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THE SCHOOL OF BUSINESS AND FINANCE,
FACULTY OF ECONOMICS AND MANAGEMENT

THE EFFECT OF CLIENT AFFILIATION ON THE PERFORMANCE ATTRIBUTIONS OF FUND MANAGERS IN SOUTH AFRICA.

BY
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DECLARATION

I hereby declare that this submission is my work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which, to substantial extent, has been accepted for the award of a degree or diploma of a university or other higher learning, except where due acknowledgement is made in the text.

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ABSTRACT

This study seeks to evaluate the performance of unit trust managers based on their client affiliation classification. Worldwide, the number of investors investing in unit trusts is on the rise and increasingly they want to be able to evaluate the performance of the managers managing their funds so as to make better investment decisions. This increase in the asset size and number of unit trusts funds could be attributed but not limited to the low capital required for investment by small investors who before could not afford to invest in portfolios requiring large capital (Prather, Bertin, and Henker, 2004). In addition, the fund managers of these units are believed to have special skills such as market timing and stock selectivity which contribute to the performances they achieve.

The evaluation of the performance of unit trust fund managers is a largely unexplored area in South Africa. As a result, the study focuses on South Africa fund managers and has as aim to evaluate the performance of two groups of fund managers (independent and dependent) who were classified based on their client affiliation structure. The client affiliation classification is as a result of the fund manager's clientele base. The dependent group are those who formed part of a group structure and offer other wealth management services for which their clients or investors in the unit trust services originate from within the group while the independent group are those whose clients are pulled together from diverse individuals or institutions and does not form part of a group or render other services other than fund management. Two fund types were selected namely; general equity funds and balanced funds. It has also examined the underlying skills the different groups of fund managers possess.

The performance of unit trust has an effect on many parties who are related in one way or the other to the unit trust funds. The results of this study will inform individual investors, trustees and asset consultants in their decision making process of selecting a fund manager. The results of the study will be of value to the asset management industry in terms of assessing their structures and restructuring the investment service business to meet the expectations of their clients; the investors. It could also be used as a marketing tool.

Publicly available historical data on the returns generated by fund managers for a five year period from 2005 to 2009 was obtained. Analyses were done using the independent sampled t-test and the Treynor Mazel model respectively for the different research questions posed.

The results obtained indicated that there were no statistically significant differences between the performances of independent fund managers with those of dependent fund managers. However, dependent fund managers of equity funds performed better than their counterparts the independent fund managers. In the case of balanced funds, the independent fund managers performed better than their dependent counterparts. On average, both fund manager types possessed selectivity skills for equity funds and none for balanced funds. However for both fund types, the dependent fund manager demonstrated more selectivity skills than their independent counterparts. The results for market timing skills demonstrated that on average, both fund managers did not possess market timing skills for balanced funds while possessing these skills for equity funds. The dependent fund managers demonstrated more market timing skills for balanced funds though negative when compared to that of their counterparts. On the other hand, the equity fund independent fund managers demonstrated more market timing skills than the dependent fund managers.

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DEDICATION

I dedicate this thesis to the Lord God Almighty for being my Lord, Savior and Director throughout my life's journey and to the Sone family; my beloved husband Bertrand and son Enoch Emmanuel Sone for their love, encouragement and support.

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KEYWORDS

Client Affiliation

Performance

Stock Selectivity

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Unit Trust

Performance attribution

Fund managers

Treynor Mazuy model

Equity Funds

Balanced Funds

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1 Introduction

1.1 Background of the Study

Unit trust growth

It has been observed in many countries that investors are gaining an increasing interest in investing in mutual funds. This could be attributed to the benefits derived from investing in diverse portfolios common to these funds, the ease with which it is possible to own units in these funds, the ability of these funds to generate returns to the satisfaction of the investors and many others reasons best known to the individual investors. In all these, one thing is sure; they have become a new source of income for many small investors (Prather, Bertin and Henker, 2004). To further substantiate what Prather *et al* (2004) observed, Pawley (2006) made mention that unit trusts (mutual funds) have experienced an impressive increase in terms of asset growth as well as the number of unit trust funds that now exist when compared to prior years. Pawley observed that this trend has been the case worldwide. Sehgal and Jhanwar (2008) also confirmed the heights that this industry has achieved by drawing attention to the fact that small investors have preferably chosen to use the unit trust as their investment medium. In the case of South Africa, Pillay, Muller and Ward (2010) recorded that unit trust funds grew from 30 to 900 between 1988 and 2008 which is an indication of an increase in the number of investors who now invest in these funds.

Some reasons behind unit trusts growth

According to Nassir *et al* (1997) this increasing entry of small investors into unit trusts investments can be attributed to the October 1985 stock market crash, which has led to small investors making the decision of investing in unit trusts in which their resources are pooled together and managed by experienced fund managers. Through unit trusts small investors now enjoy the benefits that hitherto were only available to a privileged wealthy few. One of these benefits includes diversification of exposure to varying stock exchange markets which since the inception of unit trusts are no longer the exclusive domain of wealthy individuals and institutions. Furthermore unit trust investors are expecting high returns on their investment beyond that which is obtained from a buy and hold strategy. They believe such an investment strategy is used by inexperienced managers who do not want to make investment decisions based on short term movements in the market prices of the assets (Nassir et al, 1997).
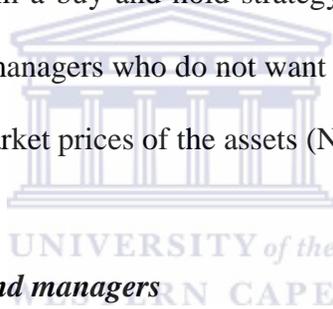
Evaluating the performance of fund managers

Given the growing interest of investors in the unit trust funds as could be seen in the discussions above, it is therefore important for researchers to continuously evaluate the performance of the managers of these funds so as to provide investors with information that will be relevant in choosing their fund managers.

