratio in comparison to unscreened ones – that is social responsibility imposes an instantaneous 'ethical penalty' of decreased immediate shareholder revenue (Tippet, 2001). In addition, searching for information and learning about corporate social responsibility is associated with cognitive costs. Screening requires an extra analytical decision making step – especially positive screens are believed to be more cognitively intensive than negative ones. In addition, screening out financial options lowers the degrees of freedom of a full-choice market spectrum and risk diversification possibilities. In the long run, however, SRI options offer higher stability, lower turnover and failure rates compared to general assets (Geczy, Stambaugh & Levin, 2005; Stone et al., 1997). Since SRI require a more elaborate decision making process, once investors have made their investment choice, they are more likely to stay with it. As a matter of fact, SRI options are less volatile and more robust regarding cyclical changes. This theory therefore postulates that SRI will outperform conventional mutual funds.

2.3 Review of Empirical Literature

This section looks at empirical literature on the relationship between SRI and performance, the relationship between SRI and portfolio management, the relationship between portfolio management and performance, the mediating role of portfolio management on the relationship

between SRI and performance and the moderating role of institutional characteristics on the relationship between SRI and portfolio management.

2.3.1 Socially Responsible Investment and Performance

Research about SRI performance dates back to the 1970s and has grown significantly during recent decades. The general hypothesis in these works is that SRI should underperform the market and other well-diversified portfolios (Moskowitz, 1972). Among the principal reasons that could explain this effect is that SRI portfolios are subsets of the market portfolio. As indicated by the proposals of the Modern Portfolio Theory (MPT), the social and environmental screening processes reduce the investment universe, which leads to a reduction in the risk-adjusted returns (Renneboog et al., 2008).

The impact of various socially responsible criteria on the performance of screened stock portfolios was investigated by Kempf and Osthoff (2007). They employed negative, positive, and best-in-class screens. They used these ratings to form one portfolio of stocks with high SRI ratings and another one of stocks with low SRI ratings. They studied the performance of these portfolios over the period 1992–2004 and measured performance using the Carhart (1997) model. The results of the study indicated that investors can earn remarkable high abnormal returns by buying stocks with high SRI ratings and selling stocks with low SRI ratings. Overall, the study results suggested that SRI ratings are valuable information for investors and a simple trading strategy based on publicly available information leads to high abnormal returns.The study however did not attempt to explain where the extra profit stems from. Does it result from a temporary mispricing in the market or does it compensate for an additional risk factor? Another weakness with the study is that Carhart model used is an improvement of CAPM which requires

the portfolio to be efficient. SRI portfolios however, may not be efficient due to screening out of some sectors such as tobacco or alcoholic industries.

Hamilton et al. (1993) tested three alternative hypotheses about the relative returns of socially responsible portfolios and conventional portfolios. They analyzed the performance of 32 mutual funds for the period 1981 to 1990. They measured excess returns using Jensen alpha and found that socially responsible mutual funds do not earn statistically significant excess returns and that the performance of such mutual funds is not statistically different from the performance of conventional mutual funds. The results from this study may be questioned due to the excess return measure used. This is because Jensen alpha is a CAPM based measure which assumes that assets are held in a well diversified portfolio which may not be the case in an SRI portfolio due to limits in diversification.

A study to determine whether there is any significant cost for socially screened, actively managed and value focused portfolios was done by Stone et al. (1997). The Kinder, Lydenberg and Domini (KLD) social screens were used in this study. The time period was 1984-1997 which included the market break of October 1987 and the down market of 1989-90. They found out that there was no significant cost as a result of applying social screens for major sub periods: 1984-88, 1989-93, and 1994-97. Most importantly results for the screened and unscreened upper quartile funds were remarkably consistent on a quarter-to-quarter and year-to-year basis. The conclusion of no significant cost/benefit was consistent both in the short run and in the long-run.

Kurtz & DiBartolomeo (2011) present a multi-decade, holdings-based attribution analysis of a U.S. social investment index and find that differences between the index's returns and those of

the S&P 500 Index are fully explained by conventional investment factors. This is true for the full time period under study as well as for two sub-periods (January 1992–November 1999 and December 1999–June 2010) that coincide with periods of nominal outperformance and underperformance by the index. The authors find that unexplained returns are not statistically different from zero in either the full time period or in any of the two sub-periods. This is beneficial for investors motivated by social values because it suggests that the risk exposures created by social screens can be managed through careful portfolio construction. It is less encouraging for investors seeking a performance advantage through the use of social or environmental factors—the analysis suggests that, for this universe at least, market valuations already correctly incorporate this information.

Statman (2000) finds that the Domini Social Index (DSI) (an index of socially sustainable stocks) performed as well as the S&P 500 over his sample time frame (1990-1998). However, he finds that the raw returns of a sample of 31 SRI funds under-performed the S&P 500 by an average of 6.26% per annum. The returns of SRI funds trailed the DSI by 5.31% (on a risk adjusted basis, SRI fund returns trailed the S&P 500 by a slightly larger amount, 6.73%). However, using a single-factor CAPM model, Statman (2000) finds that under-performance is only statistically significant for three of the 31 SRI funds. Comparing the returns performance of 31 SRI funds with 62 conventional funds (matched by asset size), he finds no statistically significant differences in returns performance. However, the study's findings are partly confounded by the fact that the author does not control for differences in "size tilts" between SRI funds and the S&P 500.

Using a different approach, Guerard (1997) examined the returns of 1,300 equity stocks and an ethically screened sample of 950 stocks, and finds no statistically significant differences in the average returns between the two samples over the period 1987-1994. He finds evidence of significantly better performance by ethically screened stocks using a composite model, which integrates both value and growth. However, the findings are not directly comparable to most other studies, which have utilised Jensen's alpha (in most cases based on a single factor CAPM model) as the measure of difference in performance.

Diltz (1995) examined various dimensions of socially responsible investment for the US stock market. He found that employing environmental and military screens leads to a significantly positive performance, while all other screens do not have a significant impact on performance. DiBartolomeo and Kurtz (1999) attempted to account for factor biases in their study. Using BARRA-style factor analysis, they examined the performance of the S&P 500 and the DSI between May 1990 and January 1999. The DSI outperformed the S&P 500 during this period because the DSI portfolio was more sensitive to market movements, had more exposure to better performing industries and had a growth bias during a period when growth investing was in favour. Modifying the DSI to have the same risk characteristics as the S&P 500, they found that the performance of the two portfolios was not distinguishable to a statistically significant degree, one from the other.

Mallin et al. (1995) argued that ethical funds have their own characteristics that may make the comparison with benchmarks, such as FTSE, somewhat misleading. They examined the performance of 29 ethical funds by comparing each ethical fund to a non-ethical one having the same formation date and fund size. They found that beta is lower for the ethical funds. This

implies that the non-ethical trusts are riskier than the ethical trusts. On a risk-adjusted basis, they found weak superior performance of ethical funds in the sample.

Brzeszczynski and Mclntosh (2011) investigated whether the portfolios composed of the British socially responsible stocks can outperform the market. They used the Global 100 Most Sustainable Corporations in the World list (known also as: Global-100) to select the SRI stocks and found that in the period of years 2000-2010 the returns of the SRI portfolios were superior compared with the corresponding returns of market index FTSE-100 and the index FTSE4GOOD. The annual average outperformance of SRI portfolios was 10.71 percent relative to FTSE-100 and 11.07 percent relative to FTSE4GOOD. Superior performance of SRI stocks was confirmed also using risk-adjusted measures such as Sharpe ratio and Treynor index.

Capelle-Blancard and Monjon (2014) examined whether the financial performance of SRI mutual funds is related to the features of the screening process. Based on a sample of French SRI funds, they found evidence that a greater screening intensity slightly reduces financial performance. Further, they showed that only sectoral screens such as avoiding 'sin' stocks, decrease financial performance, while transversal screens such as commitment to UN Global Compact Principles or ILO/Rights at work, have no impact. Lastly, a higher strategy distinctiveness amongst SRI funds, which also gives information on the quality of the selection process, was associated with better financial performance.

Mill (2006) empirically examined the financial performance of a UK unit trust that was initially "conventional" and later adopted socially responsible investment principles. He compared the SRI unit trust with three similar conventional funds whose investment objectives remained

unchanged. Results showed a temporary increase in variability of returns, followed by a return to previous levels after around 4 years. He concluded that the increased variability is associated with the adoption of SRI rather than with a change in fund management. Possible explanations for the subsequent reduction in variability include the spread of corporate social responsibility activities by firms and learning by fund managers.

Jansson & Biel (2011) compare motives to invest in accordance with socially responsible criteria among different groups of investors. In total, 60 employees from 19 investment institutions, 453 private investors and 71 institutional investors participated in a questionnaire study. While socially responsible investment among private and institutional investors was guided by self-transcendent values (environmental and social values), this was not the case among fund managers working in investment institutions. Fund managers in investment institutions were affected by beliefs about long-term returns of SRI. Private investors were, in addition, influenced by beliefs about long-term returns, whereas institutional investors were motivated by an effort to reduce financial risks. Finally, investment institutions tended to overrate the importance of financial returns among their beneficiaries (private and institutional beneficiaries) and underestimate the importance of ethical, environmental and social aspects for beneficiaries. The results indicate that private and institutional investors/beneficiaries give a wider interpretation of fiduciary duty than investment institutions do.

In a multi-national study, Bauer et al. (2005) compared the risk-adjusted returns of SRI and conventional funds between 1990 and 2001 using a sample of 103 SRI funds drawn from the German, U.K. and U.S. SRI Fund markets. To resolve the benchmarking problem that had plagued earlier studies, they extended the work of Gregory et al. (1997) by using a more

sophisticated multi-factor CAPM (which controls for size effects, book to-market and momentum effects). Applying this model, they document evidence that German and U.S. SRI funds under-perform the market index, including a matched sample of conventional funds; however, they found that U.K. SRI funds slightly out-perform the same benchmarks. None of these performance differences were found to be statistically significant.

Several other studies have examined how SRI portfolios perform relative to the market and to conventional portfolios. Myers and Anderson (2007) use over forty investment screens and analyze a wide variety of equity portfolios to show that shareholders are no worse off when investing according to their social beliefs when compared to market benchmarks. Abramson and Chung (2000) show that an SRI approach can provide competitive returns relative to benchmarks using both value and growth style investment strategies. Chong *et al.* (2006) examine the performance of an SRI fund versus a socially irresponsible fund from 2002 to 2005 and find that that the irresponsible fund outperformed the SRI fund. However, the authors note that the study was conducted during a market downturn when an SRI fund is more likely to be outperformed. Similarly, Hong and Kacperczyk (2009) show that companies involved in producing alcohol, tobacco and gambling, outperformed the market by 9.1% per annum over the same period. Shank et al. (2005) find the opposite result as they show that a 'nice' firm portfolio outperformed a 'naughty' firm portfolio over a five and ten-year horizon. Cortez et al. (2012) while comparing the performance of SRI mutual funds in UK and USA find no significant performance differences in relation to both conventional benchmarks and socially responsible benchmarks especially in the UK.

2.3.2 Socially Responsible Investment and Portfolio Management

Studies have generally not focused on portfolio composition, but rather on investment performance. Nevertheless, some studies have provided some basic analysis of the issue. For instance, Schwartz (2003) compares SRI mutual funds with other funds and addresses the ethical obligations of SRI mutual funds, the screens currently implemented and considers a code of ethics for ethical investment. By reviewing reports and web sites of relevant organizations, he concludes that ethical obligations of some funds are not met and some screens are not ethically justified. Bauer et al. (2005) note that the SRI fund styles may be changing over time with socially responsible funds becoming more like conventional funds as time passes.

Hoepner (2010) developed a theoretical model based on the three main drivers of portfolio diversification (number of stocks, correlation of stocks and average specific risk of stocks) and evidence on the significantly negative relationship between a firm's ESG rating and its specific risk. His theory argues that while the inclusion of ESG criteria into investment processes likely worsens portfolio diversification via the first and second driver, it similarly likely improves portfolio diversification through a reduction of the average stock's specific risk. This positive effect of ESG criteria probably leads best-in-class ESG screened funds to be better diversified than otherwise identical conventional funds. His theory implies that mainstream active investment managers appear well advised to consider the inclusion of ESG criteria in their portfolio management process to optimise their risk management.

Cumming and Johan (2007) studied institutional investor allocations to the socially responsible asset class. They proposed two elements influence socially responsible institutional investment in private equity: internal organizational structure, and internationalization. They studied socially

responsible investments from Dutch institutional investments into private equity funds, and compared socially responsible investment across different asset classes and different types of institutional investors (banks, insurance companies, and pension funds). The data indicated socially responsible investment in private equity is 40-50% more common when the decision to implement such an investment plan is centralised with a single chief investment officer. Socially responsible investment in private equity was also more common among institutional investors with a greater international investment focus, and less common among fund-of-fund private equity investments.

Ballestero et al. (2012) looked at portfolio selection for investors interested in ethical policies. They considered two goals, the traditional financial goal in the classical utility theory under uncertainty and an ethical goal in the same utility framework. They propose a new financial-ethical bi-criteria model with absolute risk aversion coefficients and targets depending on the investor's ethical profile. From the proposed model, an actual case on green investment is developed. Concerning this case (without generalizing to other contexts), an analysis of the numerical results shows that efficient portfolios obtained by the traditional financial model outperform the strong green portfolios in terms of expected return and risk, but this does not significantly occur with weak green investment.

Wimmer (2013) analyzes the persistence of environmental, social, and governance (ESG)-scores in socially responsible (SR) mutual funds. He finds that ESG-scores can be used as a measure for the level of social responsibility of an SR mutual fund and such scores persist for approximately two years. However, the persistence of the ESG-scores is terminated after approximately three years. This implies that value-driven investors of SR mutual funds who seek high-ESG

investments cannot rely upon a long-term continuation of high ESG-scores and thus need to rebalance their portfolio from time to time. The lack of long-term persistence in the ESG-scores is caused by changes in the holdings of the SR mutual funds.

2.3.3 Socially Responsible Investment, Institutional Characteristics and Portfolio Management

Chen et al. (2004) investigates the influence of fund management firm characteristics on mutual fund management and performance. Using a sample of European domiciled open-end equity funds for the period 1998-2008, they find that the funds of private companies have performed better than the funds of public companies. The degree of focus, the volume of assets under management and the number of funds offered by a fund management firm also have a positive impact on fund performance. In addition to these four firm characteristics, they also found that non-European and UK fund managers had better performing funds.

The existence of different characteristics with reference to the ethical and non ethical mutual funds was confirmed by Adamo et al. (2010). They concluded that ethical mutual funds are younger than conventional funds and that they generally manage more funds. Grinblatt and Titman (1994) show that fund turnover explains the risk-adjusted returns of mutual funds. Furthermore, Kacperczyk et al. (2005) demonstrate that fund size and turnover determine the fund performance by influencing the portfolio management process.

2.3.4 Portfolio Management and Performance

The performance of an investment portfolio that is diversified across multiple asset classes can be thought of as being driven by three distinct decisions that its manager makes: long-term

(strategic or policy) asset allocations; temporary adjustments (i.e. tactical) to these strategic allocations in response to current market conditions (market timing); and the choice of a particular set of holdings to implement the investment in each asset class (security selection) (Treynor & Black, 1973). The first of these performance components is commonly referred to as the passive portion of the portfolio management, while the latter two collectively represent the active positions the manager adopts. Researchers have been keenly interested in the value of active portfolio management at least since the seminal paper of Jensen (1968). Carhart (1997) for example find that portfolios that are actively managed results in superior risk-adjusted returns.

In order to address the issue of whether fund managers deploy the various risks in their portfolio in an optimal manner, it is first necessary to split the returns they produce into their passive and active components. Carhart (1997) follow a standard methodology that decomposes the returns of a managed portfolio into their three fundamental components: strategic asset allocation policy (i.e. benchmark); tactical allocation (i.e. market timing); and security selection. Timing ability on the part of a fund manager is the ability to use superior information about the future realizations of common factors that affect bond market returns. Selectivity refers to the use of security-specific information.

Keim (1989) suggests that some active management may be valuable to the investors. He finds that the '9-10 Fund' from Dimensional Fund Advisors provided a 2.2% annual premium over the CRSP 9 -10 Index on which the fund is based. He concludes that investment strategy and trading rules components of the fund's design contributed to this premium. Chen et al. (2004) show that stocks purchased by mutual funds have significantly higher returns than the stocks sold by them, and that funds that have high turnover also have high stock selection skills. Agnew et al. (2003),

on the other hand, find that higher returns are most reliably achieved by lower expenses and that there is only a weak link between stock selection and subsequent returns.

Blanchett (2010) analyses those actively managed mutual funds categorized as "Socially Conscious" from 1990 to 2008 and finds that while SRI funds tend to slightly underperform their non-SRI peers, they tend to slightly outperform on a risk-adjusted basis, but the results were neither statistically nor economically significant. He concludes that the most important issue to be aware of with SRI is that the relative performance of SRI can vary materially against their non-SRI peers, even over extended periods of more than five years implying that an investor must take a long-term perspective towards SRI and that it may be difficult to apply the same type of investment monitoring screens against style peers for SRI funds as for non-SRI funds.

2.3.5 Socially Responsible Investments, Portfolio Management and Performance

Conventional portfolio theory recognizes that an investor's exposure to risk can be reduced without any reduction in return by diversification. An investment portfolio that is highly diversified is only exposed to unavoidable economy-wide or market risk. Because socially responsible investment portfolios based on negative screens exclude certain investments, they are less diversified. Therefore, it is assumed that the exposure to risk for ethical investment is higher than for non-ethical or traditional investment. However, traditional investors can still benefit from diversification by including SRI funds as part of their portfolio strategy. Similarly, benefits accrue to socially responsible investors who include more traditional funds as part of their portfolios (Hickman et al., 1999).

Opponents of SRI highlight the adverse costs and effects that social screening may involve. They argue that the potential hidden costs associated with implementing social screens adversely affect investment performance and therefore should not be ignored (Sauer, 1997). Temper (1991) notes that unscreened benchmarks may outperform socially responsible investment since using social investing criteria may affect portfolio management process by causing additional screening and monitoring costs, availability of a smaller investment universe, and restricted potential for diversification.

Social screening also tends to eliminate large firms from the investment universe and as a result remaining firms tend to be smaller and have more volatile returns (Langbein & Posner, 1980). Further, diversification may be hindered to the extent that social criteria eliminates or favors certain industries. Moreover, socially responsible investment may involve higher risk but should not yield significantly worse returns since SRI investors do not invest in clearly unprofitable stock. Bello (2005) examines the performance of SRI funds relative to conventional mutual funds, but varies from other studies in that he also examines empirically the association between social screening and characteristics, such as diversification and size of companies in the portfolio. The overall conclusion is that all characteristics of socially responsible mutual funds are not significantly different from that of conventional funds.

2.4 Summary of Previous Studies and Research Gaps

The empirical analysis of relationship between socially responsible investment, portfolio management, institutional characteristics and performance of mutual funds has yet to provide a convincing causal link among these factors. A reasonable conclusion, based on the prior research, is that SRI portfolios perform as well as their non-SRI counterparts. It can also be

concluded that SRI affects portfolio management by limiting diversification, constraining the size and structure of investable universe and increasing the research costs of monitoring the investee companies (Haigh & Hazelton, 2004).

A number of conceptual, methodological and contextual research gaps arise from the analysis of the issues examined in this chapter. The contextual gap arises from the fact that SRI concept has largely been understudied in Kenya and at a level addressed by this study. The conceptual gaps include lack of consensus on why SRI occurs even when empirical evidence on the impact of SRI on portfolio performance is inconclusive. This study has provided more evidence especially in the context of Kenya and with the introduction of a moderating and an intervening variable, explained conclusively the relationship between SRI and performance of mutual funds.

Another conceptual gap is that most studies on the performance of SRI funds have not controlled for any intervening or moderating variable. If variables such as the differences in institutional characteristics of the mutual fund and portfolio management are introduced in the model, then the relationship between SRI and performance may be different. This study introduces portfolio management as an intervening variable and institutional characteristics as a moderating variable in an attempt to explain further the relationship between SRI and performance of mutual funds.

A major limitation with most of the researches undertaken so far is that they consider only two of the variables under study (SRI, portfolio management, mutual fund institutional characteristics and performance) at a time. None of the studies has considered the effects of the four variables taken together. This study has tested whether SRI, institutional characteristics and portfolio management jointly have a significant effect on performance of mutual funds in Kenya.

The methodological gap arises because traditional financial analysis methods mainly used in literature have been formulated to measure financial risk and return, and therefore may not be appropriate in assessing non-financial risk and returns created by social and environmental issues. The inability to quantify social, ethical, governance, moral and environmental issues may explain why socially responsible investors continue to invest even when SRI funds appear to underperform conventional funds. This study used the data envelopment analysis model to consider both financial and non-financial risk and returns.

Table 2.1 below is a summary of previous studies on the research variables of SRI, portfolio management, institutional characteristics and performance of mutual funds. For each study the results, research gaps and how the current study addresses these gaps have been shown.

