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A South African Perspective on the Investment Performance of Ethical Funds compared to Conventional Funds and Investor behavior as regards Ethical Funds.

EBRAHIM PATEL

A thesis submitted to the Faculty of Commerce Law and Management, University of the Witwatersrand, Johannesburg, in fulfilment of the Degree of Doctor of Philosophy.

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(96:1) *Recite in the name of your Lord Who created,*

(96:2) *Created man from a clot of congealed blood*.

(96:3) *Recite: and your Lord is Most Generous,*

(96:4) *Who taught by the pen,*

(96:5) *Taught man that which he knew not.*

The Holy Quran, Chapter 96, Verses 1 – 5[1]

Acquire knowledge and impart it to the people.

The Prophet Muhammad (Peace Be Upon Him) - Al-Tirmidhi, Hadith 107[2]

(20:114) *O my Lord! Increase me in knowledge*.

The Holy Quran, Chapter 20, Verse 114[3]

[1] Translation from: https://islamicmisconceptions.wordpress.com/2013/03/23/knowledge-education/
[2] Translation from: https://islamicmisconceptions.wordpress.com/2013/03/23/knowledge-education/
[3] Translation from: https://islamicmisconceptions.wordpress.com/2013/03/23/knowledge-education/

Declaration of Authorship

I, Ebrahim Patel

declare that this thesis:

"A South African Perspective on the Investment Performance of Ethical Funds compared to Conventional Funds and Investor behaviour as regards Ethical Funds."

and the work presented in it are my own and has been generated by me as the result of my own original research:

I confirm that:

1. This work was done wholly or mainly while in candidature for a PhD at Wits Business School;

2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;

3. Where I have consulted the published work of others, this is always clearly attributed;

4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

5. I have acknowledged all main sources of help;

6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

7. None of this work has been published before submission



_____

Signed: Ebrahim Patel

Date: 23 February 2016

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Abstract

Ethical investing has become increasingly prevalent in recent years and mirrors a rise in shareholder activism, consumer ethics and corporate social responsibility. Shariah funds are a subset of ethical funds. The rise in popularity of ethical funds has raised questions as to whether ethical funds perform better than conventional funds, and whether ethical funds are riskier than conventional funds. A number of studies have been carried out in different countries utilising the traditional performance measures as well as factor models to determine the risk profile and returns of ethical funds compared to conventional funds. These studies have shown that the results are country specific and hence each country needs to be analysed separately.

The aim of this study is to investigate ethical funds (incorporating Shariah funds) in the South African context. The study examines the performance and risk profile of ethical funds relative to conventional funds utilising traditional performance methods as well as the CAPM model and Fama French 3-factor model. Furthermore, the study determines the factors that influence investors to invest in ethical funds and to examine their investment preferences when choosing between conventional funds and ethical funds through a survey of Muslim investors. Finally, the study examines the role of advertising in ethical fund investment and investigates whether the marketing material of ethical funds is aligned to investor requirements by utilising content analysis to compare the fact sheets of various mutual funds for the presence of factors identified as important by investors.

The empirical results show that conventional funds outperformed ethical funds with a greater variability of return over a truncated time period. Both ethical and conventional funds were driven primarily by the market return with no clear style bias. In fact, ethical funds had a stronger beta to the ALSI than to the JSE SRI index.

The qualitative analysis showed that the sampled investors perceived conventional funds as offering better returns, but being more risky. The sampled investors were

willing to undertake financial sacrifice in order to invest according to their faith. The most important source of information regarding investments was cited as professional advice, followed by word of mouth and advice from family and friends. Advertising came in behind these factors and was not an influential source of information for the sampled investors. The factors most important to investors when deciding to invest in a fund was the philosophy of the fund (i.e. it's investment strategy or ideology) followed by the risk profile of the fund and past returns of the fund.

The content analysis showed that the factsheets of South African mutual funds were aligned to the factors identified by the sample of investors as most important with influencing their decision to invest. Moreover, conventional funds focused more on returns than risk, with ethical funds focusing more on risk than return – thus funds tended to emphasise their strong points most in their factsheets.

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Chapter 1

1.1 Introduction

This chapter introduces the thesis by presenting the context of the study, research problem/s and research objectives. The chapter is structured as follows: Section 1.2 presents the context of the study. Section 1.3 presents the problem statement. Section 1.4 provides research questions. Section 1.5 presents the contribution to the body of knowledge. Section 1.6 presents the benefits of the study and Section 1.7 presents the structure of the thesis. The chapter summary concludes the chapter.

1.2. Context of the study

In the recent past, there has been an increase in the number of mutual funds that invest according to social, political and religious criteria. For example, in South Africa, there are currently five Shariah equity funds, up from only two in the late 1990's, as well as a Socially Responsible Investing ("SRI") index on the JSE. There are various reasons advanced for this increase including growth in investors' consciousness on ethical issues, growth in the trend towards corporate social responsibility, growing evidence that ethical funds produce good returns, growth in business ethics, growth of advertising of ethical funds, greater media exposure, growth of sustainability indices that only include ethical companies and growth of national social investment organisations, (Schwartz, 2003).

Schwartz (2003) categorises funds with religious screens, such as Shariah funds, as a subset of ethical funds Schwartz (2003) further states that there are a variety of ethical funds. Some funds focus on "sin" screens such as alcohol and tobacco, other funds focus on social issues such as child labour, while others utilize religious screens. In some cases there is a combination of different types of ethical funds. When constructing an ethical fund there are two types of screens: one type is an exclusionary screen where stocks with certain characteristics are left out and the other is an inclusionary screen where stocks with certain characteristics are included. Screening represents additional criteria when constructing a fund portfolio compared to conventional funds. Both conventional and ethical funds utilize the same financial analysis tools for stock selection and the addition of a screen means that ethical funds have certain additional characteristics relative to conventional funds.

Selecting, applying and reporting screens of socially responsible investments poses a challenge for companies, investors and fund managers (Rhodes, 2010). Investors are often not clear about what constitutes an ethical investment, implying a lack of reliable information or clarity on the screens applied by ethical funds (Rhodes, 2010). Furthermore, investment fund managers face difficulty in defining investment screens and confirming adherence to them, however, investors often weigh up the ethical screen offered by a fund with their perception of the funds ability to adhere to the screen (Rhodes, 2010). Viviers et al., (2008) examined the responsible investing environment in South Africa and note that in addition to widely accepted screens internationally, in South Africa, social issues such as Black Economic Empowerment (BBE) and social infrastructure development are used for additional screens.

Establishing the exact size of the socially responsible investing market in South Africa is complicated given that such investment is given a wide array of diverse definitions (Viviers et al, 2008). Overall, there are two major issues relating to the screening aspect of ethical funds, namely: Are the screens truly representative of the philosophy they claim to be promoting? Secondly, have the screens been directly or indirectly infringed? In order to have transparency in ethical fund screens, the screens would need to be clearly defined, the source of the information used in applying the screens would need to be identified and the parties that decide whether the screens have been met must be identified. A review undertaken of several religious funds revealed the vagueness with which screens were defined (Schwartz, 2003).

There may be a need for an effective audit mechanism which can verify the compliance of both firms and funds to a set of ethical criteria. In the absence of such a mechanism, investors face significant information asymmetry whereby they do not know if their preferred ethical screens are being implemented, or if firms that report on their ethical performance are doing so accurately (Rhodes, 2010). Current research indicates that ethical funds may not actually behave ethically and that stock selection for ethical funds may not actually differ from that of conventional funds (Rhodes, 2010). Benson et al., (2006) found that while ethical funds do take different industry positions, there is little difference in the stock picking ability of ethical fund managers as compared to conventional fund managers.

However, Mueller (1994) hypothesised that any deviation in ethical standards away from the norms of the surrounding culture should be costly, and hence result in ethical funds performing worse than conventional funds. Mueller (1994) proved this hypothesis in a study of ten mutual funds that had ethical screens in the US. Studies done on the performance of ethical funds relative to conventional funds in other countries deliver mixed results. The lack of a common basis for comparison of ethical investment screens, and "information asymmetry" may explain the mixed results obtained from comparing ethical funds (Rhodes, 2010). It is however, unclear why some investors would prefer to invest in ethical funds while others stick to investing in conventional funds.

McLachlan and Gardner (2004) note that there are important differences between socially responsible investors and conventional investors. They find that the lack of a set of universally defining principles to classify socially responsible investors makes it difficult to identify them. Louche et al., (2012) identify six characteristics of faith based investing. Thus, faith based investors do not perceive investing as being contradictory to their religious beliefs, religious values are strong drivers of their investment activities, there is a strong community aspect, they are the pioneers of impact investing, practices vary across regions and there are difficulties associated with implementing faith based investment initiatives. However, faith based investors have much in common with secular socially responsible investors.

The flow of funds into ethical or conventional funds may be influenced by fund advertising. Jain and Wu (2000) find that advertising does not signal superior performance of a particular fund, but that the purpose of advertising is to attract new money to the advertised funds. Cooper et al., (2005) found that the inflows to funds that changed their names to reflect current "hot" investment styles experienced an average 28% increased flow of funds after changing their name, even though there was no improvement in performance. They conclude that investors are irrationally influenced by cosmetic effects.

Arteaga et al., (1998) examine two strategies employed by new funds to market themselves and attract flow. One of the methods is incubation, whereby a fund remains small and private to develop a track record and then advertises the performance in the closed period. The second method is selective attention, which

directs funds allocated to “special situations” to new funds. They find that both strategies lead to large inflows of funds, while the performance of the funds declines to a median value as they increase in size. Nilsson (2008) found that women and better educated investors were more likely to invest a greater proportion of their funds into ethical investments. He found that pro-social attitudes and financial perceptions were linked when socially responsible investing was considered by investors. Aydogdu and Wellman (2011) find that within a fund family, the flagship fund is affected differently to the other funds in the family. They also found that advertising is more successful in attracting inflows during a bear market. The question that still remains is whether advertising has any bearing on the decision made by investors on whether to invest in ethical or conventional funds.

The aim of this study is threefold: One, to investigate whether there is a significant difference between performance, risk profile and style bias of conventional and ethical funds; Two, to establish which of the factors identified by Schwartz (2003), as well as other factors, significantly influence investors to invest in ethical funds as well as investors risk return preferences with regard to ethical and conventional funds and three, to examine the content of mutual fund factsheets in light of the factors that investors deem important to be included in such factsheets. Ethical funds, for the purposes of this study, will include Shariah funds as per Shwartz (2003), Rhodes (2010) and Viviers et al (2008).

1.3 Problem statement

Wealth creation and investment performance are the key drivers of investment decision making (Statman, 2000). One of the factors identified by Schwartz (2003) that drives investors into ethical funds is that ethical funds perform as well or better than conventional funds in the US. However, research on the funds’ performance shows mixed results in terms of whether ethical funds outperform conventional funds. In fact, the results seem to depend on the country of research. For example, Schueth (2003) finds that ethical funds perform as well as conventional funds in the US. Cummings (2000) finds no evidence that ethical funds perform better than conventional funds in Australia. Jones et al., (2007) find that ethical funds underperform in the Australian market. Bauer et al (2007) find that there is no evidence that ethical funds outperform conventional funds in Canada. In Spain, Fernandez-Izquierdo and Matallin-Saez (2007) find that ethical funds perform

comparably if not better than conventional funds and Cortez et al (2009) finds that on a sample of European socially responsible funds that the performance of ethical funds is comparable to that of conventional funds.

Despite the fact that ethical funds underperform conventional funds in Australia, there is growing interest in ethical investments in Australia (Jones et al., 2007) Conversely, despite the favourable performance of ethical funds relative to conventional funds in Spain, the take up of ethical investments in Spain lags that of other European countries (Lozano et al., 2006).The mixed results may be an indication that investors in different markets do not understand what ethical funds are and what they should be or the definition of ethical fund is country specific.

The above analysis shows that most studies on ethical fund performance are sample specific (Bauer et al., 2007). Bauer et al. (2007) suggest that research should focus on previously unexplored countries, such as South Africa. Sakuma and Louche (2008) argue that it is important to carefully translate and reinterpret SRI practice when adopting it into a new context. Therefore, there is a need to examine the performance of ethical funds relative to conventional funds in different countries, as research findings in one market do not seem to apply to other markets. Shi and Wang (2011) state that in the arena of international business, culture focused research is viewed as increasingly important. Several models have been established to understand cultural differences, with the most prominent model being the Hofstede model (Shi and Wang, 2011). Therefore, in investing, investor behaviour and performance returns, it will be useful to understand how South Africa differs or relates to other countries in which research on ethical funds has been conducted.

Hofstede (2015) has identified six dimensions to understand cultural diversity amongst nations and has calculated scores for most developed countries. Power distance, individualism, masculinity, uncertainty avoidance, long term orientation and indulgences are identified as the dimensions across which cultures vary (Hofstede, 2015). According to Hofstede (2015), power distance expresses the culture of the society towards inequality, individualism describes whether people have a collectivist society, masculinity describes whether a culture values winning and competition or caring and nurturing, uncertainty avoidance deals with the extent to which a society is comfortable with uncertainty, long term orientation describes whether societies like

to maintain time honoured traditions or embrace new trends and indulgence describes the extent to which societies value restraint of their impulses and desires.

It would follow that a country with high scores in power distance, low scores in individualism, low score in uncertainty avoidance, low score in long term orientation and a low score in indulgence would foster the ideal environment for ethical investment. The culture in such an environment would value equality amongst people, have a collective sense of caring and nurturing, hold on to traditional values, embrace new types of investing and have the discipline to sacrifice returns for moral principles. According to the model scores calculated by Hofstede (2015) for the white population, South Africa has a culture which accepts hierarchy, is highly individualistic, winning and competition are highly prized, uncertainty is embraced, traditions are held onto and indulgence is rife. Hofstede (2015) does not have data for other race groups. Based on Hofstede's (2015) scores, South Africa would be a tough environment into which to launch and market ethical funds. By contrast, Spain is hierarchical, but has a collectivist outlook, feminine attributes of caring, avoids uncertainty, holds onto tradition and is a restrained society (Hofstede, 2015). Therefore, from a cultural viewpoint, Spain has a culture more conducive to ethical investment than South Africa.

The sample specific nature of research in ethical funds is further underlined by the fact that Spain has a Hofstede score that is most aligned with ethical principles, whereas Australia, according to Hofstede (2015) is hierarchical, individualistic, masculine, normative and highly indulgent. However, according to Jones et al (2007) there is growing interest in ethical investments in Australia despite ethical investments in that country underperforming conventional investments. This is counter intuitive as a highly indulgent society is displaying financial sacrifice in order to achieve an ethical outcome. Conversely, in Spain, according to Lozano et al (2006) the take up of ethical funds has lagged even though they are performing better than conventional funds. These examples underscore the importance of country specific research.

Carrying out the research in South Africa helps us assess the definition of ethical funds in the South African context as well as begin to establish the factors which influence investors to invest in ethical funds.

Viviers et al (2009) conducted research on the state of the responsible investing market in South Africa. They focused on defining responsible investing within the South African context, examining the main strategies used by responsible investing managers, the number of responsible investing funds established in South Africa between 1992 and 2006, the size of the sector as at March 2006 and obstacles which hinder growth of the sector. In terms of performance, they established that responsible investing funds underperformed their benchmarks in the first two periods, but outperformed their benchmarks in the third period and concluded that the responsible funds' performance improved over time. However, it is not known whether the improvement in performance has been consistent and persistent in the subsequent years; the issue that is investigated in the current research.

Chipeta and Gladysek (2012) investigated whether the announcement of a firm's inclusion in the JSE's SRI index has a positive impact on the firm's share price and whether the SRI index outperformed the ALSI for the years 2004 to 2009. They find that the announcement of a firm's inclusion in the SRI index does not earn investors abnormal returns except in one year, and similarly with the exception of 2004, the SRI Index does not outperform the ALSI. The contradiction in the findings of Viviers et al (2009) and Chipeta and Gladysek (2012) indicate that much broader research is required to establish the status quo in funds' performance in South Africa, as well as the factors that influence performance in the South African context including the role of advertising and personal profiles of investors.

Viviers et al., (2008) focused on utilising market independent performance measures, such as the Sharpe, Sortino and Upside Potential Ratios ("UPR"). They avoided utilising the market dependent CAPM measures such as the Treynor ratio and Jensen's alpha over concerns that the ALSI, as a market proxy, was a skewed measure owing to the over representation of the mining sector. Nel (2011) however, states that leading investment practitioners in South Africa tend to focus on the CAPM and further states that researchers generally agree that the use of the CAPM is a key application area for investment decisions. Nel (2011) further explains that modern finance theory is concerned with maximising an investor's return at a given level of risk, and that the CAPM was developed to express the relationship between an assets risk and return. The current research uses many different measures to measure performance.

Based on Nel (2011)'s argument, it follows that the performance, risk profile and investment style of ethical funds in South Africa relative to conventional funds needs to be established, as international research in this area conveys mixed results. The studies done on ethical funds/SRI funds in South Africa do not address the issue of investor preference and behaviour as regards ethical funds, the beta of ethical funds to the SRI index for instance are ethical funds behaving more like the general market index or the SRI index. Furthermore, the study by Viviers et al., (2008) does not utilise the Fama French and CAPM models, nor does it compare ethical funds directly against conventional funds

The fact that investors still invest in ethical funds despite not performing particularly better (Jones et al, 2007) would appear to contradict conventional financial theory which states that investors want the best return for a particular level of risk. There appear to be factors other than risk and return which drive investors' choices towards ethical funds. Jones et al., (2007) cites the concept of financial sacrifice in driving the growing interest in ethical funds. There is a pressing need to establish the factors that influence ethical investing in a South African context.

1.4 Research questions

The following are the research questions:

- Is there a difference in the performance of conventional and ethical funds (incorporating Shariah funds) in South Africa?
- What are the factors that significantly influence investors to invest in ethical funds as opposed to conventional funds?
- To what extent are investor preferences affected by biographic factors?
- Is the marketing material in the factsheets of ethical funds aligned to the factors that drive investors to invest in ethical funds?
- Does advertising influence investor's decisions to invest into ethical funds?

1.5 Contribution to the body of knowledge

Extant literature presents mixed results in the performance of ethical and conventional funds in different countries. The literature implies that the nature of funds' performance is country specific. Bauer et al., (2007) suggest that research should focus on previously unexplored countries. Sakuma and Louche (2008) argue

that it is important to carefully translate and reinterpret SRI practice when adopting it into a new context. Therefore, there is a need to examine the performance of ethical funds relative to conventional funds in different countries, as research findings in one market do not seem to apply to other markets. The current research will close the gap in the literature by investigating the performance of ethical and conventional funds in South Africa.

There has been research on ethical funds done in South Africa by others, such as Viviers et al (2008); Chipeta and Gladysek (2012) and Giamporcaro and Pretorius (2012). Viviers et al (2008) concluded that the performance of ethical funds is improving. However, there has not been any research to establish whether there has been a significant and persistent improvement in the performance of ethical funds. Chipeta and Gladysek (2012) on the other hand did not find any significant positive impact on the share price when a firm is included in the SRI index and that, with the exception of 2004, the SRI Index does not outperform the ALSI. The findings of Viviers et al (2008) and Chipeta and Gladysek (2012) are, at some level contradictory. The current research takes a broader perspective to establish the status quo in terms of the differences in the performance of ethical and conventional funds in South Africa, with emphasis on the performance of Shariah funds.

There has been a documented increase in ethical funds in South Africa. However, Viviers et al (2008); Chipeta and Gladysek (2012) and Giamporcaro and Pretorius (2012) do not investigate the factors that influence investors into ethical funds in South Africa. Although there are many factors that may influence performance of the funds, emphasis will be on the effect of advertising and gender. This is because Jain and Wu (2000) find that advertising does not signal superior performance of a particular fund, but that the purpose of advertising is to attract new money to the advertised funds. Cooper et al., (2005) found that the inflows to funds that changed their names to reflect current “hot” investment styles experienced an average 28% increased flow of funds after changing their name, even though there was no improvement in performance. They conclude that investors are irrationally influenced by cosmetic effects.

The current research will therefore investigate whether investors are lured into ethical investing by the funds' marketing strategies and not by the previous firm performance or the fund objectives and characteristics. On the other hand, Nilsson (2008) found that women and better educated investors were more likely to invest a greater proportion of their funds into ethical investments. He found that pro-social attitudes and financial perceptions were linked when socially responsible investing was considered by investors. None of the previous research in the South African context has investigated the impact of gender and other personal characteristics on the decision to invest in ethical funds.

In their research, Viviers et al., (2008) did not use measures of performance that related performance to risk. Nel (2011), however, states that leading investment practitioners in South Africa tend to focus on the CAPM in practice and further states that researchers generally agree that the use of the CAPM is a key application area for investment decisions. Based on Nel's (2011) argument, it follows that the performance, risk profile and investment style of ethical funds in South Africa relative to conventional funds needs to be established, as international research in this area conveys mixed results.

The studies done on ethical funds/SRI funds in South Africa do not address the issue of investor preference and behaviour as regards ethical funds, the beta of ethical funds to the SRI index for instance, are ethical funds behaving more like the general market index or the SRI index. Furthermore, the study by Viviers et al., (2008) does not utilise the Fama French and CAPM models, nor does it compare ethical funds directly against conventional funds. The current research fills the gap left by previous research regarding ethical funds in South Africa.

1.6 Benefits of the study

The study will assist fund managers of ethical funds (incorporating Shariah funds) to better structure their advertising, legal and marketing documents to cater for the investment drivers influencing investors' decisions into ethical funds. Fund managers of conventional funds will also be able to isolate the factors driving investors to invest in ethical and Shariah funds, in particular, and try to incorporate similar factors in marketing their conventional funds, so that they may better compete with ethical funds.

The study will be of significance to investors because it will help them to understand the factors driving their ethical investment decisions and therefore improve upon their investment decision making. Finally, the study will be of significance to researchers going forward because it establishes South Africa specific literature as regards fund performance and investor preference. The study of ethical investing is country specific and as such, it cannot be assumed that the results of international literature will apply in South Africa.

1.7 Thesis structure

The thesis will be divided into five chapters.

Chapter Two presents the theoretical underpinning of the research and extant literature. This chapter reviews the literature pertinent to the various aspects of the research, and highlights the knowledge gaps existing in the literature.

Chapter Three discusses the methodology employed to achieve the research objectives. This chapter highlights the research objectives and lays out the technical means whereby the research will be undertaken.

Chapter Four presents the results of the research.

Chapter Five discusses the overall findings arising from the research results, presents a conclusion and highlights areas for further research.

Chapter summary

The growing popularity of ethical funds has focused attention on the performance of ethical funds relative to conventional funds in various countries. A consequence of this interest in comparing the performance of ethical funds to conventional funds is the questions that arise regarding why investors would prefer ethical funds over conventional funds, despite there being no evidence of ethical funds outperforming conventional funds. The role of advertising in attracting mutual fund flows is documented in the literature, but not much is known on the role of advertising in influencing investors to invest in ethical funds rather than conventional funds.

The next chapter provides an overview of the underlying theory utilised in contextualising the study and highlights the gaps in the literature that the study wishes to address.

Chapter 2 Literature Review

2.1 Introduction

This chapter reviews various strands of literature related to the research topic. Section 2.2 presents the concept of information asymmetry in socially responsible investments. Section 2.3 presents an overview of mutual fund performance. Section 2.4 looks at socially responsible funds and their performance. Section 2.5 presents investment behaviour. Section 2.6 looks at mutual fund marketing and advertising. Section 2.7 establishes some broad hypotheses drawn from the literature and the chapter concludes with a summary.