Because of the need for investors to be informed on how well their investments are managed and a growing interest by academics to understand the performance of unit trusts funds, unit trusts performance measurements have received considerable attention within academic literature (Pawley, 2006). The increase in academic literatures could also be attributed to claims made by fund managers who claim to be able to provide superior investment opportunities than individuals can achieve by their own efforts (Oldfield and Page, 1997).

Most academic literatures available have focused on fund manager ownership and its relationship to performance. The relationship of ownership with performance was first researched on by Berle and Means (1932), who believed that some underlying factors such as ownership do contribute to the performance of many companies. This theory can be applied to the asset management industry where it is believed that fund managers with ownership stakes in the funds they manage have a positive impact on performance (Khorana et al, 2007). Researchers interested in this area of finance have not ceased to research on this relationship as they are having conflicting views (Demsetz and Villalonga, 2001).

However, it has been observed that little or no research has been carried out on the effect of client affiliation on the fund manager's performance; as a result, this study investigated this unexplored relationship. In addition, it explored the skills fund managers possess that has an effect on the performance of their funds.

The performance attribution aspect of this study takes its origin from Michael Jensen (1967) who divided portfolio performance into two components:

i. The predictive skills of the fund managers which leads to an increase in return and,

ii. The ability of the managers to minimise risk by efficiently diversifying the investments

In India, Sehgal and Jhanwar (2008) did a study of unit trust performance in which they focused their evaluation of performance attributes on stock selection and market timing abilities of the fund managers. This study also focused on evaluating these two performance attributes.

The scope of the study

The scope of this study centred on the evaluation of the performance of fund managers in South Africa. Recently in South Africa the number of people investing their income in unit trust funds as a means of wealth creation has been on the rise (Pillay et al, 2010). With fund managers playing a critical role in the success of unit trust funds it becomes important to evaluate the performance of these managers.

1.2   Purpose of the Study

Given that unit trust fund managers' performance in South Africa is largely an unexplored research area (Pawley, 2006) and that the relationship between client affiliation and performance has not been amply researched, this study sets out to examine this relationship. To eliminate any ambiguity and to contextualize the term client affiliation, it has classified funds into two categories namely (1) dependent and (2) independent.

1) A dependent mutual fund (unit trust) is a fund managed by an investment company that is part of a larger group that offers other financial services such as insurance, investment products or wealth management services, irrespective of the status of the administrator (management company) of which the Financial Service Board (FSB) registered fund manager/s (persons) is employed by the same larger financial service group.

This group of fund managers can be described as having a strong client affiliation relationship because they manage funds which originate from the other wealth management services offered in their group; as a result their clientele base also consists of other departments or divisions in the same group thus explaining the client affiliation relationship.

2) In contrast to the dependent mutual fund, an independent fund is one whose fund manager manages funds that are pulled together from diverse individuals or institutions and does not form part of a group or render other than fund management, other financial services that may tend to influence the management of these funds. This type of client affiliation is considered to be weak.

The fund types selected for this study were balanced funds and equity funds. These are the two most popular fund types that have comparable mandates and represent the bulk of the funds under unit trust management.

1.3   Significance of the Study

Since many investors make it their goal to identify skilled active fund managers (Hsu J, Kalesnik V, and Myers B W, 2010), this study seeks to inform investors and the public on the effect of client affiliation on a fund's performance by applying investment strategies such as market timing and stock selection. This will go a long way to provide information that will assist individual investors, trustees and asset consultants in the decision making process of selecting a fund manager. According to Oldfield and Page (1997), an assessment of the timing and selection skills of the managers of longer surviving unit trusts could prove to be extremely useful to investors attempting to maximize their wealth using this type of investment medium.

More over given that two fund types were selected for the study, results obtained will contribute in some way in informing investors investing in South African funds on which fund type performs better than the other. The results of the study will be of value to the asset management industry in terms of assessing their structures and restructuring the investment service business to meet the expectations of their clients; the investors. It could also be used as a marketing tool.

1.4   Research Questions

This study intends to answer the following questions:

1. Does client affiliation affect fund performance in general?

2. Will performance differ between dependent and independent fund managers given the two fund types selected for the study?

3. Could performance attribution be responsible for the variation in the performance of dependent and independent fund managers, if indeed it exist?

In other to be able to respond to research question (1) and (2), the following hypotheses were tested using the t-test. This has been discussed further in section 1.5 and in greater detail in chapter 3;

1. H_0: There is no difference in the performance of independent fund managers and dependent fund managers. This is also termed the null hypothesis.

2. H_1: There is a difference in the performance of independent fund managers and dependent fund managers.

In response to research question (3) the model used (the 'Treynor and Mazuy' model; which is a quadratic multiple regression model, further referred to in the test as the TM-model) tested the selectivity and market timing skills that could have contributed to the variation in the performance of the fund managers. This is introduced below in section 1.5 and later explained in greater detail in chapter 3 of the study.

1.5   Research Design and Methodology

The research approach that was used in this study was primarily a quantitative deductive approach where the study draws its methods extensively from existing literature and data found in public sources. This approach was appropriate because it was able to measure and provide results which addressed the problem under research. Data was collected over a period of five years. Data on returns for the funds selected for the study was obtained from an existing database made available by Plexus. Information on performance benchmarks used by the fund managers was obtained from the fund fact sheets as well as other resources which are available online. Other sources of data were I-Net Bridge and South African Reserve Bank where the market returns and the risk free rates were obtained respectively.