Table 2.1: Summary of Previous Studies and Research Gaps

RESEARCHER(S)	STUDY TITLE	RESULTS	RESEARCH GAPS	FOCUS OF CURRENT STUDY
Abramson and Chung (2000)	Socially responsible investing: Viable for value investors?	SRI out-performs the market benchmarks	Did not consider shareholders' advocacy and community investing strategies	The current study considers the three SRI strategies
Annaert *et al.* (2008)	Risk management of a bond portfolio using options	Buy and hold strategy does not dominate portfolio insurance strategy	Did not consider SRI portfolio management.	SRI is specifically introduced in the model
Bauer *et al.* (2005)	International Evidence on Ethical Mutual Fund Performance and Investment Style	SRI funds under-performs the market index in US and Germany but out-perform the benchmark in U.K.	- Did not consider effects of any intervening or moderating variables on the relationship between SRI and performance	- The study investigates the effects of portfolio management on the relationship between SRI and portfolio performance

RESEARCHER(S)	STUDY TITLE	RESULTS	RESEARCH GAPS	FOCUS OF CURRENT STUDY
Bello (2005)	Socially responsible investing and portfolio diversification	characteristics of socially responsible mutual funds are not significantly different from that of conventional funds	Did not consider shareholders' advocacy and community investing strategies	The current study considers the three SRI strategies
Brzeszczynski and Mclntosh (2011)	Performance of portfolios composed of British SRI Stocks	Superior performance of SRI stocks was confirmed using risk-adjusted measures	- Did not consider shareholders' advocacy and community investing strategies - Did not consider effects of any intervening or moderating variables on the relationship between SRI and performance	- The current study considers the three SRI strategies - The study investigates the effects of portfolio management on the relationship between SRI and portfolio performance
Capelle-Blancard and Monjon (2014)	The performance of socially responsible mutual funds: Does screening matter?	Only sectoral screens decrease financial performance	- Did not consider shareholders' advocacy and community investing strategies	- The current study considers the three SRI strategies
Carhart (1997)	On the persistence in mutual funds performance.	Actively managed portfolio yields higher risk-adjusted returns	Did not consider SRI portfolio management.	SRI is specifically introduced in the model
Chong *et al.* (2006)	To sin or not to sin? Now that's the question	The irresponsible fund out-performs the SRI funds	- Study was not conducted during a normal period but rather was conducted during a market downturn	- Current study was conducted during a normal period
Cumming and Johan (2007)	Socially responsible institutional investment in private equity	The data indicated socially responsible investment in private equity is 40-50% more common when the decision to implement such an investment plan is centralized with a single chief investment officer	Did not consider effects of any intervening or moderating variables on the relationship between SRI and performance	The study investigates the effects of portfolio management on the relationship between SRI and portfolio performance

RESEARCHER(S)	STUDY TITLE	RESULTS	RESEARCH GAPS	FOCUS OF CURRENT STUDY
DiBartolomeo and Kurtz (1999)	Managing Risk Exposures of Socially Screened Portfolios	No evidence of meaningful differences in the returns relative to the DSI and the S&P 500	Did not consider effects of any intervening or moderating variables on the relationship between SRI and performance	The study investigates the effects of portfolio management on the relationship between SRI and portfolio performance
Diltz (1995)	Does social screening affect portfolio performance?	Employing environmental and military screens leads to positive performance. Others screens do not have any impact on performance	- Did not consider shareholders' advocacy and community investing strategies	- The current study considers the three SRI strategies
Gregory *et al.* (1997)	Ethical Unit Trust Financial Performance: Small Company Effects and Fund Size Effects	SRI funds under-perform the market index	- Did not control for lack of diversification apparent in SRI portfolio - Did not measure non financial returns	- Current study uses Sharpe ratio which makes no assumption on portfolio diversification - Use of DEA model considers non-financial benefits
Guerard (1997)	Additional evidence on the cost of being socially responsible in investing	No statistically significant differences in the average returns between the two samples over the period 1987-1994	- Did not control for lack of diversification apparent in SRI portfolio	Current study uses Sharpe ratio which makes no assumption on portfolio diversification
Haigh and Hazelton (2004)	Markets: A tool for social responsibility?	SRI increases research costs	Did not consider the impact of SRI on portfolio performance	Current study looks at the three variables together
Hamilton *et al.* (1993)	Doing well while doing good: The investment performance of socially responsible mutual funds	SRI funds do not earn statistically significant excess returns	- The study did not consider all screening strategies - Excess returns were measured using Jensen alpha but no tests on the efficiency of portfolio were undertaken	- The current study considers the three SRI strategies - The current study uses Sharpe ratio which does not assume efficient portfolio

RESEARCHER(S)	STUDY TITLE	RESULTS	RESEARCH GAPS	FOCUS OF CURRENT STUDY
Havemann and Webster (1999)	Does ethical investment pay?	SRI affects diversification, size and structure of investable universe, concentration and research costs	Did not consider the impact of SRI on portfolio performance	Current study looks at the three variables together
Hoepner (2010)	Portfolio diversification and environmental, social or governance criteria: Must responsible investments really be poorly diversified?	Mainstream active investment managers appear well advised to consider the inclusion of ESG criteria in their portfolio management process to optimise their risk management.	Did not consider the impact of SRI on portfolio performance	Current study looks at the three variables together
Iraya and Musyoki (2013)	Performance of socially screened portfolio at the Nairobi Securities Exchange	Socially screened portfolio underperforms the NSE 20 share index	- Did not consider shareholders' advocacy and community investing strategies - Did not consider effects of any intervening or moderating variables on the relationship between SRI and performance	- The current study considers the three SRI strategies - The study investigates the effects of portfolio management on the relationship between SRI and portfolio performance
Jansson & Biel (2011)	Motives to engage in sustainable investment: a comparison between institutional and private investors.	The results indicate that private and institutional investors/beneficiaries give a wider interpretation of fiduciary duty than investment institutions do	- Did not consider shareholders' advocacy and community investing strategies - Did not consider effects of any intervening or moderating variables on the relationship between SRI and performance	- The current study considers the three SRI strategies - The study investigates the effects of portfolio management on the relationship between SRI and portfolio performance

RESEARCHER(S)	STUDY TITLE	RESULTS	RESEARCH GAPS	FOCUS OF CURRENT STUDY
Keim (1989)	An analysis of mutual fund design: The case of investing in small-cap stocks	Investment strategies and trading rules components of funds design influences portfolio returns	Did not consider specifically SRI portfolios	SRI is specifically introduced in the model
Kempf and Osthoff (2007)	The effects of socially responsible investment on portfolio performance	SRI results in high abnormal returns	- The study did not attempt to explain where the extra profit stems from. Does it result from a temporary mispricing in the market or does it compensate for an additional risk factor?	- The current study seeks to explain any abnormal returns by investigating the effects of portfolio management on the relationship between SRI and portfolio performance
Mallin *et al* (1995)	The financial performance of ethical investment funds	Ethical funds have lower risk and lower risk adjusted performance	Did not consider effects of SRI on portfolio management	The study investigates the effects of portfolio management on the relationship between SRI and portfolio performance
Mill (2006)	The financial performance of socially responsible investment over time and a possible link with CSR	SRI results in increased variability of returns	Did not consider effects of SRI on portfolio management	The study investigates the effects of portfolio management on the relationship between SRI and portfolio performance
Myers and Anderson (2007)	The cost of being good	SRI performs as well as the benchmark portfolio	Did not consider shareholders' advocacy and community investing strategies	The current study considers the three SRI strategies
Russ (2006)	Performance evaluation with portfolio holdings information	Portfolio performance is influence by fund manager's performance	Did not consider specifically SRI portfolios	SRI is specifically introduced in the model
Schwartz (2003)	The 'Ethics' of Ethical Investing	Ethical obligations of some funds not met and some screens not ethically justifiable	Did not consider the impact of SRI on portfolio performance	Current study looks at the three variables together

RESEARCHER(S)	STUDY TITLE	RESULTS	RESEARCH GAPS	FOCUS OF CURRENT STUDY
Shank *et al.* (2005)	Is it better to be naughty or nice?	Nice firms (SRI compliant) out-performs conventional funds	Did not consider shareholders' advocacy and community investing strategies	The current study considers the three SRI strategies
Statman (2000)	Socially responsible mutual funds	No statistically significant differences in returns performance	- Did not control for lack of diversification apparent in SRI portfolio	Current study uses Sharpe ratio which makes no assumption on portfolio diversification
Stone *et al* (1997)	Socially responsible investment screening: strong evidence of no significant costs for actively managed portfolio	There is no significant costs of applying social screens	- Did not consider all SRI strategies	- The current study considers the three SRI strategies

2.5 The Conceptual Framework and Research Hypotheses

This study adopts the modern portfolio theory in determining the relationship among socially responsible investment, portfolio management, institutional characteristics and performance of mutual funds in Kenya. The study has been anchored on modern portfolio theory due to its proposition on risk adjusted portfolio return and how this is affected by diversification. The aim is to determine whether the theory holds even when non financial costs and benefits are introduced. A discussion of the dependent, independent, moderating and intervening variables is undertaken followed by the conceptual model and the research hypotheses.

2.5.1 The Conceptual Framework

The dependent variable in this study is the mutual fund performance measured by efficiency ratio of outputs to inputs. The DEA model proposed by Basso and Funari (2003) is used to compute the efficiency ratio with composite performance measures of Sharpe ratio and ethical coefficient as outputs. The inputs are transaction fees charged, age of the fund, total asset under management and standard deviation of returns. The Sharpe ratio is used because it does not assume that the portfolio is fully diversified and therefore uses portfolio standard deviation as the measure of risk unlike other composite measures such as Treynor ratio and Jensen alpha that use portfolio beta to measure risk.

The independent variable is SRI as represented by investment philosophy, the exclusion or inclusion criteria and SRI strategies adopted. Investment philosophy was categorized in accordance with Allavida (2011) to include philanthropic investors, social investors predominantly interested in social returns (PMR), social investors interested in social returns and below market rate of financial returns (BMR), social investors interested in social returns

and at least market rate of financial return (ALMR) and mainstream investors solely interested in financial returns. The exclusion or inclusion criteria used was based on Kempf and Osthoff (2007) and Schwartz (2003), who jointly identify five criteria considered by SRI: social, environmental, ethical, governance and moral factors while the SRI strategies borrowed from Geczy *et al.* (2005) and Schueth (2003) studies that identified five SRI strategies including negative screening, positive screening, best-of-sector screening, shareholders' advocacy and community based investing.

Portfolio management is considered as the intervening variable. The main concerns are based on Jolion (1992) definition to include asset allocation, investment style, portfolio diversification, research costs incurred and transaction fees charged by the mutual fund. Asset allocation attempts to balance risk and return by adjusting the percentage of each asset in an investment portfolio according to the investors risk tolerance, goals and investment time frame; investment style considers the different style characteristics of equities, bonds or financial derivatives within a given investment philosophy; portfolio diversification measures the extent to which unsystematic risk has been eliminated from the portfolio; research costs is incurred to collect information on assets to be included in the portfolio and tracking performance of assets already invested in while transaction fees include the various expenses charged to investors by the mutual funds.

The relationship between SRI and portfolio management is assumed to be moderated by the institutional characteristics which was based on Mclachlan and Gardner (2004) to include mutual funds age, size and ownership structure. Mutual fund's age was measured by the number of years the fund has been in operation while the size depended on the amount of

money under the mutual funds management. The ownership structure depended on whether the mutual fund is owned by foreigners or by domestic investors.

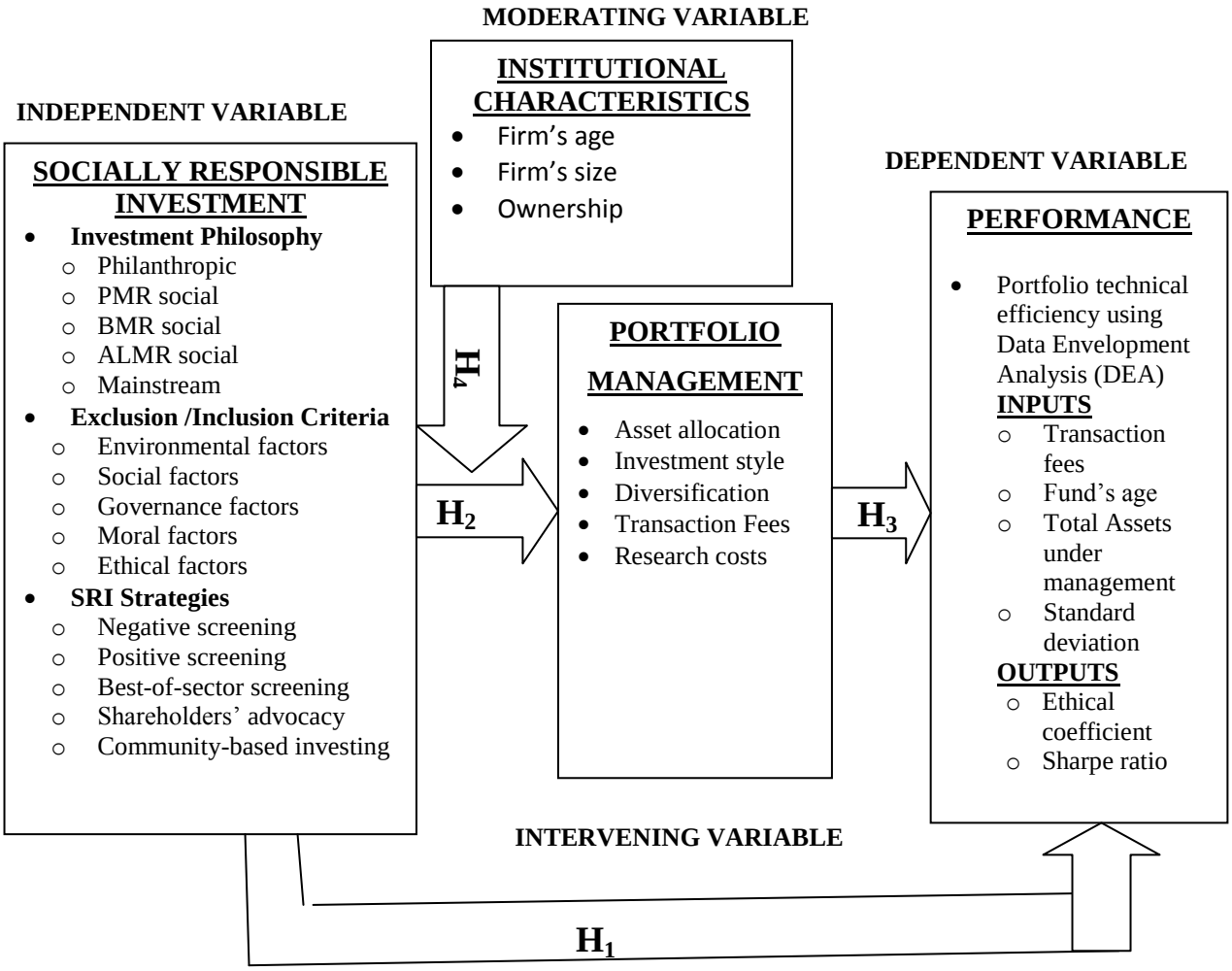

Figure 2.1: The Conceptual Model

Source: Author, 2014

2.5.2 Research Hypotheses

This study sought to establish the mediating effect of portfolio management on the relationship between SRI and performance of mutual funds and the moderating effect of institutional characteristics on the relationship between SRI and portfolio management by testing six null hypotheses. The first three hypotheses (H_1, H_2 and H_3) are generated from the first three direct relationships based on objective one, two and three respectively. The fourth hypothesis is on the moderating role of institutional characteristics, the fifth hypothesis is on the intervening role of portfolio management while the last is to test the combined effect of SRI, institutional characteristics and portfolio management on performance of mutual funds. Hence the tested null hypotheses are:

H_1: The relationship between socially responsible investment and performance of mutual funds in Kenya is not significant.

H_2: The relationship between socially responsible investment and portfolio management of mutual funds in Kenya is not significant.

H_3: The relationship between portfolio management and performance of mutual funds in Kenya is not significant.

H_4: The relationship between socially responsible investment and portfolio management of mutual funds in Kenya is not moderated by institutional characteristics.

H_5: The relationship between socially responsible investment and performance of mutual funds in Kenya is not intervened by portfolio management.

H_6: The combined effect of socially responsible investment, institutional characteristics and portfolio management on performance of mutual funds in Kenya is not significant.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the steps and approaches that were followed in executing the proposed study. Specifically it discusses the research philosophy, the research design, the study population, data collection methods, reliability and validity of the measurement instruments, operationalization of the study variables and data analysis procedures.

3.2 Research Philosophy

Among the various research approaches that exist, two extreme research philosophies may be distinguished, namely a phenomenological and a positivistic paradigm. The phenomenological paradigm is also known as the qualitative, subjectivist, humanistic or interpretive research paradigm, whereas the positivistic paradigm is alternatively known as the quantitative, objective, scientific, experimentalist or traditionalist research paradigm (Blumberg et al., 2005).

A phenomenological research paradigm or mindset is concerned with understanding human behaviour from the researcher's own frame of reference. The act of investigating a reality within a phenomenological context is thus seen as having an effect on that reality. Researchers using this paradigm essentially focus on the meaning that individuals attach to actual experiences related to a concept or a phenomenon rather than on measuring it (Miller & Salkind, 2002). This further implies that phenomenologists have to interact personally with the objects (or units of analysis) being investigated. According to this approach the opinions of experts are sought rather than drawing samples from a population (Collis & Hussey, 2003).

A positivistic paradigm consists of several beliefs about how a researcher can make sense to others, and it is based on the assumption that all researchers are fallible. As such, it is posited that human behavioural studies should be conducted in the same manner as studies in the natural sciences (Blumberg et al., 2005). It can be stated that positivism is based on realism in that it searches for the truths 'out there'.

As this research strives to test a number of quantitative hypotheses a positivistic research philosophy was adapted. This is because positivists place a strong emphasis on the quantification of constructs and believe that the best, or the only, way of measuring the properties of phenomena is through quantitative measurement. The overriding features of a positivistic philosophy are therefore the production of quantitative data based on large samples as well as on theory and hypothesis testing.

3.3 Research Design

There are three basic types of research design: exploratory, causal and descriptive. The goal of exploratory research is to discover ideas and insights. Causal research is used to establish cause-and-effect relationships between variables while descriptive research is usually concerned with describing a population with respect to important variables. The key objectives of descriptive designs are descriptions of phenomena or characteristics associated with a subject population, estimates of the proportions of a population that have these characteristics and discovery of associations among different variables (Cooper and Schindler, 2003).

Descriptive designs involve three main methods namely survey studies which describe the status quo, the correlation studies which investigate the relationship between variables and developmental studies which seek to determine changes over time. Descriptive designs can also be categorized either as cross-sectional which involves drawing a sample of elements from the population of interest and measuring characteristics of the elements only once or longitudinal where sample members are measured repeatedly over time (Sekaran, 1992).

This study used a correlational descriptive research design. Correlational descriptive research design is used to describe relationships, as they exist, between specific variables. Sekaran (1992) indicate that a wide spectrum of descriptive studies exists such as undertaking in-depth descriptions of specific individuals, social events, groups, companies or social artefacts. Alternatively researchers may also focus on the frequency with which a specific characteristic or variable occurs in a sample. Furthermore, Collis and Hussey (2003) notes that the description of phenomena may range from a narrative type of description (as in historic and discourse analyses) to a highly structured statistical analysis (as is the case in correlation studies). A description of the relationship among SRI, portfolio management, institutional characteristics and portfolio performance is the outcome of the correlational descriptive research.

3.4 Population and Sample

The unit of analysis in this study is the mutual fund and the target population was 114 mutual funds which were licensed by the Capital Market Authority (CMA) or were members of ASPEN Network of Development Entrepreneurs (ANDE) as at 31st December 2013 (see Appendix 2). Due to the small size of the population of study a census survey was conducted.

The Aspen Network of Development Entrepreneurs (ANDE) is a global network of organizations that support small and growing businesses in emerging markets by dramatically increasing the amount and effectiveness of capital and capacity development services for entrepreneurs. ANDE's membership includes investment funds, non-governmental organizations, research institutions, and private philanthropic foundations that invest money and expertise to help entrepreneurs develop and grow small businesses in emerging markets. Members operate in over 130 countries. The network had 56 Kenyan members listed as investors, foundations or capacity development providers as at 31st December 2013 (Aspen, 2014).

Mutual funds licensed by CMA are considered good representatives of formal investment companies in Kenya and are expected to be involved in SRI issues especially shareholder's advocacy and social screening so as to meet the demands of their diverse investors. ANDE members, on the other hand, are mainly philanthropic firms or development entrepreneurs who were expected to be involved in SRI through investments in community development projects.

3.5 Data Collection

The research objectives pertain to the positivistic dimension of this study and imply that appropriate procedures for the sourcing of primary quantitative data needed to be planned and executed. Blumberg et al. (2005) point out that the reliability and validity of a study can be seriously jeopardised if incorrect data collection methods are employed. Consequently, great care was taken to utilise acceptable methods.

Quantitative data was collected for this study both from primary and secondary sources. Primary sources used a semi-structured questionnaire and contained likert-type statements, closed and open ended questions. The questionnaire was developed from pertinent literature in line with the objectives of the study and required responses on the study variables of SRI, institutional characteristics and portfolio management. The researcher dropped the questionnaires personally to the respondent and explained the study concepts where required. This was necessary because socially responsible investment is a new concept in Kenya and it was expected that some respondents may not understand the concept.

Secondary data was mainly a five year (2009-2013) monthly historical data on the mutual funds portfolio performance. This resulted in sixty data points for each mutual fund and was considered adequate for the computation of the Sharpe ratio. Mueller (1991) and Shank et al. (2005) used a similar period. The secondary data was sourced from mutual funds monthly reports, annual reports, pamphlets, Capital Market Authority, Central Bank of Kenya and Central Bureau of Statistics.

The questionnaire was divided into three sections relating to research variables. The respondents were expected to be the mutual fund's investment/asset manager or the Chief Executive Officer. These respondents were deemed appropriate because of their involvement in policy on the mutual funds investment decisions. Therefore, they were considered to be knowledgeable about SRI practices within their respective mutual funds. The questionnaire was administered through drop and pick up later method.

3.6 Reliability and Validity of the Measurement Instruments

In order to establish the goodness of fit of the data collected on the study variables, reliability and validity tests were conducted. According to Tull and Hawkins (1993) a research is reliable only if different researchers get the same results when the study is replicated at a later stage or when a different sample is used. Cooper and Schindler (2003) likewise point out that a study is reliable only to the degree to which it generates consistent results (assuming that there are no real changes in what is measured or the circumstances surrounding the measurement).

A number of measures were taken to ensure the reliability of this research including interpreting published and unpublished (in-house) secondary sources correctly; selecting appropriate methods for drawing qualitative and quantitative samples; sourcing primary qualitative data from experts in the mutual funds; analysing quantitative data according to appropriate statistical conventions and risk-adjusted performance measures. Cronbach Alpha coefficient was also computed for all likert-type questions. The Alpha can take any value from zero (no internal consistency) to one (complete internal consistency) where 0.7 was the acceptable limit (Cronbach & Shavelson, 2004). The regression models were also subjected to specification tests of multicollinearity to determine how well the regression assumptions held.

Validity shows the extent to which the findings of a study accurately reflect what really happened in a specific situation (Collis & Hussey, 2003). Validity can also be defined in terms of the absence of self-contradiction and is closely linked to the research instrument used (Lancaster, 2005). The validity of a research instrument more specifically refers to the extent to which it measures what it is supposed to measure (Leedy &Ormrod, 2005). For the purpose of this research the questionnaire was pre-tested with ten respondents from the sample of the

study who were asked to respond to the questions in the research instrument. The purpose of pre-testing exercise was to improve the data collection instrument (Sekaran, 1992).

3.7 Operationalization of Study Variables

Operationalization is the process of developing operational definitions of the variables that are contained within the concepts of a quantitative research study. An operational definition is the explicit specification of a variable in such a way that its measurement is possible (Sekaran, 1992). The variables in this study, namely socially responsible investment, portfolio management, institutional characteristics and performance were operationalized in accordance with previous studies.

3.7.1 Operationalization of Socially Responsible Investment

Socially responsible investment concept was divided into three sub-variables: the exclusion or inclusion criteria, the investment philosophy and the SRI strategies used by the Mutual funds as shown in Table 3.1 below. Investment philosophy was operationalized in accordance with Allavida (2011) categorization of philanthropic investors, social investors predominantly interested in social returns (PMR), social investors interested in social returns and below market rate of financial returns (BMR), social investors interested in social returns and at least market rate of financial return (ALMR) and mainstream investors solely interested in financial returns.

The exclusion or inclusion criteria were operationalized in accordance with Kempf and Osthoff (2007) and Schwartz (2003), who jointly identify five criteria considered by SRI: social, environmental, ethical, governance and moral factors while the SRI strategies were

operationalized in accordance with Geczy *et al.* (2005) and Schueth (2003) studies that identified five SRI strategies including negative screening, positive screening, best-of-sector screening, shareholders' advocacy and community based investing.