2.2. Information asymmetry in socially responsible investing

There is a need for an effective audit mechanism that can verify the compliance of both firms and funds to a set of ethical criteria. In the absence of such a mechanism, investors face significant information asymmetry where they do not know if their preferred ethical screens are being implemented, or if firms that report on their ethical performance are doing so accurately (Rhodes, 2010). Current research indicates that ethical funds may not actually behave ethically and that stock selection for ethical funds may not actually differ from that of conventional funds (Rhodes, 2010)

Studies done on the performance of ethical funds relative to conventional funds in other countries deliver mixed results. The lack of a common basis for the comparison of ethical investment screens, the so called “information asymmetry” may explain the mixed results obtained from comparing ethical funds (Rhodes, 2010).

The literature on information asymmetry focuses on the lack of a defined standard of ethical performance and the need for the development of an objective standard. However, the literature does not closely examine the extent to which a fund’s marketing and advertising material actually articulate the ethical principles that the fund purports to subscribe to, and the extent to which the principles extolled match the drivers of investment into ethical funds. This study fills that gap by undertaking content analysis of the marketing and advertising material of funds and comparing it to both the funds stated mission as well as drivers listed by investors as influencing them to invest in ethical funds. Furthermore, this study looks at whether ethical funds

are more closely driven by a general market index or the SRI index in South Africa – this reveals if there is a mismatch in ethical fund stock universe or if the SRI index is not defined broadly enough. By doing so, this study more precisely highlights the actual state of information asymmetry in the South African market.

2.3. Mutual fund performance

A portfolio refers to a combination of financial assets held by an investor (Marx et al., 2003). A mutual fund is simply a portfolio, where a number of investors jointly contribute the funds required to build up the portfolio. In different jurisdictions, there are different legal rules that apply to the actual structure and governance required to bring effect to this portfolio. A mutual fund that invests predominantly or solely in equities is referred to as an equity mutual fund. The focus of this study is equity mutual funds. A portfolio is constructed taking into account various objectives and constraints, such as the required risk profile of the portfolio, the investment objectives, tax and regulatory constraints and any unique investor preferences (Marx et al, 2003).

After taking the objectives and constraints into account, the asset allocation of the fund is determined. Asset allocation is the process of allocating the funds of a portfolio to an asset class. Portfolio construction refers to the process of choosing the individual securities to bring effect to the asset allocation (Marx et al., 2003).

Socially responsible funds are the type of funds that integrate social, ethical and environmental considerations into the investment process (Rivoli, 2003). Typically ethical funds invest in firms that meet certain ethical and moral standards. Cowton (1993) examines how different ethical funds in the UK formulate their negative screens against military contractors. He finds that all ethical themed funds in the UK make some exclusion on the basis of involvement in military contracting. However, different funds used different criteria to exclude military contractors. Some funds excluded manufacturing and distribution of armaments, others concentrated on manufacturing or distribution and yet others focused on significant turnovers in either the production or sale of armaments.

Rivoli (2003) investigates the claim that socially responsible investing (“SRI”) benefits society and he concludes that, given the imperfections in equity markets, the

claim that SRI makes a difference to society is a reasonable one, consistent with the latest financial research.

Cumming and Johan (2007) examine socially responsible investments into private equity using Dutch data. They find that socially responsible investment in private equity is more common when the decision to implement such an investment plan is centralised with a single chief investment officer, and is more popular amongst institutional investors with a greater international focus

There are two main strategies that are often used in the management of mutual funds, namely, active and passive strategies. Active investment management involves utilising a benchmark to determine the investment manager's relative performance. An actively managed portfolio implies that the fund manager is continuously changing the stocks in his portfolio to construct the most efficient portfolio to obtain the maximum return. Fisher (1975) looks at the practicality of using the classic mean variance efficiency of portfolios in practical fund management over time.

He argues that that computer algorithms designed to produce efficient portfolios actually produce portfolios that are vastly different over time, and that by constantly changing the portfolio in this way, the fund manager incurs transaction costs on such a frequent basis that it could reduce the capital of his portfolio. As an alternative, Fisher proposes that instead of utilising computer algorithms to continuously generate efficient portfolios, rather provide the computer with data on risk and the composition of the current portfolio, and then rely on the algorithm to generate the expected returns on the present portfolio. Should the computer estimates be acceptable to the fund manager, then there is no need to change the portfolio.

Alternately, should the estimates not be acceptable to the fund manager, he can change certain stocks only as much as required to reach the required return, thus only undertaking portfolio changes in a step by step manner, thereby reducing transaction costs.

Bell (1977) looks at the importance of proper accounting reports in aiding an active portfolio manager in making stock choices and analysing the performance of the portfolio. He argues that the financial reports reveals very little about what is

happening to portfolio accounts and he goes further to suggest the type of accounting report that would be useful.

Rosenberg (1979) considers the question of how active a portfolio should be. He acknowledges that active portfolio management can produce superior returns when superior information is available, but that this strategy also increases the investor's risk. He goes on to show how fund managers can gauge the risk tolerance of investors from their normal allocation decisions between stocks and bonds, and thus adequately design a portfolio for a group of investors.

Ambachtsheer and Farrell (1979) consider whether active managers can outperform passive funds, given the higher fees and costs associated with active portfolios. Further, they aim to find the factors that active managers must focus on in order to do this. They argue that an appropriate balance needs to be found between using algorithms and human judgements. In order to answer the question of whether active management can add value, they aim to derive portfolio building rules that define risk reward characteristics while allowing portfolio managers the discretion to weight their portfolios. They find that active management does add value and is dependent on: the availability of value judgements with predictive content; reasonable assumptions around the value of the predictive content; the conversion of value judgements into return expectations; portfolio building rules that take into account risk and transaction costs; the availability of algorithms for data processing.

The benchmark and its role in compensating and motivating fund managers has been a strong focus in the literature on active management. For example, Admati and Pfleiderer (1997) examine the use of benchmark portfolios in active manager's remuneration. They argue that it is generally taken for granted that in order to assess an active manager's performance, benchmark adjusted compensation is a good idea. They utilise a model economy consisting of *n* stocks and risk free assets in order to examine the benefits of benchmark based compensation, and come to the conclusion that benchmark adjusted compensation schemes are inconsistent with optimal risk sharing, do not result in an investor obtaining an optimal portfolio, do not screen out bad managers and do not align the managers interests to that of the investor.

Chan et al (2002) investigate factors related to fund style, in particular whether size and value are useful descriptors of fund style and whether fund managers styles remain consistent over time and the factors that influence fund managers choice of style. They find that size and value are useful descriptors of fund styles and that most mutual fund managers utilise a style that centres on a broad market index. They also find that mutual fund managers rarely take significant positions away from the index, and when they do, they favour growth stocks over value stocks, and high past returns over poor past returns.

Harman (1987) looks at alternatives (unit investment trust and other fixed portfolio investment vehicles) to mutual funds to see how they compare to mutual funds. He finds that based on the characteristics of unit investment trusts, they offer a viable alternative to mutual funds. Heinkel and Stoughton (1994) consider a problem of motivating a mutual fund manager and the decision by that manager to continue with the mandate. They argue that optimal contracting and appropriate retention policy are crucial in deciding to retain mutual fund managers. They find that in general managers are retained only if their portfolios outperform the benchmark by an appropriate amount.

Ellis (1968) looks at the then emerging phenomenon of performance investing, where the generation of capital profits took precedence over the preservation of capital, and came to the conclusion that the very spectacular successes of performance investing would be the same factors that led to its downfall. He cited the high pay of fund managers, the potential for overcrowding and other factors.

Brinson et al (1986) examine the determinants of portfolio performance with a view of presenting a framework for attributing performance success to the following three factors: investment policy, market timing and security selection. By examining over 90 US pension funds over a 7 year period, they found that investment policy accounted for over 90 percent of the variation in return. Davanzo and Nesbitt (1987) aim to determine the amount of time over which a performance fee must be calculated so that the manager cannot obtain an unfair advantage by altering the portfolios risk. They use a random simulation of an equity portfolios performance and apply performance based fees to it. They find that 3 years is sufficient to smooth out

the managers return and prevent him gaining an unfair performance fee through altering the risk of the portfolio.

Hill and Jones (1988) examine the effects that momentum based portfolio strategies, such as equity only portfolio insurance, have in relation to traditional strategies such as value based strategies when the impact of computer trading is taken into account. They conclude that momentum based strategies enjoy shorter implementation lags than value based strategies leading to an increase in market instability. The literature has a gap, however, when it comes to specifying methods for comparing investment performance between funds which have different amounts of performance history.

Speidell et al (1989) tackle the problem of determining a client's risk profile, and argue that a client's risk profile is best gauged by examining a client's performance benchmark and then measuring the risk of a portfolio against that benchmark.

Ennis (1997) examines the basis of the "new investment paradigm", namely, that fund management fees will decline, there will be concentration in the money management business and that there will be a continuation of mergers in the management business. He reviews various aspects of the money management business, such as industry structure and manager selection and concludes that fee structures have remained static over 30 years and are likely to do so and that the merger trend is likely to continue. He also finds that the active management sector is not concentrated, but that the number of active managers is likely to decline as clients increasingly turn toward indexing.

Beller et al (1998) investigate the predictability of industry stock returns within a multivariate regression model with conditioning, with the results showing that industry returns are predictable.

Scott et al (1999) examine the impact of behavioural bias on active investment strategies. They identify overconfidence and prospect theory as the two most common biases, and state that according to the overconfidence hypothesis, value investing should work for slow growth companies and according to prospect theory, positive momentum stocks should outperform negative momentum stocks..

Davis (2001) aims to answer two questions: does any investment style generate abnormal returns on average and does any equity style exhibit performance

persistence? He finds that no particular investment style generated abnormal returns over this period. He found some evidence of short run performance persistence in the best and worst performing small cap funds. Bauer and Dahlquist (2001) expand on previous studies such as Sharpe (1975), Jeffrey (1984), Chua et al (1987), on the effectiveness of market timing by dividing stocks into sub categories, resulting in six asset classes rather than merely stocks and bonds. They find that buy and hold strategies using large cap stocks outperformed market timing strategy.

Passive investment management refers to investment strategies that seek to replicate an index or minimise trading in and out of positions. Barber and Odean (2000) analyse the returns of over 66,000 individual stock traders over a five year period and find that the investment performance of those that traded the most was far below the market return. Their overriding conclusion was that high trading frequency negatively affected returns.

Meade and Salkin (1989) describe four different methods of index fund construction and apply these to create four different passive index funds using Japanese stock market data. They identify stratification (representation of each industrial sector in the index) and capitalisation weighting as two desirable properties of a stock index. and describe four methods of constructing a passive fund index: One, estimated co-efficient – non stratified, where the amount of the fund invested in a company is determined statistically and not directly related to the capitalisation of the company. Two, estimated co-efficient – stratified, where the stratification of the benchmark index is maintained in the fund. Three, capitalisation weighted – non stratified, where the amount of investment into a particular company is predetermined and, four, Capitalisation weighted – stratified, where stratification is adjusted to cater for capitalisation. They find that the first method produces the best tracking of the index by the index fund, showing that the more constraints there are on a fund, the poorer the tracking capability of the fund.

Kallberg et al (2000) state that a central issue in investment management is whether fund managers add value. Using over 10 years of data from 68 REIT's in the US, they conclude that active managers of mutual funds of REIT's have produced a return 2% above that of passive strategies. Figlewski and Kon (1982) examine how stock index futures can be used in risk management for active and passive portfolio

management. They show how stock index futures can be used to hedge portfolio positions using a number of hypothetical examples.

Schneller (1983) looks at whether it is better for a fund manager to buy stocks with statistically calculated betas (at significant cost) or to simply add more securities to his portfolio to diversify away the beta risk. He finds that portfolio size must be increased by 2 percent to eliminate beta error risk, and that it only makes sense for a fund manager to purchase better betas if the cost of acquisition is below the cost of increasing the portfolio by 2%.

Grinold and Rudd (1987) examine the issue of incentive based fees versus fees based on assets under management. They conclude that poor and average managers are likely to fail under an incentive scheme of fees, whereas good managers should obtain greater reward than traditional fees. Fouse (1998) indicates that the use of borrowing in equity strategies has the potential to increase returns beyond an index, and also believes that combining indexing with derivatives opens up new possibilities for increasing returns in passive management.

Barber and Odean (2000) investigate whether investment clubs outperform the market. They utilise a random sample of 166 investment clubs in the US and find that 60 percent underperformed the market index. Waring and Siegel (2006) put forward an argument against absolute return funds, arguing that every portfolio has to have a benchmark, as its return is a combination of beta and alpha factors. Kacperczyk and Seru (2007) put forward an argument that the reliance of fund managers on public information decreases as their skill level increases. Kosowski et al (2006) examines whether active managers can actually pick winning stocks. Using data over a 25 year period, and employing a bootstrap methodology, they find evidence of stock picking ability in growth oriented funds, but not income oriented funds.

Low (2007) looks at the effect that market benchmarks have on managers' selectivity and timing performance. He compares Malaysian fund performances to the Kuala Lumpur Composite Index ("KLCI") and Exchange Main Board All Share Index ("EMAS"). He finds that there is little variation in the manager's market timing and selectivity performance across the two benchmarks, and in fact, the managers' poor

timing ability contributed to the funds negative performance as compared to the benchmarks.

Grinblatt and Titman (1994) analyse the determinants of mutual fund performance, and report on tests of fund performance that employ fund characteristics. They utilise fund characteristics such as net asset value, load, expenses, portfolio turnover and fees and find that portfolio turnover is positively related to the ability of fund managers to earn abnormal returns.

Henriksson (1984) investigates the ability of mutual fund managers to time the market. He uses data from 116 mutual funds and concludes that fund managers are not able to follow an investment strategy that times the market. Kim and Wu (1989) examine the effect that the introduction of competitive commissions has had on mutual funds. They examined various mutual fund characteristics before the introduction of competitive commissions and after the introduction of competitive commissions, and found that while there has been only a slight increase in mutual fund returns posts deregulation, there was a marked increase in mutual fund turnover rates. They find that competitive commissions had benefitted growth funds more than income oriented funds.

Brown et al (1996) investigate the hypothesis that fund managers managing funds that are likely to perform poorly will manipulate the fund. They analyse 334 growth funds over fifteen years and confirm the hypothesis. Coval and Moskowitz (2001) investigate the effect on mutual fund performance in relation to the geographic location of the stocks and find that investors trade local stocks at an informational advantage. Malkiel (1995) investigate the suggestion in recent studies that mutual fund managers generate superior returns and that considerable persistence in performance exists. They find that, on average, funds have underperformed benchmark portfolios both before and after fees, and performance consistency existed in one decade and not in the next, so the persistence of performance was inconsistent.

Indro et al (1999) examine mutual fund size and its relation to mutual fund performance. In a two year study, they found that twenty percent of the mutual funds in their sample were smaller than the breakeven fund size. Cai et al (1997) analyse the performance of open ended Japanese mutual funds over a ten year period. They

find that most funds underperform their benchmark by at least three and a half percent annually. They attribute this underperformance to the dilution effect caused by the inflow of funds, whereby a new investor only pays in the after tax value of the net asset value. Ferson and Warther (1996) modify classical performance measures to take into account well known market indicators such as dividend yields and interest rates. They then apply these modified measures to a sample of equity funds and conclude that these measures make the funds' performance look better.

Huij and Verbeek (2009) argue that multifactor performance estimates suffer from systematic biases that result from miscalculating the factor premiums. They argue that factor proxies based on mutual fund returns rather than stock returns provide better benchmarks for evaluating fund managers. Ferson and Schadt (1996) advocate conditional performance evaluation in which relevant expectations are conditioned on public information variables. They report that this method controls for biases in traditional market timing models and makes the average performance of the mutual funds in their sample look better.

Busse (1999) investigates whether fund managers have the ability to time volatility, rather than returns. He concludes that actively managed funds can potentially provide investors with a volatility hedge. Lee and Rahman (1990) examine the market timing and selectivity performance of a sample of fund managers. They find some evidence of forecasting at the fund level. Phelps and Detzel (1997) investigate persistence in mutual fund performance. They find that positive persistence disappears when the recent past is examined or risk factors are more carefully controlled.

Cumby and Glen (1990) examine the performance of a sample of international mutual funds in relation to a broad based international index, and the funds underperformed the index. Xu (2005) contrasts the performance of mutual funds in China to those in the USA. His results show that Chinese funds displays better market timing performance, while the US funds display stronger stock selection capabilities. Ackermann and Loughran (2007) investigate the veracity of the performance claims made by incubator funds. They find that the returns advertised for incubator funds are not a good predictor of subsequent fund performance and likely to mislead investors.

Swinkels and Rzezniczak (2009) evaluate the investment performance of Polish fund managers. They use monthly mutual fund returns to investigate the managers' market timing and selectivity skills. They find that active managers performed on par with passive indices and showed limited selectivity skill and no market timing ability. Belgacem and Hellara (2011) examine the ability of fund characteristics such as fund performance, fees, net asset value, etc. to explain the performance of Tunisian mutual funds. Their results support a link between fund characteristics and future performance, with past performance and fund size having a significant effect on future positive performance.

Jans and Otten (2008) examine the tournament hypothesis as it relates to the UK mutual fund industry. They state the tournament hypothesis as the hypothesis that fund managers alter risk taking behaviour in response to their performance relative to other managers. They find that over the entire sample period 1989 to 2003, no evidence of tournament behaviour is found, but when the period is split into two, there is evidence of tournament behaviour in the first period and strategic behaviour in the second.

Morey (2002) states that the rating given to a mutual fund by Morningstar has a significant effect on investor preference for the fund, and given the influence of such rating, he investigates whether funds of different ages receive a different Morningstar rating in spite of similar performance. He finds that seasoned funds consistently receive higher overall ratings because of the Morningstar weighting system. He concludes that systems that weight time horizons by the age of the fund can lead to biases that render the rating more subjective than objective. Adkisson and Fraser (2003) confirm the findings in Morey (2002) in terms of age bias in Morningstar ratings being caused by the Morningstar weighting methodology, but also investigate whether there could be other causes of the age bias in Morningstar ratings as well.

They find that the market climate prevailing over the evaluation period also plays a role in age bias (they recommend that to eliminate this source of age bias, fund performances should be compared under uniform market conditions) and that young funds tend to be smaller than older funds, making the returns of younger funds more susceptible to manipulation. Bollen and Busse (2005) investigate mutual fund persistence using short measuring periods and find that superior performance is a

short lived phenomenon that only manifests itself when funds are evaluated several times a year. Arteaga et al (1998) investigate the strategies used by sponsors to introduce new equity funds and promote their performance. They find fund sponsors use two strategies: firstly, they utilise an incubation strategy that allows funds to remain private and develop a track record before opening up to the public – they find that after going public, these funds grow rapidly in size and revert to mean performance; secondly, the strategy of selective attention is utilised, whereby favourable allocations of special situations are made to new funds, resulting in superior first year performance which attracts large fund inflows – subsequent performance is not maintained.

Huang et al (2007) note that funds with superior recent performance enjoy large new money inflows, while funds with poor performance suffer smaller outflows – they characterise this as an asymmetric relationship between mutual fund flows and past performance. They develop a rational model to explain this asymmetry and the impact of various fund characteristics on the flow performance relationship. Their model incorporates participation costs and assumes that investors learn about managers' ability from past returns. They find that mutual funds with lower participation costs have a higher sensitivity to medium performance as opposed to high performance compared to their peers.

The literature on mutual fund performance focuses on the determinants of performance, for example, a manager's ability to pick stocks, mutual fund tournaments and manager behaviour. There is a gap in the literature regarding performance comparability of conventional and ethical mutual funds and the extent of the difference to which conventional funds and ethical funds are driven by the market, despite being actively managed. This study closes that gap by examining the performance of conventional funds relative to ethical funds in South Africa and by examining the betas and cross sectional variation of return between both ethical funds and conventional funds in South Africa – this will reveal the extent to which each fund is dominated by the market return or not.

2.4. Socially responsible funds and their performance

Basso and Funari (2003) create a performance measure for ethical funds that combines the ethical component with the financial component, so that a holistic view of performance is obtained. They conclude that data envelopment analysis (DEA) is appropriate for measuring performance of ethical funds.

Pava and Krausz (1996) examine the association between corporate social responsibility and financial performance. They do not find any evidence to suggest that corporate responsibility detracts or negatively influences financial performance. Cummings (2000) examines whether the performance of ethical mutual funds differ from that of conventional market indices in Australia. She finds that there is no significant difference between the two.

Schueth (2003) does a broad review of socially responsible investing ("SRI") in the USA. He finds two broad motivations for investors to invest in ethical funds: One, the need to put their money to work in a manner that is more closely aligned to their personal values and, Two the desire to effect societal change. He describes three ethical investing strategies that investors use to achieve their motivation for investing which include Screening; Shareholder Advocacy and community investing. He describes increasing educational levels; the prominence of women in industry and the fact that studies have shown that returns on ethical funds are just as good as conventional funds as the three main reasons behind the rapid growth in SRI.

Sparkes and Cowton (2004) review the development of SRI over the years. They argue that SRI has become mature and has become an investment philosophy adopted by a number of investment institutions. They further argue that the transition of SRI from being niche to becoming mainstream also increases the activism that executives are likely to face with regard to ethical issues. Haigh and Hazelton (2004) argue that traditional mechanisms of social responsibility such as shareholder activism and managed investments lack the power to create significant corporate change. In order to be more effective in bringing about social change, they argue that SRI funds should address issues at a more systemic level, such as the collective lobbying of governments and trade unions.

Hummels and Timmer (2004) discuss the shareholders need for social, ethical and environmental information and review organisations attempts to meet this need.

They conclude that companies should differentiate between different classes of investors and adjust their information disclosure accordingly.

Bauer et al (2007) argue that most studies on ethical fund performance have been sample specific, and that research should focus on previously unexplored countries in this regard. They look at the performance of Canadian ethical mutual funds relative to their conventional peers. They find that there is no significant difference in the performance between ethical funds and conventional funds. Hill et al (2007) examine the relationship between corporate social responsibility ("CSR") and company stock valuation across the US, Europe and Asia. They find being regarded as socially responsible may positively impact the valuation of companies in the long run.

Fowler and Hope (2007) look at the impact of sustainable investment indices. They conclude that while the impact of these indices is currently minimal, more attention is being paid to it. Benson et al (2006) investigate whether SRI funds invest differently to conventional funds and whether managers of SRI funds have superior stock selection ability when compared to conventional funds. They find that SRI funds exhibit different industry betas from year to year, consistent with different investment decisions relative to conventional funds and find no evidence that SRI fund managers have superior stock selection ability.

Scholtens (2006) looks at finance as a driver of corporate social responsibility. He finds that while there are no one to one relationships between financial development and sustainable development, but there are various indirect linkages. He believes that the literature neglects the potential for credit providers and private equity capital to drive corporate social responsibility. Lozano et al (2006) examine the development of SRI in the Spanish financial market. They find that the take up of SRI investments in Spain has not been as good as other European countries, due to lack of development of investment strategies and lack of sensitivity of Spaniards to social issues.

Brander (2006) examines the effect that inclusion in an ethical index has on executive compensation. He divides the constituents of the S&P 500 index into those funds who are part of the Domini Social Index and those who are not and analyses

executive compensation in each group. He finds that those in the Domini index had lower levels of executive compensation than the others.

Fernandez-Izquierdo and Matallin-Saez (2007) investigate whether investing in ethical mutual funds in Spain involves sacrificing returns, as compared with investing in conventional funds. They find that the performance of ethical mutual funds in Spain is comparable, if not better, than those of conventional mutual funds, and hence there is no sacrifice of return.

Sakuma and Louche (2008) explore the emergence and development of SRI in Japan. They find that the Japanese model holds some similarities with the US, and Europe but remains unique. They highlight that it is important to carefully translate and reinterpret SRI practice when adopting it into a new context. Bengtsson (2007) highlights the history and development of SRI in Scandinavia. He traces its history and the impact that societal changes have had on the industry.