In order to apply the methods selected, the fund managers were grouped into two categories; independent and dependent which form the independent constructs of the study while the performance measure variable; the returns on investment of the funds managed by the fund managers forms the dependent construct.

1.5.1   Multiple regression analysis and T-test

The quantitative methodology used to analyse the data collected was the independent two-sample t-test and multiple regression analysis method. The t-test was used to compare the two fund manager categories while the TM model was used to identify, evaluate and compare the skills exhibited by the fund managers that brought about their performance. The t-test that was appropriate for this study is the independent sampled t-test while the multiple regression method that was appropriate and was used is the TM model (a quadratic regression model). Given the many variables involved in this study, in order to reach valid and reliable results, the

methodologies selected above were the most appropriate as they were able to provide results suitable to answer the research questions posed above. Chapter three gives a more detailed outline of the methods chosen and how the results were analysed.

1.6 Definitions

Mutual funds

These are investment companies that pool capital from shareholders and invest it in a diversified portfolio of assets (Khorana et al, 2007).

Unit Trusts

They are identical to mutual funds, most recently and more generally described as collective investment schemes (Pawley, 2006).

Asset allocation

This is an investment strategy that aims to balance risk and reward by apportioning a portfolio's assets according to an individual's goals, risk tolerance and investment horizon. The three main financial asset classes - equities, fixed-income, cash and cash equivalents - have different levels of risk and return, so each will behave differently over time.

Market timing

This refers to a manager's macro-forecasting ability i.e. his or her ability to forecast and exploit anticipated movement in the market as a whole (Oldfield et al, 1997).

Stock Selection

This is switching between assets of essentially the same systematic risk to exploit temporary mispricing (Oldfield et al, 1997).

Performance attributions

This is all about evaluating the underlying factors that contributed to the performance of the fund managers as a result of their selection method used either through asset allocation, stock and sector selection or market timing skills as already discussed above.

Collective investment scheme

This means a scheme, in whatever form, including an open-ended investment company, in pursuance of which members of the public are invited or permitted to invest money or other assets in a portfolio, and in terms of which-

(a) two or more investors contribute money or other assets to, and hold a participatory interest in a portfolio of the scheme through shares, units or any other form of participatory interest;

(b) the investors share the risk and the benefit of investment in proportion to their participatory interest in a portfolio of a scheme or on any other basis determined in the deed, but not a collective investment scheme authorised by any other Act (Act No.45 of 2002: Collective Investment Scheme Control Act, 2002, lines 35-40, page 11).

1.7 Chapter Outline of the Study

Chapter one gives a brief introduction to the study making mention of the purpose of the study, the significance of the study, the research questions and the research method used to answer the research questions. Important concepts used in the study are defined here.

Chapter two focuses on analysing already existing literature on the study, expanding on the different concepts that relate to the study. Here the study reviews literatures that have tried to respond to other research questions but which have some important relationship with the topic under study.

Chapter three presents the method used to collect, measure and analyse the variables. It explores the different research methods that are available to analyse data and clearly indicates the appropriate method for the present study showing how the method used will bring about the results that will respond to the research questions.

Chapter four reports on the results obtained from the use of the methods stipulated in chapter three as well as the analysis of the findings. This chapter analyses the data in line with the research questions and hypotheses to measure how well the analysis addresses the questions as well as state what the fate of the hypothesis is.

Chapter five concludes the study based on the results from chapter four. It draws its content from almost all the chapters above with emphasis on how the results have answered the questions and what conclusions can be drawn from the study. The limitations experienced during the study are also outlined. Gaps for further research have been suggested in this chapter.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

There is an increasing need for the performance of mutual fund managers to be evaluated. This is evident from the fact that the number of individual investors who now invest in mutual funds is massively on an increase. Small investors have found this, an investment route that suite them due to the low cost and minimum start-up investment amounts required. As a result of this increase in investment, the mutual fund industry has gained importance in the financial markets (Philippas, 2005; Pawley, 2006). Given that the growth in mutual funds is deemed to continue as the number of interested investors increases with time, it is important that the performance of the managers of these funds be continuously evaluated (Sehgal and Jhanwar, 2008). This growth captured the attention of many researchers who are eager to know what drives the performance of these funds which seem to be attracting an increasing number of investors year after year. The result of this is an increase in academic literature on mutual funds as confirmed by Prather *et al* (2004) who state that:

> "Despite the growth in the mutual fund literature over the past several decades, academics still reach contradictory conclusions regarding the ability of fund managers to consistently outperform the market and the fund-specific organizational and managerial factors that impact performance". (306)

The fact that investors are expecting higher returns on their investment than as in inexperienced buy and hold strategies (Nassir *et al* 1997) also makes it important for researchers to focus on evaluating the performance of these managers.

Within the ambit of research carried out on the operation of mutual funds, there is on-going debate and a differing in opinions between academics and fund managers on the performance of fund managers (Bello and Janjigian, 1997). According to Bello and Janjigian, fund managers who are doing well argue that the academics are using inaccurate measures in coming to their conclusions on their performance; that they compare like with unlike such that the benchmark used by the academics are different from those used by the fund managers and are hence inappropriate.

Academics and the evaluation of unit trust performance

This chapter of the study explores some of these literatures with the aim of presenting and analysing the different outcomes of the research carried out by researchers on performance. Most of the literature available on assessing the performance of fund managers focused on different factors that affect fund performance other than the one addressed in this study. The results reported by the studies explored in this section have contributed to the existence of a number of evaluation methodologies that have marked portfolio performance and also assisted in identifying skilled fund managers (Hsu *et al*, 2010).