Table 3.1: Operationalization of Socially Responsible Investment

Variable	Indicator	Operational Definitions	Scale	Questionnaire Reference
SRI Investment Philosophy (**PH**)	Philanthropic focus	Funding of charities and social change groups that rely on gifts	Interval	Q5f
	PMR Social	social investors predominantly interested in social returns		Q5b
	BMR Social	social investors interested in social returns and below market rate of financial returns		Q5c
	ALMR Social	social investors interested in social returns and at least market rate of financial return		Q5d
	Mainstream	investors solely interested in financial returns		Q5a
SRI exclusion or inclusion criteria (**CL**)	Environmental Factors	Urban and industrial pollution, global warming, depletion of some natural resources (such as oil) and restricted access to others (such as clean water), the reduction of the world's flora and fauna populations	Interval	Q7a,b,c,k,l,p,q Q8g
	Social Factors	Human capital (training and education, working conditions, and health), community development and labour rights (such as the right to unionisation)		Q7f,i,n,o Q8p,q,s
	Governance Factors	The rights and responsibilities of the management of a company – its board, shareholders and the various stakeholders in that company i.e. management structure, employee relations and executive compensation		Q7h,j Q8t,u
	Moral Factors	Avoidance of 'sin' stocks, such as companies in the gambling, alcohol, tobacco,		Q8a,b,h,l,m,n

Variable	Indicator	Operational Definitions	Scale	Questionnaire Reference
		pornography and firearms industries, from the investment portfolio.		
	Ethical Factors	Violations of human rights, use of child labour, manufacture or distribution of weapons, inhumane testing of products on animals, implicit support of oppressive political regimes, slavery, forced prostitution.		Q7d,e,g,m Q8c,d,e,f,i,j,k,o,r
SRI Strategies (**ST**)	Negative Screening	Avoiding investments in alcohol production & retailing; animal testing , farming & processing; armaments; environmental damage; gambling; genetic modification; nuclear processing; oppressive regime; pornography; tobacco	Interval	Q6c
	Positive Screening	investing in companies which are deemed good e.g. dealing with alternative energy, environmental protection, ethical employment practices, healthcare, pollution control & recycling		Q6d
	Shareholder's Advocacy	Actively engaging with management boards on ESG issues including proxy voting, corporate engagement, shareholder resolution and divestment.		Q6f
	Community-based Investing	Providing opportunities for community investors to place their money in investment vehicles and savings accounts that create jobs and affordable housing, develop local enterprise, provide community services such as child care, improve the environment, empower workers or consumers and reduce overall world poverty		Q6e

Source: Author, 2014

3.7.2 Operationalization of Portfolio Management

Portfolio management was operationalized based on Jolion (1992) definition which includes asset allocation that attempts to balance risk and return by adjusting the percentage of each asset in an investment portfolio according to the investors risk tolerance, goals and investment time frame; investment style which considers the different style characteristics of equities, bonds or financial derivatives within a given investment philosophy; portfolio diversification which measures the extent to which unsystematic risk has been eliminated from the portfolio; research costs incurred to collect information on assets to be included in the portfolio and tracking performance of assets already invested in and transaction fees charged to investors by the mutual funds (See Table 3.2 below).

Table 3.2: Operationalization of Portfolio Management

Variable	Indicator	Operational Definitions	Scale	Questionnaire Reference
Asset Allocation (AA)	Equity, Short term government securities, Treasury bonds, Short term fixed income securities, long term fixed income securities, Real estate, Others	An investment strategy that attempts to balance risk versus reward by adjusting the percentage of each asset in an investment portfolio according to the investors risk tolerance, goals and investment time frame	Interval	Part C (Q10)
Investment Style (IS)	Passive, Active, Top-down, Bottom-up, Value-oriented, Growth, Large capitalization, Small capitalization, Socially responsible, Others	Different style characteristics of equities, bonds or financial derivatives within a given investment philosophy.	Interval	Part C (Q11)
Portfolio Diversification (PD)	Amount of unsystematic risk eliminated from a portfolio	Reducing risk by investing in a variety of assets	Ratio	Secondary data

Variable	Indicator	Operational Definitions	Scale	Questionnaire Reference
Research Costs (RC)	Annual expenditure on research costs	Charges incurred to collect information on assets to be included in the portfolio and tracking performance of assets already invested in	Ratio	Part C (Q12e)
Transaction Fees (TF)	Purchase fee, Redemption fee, Exchange fee, Management fee, Account fee, Front-end load, Back – end load, Others	Charges that may be incurred by investors in mutual funds including purchase fees, redemption fees, exchange fees, management fees, account fees, front-end load and back-end load	Interval	Part C (Q13)

Source: Author, 2014

3.7.3 Operationalization of Institutional Characteristics

Institutional characteristics was operationalized based on Mclachlan and Gardner (2004) to include mutual funds age, size and ownership structure. Mutual fund's age was measured by the number of years the fund has been in operation while the size depended on the amount of money under the mutual funds management. The ownership structure depended on whether the mutual fund is owned by foreigners or by domestic investors (See Table 3.3 below).

Table 3.3: Operationalization of Institutional Characteristics

Variable	Indicator	Operational Definitions	Scale	Questionnaire Reference
Size of Portfolio (PS)	Total assets under management	Value of asset under management	ratio	Part A (Q1d)
Firm's Age (FA)	Years	Number of years the mutual fund has been in operation	ratio	Part A (Q1c)
Ownership structure (OS)	Foreign, Local	Majority ownership by foreigners, domestic	Nominal	Part A (Q3)

Source: Author, 2014

3.7.2 Operationalization of Performance

Performance was operationalized, to include the mutual fund efficiency which is a ratio of outputs to inputs. The categorical DEA model of Basso and Funari (2003) was used to compute the efficiency ratio with composite performance measures of Sharpe ratio and ethical coefficient as outputs. The inputs were transaction fees charged by the mutual fund, age of the fund, total asset under management and standard deviation of returns generated by the fund. The Sharpe ratio was used because it does not assume that the portfolio is fully diversified (See Table 3.4 below).

Table 3.4: Operationalization of Performance

Variable	Indicator	Operational Definitions	Scale	Questionnaire Reference
Efficiency Ratio (ER)	Transaction fees charged (input)	Charges that may be incurred by investors in mutual funds including purchase fees, redemption fees, exchange fees, management fees, account fees, front-end load and back-end load	Interval	Part C (Q13)
	Fund's age (input)	Number of years the mutual fund has been in operation	Ratio	Part A (Q1c)
	Total asset under management (input)	Value of asset under management	Ratio	Part A (Q1d)
	Portfolio risk (input)	Standard deviation of returns	Ratio	Secondary data
	Sharpe ratio (output)	A composite measure of financial performance	Ratio	Secondary data
	Ethical coefficient (output)	A measure of social performance	Interval	Part B (Q6)

Source: Author, 2014

3.8 Data Analysis

This study adopted Sekaran (1992) four steps model of data analysis including getting data ready for analysis, getting a feel for the data, testing the goodness of fit of the data and

hypothesis testing. In getting the data ready for analysis, data editing, standardization, coding and categorization was undertaken. Descriptive statistics including measures of central tendency for likert scale variables in the questionnaire were calculated. The standard deviation was equally used in order to explore the dispersion in the underlying data. In addition coefficient of variation, kurtosis and skewness were also computed. Descriptive statistics covered all response variables as well as the demographic characteristics of respondents. Descriptive statistics provide the basic features of the data collected on the variables and provide the impetus for conducting further analyses on the data (Mugenda and Mugenda, 2003).

Correlation analysis was used to measure the strength of the relationship between SRI and performance; SRI and portfolio management; portfolio management and performance; as well as the relationship among all the variables taken together. This helped in establishing the suitability of the data for regression analysis by ensuring that the dependent and independent variables have a statistically significant relationship while at the same time controlling for multicollinearity problem which occurs if any two independent variables are highly correlated (Cooper & Schindler, 2003). Since the scale of most of the data collected was interval or ratio, Pearson's Product Moment correlation coefficient was used.

The categorical Data Envelopment Analysis (DEA) model proposed by Basso and Funari (2003) was used to determine the mutual fund efficiency. This model focuses on the analysis of the relative efficiency of a set of decision-making units (the mutual funds) that require some inputs and in return supply some outputs. The original DEA model was proposed by Charnes et al. (1979) but has subsequently been revised for specific applications. Basso and

Funari (2003) suggests three DEA models for measurement of the efficiency of socially responsible mutual funds including a generalized basic DEA model, an exogenously fixed DEA model and a categorical DEA model. The categorical DEA model has been chosen because, unlike the exogenous DEA model, it does not require an indicator that measures the ethical levels achieved by each mutual fund.

Hierarchical multiple linear regression model was used to assess the nature of the relationship between various variables as hypothesised in the study at 5% level of significance. In this method, each independent, moderating and intervening variable was entered in sequence and its value assessed. If adding the variable contributes value to the model, then it is retained, but all other variables in the model are then re-tested to see if they are still contributing to the success of the model. If they no longer contribute significantly, they are removed. The method ensures that only the minimum possible set of predictor variables are included in the model (Sekaran, 1992). Statman (2000) and Kempf and Osthoff (2007) used similar analysis in their study. Reliability tests on the regression models were then computed to determine the strength of the relationship among the variables. These tests included multicollinearity tests, adjusted coefficient of determination (adjusted R^2), F-tests and t tests.

3.8.1 Preliminary Data Analysis Methods

Secondary sources make a distinction between the approaches used to calculate historic (*ex post*) and expected (*ex ante*) returns and risk measures. As the objective of this study is to analyse the historic returns of mutual funds, the focus of the study was only on *ex post* returns and risk measures. An investment's realised rate of return, also called its holding period rate of return (HPR), was calculated for single period (one month). As indicated in Equation 3.1, a

single-period HPR signifies a change in wealth over the time period during which the investment is held (Reilly & Brown, 2000).

$$HPR = \frac{(NAV\ \mathrm{Price}_1 - NAV\ \mathrm{Price}_0) + income}{NAV\ \mathrm{Price}_0} \quad \text{..... (3.1)}$$

Where:

HPR is the holding period return (yield)

$\mathrm{NAVPrice}_1$ is price of the fund at the end of the holding period,

$\mathrm{NAVPrice}_0$ is price of the fund at the beginning of the holding period, while

Income is any cash distributions received during the holding period (such as interest, dividends or rental income).

The NAV Price of a unit at any point in time was determined according to equation 3.2.

$$NAV\ \mathrm{Price}_t = \frac{NAV_t}{No.\_of\ \_units\ \_outstanding} \quad \text{..... (3.2)}$$

The arithmetic mean was then computed for each fund as shown in equation 3.3

$$\overline{HPR} = \sum_{t=1}^{n} \frac{HPR}{n} \quad \text{..... (3.3)}$$

Where:

$\overline{HPR}_i$ is the arithmetic mean of fund *i,* and

n is the number of periods over which the investment is held.

A fund's risk profile was determined by calculating its realised or *ex post* standard deviation (σ_i). As shown in Equation 3.4, this measure indicates by how much fund *i*'s returns have deviated from the mean return overtime. The greater the standard deviation, the greater the

dispersion around the mean return and the higher the risk associated with the investment (Reilly and Brown, 2000).

$$\sigma_i = \sqrt{\frac{\sum_{t=1}^{n}(HPR_t - \overline{HPR})^2}{n}} \quad \text{..... (3.4)}$$

Where:

σ_i is fund $_i$'s historic standard deviation,

HPR_t is fund $_i$'s holding period returns during period t,

$\overline{HPR}$ is fund $_i$'s arithmetic mean of HPR, and

n is number of periods over which the investment is held

The portfolio beta coefficient (β_p) was then computed as shown in equation 3.5 below:

$$\beta_p = \frac{Cov_{pm}}{\sigma^2_m} \quad \text{.....(3.5)}$$

Where:

Cov_{pm} is the covariance of portfolio p's returns against market returns, and

σ^2_m is the variance of market returns (Approximated by returns on the NSE 20 share index).

The Unsystematic risk which measures the extent to which a mutual fund is not fully diversified was then computed according to the formula suggested by Fama (1972) as shown in equation 3.6 below:

$$U = (\sigma_p - \beta_p)(E(R_m) - E(R_f)) \text{ ..... (3.6)}$$

Where:

U is the unsystematic risk in a fund

σ_p is fund p's historic standard deviation,

β_p is fund p's historic beta

$E(R_m)$ is the expected market returns (approximated by average return on NSE 20 share index)

$E(R_f)$ is the expected risk free return (approximated by average return on 91 treasury bills).

The higher the U for a specific mutual fund, the lower the diversification level of the fund.

The Sharpe ratio, for each fund was then computed as shown in equation 3.7:

$$S_t = \frac{R_p - R_f}{\sigma_p} \quad \text{……..……..…..} (3.7)$$

Where:

S_t is the Sharpe Index, R_p is the average return on portfolio p (= $\overline{HPR}$), R_f is the risk free rate of return, and σ_p is the standard deviation of the return of portfolio p

The Sharpe ratio makes no assumption on portfolio diversification and therefore uses standard deviation to measure risk. The Sharpe ratio was used mainly because socially responsible portfolios may not be fully efficient due to screening out of some sectors such as tobacco or alcoholic industries.

The mutual fund's efficiency was computed as a ratio of inputs to output using the categorical DEA model developed by Basso and Funari (2003) as follows:

$$Max \frac{U_1 S_j + U_2 e_j}{\sum_{i=1}^{m} V_i X_{ij}} \quad \text{.....} \quad (3.8)$$

Subject to:

$$\frac{U_1 S_j + U_2 e_j}{\sum_{i=1}^{m} V_i X_{ij}} \leq 1 \quad j=1, 2, ..., n \quad \text{.....} \quad (3.9)$$

$$U_r \geq \varepsilon \quad r= 1, 2 \quad \text{.....} \quad (3.10)$$

$$Vi \geq \varepsilon \quad i= 1, 2, 3, 4 \quad \text{.....} \quad (3.11)$$

Where:

j is the mutual funds,

i are the inputs (Transaction fees charged, age of the fund, total assets under management and standard deviation),

S_j is the Sharpe ratio for mutual fund j,

X_{ij} is amount of input i for mutual fund j,

U_r is the weight assigned to output r,

V_i is the weight assigned to input i, and

e_j is the ethical coefficient of mutual fund j.

ε is a non-Archimedean infinitesimal

The main advantages of DEA are that it can readily incorporate multiple inputs and outputs and, to calculate technical efficiency, only requires information on output and input quantities (not prices) (Banker, 1993). This makes it particularly suitable for analysing the efficiency of SRI mutual funds since it may not be possible to assign prices to social returns. The second advantage is that possible sources of inefficiency can be determined as well as efficiency

levels. DEA provides a means of 'decomposing' economic inefficiency into technical and allocative inefficiency (Basso and Funari, 2003).

The main weaknesses of DEA include: Since DEA is an extreme point technique, noise (even symmetrical noise with zero mean) such as measurement error can cause significant problems. DEA is good at estimating "relative" efficiency of a DMU but it converges very slowly to "absolute" efficiency. In other words, it can tell you how well you are doing compared to your peers but not compared to a theoretical maximum; since a standard formulation of DEA creates a separate linear program for each DMU, large problems can be computationally intensive (Ali et al., 1991). The study controlled for these weaknesses by ensuring that extreme care was taken in measurements of all inputs and output variables. The DEA technical efficiency scores were used for relative comparison only as inputs in the regression models.

The ethical coefficient for each mutual fund was computed as shown by equation 3.12 below:

$$e_j = W^N N_j + W^P P_j + W^C C_j + W^A A_j \quad \text{..... (3.12)}$$

Where:

N_j is the proportion of negative screening features for fund j,

P_j is the proportion of positive screening features for fund j,

C_j is a binomial coefficient measuring the existence of community development in fund j

A_j is a binomial coefficient measuring the existence of shareholders advocacy in fund j,

W^N, W^P, W^C and W^A are equal weights assigned to negative screening, positive screening, community development and shareholders' advocacy respectively.

The Open Source Data Envelopment Analysis (OSDEA) software 2014 version was used in computing the efficiency ratio.

3.8.2 Relationship between SRI and Performance

Hierarchical multiple regression model was used to determine the relationship between SRI and portfolio performance of mutual funds in Kenya. This model tested hypothesis one and was as follows:

$$\mathbf{ER=\beta_0 + \beta_1 PH + \beta_2 CL + \beta_3 ST + \varepsilon_i} \quad \text{..... (3.13)}$$

Where:

ER is the efficiency ratio during the period;

β_0 is the regression constant or intercept,

$\beta_{1.....}\ \beta_3$ are the regression coefficients,

PH is the investment philosophies score,

CL is the exclusion or inclusion criteria score,

ST is the SRI strategy score, and

ε_i is a random error term that accounts for the unexplained variations.

3.8.3 Relationship between SRI and Portfolio Management

Hierarchical multiple regression model was used to determine the relationship between SRI and portfolio management of mutual funds in Kenya. The model tested hypothesis two and was as follows:

$$\mathbf{PM} = \beta_0 + \beta_1 \mathbf{PH} + \beta_2 \mathbf{CL} + \beta_3 \mathbf{ST} + \varepsilon_i \quad \text{..... (3.14)}$$

Where:

PM is the composite portfolio management score

β_0 is the regression constant or intercept,

$\beta_{1.....} \beta_3$ are the regression coefficients,

PH, CL & ST are as defined by section 3.8.2

ε_i is a random error term that accounts for the unexplained variations.

The composite portfolio management score was computed as a geometric mean of the five sub variables of portfolio management (asset allocation, investment style, portfolio diversification, research costs and transaction fees).

3.8.4 Relationship between Portfolio Management and Performance

Hierarchical multiple regression model was used to determine the relationship between portfolio management and portfolio performance of mutual funds in Kenya. The model was as follows:

$$\mathbf{ER} = \beta_0 + \beta_4 \mathbf{AA} + \beta_5 \mathbf{IS} + \beta_6 \mathbf{PD} + \beta_7 \mathbf{RC} + \beta_8 \mathbf{TF} + \varepsilon_i \text{..... (3.15)}$$

Where:

ER is the efficiency ratio during the period,

β_0 is the regression constant or intercept,

$\beta_{4.....} \beta_8$ are the regression coefficients,

AA is asset allocation score,

IS is investment style score,

PD is the level of portfolio diversification measured by the unsystematic risk (in thousands),

RC is the log of annual expenditure on research costs,

TF is the different type of fees charged by mutual funds, and

ε_i is a random error term that accounts for the unexplained variations

3.8.5 Socially Responsible Investment, Institutional Characteristics and Portfolio Management

Multiple regression model was used to determine the moderating effect of institutional characteristics on the relationship between SRI and portfolio management in line with methodology suggested by Baron and Kenny (1986). The model was as follows:

$$\mathbf{PM}=\beta_0 + \alpha_1(\mathbf{SRI}) + \alpha_2 (\mathbf{IC}) + \alpha_3((\mathbf{SRI})* (\mathbf{IC})) + \varepsilon_i \quad (3.16)$$

Where:

α_1, α_2 and α_3 are the regression coefficients

PM is the composite portfolio management score

SRI is the socially responsible investment composite score,

IC is the institutional characteristics composite score, and

ε_i is a random error term that accounts for the unexplained variations

The composite scores of portfolio management, SRI and institutional characteristics were computed as a geometric mean of the indicators of each variable.

3.8.6 Socially Responsible Investment, Portfolio Management and Performance

Four steps were followed to test the mediating effects of portfolio management on the relationship between SRI and performance in line with the process advocated by Baron and Kenny (1986). In step one of the mediation model, regression analysis was performed to assess the relationship between performance (dependent variable) and SRI composite score (independent variable) while ignoring portfolio management (the mediator).

In the second step of the mediation analysis, regression analysis was performed to assess the relationship between portfolio management (intervening variable) and SRI (independent variable) ignoring the dependent variable (performance). In the third step of the mediation analysis, regression analysis was performed to assess the relationship between portfolio management (intervening variable) and performance (dependent variable) while ignoring the independent variable (SRI). The fourth step of the mediation analysis was performed to assess the relationship between performance (dependent variable), portfolio management (intervening variable) and SRI (independent variable). Mediation (intervention) occurs if SRI predicts performance, SRI predicts portfolio management, portfolio management predicts performance and still SRI predicts performance when portfolio management is in the model.

3.8.7 Socially Responsible Investment, Institutional Characteristics, Portfolio Management and Performance

Multiple regression model was used to determine the relationship among SRI, institutional characteristics, portfolio management and performance of mutual funds in Kenya. The model is as follows:

$$ER=\beta_0+\beta_1 PH+\beta_2 CL+\beta_3 ST+\beta_4 AA+\beta_5 IS+\beta_6 PD+\beta_7 RC+\beta_8 TF+\beta_9 FS+B_{10} FA+\beta_{11} OS+\varepsilon_i$$

..... (3.17)

Where:

β_0 is the regression constant or intercept,

$\beta_{1.....}\beta_{11}$ are the regression coefficients,

ER, PH, CL, ST, AA, IS, PD, RC, TF are as defined in sections 3.8.2 and 3.8.4 above,

FS is the mutual funds size measured by the log of the amount of funds under the firm's management,

FA is the mutual fund's age in numbers of years in operation,

OS is a dummy variable representing ownership structure,

ε_i is a random error term that accounts for the unexplained variations

Table 3.5 below summarizes statistical tests of the hypotheses.

Table 3.5: Summary of Statistical Tests of Hypotheses

Objective	Hypothesis	Analytical Method	Interpretation
(i) To determine the relationship between socially responsible investment and portfolio performance of mutual funds in Kenya	**Hypothesis 1:** The relationship between socially responsible investment and performance of mutual funds in Kenya is not significant	• Pearson correlation coefficient • Hierarchical multiple regression analysis • Data Envelopment Analysis (DEA) • Goodness of fit tests (e.g. T – test)	• Relationship exist if at least one of $\beta_{1...}$ β_3 is significant • Pearson correlation coefficient is significant.
(ii) To determine the relationship between socially responsible investment and portfolio management of mutual funds in Kenya	**Hypothesis 2:** The relationship between socially responsible investment and portfolio management of mutual funds in Kenya is not significant	• Pearson correlation coefficient • Hierarchical multiple regression analysis • Goodness of fit tests (e.g. T – test)	• Relationship exist if at least one of $\beta_{1...}$ β_3 is significant • Pearson correlation coefficient is significant.
(iii) To determine the relationship between Portfolio management and portfolio performance of mutual funds in Kenya	**Hypothesis 3:** The relationship between portfolio management and performance of mutual funds in Kenya is not significant	• Pearson correlation coefficient • Hierarchical multiple regression analysis • Data Envelopment Analysis (DEA) • Goodness of fit tests (e.g. T – test)	• Relationship exist if at least one of $\beta_{4...}$ β_8 is significant • Pearson correlation coefficient is significant.
(iv) To determine the effect of institutional characteristics on the relationship between socially responsible investment and portfolio performance	**Hypothesis 4:** The relationship between socially responsible investment and portfolio management is not moderated by institutional characteristics	• Pearson correlation coefficient • Hierarchical multiple regression analysis • Goodness of fit tests (e.g. T – test)	• Relationship exist if at least one of $\beta_{9...}$ β_{11} is significant • Pearson correlation coefficient is significant.
(v) To determine the effect of portfolio management on the relationship between socially responsible investment and portfolio performance.	**Hypothesis 5:** The relationship between socially responsible investment and portfolio performance of mutual funds in Kenya is not intervened by the portfolio management	• Pearson correlation coefficient • Hierarchical multiple regression analysis • Data Envelopment Analysis (DEA) • Goodness of fit tests (e.g. T – test)	• An intervening relationship exist if at least one of $\beta_{4...}$ β_9 is significant • Pearson correlation coefficient is significant.
(vi) To determine the combined effects of socially responsible investment, institutional characteristics and portfolio management on portfolio performance.	**Hypothesis 6:** The combined effect of socially responsible investment, institutional characteristics and portfolio management on performance of mutual funds in Kenya is not significant	• Pearson correlation coefficient • Hierarchical multiple regression analysis • Data Envelopment Analysis (DEA) • Goodness of fit tests (e.g. T – test)	• Relationship exist if at least one of $\beta_{1...}$ β_{11} is significant • Pearson correlation coefficient is significant.