Jones et al (2007) investigate the investment performance of SRI funds in Australia. They cite the concept of financial sacrifice, whereby investors sacrifice returns to invest in ethical funds, as being behind the growing academic interest in the investment performance of ethical funds relative to conventional funds. They find, contrary to most other studies such as Hamilton et al (1993) and Statman (2000), that ethical funds underperform the Australian market.

There has been research on ethical funds done in South Africa by Viviers et al (2008); Chipeta and Gladysek (2012) and Giamporcaro and Pretorius (2012). Viviers et al (2008) concluded that the performance of ethical funds is improving. Chipeta and Gladysek (2012) on the other hand did not find any significant positive impact on the share price when a firm is included in the SRI index and that, with the exception of 2004, the SRI Index does not outperform the ALSI. The findings of Viviers et al (2008) and Chipeta and Gladysek (2012) are, at some level contradictory.

Viviers et al (2008) decided to focus on utilising market independent measures, such as the Sharpe, Sortino and Upside Potential Ratios (“UPR”). They avoided utilising the market dependent CAPM measures such as the Treynor ratio and Jensen’s alpha over concerns that the ALSI, as a market proxy, was a skewed measure owing to the over representation of the mining sector. Nel (2011) however states that

leading investment practitioners tend to focus on the CAPM in practice. Nel (2011) states further that researchers generally agree that the use of the CAPM is a key application area for investment decisions. Nel (2011) explains that modern finance theory is concerned with maximising an investor's return at a given level of risk, and that the CAPM was developed to express the relationship between an assets risk and return.

The literature on the performance of ethical mutual funds has concentrated mostly on the USA and the UK, with more recent studies expanding the analysis to markets such as Canada, Australia and Spain. There has been a documented increase in ethical funds in South Africa. However, Viviers et al (2008); Chipeta and Gladysek (2012) and Giamporcaro and Pretorius (2012) do not investigate the factors that influence investors into ethical funds in South Africa

Also, the literature on the returns of ethical versus conventional funds in South Africa does not utilise the CAPM and Fama French models which gives an indication of an investor's return relative to various measures of risk. This study addresses these gaps.

2.5. Investor behaviour

Established investment theory suggests that investors will seek the highest possible return per unit of risk (Marx et al, 2003). However, ethical funds have been shown to either perform on par or worse than conventional funds, yet they still attract significant inflows. In order to better understand investor behaviour and rationality, in light of seemingly irrational investment behaviour as regards investing in ethical funds over conventional funds, a review of the literature on investor behaviour is presented below.

Erturk et al (2007) examine the consequences of, and conditions for, the democratization of finance. They explain that the democratisation of finance refers to broadening and deepening of access to the capital market by ordinary individuals. They characterise the concept of a democratisation of finance as being the promise that all households can make money and manage risk by buying the relevant financial products. They further argue that this promise has not been fulfilled and identify three conditions that need to be fulfilled before the gap between what is promised and what is delivered is closed, One, predictability of income and wealth

effects over an individual's lifecycle. Two, basic financial literacy and financial decision making ability and Three, products where the risk and return are calculable. They cite evidence from the US and UK which shows that expectations are not being met because the context is confusing, products are opaque and individuals cannot calculate their choices. They conclude that as things currently stand, favourable outcomes for middle class savers are uncertain and are unlikely for lower earners.

Wu et al (2008) investigate how investors evaluate mutual fund performance. They utilise a modified Delphi process and analytical hierarchy process to design a mutual fund assessment method. They find that mutual fund style is the most important investment criteria, followed by market investment environment.

Huhmann and McQuitty (2009) develop financial literacy as the theoretical explanation for consumer proficiency with financial services. They utilise various existing models and studies into financial literacy to develop a comprehensive model explaining the consequences of financial literacy. They find that the level of financial numeracy has a direct bearing on the financial outcomes that consumers experience in relation to borrowing, savings and taxes. They find that financial literacy can be enhanced through appropriate experience and familiarity with financial instruments.

Capon et al (1994) investigate the mutual fund purchase decision by affluent investors. They utilise surveys sent out to approximately 300 affluent investors to draw their conclusions. They find that the average investor was invested in two or less mutual funds, utilised fund ranking data as the most important information source and made investment decisions based on performance track record.

Scharfstein and Stein (1990) aim to develop a clear understanding of the forces that can lead to herd behaviour. They find that under certain circumstances, managers merely mimic the investment decisions of other managers, even if there is private information to the contrary.

Johnson (2004) argues that where there are two types of investors in a fund, and the trading behaviour of the first type imposes higher costs on the fund than the trading behaviour of the second type, then wealth transfer occurs from the lower cost investors to the higher cost investors. Using simulations he shows that this is indeed

the case, and concludes that equity funds do not provide equitable liquidity risk insurance.

Giannetti and Simonov (2006) analyse whether investors take the quality of corporate governance into account when selecting stocks. They find that investors with access to private information were more likely to invest in companies with corporate governance than those without such access.

Shiller (2002) examines the factors that help our understanding of asset bubbles, particularly factors that relate to professional investors. He defines bubbles as the feedback mechanism from price change to further price change. He states that many of the factors that lead to the propagation of bubbles have to do with the subjective elements of intuition, personal judgement and probability. He cites the social environment in which decisions are made, the prominence of news media and human interaction with organisations as other elements. He concludes that the irrationality of investors is central to financial market behaviour, and far from being foolish, investor actions are merely manifestations of irrationality.

Del Guercio and Tkac (2002) compare the interaction between asset flow and performance in the mutual fund industry as compared to the pension fund industry. They find that mutual fund investors flock to good performers, whereas pension fund investors do not flock disproportionately to recent winners and punish poorly performing managers by withdrawing their assets. They conclude that pension fund managers have little incentive to engage in risk shifting behaviour of mutual fund managers.

Goetzmann and Massa (2002) examine the trading and investment behaviour of investors in passive funds. They examine the trading accounts of over 91,000 investors and use this data to identify classes of momentum and contrarian investors. Ippolito (1992) examines consumer reactions to perceptions about the quality of mutual fund managers, and finds that in reacting to new information about mutual fund quality, consumers tend to react disproportionately where expected performance is expected to be higher. He further argues that this denies poor quality managers the opportunity to capture funds. Elton et al (2004) investigate investor rationality by examining a number of different S&P 500 Index funds (52 open ended funds) which are virtually identical in asset allocation, but differ in terms of fees and

tracking ability. They argue that investors should choose the best performing fund, as the return is the only differentiator between the two. Their results show that investors put a large amount of cash into the poorest performing funds and that the highest growth funds are those with the highest expenses. They explain this? as being a result of uninformed investors and financial advisers incentivised to sell inferior products.

Elton et al (1998) investigate firstly, whether small investor sentiment is an important factor in the return generating process for stocks, and secondly, whether closed end funds which have a high sensitivity to this factor offer a higher expected return. They find that small investor sentiment is not an important factor in the return generating process and that closed end funds cannot be expected to offer higher returns as a result of small investor sentiment. Sirri and Tufano (1998) examine fund flow into and out of mutual funds. They find that investors flock to high performing funds at a higher rate than they leave low performing funds, flows are fee sensitive and consumers respond to the risk of their portfolios.

Keswani and Stolin (2008) examine the smart money hypothesis which states that investor money is smart enough to choose winning funds. They examine for this effect using UK data and find that the smart money effect holds in the UK , i.e. investors choose winning funds. O'Neal (2004) examines the purchase and redemption rates for a sample of equity funds with the aim of finding the determinants of mutual fund inflows and redemptions. He also examines the influence of brokers on investor decision making and seeks to investigate whether investment decisions of investors using a broker a measurably different from those that do not use a broker. He finds that brokers and financial advisors play a significant role in increased trading in and out of mutual funds, with passive funds displaying lower redemption rates than actively managed funds with investors punishing poor performing funds by withdrawing their investments.

Saraoglu and Detzler (2002) utilise analytic hierarchy process (AHP), which helps decision makers to systematically structure complex problems, to create a framework for mutual fund selection and asset allocation taking into account the preferences and constraints of individual investors. They utilise a hypothetical

investor to test sample fund selection and find that the AHP framework generates reasonable asset allocation and fund selection results.

Daniel and Titman (1999) investigate the effects of investor overconfidence on investment behaviour. They find that investor overconfidence can generate momentum in stock returns, especially those stocks for which interpretation of ambiguous information is required. They find that this momentum effect is greater for growth stocks than stable stocks.

Cooper et al (2005) examine whether mutual funds change their name to capitalise on current investment trends and whether investors respond positively to this. They find that investors are influenced by this cosmetic change.

Huhmann and Bhattacharrya (2005) investigate whether mutual fund adverts contain the information necessary for investors to make optimal decisions, and find that, in the sample analysed, mutual funds use techniques to increase their advert visibility, but decrease its readability, and also do not contain the information necessary for an optimal investment decision. Diacon (2004) investigates whether investors and financial advisors have the same perceptions of investment risk. He finds that there are significant differences between risk perceptions of advisers and those of lay persons, with financial advisers less loss averse, more trusting of regulators and more prone to develop an affinity with certain products.

Junkus and Berry (2010) aim to profile the typical socially responsible investor and find that the typical socially responsible investor is a single, younger, female who is wealthy and better educated that conventional investors.

The literature on investor behaviour focuses on the influence of reputation, past returns, advertising, investor confidence and investor profile on the decision to investment and in explaining investment flows. There is a gap in the literature, specifically in the South African context, as regards the factors influencing investment into ethical funds, the risk return preferences of ethical investors and the influence of biographic factors on ethical investor behaviour. This study will help explain which commonly identified drivers of investment behaviour can be said to apply to the flow of funds into ethical investments, as well as identify any other drivers that may exist.

2.6. Mutual fund advertising and marketing

Advertising may influence fund flows due to factors such as reduced search costs for investors, or if investors believe that past performance will continue (Jain and Wu, 2000). Jain and Wu (2000) find that advertising does not signal superior performance, but that the purpose of advertising is to attract new money to the advertised funds. Cooper et al (2005) found that the inflows to funds that changed their names to reflect current "hot" investment styles experienced an average 28% increased flow of funds after changing their name, even though there was no improvement in performance. They conclude that investors are irrationally influenced by cosmetic effects. Arteaga et al (1998) examine two strategies employed by new funds to market themselves and attract flow: incubation, whereby a fund remains small and private to develop a track record and then advertises the performance in the closed period; selective attention, which directs funds allocated to "special situations" to new funds.

They find that both strategies lead to large inflows of funds, while the performance of the funds declines to a median value as they increase in size. Nilsson (2008) found that women and better educated investors were more likely to invest a greater proportion of their funds into ethical investments. He found that pro-social attitudes and financial perceptions were linked when socially responsible investing was considered by investors. Aydogdu and Wellman (2011) find that within a fund family, the flagship fund is affected differently to the other funds in the family. They also found that advertising is more successful in attracting inflows during a bear market

The literature on the marketing and advertising of mutual funds focuses on the purpose of advertising, the influence of cosmetic effects on investors and strategies used by new funds to attract inflows. It also highlights the post advertisement performance of funds and notes that advertising is a poor signal of future performance. The literature does not examine the extent to which advertising and marketing of ethical funds takes into account the drivers of investment into ethical funds, nor does the literature examine if there is congruence between the factors that drive investment into ethical funds and the factors emphasised in fund advertising and marketing. This study will address that gap.

2.7. Hypotheses Development

The literature related to the research objectives gives rise to a number of hypotheses. The relevant literature is organised below according to the various research objectives and research questions, and a null hypothesis is developed for each.

2.7.1. Fund Performance compared between ethical and conventional funds

The literature on the performance of ethical funds compared to conventional funds provides mixed results. On the one hand, Fernandez-Izquierdo and Matallin-Saez (2007); Cortez et al (2009); Schwartz (2003) find that ethical funds outperform conventional funds. On the other hand, Cummings (2000); Jones et al., (2007); Schueth (2003); Bauer et al (2007) find that ethical funds do not outperform conventional funds. Our null hypothesis is that ethical funds do not outperform conventional funds.

2.7.2. Do ethical funds differ from conventional funds in terms of style, bias and composition?

Selecting, applying and reporting screens of socially responsible investments poses a challenge for companies, investors and fund managers (Rhodes, 2010). Current research indicates that ethical funds may not actually behave ethically and that stock selection for ethical funds may not actually differ from that of conventional funds (Rhodes, 2010). A review undertaken of several religious funds revealed the vagueness with which screens were defined (Schwartz, 2003). Benson et al., (2006) found that while ethical funds do take different industry positions, there is little difference in the stock picking ability of ethical fund managers as compared to conventional fund managers. Our null hypothesis is, therefore, that ethical funds do not differ much from conventional funds in terms of style, stock bias or the selection of stocks.

2.7.3. Investor's knowledge of ethical Investing

Investors are often not clear about what constitutes an ethical investment, implying a lack of reliable information or clarity on the screens applied by ethical funds (Rhodes, 2010). Our null hypothesis is that most investors from the research sample will not understand Shariah/ethical investing.

2.7.4. Characteristics of ethical investors

Louche et al., (2012) identify six characteristics of faith based investing. Thus, faith based investors do not perceive investing as being contradictory to their religious beliefs, religious values are strong drivers of their investment activities, there is a strong community aspect, they are the pioneers of impact investing, practices vary across regions and there are difficulties associated with implementing faith based investment initiatives. Schueth (2003) does a broad review of socially responsible investing ("SRI") in the USA. He finds two broad motivations for investors to invest in ethical funds: One, the need to put their money to work in a manner that is more closely aligned to their personal values and, Two the desire to effect societal change.

Our null hypothesis is that investors from the research sample will be driven largely by religious belief / ethical values in their investing activities.

2.7.5. Factors influencing investors to Invest

The flow of funds into ethical or conventional funds may be influenced by fund advertising. Jain and Wu (2000) find that advertising does not signal superior performance of a particular fund, but that the purpose of advertising is to attract new money to the advertised funds. Our null hypothesis is that the sampled investors will take advertising into account when deciding to invest.

Cooper et al., (2005) found that the inflows to funds that changed their names to reflect current "hot" investment styles experienced an average 28% increased flow of funds after changing their name, even though there was no improvement in performance. They conclude that investors are irrationally influenced by cosmetic effects. Our null hypothesis is that the sampled investors will be influenced by fund name and brand when deciding to invest.

Wealth creation and investment performance are the key drivers of investment decision making (Statman, 2000). Capon et al (1994) investigate the mutual fund purchase decision by affluent investors. They find that the average investor utilised fund ranking data as the most important information source and made investment decisions based on performance track record. Our null hypothesis is that the sampled investors will rank performance as one of the major factors that they take into account when deciding to invest.

Wu et al (2008) investigate how investors evaluate mutual fund performance. They find that mutual fund style is the most important investment criteria, followed by market investment environment. Our null hypothesis is that the sampled investors will rank mutual fund style as the most important criteria when deciding to invest.

O'Neal (2004) examines the influence of brokers on investor decision making and finds that brokers and financial advisors play a significant role in increased trading in and out of mutual funds, with investors punishing poor performing funds by withdrawing their investments. Our null hypothesis is that the sampled investors will rank professional advice as one of the major factors that they take into account when deciding to invest.

2.7.6. Effects of Gender and Education on Ethical Investment

Nilsson (2008) found that women and better educated investors were more likely to invest a greater proportion of their funds into ethical investments. He found that pro-social attitudes and financial perceptions were linked when socially responsible investing was considered by investors. Schueth (2003) describes increasing educational levels as one of the three main reasons behind the rapid growth in SRI. Junkus and Berry (2010) aim to profile the typical socially responsible investor and find that the typical socially responsible investor is a single, younger, female who is wealthy and better educated that conventional investors. Our null hypothesis is that female investors and well educated investors from the research sample will be more willing to invest in ethical funds.

2.7.8. Do investors undergo financial sacrifice in order to invest in ethical funds?

Jones et al., (2007) cites the concept of financial sacrifice in driving the growing interest in ethical funds. Jones et al (2007) investigate the investment performance of SRI funds in Australia. They cite the concept of financial sacrifice, whereby investors sacrifice returns to invest in ethical funds, as being behind the growing academic interest in the investment performance of ethical funds relative to conventional funds. Our null hypothesis is that the sampled investors will be willing to undergo financial sacrifice in order to invest according to their beliefs.

2.7.9. Financial literacy levels amongst Investors

Keswani and Stolin (2008) find that the smart money effect holds in the UK, i.e. investors choose winning funds. Elton et al (2004) investigate investor rationality and find that investors are uninformed. Huhmann and McQuitty (2009) find that the level

of financial numeracy has a direct bearing on the financial outcomes that consumers experience in relation to borrowing, savings and taxes. Our null hypothesis is that the sampled investors will indicate that they have a solid understanding of investment products.

2.7.10. Do mutual fund adverts contain the necessary information?

Huhmann and Bhattacharrya (2005) investigate whether mutual fund adverts contain the information necessary for investors to make optimal decisions, and find that, in the sample analysed, mutual funds use techniques to increase their advert visibility, but decrease its readability, and also do not contain the information necessary for an optimal investment decision. Our null hypothesis is that the sampled fund factsheets do not contain the information that investors require in order to make an optimal investment decision.

Chapter summary

The literature on the various underlying theories dealing with mutual funds and socially responsible funds is well developed, but there are noticeable gaps, namely: the performance of ethical funds relative to conventional funds in South Africa utilising the CAPM and 3 factor models; drivers of investment into ethical funds; an analysis of the factsheets of ethical and conventional funds with regard to the factors driving investment into ethical funds.

The next chapter outlines the methodology employed to close the gaps identified in the literature.

Chapter 3 Research Methodology

3.1. Introduction

This chapter presents the data and methods and methodologies used in conducting the research. The chapter is structured as follows: Section 3.2 presents the data used and the sources of data used. Section 3.3 details the research design used to analyse fund performance and fund risk profile and the cross sectional variation of returns. Section 3.4 presents the method used to investigate the factors that drive investors into ethical funds, investors' perceptions of risk and return and their preferences regarding fund information sources. Section 3.5 discusses the content analysis of mutual fund documentation (factsheets) to establish whether the information contained in factsheets adequately cater for investor preferences with regard to fund information. A chapter summary concludes the chapter.

3.2. Data and data sources

The aim of the study is to establish the differential performance between ethical (represented mostly by Shariah funds) and conventional funds in South Africa and to further determine the factors which cause investors to invest in ethical funds and further establish the role of advertising in influencing investor behaviour.

The information about the funds available in South Africa is obtained from *Equinox. Equinox* is a South African unit trust (mutual fund) information service which classifies mutual funds, provides fund statistics and tracks the performance of funds over various periods. Equinox lists the performance, risk metrics and description of over 400 unit trusts and money market funds available in South Africa. The funds are classified according to the following criteria: equity sector funds (all, resources, financial, etc.), multi asset funds, fixed income funds, real estate funds and geographic focus. The closing prices for mutual funds, market indices and rates for risk free securities were sourced from *Bloomberg, Macgregor BFA and I Net Bridge (Macgregor BFA and I Net Bridge have since merged)*. Mutual fund prices used are closing NAV prices that do not take into account the fund's fees.

As in Bauer et al., (2007), the funds under analysis are all domestic equity funds, older than 12 months. The final sample comprises 7 ethical funds and 38 conventional funds. In comparison, Bauer et al., (2007) have 8 ethical funds in their sample and 267 conventional funds.

In order to determine the factors which drive investment into ethical funds (incorporating Shariah funds), a questionnaire (See Appendix A) was sent on an e-mail list of potential ethical investors in South Africa. Specifically, an email link was sent to a database of predominantly Muslim individuals through the community website "Muslims at Work" which has an emailing database of a cross section of the Muslim community in excess of 15,000.

The Muslim community was an appropriate audience given that the majority of ethical funds in South Africa are Shariah funds. The advantage of choosing a Muslim audience was that they would have the most inherent interest in Shariah funds(which comprise the majority of ethical funds in South Africa) and were the target audience of those funds, while also having exposure to the general knowledge about conventional funds (as members of South African society at large). The disadvantage is that the results obtained are very sample specific and need to be interpreted as such.

The questionnaire was sent by email utilising the online survey tool "*Survey Monkey*". The email included a link to the questionnaire and a covering letter on the *survey monkey* website. One hundred responses were received to the questionnaire from the database of 15,000 which received the questionnaire via email.

A content analysis of mutual funds' factsheet was carried out to establish whether advertising has a role in influencing investors into ethical funds. The factsheets were analysed because they displayed the information most important to investors. The unit trust factsheets were obtained from the website of the management company. Factsheets for 28 out of the 38 conventional funds and 6 out of the 7 ethical funds were available, representing over 70% of the funds forming the subject of this study – hence the results are representative of domestic equity conventional and ethical funds in South Africa.

3.3. Research Design

3.3.1. Assessing fund performance, risk profile and the cross sectional variation of returns

Otten and Bams (2004) conducted a comprehensive assessment of existing mutual fund performance models. They divide models into conditional and unconditional

models. Conditional models are based on the assumption that managers trade on information about the state of the economy to form expectations, while unconditional models assume that the investor and manager do not use information about the state of the economy to form expectations of returns. Otten and Bams (2004) report that in terms of statistical significance, conditional models are superior to unconditional models, but in terms of economic significance, another conclusion can be drawn. Therefore, in order to obtain economically significant measures of risk and return, this study utilises unconditional models, which include: the traditional risk return measures, the CAPM model and the Fama French three factor model.

The first unconditional model explored by Otten and Bams (2004) is the CAPM model, which is a single factor model utilising a single market index such as the S & P 500 index in the USA. The single market index, however, ignores the influence of other market sectors such as small cap stocks (Otten and Bams, 2004). In order to overcome this shortcoming, various multifactor models were developed in the current research to take into account other market variables such as a small cap index [Elton]; 3 factor models adding size and book to market [Fama and French]; a 4 factor model adding a momentum term [Carhart] and a 5 factor model adding sensitivity to government bond yields [Elton].

According to Parisi and Stang (2012), the Fama 3-factor model is currently the most widely used multifactor model, developed with the objective of identifying common risk factors that help improve the relationship between risk and return. Parisi and Stang (2012) state that the Fama 3-factor model turns up the most in academic literature on socially responsible mutual fund performance. They further state that the model identifies three stock market factors that impact the risk and return relationship: an overall market factor; a factor related to firm size and a factor related to book to market equity.

In analysing the performance of Canadian ethical mutual funds to their conventional counterparts, Bauer et al., (2007) examined both the performance and risk sensitivities of the mutual funds. Bauer et al., (2007) noted that traditional performance measures such as Jensen's measure and Sharpe ratio which linked performance to a market index was used to compare ethical mutual funds to conventional mutual funds. Bauer et al., (2007) argue, however, that a single index

models do not always account for the risk associated with non-index holdings such as small cap stocks. Therefore, Bauer et al., (2007) advocate the use of multifactor models to prevent the erroneous assessment of mutual fund returns. Bauer et al., (2007) note that the Fama French model addresses the concerns around a single index model, and that Carhart has taken the analysis even further by adding a momentum term to the model.

Based on the above established methods of assessing mutual fund performance from the literature, mutual fund performance (incorporating risk profile, market sensitivity and cross sectional variation of returns) are evaluated using two main methods classified as follows: First, traditional performance measures including Sharpe ratio and Treynor ratio. Beta is utilised to assess the risk return characteristics of the funds. Second, the factor models including CAPM and the Fama and French 3 factor model measures the sensitivity of both ethical and conventional funds to both the market index (JSE ALSI) and a JSE SRI index. The three factor Fama French model is utilised to analyse the cross sectional returns of both conventional and ethical funds, and to compare the factors driving each of them.