Genetay (1999:107) in relation to one of the factors that affects performance stated that "the theory of ownership structure and control, suggest that differences in ownership rights may affect a firm's control and performance". With respect to this theory, the performance of fund managers who have ownership stakes in the funds they manage will be different from those who do not have ownership stakes within the funds they manage. However, ownership is not the only incentive that affects performance as a whole. This study and others have looked at other factors that affect fund performance. Other literatures consulted include, Khorana, Servaes and Wedge

(2007), Himmelberg, Hubbard, Palia, (1999), Zhou (2001) and more. A brief review of each of these papers has been done in order to highlight what this study aims to achieve.

It is evident from the review of these literatures that very little has been done on assessing the effect of client affiliation on fund performance. Hence the findings from this study will set the ball rolling for further research.

It is believed that though client affiliation and control have an effect on the performance of fund managers there are however performance attributions that fund managers may exhibit that also have an impact on the performance of the funds they manage. These attributions seek to expose other underlying factors behind the performance of fund managers. At the time of Oldfield and Page's research (1997 – using South Africa as a case study) there existed no literature that gave an indication as to whether the performance of fund managers was related to their skills or whether they were merely able to predict future market conditions by chance. This study in addition to Oldfield and Page has assessed performance based on their timing abilities as well as the selectivity abilities of fund managers in South Africa.

No conclusion has yet been reached as to what is the most appropriate way in examining unit trust performance; the arguments are still ongoing (Oldfield and Page, 1997), as a result this study intends to contribute to the wealth of knowledge that already exist.

2.2   Unit Trust Structure

In their article, Khorana *et al* (2007:183) described a typical mutual fund (unit trust) as one that consists of investors, a board of trustees, the fund adviser (fund management company), and the portfolio manager. The decision as to what funds to invest in is at the discretion of the investor or unit holder which leads them to select the appropriate fund adviser. Since the board of trustees

seeks the best interest of the investor, they ensure that the fund management company chosen by the investor is managed properly. The fund management company then employs a fund manager (an individual) to manage the funds selected by the investor whose compensation is at the fund management company's discretion. (Khorana *et al*, 2007)

2.3   Fund Manager and Performance

2.3.1   Overview of performance

The efficient market hypothesis (EMH) (with its assertion that one cannot consistently outperform the market) has provoked academics by generating their interest to verify whether funds exhibit superior performance (Grinblatt and Titman, 1992). The history of the performance of mutual funds dates back to 1967 when Michael Jensen wrote his article on the 'Performance of Mutual funds within the period 1945-1964'. Jensen (1967) found that the main problem in portfolio management has been that of evaluating the "performance" of portfolios of risky investments. Sharpe (1966) believes that portfolio selection, asset pricing and stock market behaviour is relevant for evaluating mutual fund performance. Academics have not yet come to a common agreement as to what method is the most appropriate to evaluate performance. However many evaluation techniques have been implemented to date (Grinblatt, 1989). According to Porter and Trifts (1998), performance measure is based on comparing the returns of fund managers with those of other managers having the same investment objective as this will take care of the risk factor faced by these funds in the same category.

Managerial ownership, fund size, past performance and performance attribution are found to be some of those factors influencing fund manager performance. Each of these factors in the following paragraphs has been expanded based on literatures consulted how they are perceived to impact on performance if at all.

2.3.2   Managerial Ownership and Performance

According to Khorana et al (2007) managerial ownership has predictive power in explaining future returns. Generally speaking directors who own a large amount of shares in the companies they manage have the tendency to manage the assets of the company in such an effective and efficient manner making sure they make the most of every future beneficial opportunity that comes their way. No manager will venture to give such dedication to the company they manage if it were not for the financial implications that befell them for every wrong decision taken (Chung and Pruitt, 1996).

Since Berle and Means (1932), the disagreement between managers and shareholders has been studied in greater depths by researchers who desire to understand the nature of the firm (Himmelberg *et al*, 1999). Recent studies have investigated the relationship of firm performance to managerial stock ownership and the evidence obtained from the studies has varied (Zhou 2001). Researchers are still to reach a consensus on the deliberations that are on-going on this relationship. As a result, the researchers continue to have varying opinions on the relationship and they consider research on this relationship to be important as it has taken the toll in corporate finance literature (Demsetz and Villalonga, 2001). Agency theory suggests that managers' objectives may not be in line with those of their shareholders. They may hence pursue policies that increase their own rewards as opposed to those of their shareholders and may not be as meticulous as the shareholders would be in the administration of the business (Genetay, 1999).

Himmelberg *et al* (1999) re-examined the ownership-performance relationship and showed that there is one factor that determines the level of managerial ownership namely; the riskiness of the firm which is measured by the volatility of the stock price, firm size, capital intensity, R&D, intensity, advertising intensity, cash flow, and the investment rate. Using panel data and

controlling for firm fixed effects, they found no meaningful correlation between managerial ownership and performance. They concluded that previous studies failed to account for unobserved firm differences that affect both ownership and performance hence their results which are subject to inconsistent estimators are likely to be outcomes of false correlations (Zhou, 2001). According to Zhou (2001) potential problems exist in Himmelberg *et al*'s methodology of examining the ownership-performance relationship. He argues that in panel data with firm fixed effects it would be hard to find a meaningful relationship between ownership and performance even if one existed. He looks at the cross-sectional features of managerial ownership, as executives now hold options which if looked at in terms of numbers of shares held are often comparable to ownership. This increases incentives and so performance.

Analysing this relationship in the unit trust industry context, Khorana et al (2007) used newly available managerial ownership information to investigate whether fund managers who own a larger stake in the funds they manage perform better and explore the reasons behind why fund managers own shares in the funds they manage. They reported that this was the case as fund managers who owned stakes in the fund they managed performed better. In order to make sure their finding was valid and consistent, they also assessed managers who managed more than one fund and found out that the funds in which they had stakes performed better.