Source: Author, 2014

CHAPTER FOUR: DESCRIPTIVE DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter presents results of descriptive data analysis of the variables of the study. This includes a discussion of pilot test, a review of the response rate, descriptive statistics of SRI, institutional characteristics, portfolio management and performance of mutual funds using frequencies, means, standard deviation, coefficient of variation, kurtosis and skewness. In addition, the chapter also covers correlation analysis using Pearson Product-Moment Correlations**.** The raw data used is shown in appendix III and IV.

4.2 Pilot Test

A pilot study was conducted to ensure that the questionnaire was effective in collecting the relevant information. A preliminary version of the questionnaire was first discussed with the supervisors before piloting. The aim was to improve the validity of the data collection instrument. The questionnaire was then pretested with 10 mutual funds' asset managers. To establish the content and face validity of the data collection instrument, the respondents were requested to help evaluate the clarity of the questions and to make the content more comprehensive. Based on their input, several items of the initial draft of the questionnaire were restructured to improve comprehension while some other items considered inappropriate were dropped from the questionnaire.

To measure the reliability of the data collection instrument (internal consistency), Cronbach's alpha was calculated for all likert scale questions of the questionnaire. The rule of the thumb for Cronbach's alpha is that the closer the alpha is to 1, the higher the reliability (Kothari,

2004). Table 4.1 below indicates the reliability statistics for SRI strategies scale, SRI exclusion and inclusion criteria scale, investment style scale and the transaction fees scales. All the four scales were quite reliable with a Cronbach's alpha reliability coefficient greater than 0.7. The SRI strategies scale had good internal consistency with a Cronbach alpha coefficient reported of 0.764. SRI exclusion or inclusion criteria scale reported a Cronbach alpha coefficient of 0.972, investment style reported a Cronbach alpha coefficient of 0.836 while transaction fees scale reported a Cronbach alpha coefficient of 0.864, all indicating good internal consistency.

Table 4.1: Pilot Test Reliability Analysis

Scale	Number of Items	Cronbach's Alpha (α)
SRI Strategies	6	0.764
SRI Exclusion and Inclusion Criteria	38	0.972
Investment Style	10	0.836
Transaction Fees	8	0.864

Source: Author, 2014

4.3 The Study Response Rate

This study undertook a census of a population of 114 mutual funds made up of 58 funds licensed by the Capital Market Authority (CMA) and 56 that were members of Aspen Network of Development Entrepreneurs (ANDE). Seventy (70) questionnaires were returned consisting of fifty (50) from CMA licensed funds and twenty (20) from ANDE members. One of the returned questionnaires from an ANDE member was not fully filled especially on the portfolio management questions and therefore could not be used in the analysis. The response rate was therefore computed based on the sixty nine (69) good questionnaires as a percentage

of the study population. This rate, amounting to 60.5%, is considered adequate and comparable to previous studies such as Kirimi (2012) who reported a response rate of 60.9%. 72.5 percent of the responding mutual funds were CMA licensee while 27.5 percent were ANDE members. The high response rate recorded by CMA licensee can be attributed to the fact that most of the information sought was considered by these firms as public information and therefore was readily available. A number of the targeted ANDE members could not release the information sought arguing that such information was private and confidential.

To ensure that the questionnaires were filled by officers with appropriate knowledge of the mutual funds, the respondents were asked to indicate their current position in the firm. 58.0 percent of the respondent were investment managers (also referred to as fund managers by some mutual funds) while 20.3 percent were investment analysts as shown by Table 4.2 below.

Table 4.2: Respondent's Current Position

Respondent	Frequency	Percentage (%)
Chief Executive officer	3	4.3
Investment Manager /Fund managers	40	58.0
Sales and Marketing Manager	4	5.8
Investment Analyst	14	20.3
Others	8	11.6
TOTAL	**69**	**100**

Source: Author, 2014

Respondents classified as 'others' included legal and compliance managers, investment advisers, finance officers and customer service managers. These categories were mainly prevalent in the ANDE members who did not have the generic fund manager titles.

4.4 Institutional Characteristics of Mutual Funds in Kenya

The institutional characteristics of mutual funds were operationalized based on Mclachlan and Gardner (2004) to include mutual funds age, size and ownership structure. This section therefore shows the descriptive statistics of the amount of funds under management which was a proxy for mutual fund size, the number of years the fund had been in existence to indicate the firm's age and the ownership structure which categorized mutual funds as either local or foreign.

To determine the size of the firm managing the fund under consideration, the respondent were asked to indicate the total amount of funds under the firm's management and the responses are as shown in Table 4.3 below. To determine the number of classes to use in a frequency distribution table, Scott (2009) recommends the use of Sturge's rule. Using this rule the number of classes, k is given by

$$k = 1 + 3.322(\log n),$$

where,

k is the number of classes,

n is the number of observations.

For this study k = 1 + 3.322 (log (69)) = 7 classes.

Table 4.3: Total Amount of Funds under Firm's Management

Funds Under firm's Management (Millions)	Frequency	Percentage (%)
1-500	27	39.1
501-1000	9	13.0
1001 - 1500	2	2.9
1501 - 2000	3	4.3
2001 - 2500	1	1.5
2501-3000	7	10.2
>3001	20	29.0
TOTAL	**69**	**100**

Source: Author, 2014

The results in Table 4.4 above show that 39.1% of the responding firms were managing a maximum of five hundred million shillings, 13% managed more than five hundred million but less than one billion shillings, 2.9% managed more than one billion but less than one billion and five hundred million shillings, 4.3% managed more than one billion and five hundred million but less than two billion shillings, 1.5% managed more than two billion but less than two billion and five hundred million shillings, 10.2% managed more than two billion and five hundred million but less than three billion shillings while 29% of the respondents managed more than three billion shillings.

The study also sought to determine the firms age by requiring the respondent to indicate the number of years the mutual fund has been in existence. Sturge's rule (as discussed in section 4.4.1) was used in establishing the number of classes in the frequency table. Table 4.4 below shows that 13 percent of the funds were newly

established having been in existence for less than four years while 87 percent had been in operation for more than four years.

Table 4.4: Number of Years firm has been in Operation

Years	Frequency	Percentage (%)
1-4 Years	9	13
5-8 Years	15	21.7
9-12 Years	20	29
13-16 Years	6	8.7
17-20 Years	4	5.8
21-24 Years	5	7.3
> 24 Years	10	14.5
TOTAL	**69**	**100**

Source: Author, 2014

To determine the ownership structure of mutual funds in Kenya, the respondents were asked to state whether the majority of the firm owners were local or foreign investors. The findings show that 28% of the responding mutual funds were foreign owned while 72% were locally owned.

4.5 Socially Responsible Investment

This section discusses the SRI features of mutual funds in Kenya using descriptive statistics. As indicated in chapter three, SRI has been operationalized to include SRI investment philosophy such as philanthropic, social or mainstream investors; SRI exclusion or inclusion criteria that looks at the factors (environmental, social, governance, moral or ethical) used in screening investments to or from a portfolio; and SRI strategies adopted which include screening, shareholders advocacy or community based investments. The respondents were asked to indicate the percent of their funds invested in SRI first before answering questions on other SRI attributes.

4.5.1 Existence of Socially Responsible Investments in Kenya

The respondents were asked to indicate the percentage of their funds invested in SRI. The results as shown by Table 4.5 below indicate that 36.2 percent of the respondent did not have any SRI in their portfolio, 30.4 percent had up to 25 percent of their portfolio in SRI while 26.1 percent had up to 100 percent invested in SRI.

Table 4.5: Percentage of Portfolio Invested in SRI

Percentage Portfolio Invested in SRI	Frequency	Percentage (%)
None	25	36.2
1-25%	21	30.4
26-50%	1	1.5
51-75%	4	5.8
76-100%	18	26.1
TOTAL	**69**	**100**

Source: Author, 2014

Mutual funds without any investment in SRI are considered mainstream investors who are only concerned with financial returns while those with 100 percent investments in SRI are philanthropic mainly concerned with social returns only. Those mutual funds with some SRI investment are considered social investors. From the table above this amounted to 63.8 percent of the respondent. The implication of this is that SRI is a concept that has gained root among mutual funds in Kenya.

4.5.2 Socially Responsible Investment Philosophy

The study sought to establish the investment philosophy followed by mutual funds in portfolio selection. Table 4.6 shows that the various philosophies are followed to some degree by the

mutual funds in Kenya. Mainstream investors were the majority with about 62.5 percent (100 – 37.5) of their portfolio composed of at least some investments with high financial returns regardless of their social impacts. 47.8 percent (100 – 52.2) of mutual funds reported some investments that predominantly provide social returns but have a potential for profit making in the future. These funds can be referred to as Potential Market Returns (PMR) social investors. Mutual funds that reported some investments in assets that provide social returns and at least market returns (ALMR social) amounted to 37.7 percent (100 – 62.3) while mutual funds that reported some elements of philanthropy philosophy amounted 33.3 percent (100 – 66.7). The least philosophy followed was BMR social which requires investments that provide social returns and below market financial returns with only 30.4 percent (100 – 69.6) reporting investments in such assets

Table 4.6: Socially Responsible Investment Philosophy

Percentage of funds invested in:	**None**	**Up to 10%**	**10 – 25%**	**25 – 50%**	**More than 50%**	**TOTAL**
Investments that have high financial returns regardless of their social impacts	37.5	4.3	13.3	17.4	27.5	**100**
Investments that predominantly provide social returns but have a potential for profit making in the future	52.2	10.2	8.7	18.8	10.1	**100**
Investments that provide social returns and below market financial returns	69.6	17.4	5.8	5.8	1.4	**100**
Investments that provide social returns and at least market returns	62.3	17.4	10.1	5.8	4.4	**100**
Philanthropy (Funding of charities and social change groups that rely on gifts)	66.7	8.7	5.8	1.4	17.4	**100**

Source: Author, 2014

4.5.3 SRI Strategies Adopted by Mutual Funds in Kenya

The study sought to establish the SRI strategies adopted by mutual funds in Kenya. The study had operationalized this concept to include negative social screening, positive social

screening, community based development and shareholders' advocacy. Table 4.7 below shows the descriptive statistics including the mean, standard deviation, coefficient of variation, kurtosis and skewness. Skewness and kurtosis are statistical terms that, along with mean, standard deviation and coefficient of variation, help describe the overall shape of the probability distribution of a variable. The mean is a measure of central tendency that offers a general picture of the data while standard deviation is a measure of dispersion or variability around the mean. The coefficient of variation represents the ratio of the standard deviation to the mean, and it is a useful statistic for comparing the degree of variation from one data series to another, even if the means are drastically different from each other (Sekaran, 1992).

Skewness is the third standardised moment of the probability distribution and it measures the lopsidedness or asymmetry of the distribution. A distribution with negative skewness has a longer tail in the lower-return side and a distribution with positive skewness has a longer tail on the higher-return side of the curve. With a negatively skewed distribution, there is greater downside risk than what the standard deviation measures. Conversely, there is less downside risk than indicated by the standard deviation when the distribution is positively skewed. In other words, the standard deviation overstates the downside risk for a positively skewed distribution while understating the downside risk for a negatively skewed distribution (Cooper & Schindler, 2003).

Kurtosis is the fourth standardised moment of the probability distribution and it measures the distribution's peakedness or flatness. A distribution with kurtosis closer to zero is normal (or mesokurtic), a kurtosis greater than 0 is a leptokurtic distribution. A leptokurtic distribution has a sharper peak and fatter tails compared to a normal distribution and it indicates a lower

probability than a normally distributed variable of values near the mean and a higher probability than a normally distributed variable of extreme values. Conversely, a distribution with kurtosis less than 0 is a platykurtic distribution. In term of shape, a platykurtic distribution has a lower, wider peak and thinner tails and it indicates a higher probability than a normally distributed variable of values near the mean and a lower probability than a normally distributed variable of extreme values (Cooper & Schindler, 2003).

Table 4.7 shows that negative screening has a mean of 3.09, a standard deviation of 1.60, coefficient of variation of 0.52, kurtosis of -1.59 and skewness of -0.06. Positive screening has a mean of 3.16, a standard deviation of 1.50, coefficient of variation of 0.47, kurtosis of -1.40 and skewness of -0.23. Community based development has a mean of 2.68, standard deviation of 1.52, coefficient of variation of 0.57, kurtosis of -1.30 and skewness of 0.33 while shareholders' advocacy has a mean of 3.19, a standard deviation of 1.33, coefficient of variation of 0.42, kurtosis of -0.97 and skewness of -0.13. The implication is that all the strategies are followed to a moderate extent except community based development which is followed only to a small extent.

The negative kurtosis for all the strategies implies that the distribution of all the SRI strategies is flatter than normal and thus is platykurtic. The skewness for negative screening, positive screening, and shareholder advocacy is negative implying the distribution is asymmetrical with a long tail to the left while the one for community based development is positive implying the distribution is skewed to the right.

Table 4.7: SRI Strategies Adopted by Mutual Funds in Kenya

Item	N	Mean	SD	CV	KU	SK
Extent to which avoidance of socially unacceptable activities influences firms investment objectives (negative screening)	69	3.09	1.60	0.52	-1.59	-0.06
Extent to which thematic investment in positive activities influences firms investment objectives (positive screening)	69	3.16	1.50	0.47	-1.40	-0.23
Extent to which community based development influences firms investment objectives (community based development)	69	2.68	1.52	0.57	-1.30	0.33
Extent to which engagement with company management on social, ethical, environment, governance and moral issues influences firms investment objectives (shareholders' advocacy)	69	3.19	1.33	0.42	-0.97	-0.13

N is number of observations, SD is standard deviation, CV is coefficient of variation, KU is kurtosis, SK is skewness

Source: Author, 2014

4.5.4 SRI Exclusion or Inclusion Criteria used in Screening Investments

SRI exclusion or inclusion criteria was operationalized to include considerations on whether a mutual fund screens for environmental, social, governance, moral or ethical factors. The respondents were asked to indicate the factors used in positive screening with the results as shown by Table 4.8. Nine of the seventeen issues examined reported a mean approximately equal to three (in a likert scale of 1 to 5) with standard deviation ranging from 1.31 to 1.63. These were conservation of natural resources, human welfare, community development, company management structure, employee relations, environmental protection, ethical employment practices, pollution control, and recycling. The respondent reported support for all other factors examined to a small extent with a mean score of about two and standard deviation ranging from 1.16 to 1.58.

The highest relative dispersion occurs for reduction in global warming and healthcare both with a coefficient of variation of 0.65 while the lowest coefficient is 0.44 as reported by company management structures. The negative kurtosis for most of the variables implies a distribution that is flatter than normal (platykurtic). The skewness for most of the variables is positive implying a right skewed distribution.

Table 4.8: Factors Used in Positive Screening of Investments into a Portfolio

Extent of support to companies investing in:	**N**	**Mean**	**SD**	**CV**	**KU**	**SK**
Reduction of global warming	69	2.42	1.58	0.65	-1.28	0.55
Conservation of natural resources	69	2.64	1.61	0.61	-1.56	0.25
Conservation of flora and fauna population	69	2.43	1.54	0.63	-1.26	0.50
Human welfare	69	2.96	1.63	0.55	1.59	-0.05
Animal welfare	69	2.06	1.17	0.57	-0.09	0.78
Community development	69	2.67	1.62	0.61	-1.54	0.29
Labour rights	69	2.14	1.26	0.59	-0.50	0.80
Company's management structure	69	3.22	1.41	0.44	-1.12	-0.40
Company's employee relations	69	2.81	1.31	0.47	-1.12	0.14
Amount of executive compensation	69	2.23	1.16	0.52	-0.85	0.45
Alternative energy	69	2.13	1.31	0.62	-0.23	0.94
Environmental protection	69	2.67	1.61	0.60	-1.54	0.28
Ethical employment practices	69	2.77	1.48	0.53	-1.38	0.10
Healthcare	69	2.38	1.54	0.65	-1.18	0.62
Health lifestyle	69	2.42	1.55	0.64	-1.17	0.63
Pollution control	69	2.72	1.61	0.59	-1.49	0.31
Recycling	69	2.58	1.55	0.60	-1.28	0.47

N is number of observations, SD is standard deviation, CV is coefficient of variation, KU is kurtosis, SK is skewness

Source: Author, 2014

The factors used in negative screening were determined with twenty one items all covering environmental, social, governance, ethical and moral issues. The results as shown by Table

4.9 below indicate the most used screening criterion is non transparent corporate policies and practices which reported a mean of 3.58, a standard deviation of 1.64, a coefficient of variation of 0.46, kurtosis of -1.35 and skewness of -0.59 implying that this factor is used to a large extent, its distribution is flatter than normal and is skewed to the left. Thirteen other factors are used to a moderate extent with a mean of approximately three and standard deviation ranging from 1.57 to 1.89, kurtosis ranging from -1.90 to 1.36 and skewness ranging from -0.36 to 1.64. These factors are armaments (weapons), environmental damage and pollution, gambling services, genetic modification, nuclear processing, oppressive regime, pornography production and sale, human rights abuses, employee discrimination, poor employee safety, poor labour practices, poor union relations and poor governance structures.

Only five of the factors reported a mean of approximately two with standard deviation ranging from 1.34 to 1.74 implying their usage to a small extent. These factors are animal testing, animal farming, animal processing, tobacco production and tobacco retailing. Only three of the variables reported a positive kurtosis measure implying that most of the distribution for negative screening variables is flatter than normal. Most of the variables are skewed to the right as evidenced by the positive skewness score.

Table 4.9: Factors Used in Negative Screening of Investments into a Portfolio

Extent of using a criterion in excluding investments from a portfolio:	N	Mean	SD	CV	KU	SK
Alcohol production	69	2.22	1.61	0.73	-0.77	0.95
Alcohol retailing	69	2.25	1.63	0.72	-0.94	0.87
Animal testing	69	1.83	1.35	0.74	0.97	1.51
Animal farming	69	1.83	1.62	0.89	0.97	1.51
Animal processing and retailing	69	1.77	1.34	0.76	1.36	1.64
Armaments (weapons)	69	2.90	1.81	0.62	-1.83	0.09
Environmental damage and pollution	68	3.21	1.79	0.56	-1.81	-0.19
Gambling services	69	2.74	1.87	0.68	-1.83	0.28
Genetic modification	68	2.68	1.80	0.67	-1.78	0.28
Nuclear processing	68	2.96	1.86	0.63	-1.90	0.02
Oppressive regime	68	2.85	1.76	0.62	-1.78	0.13
Pornography production and sales	69	3.35	1.89	0.56	-1.82	-0.36
Tobacco production	69	2.43	1.74	0.72	-1.45	0.62
Tobacco retailing	69	2.49	1.76	0.71	-1.55	0.54
Human rights abuses	69	3.30	1.78	0.54	-1.75	-0.27
Employee discrimination	69	3.12	1.79	0.57	-1.79	-0.10
Poor employee safety	69	2.94	1.72	0.59	-1.70	0.11
Poor labour practices	69	2.81	1.75	0.62	-1.71	0.19
Poor union relations	69	2.65	1.57	0.59	-1.38	0.32
Poor governance structures	69	3.28	1.64	0.50	-1.55	-0.31
Non transparent corporate policies and practices	69	3.58	1.64	0.46	-1.35	-0.59

N is number of observations, SD is standard deviation, CV is coefficient of variation, KU is kurtosis, SK is skewness

Source: Author, 2014

4.6 Portfolio Management

As indicated in chapter three, portfolio management was operationalized to include concerns on asset allocation which aims at balancing risk and returns, investment style which explains the different style characteristics of securities within a given investment philosophy, diversification which is the reduction of risk by investing in a variety of assets, research costs which refer to charges incurred to collect information on assets to be included in the portfolio

and tracking performance of assets already invested in, and transaction fees charged by the mutual funds for portfolio management.

4.6.1 Mutual Funds Portfolio Composition

The respondents were required to state the proportion of different category of assets held in the mutual funds portfolio. As shown by Table 4.10 most of the mutual funds held either equity or short term fixed income securities with 10.1 percent reporting investment in equity of more than 80 percent and 59.4 percent reporting investments of more than 20 percent in such securities. 15.9 percent of the mutual funds reported investment in short term fixed income securities of more than 80 percent while 55.1 percent reported investment of more than 20 percent in such securities. This can be attributed to the fact that some mutual funds were either purely equity based or money market based. Real estate investment was the least held with only 31.9 percent of the respondent reporting investments of more than 20 percent in their portfolio.

Table 4.10 Percentage of Different Assets in Portfolio Composition

Asset	**0- 20 %**	**21– 40 %**	**41- 60 %**	**61 – 80 %**	**81-100 %**	**TOTAL %**
Equity	40.6	13.1	13.0	23.2	10.1	**100**
Short term government securities	56.5	17.4	7.3	13.0	5.8	**100**
Treasury Bonds	60.9	11.6	13.0	11.6	2.9	**100**
Short term fixed income securities	44.9	20.3	13.1	5.8	15.9	**100**
Long term fixed income securities	55.1	11.6	18.8	11.6	2.9	**100**
Real estate	68.1	13.0	4.4	10.2	4.3	**100**
Others-Community development	97.1	-	-	2.9	-	**100**
Others–Offshore investments	98.6	-	-	1.4	-	**100**

Source: Author, 2014

The respondents were required to indicate any other investment held in their portfolio. 2.9 percent of the respondents mainly composed of ANDE members indicated to also hold community development investments while 1.4 percent held offshore investments in their portfolio.

Respondents were asked to indicate the key factors considered in asset selection while forming the portfolio. The factors identified from the literature review included asset mix, sector/industrial classification, individual securities and diversification. Table 4.11 below shows the responses obtained indicating that all the factors are important to a large extent (on a five point likert scale) with means of approximately four. Asset mix however had the highest mean of 3.95 with standard deviation of 1.41, coefficient of variation of 0.36, kurtosis of -1.47 and skewness of -0.51. Diversification had the lowest mean of 3.70 with standard deviation of 1.40, coefficient of variation of 0.38, kurtosis of -1.59 and skewness of -0.24. The negative kurtosis for all the factors implies that their distribution is flatter than normal and thus is platykurtic. The skewness is also negative for all the variables implying the distribution is asymmetrical with a long tail to the left.

Table 4.11: Important Factors Considered in Forming Investment Portfolio

Item	N	Mean	SD	CV	KU	SK
Importance of asset mix in investment process	58	3.95	1.41	0.36	-1.47	-0.51
Importance of sector/industry in investment process	58	3.74	1.37	0.37	-1.34	-0.45
Importance of individual securities in investment process	57	3.88	1.49	0.38	-1.62	-0.42
Importance of diversification in investment process	56	3.70	1.40	0.38	-1.59	-0.24

N is number of observations, SD is standard deviation, CV is coefficient of variation, KU is kurtosis, SK is skewness

Source: Author, 2014

4.6.2 Investment Style Adopted by Mutual Funds in Kenya

The investment style adopted by mutual funds was operationalized to include passive or active style, top-down or bottom-up style, value or growth–oriented style, large or small capitalization, and socially responsible investment style. Table 4.12 below shows that passive investment style is the most prevalent with a mean of 3.38, a standard deviation of 1.65, coefficient of variation of 0.49, kurtosis of 0.73 and skewness of 1.42 indicating usage to a moderate extent (on a 5 point likert scale), peaked and right skewed distribution as indicated by kurtosis and skewness respectively. Value oriented, bottom–up, growth and small capitalization styles all reported a mean of approximately three with standard deviation ranging from 1.54 to 1.64 and negative kurtosis implying usage to a moderate extent and flatter than normal distribution. Socially responsible style is least used with a mean of 1.96, standard deviation of 0.36, coefficient of variation of 0.19, kurtosis of -1.39 and skewness of 0.45. This implies usage to a small extent, a flatter and right skewed distribution.