3.3.1.1. Traditional Performance Measures

Following Rao (2003), Debasish (2009); Subha and Bharathi (2007); Bauer et al., (2007) the following measures are used to assess the performance of ethical and conventional funds: Average Monthly Return, Beta, Standard Deviation, Variance, Treynor's ratio, Sharpe's ratio, Jensen's measure and Fama's measure.

These measures differentially show the returns earned by the fund, the sensitivity of the fund's return to the market index, the volatility of fund returns, fund returns relative to the systematic risk inherent in a fund, fund returns relative to the total risk inherent in a fund, the extent to which the performance of the fund exceeds the expected CAPM return and the extent to which the performance of the fund exceeds the expected return based on total risk respectively.

Comparing the monthly logarithmic returns of each fund class, combined with comparing the volatility of those returns provide insight into the risk-reward characteristic of each fund class. Thus, it can be ascertained which fund class is the most risky and which fund class offers better returns, allowing us to assess the risk

reward proposition for investing in either conventional or ethical funds. Comparing the Treynor and Sharpe ratio of each fund class provide an insight into the predominant type of risk inherent in each fund class. Furthermore, it allows us to assess the risk reward ratio associated with each fund class as it relates to specific risks. Rao (2003) states that a comparison of the Sharpe and Treynor ratios gives an indication of the risk profile of a fund while Jensen's and Fama's measures indicate the nature of the return earned by the fund.

3.3.1.1.1 Analysis of Fund Return

The analysis of fund returns involves comparing the monthly logarithmic returns of the conventional funds with the ethical funds. The natural logarithm is applied to the monthly closing NAV of each fund. Thereafter, the difference between the monthly closing NAV is taken to get the monthly logarithmic returns [R(i)] of the fund. As in Rao (2003), the measure is presented in the equation below.

$$R(i) = \ln[(Ending\ NAV)\ /(Beginning\ NAV)]$$

Where:

$R(i) =\ logarithmic\ return\ of\ fund\ for\ month\ i$

$Beginning\ NAV = closing\ NAV\ of\ fund\ for\ month\ i - 1$

$Ending\ NAV = closing\ NAV\ of\ fund\ for\ month\ i$

3.3.1.1.2 Beta analysis

The beta analysis involves comparing the beta of the conventional funds with the beta of the ethical funds. Beta measures the sensitivity of the fund to the market index. The fund type with the higher beta has a greater sensitivity to the market index and hence a greater systemic risk. The beta is calculated as follows (Nel, 2011):

$$\beta_{Fund} = Cov\ (return\ on\ mutual\ fund; return\ on\ market\ index) \\ /\sigma^2(return\ on\ market\ index)$$

Where:

$\beta_{Fund} = Beta\ of\ the\ fund$

$Cov = Covariance$

$\sigma^2 = Variance$

$Return\ on\ Mutual\ Fund = logarithmic\ monthly\ return\ of\ fund$

$Return\ on\ Market\ Index = logarithmic\ monthly\ return\ of\ the\ market\ index\ (JSE\ All\ Share)$

3.3.1.1.3. Risk analysis

Risk analysis involves computing the standard deviation of the monthly log returns and comparing the risk between the conventional funds and ethical funds. The aim is to measure which of the two fund types are more risky i.e. whether the monthly returns of conventional funds are more variable than the monthly returns of ethical funds, or vice versa. The standard deviation is calculated as the square root of the variance of the monthly log returns represented in Rao(2003) as follows:

$$Std = \sqrt{\sigma^2\,(R(i))}$$

Where:

$Std = standard\ deviation$

$\sigma^2 = Variance$

$R(i) = logarithmic\ return\ of\ fund\ for\ month\ i$

3.3.1.1.4 Treynor's Ratio

Treynor's ratio is used to measure the excess return earned per measure of systematic risk (Rao, 2003). The assumption behind the ratio is that an investor can eliminate unsystematic risk by holding a diversified portfolio. Treynor ratio seeks to measure the excess return earned per unit of systematic risk (Rao, 2003). The Treynor ratio of the conventional funds is compared to the Treynor ratio of the ethical funds to determine which class of fund (ethical or conventional) produces higher

returns in relation to the funds systematic risk. This is built on the risk analysis by providing a risk-return picture to determine which fund class better compensates investors for the systematic risk assumed. The Treynor ratio is calculated as follows (Rao (2003)):

$$T = (Fund\ Return - Risk\ Free\ Return)/\beta_{Fund}$$

Where:

$T = Treynor\ Ratio$

$Fund\ return = annualised\ average\ of\ monthly\ logarithmic\ returns\ of\ fund$

$Risk\ Free\ Return = average\ annual\ yield\ of\ the\ R157\ bond\ qouted\ monthly$

$\beta_{Fund} = Beta\ of\ the\ fund$

3.3.1.1.5 Sharpe's Ratio

The Sharpe ratio measures the excess return earned per measure of total risk (Rao, 2003). Whereas the Treynor ratio is concerned with the excess returns earned relative to systematic risk, Sharpe's ratio takes total risk into account. The Sharpe ratio is calculated as follows (Rao, 2003):

$$S = (Fund\ Return - Risk\ Free\ Return)/\sigma_{Fund\ Return}$$

Where:

$S = Sharpe\ \ Ratio$

$Fund\ return = annualised\ average\ of\ monthly\ logarithmic\ returns\ of\ fund$

$Risk\ Free\ Return = average\ annual\ yield\ of\ the\ R157\ bond\ qouted\ monthly$

$\sigma_{Fund\ Return} = Standard\ deviation\ of\ fund\ return$

A fund with a large Treynor ratio but small Sharpe ratio has larger unique risk than a fund with a low Treynor ratio but a high Sharpe ratio (Rao, 2003). By comparing the Treynor and Sharpe ratios of conventional funds against ethical funds, we can break

down the risk inherent in each fund and identify which of the two fund classes is more exposed to systematic risk and unsystematic risk.

3.3.1.1.6. Jensen's Measure

The Jensen's measure measures the performance of a fund as the excess return provided by the portfolio over CAPM returns. Jensen's measure is represented as follows (Rao, 2003):

$$J = Fund\ Return - \{Risk\ Free\ Return + \beta_{Fund}\ [Market\ Return - Risk\ Free\ Return]\}$$

Where:

$Fund\ return = annualised\ average\ of\ monthly\ logarithmic\ returns\ of\ fund$

$Risk\ Free\ Return = average\ annual\ yield\ of\ the\ R157\ bond\ qouted\ monthly$

$\beta_{Fund} = Beta\ of\ the\ fund$

$Market\ Return$
$= annualised\ average\ of\ the\ monthly\ log\ returns\ of\ the\ market\ index(JSE\ All\ Share)$

3.3.1.1.7 Fama's Measure

Fama's measure measures the performance of a fund in terms of excess return over expected returns based on total risk. (Rao,2003). Fama's measure is represented as follows:

$$F = Fund\ Return - Risk\ Free\ Return - (\sigma_{Fund\ Return} - \sigma_{Market\ Return})/(Market\ Return - Risk\ Free\ Return)$$

Where:

$F = Fama's\ Measure$

$Fund\ return = annualised\ average\ of\ monthly\ logarithmic\ returns\ of\ fund$

$Risk\ Free\ Return = average\ annual\ yield\ of\ the\ R157\ bond\ qouted\ monthly$

$\sigma_{Fund\ Return} = Standard\ deviation\ of\ fund\ return$

$\sigma_{Market\ Return} = Standard\ deviation\ of\ market\ return\ JSE\ All\ Share\ Index$

$Market\ Return$
$= annualised\ average\ of\ the\ monthly\ log\ returns\ of\ the\ market\ index\ (JSE\ All\ share\ Index)$

The JSE All Share Index ("ALSI") is used as the proxy for the market return in the Fama measure as the ALSI represents 99% of the market cap of all eligible equities on the JSE (JSE, 2015). The R157[4] is used as the risk free rate in the above calculations. Nel(2011) conducted a survey of investment practitioners and academics and found that the R157 was the most widely favoured risk free proxy in use in South Africa for CAPM calculations, without any adjustments for tax.

The R157 is quoted monthly as an annual yield, whereas the logarithmic returns of each of the funds and the market proxy are monthly. In order to align the measures, the average monthly returns (over the entire period of the analysis) for each fund and for the market return are annualised by multiplying by 12.

In order to conduct the analysis, the monthly logarithmic returns for each fund and for the market proxy are calculated, and then the average monthly logarithmic return for the period is calculated. These figures are then annualised and utilised in the above calculations. Each fund has one figure per time period under consideration for each of the above measures.

All the above measures are then statistically analysed for any significant differences between ethical funds and conventional funds. For all the above measures, a mean difference test is performed to establish firstly whether the measures are significantly different from zero and, secondly, whether the difference between the measures for ethical and conventional funds is significant.

It is important to note that each fund in the analysis has a different age, resulting in varying time periods over which the analysis is conducted. This means that any differences in performance could be explained by either actual differences in fund performance or it could be explained by the fact that differing time periods were used. In order to overcome this limitation, truncated and untruncated data is analysed: the untruncated data (starting 31/07/1995) is data with different time periods for each fund (meaning that each fund has a different age) and the truncated data (starting 31/07/2009) is data where all funds are analysed over the same time period (meaning that all funds are the same age).

[4] a South African government bond expiring in 2015

The results of the significance testing are then compared for both the truncated and untruncated data to see if the truncation has yielded different t-test results. If the t-test results for the truncated data are different from the t-test results for the untruncated data, then it is concluded that different time periods affect the results.. If there are no differences in the t-test results for the truncated and untruncated data then the differences in time period have not influenced the results of the analysis.

The data is truncated as follows: Shariah are the newest of the funds when compared to conventional funds, and the youngest Shariah fund was established on 31/07/2009. In order to include all of the Shariah funds, we will have to exclude two conventional funds from our analysis because these two funds were established after the last Shariah fund and only provide 24 and 18 months of data – therefore, if we include these funds our data set will be very short dated. These funds represent only 5% of the entire conventional fund universe so we expect no material effect on the analysis.

In order to adjust for the effect of uneven time periods we truncate all data sets to 31/08/2009 and do not regard any previous data from any fund. Two funds are excluded from the analysis as they only started after 31/07/2009. The above two steps eliminates the bias resulting from uneven time periods.

3.3.1.2 Factor models

As in Bauer et al., (2007), an equally weighted portfolio (index) of ethical and conventional mutual funds is constructed to create two data sets which are compared to each other utilising the CAPM and Fama-French model (see section 3.3.1.2.1 for the construction of the index).

The data for the proxy factors in the Fama French model (i.e. the data for the SMB and HML factors) is only available from 31/01/2002. Therefore, in order to ensure matching time periods for the Fama French models, the ethical and conventional indices will also be calculated from 31/01/2002. The CAPM model regressed on the JSE All Share Index will also start from 31/01/2002 so that it is consistent with the timeframe used for the Fama French regression. Data for the JSE SRI Index is only available from 31/03/2004, and so the CAPM model regressed on the JSE SRI index will run from 31/03/2004 instead of 31/01/2002.

3.3.1.2.1 Assessing performance using the CAPM

Following on from Bauer et al (2007), we construct an equally weighted index for each of all the conventional and ethical mutual funds for use in the factor model analysis. The monthly closing NAVs for each fund are added and divided by the number of funds to get an index of monthly funds' average NAV's. These average values represent a single price series representative of all *n* conventional and ethical funds.

Both the conventional fund index and the ethical fund index, are regressed against the JSE All Share Index (as the conventional market index) and also against the JSE SRI Index (as the SRI benchmark index). The monthly logarithmic returns for the fund indices and benchmark indices are annualised, and the R157 is utilised as the risk free rate.

The conventional and the ethical fund equally weighted index is regressed against the JSE All Share Index and the JSE SRI index because the stock universe of ethical mutual funds is limited by their screening criteria and therefore a full market proxy may lead to biased estimates of mutual fund performance(Bauer et al, 2007). If the beta of the ethical fund to the SRI index is less than its beta to the market index, then it could be a sign that ethical funds are not investing in enough ethical stocks, or that fund managers may screen for ethics differently or that the index is not representative of the ethical fund population (Bauer et al 2007). Cortez (2009) found in their study of socially responsible funds in Europe that ethical funds are more exposed to conventional indices than socially responsible indices

As in Bauer et al., (2007), the fund return is determined as follows:

$$Fund\ Index\ Return - Risk\ Free\ Return = \alpha + \beta\ (Market\ Return - Risk\ Free\ Return)$$

Where:

$Fund\ index = either\ the\ conventional\ fund\ index\ or\ the\ ethical\ fund\ index$

$Fund\ Index\ return = annualised\ average\ of\ monthly\ logarithmic\ returns\ of\ fund\ index$

$Risk\ Free\ Return = average\ annual\ yield\ of\ the\ R157\ bond\ qouted\ monthly$

$$Market\ Return$$
$$= annualised\ average\ of\ the\ monthly\ log\ returns\ of\ the\ market\ index(JSE\ All\ Share\ Index)$$

$$\alpha = Intercept, being\ the\ alpha\ estimate$$

$$\beta = estimated\ Beta\ of\ the\ excess\ fund\ return$$

The alpha term is the intercept and represents the amount by which the fund underperformed or outperformed the market, while beta measures the funds sensitivity to the market benchmark.

To test whether the model is significant, the F-Test is utilised to indicate the fit of the model – that is, whether the benchmark index (JSE All Share or JSE SRI index) significant influences the conventional fund index and the ethical fund index.

3.3.1.2.2. Assessing performance using the Fama-French three factor model

In order to replicate the Fama French factors in South Africa, we follow the approach used by Faff (2003). To represent the market return, JSE All Share index which represents 99% of the market cap of all eligible equities listed on the JSE is used. To replicate the SMB factor we utilise the JSE Small Cap index which represents the 60 smallest shares by market cap on the JSE and the JSE Top 40 index which represents the top 40 shares on the JSE. To replicate the HML factor, we utilise the JSE Value Index to represent the high book to market factor and the JSE Growth Index to represent the low book to market factor (JSE, 2015). The JSE Value Index is designed to reflect portfolios that focus on the price and value characteristics of securities, while the JSE Growth Index is designed to reflect portfolios focusing on earnings and revenue growth (JSE, 2015).

As in Faff (2003), the Fama French model is presented as follows:

$$Return\ on\ Mutual\ Fund - Monthly\ Risk\ Free\ Return$$
$$= \alpha + \beta\ (Return\ on\ Market\ Index - Monthly\ Risk\ Free\ Return)$$
$$+ \gamma(SMB) + \delta(HML)$$

Where:

$$Monthly\ Risk\ Free\ Return$$
$$= average\ annual\ yield\ of\ the\ R157\ converted\ to\ monthly\ rate$$

$$Return\ on\ Mutual\ Fund = logarithmic\ monthly\ return\ of\ fund$$

$$Return\ on\ Market\ Index = logarithmic\ monthly\ return\ of\ the\ market\ index(JSE\ All\ Share\ Index)$$

$$\alpha = Intercept, being\ the\ alpha\ estimate$$

$$\beta = estimated\ Beta\ of\ the\ excess\ fund\ return$$

$$SMB = Small\ Minus\ Big\ Factor\ (JSE\ Small\ Cap\ Index - JSE\ Top\ 40\ Index)$$

$$HML = High\ Minus\ Low\ Factor(JSE\ Value\ Index - JSE\ Growth\ Index)$$

To test whether the model is significant, the F-Test is utilised, to indicate the fit of the model. The F-Test indicates whether the independent variable significantly influence the fund return. Conventional measures are used to measure the significance of the regression estimates.

The 3 factor Fama French model is then extended to include a dummy variable to control for fund type. The aim of this analysis is to determine whether the type of fund (ethical or conventional) has a significant influence on the fund return. The data series for ethical and conventional funds are combined to produce the following combined regression:

$$Combined\ Return\ Index = \alpha + \beta\ (Return\ on\ Market\ Index - Monthly\ Risk\ Free\ Return) + \gamma(SMB) + \delta(HML) + [1 - 0]Fund$$

Where:

$$Combined\ Return\ Index = combined\ data\ from\ the\ ethical\ and\ conventional\ funds$$

$$Monthly\ Risk\ Free\ Return = average\ annual\ yield\ of\ the\ R157\ converted\ to\ monthly\ rate$$

$$Return\ on\ Mutual\ Fund = logarithmic\ monthly\ return\ of\ fund$$

$$Return\ on\ Market\ Index = logarithmic\ monthly\ return\ of\ the\ market\ index(JSE\ All\ Share\ Index)$$

$$\alpha = Intercept, being\ the\ alpha\ estimate$$

$$\beta = estimated\ Beta\ of\ the\ excess\ fund\ return$$

$$SMB = Small\ Minus\ Big\ Factor\ (JSE\ Small\ Cap\ Index - JSE\ Top\ 40\ Index)$$

$$HML = High\ Minus\ Low\ Factor(JSE\ Value\ Index - JSE\ Growth\ Index)$$

$$[1-0]Fund$$
$$= dummy\ variable\ to\ test\ for\ fund\ type; 0\ is\ for\ ethical\ and\ 1\ is\ for\ conventional$$

To test whether the model is significant, the F-Test is utilised, to indicate the fit of the model. The F-Test indicates whether the independent variable significantly influence the fund return. Conventional measures are used to measure the significance of the regression estimates.

3.3.2. Determining the factors that influence investors decisions

The second objective of this research is to investigate the factors that influence investors to invest generally and specifically in ethical/Shariah funds. The study also seeks to determine how investors perceive the performance of ethical funds as compared to conventional funds and to further examine their preferences under different risk return scenarios for either conventional funds or ethical funds. The information is collected using a survey. There were no requests for follow ups.

Following the approach by Hussey (1997), the target sample size is at least 100 responses. The questions are closed ended and the questions are designed to answer the research questions relating to investor behaviour and to elicit key biographical data such as age, gender and qualification.

The questions were designed in accordance with the general rules for designing questions outlined by Hussey (1997), such as: the purpose of the questionnaire should be explained; questions should be simple without the use of jargon; vague descriptive words should be avoided; include relevant questions only; include questions as a cross check; avoid questions which are value laden, insensitive, a mere memory test or require the respondent to do calculations (See Appendix A).

The questionnaire probes investors on: their biographical information in terms of age, gender and educational level; their current level of knowledge and understanding as regards investing and unit trusts (mutual funds) generally and in regard to ethical funds specifically; their perception on the level of risk and returns associated with

conventional funds as compared to ethical funds; what the main drivers of their decisions to invest are; their preferences with regard to compromising on either risk or return in exchange for ethical considerations; their main sources of information on investing and unit trusts; the extent to which they were influenced by fund advertising and factsheets; the importance of the screening methodology as compared to fund performance in informing their decision to invest; the importance of ethical considerations in making financial decisions and the factors that they regard as being most important to be present in fund factsheets.

The Muslim community was chosen as a population group from which to draw a sample due to the fact that the majority of ethical funds in South Africa are in fact Shariah funds – therefore, they would be the most appropriate community from which to elicit responses as they have had exposure to ethical investing and the concepts around investing according to a philosophy. They are, therefore, also the most likely community to have had experience in actually investing or actively considering an investment into an ethical fund.

Also, McLachlan and Gardner (2004) note that there are important differences between socially responsible investors and conventional investors. They find that the lack of a set of universally defining principles to classify socially responsible investors makes it difficult to identify them. Therefore the fact that most ethical funds are Shariah in SA allows us to identify a group of ethical investors and utilise the specialist email list available to elicit responses.

Responses to the questionnaire were collated by surveymonkey.com. The covering letter explained the purpose of the survey, gave the details of the researcher and supervisor and assured the respondents of the confidentiality of their responses. The covering letter also explained key terms used in the survey. The data from the questionnaire was analysed using the statistical software SAS Jmp.

Firstly, descriptive data was compiled for the questionnaire responses, showing the variation in responses to each question. Thereafter, to test for any significant associations between the biographical data and the responses, a chi - square test was utilised. The chi - square test tests for a significant association between responses. In order to test for significance, the p-value from the Pearson test is analysed. If the p-value is <0.05 then the association is significant at the 95% level of

confidence. One limitation of the Chi - square analysis is that as a result of the small sample size of respondents (100 responses) 20% of the cells had expected counts of less than five – this weakens the reliability of the Chi square test.

Where there is a significant association between two variables, this association is further investigated with reference to the contingency tables showing the breakdown of the respondent's preferences.

A major consideration in questionnaires in the problem of non-response bias. This can occur where there are a large number of respondents omitting to answer certain questions (Hussey, 1997). One way of dealing with these is to omit those questions if the non-response rate on those questions was large (Hussey, 1997). The non response rate on any particular question in the survey was never more than 5%, hence no questions were omitted.

3.3.3. Determining the impact of fund advertising on investor decisions

This section of the analysis is aimed at determining whether advertising in the fund factsheet is the main factor that influences investors into ethical investing. The content analysis is used to analyse the factsheets of both conventional funds and ethical funds' factsheets. The results of the analysis are compared between conventional funds and ethical funds. The fund analysed are the same funds utilised in the quantitative analysis, except in cases where the fund did not have a factsheet.

The conceptual analysis of the factsheets was completed in line with Busch et al (2012), where the concepts are coded without flexibility .Concepts are coded for frequency and the coding scheme allows for the generalisation of concepts – that is, all words that imply a concept will be coded. Irrelevant info is discarded. The coding is done manually and this involves reading through the text and manually writing down concept occurrences.

The following concepts are coded for existence and frequency: any awards that the company may have won; forecast returns; the brand and status of the management company; past returns; the risk profile of the fund; the philosophy of the fund.

Once the frequency of the concepts is recorded, the occurrences are tallied and analysed to identify the concepts most frequently occurring and also to compare

occurrences between ethical funds and conventional funds. The most commonly occurring concepts clearly indicate on what the fund managers should emphasise in their factsheets for marketing purposes. The results from this analysis are compared to the results of the survey in section 3.3.2 above to establish if fund factsheets contain the information that investors regard as most important in marketing material.

Chapter summary

The research methodology in this research employs both quantitive and qualitative analysis. In the first instance performance and risk between ethical funds and conventional funds is established. Then the methodology that determines the factors that drive investors to invest in ethical funds is laid out. A qualitative analysis of the factsheet is then undertaken. The results of the research are presented and analysed in the next chapter.

Chapter 4 Presentation of research results

4.1 Introduction

This chapter presents the research results to address the research questions and research objectives presented in chapter 1. The chapter is structured as follows: Section 4.2 presents a univariate analysis of the truncated and untruncated data of conventional and ethical funds. Section 4.3 presents the results of the traditional performance measures utilised to gauge fund performance and risk profile. Section 4.4 presents the performance of the CAPM regression for both the ethical fund index and conventional fund index. Section 4.5 presents the results of the Fama and French three factor model for both the conventional index and ethical index. Section 4.6 presents the results of the survey aimed at establishing the factors that influence investors into ethical funds. Section 4.7 presents the results of the content analysis the funds' fact sheet to establish the role of advertising/marketing material. The chapter summary concludes the chapter.

4.2. Univariate analysis

A sample consists of 45 funds divided into 38 conventional domestic equity funds and 7 ethical domestic equity funds that are available in *equinox*. The data for these funds is over their life time (untruncated) starting from 31/07/1995. However, in order to align the two samples, the sample period was set between 31/08/2009 and 31/10/2013 (truncated). When truncated, the sample of conventional funds declined to 36 while the ethical domestic funds remained at 6. Both truncated and untruncated data are analysed.

Table 1 below shows the univariate analysis of truncated and untruncated conventional and ethical funds. The average monthly return is calculated by taking the average of the monthly returns for each fund over the entire time period (truncated and untruncated).

Table 1: The descriptive statistics of the average monthly return on untruncated and truncated data for conventional and ethical funds.