2.3.2.1 Other performance related Incentives

As already mentioned earlier, incentives available to managers have an impact on their performance. Khorana *et al*, (2007) in their study, make mention of four primary mechanisms that are available to create the appropriate incentives for fund managers.

The first is the compensation contract, where the salary and bonus of the fund manager can be based on fund performance. Their argument could not be substantiated as information on the employment contract is generally not publicly available.

The second is the fear of being dismissed. Genetay (1999) in her hypothesis suggested that in general managers have the tendency of been inefficient in their task of managing the corporations and that the only thing that pushes them to seek profit maximising ventures is that they fear to losing their jobs or position of influence due to threat of take-over and dismissal. This argument could be justified from evidence drawn from the articles of Khorana (1996), Chevalier and Ellison (1999), and Ding and Wermers (2005) which suggests that poorly performing managers are more likely to be dismissed and that the strength of this relationship depends on various fund and manager characteristics.

The third is removal of the fund management company by the board of directors of the fund. Given that the portfolio manager is employed by the fund management company, poor performance could lead to the dismissal of the fund manager. However, recent evidence (Kuhnen, 2005; Khorana *et al*, 2007) suggest that this has happened in only a few isolated cases.

The fourth and last mechanism was based on the managers' exclusive decision to invest in the funds they manage. They believe that there is a possibility that it is a requirement that fund managers invest their capital in the funds they manage. This argument had no grounds as this scenario does not occur frequently; hence it is the exclusive choice of the fund manager to invest in the fund they manage with no laws governing that decision. In conclusion, they suggested based on the arguments above that ownership is an incentive that leads to out-performance as well as superior information on the part of fund managers (Khorana *et al*, 2007).

2.3.3 Fund Size and Performance

Fund size is the total net asset value of the individual portfolios that make up a fund (Dahlquist, Engström and Söderlind, 2000). Many researchers have considered the effect of fund size in evaluating the fund manager's performance. Some studies found a relationship between fund size and performance while others did not. Pillay et al (2010) set out in their study (which was based on South African unit trust funds)to determine if fund size really influences returns as this will enable them to come up with an optimal size which will assist in designing a management strategy. It was clear from their findings that smaller funds achieved superior results as increase in size comes with liquidity problems which fund managers are not comfortable dealing with. According to Grinblatt and Titman (1989), it is easy to jump into conclusions that smaller funds will outperform larger funds since they have an edge over the larger funds as they can easily buy and sell securities with changing security price, but it should be noted that they too have other problems that affect their performance such as transaction cost etc. However it is important to note that the results of Grinblatt and Titman (1989) also revealed that smaller funds do perform better than larger funds.

The findings of earlier studies such as those of Milburn-Pyle (1984) and Nurse (1998) were in contrast to the views of Pillay *et al* (2010) because they saw no correlation between fund size and performance. Their results were consistent with those observed by (Dahlquist, Engström and Söderlind, 2000) who found little or no relationship between size and performance during their evaluation of Swedish equity funds in the period 1993 to 1997. However, Cassidy (1991) and Philpot, Hearth, Rimbey and Schulman (1998) investigated this relationship and found a correlation between fund asset size and risk-adjusted returns where larger funds performed better than smaller funds. According to Cassidy (1991), the relationship between fund size and

performance when comparing large funds to small funds was that large funds were financially sound to afford expert fund managers and that their size brought about reduction in transaction cost while small funds on the other hand could not take advantage of certain economies of scale, hence they bear the burden of higher transaction costs than do larger funds. Also small funds are more susceptible to survivorship bias (Grinblatt and Titman, 1989). The concept of survivorship bias in relation to performance has been analysed separately in a later section of this chapter. Philpot *et al* (2008) on the other hand argued that these benefits which large funds enjoyed were due to their greater liquidity. Controlling for survivorship bias, Elton, Gruber and Blake (1996), in their study reveal that smaller funds performed worse than larger firms because small firms cannot survive due to poor performance.

2.3.4   Past Performance and Future Performance (On Persistence)

Mutual fund persistence in performance studies does not go without contradictory results (Porter and Trifts 1998; Collinet and Firer, 2003). Collinet and Firer SA (2003:523) asked the question 'Will today's best performing fund be next year's winner?' Some answer yes to this question while others do not. However it is because it generally believed that past performance is indicative of future performance that investors and other interested parties looked at past performance to make their investment decisions. Porter and Trifts (1998) in their study had two questions to answer; the first of which inquired if fund managers who have managed a fund over a 10-year period have demonstrated outperformance over their counterparts in a consistent manner. Their next question was whether funds that were ranked as say second consecutively over a 5 year period based on their performance would do so in the next five year period? They studied the performance of 93 funds over a 10-year period and found that experience was not the

key for fund managers to outperform their peers and that performance over 5 years was not an indication of a better or higher performance over the next 5 years. Collinet and Firer SA (2003) in examining unit trust in South Africa looked at equity funds that were survivorship bias free, over a period of 20 years. Their study aimed to establish if general equity funds showed any reasonably significant persistence in their performance. They found that persistence will only be evident if the holding period and formation period is long for the period under study. This they believe is because persistence is sensitive to period selected for the study; the holding period as well as the formation period. According to their results persistence was evident during the period 1995-1999 where holding period and formation period were 6 months. Although there was a demonstration of persistence as stated above, they noted that past and future performance ranking was weak. This then confirmed that the contradictory results reached by prior studies on the persistence of funds had grounds and this they believe could be explained partly by the different methodologies used as well as the period selected for the studies. In concluding, they advised that past performance should not be expected to be consistent with future performance but that though the persistence result is weak, investors can still rely on these weak results to make their investment decisions about investing in unit trust funds.