Table 4.12: Investment Styles used in Portfolio Management of Mutual Funds in Kenya

Extent to which a given investment style is used:	N	Mean	SD	CV	KU	SK
Passive investment style	69	3.38	1.65	0.49	0.73	1.42
Active investment style	69	2.42	1.43	0.59	-1.40	-0.47
Top down investment style	69	2.30	1.34	0.58	-1.12	0.46
Bottom up investment style	68*	2.97	1.64	0.55	-1.06	0.43
Value oriented investment style	69	3.09	1.54	0.50	-1.68	-0.24
Growth investment style	69	2.72	1.57	0.58	-1.44	-0.40
Large capitalization investment style	69	1.96	1.10	0.56	-1.51	0.14
Small capitalization investment style	69	2.54	1.58	0.62	-0.16	0.83
Socially responsible investment style	68*	1.94	0.36	0.19	-1.39	0.45

N is number of observations, SD is standard deviation, CV is coefficient of variation, KU is kurtosis, SK is skewness

*One respondent did not answer this question.

Source: Author, 2014

4.6.3 Research Aspect of Mutual Funds in Kenya

The study sought to establish whether a research committee existed in the mutual funds and if so, the frequency of research meetings, the approximate number of securities followed by the research team and the annual expenditure on research costs. Results show that majority of the mutual funds (79.7 percent) reported having established the research committee while 20.3 percent of the respondents did not have the committee.

The respondents were also asked to indicate their average annual expenditure incurred on research cost by the research committee to track securities. Table 4.13 below indicate that 21.7 percent of the mutual funds incurred up to five hundred thousand shillings on research costs, 20.3 percent spent between five hundred thousand and one million shillings, 14.5 percent sent between sh.1,500,000 and sh.2,000,000, while 21.7 percent spent more than sh.3,500,000.

Table 4.13: Average Annual Expenditure on Research Cost

Research Cost	Frequency	Percentage (%)
0-500,000	15	21.7
500,001-1000,000	14	20.3
1,000,001-1,500,000	1	1.5
1,500,001-2,000,000	10	14.5
2,000,001-2,500,000	6	8.7
3,000,001-3,500,000	8	11.6
>3,500,000	15	21.7
TOTAL	**69**	**100**

Source: Author, 2014

4.6.4 Transaction Fees Charged by Mutual Funds in Kenya

The respondents were asked to state the extent to which various fees were charged by the mutual funds to their clients. Table 4.14 shows that the most common fee was management

fee with a mean of 3.56, standard deviation of 1.59, coefficient of variation of 0.45, kurtosis of -1.09 and skewness of -0.71 implying usage to a large extent on a five point likert scale, a flatter and left skewed distribution. Six other costs including purchase fee, redemption fees, exchange fees, account fees, front –end load and back – end load were charged to a small extent. Other fees that were mentioned by the respondent but which were insignificant were incentive fees, subscription fees, shariah advisory fees, legal and consulting fees, custodial fees, outperformance fees and brokerage fees.

Table 4.14: Transaction Fees Charged by Mutual Funds in Kenya

Extent to which specific fee is charged by the mutual fund:	N	Mean	SD	CV	K	S
Purchase fee	69	2.26	1.51	0.67	-1.08	0.67
Redemption fee	69	2.14	1.44	0.67	-0.80	0.81
Exchange fee	66*	2.27	1.61	0.71	-1.36	0.61
Management fee	68*	3.56	1.59	0.45	-1.09	-0.71
Account fee	69	2.14	1.43	0.67	-1.03	0.74
Front end load	68*	1.65	1.13	0.68	2.10	1.75
Back end load	68*	1.65	1.16	0.70	1.88	1.72

N is number of observations, SD is standard deviation, CV is coefficient of variation, KU is kurtosis, SK is skewness

*some respondents did not answer these questions.

Source: Author, 2014

4.7 Performance of Mutual Funds in Kenya

Performance of mutual funds was measured by the technical efficiency ratio which compares outputs to the inputs used in generating those outputs. Categorical Data Envelopment Analysis (DEA) technique using Open source DEA (OSDEA) was used. DEA is a non-parametric technique which classifies the entities into "efficient" or "performers" versus "inefficient" or "nonperformers." Full (100%) efficiency is attained by any Decision Making Unit (DMU) if

and only if none of its inputs or outputs can be improved without worsening some of its other inputs or outputs (Charnes et al., 1979).

The inputs to the DEA model were transaction expenses measured by the extent to which various fees were considered important by the respondent, mutual funds age which was measured by the number of years the fund has been in operation, the fund size measured by the log of total assets under management (in accordance with Chen et al. (2004)) and the fund's risk measured by standard deviation of monthly returns generated by each mutual fund (Jagric et al., 2007). The outputs to the model were the Sharpe ratio computed from five years monthly portfolio returns and the ethical coefficient which depended on the SRI strategy adopted by each mutual fund (See Appendix IV). The outputs together with DEA efficiency ranking are discussed below.

4.7.1 The Sharpe Ratio of Mutual Funds in Kenya

Secondary data was collected from the mutual funds and used to determine the Sharpe ratio. This was considered to be an appropriate measure of risk adjusted financial returns from a mutual fund. Specifically monthly average yield for five years (2009 to 2013) was calculated for each mutual fund. Where five year data was not available, then the average returns for the available months was calculated. Monthly NSE 20 share index and Monthly returns on 91 days treasury bills were used to measure market returns and risk free rate respectively. The Sharpe ratio was calculated as shown in section 3.8.1.

The mutual funds were coded as Decision Making Unit (DMU) followed by either CMA for those registered by Capital Market Authority or ANDE for those that are members of Aspen

Network of Development Entrepreneurs. As shown by appendix IV, DMU-CMA-22 mutual fund had the highest average Sharpe ratio of 25.9 while DMU-CMA-35 had the lowest Sharpe ratio of - 42.28. Most of the mutual funds (76.8 percent) had a negative Sharpe ratio implying that they were generally reporting returns that were below the risk free rate (approximated by the 91 days treasury bills yield).

4.7.2 The Ethical Coefficient of Mutual Funds in Kenya

To measure social returns, the extent to which SRI strategies are adopted by a mutual fund were used. These strategies included positive screening, negative screening, community development and shareholder advocacy. The formula (discussed in section 3.8.1) was used to compute the ethical coefficient as follows:

$$e_j = 0.25N_j + 0.25P_j + 0.25C_j + 0.25A_j \quad \text{..... (4.2)}$$

Where

e_j is the ethical coefficient of fund j

N_j is the proportion of negative screening features in fund j,

P_j is the proportion of positive screening features in fund j,

C_j is the proportion of community development features in fund j

A_j is the proportion of shareholders advocacy feature in fund j,

As shown in appendix IV, the ethical coefficient lie between 1 (the least ethical fund) and 5 (the most ethical fund). It is evident from appendix IV that more than half (37 out of 69) of the mutual funds surveyed practice socially responsible investments with an ethical coefficient of

three or more. Most of these firms are the ANDE members who were mainly Non Governmental Organizations (NGO) that have philanthropy as their main objective.

4.7.3 Data Envelopment Analysis (DEA)

This study sought to compute the efficiency ratio (which measured performance) of mutual funds (Decision Making Units) in Kenya and to rank them according to their efficiency. Sixty nine (69) Decision Making Units (DMUs) were compared out of which thirteen emerged the most efficient (See Appendix IV). The DEA model (as shown in section 3.8.1) was used to compute the efficiency score.

An efficiency score of 1.00 indicates that the mutual fund is efficient and lies on the efficient frontier. Whereas, a score of less than 1.00 indicates that the mutual fund is inefficient relative to others and lies distant from the efficient frontier. Mutual funds with efficiency scores very near to 1.00 are referred to as "near efficient" because they need only a minor adjustments in their inputs to become efficient.

As shown by appendix IV, the efficient mutual funds were DMU-CMA-20, DMU-CMA-25, DMU-CMA-26, DMU-CMA-22, DMU-ANDE-01, DMU-CMA-49, DMU-ANDE-2, DMU-ANDE-04, DMU-ANDE-08, DMU-CMA-06, DMU-ANDE-06, DMU-ANDE-15 and DMU-CMA-47. The most inefficient mutual fund was DMU-CMA-03 with a DEA score of 0.16.

4.8 Correlation Analysis

This section presents the results of the correlation analysis of study variables using Pearson's product-moment correlation. The Pearson product-moment correlation coefficient is a measure of the strength of a linear association between two variables and is denoted by *r*. The Pearson correlation coefficient, *r*, can take a range of values from +1 to -1. A value of 0 indicates that there is no association between the two variables. A value greater than 0 indicates a positive association; that is, as the value of one variable increases, so does the value of the other variable. A value less than 0 indicates a negative association; that is, as the value of one variable increases, the value of the other variable decreases. A value of 1 indicates perfect positive correlation implying that an increase/decrease in one variable is followed by a proportional increase/decrease in the other variable while a value of -1 indicate perfect negative correlation which imply that an increase in one variable is followed by a proportional decrease in the other variable (Cooper & Schindler, 2003).

The stronger the association of the two variables, the closer the Pearson correlation coefficient, *r*, will be to either +1 or -1 depending on whether the relationship is positive or negative, respectively (Cooper & Schindler, 2003). According to Sekaran (1992), the Pearson's correlation is used if the variables of the study are measured using either interval or ratio scales. Correlation results are reported at a significance level of 0.05 and 0.01 in line with other studies such as Magutu (2013), Kidombo (2007) and Muia (2012).

4.8.1 Correlation between SRI and Performance

The strength of the relationship between mutual fund performance (measured by the efficiency ratio) and SRI strategies, SRI investment philosophy and SRI exclusion and inclusion criteria was determined using Pearson product moment correlation. As shown in Table 4.15 below, there is a positive correlation between mutual fund's efficiency ratio and SRI strategies which was statistically significant ($r = .824$, $p<0.01$). Similarly, there is a positive correlation between efficiency ratio and SRI investment philosophy which is statistically significant ($r = .284$, $p<0.05$). The research findings also indicate that there is a positive relationship between mutual fund's efficiency ratio and SRI exclusion or inclusion criteria which is statistically significant ($r = .522$, $p<0.01$).

Table: 4.15: Correlations between SRI and Performance

Scale	1	2	3	4
1. Efficiency Ratio	1	.824**	.284*	.522**
2. SRI Strategies		1	.396**	.739**
3. SRI Investment Philosophy			1	.529**
4. SRI Exclusion or inclusion Criteria				1

** P< 0.01 (2-tailed), * p< 0.05 level

Source: Author, 2014

The results in Table 4.15 above imply that SRI strategies, SRI investment philosophy and SRI exclusion and inclusion criteria are all positively related to performance. To test for multicollinearity, the correlation between the independent variables was considered. According to Cooper & Schindler (2003) multicollinearity problem occurs if the correlation coefficient between any two independent variables is greater than 0.8. As is evident from

Table 4.15 above, the correlation between SRI strategies and SRI investment Philosophy is 0.396 ($p<0.01$). Similarly the correlation between SRI strategies and SRI exclusion or inclusion criteria is 0.739 ($p<0.01$) while the correlation between SRI investment philosophy and SRI exclusion or inclusion criteria is 0.529 ($p<0.01$). Although the correlation coefficients are significant at one percent level, the problem of multicollinearity does not exist since none of these coefficients is greater 0.8.

4.8.2 Correlation between SRI and Portfolio Management

The relationship between SRI and portfolio management was investigated using Pearson product moment correlation. Portfolio management was measured through the use of a composite score for each mutual fund based on the average of the responses from asset allocation, investment style, diversification component, research cost and the transaction fee charged while SRI was measured by SRI strategies, SRI investment philosophy and SRI exclusion and inclusion criteria.

As shown in Table 4.16 below, there is a negative correlation between mutual fund's portfolio management and SRI investment philosophy which was statistically significant ($r =-.325$, $p<0.01$). Similarly, there is a negative correlation between portfolio management and SRI strategies which is statistically significant ($r =-.324$, $p<0.01$). The research findings also indicate that the correlation between portfolio management and SRI exclusion or inclusion criteria is statistically insignificant ($r =-.205$, $p>0.05$).

Table 4.16: Correlations between Portfolio Management and SRI

	Portfolio Management
1. SRI Investment Philosophy	-.325**
2. SRI Strategies	-.324**
3. SRI Exclusion inclusion Criteria	-.205

** P< 0.01

Source: Author, 2014

4.8.3 Correlation between Portfolio Management and Performance

The relationship between mutual fund performance as measured by the efficiency ratio and portfolio management as measured by asset allocation, investment style, diversification, research costs and transaction fees charged was determined. As shown in Table 4.17 below, there is a positive correlation between mutual fund's efficiency ratio and portfolio diversification which was statistically significant ($r = .302$, $p < 0.05$). The correlation between efficiency ratio and investment style was positive but statistically insignificant ($r = .081$, $p > 0.05$). There was negative but statistically insignificant correlation between efficiency ratio and asset allocation ($r = -.209$, $p > 0.05$), efficiency ratio and research costs ($r = -.182$, $p > 0.05$), and efficiency ratio and fees charged ($r = -.098$, $p > 0.05$). The implication is that performance has a significant positive relationship only with portfolio diversification.

Table 4.17: Correlations between Portfolio Management and Performance

Scale	1	2	3	4	5	6
1. Efficiency Ratio	1	-.209	.081	.302*	-.182	-.098
2. Asset Allocation		1	-.100	.047	-.021	.180
3. Investment Style			1	-.130	.505**	.405**
4. Diversification				1	-.145	-.090
5. Research Costs					1	.443**
6. Fees						1

** P< 0.01, * p< 0.05 level

Source: Author, 2014

To test for multicollinearity, the correlation between the independent variables was considered. The result shows the correlation between investment style and research costs ($r = 0.505$, $p<0.01$), investment style and transaction fees charged ($r =0.405$, $p<0.01$) and research costs and transaction fee charged ($r = 0.443$, $p<0.01$). Based on Cooper and Schindler (2003) who considered multicollinearity problem to occur if the correlation coefficient between any two independent variables is greater than 0.8, none of the above correlation is too high so as to cause this problem.

4.8.4 Correlation among SRI, Portfolio Management and Institutional Characteristics

The relationship between mutual fund portfolio management, SRI and institutional characteristics was also investigated using Pearson product moment correlation. As shown in Table 4.18 below, there is a negative correlation between portfolio management and SRI which was statistically significant ($r =-.314$, $p<0.01$). Similarly, there is a negative correlation between portfolio management and institutional characteristics which is statistically insignificant ($r =-.145$, $p>0.05$).

Table 4.18: Correlations among Portfolio Management, SRI and Institutional Characteristics

Scale	Portfolio Management	SRI	Institutional Characteristics
Portfolio Management	1	-.314**	-.145
SRI		1	.011
Institutional Characteristics			1

** P< 0.01 (2-tailed)

Source: Author, 2014

The correlation between the two independent variables of SRI and institutional characteristics is below 0.8 and based on Cooper and Schindler (2003) there is no problem of multicollinearity.

4.9 Chapter Summary

This chapter has presented results of pilot test, descriptive data analysis on all variables of the study and correlation analysis using Pearson Product-Moment correlations. The pilot test shows that all variables that were measured using likert scale had good internal consistency with Cronbach's alpha greater than 0.7. The response rate was 60.5% calculated from 69 good questionnaires returned out of 114 targeted. The respondents were mainly investment or fund managers who were considered knowledgeable on the issues covered by the questionnaire.

Descriptive statistics on socially responsible investment (the independent variable) showed that 36.2 percent of the respondent have no SRI in their portfolio, 30.4 percent have up to 25 percent of their portfolio in SRI while 26.1 percent have up to 100 percent invested in SRI.

On the SRI investment philosophy, mainstream investors are the majority with about 62.5 percent of their portfolio composed of at least some investments with high financial returns regardless of their social impacts. All the SRI strategies are important to the respondent with negative screening having a mean of 3.09 and a standard deviation of 1.60, positive screening a mean of 3.16 and a standard deviation of 1.50, community based developments a mean of 2.68 and standard deviation of 1.52 while shareholders' advocacy had a mean of 3.19 and a standard deviation of 1.33. The main variables considered in positive screening are conservation of natural resources, human welfare, community development, company management structure, employee relations, environmental protection, ethical employment practices, pollution control, and recycling while the most used negative screening criterion is non transparent corporate policies and practices.

Descriptive results of institutional characteristics (the moderating variable) showed that 39.1% of the mutual funds manage less than 500 million shillings, 29% manage more than three billion shillings while 31.9% manage amounts that lie between the two extremes. On the mutual fund's age, 13 percent of the funds are newly established having been in existence for less than four years while 87 percent have been in operation for more than four years. On the ownership structure, 28 % of the responding mutual funds are foreign owned while 72% are locally owned.

Portfolio management (the intervening variable) was composed of five sub-variables which include asset allocation, investment style, diversification, transaction fees and research costs. Descriptive statistics show that most of the mutual funds hold either equity or short term fixed income securities while real estate investments is the least held. The main factors

considered in forming a portfolio include asset mix, sector/industrial classification, individual securities and diversification. Passive investment style is the most prevalent followed by value-oriented, bottom – up, growth, small capitalization and socially responsible style in that order. Majority of the mutual funds (79.7 percent) have established a research committee while 20.3 percent of the respondents do not have the committee. 21.7 percent of the mutual funds incur up to five hundred thousand shillings on research costs per year, 21.7 percent spend more than sh.3,500,000 while 56.5% spend amounts that lie between the two extremes. The most common transaction fee charged by mutual funds was management fee.

Performance (the dependent variable) required the computation of the DEA technical efficiency ratio. The inputs to the DEA model were transaction expenses, mutual funds age, fund size and standard deviation of monthly returns generated by each mutual fund while the outputs were Sharpe ratio and ethical coefficient of each mutual fund. The highest average Sharpe ratio is 25.9 while the lowest is - 42.28. Most of the mutual funds (76.8 percent) have a negative Sharpe ratio implying that they are generally reporting returns that are below the risk free rate. On the ethical coefficient, more than half (37 out of 69) of the mutual funds surveyed practice SRI with an ethical coefficient of three or more (on a scale of 1 to 5).

Results of correlation analysis show that there is a statistically significant positive correlation between mutual fund's performance and SRI components of SRI strategies ($r = .824$, $p < 0.01$), SRI investment philosophy ($r = .284$, $p < 0.05$) and SRI exclusion or inclusion criteria ($r = .522$, $p < 0.01$). There is a negative correlation between mutual fund's portfolio management and SRI components of SRI investment philosophy ($r = -.325$, $p < 0.01$), SRI strategies ($r = -.324$, $p < 0.01$) and SRI exclusion or inclusion criteria ($r = -.205$, $p > 0.05$).

The correlation between mutual fund performance and various components of portfolio management is mixed with positive correlation for portfolio diversification ($r = .302$, $p < 0.05$) and investment style ($r = .081$, $p > 0.05$) but negative correlation for asset allocation ($r = -.209$, $p > 0.05$), research costs ($r = -.182$, $p > 0.05$), and transaction fees charged ($r = -.098$, $p > 0.05$). Apart from portfolio diversification which has a statistically significant correlation, all the other components of portfolio management have a statistically insignificant relationship with performance of mutual funds in Kenya.

CHAPTER FIVE: HYPOTHESES TESTING AND DISCUSSION OF FINDINGS

5.1 Introduction

This chapter present results of the tests of the six null hypotheses in the study and their interpretation. The first three null hypotheses tested the direct relationship among the three variables (SRI, portfolio management and performance) and included the first which premised that the relationship between SRI and performance was not significant, the second which held that the relationship between SRI and portfolio management was not significant and the third hypothesis which held that the relationship between portfolio management and performance of mutual funds in Kenya was not significant. The last three hypotheses tested the moderating effect of institutional characteristics on the relationship between SRI and portfolio management, the intervening effect of portfolio management on the relationship between SRI and performance and the combined effect of SRI, institutional characteristics and portfolio management on performance of mutual funds in Kenya, respectively. Tests of goodness of fit including the adjusted coefficient of determination ($\bar{R}^2$), t-tests, standard error of estimate (S_e) and ANOVA are also presented. The chapter concludes with a discussion of findings on each of the hypotheses tested.

This study reports the adjusted *R*-squared ($\bar{R}^2$), instead of the R^2. For multiple regression analysis, R^2 measures the amount of variations in the dependent variable explained by all the independent variables taken together. When an additional independent variable is added to a regression model, R^2 always increases even if the new independent variable has no additional predictive ability. Some of this increase is due to chance because adding independent variables reduces the degrees of freedom. Especially as the number of independent variables

approaches the sample size, the R^2 estimate will exaggerate the real fit of the model to the data. The adjusted R^2 controls for the decrease in degrees of freedom caused by increase in independent variables and unlike the R^2, the adjusted R^2 can show decreases as independent variables are added to a model.

5.2 Relationship between SRI and Performance

The first objective of the study was to assess the relationship between SRI and performance. The study predicted that the relationship between socially responsible investment and performance of mutual funds in Kenya was not significant. Socially responsible investment comprised of SRI investment philosophy, SRI exclusion or inclusion criteria and SRI strategies. Performance was measured through the efficiency ratio for each mutual fund. Hierarchical multiple regression analysis was therefore used to assess if SRI investment philosophy, SRI exclusion or inclusion criteria and SRI strategies significantly predicted efficiency ratio of mutual funds in Kenya. This was the test of the first null hypothesis as shown below:

Hypothesis 1: The relationship between socially responsible investment and performance of mutual funds in Kenya is not significant

The prediction equation as shown in chapter three was $\mathbf{ER=\beta_0 + \beta_1 PH + \beta_2 CL + \beta_3 ST + \varepsilon_i}$,

Note: The variables are as defined in section 3.8.2

Three steps were used in carrying out the hierarchical multiple regressions with the first step involving regressing efficiency ratio against SRI strategies, the second involving regressing efficiency ratio against SRI strategies and SRI exclusion or inclusion criteria while the third

step involved regressing efficiency ratio against SRI strategies, SRI exclusion or inclusion criteria, and SRI investment philosophy. The results of these regressions are reported in Table 5.1 below.

Table 5.1: Regression Results of SRI and Performance

	Model 1[a]	**Model 2[b]**	**Model 3[c]**
Constant	0.098(.050)	0.117(.020)	0.115(.067)
SRI strategies	0.192(.000)	0.225(.000)	0.225(.000)
SRI Exclusion /Inclusion criteria		-0.043(.033)	-.043(.044)
SRI investment philosophy			0.002(.956)
Adjusted R^2	**0.674**	**0.686**	**0.694**
F	**141.291(.000)**	**75.152(.000)**	**52.528(.000)**

p – values in parenthesis
a. Predictors: (Constant), SRI strategies
b. Predictors: (Constant), SRI strategies , SRI exclusion or inclusion Criteria
c. Predictors: (Constant), SRI strategies , SRI Exclusion or inclusion criteria , SRI investment philosophy

Source: Author, 2014

From the hierarchical regression results in Table 5.1 above, three models were generated. All the three models reported a significant F value ($p < .05$). However, model one with SRI strategies as independent variable had the highest value of F ($F=141.291$, $p < .05$) followed by model two with SRI strategies and SRI exclusion or inclusion criteria as independent variables ($F=75.152$, $p < .05$) while model three had the lowest computed F statistic ($F=52.528$, $p < .05$). Since all the three models are good predictors of portfolio performance, any could be used subject to the other goodness of fit tests discussed below.