	Average Monthly Return	Median Monthly Return	Variance	Std Dev	Skewness	Kurtosis
Panel 1: Conventional Funds						
Untruncated	0.01116	0.01109	0.00001	0.00288	0.04723	-0.27348
Truncated	0.01156	0.01165	0.00001	0.00247	0.30797	1.36047
Panel 2: Ethical Funds						
Untruncated	0.00950	0.01083	0.00002	0.00434	-0.76814	0.80225
Truncated	0.00874	0.00975	0.00002	0.00418	0.21604	-0.80572

Table 1, Panel 1 and Panel 2 shows that the , the average return for untruncated and truncated conventional funds was higher (mean = 0.01116 and 0.01156 respectively) than that of the untruncated and truncated monthly average return for ethical funds (mean = 0.00950 and 0.00874 respectively). Thus, generally, conventional funds produced a better return than ethical funds. On the other hand, the standard deviation of the average monthly returns for untruncated and truncated conventional funds is lower (SD = 0.00288 and 0.00247 respectively) than that of the untruncated and truncated ethical funds average monthly returns (SD =0.00434 and 0.00418 respectively) This shows that on average, conventional funds offer higher returns for lower risk.

Table 2 below shows yearly descriptive statistics for untruncated conventional funds. The average monthly return is calculated as the average of the monthly returns for each fund for each sample year.

Table 2: The table presents the descriptive statistics of untruncated data for conventional and ethical funds over the untruncated period.

Period	No of Funds	Average Monthly Return	Median Monthly Return	Std Dev	Skewness	Kurtosis
Panel A: Descriptive Statistics of untruncated data for conventional funds						
1995	6	0.03225	0.03009	0.01363	0.53132	-0.39062
1996	6	0.00814	0.00663	0.03152	0.41085	1.06455
1997	8	-0.00047	-0.00548	0.03397	0.17284	0.70412
1998	12	-0.00591	0.01404	0.10336	-1.98400	5.05109
1999	14	0.03735	0.04041	0.05622	0.04201	-0.21892
2000	19	0.00125	-0.00856	0.04920	0.65265	-0.32351
2001	20	0.01649	0.03652	0.05927	-0.68030	-0.61912
2002	21	0.00166	0.00760	0.04215	-0.67359	0.83890
2003	22	0.01869	0.01927	0.05157	-0.11352	-0.56129
2004	24	0.02893	0.02260	0.03402	0.45443	-0.50722
2005	27	0.02622	0.02642	0.04163	-0.03819	-1.04387
2006	30	0.02440	0.02952	0.03772	-0.48285	0.30320
2007	33	0.00987	0.00921	0.03130	-0.09101	-0.77056
2008	34	-0.02254	-0.01544	0.06350	-0.15862	-0.74181
2009	36	0.01795	0.02722	0.05372	-0.93219	0.90639
2010	36	0.01405	0.00907	0.04091	0.17869	-1.12636
2011	37	0.00257	-0.00069	0.02885	1.04907	2.38029
2012	38	0.01459	0.01734	0.02163	-1.00988	1.94428
2013	38	0.01211	0.01646	0.03513	-0.18158	-0.40579
Panel B: Descriptive Statistics of untruncated data for ethical funds						
1995	1	0.03522	0.02521	0.02671	0.20284	-2.51123
1996	1	0.00897	0.00549	0.03467	0.97600	0.54320
1997	2	-0.01225	-0.00751	0.04139	-0.06335	-1.38896
1998	2	0.00883	0.02001	0.06735	-0.01398	3.21430
1999	2	0.03661	0.04406	0.04369	-0.77238	0.64769
2000	2	0.00184	0.00307	0.04161	0.23199	0.05881
2001	3	0.03493	0.03933	0.03548	-0.58723	-0.61793
2002	3	0.01350	0.01478	0.02682	0.05844	-0.76803
2003	3	0.01525	0.00116	0.05233	0.36523	-1.00532
2004	3	0.02057	0.01519	0.02763	0.43463	-0.52647
2005	4	0.03552	0.03608	0.03784	-0.16881	-0.14941
2006	5	0.02551	0.03113	0.03461	-0.35548	-0.52306
2007	6	0.01385	0.01652	0.03254	-0.05471	-0.84823
2008	6	-0.02567	-0.01779	0.06792	-0.22919	-0.76454
2009	7	0.01428	0.01717	0.04032	-0.73972	0.54826
2010	7	0.01207	0.01247	0.03381	-0.05817	-0.88387
2011	7	0.00222	-0.00024	0.02277	1.01937	1.74055
2012	7	0.01099	0.01245	0.01704	-0.54986	0.10766

2013	7	0.00849	0.01075	0.03791	0.00958	-0.21161

Table 2, Panel A shows that the number of conventional funds increased from 6 in 1995 to 38 in 2013. This highlights the growing popularity of unit trusts as investment options in South Africa over an 18 year period. Over the research period, the conventional funds showed negative returns only in 3 years. Table 2, Panel B shows that the number of ethical funds has risen from 1 in 1995 to 7 in 2013. Four out of the seven funds have been established in the last ten years of the sample periods. Over the research period, the ethical funds showed the negative return only in 2 years.

Figure 1 below depicts the increase in the number of conventional and ethical funds over the period between 1995 and 2013.

Figure 1: The graph presents the number of ethical and conventional funds over the years .

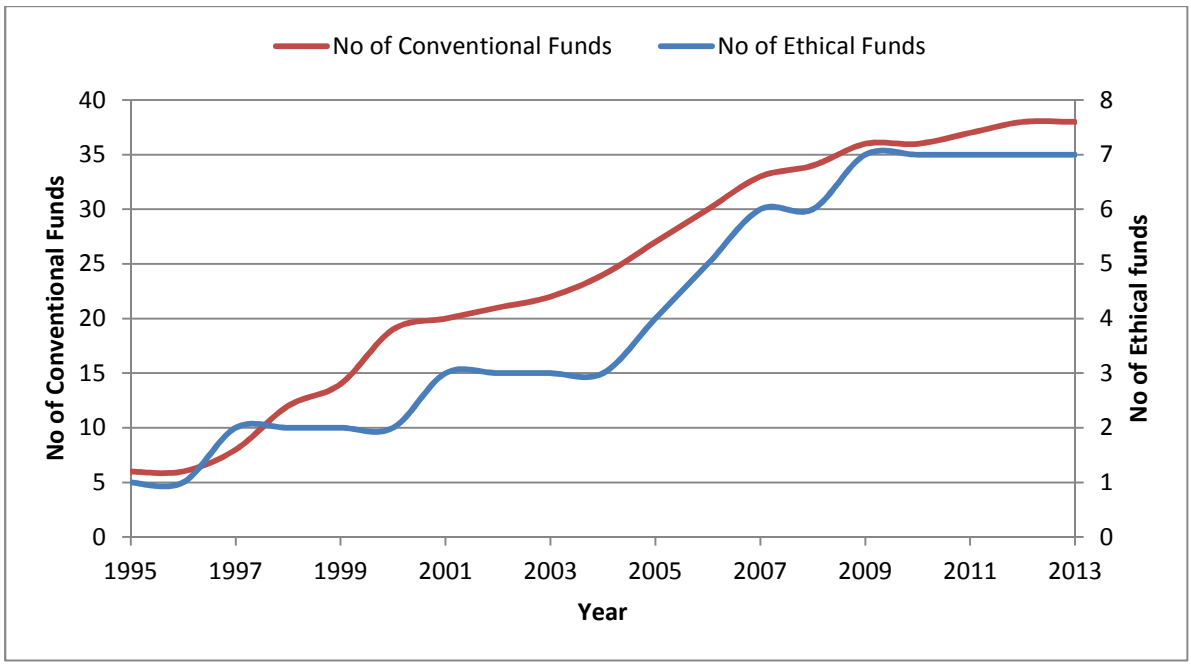
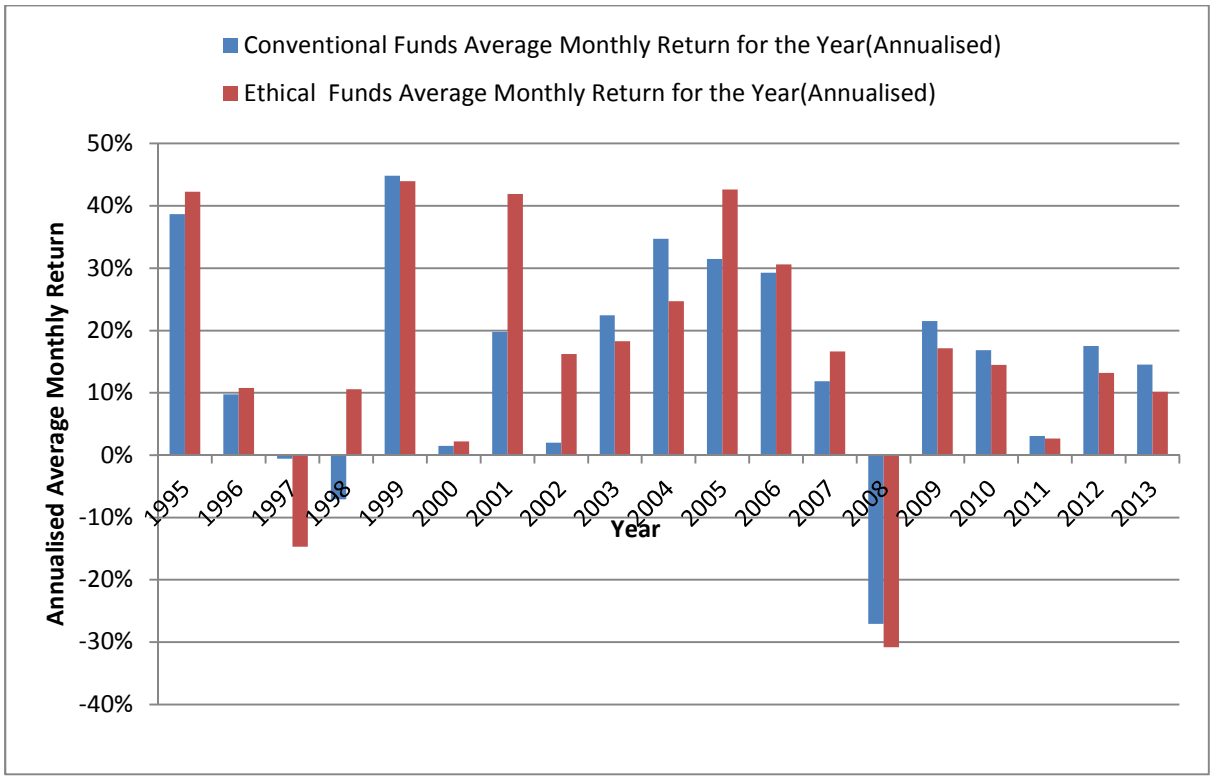


Figure 1 shows that the rate of growth in conventional funds was at its sharpest between 1997 and the year 2000, while the rate of growth in ethical funds was at its sharpest between 2005 and 2009. Thus, while the rapid increase of conventional funds occurred in the 1990's, the faster growing fund segment of the mid 2000's was ethical funds. This coincides with the introduction of the JSE SRI index in 2004 in South Africa which made ethical investing a mainstream activity.

Figure 2 below shows the annualised average monthly return for ethical funds and conventional funds for each year of the untruncated period.

Figure 2: The graph presents the annualised average monthly return for ethical funds and conventional funds for each year of the untruncated period



The graph shows that conventional funds generally underperformed in relation to ethical funds in the first half of the untruncated period (from 1995 to 2002). However, in the second half of the untruncated period from 2003 to 2004, conventional funds significantly outperformed ethical funds. In the run up to the great financial crisis between 2006 and 2007, ethical funds outperformed conventional funds. However, since the start of the financial crisis in 2008 to 2013, conventional funds have outperformed ethical funds. When taken as an average over the entire untruncated period, conventional funds outperform ethical funds due to the magnitude of their outperformance from 2005 to 2013.

Ethical funds grew the fastest between 2005 and 2007, but it was also during this period that ethical funds showed the most significant outperformance to conventional funds. It is therefore interesting to note that the number of ethical funds grew the fastest in the same period where their performance was superior compared to conventional funds.

From the period 2008 to 2013, ethical funds had a lower average monthly return than conventional funds. In fact, for every year after 2008, ethical funds had a lower standard deviation than conventional funds. Figure 3 below shows the standard deviation of the average monthly return for ethical funds and conventional funds for each year of the untruncated period.

Figure 3: The graph presents the standard deviation of ethical funds and conventional funds for each year of the untruncated period.

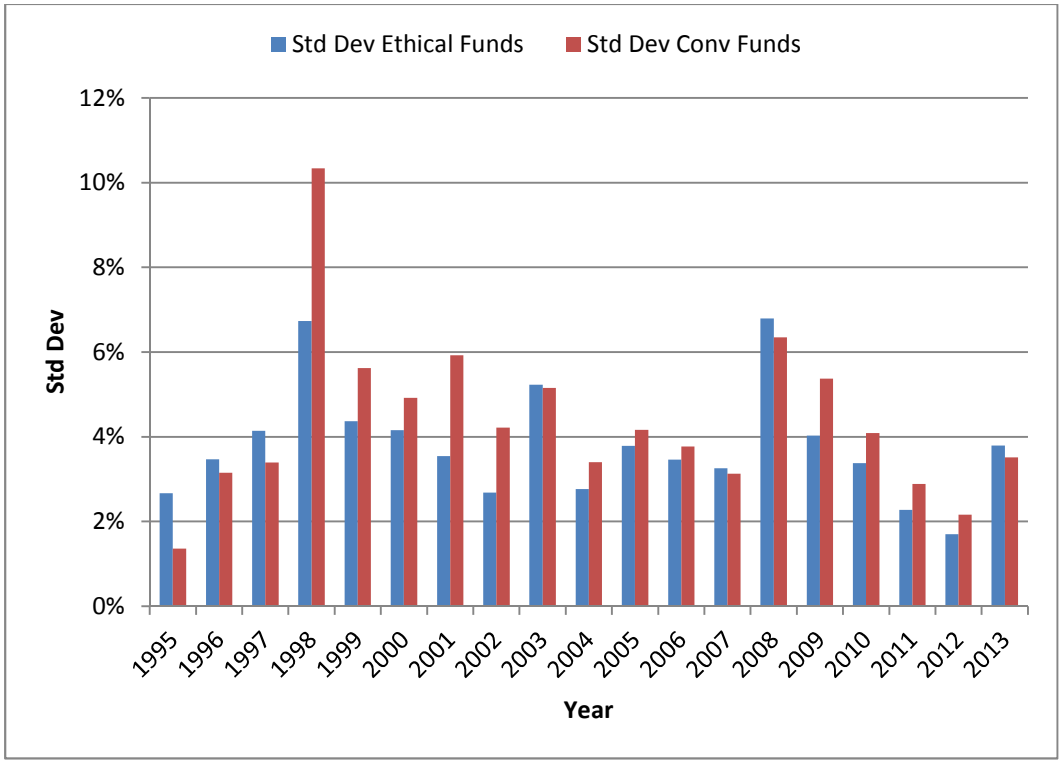


Figure 3 shows that in the period from 1995 to 1997, ethical funds had a higher standard deviation than conventional funds. In the period 1998 to 2006 ethical funds standard deviation were equal or lower to conventional funds. During the years 2007 and 2008, the standard deviation of ethical funds was higher than conventional funds

Combined with insights into the average monthly returns and number of funds explored above, the data suggests that while the number of ethical funds rose rapidly between 2005 and 2007, ethical funds were delivering higher returns but with higher price volatility (making the ethical funds more risky for investors) than conventional funds over the same period. The superior performance of ethical funds in this period would have supported the rapid launch of new funds. From the period 2009 to 2012, ethical funds had a lower standard deviation than conventional funds. In fact, for every year after 2008 (except 2013), ethical funds had a lower standard deviation

than conventional funds. This would suggest that post the financial crisis ethical funds had become more risk averse than conventional funds.

Table 3 below shows the descriptive statistics for conventional funds over the truncated data period. Table 3, Panel A, shows that the number of conventional funds included in the truncated data period is 36, with 2 funds having been excluded because they were established after 2009. The number of conventional funds in the truncated period has remained constant. The average monthly return is positive over the period of truncated data.

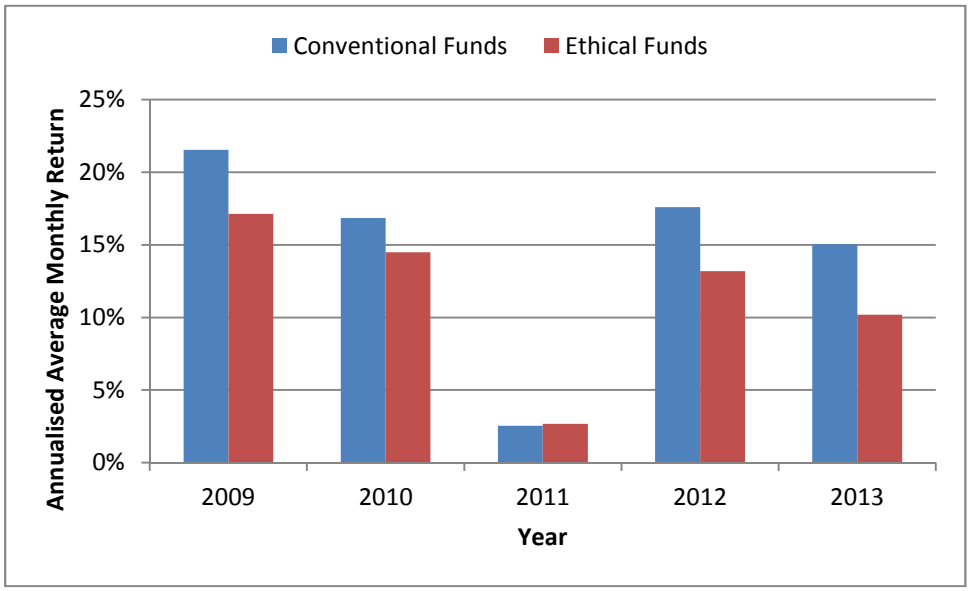
Table 3: The table presents the descriptive statistics of truncated data for conventional and ethical funds over the years.

Period	Average Monthly Return	Median Monthly Return	Std Dev	Skewness	Kurtosis
Panel A: Descriptive Statistics of truncated data for conventional funds n = 36					
2009	0.01795	0.02722	0.05372	-0.93219	0.90639
2010	0.01405	0.00907	0.04091	0.17869	-1.12636
2011	0.00212	-0.00150	0.02837	1.10341	2.38029
2012	0.01465	0.01738	0.02163	-1.00239	1.89704
2013	0.01253	0.01723	0.03542	-0.22458	-0.42187
Panel B: Descriptive Statistics for truncated data of ethical funds n = 7					
2009	0.01428	0.01717	0.04032	-0.73972	0.54826
2010	0.01207	0.01247	0.03381	-0.05817	-0.88387
2011	0.00222	-0.00024	0.02277	1.01937	1.74055
2012	0.01099	0.01245	0.01704	-0.54986	0.10766
2013	0.00849	0.01075	0.03791	0.00958	-0.21161

Table 3, Panel B, shows that the number of ethical funds over the period has also remained constant and the average monthly return for each month is positive.

Figure 4 below shows the annualised average monthly return for ethical funds and conventional funds for each year of the truncated period.

Figure 4: The graph presents the annualised average monthly return for ethical funds and conventional funds for each year of the truncated period



The graph shows that ethical funds have generally underperformed relative to conventional funds over the truncated data period.

Figure 5 below shows the standard deviation of the average monthly return for ethical funds and conventional funds for each year of the truncated period.

Figure 5: The graph presents the standard deviation of ethical funds and conventional funds for each year of the truncated period

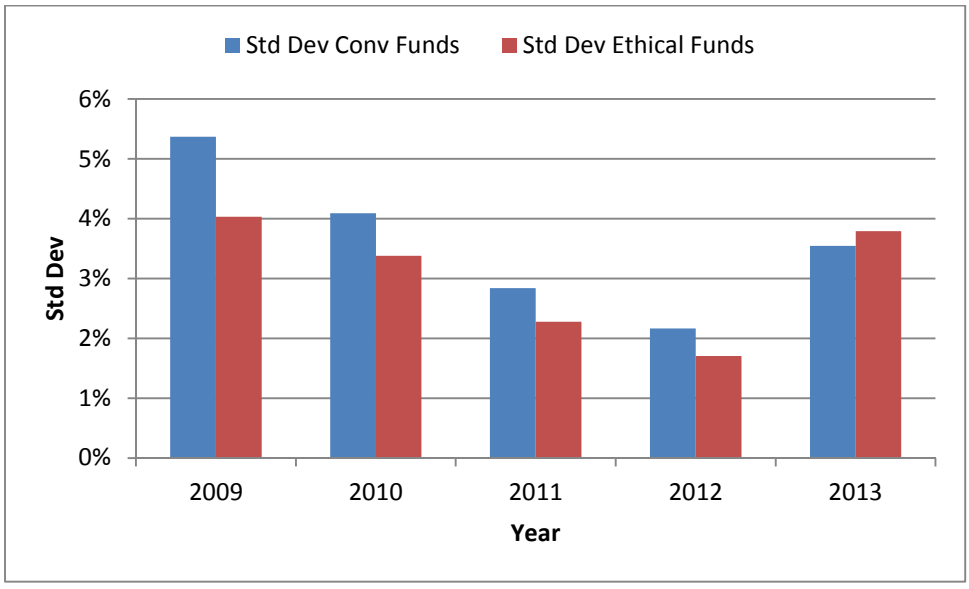


Figure 5 shows that throughout the truncated period, the standard deviation of average monthly returns of ethical funds was less than that of conventional funds, with the exception of 2013. Therefore, over the truncated period before 2013, ethical funds underperformed conventional funds but they also showed less variation of returns.

Given the popularity of passive investment and tracker funds in recent times in South Africa, it would be interesting to note the comparison in performance between the JSE ALSI index and the JSE SRI index. Figure 6 below shows the annualised average monthly return for the JSE ALSI index and the JSE SRI index since the inception of the SRI index in 2004.

Figure 6: The graph presents the annualised actual return for the JSE ALSI index and the JSE SRI index since the inception of the SRI index in 2004.

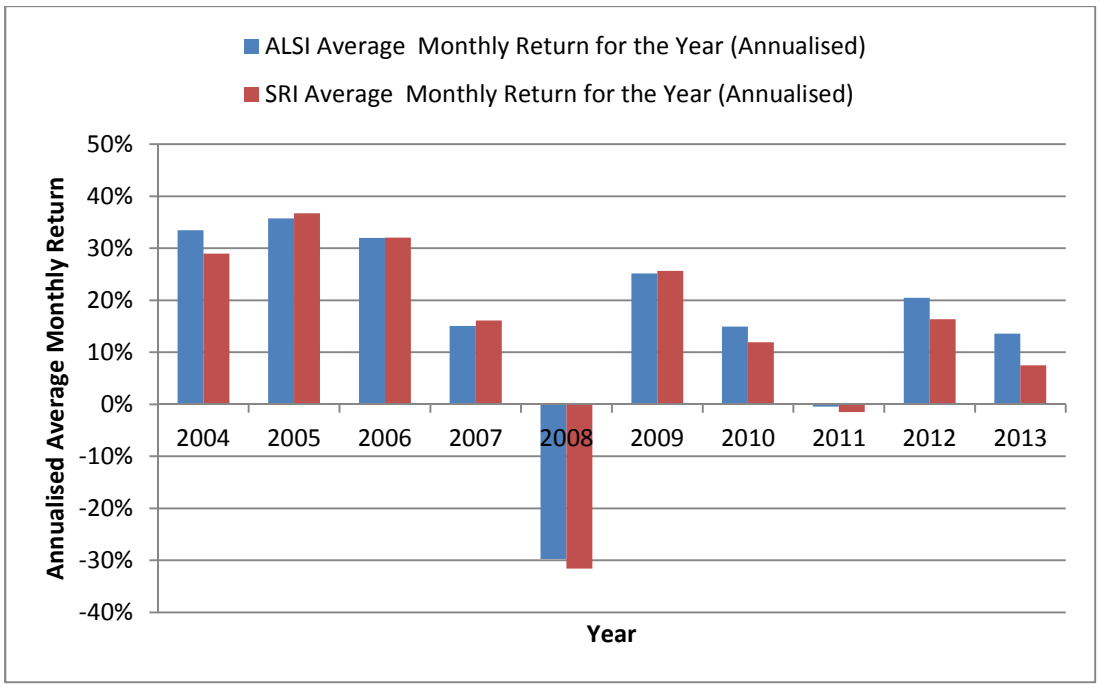


Figure 6 shows that for the years 2004 and 2005 the ALSI outperformed the SRI, with performance being equal in 2006. The SRI outperformed the ALSI in 2007, but from 2008 to 2013 the ALSI has outperformed the SRI.