2.3.5 Survivorship Bias and Unit Trust Performance

Survivorship bias is when a data set used for a study excludes returns of funds that have ceased doing business in the course of the years selected i.e. those which do not have complete records of their returns for the entire period selected (Pawley, 2006; Holmes , 2007). It is believed that the performance of unit trusts in the case of South Africa with respect to survivorship bias has been an 'unexploited' area in drawing from the result of the studies carried out in this industry (Pawley, 2006). Most of the prior studies whose results have marked research in fund

performance did not consider survivorship bias (Pawley, 2006). Pawley (2006) believes that prior results (average performances) were skewed because survivor ship bias was not taken in to consideration, thus providing investors with incorrect information about the performance of unit trusts.

From the above claims, it is therefore important for survivorship bias to be considered when selecting the funds to be analysed as this has an effect on the results. In this study survivorship has not been taken into consideration as the decision was to include funds that existed from the beginning of the period. It is believed that the results are not skewed as none of the funds selected ceased to exist at the end of the period.

2.3.6 Performance Attribution, Selectivity, Market Timing and Asset Allocation

Fund managers are believed to have special skills which should be taken into account in the evaluation of their performance as these skills are known to have an effect on performance (Jensen, 1967; Fama 1972; Nassir et al, 1997; Oldfield and Page, 1997;Philippas, 2005), among others. The skills demonstrated by fund managers could also be termed the investment strategies that fund managers exhibit which adds value to the funds they manage. Performance attribution is that technique that is used to evaluate if the skills possessed by these managers do add value to their performance. Hsu, Kalesnik , and Myers, (2008) in explaining performance attribution said:

"Performance attribution is used by investment officers and consultants to evaluate the skill of a portfolio manager and the active risk exposure associated with his strategy against the benchmark "(1)

It is believed by Sehgal and Jhanwar, (2008); Nassir et al, (199; and Fama (as cited in Nikoloas, 2005) that the following skills evaluation contributes in assessing the performance of fund

managers: (1) evaluating stock selection skills (micro-forecasting) and (2) examining the market timing abilities of the fund managers (macro-forecasting).

The evaluation of performance dates back to 1967 when Jensen indicated that portfolio performance has two dimensions; the ability of fund managers to successfully predict future prices (stock picking) as well as their ability to minimize insurable risk through diversification (Asset allocation) (Jensen, 1967). Jensen hence demonstrated that stock selection skills do add valued to the performance of a fund.

In addition, the evaluation of the market timing skills of the fund manager dates back to Fama and Jensen in 1972 who, according to Oldfield and Page (1997), are the pioneers of the studies that attributes how well a manager performs, to their market time skill or ability. Their papers being pioneer papers have led to further research on the area of which this paper is one of them.
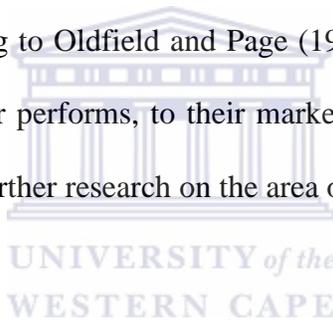
Due to this increase in the number of researchers interested in this area, many theories have evolved and the results of these studies have brought about contrasting views on the effect of the market timing ability and the stock selection skills of fund managers on performance. It is the view of Jensen (as cited in Sehgal and Jhanwar, 2008) that the selectivity skill used by managers resulted in negative abnormal returns. Nassir *et al*, (1997) also commented on the fact that prior studies of micro and macro-forecasting ability of mutual fund managers reported a zero or negative performance. Sehgal and Jhanwar (2008) found that other studies like those of Ippolito (1989) (as cited in their study) showed positive abnormal returns using more recent data compared to that used by Jensen. This they noted was later disproved by Elton *et al* (1992) (as cited in their study) on the basis that the results were positive because of the benchmark chosen

by Ippolito. Their own results on an average showed a negative return when they used the multi-factor benchmark model. Nassir et al (1997) using the Treynor Mazuy model, and with a sample of 31 unit trusts for a period of 62 months, found on average that the selectivity performance was positive.

The same story goes for market timing where previous work found little evidence of significant timing abilities of the fund managers in relation to the sample size that was used as in the case of Treynor and Mazuy (1966) and Henriksson (1984) (as cited in Sehgal and Jhanwar (2008) and Nassir et al (1997)). The results by other studies later changed when Chance and Hemler (2001), as cited in Sehgal and Jhanwar (2008), found a significant market timing abilities when using daily data instead of monthly data used by their predecessors. Using a methodology (TM model) designed to correct for size (size of firms the funds invest in) which has been depicted by many as the reason for negative performance, Elton et al (1993); Grinblatt and Titman (1994) (as cited in Bello and Tanjigian, 1997), reported superior security selection and market timing abilities of mutual fund managers.

It is argued that standard measures used to identify stock selection and market timing abilities are biased as they use unconditional returns without taking cognisance of the time variation in return and risk premia (Sehgal and Jhanwar, 2008). Phillipas (2005) argued that some prior studies have compared fund managers' performance with that of a benchmark index which he believes has certain limitations. Cahart (1997) had however developed a four-factor model which took in to consideration CAPM by Sharpe (1964), the size, book to market factor and the momentum factor to account for continuation patterns in stock return. It was suggested that the last three factors will consider the time varying nature of returns and risk hence eliminating the bias (Sehgal and

Jhanwar 2008). Sehgal and Jhanwar (2008) in their study after the review of literature, decided to use the multi-factor benchmark as well as the additional three Cahart factors which demonstrated that the use of the prior methods modifies the results of both the selectivity and market timing abilities.

2.3.6.1 Stock Selectivity

Stock selectivity, also known as micro-forecasting, is the ability displayed by the manager to identify individual stock which are under-priced or over-priced in relation to equities in general (Nassir et al, 1997; Oldfield and Page 1997).