The adjusted coefficient of determination ($\bar{R}^2$), which indicates the amount of variation in the dependent variable that is explained by all the independent variable taken together, was

highest in model three ($\bar{R}^2$=.694) and lowest in model one ($\bar{R}^2$=.674). Since all the models are statistically significant, then all are acceptable subject to tests of the slope. Tests of the slope, which aimed at determining the strength of the relationship between the dependent variable and each independent variable, was then performed and also reported in Table 5.1 above. The research findings indicate that SRI investment philosophy was not a significant predicator of efficiency ratio (β = .002, p>.05). The beta coefficient was not different from zero since p>0.05 and therefore this variable was removed from the model. Model three comprised of the three independent variables was therefore dropped at that point. Model two shows that both SRI exclusion/inclusion criteria (β =-.043, p < .05) and SRI strategies (β = .225, p<.05) were good predictors of efficiency ratio. Although model one with only SRI strategies as independent variable was also good in predicting performance, model two is better since it has two independent variables.

Results of this study show that there is a positive significant relationship (p<0.05) between efficiency ratio and SRI strategies. Similarly there is a significant negative relationship (p<0.05) between efficiency ratio and SRI exclusion or inclusion criteria. In general it can therefore be concluded that there is a significant relationship between SRI and performance of mutual funds in Kenya resulting in the rejection of hypothesis one (H_1).

5.3 Relationship between SRI and Portfolio Management

The second objective of the study was to assess the relationship between SRI and portfolio management. The study predicted that the relationship between socially responsible investment and portfolio management of mutual funds in Kenya was not significant. Portfolio management was measured through the use of a composite portfolio management (PM) score

for each mutual fund. The PM score was an average of the responses from asset allocation, investment style, diversification component, research cost and the transaction fee charged. Hierarchical multiple regression analysis was therefore used to assess if SRI investment philosophy, SRI exclusion or inclusion criteria and SRI strategies significantly predicted portfolio management of mutual funds in Kenya. This was the test of the second null hypothesis as shown below:

Hypothesis 2: The relationship between socially responsible investment and portfolio management of mutual funds in Kenya is not significant.

The prediction equation as shown in chapter three was $\mathbf{PM}=\beta_0 + \beta_1\mathbf{PH} +\beta_2\mathbf{CL} + \beta_3\mathbf{ST} +\varepsilon_i$,

Note: The variables are as defined in section 3.8.3

Three steps were used in carrying out the hierarchical multiple regression analysis with the first step involving regressing portfolio management against SRI strategies, the second involving regressing portfolio management against SRI strategies and SRI exclusion or inclusion criteria while the third involved regressing portfolio management against SRI strategies, SRI exclusion or inclusion criteria, and SRI investment philosophy. The results of these regressions are reported in Table 5.2 below.

Table 5.2: Regression Results of SRI and Portfolio Management

	Model 1[a]	**Model 2[b]**	**Model 3[c]**
Constant	3.137(.000)	3.114(.000)	3.284(.000)
SRI strategies	-0.229(.007)	-0.269(.031)	-0.205(.114)
SRI Exclusion /Inclusion criteria		-0.051(.663)	0.112(.363)
SRI investment philosophy			-0.239(.127)
Adjusted R^2	**0.092**	**0.081**	**.100**
F	**7.873(.007)**	**3.985(.023)**	**3.507(.020)**

p – values in parenthesis
a. Predictors: (Constant), SRI strategies
b. Predictors: (Constant), SRI strategies , SRI exclusion or inclusion Criteria
c. Predictors: (Constant), SRI strategies , SRI Exclusion or inclusion criteria , SRI investment philosophy

Source: Author, 2014

From the hierarchical regression results shown in Table 5.2 above, three models were generated. All the three models reported a significant F value ($p < .05$). However, model one with SRI strategies as independent variable had the highest value of F ($F=7.873$, $p < .05$) followed by model two with SRI strategies and SRI exclusion or inclusion criteria as independent variables ($F=3.985$, $p < .05$). Model three had the lowest F statistic ($F=3.507$, $p < .05$). The results also show a low adjusted coefficient of determination ($\bar{R}^2$), with the highest occurring in model three ($\bar{R}^2=.100$) and lowest in model two ($\bar{R}^2=.081$). Although the adjusted R^2 were low, they were still used since hierarchical regression model depend mainly on the change in adjusted R^2 from one model to another rather than the absolute values. Since all the models are statistically significant, then all are acceptable subject to tests of the slope.

Tests of the slope was then performed and also reported in Table 5.2 above. Research findings indicate that the relationship between portfolio management and SRI investment philosophy (model three) is not statistically significant. Similarly, the relationship between portfolio management and SRI exclusion or inclusion criteria (both model two and three) is not

statistically significant. The beta coefficients were not different from zero since $p>0.05$ and therefore these variables were removed from the model. The study however, revealed a statistically significant negative relationship between SRI strategies ($\beta = -.229$, $p<.05$) and portfolio management (model 1). Model one, therefore, with SRI strategies as the only independent variable ended up being the best for predicting portfolio management. Results of this study indicate that the relationship between portfolio management and SRI is statistically significant ($p<0.05$) as shown in Table 5.2 above resulting in the rejection of the null hypothesis.

5.4 Relationship between Portfolio Management and Performance

The third objective of the study was to assess the relationship between portfolio management and performance. The study predicted that the relationship between portfolio management and performance of mutual funds in Kenya was not statistically significant. Portfolio management comprised of asset allocation, investment style, diversification component, research cost and the transaction fee charged while performance was measured by the efficiency ratio of mutual funds in Kenya. Hierarchical multiple regression analysis was used to assess if asset allocation, investment style, diversification component, research cost and the transaction fee charged significantly predicted efficiency ratio of mutual funds in Kenya. This was the test of the third null hypothesis as shown below:

Hypothesis 3: The relationship between portfolio management and performance of mutual funds in Kenya is not significant.

The prediction equation as shown in chapter three was:

$$\mathbf{ER = \beta_0 + \beta_4 AA + \beta_5 IS + \beta_6 PD + \beta_7 RC + \beta_8 TF + \varepsilon_i,}$$

Note: The variables are as defined in section 3.8.4

Five steps were used in carrying out the hierarchical multiple regressions with the first step involving regressing efficiency ratio against asset allocation, the second step involving regressing efficiency ratio against asset allocation and investment style, the third step regressed efficiency ratio against asset allocation, investment style and diversification, the fourth step regressed efficiency ratio against asset allocation, investment style, diversification and research costs while the fifth step involved regressing efficiency ratio against asset allocation, investment style, diversification, research costs and transaction fees charged. The results of these regressions are reported in Table 5.3 below.

Table 5.3: Regression Results of Portfolio Management and Performance

	Model 1[a]	**Model 2[b]**	**Model 3[c]**	**Model 4[d]**	**Model 5[e]**
Constant	0.824(.000)	0.822(.000)	0.762(.000)	0.822(.000)	0.882(.000)
Asset Allocation	-0.049(.116)	-0.049(.122)	-0.052(.086)	-0.050(.080)	-0.050(.093)
Investment Style		0.001(.986)	0.019(.624)	0.047(.236)	0.047(.259)
Diversification			0.048(.008)	0.041(.018)	0.041(.019)
Research Costs				-0.035(.018)	-0.034(.023)
Transaction Fees					-0.001(.973)
Adjusted R^2	**0.026**	**0.009**	**0.116**	**0.190**	**0.174**
F	**2.549(.116)**	**1.252(.294)**	**3.484(.022)**	**4.341(.004)**	**3.408(.010)**

p – values in parenthesis
a. Predictors: (Constant), Asset Allocation
b. Predictors: (Constant), Asset Allocation , Investment Style
c. Predictors: (Constant), Asset Allocation , Investment Style , Diversification
d. Predictors: (Constant), Asset Allocation , Investment Style , Diversification, Research Costs
e. Predictors: (Constant), Asset Allocation , Investment Style , Diversification, Research Costs , Fees

Source: Author, 2014

From the hierarchical regression results shown in Table 5.3 above, five models were generated. Only three models (model 3, 4 and 5) reported a significant F value (all with $p < .05$). Model 1 and 2 had insignificant F values of 2.549 and 1.252 respectively (both with $p>.05$). Model 4 with asset allocation, investment style, diversification and research costs as

independent variable had the highest value of F (F=4.341, p < .05) followed by model 3 with asset allocation, investment style and diversification as independent variables (F=3.484, p<.05). Model 5 with asset allocation, investment style, diversification and transaction fees as independent variables had the lowest statistically significant F value (F=3.408, p < .05). This implies that the three models (model 3, 4 and 5) are all acceptable subject to tests of the slope. The results also show a low adjusted coefficient of determination ($\bar{R}^2$), with the highest occurring in model four ($\bar{R}^2$=.190) and lowest in model two ($\bar{R}^2$=.009). The order of preference for the three statistically significant models is model four, then model five and lastly model three.

Tests of the slope were then performed and reported in Table 5.3 above. Research findings indicate that the relationship between efficiency ratio and asset allocation (model 1) is not statistically significant. Similarly, the relationship between efficiency ratio and investment style (model 2) and transaction fees charged (model 5) is not statistically significant. The beta coefficients were not different from zero since p>0.05 and therefore these variables were removed from the model. Model four, however, shows a statistically significant positive relationship between diversification and performance (β = .041, p<.05). Similarly a significant negative relationship is reported between research costs incurred and performance (β = -.035, p<.05). Model four, therefore, is the best for predicting performance. Since the fourth model (model 4) was statistically significant (p<0.05), there is a statistically significant relationship between portfolio management and performance of mutual funds in Kenya. The null hypothesis was therefore rejected.

5.5 Socially Responsible Investment, Institutional Characteristics and Portfolio Management

The fourth objective of the study was to assess the moderating effect of institutional characteristics on the relationship between SRI and portfolio management. The study predicted that the relationship between SRI and portfolio management was not moderated by institutional characteristics of mutual funds in Kenya. The following hypothesis was formulated:

Hypothesis 4: The relationship between socially responsible investment and portfolio management is not moderated by institutional characteristics.

The moderating effect was computed using the method proposed by Baron and Kenny (1986). This involved testing the main effects of the independent variable (SRI), the moderating variable (institutional characteristics) and the interaction term between SRI and institutional characteristics (SRI*IC) on the dependent variable (portfolio management). In order to create an interaction term, SRI and institutional characteristics measures were first centered and a single item indicator representing the product of the two measures calculated (SRI*IC). The creation of a new variable by multiplying the scores of SRI and institutional characteristics risks creating a multicollinearity problem. To address the multicollinearity problem, which can affect the estimation of the regression coefficients for the main effects, the two factors were converted to standardized (Z) scores that have mean zero and standard deviation one. The two standardized variables (SRI and institutional characteristics) were then multiplied to create the interaction variable.

The results of hierarchical multiple regression predicting portfolio management from SRI, institutional characteristics and the interaction between SRI and institutional characteristics (SRI*IC) are reported in Table 5.4 below. The results of step one (model 1) indicate that the variance of portfolio management accounted for by SRI and institutional characteristics is 11.9% before inclusion of interaction term (SRI*IC). The multiple regression model (model 1) produced $\bar{R}^2$ = .092, F = 4.448, and p < .05. The model reveals a statistically significant relationship between portfolio management (dependent variable), institutional characteristics (moderating variable) and SRI (independent variable).

Table 5.4: Regression Results of Portfolio Management, SRI, Institutional Characteristics and Interaction Term (SRI*IC)

	Model 1[a]	**Model 2[b]**
Constant	3.275(.000)	3.255(.000)
SRI	-0.270(.009)	-0.272(.008)
IC	-0.001(.226)	-0.001(.353)
SRI *IC		0.160(.166)
Adjusted R^2	**0.092**	**0.105**
F	**4.448(.015)**	**3.662(.017)**

p – values in parenthesis
a. Predictors: (Constant), Institutional Characteristics, SRI
*b. Predictors: (Constant), Institutional Characteristics, SRI, SRI*IC*

Source: Author, 2014

In the second step, the interaction term between SRI and institutional characteristics (SRI*IC) was entered into the regression equation. Although this reduced the F value, the results of hierarchical multiple regression as indicated by Table 5.4 above show a statistically significant relationship between portfolio management, SRI, institutional characteristics and the interaction term, $\bar{R}^2$= .105, F= 3.662, p< .05. The results of step two (model 2) indicate that the variance of portfolio management accounted for by SRI and institutional characteristics is

10.5% after the inclusion of interaction term (SRI*IC). This implies that both model 1 and 2 are acceptable subject to tests of the slope.

Tests of the slope was then performed as reported in Table 5.4 above. Model 2 shows that the regression coefficient (β) value of SRI was -.272 with a significance level (p-value) of 0.008. The regression coefficient (β) value of institutional characteristics was -.001 with a significance level (p-value) of 0.353 while the regression coefficient (β) value of interaction term was .160 with a significance level (p-value) of 0.166.

From both Table 5.4 above, it is evident that the change in variance of portfolio management accounted for (ΔR^2) was equal to .013 (.105 - .092) after the inclusion of the interaction term (model 2). However, the interaction term was not statistically significant ($p>0.05$) indicating that institutional characteristics has no moderation effect on the relationship between SRI and portfolio management. From the analysis above hypothesis four was accepted.

5.6 Socially Responsible Investment, Portfolio Management and Performance

The fifth objective of the study was to assess the mediating effect of portfolio management on the relationship between SRI and performance. Socially responsible investment comprised of a composite score of SRI investment philosophy, SRI exclusion or inclusion criteria and SRI strategies while portfolio management comprised of a composite score of asset allocation, investment style, diversification component, research cost and the transaction fee charged. Performance was measured by the efficiency ratio of each mutual fund. The following null hypothesis was formulated:

Hypothesis 5: The relationship between socially responsible investment and performance of mutual funds in Kenya is not intervened by portfolio management.

Four steps were followed to test the mediating effects in line with the process advocated by Baron and Kenny (1986). In step one of the mediation model, regression analysis was performed to assess the relationship between efficiency ratio (dependent variable) and SRI (independent variable) while ignoring the mediator (portfolio management). The model was statistically significant (p-value<.05) as shown in Table 5.5 below. The multiple regression model produced adjusted R^2 of .452, F of 56.994, and $p < .05$. SRI explained 45.2% of the variance in efficiency ratio.

Table 5.5: Regression Results of SRI, Portfolio Management and Performance

	SRI & ER[a]	**SRI & PM[b]**	**PM & ER[c]**	**SRI, PM & ER[d]**
Constant	0.154(.028)	3.174(.000)	0.698(.000)	-0.018(.877)
SRI	0.193(.000)	-0.271(.009)	-0.320(.027)	0.208(.000)
PM				0.054(.025)
Adjusted R^2	**0.452**	**0.085**	**0.171**	
F	**56.994 (.000)**	**7.348(.009)**	**3.308**	**30.975(.000)**

p – values in parenthesis

a. *Dependent variable: Performance (Efficiency Ratio)*
b. *Dependent variable: Portfolio Management*
c. *Dependent variable: Performance*
d. *Dependent variable: Performance*

Source: Author, 2014

Tests of the slope show that the regression coefficient (β) value of SRI was 0.193 with a significance level (p-value) of 0.000. This indicate that SRI is a significant predictor variable ($p < .05$) and therefore a relationship exist between SRI and performance.

In the second step of the mediation process, regression analysis was performed to assess the relationship between portfolio management (intervening variable) and SRI (independent variable) ignoring the dependent variable (performance). The model was statistically significant (p-value <.05) as shown in Table 5.5 above. The multiple regression model produced adjusted R^2 = .085, F = 7.348 and p < .05. SRI explained 8.5% of the variance in portfolio management. Tests of the slope show that the regression coefficient (β) value of SRI was -.271 with a significance level (p-value) of 0.009. This indicate that SRI is a significant predictor variable (p < .05) and therefore a relationship exist between SRI and portfolio management.

In the third step of the mediation process, regression analysis was performed to assess the relationship between portfolio management (intervening variable) and performance (dependent variable) ignoring the independent variable (SRI). The model was statistically significant as shown by Table 5.5 above. The multiple regression model produced adjusted R^2 of .171, F of 3.308 and p < .05. This implies that the relationship between portfolio management and performance is statistically significant. Tests of the slope show that the regression coefficient (β) value of SRI was -.320 with a significance level (p-value) of 0.027. This indicate that a statistically significant relationship exist between portfolio management and performance.

The fourth step of the mediation analysis was performed to assess the relationship between performance (dependent variable), portfolio management (intervening variable) and SRI (independent variable). As shown in Table 5.5 above, the model was statistically significant (p-value<.05). The multiple regression model produced adjusted R^2 of .469, F of 30.975, p<.05. Portfolio management and SRI explained 46.9% of the variance in performance. Tests

of the slope show that the regression coefficient (β) value of SRI was .208 with a significance level (p-value) of 0.000. The regression coefficient (β) value for portfolio management was .054 with a significance level of .025. This indicates that both SRI and portfolio management are significant predictor variables ($p < .05$) and therefore a relationship exist among SRI, portfolio management and performance. Since portfolio management significantly predict efficiency ratio (ER) even when SRI is controlled ($p<0.05$), portfolio management has an intervening effect on the relationship between SRI and efficiency ratio. Hypothesis five (H_5) was therefore rejected.

5.7 Socially Responsible Investment, Institutional Characteristics, Portfolio Management and Performance

The sixth objective of the study was to determine joint effect of SRI, institutional characteristics and portfolio management on performance of mutual funds in Kenya. The study predicted that the combined effect of SRI, institutional characteristics and portfolio management on performance of mutual funds in Kenya was not significant. The following null hypothesis was formulated:

Hypothesis 6: The combined effect of socially responsible investment, institutional characteristics and portfolio management on performance of mutual funds in Kenya is not significant

The prediction equation as discussed in chapter three is:

$$\mathbf{ER=\beta_0 + \beta_1 PH + \beta_2 CL + \beta_3 ST + \beta_4 AA + \beta_5 IS + \beta_6 PD + B_7 RC + \beta_8 TF + \beta_9 FS + \beta_{10} FA + \beta_{11} OS + \varepsilon_i,}$$

Note: The variables are as defined in section 3.8.7

Multiple regression analysis was performed to assess the association between performance (dependent variable), institutional characteristics (moderating variable), portfolio management (intervening variable) and socially responsible investments (independent variable). Table 5.6 below shows that the model was statistically significant (p-value<.05). The multiple regression model produced $\bar{R}^2$ = .826, F= 25.604, p < .05. Portfolio management, institutional characteristics and SRI explained 82.6% of the variance in efficiency ratio.

Table 5.6: Regression Results of SRI, Institutional Characteristics, Portfolio Management and Performance

	Model 1[a]
Constant	0.935(.001)
Investment Philosophy	-0.036(.186)
Exclusion/inclusion criteria	-0.029(.174)
SRI Strategies	0.263(.000)
Asset Allocation	0.003(.826)
Investment Style	0.060(.016)
Diversification	0.086(.342)
Research Costs	0.001(.886)
Transaction Fees	-0.024(.226)
Firm's Size	-0.078(.001)
Firm's Age	-0.001(..625)
Ownership Structure	-0.216(.000)
Adjusted R^2	**0.826**
F	**25.604(.000)**

p – values in parenthesis

a. Predictors: (Constant), Ownership Structure, Firm's Age , Asset Allocation , Diversification, Transaction Fees, SRI Investment Philosophy, Investment Style, Research Costs, Firm's Size, SRI Exclusion Inclusion Criteria, SRI Strategies

Source: Author, 2014

The regression coefficient (β) value of SRI investment philosophy was -.036 with a significance level (p-value) of 0.186. The regression coefficient (β) value of SRI exclusion or inclusion criteria was -.029 with a significance level (p-value) of 0.174 while the regression coefficient (β) value of SRI strategies was .263 with a significance level (p-value) of 0.000. The regression coefficient of asset allocation was .003, with p-value was .826, investment style (β=.060, p=0.016), diversification (β=0.08572, p=.342), research costs (β= .001, p=.886), Transaction fees (β= -.024, p=.226), firm size (β= -.078, p=.001), fund's age (β= -.001, p=.625) and ownership structure (β= -.216, p=.000).

From Table 5.6 above, it is evident that only SRI strategies, investment style, firm size and ownership structure had a significant relationship with performance ($p<.05$). The relationship between performance and SRI investment philosophy, SRI exclusion or inclusion criteria, asset allocation, diversification, research costs, transaction fees and fund's age were not statistically significant ($p>0.05$) implying their beta coefficients are not significantly different from zero. Since the overall model was statistically significant ($p<0.05$), socially responsible investments, institutional characteristics and portfolio management jointly have a significant relationship with performance of mutual funds in Kenya. The hypothesis was rejected.

5.8 Discussion of Findings

The general objective of this study was to determine the relationship among SRI, portfolio management, institutional characteristics and performance of mutual funds in Kenya. This section presents a discussion of the results summarized in Appendix V. The discussion follows closely the results of test of each hypothesis.

5.8.1 Socially Responsible Investment and Performance

The first specific objective of the study was to assess the relationship between SRI and performance. This study hypothesized that the relationship between SRI and performance was not significant. As shown by Table 5.1, the best predicting hierarchical multiple regression equation was $ER = 0.117 – 0.043CL + 0.225ST+\varepsilon$ (CL was SRI exclusion or inclusion criteria while ST was SRI strategies) with $p < 0.05$. The first hypothesis was therefore rejected implying that a statistically significant positive relationship exist between SRI strategies and portfolio performance of mutual funds in Kenya while a statistically significant negative relationship exist between SRI exclusion or inclusion criteria and performance of mutual funds in Kenya. Mutual fund managers in Kenya should therefore be involved in more SRI strategies while at the same time reducing the number of SRI inclusion and exclusion criteria if they have to increase performance.

These results are consistent with other studies such as Diltz (1995) who looked at the effect of social screening on portfolio performance for the US stock market and concluded that employing environmental and military screens lead to positive performance, Kempf and Osthoff (2007) who studied the effect of socially responsible investment on portfolio performance and concluded that SRI results in high abnormal returns, and Brzeszczynski and Mclntosh (2011) who explored the performance of portfolios composed of British SRI stocks and indentified superior risk adjusted performance of SRI stocks. However, these findings contradict Bauer et al. (2005) and Gregory et al. (1997) who found that SRI has a negative relationship with performance of mutual funds.

5.8.2 Socially Responsible Investment and Portfolio Management

The second specific objective of this study was to assess the relationship between SRI and portfolio management of mutual funds in Kenya. This study hypothesized that the relationship between SRI and portfolio management was not significant. As shown by Table 5.2, the best predicting hierarchical multiple regression equation was PM = 3.137 – 0.229ST+ε (ST was SRI strategies) with $p < 0.05$ implying that SRI strategies significantly influence portfolio management. The second hypothesis was therefore rejected implying that a significant negative relationship exist between SRI and portfolio management of mutual funds in Kenya. For Kenyan mutual funds this implies that SRI will affect and complicate portfolio management process of asset allocation and investment style used by forcing these managers to actively follow the chosen assets. At the same time SRI will reduce portfolio diversification in Kenyan mutual funds and increase research cost incurred to track and select SRI compliant assets.