Figure 7 below shows the standard deviation of the average monthly return for the JSE ALSI index and the JSE SRI index since the inception of the SRI index in 2004.

Figure 7: The graph presents the standard deviation of the annualised actual returns for the JSE ALSI index and the JSE SRI index since the inception of the SRI index in 2004.



Figure 7 shows that the standard deviation of the ALSI was lower than the standard deviation of the SRI for every year except 2011. Combined with the returns comparison, it is clear that the ALSI outperformed the SRI index and did so with a lower level of risk. The differences in average monthly return and standard deviation between the ALSI and SRI are not significant (results not presented).

In summary, the univariate analysis shows that from 1995 to 2002, ethical funds outperformed conventional funds. From 1995 to 1997, ethical funds also showed a higher variation in average monthly returns, making ethical funds more risky than conventional funds in this period. From 2005 to 2007, the number of ethical funds increased rapidly with ethical funds outperforming conventional funds while displaying higher price volatility. From 2008 to 2013 the number of ethical funds and conventional funds stabilised and conventional funds have outperformed ethical funds, but ethical funds have shown less price variation (with the exception of 2013). Therefore, pre-2008 ethical funds had assumed more risk to produce higher returns, but post 2008 ethical funds became more risk averse and also produced lower returns, when compared to conventional funds. It is interesting to note that in 2013 ethical funds had a higher variability of return than conventional funds, indicating that

ethical funds may have regained their appetite for taking on higher risk than conventional funds.

By contrast, the comparison of returns and standard deviation between the ALSI and SRI show that the ALSI has consistently outperformed the SRI since 2004 (except 2011) at a lower level of risk. Therefore, between 2008 and 2013, ethical funds (both active and passive) have underperformed conventional funds. While active managed ethical funds have shown a lower variability of return than conventional funds, the SRI index had a higher variability of return relative to the ALSI.

Furthermore, it is important to note as well, that while the returns and standard deviation comparison between the SRI and ALSI and between ethical and conventional funds (for both the truncated and untruncated periods) provides insight into the relative performance of the funds, the data is not statistically significant.

4.3. Performance of conventional and ethical funds using traditional measures

The performance of conventional funds relative to ethical funds was analysed utilising the following traditional performance measures: average monthly return, beta, standard deviation, variance, Sharpe ratio, Treynor ratio, Fama's measure and Jensen's measure.

The means for each of these measures for conventional funds and ethical funds over the untruncated data period are presented in Table 4.

Table 4: shows the means for each of the performance measures for conventional and ethical funds over the untruncated data period

	Conventional Funds					Ethical Funds				
Variables	**Mean**	**t - statistic**	**p - value of t test**	**Non parametric test statistic**	**p-value of non-parametric test**	Mean	t - statistic	**p - value of t test**	**Non parametric test statistic**	**p-value of non-parametric test**
Average Monthly Return	0.01116	23.89860	<0.0001[a]	370.50000	<0.0001[a]	0.00950	5.7927	0.00120[a]	14.00000	0.01560[b]
Beta	0.74690	47.45690	<0.0001[a]	370.50000	<0.0001[a]	0.66763	18.3633	<0.0001[a]	14.00000	0.01560[b]
Standard Deviation	0.04400	36.36450	<0.0001[a]	370.50000	<0.0001[a]	0.04006	14.028	<0.0001[a]	14.00000	0.01560[b]
Variance	0.00199	19.29980	<0.0001[a]	370.50000	<0.0001[a]	0.00165	7.2952	0.00030[a]	14.00000	0.01560[b]
Sharpe Ratio	1.21913	7.95600	<0.0001[a]	358.50000	<0.0001[a]	0.90114	1.8647	0.11150	9.00000	0.15630
Treynor Ratio	0.06913	8.50010	<0.0001[a]	359.50000	<0.0001[a]	0.05561	1.8533	0.11330	10.00000	0.10940
Fama's Measure	0.01440	3.47150	0.00130[a]	199.50000	0.00260[a]	0.00410	0.2948	0.77810	3.00000	0.68750
Jensen's Measure	0.01962	4.77740	<0.0001 [a]	259.50000	<0.0001[a]	0.00913	0.625	0.55500	3.00000	0.68750

a = significant at 99% level of significance b = significant at 95% level of significance

Table 4 shows that over the untruncated period, all the performance measures for conventional funds were significantly different from zero, whereas for ethical funds only the mean average monthly return, beta, standard deviation and variance were significantly different from zero. This implies that the Sharpe ratio, Treynor ratio, Fama's measure and Jensen's measure were not significantly zero for ethical funds over the untruncated period. This would imply that the difference between the ethical fund return and risk free return was not significant over the period, as the numerator of these measures consists of the difference between the fund return and the risk free return.

The means for each of these measures for conventional funds and ethical funds over the truncated data period are presented in Table 5. The results (not presented) are the same for the truncated data period.

The difference in means of the various measures for conventional funds and ethical funds for the untruncated period is shown in Table 5 below.

Table 5: The table presents the difference in means for each of the performance measures for ethical and conventional funds over the untruncated data period

	Conventional Funds		Ethical Funds							
Variables	**Mean**	**Median**	**Mean**	**Median**	**Difference in Means**	**t - statistic**	**p - value of t test**	**Difference in Medians**	**Non parametric test statistic**	**p-value of non-parametric test**
Average Monthly Return	0.01116	0.01109	0.00950	0.01083	0.00166	-1.29245	0.20310	0.00026	0.66300	0.41550
Beta	0.74690	0.73920	0.66763	0.67799	0.07928	-1.98907	0.05310[c]	0.06121	3.18630	0.07430[c]
Standard Deviation	0.04400	0.04396	0.04006	0.03807	0.00394	-1.28143	0.20690	0.00589	1.27100	0.25960
Variance	0.00199	0.00193	0.00165	0.00145	0.00034	-1.29624	0.20180	0.00048	1.27100	0.25960
Sharpe Ratio	1.21913	1.15546	0.90114	1.14014	0.31799	-0.77470	0.44280	0.01532	0.16570	0.68390
Treynor Ratio	0.06913	0.06940	0.05561	0.07500	0.01352	-0.59598	0.55430	-0.0056	0.09810	0.75420
Fama's Measure	0.01440	0.01169	0.00410	0.00876	0.01030	-0.91367	0.36600	0.00293	0.35400	0.55180
Jensen's Measure	0.01962	0.01789	0.00913	0.01697	0.01049	-0.92522	0.36000	0.00093	0.47470	0.49080

c = significant at 90% level of significance

The only performance measure which showed a significant difference in both the mean and median between ethical funds and conventional funds was the beta. The mean beta for conventional funds was higher than that of ethical funds over the untruncated period, showing that conventional funds took on more systemic risk than ethical funds over the period. Therefore, conventional funds were more aligned to the market index over the period than were ethical funds. This is to be expected as ethical funds have additional screening criteria to conventional funds, and as such, they should be less driven by the overall market index.

The mean difference results show that while there are differences between ethical and conventional funds in relation to the other variables, these differences are not statistically significant, meaning that, over the untruncated period, it does not matter whether investors invested in the ethical funds or conventional funds, the returns would not be significantly different.

The difference in means of the various measures for conventional funds and ethical funds for the truncated period is shown in Table 6 below.

Table 6: The table presents the difference in means for each of the performance measures for ethical and conventional funds over the truncated data period

	Conventional Funds		Ethical Funds							
Variables	**Mean**	**Median**	**Mean**	**Median**	**Difference in Means**	**t - statistic**	**p - value of t test**	**Difference in Medians**	**Non parametric test statistic**	**p-value of non-parametric test**
Average Monthly Return	0.01156	0.01165	0.00874	0.00975	0.00282	-2.44875	0.01870[b]	0.00190	3.89610	0.04840[b]
Beta	0.75207	0.75229	0.63005	0.64525	0.12203	-2.72389	0.00940[a]	0.10703	10.82250	0.00100[a]
Standard Deviation	0.03136	0.03166	0.02784	0.02784	0.00352	-2.43602	0.01930[b]	0.00382	9.36040	0.00220[a]
Variance	0.00100	0.00100	0.00078	0.00078	0.00022	-2.46023	0.01820[b]	0.00023	9.36040	0.00220[a]
Sharpe Ratio	2.33890	2.17794	1.29321	1.74967	1.04569	-1.84435	0.07240[c]	0.42827	2.19160	0.13880
Treynor Ratio	0.09906	0.08880	0.05992	0.07437	0.03913	-1.41381	0.16500	0.01443	2.00110	0.15720
Fama's Measure	0.01248	0.01047	-0.01477	-0.00260	0.02725	-1.82996	0.07450[c]	0.01307	2.09520	0.14780
Jensen's Measure	0.01935	0.01622	-0.00611	0.00436	0.02546	-1.72563	0.09190[c]	0.01186	2.09520	0.14780

a = significant at 99% level of significance; b = significant at 95% level of significance; c = significant at 90% level of significance

Table 6 shows that the mean difference for all traditional performance measures are significant over the truncated period. This differs from the untruncated period where only the beta was significant. Conventional funds had a significantly higher Sharpe ratio over the truncated period than ethical funds indicating that, on average over the truncated period, conventional funds delivered more return per unit of risk than ethical funds. The Treynor ratio for conventional funds over the truncated period was higher than for ethical funds indicating that conventional funds provided investors with a better return per unit of systemic risk. Therefore, even though the mean beta (systemic risk) for conventional funds was much higher than for ethical funds over the same period, conventional funds justified that risk by providing a higher return per unit of systemic risk than ethical funds.

The mean Jensen's and Fama's measure for conventional funds was higher than that for ethical funds over the truncated period indicating that conventional funds showed superior outperformance to expected CAPM returns than ethical funds did over the truncated period.

Fama's measure measures outperformance of a fund relative to a premium for all risks (whereas CAPM formulates an expected return based on systemic risk),

therefore conventional funds showed superior returns for all risks compared to ethical funds.

Conventional funds also had superior mean average monthly returns over the period, albeit with higher price variation. Therefore, while the difference in performance between conventional and ethical funds over the untruncated period was insignificant, there was a significant difference in performance between conventional funds and ethical funds during the truncated period. Conventional funds provided higher returns per unit of risk than ethical funds over the truncated period, while ethical funds were less risky than conventional funds.

4.4. Performance of conventional and ethical funds using factor models

4.4.1 Performance of funds using CAPM

CAPM and Fama and French 3 factor models are the two models used to assess the performance of conventional and ethical funds. An equally weighted index of funds was created for both ethical and conventional funds. The risk free rate was then subtracted from the index return to obtain the funds excess return. The excess return of the conventional funds is referred to as the “conventional fund index” and the excess return of the ethical funds is referred to as the “ethical fund index” in the regression analysis.

Both sets of conventional and ethical funds are regressed on the JSE All Share (ALSI) and on the JSE SRI indices (SRI) for the CAPM model and on the ALSI for the Fama and French (FF) model. The regression for the FF model is done on the ALSI only because the FF model has specific input requirements, one of which is a broad market index that represents the entire market. The SRI is not a broad market index.

The CAPM ALSI regression and the FF model regression run from 31/01/2002 and the CAPM SRI regression runs from 31/03/2004 in line with data availability.

Table 7 below details the results of the CAPM regression for both ethical and conventional funds.

Table 7: Results of the CAPM regression for both ethical funds and conventional funds

	Co-Efficient	Standard Error	t - Stat	p-Value	F Ratio	p value of F Test	Adjusted R Square
Panel 1: CAPM regressed on ALSI							
Conventional Fund Index					595.381	<0.0001[a]	0.80936
-Intercept	0.00187	0.00155	1.21000	0.2282			
-Excess Market Return	0.76254	0.03125	24.40000	<0.0001[a]			
Ethical Fund Index					158.724	<0.0001[a]	0.52799
-Intercept	-0.00208	0.00267	-0.78000	0.4383			
-Excess Market Return	0.68114	0.05407	12.60000	<0.0001[a]			
Panel 2: CAPM regressed on SRI							
Conventional Fund Index					310.938	<0.0001[a]	0.73109
-Intercept	0.00195	0.00202	0.97000	0.3361			
-Excess Market Return	0.68588	0.0389	17.63000	<0.0001[a]			
Ethical Fund Index					107.349	<0.0001[a]	0.480459
-Intercept	-0.0045	0.00322	-1.40000	0.1653			
-Excess Market Return	0.6456	0.06231	10.36000	<0.0001[a]			

Panel 3: Co-efficient Differentials(Conventional less Ethical)	**Difference**	**T - Stat**
CAPM regressed on ALSI		
-Intercept	0.00395	-0.01437
-Excess Market Return	0.0814	1.30349
CAPM regressed on SRI		
-Intercept	0.00645	-0.14465
-Excess Market Return	0.04027	0.54829

a = significant at 99% level of significance

Table 7, Panel 1, shows that a model of conventional funds regressed against the ALSI is significant at the 99% level. The adjusted R-square is 81% indicating that 81% of the variation in the conventional fund index can be explained by the model. The model of ethical funds regressed against the ALSI is also significant at the 99% level. The adjusted R-square is 53% indicating that 53% of the variation in the conventional fund index can be explained by the model.

The beta for the conventional fund index is 76% and significant at the 99% level of significance. The beta for the ethical fund index is 68% and significant at the 99%

level of significance. This indicates that the variation in the conventional fund index is more closely associated with the excess market return than the variation in the ethical fund index is. This finding is further supported by the adjusted R- square values which indicate that the variation in the conventional fund index is better explained by the regression model than the variation in the ethical fund index is.

The alpha for the conventional fund index is positive (0.00187) but not significant, while the alpha for the ethical fund index is negative (-0.00208) but also not significant.

Table 7, Panel 2, shows that the model of conventional funds regressed against the SRI is significant at the 99% level. The adjusted R-square is 73% indicating that 73% of the variation in the conventional fund index can be explained by the model. The model of ethical funds regressed against the SRI is also significant at the 99% level. The adjusted R-square is 48% indicating that 48% of the variation in the conventional fund index can be explained by the model.

The beta for the conventional fund index is 69% and significant at the 99% level of significance. The beta for the ethical fund index is 65% and significant at the 99% level of significance. This indicates that the variation in the conventional fund index is more closely associated with the excess market return than the variation in the ethical fund index is. This finding is further supported by the adjusted R- square values which indicate that the variation in the conventional fund index is better explained by the regression model than the variation in the ethical fund index is. Given that ethical funds focus on socially responsible and Shariah stocks, one would expect the ethical fund index to be better explained by the excess market return of the SRI than the conventional fund index.

The alpha for the conventional fund index is positive (0.00195) but not significant, while the alpha for the ethical fund index is negative (-0.0045) but also not significant.

Table 7, panel 3, presents the differences in the alpha and betas between the conventional fund index and the ethical fund index, when regressed against the ALSI and SRI respectively.

When regressed against the ALSI, the difference in beta's between the two fund indexes (8%) is not significant. This is a different result to what would be expected. Given that the focus of ethical funds is solely on socially responsible or Shariah stocks, one would expect the conventional fund index to show a significantly higher beta to the ALSI than the ethical fund index. Furthermore, the difference in alpha's (0.00395) between the conventional fund index and the ethical fund index is not significant.

Similarly, when regressed against the SRI, the difference in beta's between the two fund indexes (4%) is not significant. Given that the focus of ethical funds is solely on socially responsible or Shariah stocks, one would expect the ethical fund index to show a significantly higher beta to the SRI than the conventional fund index. It would appear that either ethical funds are mirroring conventional funds in stock selection and are not truly ethical, or that the SRI is not truly representative of the universe of stocks regarded as ethical and Shariah compliant. Furthermore, the difference in alpha's (0.0065) between the conventional fund index and the ethical fund index is not significant.

4.4.2 Performance of funds using the Fama and French 3 factor model

The result of the Fama and French regression is shown in Table 8 below.

Table 8: The results of the Fama and French regression for both ethical and conventional funds

	Co-Efficient	Standard Error	t - Stat	p-Value	F Ratio	p value of F Test	Adjusted R Square
Panel 1: Conventional Fund Index					276.944	<0.0001[a]	0.85535
Intercept	0.00027	0.00138	0.20000	0.8444			
Excess Market Return	0.89539	0.03359	26.65000	<0.0001[a]			
SMB	0.25193	0.04083	6.17000	<0.0001[a]			
HML	0.02054	0.05307	0.39000	0.6993			
Panel 2: Ethical Fund Index					60.901	<0.0001[a]	0.56034
Intercept	-0.00407	0.00264	-1.54000	0.1256			
Excess Market Return	0.80424	0.06421	12.53000	<0.0001[a]			
SMB	0.27445	0.07838	3.50000	0.0006[b]			
HML	-0.15103	0.10057	-1.50000	0.1354			

Panel 3: Co-efficient Differentials

	Difference	T - Stat
Excess Market Return	0.0911509	2.66514[a]
SMB	-0.0225247	0.254860
HML	0.1715750	-1.50886

Panel 4: Combined Fund Return Index					158.817	<0.0001[a]	0.691219
Intercept	-0.004043	0.002085	-1.94000	0.05350			
Excess Market Return	0.849195	0.036402	23.33000	<0.0001[a]			
SMB	0.262985	0.044343	5.93000	<0.0001[a]			
HML	-0.066905	0.057258	-1.17000	0.24360			
[1 – 0] Fund	0.0042	0.002916	1.46000	0.14660			

a = significant at 99% level of significance; b = significant at 95% level of significance

Table 8, Panel 1, shows that the model of conventional funds regressed against the ALSI is significant at the 99% level. The adjusted R-square is 86% indicating that 86% of the variation in the conventional fund index can be explained by the model. The beta for the conventional fund index is 90% and significant at the 99% level of significance. The alpha for the conventional fund index is positive (0.00027) but not significant. The SMB factor is significant at a 99% level of significance. The HML factor is not significant.

Table 8, Panel 2, shows that the model of ethical funds regressed against the ALSI is also significant at the 99% level. The adjusted R-square is 56% indicating that 56% of the variation in the conventional fund index can be explained by the model. The beta for the ethical fund index is 80% and significant at the 99% level of significance. The alpha for the ethical fund index is negative (-0.00407) but also not significant. The SMB factor is significant at a 95% level of significance. The HML factor is not significant.

The above results indicate that the variation in the conventional fund index is more closely associated with the excess market return than the variation in the ethical fund index is. This finding is further supported by the adjusted R- square values which indicate that the variation in the conventional fund index is better explained by the regression model than the variation in the ethical fund index is.

Table 8, panel 3, shows the differences in the betas, SMB and HML factors between the conventional fund index and the ethical fund index, when regressed against the ALSI.

The difference in beta's between the two fund indexes (9.1%) is significant at the 99% level of significance. This is result is in line with the expectations. Because the

focus of ethical funds is solely on socially responsible or Shariah stocks, one would expect the conventional fund index to show a significantly higher beta to the ALSI than the ethical fund index. Furthermore, the differences in the SMB (-0.02252) and HML (0.17157) factors between the conventional fund index and the ethical fund index are not significant.

Table 8 further shows that both ethical and conventional funds do not have any dominant style bias, but instead are closely aligned to the market return. Both the ethical fund index and conventional fund index are driven by the excess market return primarily. However, the conventional fund index has a better model fit than the ethical fund index. The ethical index is less responsive to the excess market return. Thus, an investor wishing to minimise systemic risk would be better off choosing an ethical fund. The alpha for the conventional fund index is positive, while the alpha for the ethical fund index is negative – therefore, investing in an ethical fund will result in an investor assuming lower systemic risk, but foregoing performance in comparison to conventional funds.

Table 8, panel 4, shows that the model of the combined return index regressed against the ALSI is significant at the 99% level. The adjusted R-square is 69% indicating that 69% of the variation in the conventional fund index can be explained by the model. The beta for the index is 85% and significant at the 99% level of significance. The alpha for the index is negative (-0.004043) but not significant. The SMB factor is significant at a 99% level of significance. The HML factor is not significant and the dummy variable representing fund type is not significant. This means that the type of fund (ethical or conventional) does not have a significant effect on the index. The variable with the most significant effect is the market return, underscoring the fact that whether a fund is ethical or conventional, its returns are still driven primarily by the overall market index.

4.5. Factors that influence investors to invest in ethical funds

The analysis in section 4.4. above shows that, on average over a time period, the ethical funds underperform compared to conventional funds. The logical question is therefore, why are the ethical funds increasing over time regardless of underperformance, and more importantly why do investors continue to invest in ethical funds (in particular Shariah funds)? Understanding why investors would

invest in Shariah funds is very important as 70% of ethical funds in South Africa are actually Shariah compliant.

This section aims at establishing what factors play a major role in influencing investor's decisions to invest in ethical funds. The results presented below are sample specific. Although the questionnaire results are not significant, the results provide interesting insights to guide further research. Figure 8 below presents the characteristics of the sample of respondents

Figure 8: Biographical information of respondents: Age, Gender, Education Level

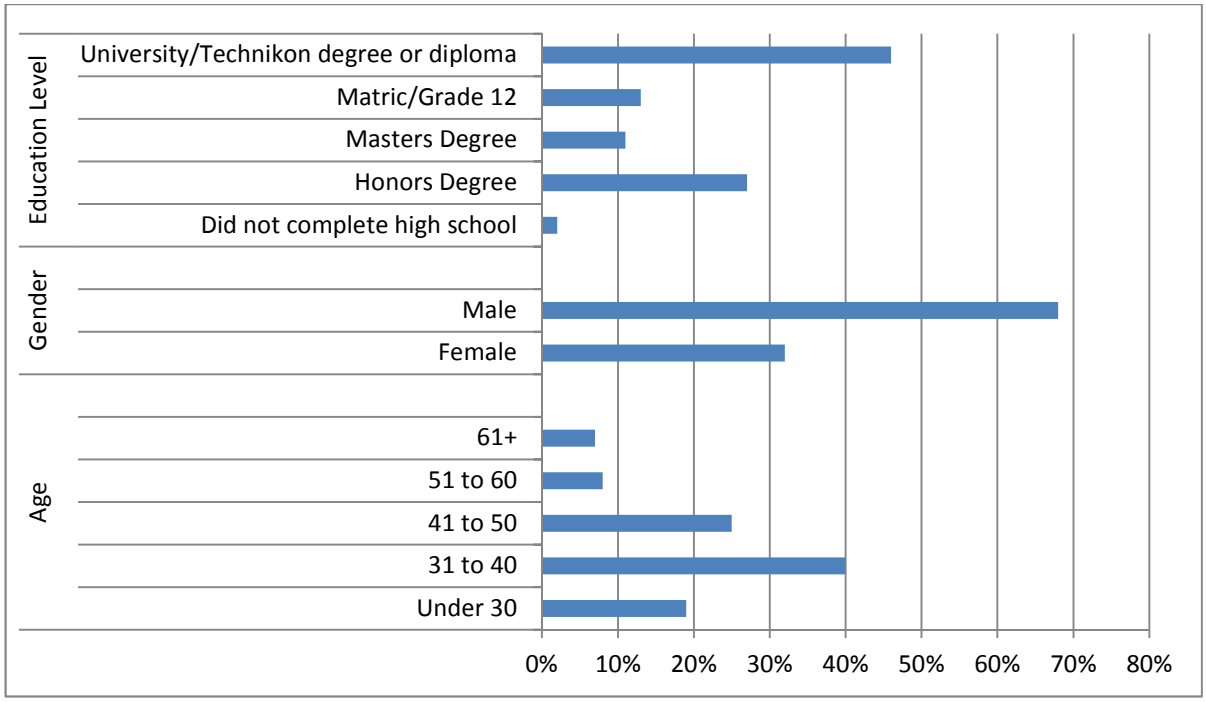


Figure 8 shows that 65% of the respondents are between the ages of 31 to 50. About 73% had either a bachelor's degree/diploma or Honours degree. The majority of respondents (68%) are male (68) with 32% of the respondents being females (32)

Figure 9 below depicts the respondent's views on ethics/ religious faith when investing, their knowledge of investing in unit trusts and their understanding of ethical investing.