Jensen (1968), as cited in Sehgal and Jhanwar (2008), developed a traditional approach to measure stock selectivity. The Jensen model measures the excess return of a portfolio after taking into consideration its level of risk. This is also called 'Jensen's alpha' and it indicates the ability of the fund manager to outperform the market. A positive alpha means the portfolio is earning excess return, which in this study is an indication that the fund manager possesses selectivity skills. Below is the formula and the variables used to determine the selectivity ability of the fund manager.

$R_{pt} - R_{Ft} = \alpha + \beta\left(R_{Mt} - R_{Ft} \right) + \varepsilon_t$ (Unconditional measure of α = average performance measure)

Where

R_{Pt} - R_{Ft} and R_{Mt} - R_{Ft} are excess portfolio and market returns respectively

α and β are the intercept and slope coefficients.

ε_t is an error term.

The stock selection ability can also be measured using the four factor model of Cahart (1997) stated below

$$R_{Pt} - R_{Ft} = \alpha + \sum_{K=1}^{4} \beta K F_{Kt} + \varepsilon_t$$

Where the variables are the same as those of Jensen's traditional model above, except for F_{Kt} which is returns on the factors (including the excess market return, Fama-French size, book to market factors and Cahart's momentum factor) and B_k which is the sensitivity coefficient.

2.3.6.2   Market Timing

Market timing, also known as macro forecasting, is the ability of a manager to predict anticipated future movement in the market as a whole i.e. to act on any expectations regarding the behaviour of the market return (Nassir et al 1997; Oldfield and Page 1997). There exist different models to major the market timing ability of the manager which have been used and modified over the years. Below is an outline of these methods, as reviewed by Sehgal and Jhanwar (2008);

1. Treynor and Mazuy

$(R_{pt} - R_{ft}) = \alpha_p + \beta(R_{mt} - R_{ft}) + \gamma(R_{mt} - R_{ft})^2 + \varepsilon_{pt}$ (Sehgal and Jhanwar. 2008, Nassir et al, 1997). Where:

- $(R_{pt} - R_{ft})$ and $(R_{mt} - R_{ft})$ are excess portfolio and market returns at month t. Where R_{ft} is the risk free rate (91days treasury bill at month t)

- α_p = the estimated selectivity

- β = measures the sensitivity of the fund to the market return or the beta risk of the unit trust.

- γ = Measures the market timing ability of the fund manager (coefficient of the quadratic effect on fund's performance)

- ε_t is an error term.

2. Henriksson and Merton (HM)

The concept behind this method is that the manager allocated capital based on forecasts of future excess market return.

$$R_{pt} - R_{ft} = \alpha + \beta(R_{mt} - R_{ft}) + r_{Dt} + \varepsilon_{pt}$$

Where r =1 when $R_{mt} - R_{ft}$> 0 andequal to 0 otherwise, δ is used as a market timing measure in the HM framework.

3. Sehgal and Jhanwar

$$R_{Pt} - R_{Ft} = \alpha + \sum_{K=1}^{4} \beta KF_{Kt} + \sum_{K-1}^{4} \delta \kappa D_{kt} + \varepsilon_t$$

Where

α = intercept term

Bk = Sensitivity Coeficient

Fk = returns on the factors including the excess market return, the Fama-French size and the book to market factors and Carhart's momentum factor.

δk = Market timing measure

D_k = are dummy variables for the slope of the coefficient of each factor.

This has taken into consideration additional timing coefficients as a result of incorporating other factors such as those of the Cahart model. Sehgal and Jhanwar in coming up with this multi – factor regression model had to combine the TM model and the Henriksson and Merton method.

2.3.6.3   Asset Allocation

In order to enhance the measurement of manager skills, Hsu et al (2010) have been able to outline straight forward and intuitive methodology that decomposes the allocation effect into

static and dynamic components. By static they measure the ability for managers to outperform by generating a higher return against the benchmark, while with dynamic allocation they measure the ability of managers to forecast the performance of a stock in a given year and adjust the weight of the stock they believe will perform well. They do acknowledge the fact that the dynamic ability of a manager has already been examined in a number of academic papers. This is true from the market timing skills already examined above. Their argument was that traditional attribution analysis does not distinguish between static and dynamic components as it is designed only to measure the manager's skill in factor allocation.

The asset allocation analysis has not been taken into consideration here as such the study does not dwell on this ability of the fund manager in detail; however the attribution analysis of the market timing skills of the fund manager which this study has dwelled on, has taken into account their dynamic ability.

2.3.7   Performance and Client affiliation

This study actually sets out to find out if there is a relationship between client affiliation and performance. The fund managers in this study where classified into two groups based on their client affiliation characteristics namely; independent and dependent fund managers. It is difficult to date to ascertain from literature which fund manager perform better than the other as no academic paper was found to have been published in this area of research. These unexplored research questions on client affiliation seem to still be in the thoughts of potential researchers. The results from this study have begun to give some answers to what has been the questions in the minds of many investment analysts who are yet to put themselves significantly to the task of researching on this. It could be hypothesis that independent fund managers performs better than dependent fund managers given their independent nature. Evidence on whether this hypothesised

is true or not has been reported in the subsequent chapters under 'results and analysis'. However, the study was also interested in assessing whether the skills of the managers affected the performance results that were obtained.

2.4   Industry Overview- South Africa

The unit trust is an investment scheme offered by the collective investment scheme management companies which falls under the savings and investment industry of South Africa. Prior to 2002, the Act that controlled these collective investment schemes was the Unit Trust Control Act 54 of 1981. This was repealed as a whole and replaced by the Collective Investment Scheme Act 42 of 2002 which came into effect on the 13 December 2002. The period selected for this study, i.e. 1 January 2005 to 31 December 2009, is now regulated by the new Act. The collective investment scheme under study is for domestic funds only. Below is a statistical overview of how the industry has evolved over the years with respect to domestic funds.