These results are consistent with Havemann and Webster (1999) and Stone et al. (1997) who concluded that SRI and portfolio management are negatively correlated due to the additional constraint such as diversification, the size and structure of investable universe, concentration and research costs incurred, that SRI introduces in portfolio management. These results however, contradict Bauer et al. (2005) findings that SRI does not affect portfolio management since both SRI and conventional portfolios follow the same management process.

5.8.3 Portfolio Management and Performance

The third specific objective of this study was to assess the relationship between portfolio management and performance of mutual funds in Kenya. This study hypothesized that the relationship between the two variables was not significant. As shown by Table 5.3, the best predicting Hierarchical multiple regression equation was $ER = 0.882 + 0.04PD - 0.035RC + \varepsilon$ (PD was Unsystematic risk while RC was the annual expenditure on research costs) with $p < 0.05$ implying that a statistically significant positive relationship exist between unsystematic risk and performance while a statistically significant negative relationship exist between annual expenditure on research costs and performance of mutual funds in Kenya. The third hypothesis was therefore rejected implying that a significant relationship exist between portfolio management and performance of mutual funds in Kenya. For the Kenyan fund managers this shows that the higher the unsystematic risk the higher the performance. At the same time, high expenditure on research costs result in low performance implying that fund managers must control these costs.

The above finding supports the study by Keim (1989) who concluded that the more actively a mutual fund is managed, the higher its performance and Agnew et al. (2003) who found that higher returns are most reliably achieved by lower expenses and that stock selection (asset allocation) had insignificant effects on performance in America. The positive relationship between unsystematic risk and performance is in line with the modern portfolio theory of Markowitz (1952) which concluded that the higher the risk, the higher the returns required to compensate for the incremental risk.

5.8.4 Socially Responsible Investment, Institutional Characteristics and Portfolio Management

The fourth objective of the study was to assess the moderating effect of institutional characteristics on the relationship between SRI and portfolio management. The study predicted that the relationship between SRI and portfolio management was not moderated by institutional characteristics of mutual funds in Kenya. From the results shown in Table 5.4, H_4 is accepted implying that the relationship between SRI and portfolio management is not moderated by institutional characteristics of mutual funds in Kenya. Therefore fund managers in Kenya may not need to be concerned with their firm's size, age or ownership structure when making SRI decisions.

These results contradict previous studies such as Chen et al. (2004) who investigated the influence of fund management firm characteristics on mutual fund management and performance and found that the degree of focus, the volume of assets under management and the number of funds offered by a fund management firm had a positive impact on fund management and performance. The results also contradict the work of Kacperczyk et al. (2005) who demonstrated that fund size and turnover determine the fund performance by influencing the portfolio management process. It is worth noting that none of the above studies had considered institutional characteristics as a moderating variable but rather had considered the pair wise relationship between institutional characteristics and portfolio management or between SRI and institutional characteristics.

5.8.5 Socially Responsible Investment, Portfolio Management and Performance

The fifth objective of the study was to assess the mediating effect of portfolio management on the relationship between SRI and performance. The null hypothesis held that the relationship between socially responsible investment and performance of mutual funds in Kenya is not intervened by the portfolio management. The results (adjusted $R^2 = 0.469$, $F = 30.975$, and $p < 0.05$) imply that there is a significant positive relationship between SRI, portfolio management and performance with SRI and portfolio management jointly explaining 46.7% of the variations in performance. From these results, H_5 is rejected implying that portfolio management has a statistically significant intervening effect on the relationship between SRI and portfolio performance of mutual funds in Kenya. The predicting equation is: $ER = -0.018 – 0.054PM + 0.208SRI + \varepsilon$.

Although previous studies have looked at the main relationship between SRI and performance (Jones, 1996; Kempf and Osthoff, 2007; Hamilton et al., 1993; Cortez et al., 2012), none has considered the fact that the relationship may not be direct but may be mediated by portfolio management implying that SRI affects portfolio management process which in turn influences performance. This may explain why the conclusion from previous studies on the nature of the relationship between SRI and performance of mutual funds has been contradictory.

5.8.6 Socially Responsible Investment, Institutional Characteristics, Portfolio Management and Performance

The sixth and last objective of the study was to assess the relationship between SRI, institutional characteristics, portfolio management and performance. The study predicted that the combined effect of SRI, institutional characteristics and portfolio management on

performance of mutual funds in Kenya was not significant. The results (adjusted $R^2 = 0.826$, $F = 25.604$, and $p < 0.05$) imply that there is a significant positive relationship between SRI, institutional characteristics, portfolio management and performance with SRI, institutional characteristics and portfolio management jointly explaining 82.6% of the variations in performance. From the results, H_6 is rejected implying that there is a statistically significant combined effect of SRI, institutional characteristics and portfolio management on performance of mutual funds in Kenya.

The concepts of SRI, institutional characteristics, portfolio management and performance have not been previously considered together as has been done in this study. Previous researchers (Jones, 1996; Kempf and Osthoff, 2007; Hamilton et al., 1993; Cortez et al., 2012) have looked at any two variables at a time and thereby ignoring the joint effect of all the variables considered together.

CHAPTER SIX: SUMMARY OF FINDINGS, CONCLUSION AND IMPLICATIONS

6.1 Introduction

This study set out to establish the relationship among socially responsible investments, institutional characteristics, portfolio management and performance of mutual funds in Kenya by testing six hypotheses that explored the four variables. This chapter presents a summary of findings from the descriptive statistics and for each research hypothesis, conclusion from these findings, study contributions and policy recommendations. The chapter also identifies the limitations of the study and future research directions.

6.2 Summary of Findings

Hypothesis one (H_1) explored the relationship between SRI and performance of mutual funds in Kenya. Results of hierarchical multiple regression show that there is a positive significant relationship ($p<0.05$) between performance and SRI strategies. Similarly there is a significant negative relationship ($p<0.05$) between performance and SRI exclusion or inclusion criteria. In general it can therefore be concluded that there is a significant relationship between SRI and performance resulting in the rejection of null hypothesis one.

Hypothesis two (H_2) explored relationship between SRI and portfolio management of mutual funds in Kenya. Results of this study indicate that the relationship between portfolio management and SRI is statistically significant ($p<0.05$) resulting in the rejection of the null hypothesis. Hypothesis three (H_3) explored the relationship between performance and portfolio management of mutual funds in Kenya. Results of hierarchical multiple regression analysis indicates there is a statistically significant relationship between portfolio management and performance of mutual funds in Kenya. The hypothesis is therefore rejected.

Hypothesis four (H_4) examined the moderating effect of institutional characteristics on the relationship between socially responsible investment and portfolio management. From the results of this study it is not possible to reject hypothesis four implying that institutional characteristics is not a significant moderating variable between SRI and portfolio management. Hypothesis five (H_5) tested the mediating effect of portfolio management on the relationship between SRI and performance. Results of this study indicate that portfolio management significantly predict performance even when SRI is controlled ($p<0.05$) implying that portfolio management has an intervening relationship between SRI and performance. The null hypothesis five is therefore rejected.

Hypothesis six (H_6) assessed the combined effects of socially responsible investments, institutional characteristics and portfolio management on performance of mutual funds in Kenya. The findings of this study show the overall model is statistically significant ($p<0.05$), implying that socially responsible investments, institutional characteristics and portfolio management jointly have a significant relationship with performance of mutual funds in Kenya. The null hypothesis six is rejected.

6.3 Conclusions of the Study

This study set out to determine the relationship among SRI, portfolio management, institutional characteristics and performance of mutual funds in Kenya. The study was anchored on modern portfolio theory and used positivistic philosophy in testing six quantitative hypotheses. Both primary and secondary data was collected from mutual funds that are either licensed by CMA or are members of ANDE. A response rate of 60.5% was reported.

The results of this study show that a good number of mutual funds in Kenya have adopted socially responsible investment with at least 63.8% of the respondent indicating some percent of SRI in their portfolio. The most common SRI strategy in Kenya is shareholder's advocacy followed by positive screening, negative screening and community based developments respectively. The main variable considered in positive screening by Kenyan mutual funds is company management structures while the most used negative screening criterion was non transparent corporate policies and practices. This implies that Kenyan mutual funds are mainly concerned with corporate governance of investee companies more than other SRI variables. It can also be concluded that most mutual funds in Kenya are locally owned managing less than 500 million shillings. However, majority of the mutual funds have been in operation for more than five years and thus enough data points were available for computation of the Sharpe ratio as discussed in section 3.8.1.

Most mutual funds in Kenya hold either equity or short term fixed income securities with the main factors considered in forming a portfolio being asset mix, sector/industrial classification, individual securities and diversification. Majority of the mutual funds in Kenya have established a research committee to track investment candidates while the most common transaction fee charged is management fee. It can also be concluded that portfolio return from mutual funds in Kenya is not very high with more than half reporting a negative Sharpe ratio implying that their returns are below government Treasury bill rate.

The rejection of the first hypothesis (H_1) implies there is a significant relationship between socially responsible investment and performance of mutual funds in Kenya. Since the relationship between SRI strategies and performance is positive, the more SRI strategies

adopted, the higher the performance of mutual funds. However, since there is a negative relationship between SRI exclusion/inclusion criteria and performance, then the more stringent the SRI screening process is, the less the performance of Kenyan mutual funds. Mutual fund managers in Kenya should therefore pursue socially responsible investment to increase performance. However, they should reduce to a minimum the number of constraining inclusion or exclusion criteria.

Hypothesis two (H_2) was also rejected implying a significant relationship exist between socially responsible investment and portfolio management of mutual funds in Kenya. Since this relationship is negative, the higher the SRI adoption in a mutual fund, the more constrained the portfolio management process of asset allocation, investment style and diversification. Mutual fund managers in Kenya who want to adopt SRI should therefore be prepared to allocate more time and effort to portfolio management.

The rejection of hypothesis three (H_3) imply a significant relationship exist between portfolio management and performance of mutual funds in Kenya. The key portfolio management components that explain this relationship are diversification and research costs. The conclusion is that the higher the unsystematic risk, the higher the performance of mutual funds. This is consistent with modern portfolio theory assumption that the higher the risk, the higher the returns required. It can also be concluded from this study that the higher the research costs incurred by the mutual fund, the lower the performance. This implies that mutual fund managers in Kenya should control the amount of research costs incurred while at the same time working on the diversification of their portfolio if they were to increase risk adjusted portfolio returns.

Failure to reject hypothesis four (H_4) imply that the relationship between socially responsible investment and portfolio management is not moderated by institutional characteristics of size, age and ownership structure. Mutual fund managers in Kenya who adopts SRI should consider its impact on portfolio management without being concerned with how large their portfolios are, for how long they have been operating or who their owners are.

The rejection of hypothesis five (H_5) shows that portfolio management has an intervening effect on the relationship between SRI and performance while the rejection of Hypothesis six (H_6) imply that socially responsible investments, institutional characteristics and portfolio management jointly have a significant effect on performance of mutual funds in Kenya. This implies that mutual fund managers in Kenya should keenly look at the portfolio management to clearly understand the relationship between SRI and performance.

6.4 Contributions of the Study Findings

The findings from this study contribute to the body of knowledge in the area of SRI, portfolio management, institutional characteristics and performance of mutual funds. This section highlights the study findings contribution to knowledge and benefits to mutual funds practice and policy.

6.4.1 Contributions to Knowledge

The results of this study add to existing knowledge in the area of SRI, portfolio management, institutional characteristics and performance of mutual funds in five main ways: The first major contribution is the determination of the relevant factors that are important in defining SRI in Kenya. Although three indicators (SRI philosophy, SRI inclusion and exclusion criteria

and SRI strategies) were used to measure SRI, results of hierarchical multiple regression show that SRI strategies of social screening, shareholder's advocacy and community based developments are the key indicators of SRI in Kenya. None of the literature reviewed in the area of SRI had attempted to determine the appropriate indicators of SRI.

The second contribution of this study is the use of DEA methodology for evaluating and comparing performance of mutual funds based on their financial and social costs and benefits. This method is an application of the categorical Data Envelopment Analysis (DEA) model proposed by Basso and Funari (2003), which allows for multiple inputs and outputs. The main benefit of this method is an empirically based estimate of the efficiency of mutual funds. Furthermore, the method is computationally tractable and easy to use software is readily available. Once the efficiency frontiers of mutual fund performance have been determined, the DEA methodology used in this study then provides another benefit, the comparison of competing mutual funds. Many of the researches carried out (see Kempf and Osthoff, 2007; Schwartz, 2003; Geczy *et al.*, 2005; Schueth, 2003) had used financial performance measures such as Sharpe ratio, CAPM, Jensen alpha or the Carhart model, all which ignore social benefits and costs.

The third contribution of the study findings is the determination of the relevant factors that are important in defining portfolio management in Kenya. Based on the literature reviewed, five indicators were identified as suitable measures of portfolio management. These included asset allocation, investment style, diversification, research costs and transaction fees charged. The strength of each of the measures in explaining variations in portfolio performance was then

tested with results indicating the main measures of portfolio management in Kenya to be the level of portfolio diversification and the annual expenditure on research costs.

The fourth contribution of the study is the test of the moderating effect of institutional characteristics on the relationship between SRI and portfolio management. Although some studies had looked at the effect of institutional characteristics on SRI (see Chen et al., 2004; Adamo et al., 2010), none had introduced portfolio management in the relationship. The findings of this study show that institutional characteristics have no moderating effect on the relationship between SRI and portfolio management.

Lastly, this study has helped in reducing the controversy on the relationship between SRI and performance by showing that the relationship is not direct but rather is intervened by portfolio management. This can explain why many researchers who have tested the relationship between SRI and performance of mutual funds have found contradictory results with some concluding the relationship between the variables to be positive (Jones, 1996; Diltz, 1995; Kempf and Osthoff, 2007; Brzeszczynski and Mclntosh, 2011), negative (Mallin et al., 1995) or not significant (Hamilton et al., 1993; Stone et al., 1997; Statman, 2000; Cortez et al., 2012). This study has shown that the effect of SRI on performance can best be understood by considering how SRI affects portfolio management first and then how portfolio management affects performance of the mutual funds.

6.4.2 Contributions to Managerial Policy and Practices

The findings of this study are useful to various stakeholders including investors, fund managers, corporate managers, regulators and the government. The effects of SRI on performance as documented in the study helps investors and fund managers when setting

investment objectives, setting investment constraints, constructing and monitoring portfolio. Since the findings of this study indicate that there is a positive relationship between SRI and performance, the fund managers therefore can justify including SRI in their portfolio.

This study helps corporate managers to understand the impact of their corporate social responsibility on the value of the firm. This is important because many companies spend part of the shareholders' wealth on social responsibility with the hope of creating social value and attracting socially responsible investors to the firm. Since the effect of the company's shares being screened out of many SRI funds is negative, corporate managers will do everything to ensure their companies securities are not screened out by mutual fund managers. This is true mainly because the findings of this study show that SRI inclusion or exclusion criteria is a significant indicator of SRI in Kenya.

Investment regulators in the country such as the Capital Market Authority (CMA) and the Retirement Benefit Authority (RBA) can use the findings in guiding the regulation process especially when setting limits on the type of investments fund managers can include in their portfolio and thereby establishing the fund managers' fiduciary responsibility towards their clients. The government can use the findings of this study as an input in policy formulation on SRI especially because of the potential contribution of the much needed capital by the sector.

6.5 Limitations of the Study

Although this study had some limitations, every effort was made to ensure that these limitations did not significantly affect the findings of the study. This study used a cross-sectional design where data was collected from asset managers once to get their views concerning the variables and constructs under study. Even though cross-sectional design is

effective in getting insight about the dynamics of the industry at a point in time, practices change over time such that longitudinal studies may result in better insights. Given the time and cost limitations, it was not possible to design this study that way.

Although the research exercise involved some contact with the respondents, there was little opportunity for direct observations of the events studied. Reliance on the reporting of the participants was thus inevitable. However, this is prone to the threat that the events reported are subject to systematic bias mainly from *expost* rationalisation by the respondents influenced by their wish to appear as belonging to a well run organization. This risk was however minimised by careful wording of the questions in the research instrument.

Lack of studies on SRI in the Kenyan market meant that a comparative analysis with local cases was not possible. However, results from this study were effectively compared with similar international studies.

6.6 Future Research Directions

There are a number of future research possibilities based on the findings of this study. As this was a cross-sectional research that studied SRI and portfolio management features at a particular point in time, other studies could use longitudinal research design to track changes over time.

This study used mutual funds as its context. Further studies could concentrate on individual investors' SRI attributes. This may be important especially because investors' utility functions are different such that decision making may differ between individual investors and mutual

funds managers. Further studies could also be done on other institutional investors such as pension schemes to determine the extent to which they practice socially responsible investment and how their returns are affected by such investment strategies.

Although the study found no moderating effect of institutional characteristics on the relationship between SRI and portfolio management, there could be other important moderators such as the individual investors' behaviour or their demographic characteristics. Such variables could not be considered in this study since the target was mutual funds as a whole. Future studies therefore could focus on individual investors and introduce additional moderating variables to the relationship.

The current study used a positivistic research philosophy to test quantitative hypotheses. Further research could be designed based on phenomenological paradigm using qualitative approach. Since some studies have documented that investors have different reasons for investing in SRI profiled mutual funds (Nilsson, 2009; Junkus and Berry, 2010), an interesting area for future research would be to find out the reasons why investors put their money in SRI mutual funds. Issues that could be focused on here include why some investors consider social responsibility over financial return and why some investors prefer the opposite. What reasons do socially responsible investors have for the choices and preferences that they have? Is it possible to change these preferences so that they invest more of their portfolio in SRI? Such questions can be answered through a qualitative research.

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APPENDICES

Appendix I: Questionnaire

Please respond to the following questions. The information obtained will be treated confidentially and for research purposes only. Your support and cooperation in filling the questionnaire will be highly appreciated.

PART A: BACKGROUND INFORMATION

Q1. Please indicate:

a) Your current position in the firm:

Chief Executive Officer ☐

Investment Manager ☐

Others ☐ Please specify_____

b) Name of the firm (optional)_____

c) The number of years that the firm has been in operation _____

d) The total amount of funds (in Ksh. Million) under the firm's management_____

Q2 Majority of the firm owners are: Local ☐ Foreign ☐

Q3a The type of fund under consideration is:

TYPE OF FUND	CHOOSE ONE
Equity fund	
Fixed income fund	
Balanced fund	
Money market fund	
Managed fund	
Socially responsible fund	
Others (Please specify)_____	

Q3b Is the fund licensed by the capital market authority? YES ☐ NO ☐

PART B: SOCIALLY RESPONSIBLE INVESTMENT (SRI)

Q4. What percentage of your entire portfolio is invested in socially responsible investment?

None: ☐ 1- 25% ☐ 26 – 50% ☐ - 75% ☐ – 100% ☐

Q5. Please indicate the proportion of your portfolio that is invested in the following:

	None	**Up to 10%**	**10 – 25%**	**25 – 50%**	**More than 50%**
(a) Investments that have high financial returns regardless of their social impacts					
(b) Investments that predominantly provide social returns but have a potential for profit making in the future					
(c) Investments that provide social returns and below market financial returns					
(d) Investments that provide social returns and at least market returns					
(e) Social purpose enterprises that focus on community based developments with specific benefits for particular groups					
(f) Philanthropy (Funding of charities and social change groups that rely on gifts)					

Q6. Please indicate the extent to which the following factors influence your investment objective

	Not at all	**To a small extent**	**To a moderate extent**	**To a large extent**	**To a very large extent**
(a) Maximum financial returns					
(b) Maximum social returns					
(c) Avoidance of socially unacceptable activities even if this compromises financial returns					
(d) Thematic investment in positive activities					
(e) Community based developments					
(f) Engagement with companies management on social, ethical, environment, governance and moral issues					

Q7. Some funds actively seek to support companies investing in socially responsible activities. Please indicate the extent to which the following issues are supported by your fund:

	Not at all	**To a small extent**	**To a moderate extent**	**To a large extent**	**To a very large extent**
(a) Reduction of global warming					
(b) Conservation of natural resources					
(c) Conservation of flora and fauna population					
(d) Human Welfare					
(e) Animal Welfare					
(f) Community development					
(g) Labour rights (right to unionization)					
(h) Company's management structure					
(i) Company's employee relations					
(j) Amount of executive compensation					
(k) Alternative energy					
(l) Environmental protection					
(m) Ethical employment practices					
(n) Healthcare					
(o) Healthy lifestyle					
(p) Pollution control					
(q) Recycling					

Q8. Some funds apply screens to avoid investing in unethical areas. Please indicate the extent to which your fund uses the following criteria in excluding investments from your portfolio:

	Not at all	**To a small extent**	**To a moderate extent**	**To a large extent**	**To a very large extent**
(a) Alcohol production					
(b) Alcohol retailing					
(c) Animal testing					
(d) Animal farming					
(e) Animal processing and retailing					
(f) Armaments (Weapons)					
(g) Environmental damage and pollution					
(h) Gambling services					
(i) Genetic modification					
(j) Nuclear processing					
(k) Oppressive regime					
(l) Pornography production and sales					
(m) Tobacco production					
(n) Tobacco retailing					
(o) Human rights abuses					
(p) Employee discrimination					
(q) Poor employee safety					
(r) Poor labour practices e.g. use of child labour					
(s) Poor union relations					
(t) Poor governance structures					
(u) Corporate policies and practices that are not transparent					

PART C: PORTFOLIO MANAGEMENT

Q9. Please state your current portfolio composition:

Asset	**0 - 20%**	**21– 40%**	**41- 60%**	**61 – 80%**	**81-100%**
Equity					
Short term government securities					
Treasury Bonds					
Short term fixed income securities					
Long term fixed income securities					
Real estate					
Others					

Please specify for others in Q9 _____

Q10. Within your investment process, rank (1 being the lowest and 5 the highest) the importance of the following in forming your investment portfolio:

Strategy	Asset Mix	Sector/Industry	Individual securities	Diversification	Others
Rank					

Please specify for others in Q10 _____

Q11. Please indicate the extent to which the following investment styles describe your portfolio management.

Investment style	**Not at all**	**To a small extent**	**To a moderate extent**	**To a large extent**	**To a very large extent**
a) Passive					
b) Active					
c) Top - Down					
d) Bottom - Up					
e) Value - Oriented					
f) Growth					
g) Large Capitalization					
h) Small Capitalization					
i) Socially Responsible					
j) Others					

Please specify for others in Q11 _____

Q12. Provide the following information on the research aspect in your mutual fund:

a) Do you have a research committee?	
b) What is the frequency of regular research meetings?	
c) What is the approximate number of securities generally followed?	
d) What is the average number of securities on your buy list?	
e) Provide your average annual expenditure on research cost in Ksh. Million	

Q13. Please indicate the extent to which the following fees are importance in your mutual fund.