Figure 9: Respondent's views in ethics/ religious faith when investing, their knowledge in investing in unit trusts and their understanding of ethical investing

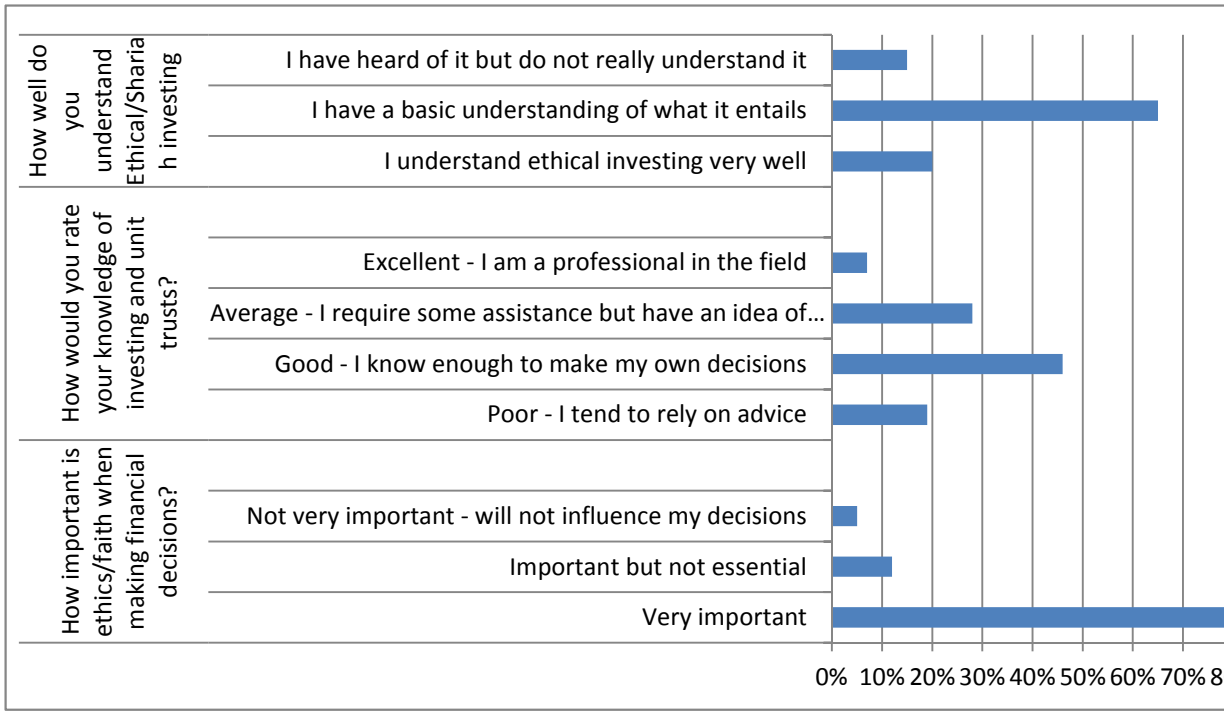


Figure 9 shows that 83% of the respondents state that ethics or religion are important when making their financial decisions and the majority of respondents had a basic understanding of Shariah/Ethical investing, while a further 20% stated that they had a very good understanding of Shariah/ethical investing. About 73% of the respondents rated their knowledge of investing and unit trusts as either good or average.

It is interesting to note that while 20% of respondents stated that they understood Shariah/ethical investing very well only 7% rated their knowledge of investments and unit trusts as excellent. This suggests that while respondents may have excellent knowledge of Shariah/Ethical investing as a concept, their knowledge of specific investment vehicles may be poor. Therefore, based on the sample response, product providers may need to focus education efforts not only on explaining the Shariah/Ethical principles of investment, but also on the mechanics of the investment vehicle as well.

Figure 10 below shows the important considerations that investors take into account when investing in equity unit trusts.

Figure 10: Considerations that investors take into account when investing in equity unit trusts.

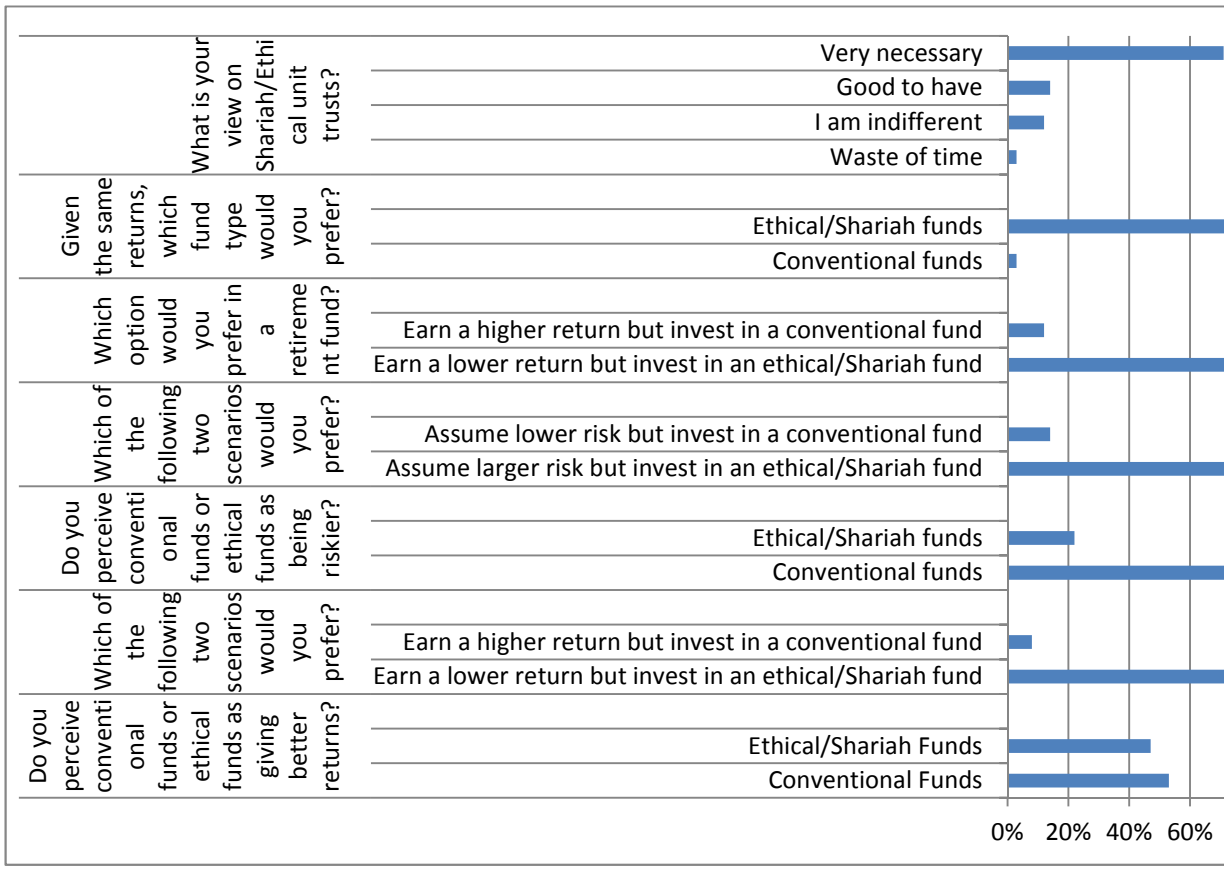


Figure 10 shows that 53% of the respondents perceive the conventional funds as giving better returns than the ethical funds (the fact that was analytically established in the analysis in sections 4.2, 4.3 and 4.4 above) while 78% also recognize the conventional funds as being more risky.

However, 92% of the respondents believed in an investment that complies with ethics/religion and not with higher returns even if they are saving for retirement. This is consistent with the fact that 83% of the sample stated that ethics/faith is very important when it comes to making financial decisions. The two most important considerations that are taken into account are the interplay between risk, return and ethics and the ethical/religious nature of the investment. Generally, respondents believe in the concept of ethical funds and their decisions are not influenced by risk and return from the investment.

It was further investigated whether advertising could influence investors' decisions

into ethical funds, such that their decision to invest is due to the advertising. Figure 11 below shows the sources of information that the sampled investors hold in high regard when they seek to invest.

Figure 11: Sources of information that investors hold in high regard when they seek to invest.

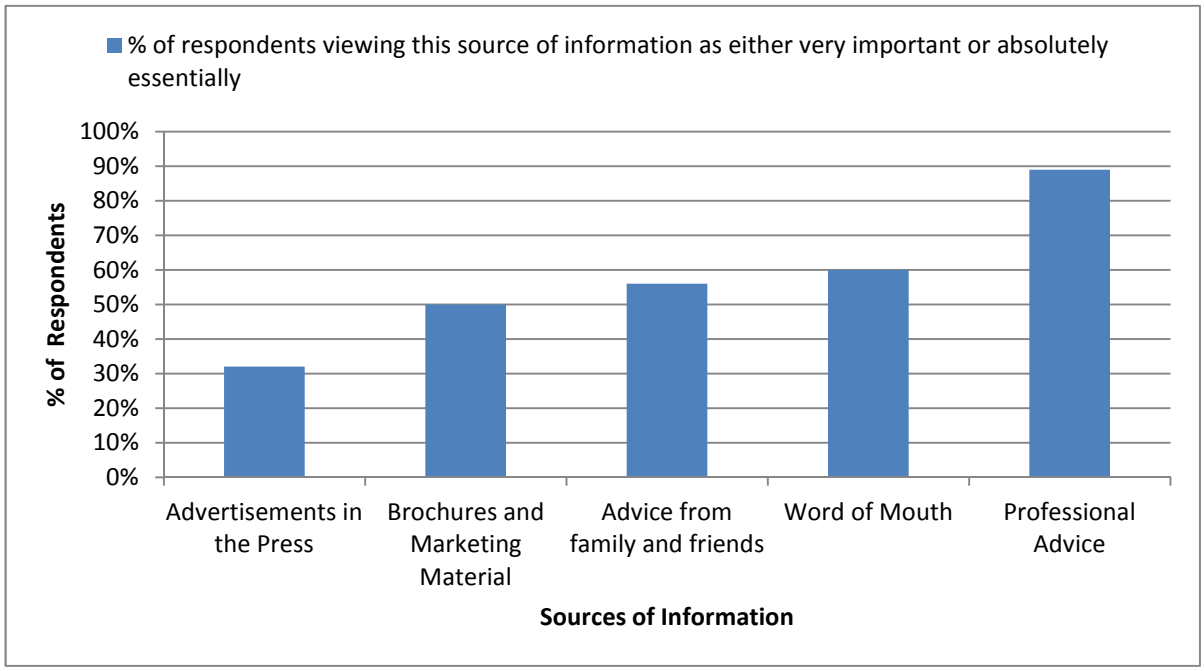


Figure 11 shows that the majority of sampled investors prefer professional advice (90%) when making a decision to invest and only 30% consider advertisements in the press when making decisions. The role of brochures and marketing material in influencing investors to invest in ethical funds will be examined in more detail in section 4.7. below.

Advertisements refer to paid for marketing material in the press, while brochures and marketing material refer to official fund documentation highlighting the strengths and weaknesses of the fund, and conveying crucial information about the fund. Figure 11 above shows that only 50% of the respondents would consider brochures and marketing materials. This is counterintuitive as factsheets are factual documents that contain all the relevant information about a fund required to make an investment decision. A further analysis of funds factsheets is made in section 4.6 below to better understand why only 50% of investors rely on brochures and what information is generally contained in the factsheets.

Figure 12 below shows the factors that the sampled investors regard as being very

important in influencing their decision to invest.

Figure 12: Factors that investors regard as being very important in influencing their decision to invest.

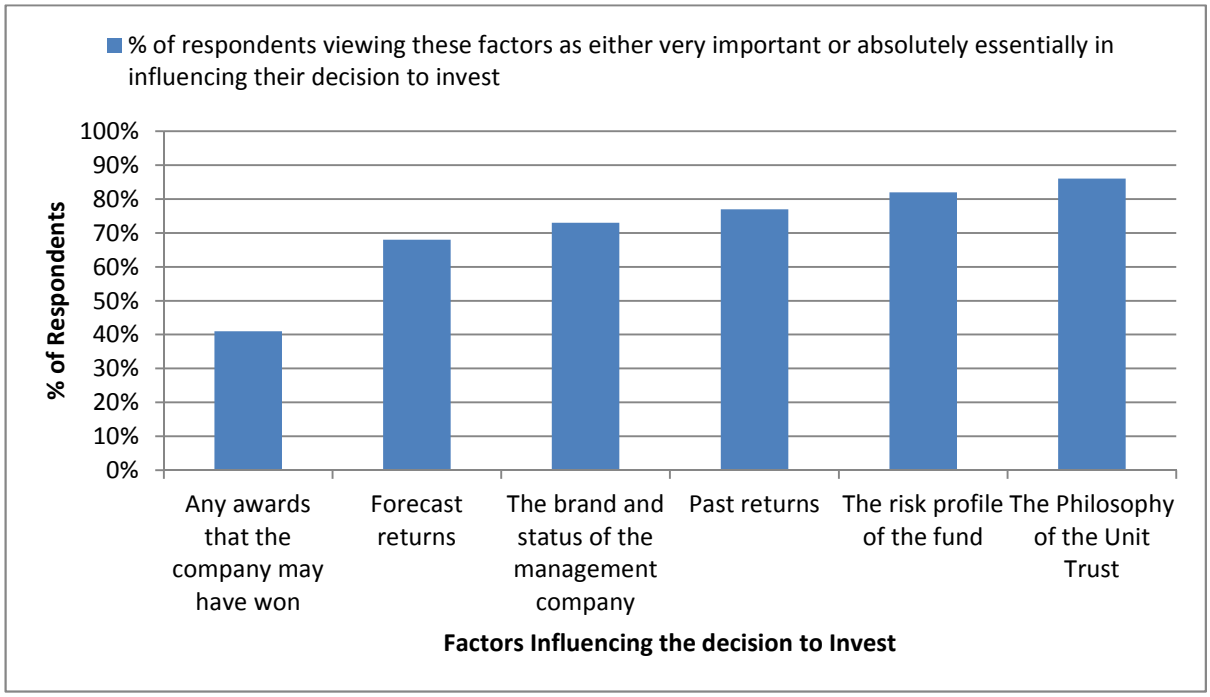


Figure 12 indicates that the sampled investors are influenced mainly by the philosophy of the unit trust when making the investing decisions and least by the awards that the company has won previously. The philosophy of the unit refers to the investment focus and strategy of the unit trust, e.g. ethical or conventional. Interestingly, based on the responses from the sample, the risk profile of the fund seems to be more important than the past and the forecasted returns indicating that including past performance in marketing material is not very important to the sampled investors' decision making process.

Figure 13 below shows which of the above factors the sampled investor's believe are very important to include in a factsheet/brochure.

Figure 13: Factors which investor's believe are very important to include in a factsheet/brochure.

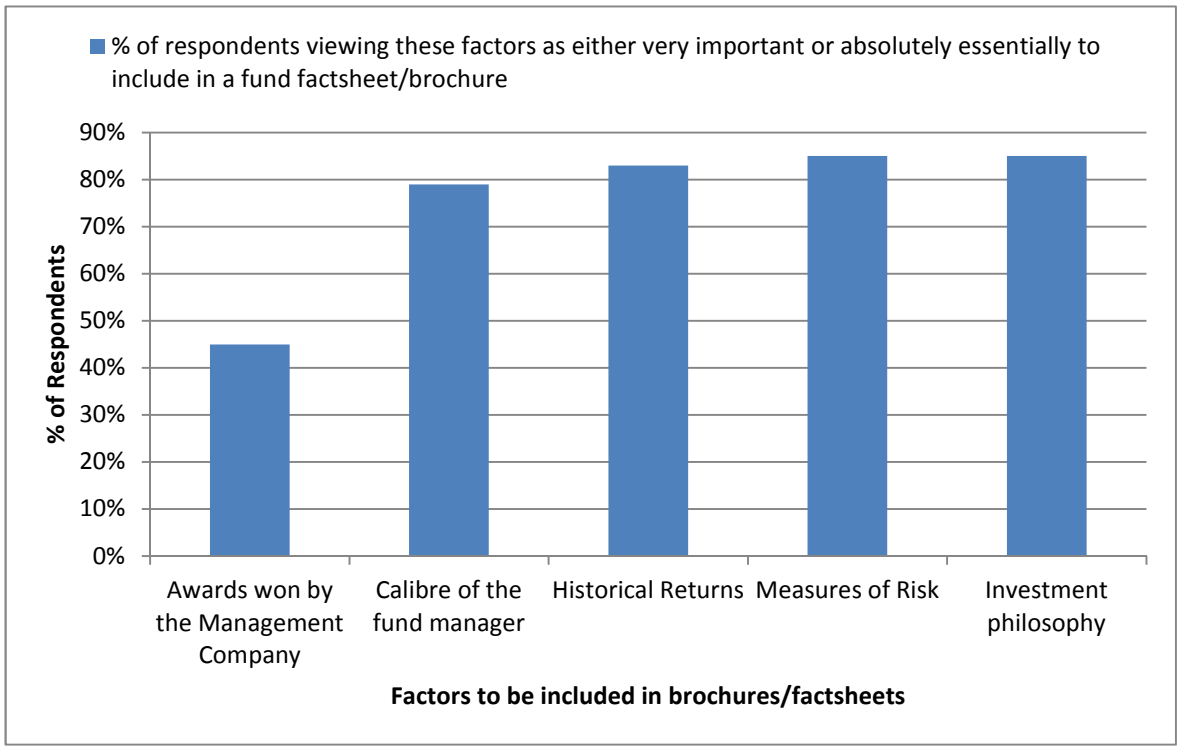


Figure 13 indicates that the sampled investors prefer the investment philosophy (85%) of the unit trust to be included in the fact sheet of the unit trust while only 45% believed that awards won by management are important. Over 80% of the sampled investors believed that risk and return should be in the factsheet with risk being more important than returns. Therefore, from figures 12 and 13, it is clear that the sampled investors regard information about fund investment philosophy, risk and historical returns as being the most important to them in reaching an investment decision and they prefer that factsheets include this information.

4.6 Analysis of funds' factsheets

Given the analysis of the factors that influence the sampled investors to invest into ethical investing, a further analysis was carried out to establish the contents of the conventional and ethical funds' factsheets. The aim is to check which of the factors discussed in section 4.7. above are actually included in the factsheet. The factors are: awards that the company may have won, forecasted returns, status or the brand of the management company, past returns, the risk profile of the fund and the philosophy of the unit trust. There were 28 factsheets of conventional funds and 6 ethical funds analysed. Therefore, ethical funds comprised 18% of this sample and conventional funds 82%.

Table 9 below shows which of the six measures were included in the factsheets.

Table 9: The number of times that certain types of information appears in factsheets

Concept	Overall Count	Conventional Fund Count	Ethical Fund Count
Any awards that the company may have won	2	2	0
Forecast returns	3	3	0
The brand and status of the management company	409	360	49
Past returns	356	296	60
The risk profile of the fund	147	120	27
The Philosophy of the Unit Trust	0	0	0

Table 9 shows that that past returns, the risk profile of the fund and the philosophy of the unit trust are three characteristics most mentioned in mutual fund factsheets, and this is consistent with the information that the sampled investors regard as being the most important. Conventional funds mention past returns more than risk profile, while for ethical funds the reverse is true – this is consistent with the results of the analysis in section 4.2, 4.3 and 4.4 which shows that conventional funds are the better performers on average while ethical funds are less risky on average, especially in the period post 2009. Therefore, ethical fund factsheets correctly reflect the information preferences of the sampled investors. The reason as to why only 50% of sampled investors regard brochures and factsheets as important sources of information must therefore lie elsewhere (maybe in trust or issues of independence).

4.7 Test for differences between samples

Demographic factors such as age, education level and gender often influence the way people feel about things. In order to understand how the sampled investors are influenced by these factors, the chi-square test is used to test differences in the samples, divided by age, gender and level of education.

Table 10 below shows the results of the Chi square test for association by age

Table 10: Chi square test for association by age

Association by Age	Df	Chi Sq Value	P-Value	Significance
How important are the following factors in deciding to invest in unit trusts?				
-Past returns	16	27.521	0.0360*	Significant

The results show that, in the survey sample, there is a significant association (at 5% level) between age and past returns being a factor in investing in unit trusts. Investors from the sample aged 31 to 40 place the most emphasis on past returns compared to any other age group.

Table 11 below shows the association by gender.

Table 11: Chi square test for association by gender

Association by Gender	Df	Chi Sq Value	P-Value	Significance
Level of knowledge of investing and unit trusts?	3	10.753	0.0131	Significant
Understanding of Sharia or Ethical investing	2	8.389	0.0151	Significant
Would you prefer higher risk in a Shariah/Ethical fund or lower risk in a conventional fund?	1	5.263	0.0218	Significant
Would you prefer a retirement fund that was Shariah/ethical or a conventional retirement fund?	1	7.363	0.0067	Significant

Table 11 shows that there is a significant association between gender and the level of knowledge of investing and unit trusts based on the sample of investors.

About 31% of females sampled rated their knowledge as poor whereas only 13% of males sampled did the same. None of the sampled female investors indicated that their knowledge of unit trusts and investing was excellent, whereas 10% of sampled males did. While a higher percentage of females regarded their knowledge as average, a significantly higher percentage of males regarded their knowledge as good. Therefore, based on these sample specific results, when marketing to distinctly women groupings, fund marketers should sufficiently explain investment concepts and educate the intended audience such that they feel they have a good enough grasp of the principles to make an informed decision.

There is a significant association between gender and understanding of Shariah or

ethical investing based on responses from the survey sample. The majority of female respondents (78%) have a basic understanding, but 27.94% of male respondents understand Shariah/Ethical investing very well compared to only 3% of women.

There is a significant association, within the sample population, between willing to take on a larger risk to invest in a Shariah or Ethical unit trust and gender. About 91% of male respondents would take on a larger risk in order to invest in a Shariah/Ethical unit trust compared to only 73.33% of female respondents. It is important to note that while there is no significant association between gender and willing to accept a lower return in order to invest in a Shariah/ethical fund, there is a significant association between gender and the willingness to accept more risk in order to invest in Shariah/Ethical funds. This indicates that while there is no gender bias within the sample in sacrificing returns for ethics/faith, in terms of risk, female respondents are more risk averse and are less likely to take on more risk in order to invest according to their ethical/religious beliefs. Therefore, based on these sample specific results, when marketing to women, the risk profile of the fund should be favourably compared to conventional funds.