Fees Category	**Not at all**	**To a small extent**	**To a moderate extent**	**To a large extent**	**To a very large extent**
a) Purchase fee					
b) Redemption fee					
c) Exchange fee					
d) Management fee					
e) Account fee					
f) Front – end load					
g) Back – end Load					
h) Others					

Please specify for others in Q13 _____

Appendix II: Mutual Funds in Kenya as at 31st December 2013

S.NO	CMA LICENSED MUTUAL FUND	S.NO	ANDE MEMBERS
1	African Alliance Kenya Equity Fund	1	ACCION International
2	African Alliance Kenya Fixed Income Fund	2	Acumen Fund
3	African Alliance Kenya Managed Fund	3	Africa Enterprise Challenge Fund
4	African Alliance Kenya Shilling Fund	4	Aga Khan Foundation
5	Amana Balanced Fund	5	APPFRICA
6	Amana Growth Fund	6	ATMS Foundation/AMSCO
7	Amana Money Market Fund	7	Bamboo Finance
8	British-American Balanced Fund	8	BDS Africa (an EWB Venture)
9	British-American Equity Fund	9	Calvert Foundation
10	British-American Income Fund	10	CapitalPlus Exchange
11	British-American Managed Retirement Fund	11	CARE
12	British-American Money Market Fund	12	Cherie Blair Foundation for Women
13	CIC Balanced Fund	13	Citi Foundation
14	CIC Equity Fund	14	Edge
15	CIC Fixed Income Fund	15	Emcor Securities
16	CIC Money Market Fund	16	Emerging Stars
17	Commercial Bank of Africa Equity Fund	17	Enablis
18	Commercial Bank of Africa Money Market Fund	18	Equity Group Foundation
19	Diaspora Bond Fund	19	Exclude
20	Diaspora Equity Fund	20	Fair Trade USA
21	Diaspora Money Market Fund	21	Feleman
22	Dyer and Blair Bond Fund	22	Grameen Foundation
23	Dyer and Blair Diversified Fund	23	Grassroots Business Fund
24	Dyer and Blair Equity Fund	24	Gray Ghost Ventures
25	Dyer and Blair Money Market Fund	25	Growth Africa
26	First Ethical Opportunities Fund	26	Heifer International
27	GenCap Eneza Fund	27	I-DEV International
28	GenCap Hazina Fund	28	Impact Finance
29	GenCap Hela Fund	29	Intellecap
30	Gencap Hisa Fund	30	Jacana Partners
31	GenCap Iman Fund	31	LGT Venture Philanthropy
32	ICEA Bond Fund	32	Low Carbon Enterprise Fund
33	ICEA Equity Fund	33	Lundin Foundation
34	ICEA Growth Fund	34	Mara Foundation
35	ICEA Money Market Fund	35	Mercy Corps
36	Madison Asset Balanced Fund	36	Omidyar Network
37	Madison Asset Bond Fund	37	Open Capital Advisors
38	Madison Asset Equity Fund	38	Potencia Ventures
39	Madison Asset Money Market Fund	39	responsAbility Investments AG
40	Madison Asset Treasury Bill Fund	40	Root Capital

41	Old Mutual Balanced Fund.	41	Root Change
42	Old Mutual Bond Fund	42	Santa Clara Global Social Benefit Incubator
43	Old Mutual East Africa Fund	43	Shell Foundation
44	Old Mutual Equity Fund	44	Solidaridad Networks
45	Old Mutual Money Market Fund	45	TechnoServe Inc.
46	Stanbic Balanced Fund	46	The Bill and Melinda Gates Foundation
47	Stanbic Equity Fund	47	The Ford Foundation
48	Stanbic Fixed Income Fund	48	The Lemelson Foundation
49	Stanbic Managed Prudential Fund	49	The MasterCard Foundation
50	Stanbic Money Market Fund	50	The Rockefeller Foundation
51	Standard Investment Balanced Fund	51	The Tony Elumelu Foundation
52	Standard Investment Equity Growth Fund	52	TriLinc Global
53	Standard Investment Fixed Income Fund	53	Value for Women
54	Suntra Balanced Fund	54	Village Capital
55	Suntra Equity Fund	55	Vita Voices Global Partnership
56	Suntra Money Market Fund	56	WEConnect International
57	Zimele Balanced Fund		
58	Zimele Money Market Fund		

Appendix III: Raw Data on Research Variables

MUTUAL FUND	AGE	SIZE	OWNERSHIP	SRI INVTS	INVTS PHILOSOPHY	SRI STRATEGY	SRI	ASSET ALLOCATION	INVTS STYLE	UNSYS RISK	TRANSACTION FEES	RESEARCH COSTS
		Sh. 'M'								'000'		Sh 'M'
DMU-ANDE-01	35	280	1	4	2.80	5.00	4.39	1.94	5.00	0.0303	1.00	0.9
DMU-ANDE-02	7	108	2	5	3.60	4.00	3.84	2.17	4.00	0.0457	1.00	2
DMU-ANDE-03	33	300	2	5	2.80	4.00	4.09	1.89	4.00	0.0735	1.00	0
DMU-ANDE-04	15	300	2	2	3.60	4.33	4.66	2.50	4.33	-0.0024	1.00	0
DMU-ANDE-05	12	11	1	4	2.80	2.83	2.67	1.22	2.83	0.0040	1.47	1
DMU-ANDE-06	5	1000	1	5	1.80	4.33	3.31	1.56	4.33	0.0105	1.12	0
DMU-ANDE-07	6	91	2	5	3.00	3.67	3.00	1.44	3.67	0.0110	1.24	0.5
DMU-ANDE-08	10	100	2	5	3.20	4.00	3.81	1.83	4.00	0.0534	1.00	0
DMU-ANDE-09	20	1700	2	5	3.60	3.67	3.47	2.00	3.67	0.0221	1.24	0
DMU-ANDE-10	6	85	2	1	3.20	3.00	2.19	2.06	3.00	0.0139	1.29	1
DMU-ANDE-11	10	2000	2	5	2.00	2.83	4.02	2.11	2.83	0.0329	1.24	1.5
DMU-ANDE-12	60	500	2	5	2.60	3.17	3.24	1.72	3.17	0.0022	1.00	0
DMU-ANDE-13	18	1000	2	5	3.20	4.50	3.47	1.39	4.50	0.0454	1.00	0
DMU-ANDE-14	4	500	1	5	2.00	3.83	3.34	1.67	3.83	0.1872	1.47	1
DMU-ANDE-15	4	190	2	5	2.00	4.33	4.39	1.94	4.33	0.4157	1.00	0.9
DMU-ANDE-16	10	150	2	5	3.00	3.67	3.35	1.17	3.67	0.0424	1.65	2
DMU-ANDE-17	6	500	1	4	3.40	3.67	3.26	1.72	3.67	0.0185	1.00	0
DMU-ANDE-18	8	200	1	4	3.40	3.67	3.24	1.72	3.67	0.2152	1.00	0
DMU-ANDE-19	16	300	1	4	4.20	3.67	3.31	1.56	3.67	0.1569	1.00	0
DMU-CMA-01	10	97000	2	1	2.00	3.50	1.18	1.17	3.50	0.0123	2.29	4
DMU-CMA-02	10	97000	1	2	2.40	2.67	1.29	1.06	2.67	0.0046	1.59	4
DMU-CMA-03	10	97000	2	1	1.80	2.67	1.00	1.17	2.67	-0.0012	1.47	4
DMU-CMA-04	6	380	1	1	3.00	4.17	3.79	2.56	4.17	0.0171	1.71	1
DMU-CMA-05	25	40000	1	2	3.60	3.67	4.44	3.50	3.67	0.0032	1.76	5
DMU-CMA-06	5	3000	1	1	2.00	2.83	2.68	1.94	2.83	-0.0057	1.35	4.5
DMU-CMA-07	25	40000	1	2	3.60	3.67	4.44	3.33	3.67	0.0858	1.65	5
DMU-CMA-08	25	40000	1	1	3.40	3.83	4.12	3.33	3.83	0.0090	1.88	5

MUTUAL FUND	AGE	SIZE	OWNERSHIP	SRI INVTS	INVTS PHILOSOPHY	SRI STRATEGY	SRI	ASSET ALLOCATION	INVTS STYLE	UNSYS RISK	TRANSACTION FEES	RESEARCH COSTS
		Sh. 'M'								'000'		Sh 'M'
DMU-CMA-09	25	40000	1	1	3.80	3.67	2.57	2.22	3.67	0.0153	1.88	5
DMU-CMA-10	5	3000	1	1	2.00	2.83	2.68	2.11	2.83	0.0058	1.35	4.5
DMU-CMA-11	6	380	1	2	1.60	4.33	3.00	1.56	4.33	0.0474	2.65	1
DMU-CMA-12	5	380	1	2	3.60	3.67	2.62	1.39	3.67	0.0265	1.24	1
DMU-CMA-13	20	40000	1	1	4.80	4.33	3.70	3.17	4.33	0.0133	2.12	5
DMU-CMA-14	25	40000	1	2	3.60	3.67	4.44	3.33	3.67	0.0834	1.82	5
DMU-CMA-15	10	336	1	1	1.20	2.83	1.00	1.00	2.83	0.0335	1.71	2.5
DMU-CMA-16	10	805	1	1	1.20	2.83	1.00	1.00	2.83	0.0687	1.71	2.5
DMU-CMA-17	5	2000	2	5	2.40	3.50	3.68	2.56	3.50	0.0123	1.24	0
DMU-CMA-18	3	500	1	2	2.40	2.83	1.84	1.28	2.83	0.0167	1.82	2
DMU-CMA-19	5	3000	1	1	2.00	2.83	2.77	2.11	2.83	0.0018	1.35	4.5
DMU-CMA-20	3	3400	1	2	3.20	4.33	1.96	1.33	4.33	0.0007	1.65	2.5
DMU-CMA-21	6	380	1	3	3.60	3.50	2.20	1.33	3.50	0.0093	1.12	1
DMU-CMA-22	3	3400	1	2	2.80	4.33	1.99	1.39	4.33	0.0001	1.65	2.5
DMU-CMA-23	10	1700	1	1	1.20	2.83	1.00	1.00	2.83	0.0385	1.71	3.5
DMU-CMA-24	10	97000	1	1	1.20	3.17	1.58	1.39	3.17	-0.0021	1.59	4
DMU-CMA-25	3	3400	1	1	2.80	4.33	1.96	1.33	4.33	0.0001	1.65	2.5
DMU-CMA-26	3	3400	1	2	3.00	4.33	1.96	1.39	4.33	0.0091	1.65	2.5
DMU-CMA-27	14	3000	2	1	2.00	2.33	1.00	1.28	2.33	0.0046	1.18	3.5
DMU-CMA-28	10	36000	1	1	1.20	3.17	1.55	1.72	3.17	0.0009	1.12	3.5
DMU-CMA-29	60	36300	1	2	2.00	3.67	1.56	1.78	3.67	0.0078	1.41	0
DMU-CMA-30	60	36300	1	2	2.20	3.50	1.29	1.89	3.50	0.0127	1.47	0
DMU-CMA-31	14	3000	2	1	2.00	2.67	1.26	1.22	2.67	0.0224	1.18	2
DMU-CMA-32	14	3000	2	1	2.00	2.33	1.00	1.33	2.33	0.0042	1.18	2
DMU-CMA-33	14	3000	2	1	1.20	2.33	1.00	1.22	2.33	0.0047	1.18	2
DMU-CMA-34	18	1000	1	2	3.40	3.17	3.38	2.22	3.17	-0.0001	2.65	1
DMU-CMA-35	10	36000	1	1	2.00	2.67	1.95	1.44	2.67	0.0000	1.82	3.5
DMU-CMA-36	10	36000	1	1	2.40	3.17	2.15	1.11	3.17	-0.0045	1.41	3.5
DMU-CMA-37	21	500	1	4	2.60	3.33	1.40	1.33	3.33	0.0172	2.88	2

MUTUAL FUND	AGE	SIZE	OWNERSHIP	SRI INVTS	INVTS PHILOSOPHY	SRI STRATEGY	SRI	ASSET ALLOCATION	INVTS STYLE	UNSYS RISK	TRANSACTION FEES	RESEARCH COSTS
		Sh. 'M'								**'000'**		**Sh 'M'**
DMU-CMA-38	8	550	1	2	3.20	2.83	2.08	1.39	2.83	0.0079	1.00	2
DMU-CMA-39	18	1000	1	2	3.40	3.33	3.26	2.17	3.33	0.0184	2.65	2
DMU-CMA-40	8	550	1	2	1.60	3.17	1.68	1.22	3.17	0.0001	1.24	6
DMU-CMA-41	10	306	1	1	1.20	2.83	1.00	1.00	2.83	0.0091	1.71	3.5
DMU-CMA-42	10	706	1	2	3.00	4.00	3.02	1.89	4.00	0.0180	1.88	1
DMU-CMA-43	10	706	1	2	3.00	4.00	3.02	1.89	4.00	0.0003	1.88	1
DMU-CMA-44	10	706	1	2	3.00	4.00	3.02	1.83	4.00	0.0019	1.59	1
DMU-CMA-45	10	36000	1	1	2.00	2.83	1.76	1.44	2.83	0.0032	1.82	3.5
DMU-CMA-46	10	36000	1	1	2.00	4.00	3.36	1.56	4.00	-0.0022	2.12	3.5
DMU-CMA-47	6	380	1	3	2.80	4.17	3.06	1.22	4.17	0.0129	1.00	1
DMU-CMA-48	3	500	1	3	2.80	3.33	1.41	1.33	3.33	0.0118	2.35	2
DMU-CMA-49	4	100	1	5	1.20	3.67	3.10	2.00	3.67	0.0125	3.12	0
DMU-CMA-50	5	3000	1	1	2.00	2.83	2.68	2.11	2.83	0.0090	1.35	4.5

Appendix IV: DEA Inputs, Outputs and Efficiency Ratio Score of Mutual Funds in Kenya

	DMU Name	Fees Charged	Age	Log of Total_Asset	Std Deviation	Sharpe Ratio	Ethical Coefficient	Efficiency Ratio
1	DMU-CMA-20	2.375	3	9.53	0.57	19.72	4	1
2	DMU-CMA-25	1.75	3	9.53	0.8	8.17	4	1
3	DMU-CMA-26	2.375	3	9.53	3.35	0.92	4	1
4	DMU-CMA-22	2.375	3	9.53	0.34	25.9	4	1
5	DMU-ANDE-01	1	8	8.45	16.28	-0.45	5	1
6	DMU-CMA-49	2	4	8	6.62	-1.86	4	1
7	DMU-ANDE-02	1	7	8.03	6.62	-1.86	4.5	1
8	DMU-ANDE-04	1	15	8.48	1.2	-8.48	5	1
9	DMU-ANDE-08	1	10	8	24.57	-0.85	4.5	1
10	DMU-CMA-06	1.75	5	9.48	-10.26	2.54	2.75	1
11	DMU-ANDE-06	1.25	5	9	30.54	0.85	5	1
12	DMU-ANDE-15	1	4	8.28	62.74	-0.18	5	1
13	DMU-CMA-47	1	6	8.58	2.4	0.82	4.25	1
14	DMU-ANDE-14	2	4	8.7	12.37	-0.17	4	0.928727576
15	DMU-CMA-12	1.5	5	8.58	4.83	0.53	3.75	0.894931626
16	DMU-CMA-04	2.5	6	8.58	3.37	-0.05	4.25	0.869841914
17	DMU-CMA-11	4.5	6	8.58	6.97	-0.1	4	0.825008959
18	DMU-CMA-34	4.5	18	9	1.07	0.72	3.5	0.822569064
19	DMU-ANDE-07	1.5	6	7.96	33.48	-0.66	4	0.819140689
20	DMU-ANDE-03	1	33	8.48	8.67	-0.78	4.25	0.818978926
21	DMU-CMA-43	2.875	10	8.85	1.98	-5.45	4	0.816237387
22	DMU-ANDE-13	1	18	9	20.67	-0.03	4	0.800397541
23	DMU-CMA-44	2.25	10	8.85	2.76	-4.25	4	0.797571511
24	DMU-ANDE-16	2.375	10	8.18	19.82	-0.03	3.5	0.79509091
25	DMU-CMA-42	2.875	10	8.85	4.76	0.91	4	0.78015178
26	DMU-CMA-39	4.5	18	9	3.77	-0.2	3.5	0.773302822
27	DMU-CMA-21	1.25	6	8.58	2.14	0.33	2.75	0.763094649
28	DMU-ANDE-09	1.5	20	9.23	16.28	-0.45	3.75	0.703268747
29	DMU-ANDE-11	1.5	10	9.3	19.82	-0.03	3.75	0.700937529
30	DMU-CMA-29	1.875	60	10.56	3.73	-0.83	3.75	0.661927218
31	DMU-CMA-46	3.375	10	10.56	5.48	-1.37	4	0.650842751
32	DMU-CMA-13	3.375	20	10.6	3.49	-2.64	3.75	0.649153197
33	DMU-CMA-30	2	60	10.56	3.58	-2.95	3.75	0.648295671
34	DMU-CMA-19	1.75	5	9.48	2.54	-7.28	2.75	0.647898709
35	DMU-CMA-17	1.5	5	9.3	4.32	0.37	3	0.640471974
36	DMU-CMA-08	2.875	25	10.6	2.54	-7.28	3.5	0.634888301
37	DMU-CMA-50	1.75	5	9.48	3.93	0.54	2.75	0.634073271
38	DMU-CMA-10	1.75	5	9.48	5.28	-4.4	2.75	0.629734205
39	DMU-CMA-40	1.5	8	8.74	11.54	-0.15	2.5	0.561686311
40	DMU-CMA-48	3.875	3	8.7	3.66	-0.84	2.25	0.526141243
41	DMU-CMA-18	2.75	3	8.7	4.32	0.37	1.5	0.524656496
42	DMU-CMA-45	2.75	10	10.56	3.51	-2.09	2.5	0.510983061
43	DMU-CMA-01	3.75	10	10.99	2.63	-0.18	3	0.509224822
44	DMU-CMA-24	2.25	10	10.99	3.32	-2.12	2.75	0.497465213

45	DMU-ANDE-17	1	6	8.7	2.88	-1.97	2	0.491207503
46	DMU-CMA-28	1.25	10	10.56	0.46	-21.24	2.25	0.491028178
47	DMU-CMA-05	3.125	25	10.6	3.49	-2.64	3	0.482130783
48	DMU-CMA-31	1.375	14	9.48	4.5	0.67	1.5	0.472552184
49	DMU-CMA-07	2.875	25	10.6	9.09	0.54	3	0.471782164
50	DMU-CMA-14	2.75	25	10.6	8.85	0.05	3	0.466725232
51	DMU-CMA-09	2.875	25	10.6	5.28	-4.4	2.75	0.466352878
52	DMU-ANDE-05	2	12	7.03	4.15	-2.79	1.75	0.465363859
53	DMU-CMA-38	1	8	8.74	4.4	-3.09	2	0.42689039
54	DMU-ANDE-12	1	60	8.7	5.1	-0.65	2	0.423596425
55	DMU-ANDE-10	1.625	6	7.93	12.37	-0.17	1.5	0.422984159
56	DMU-ANDE-18	1	8	8.3	12.37	-0.17	2	0.409443896
57	DMU-ANDE-19	1	8	8.48	12.37	-0.17	2	0.409443896
58	DMU-CMA-41	2.5	10	8.49	3.77	-0.16	1.75	0.40761905
59	DMU-CMA-37	4.5	21	8.7	3.66	-0.84	2.25	0.393495337
60	DMU-CMA-15	2.5	10	8.53	4.88	-1.05	1.75	0.389551872
61	DMU-CMA-16	2.5	10	8.91	8.28	0.32	1.75	0.373466774
62	DMU-CMA-35	2.75	10	10.56	0.17	-42.28	2	0.371751955
63	DMU-CMA-23	2.5	10	9.23	5.53	-0.22	1.75	0.364950828
64	DMU-CMA-02	3.75	10	10.99	3.32	-2.12	1.5	0.331643475
65	DMU-CMA-36	1.625	10	10.56	5.54	-1.79	2	0.324174227
66	DMU-CMA-32	1.375	14	9.48	2.11	0.27	1	0.255381016
67	DMU-CMA-33	1.375	14	9.48	1.2	-3.67	1	0.206028856
68	DMU-CMA-27	1.375	14	9.48	2.55	-2.85	1	0.2
69	DMU-CMA-03	2.5	10	10.99	5.48	-1.36	1.25	0.157525635

Appendix V: Summary of Results of Hypothesis Testing

Study Objective	Hypothesis	Results	Implications
To determine the relationship between socially responsible investment and performance of mutual funds in Kenya	**Hypothesis 1:** The relationship between socially responsible investment and performance of mutual funds in Kenya is not significant	Adjusted R^2 = 0.694, F= 52.528, $p< 0.05$ There is a significant strong positive relationship between SRI and portfolio performance with SRI explaining 69.4% of the variations in portfolio performance.	From the results H_1 is rejected implying that there is a statistically significant relationship between SRI and portfolio performance of mutual funds in Kenya. The predicting equation is: $ER = 0.117 – 0.043CL + 0.225ST + \varepsilon$
To determine the relationship between socially responsible investment and portfolio management of mutual funds in Kenya	**Hypothesis 2:** The relationship between socially responsible investment and portfolio management of mutual funds in Kenya is not significant	Adjusted R^2 = 0.092, F = 7.873, $p< 0.05$ There is a significant weak positive relationship between SRI and portfolio management with SRI explaining 9.2% of the variations in portfolio management.	From the results H_2 is rejected implying that there is a statistically significant relationship between SRI and portfolio management of mutual funds in Kenya. The predicting equation is: $PM = 3.137 – 0.229X_3 + \varepsilon$
To determine the relationship between portfolio management and performance of mutual funds in Kenya	**Hypothesis 3:** The relationship between portfolio management and performance of mutual funds in Kenya is not significant	Adjusted R^2 = 0.190, F = 4.341, $p< 0.05$ There is a significant positive relationship between portfolio management and portfolio performance with portfolio management explaining 19% of the variations in portfolio performance	From the results H_3 is rejected implying that there is a statistically significant relationship between portfolio management and portfolio performance of mutual funds in Kenya. The predicting equation is: $PM= 0.882 +0.00004PD – 0.035RC + \varepsilon$
To determine the effect of institutional characteristics on the relationship between socially responsible investment and portfolio management	**Hypothesis 4:** The relationship between socially responsible investment and portfolio management is not moderated by institutional characteristics	$\Delta R^2 = 0.026$, $p > 0.05$ The change in the variation in portfolio management explained by introduction of the institutional characteristics is statistically insignificant	From the results, H_4 is accepted implying that institutional characteristics has no moderating effect on the relationship between SRI and portfolio management of mutual funds in Kenya.
To determine the effect of portfolio management on the relationship between socially responsible investment and performance.	**Hypothesis 5:** The relationship between socially responsible investment and portfolio performance of mutual funds in Kenya is not intervened by the portfolio management	Adjusted R^2 = 0.469, F = 30.975, $p< 0.05$ There is a significant positive relationship between SRI, portfolio management and portfolio performance with SRI and portfolio management jointly explaining 46.7% of the variations in portfolio performance	From the results, H_5 is rejected implying that portfolio management has a statistically significant intervening effect on the relationship between SRI and portfolio performance of mutual funds in Kenya. The predicting equation is: $ER = -0.018 – 0.054PM + 0.208SRI + \varepsilon$

Study Objective	Hypothesis	Results	Implications
To determine the combined effects of socially responsible investment, institutional characteristics and portfolio management on performance.	**Hypothesis 6:** The combined effect of socially responsible investment, institutional characteristics and portfolio management on performance of mutual funds in Kenya is not significant	Adjusted R^2 = 0.826, F = 25.604, $p < 0.05$ There is a significant positive relationship between SRI, institutional characteristics, portfolio management and portfolio performance with SRI, institutional characteristics and portfolio management jointly explaining 82.6% of the variations in portfolio performance	From the results, H_6 is rejected implying that there is a statistically significant combined effect of SRI, institutional characteristics and portfolio management on portfolio performance of mutual funds in Kenya. The predicting equation is: $ER = 0.935 + 0.060IS - 0.078FS - 0.216OS + \varepsilon$