There is a significant association between willingness to accept a lower return on a retirement in order to invest according to faith/ethical principles and gender. About 25% of female respondents would be willing to invest in a fund that was not Shariah/ethical in order to earn a higher return, compared to 5.97% of male respondents. As retirement is a topic of intense importance, this reinforces that female respondents have indicated less tolerance for risk. Therefore, the lower tolerance for risk exhibited by female respondents may explain why there are less willing to accept a lower return in retirement – as not having sufficient capital in retirement is a major risk.

Table 12 below shows the association by education level.

Table 12: Chi square test for association by education level

Association by Qualification	Df	Chi Sq Value	P-Value	Significance
The importance of ethics when making financial decisions	8	20.054	0.0101	Significant
Level of knowledge of investing and unit trusts?	12	38.414	0.0001	Significant
Would you prefer lower returns in a Shariah/Ethical fund or higher returns in a conventional fund?	4	15.598	0.0036	Significant
If Shariah/Ethical funds produced the same return as conventional funds, which would you prefer?	4	10.542	0.0322	Significant

Table 12 shows that, based on sample responses, there are significant associations between education level and a number of factors. One, there is a significant association between education level and the importance of ethics/faith in making financial decisions. The most highly educated of the respondents (18%) responded that faith/ethics was not very important when making financial decisions, significantly higher than other less educated respondents. Those with honours degrees (7.41%) and degrees/diploma's (2.17%) also responded that faith/ethics was not very important, whereas 0% of respondents with a Grade 12 or less indicated as such. A possible reason for this is that those with the highest education level also had excellent investment knowledge, thereby making them more objective in their investment criteria. Furthermore, given knowledge of analytical investment tools, they would be more prone to take a classical risk return stance based purely on performance.

Those respondents with a degree/diploma (95.65%) indicated that faith/ethics was very important when making financial decisions. Therefore, when marketing to a more educated audience, based on responses from the survey sample, appealing to faith/ethics alone may not be sufficient to convince them.

Two, based on sample responses, there is a significant association between level of education and the level of knowledge of investing and unit trusts. Those respondents with the highest level of education (45.45%) rated their knowledge as excellent as compared to lower levels of education. Therefore, when marketing to highly educated audiences, based on responses from the survey sample, fund management companies can offer a more technical, sophisticated presentation of the fund.

Three, based on sample responses, there is a significant association between educational level and willingness to invest in a non-ethical/non-Shariah fund in order to earn a higher return. Those respondents with the highest educational level (36.36%) were far more likely to invest in a non-ethical/Shariah fund in order to earn a higher return. This is consistent with the response of those with the highest educational level being in the majority in saying that ethical/faith considerations are not important when making financial decisions. It is interesting to note that the highest education level was also the level most likely to have excellent knowledge of unit trusts and investing. Therefore, based on sample responses, the more educated the investor, the less of a role ethics play in his decision making and the more likely the investor to choose returns over ethics/faith.

Four, based on sample responses, there is a significant association between educational level and whether an investor will choose a conventional or ethical/Shariah fund given the same level of risk and return. About 18.18% of those respondents with the highest education level said that they would still choose conventional funds even if ethical/Shariah funds gave same level of risk and return.

Five, based on sample responses, there is a significant association between fund preference given the same level of return and the importance of ethics/faith in making financial decisions. About 100% of the respondents who would choose a conventional fund given the same level of return regarded ethics as not being very important in making financial decisions, while 85.57% of respondents who would choose ethical/Shariah funds regarded ethics as being very important in making financial decisions.

Chapter summary

The performance (in terms of both risk and return) of ethical funds was analysed and compared to conventional funds using three methods: univariate analysis, traditional performance measures and factor models (the CAPM and Fama and French 3 factor models). The results all show that conventional funds have outperformed ethical funds on average over various periods, while ethical funds have had lower price variation post 2008. However, conventional funds have rewarded investors better per unit of risk. Both ethical funds and conventional funds show minimal style bias and are driven predominantly by the market return.

After assessing the performance of ethical and conventional funds, the factors that influence investors to invest in ethical funds were analysed, as well as their preferred sources of information on investing and the type of information they seek in order to assess an investment. The role of advertising and brochures was also examined as well as the extent to which brochures and factsheets provide investors with the information that they deem most important. The impact of demographic factors on investor choices was analysed

The results show that, based on sample responses, investors are primarily driven by ethical considerations when investing into ethical funds, with a significant percentage of investors willing to undergo financial sacrifice in favour of faith/ethics. The willingness of the sample to undergo financial sacrifice may well be influenced by the fact that the respondents were Muslim, and most ethical funds in South Africa are Shariah funds. A more diverse sample may not show the willingness to undergo financial sacrifice in favour of ethical considerations.

Age, education level and gender emerged as biographic factors significantly influencing investor's preferences. The sampled investors preferred sources of information was professional advice, word of mouth and advice from family and friends. Investors took the investment philosophy of the fund, the risk profile of the fund and historical returns as the most important pieces of information to consider when deciding to invest and that they would like to see in factsheets. These factors were present in both ethical and conventional fund factsheets, with conventional funds emphasising returns and ethical funds emphasising risk profile.

Finally, it is important to note that results derive from a small sample group, and that continuous research with larger sample groups will be required in order to project these results onto the entire investing population.

The next chapter analyses the results and presents a conclusion.

Chapter 5 Discussion and conclusion

5.1. Introduction

This chapter discusses the results of the research. Section 5.2. discusses the results of the research. Section 5.3. presents an overall conclusion of what the study has produced. Section 5.4. notes the limitations of the study and Section 5.5. provides suggestions for future research.

5.2. Discussion of Results

The results of the empirical analysis showed that: One, conventional funds performed better than ethical funds when compared over a truncated time period and conventional funds were more risky than ethical funds; Two, both conventional funds and ethical funds were driven primarily by the market return with no clear style bias and three, ethical funds had a stronger beta to the ALSI index than to the JSE SRI index.

The finding that conventional funds perform better in South Africa is not in line with the findings of Cumming (2000), Schueth (2003), Bauer et al., (2000) who found no evidence that conventional funds outperform ethical funds. In fact, the results of this research contradict the findings of Fernandez-Izquierdo and Matallin-Saez (2007) who found that ethical funds perform better than conventional funds. These research findings however, corroborate the findings of Jones et al., (2007) and Bauer et al (2007) who found no evidence that ethical funds outperform conventional funds in Australia and Canada respectively.

The difference in results between our findings and the findings in the literature could be explained by the fact that most studies on ethical fund performance are sample specific (Bauer et al, 2007). Bauer et al (2007), suggest that research should focus on previously unexplored countries in this regard, with Sakuma and Louche (2008) arguing that it is important to carefully translate and reinterpret SRI practice when adopting it into a new context. The fact that ethical fund performance is sample specific is confirmed by the fact that while the research results for South Africa agree with studies from Australia and the US, they do not agree with European studies. The null hypothesis that ethical funds do not outperform conventional funds is

accepted on the results which show that ethical funds in South Africa underperform conventional funds.

The research results further show that the ethical fund index has a lower beta to the JSE SRI index than it has to the JSE ALSI index. The results of the Fama- French analysis also shows that in South Africa both ethical funds and conventional funds are most influenced by the JSE ALSI index than by value or growth strategies, corroborating the CAPM results which show ethical funds to have a lower beta to the JSE SRI index. Furthermore, South Africa is a much smaller market than the United States and as such, diversification and differentiation are not as effectively achieved as in jurisdictions with larger markets.

The research results are in line with Cortez (2009) who found that ethical funds in Europe are more exposed to conventional indices than socially responsible indices. These findings may be an indication that ethical funds may not actually behave ethically and that stock selection for ethical funds may not actually differ from that of conventional funds (Rhodes, 2010). For example, Benson et al., (2006) found that while ethical funds do take different industry positions, there is little difference in the stock picking ability of ethical fund managers as compared to conventional fund managers. The reasons for ethical funds having a lower beta to the JSE SRI index than to the JSE ALSI index could be because ethical funds are not investing in enough ethical stocks, or that fund managers may screen for ethics differently or that the index is not representative enough (Bauer et al, 2007).

A further reason could be that socially responsible indices have a minimal impact on stock selection (Fowler and Hope, 2007). The difficulty that fund managers face in selecting, defining and applying socially responsible screens (Rhodes, 2010) may also explain the divergence in ethical fund performance from the JSE SRI Index performance. A further reason may just be sheer size and inclusivity of the ALSI index, which represents 99% of the JSE's market capitalisation, as compared to the SRI index, which only had 51 stocks at launch in 2004.

We therefore accept the null hypothesis that ethical funds do not differ much from conventional funds in terms of style, stock bias or the selection of stocks.

Although the questionnaire results are not significant, they provide insight into the sample specific views of investors.

The research results show that the sampled investors have a basic understanding of ethical investing. This finding is in line with Schwartz (2003) who cited a growth in business ethics and investors' concerns over ethical issues.

Therefore, we reject the null hypothesis is that most investors from the research sample will not understand Shariah/ethical investing;

The sampled investors perceived conventional funds as having a better return than ethical funds. The vast majority of sampled investors viewed conventional funds as more risky than ethical funds and the vast majority of investors would invest according to faith/philosophy even if it meant assuming higher risk or earning lower returns (this result only holds for the homogenous Muslim sample; a more diverse sample may produce different results)

Furthermore, the research finds that the sampled investors would prefer to invest at a higher risk, or receive a lower return, in order to invest according to ethical or religious reasons. This finding is at odds with established investment theory which suggests that investors will seek the highest possible return per unit of risk (Marx et al., 2003) and contradicts the findings of Statman (2000), Schwartz (2003), Nilsson (2008) and Schueth (2003) who purport that investment performance is one of the key drivers of investment decision making. The reason for this contradiction is the concept of financial sacrifice, whereby investors sacrifice returns to invest in ethical funds (Jones et al 2007). It is also important to bear in mind that the sample was restricted to Muslim investors, and that the result may be different if a more diverse sample is surveyed.

Therefore we accept the null hypotheses that that the sampled investors will be willing to undergo financial sacrifice in order to invest according to their beliefs and the null hypothesis that investors from the research sample will be driven largely by religious belief / ethical values in their investing activities.

Furthermore, the research found that, for the sample respondents: the most important source of investment information was professional advice followed by word of mouth and advice from family and friends; the factors most convincing to investors

was the philosophy of the fund, followed by the risk profile of the fund and past returns – and these are the factors that they would most like to see on fund factsheets.

Therefore, we accept the null hypothesis that the sampled investors will rank professional advice as one of the major factors that they take into account when deciding to invest. We also accept the null hypothesis that the sampled investors will rank fund performance and mutual fund style as amongst the major factors to take into account when investing.

Based on the survey sample, men were more willing to accept risk and lower return in order to invest according to ethics/faith than women, and men had a better understanding of Shariah/ethical investing and mutual funds generally. Respondents between the ages of 31 to 40 placed the most emphasis on past returns. The importance of ethics in financial decision making decreases as education level increases, and the willingness to accept a lower return in order to invest in an ethical fund decreases as education increases.

Daniel and Titman (1999) investigate the effects of investor overconfidence on investment behaviour. They find that investor overconfidence can generate momentum in stock returns, especially those stocks for which interpretation of ambiguous information is required. They find that this momentum effect is greater for growth stocks than stable stocks. In our responses, men display more overconfidence in their abilities. The sample findings show that men are more willing to accept risk and lower return in order to invest according to ethics/faith than women, and men had a better understanding of Shariah/ethical investing and mutual funds generally.

The finding from our sample that ethics in financial decision making decreases as education level increases, and the willingness to accept a lower return in order to invest in an ethical fund decreases as education increases contradicts the findings of Nilsson (2008) who found that women and better educated investors were more likely to invest a greater proportion of their funds into ethical investments and also contradicts Junkus and Berry (2010) who find that the typical socially responsible investor is a single, younger, female who is wealthy and better educated that conventional investors. Our research results show that the educated respondent was

less likely to invest in ethical funds. Given that ethical investing in South Africa requires financial sacrifice, female respondents were less willing to accept risk and lower return in order to invest according to ethics/faith than men.

Therefore, we reject the null hypothesis that female investors and well educated investors from the research sample will be more willing to invest in ethical funds.

The results of the content analysis indicated that the most mentioned factors in fund factsheets were risk, past returns and fund philosophy, in line with the information that sampled investors took into account the most when deciding to invest. This is in contradiction to the finding by Huhmann and Bhattacharrya (2005) that mutual fund adverts do not contain the information necessary for an optimal investment decision. The results of the content analysis show that the factsheets of South Africa funds concentrate on those factors that investors in our sample consider most important to influence their decision. The factsheet of South African funds also mention their strengths the most – conventional funds mention performance more than risk and ethical funds mention risk more than performance. A possible reason for the difference in results could be that factsheets are designed to convey important objective information, whereas advertisements focus more on wording that triggers a particular consumer response.

Therefore, we reject the null hypothesis that that the sampled fund factsheets do not contain the information that investors require in order to make an optimal investment decision.

There is no evidence that advertising has no impact on investor behaviour. No causality test was done, however, purely in terms of responses from our sample we find that advertisements in the press are not the most relied upon source of information for investing, falling behind professional advice, word of mouth and advice from family and friends as the most important source of financial information for investors. This result from our sample contradicts the findings of Schwartz (2003), Jain and Wu (2000) and Ayogdu and Wellman (2011) that advertising has a significant effect on fund growth and inflows.

Therefore, based on sample responses only, advertising and media exposure does not, in the South African context, contribute to the growth of investing in ethical

funds. The findings are also contrary to Capon et al (1994) who found that fund ranking data was the most important source of information for investors. The findings are, however, in line with the model of fund management proposed by Gennaioli et al (2015) that investors are not comfortable making investment decisions on their own and hire professional advisers to help them. The reason for the difference in findings could be that South Africa is a developing country with asymmetric access to financial services, and investors tend to rely more heavily on advice than on making a decision themselves in response to an advert. Although advertising was not the major source of information in deciding to invest, the sample respondents did indicate that they do take advertisements into account (albeit to a lesser extent), therefore we accept the null hypothesis that the sampled investors will take advertising into account when deciding to invest.

Our research revealed that while 20% of sampled investors stated that they understood ethical investing very well, only 7% had excellent knowledge of unit trusts/mutual funds. This suggests that while the sampled investors may understand ethical investing as a concept, their knowledge of investment products may be poor, causing them to rely on advice and word of mouth recommendations. We therefore reject our null hypothesis that the sampled investors will indicate that they have a solid understanding of investment products.

The research found that in deciding to invest, the sampled investors looked at the philosophy of the fund, the risk profile of the fund and historic returns. In particular, respondents between the ages of 31 to 40 placed the most emphasis on past returns. This result from our sample is in line with Arteaga et al (1998) and Capon et al (1994) who found that investors take historical performance into account. The sample findings are in contradiction to Cooper et al (2005) who find that investors are influenced by the cosmetic effects of advertising.

The reason for the contradiction is that the sampled investors show a preference for advice over advertising as a source of information, hereby shielding them from the cosmetic effects of advertising. The research results also indicate that the majority of respondents felt that any awards won by the fund were of no more than average importance in choosing to invest. This is reflected in the content analysis of fund factsheets where awards mentioned were negligible.

This is in contradiction to the finding by Morey (2002) that the rating given to a mutual fund by Morningstar has a significant effect on investor preference for the fund. A possible reason for the contradiction is that South Africa does not have a well-defined awards system, and that investors seek professional advice which focuses on objective measures, rather than responding to adverts which would punt awards. We therefore reject our null hypothesis that the sampled investors will be influenced by fund name and brand when deciding to invest.

5.3. Conclusion

Overall, the study utilised three distinct research methodologies (quantitative analysis, questionnaires and content analysis) in order to gain insight into the nexus between objective metrics and subjective decision making. The results of the study provide unique insight into the risk return dynamic of making an ethical investment choice in South Africa, as well as providing insight into how South African investors, based on a small sample, view ethical investment. Crucially, the study has taken the existing quantitive research into ethical fund performance in South Africa and expanded it utilising the most up to date models and extended the body of knowledge to include investor insights and content analysis of fund marketing material.

By utilising a unique combination of methods, the study has laid a foundation for the deeper exploration of the results by future researchers, as well as providing a template for mixed methods research into the mutual fund field.

The results of the study are mostly in line with the various null hypotheses developed from the literature review. The quantitative study showed that ethical funds do not outperform conventional funds and that there is no style or selection difference between conventional funds and ethical funds. Therefore, there is currently no stock selection or performance advantage to be gained from choosing an ethical fund over a conventional fund in the South African market.

The qualitative research results were very sample specific, but presented interesting insights which can form the basis of further research with a larger, more diverse sample. The study showed that investors from the sample understand ethical investing, but are not fully conversant with investing in general. This indicates that financial literacy is an area that requires focus in the South African market. The

sampled investors were objective and rationale in deciding upon an investment, looking at past performance and seeking professional advice.

The content analysis showed that the sampled funds catered for this characteristic by ensuring that factsheets contained information relevant to investors. In this regard, we may conclude that the sampled investors and mutual funds displayed an analytic and mature approach to investment. The sampled investors were found to not be susceptible to cosmetic fund promotion – again, confirming that despite the sampled investors indicating that they do not have solid knowledge of investment products, they still adopt a pragmatic, objective approach to investments.

The sample study also highlighted the importance of factors such as gender, education level and religious beliefs in choosing whether to invest in an ethical fund or conventional fund. The sampled investor's choices varied depending on their gender and level of education. There was an overall willingness amongst the sampled investors to undergo financial sacrifice. This has important implications for ethical fund managers, who need to ensure that their funds are fully in line with the philosophy that they claim to be utilising as their investment screen. Furthermore, it presents a fertile area for future research utilising a more diverse population pool.

5.4. Limitations of the Study

The study and the results are subject to the following limitations, which impact the interpretation and application of the results.

Firstly, a number of the empirical and qualitative results are not statistically significant. Therefore, while these results are useful in quantifying varying results between the funds, such differences are not statistically significant. As such, those results cannot be said to be conclusive proof of performance etc.

Secondly, all of the respondents are from the Muslim faith and this may influence their answers. In particular, the willingness to undergo financial sacrifice and the importance of ethics in their decision making may be due to the level of religious belief. As such, we cannot assume that a diverse South African investor community would necessarily behave in the same manner. Given that the majority of ethical funds currently apply Shariah screens, the results are particularly relevant as the Muslim community would be the natural target market of such funds. However, as

ethical funds of varying screens are established, it will be necessary to survey the target markets of those funds in order to gain insight into the preferences of that target market.

Thirdly, the sample size for the questionnaire is small, and as such, we cannot derive broad inferences from the results. The results are indicative of the responses of the sample. Thus, while the results give us valuable insight into a relevant investor community, they cannot be said to be statistically significant for the entire South African Muslim population. In order to build upon the results from the Muslim community it will be necessary to take surveys with ever increasing sample sizes.

Fourthly, the impact of fees has not been considered. Khorana et al (2008) note that higher fees depress investment performance, and Gennaioli et al (2015) state that, net of fees, investors consistently underperform the market. Furthermore, fees differ depending on various factors, including fund objectives and fund type (Khorana et al, 2008). The inclusion of fees in the comparison of returns between ethical and conventional funds will result in reduced investment performance for both types of funds. The reduction in performance may not be the same, however, as fees differ from fund to fund.

5.5. Suggestions for Future Research

The research results point to a number of areas that can be investigated further in future research.

Firstly, the manner in which ethical funds select stocks needs to be compared with that of conventional funds to establish why there is such a close resemblance of ethical funds to conventional funds. Given that ethical funds are screen funds, the stock picking process should result in a significantly different universe of stocks to a conventional fund, and hence a much lower beta to the market.

Secondly, the composition and definition of socially responsible indices need to be considered, and the reasons as to why ethical funds are more aligned to the ALSI than the SRI need to be investigated. Is it because the SRI is defined in a narrow manner and ethical fund managers employer a wider definition of ethical stocks, or is it because ethical fund managers are not considering the entire universe of ethical stocks but are instead trying to mimic conventional funds?

Thirdly, the manner in which funds advertise their products needs to be evaluated. The research results show that investors place a premium on professional advice and word of mouth recommendations to decide on investments. The research must investigate the various word of mouth strategies available and investigate which are best suited to South African investors, new technology which can aid word of mouth recommendations, the regulatory framework that would be required to govern word of mouth financial advice and also look at ways of ensuring the independence of fund-sponsored financial advice.

Appendix A: Questionnaire

1. What is your highest educational level?
    a. Did not complete high school
    b. Matric /Grade 12
    c. University/Technikon degree/diploma
    d. Master's Degree
    e. PhD
2. What is your Gender?
    a. Male
    b. Female
3. What is your age group?
    a. Under 30
    b. 31 – 40
    c. 41 – 50
    d. 51 – 60
    e. 61 +
4. How important are ethics and/or religious faith when it comes to making financial decisions?
    a. Very Important
    b. Important, but not essential
    c. Not very important, will not influence my decisions
    d. Not important at all
5. How would you rate your knowledge of investing and unit trusts?
    a. Excellent – I am a professional in the field
    b. Good – I know enough to make my own decisions
    c. Average – I require some assistance but have an idea of what I want
    d. Poor – I tend to rely on advice
6. How well do you understand Shariah or ethical investing?
    a. Very well
    b. I have a basic understanding of what it entails
    c. I have heard of it but do not really understand
    d. I have never heard of these concepts.

7. What are the most important considerations you would take into account when investing in an equity fund/unit trust?
    a. Returns – how much money can I make
    b. Risk – how much does the return vary
    c. Ethics /Faith – is the investment Shariah compliant or ethical
    d. A combination of risk and return
    e. A combination of risk, return and ethics
8. Which of the following unit trusts/funds do you perceive as giving better returns?
    a. Shariah Funds
    b. Ethical Funds
9. Which of the following two scenarios would you prefer?
    a. Earn a lower return but invest in a unit trust that is Sharia compliant/ethical
    b. Earn a higher return, but invest in a unit trust that was NOT Sharia compliant/ ethical
10. Which of the following unit trusts/funds do you perceive as being more risky?
    a. Shariah/ethical Funds
    b. Conventional Funds
11. Which of the following two scenarios would you prefer?
    a. Assume larger risk but invest in a unit trust that is Sharia compliant/ethical
    b. Assume lower risk, but invest in a unit trust that is NOT Sharia compliant/ethical
12. When it comes to saving for your retirement, which would you prefer?
    a. A retirement fund that is Sharia compliant/ethical but has lower returns
    b. A retirement fund that is NOT Sharia compliant/ethical but has higher returns
13. If Ethical/Shariah compliant funds/unit trusts produced the same results as conventional funds, which would you prefer?
    a. Ethical/sharia funds
    b. Conventional funds

14. What is your view on Shariah compliant/ethical unit trusts?
    a. Very necessary
    b. Good to have
    c. I am indifferent
    d. Waste of time

	Not Important at all	Of little Importance	Of Average Importance	Very Important	Absolutely Essential
15. How important are the following sources of information on deciding whether to invest in unit trusts?					
Brochures and marketing material					
Advertisements in the press					
Word of mouth					
Advice from family or friends					
Professional advice					
16. How important are the following factors in influencing your decision to invest in a unit trust?					
Forecasted future returns					
Past Returns					
The risk profile					
The brand and status of the management company					
Awards that the company may have won					
The philosophy of the unit trust e.g. Shariah					
17.How important is it for the following factors to be included in					

the brochure/factsheet of a unit trust?					
Historical returns					
Measures of risk – how risky the investment is					
The calibre of the fund manager					
Investment Philosophy					
Awards won by the fund/management company					

18. Choose the appropriate answer, either "yes" or "no" for each of the following options:

	Yes	No
Would you be willing to earn a lower return in order to invest in a Sharia/ethical manner?		
Would you prefer an insurance company that invested in a Sharia compliant/ethical versus one that does not?		
If given the choice, would you prefer a Sharia compliant/ethical pension or retirement fund over a conventional one?		

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