2.4.1 Unit trust Growth Statistics

 Pillay, Muller and Ward (2010), obtained important statistical information from the Association for Savings and Investment in South Africa on the significant growth the unit trust industry has undergone between 1988 and 2008, wherein registered equity unit trust funds have grown from 30 funds with an asset size of R 4.3bn as at December 1988 to 900 funds in 2008 with an asset size of R 700bn. Based on information obtained from the ASISA for the period under study, the fund size at the beginning of 2005 was R 287,482m. This grew to R 743,708m at the end of December 2009. These funds were allocated to different asset classes as shown in the table below.

Table 2.1 Unit Trust Growth Statistics

Asset Classes	1 January 2005 (Size Rm)	31 December 2009 (SizeRm)
Equity	84,203	169,010
Balanced Fund	46,582	174,173
Real Estate	0	21,342
Fixed interest	156,697	379,183

With these statistics, the growth trend is set to continue. According to Pillay *et al* (2010) there is room for more research in the asset management sector, with special focus placed on the study of the relationship between fund size and active management as this cannot be over emphasised.

By the time Oldfield and Page 1997 wrote the article 'Assessing portfolio performance: The Case of South African Unit Trust', they made mention that no published research into the performance of South African unit trust had specifically investigated the timing and selection ability of unit trust managers. Drawing from previous literature, it is a fact that there exist a relationship between managers who are shareholders and the performance of fund management companies(Zhou, 2001 and Khorana et al, 2007). As a result control which is an integral part of client affiliation was also taken into consideration when classifying the fund managers into the two client affiliation fund manager groups of dependent and independent fund managers. This study focuses its investigation on fund managers in South Africa. The South African unit trust industry is a very dynamic one with many financial service providers that also offer other products, such as wealth management and insurance products. These institutions opened their doors to unit trust management to cater for the needs of smaller investors as well as enjoy the income generated from this growing sector.

2.5   Summary

From the above review of literature, it is evident that performance has many variables that affect it and most of the studies on the performance of fund managers have focused on these important aspects that affect performance. However none has addressed the client affiliation relationship with performance. Our interest is to find out what influence client affiliation and control has on performance given the performance attributions analysis of market timing and stock picking in the case of South Africa. This relationship is important due to the dynamic nature of the unit trust sector in South Africa. However this study has taken into account some of the aspects discussed above such as, size, survivorship bias, market timing and selectivity. Below is a summary of how these elements have been incorporated into the study.

2.5.1   Size

The only relationship that the present study has with that of size is that this study has decided to limit its selection to funds with asset value starting from R40million and above. There exist other parameters that have been considered in the selection of these funds which will be discussed in detail in the next chapter.

2.5.2   Survivorship Bias

Contrary to Pawley's (2006) suggestion, the data set that has been used in this data will not include funds that were not in existence for the entire period under study. The argument here is that the results should only include funds that existed during the full period of study as some funds cease business at different times; an occurrence which will affect the results. This is not the case here as no fund chosen ceased to exist before the end of the period of study hence minimising survivorship bias.

2.5.3   Stock Selection and Market Timing

It will almost be impossible to talk about performance and not look at these aspects. This has been incorporated into our research as there are very few papers that discuss the effect of these abilities in the context of South Africa. Most of the literatures consulted above were studies carried out in other countries. Hence as Oldfield and Page (1997) rightly noted, no other research paper exist that has looked at this relation in the South African context. It will be of interest to find out what the skills of the fund managers in South Africa are and how it affects their performance so as to inform the investors of what to look out for when investing their wealth.

The results of this study will be of great importance as academics and researchers would have been exposed to another area (client affiliation) that affects performance. This study could be replicated in other countries where the unit trust dynamics is the same as that of South Africa.
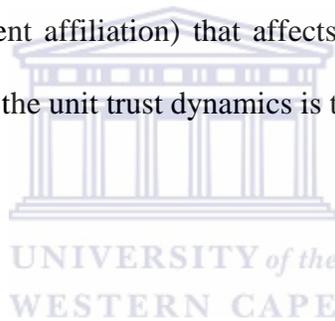
CHAPTER THREE

RESEARCH METHODOLOGY

3.1   Introduction

The objective of the study is to measure the benchmark-return-based performance of two categories of fund managers in relation to two performance attributions namely; their market timing and stock selection abilities. Given these different variables and the complexity of finding a method that will best answer our research questions, one will have to start by exploring other research methods in order to be able to ascertain the most appropriate one that will help reach a valid and reliable conclusion on the relationship between client affiliation of fund managers and their performance attributions.

According to Cooper and Schindler (2001), this type of a relationship between variables calls for a causal study which seeks to explain how one variable affects another by bringing about changes in the other. The causal relationship this study seeks to explain is how the independent variables (fund managers- grouped by their client affiliation characteristics) affect performance which has been divided into two performance measures or attributions namely; market timing and stock selection ability. Hence this chapter seeks to describe the methods used to test the existence of the causal link or an association relationship, as well as to justify why the methods used are the most appropriate methods for the anticipated outcome. On the other hand, within the fund manager group this study seeks to compare the independent fund manager's performance to that of dependent fund managers. This area has not been researched on as previously mentioned in the preceding chapters thereby justifying the use of an exploratory approach. The chapter also goes a long way to explain how the data was collected and analysed.

3.2   Classifying Research

Collis and Hussey (2009) classified research into purpose, process, outcome and logic. Purpose they explain describes an exploratory, descriptive, analytical and predictive research approach. Process is about how the data will be collected i.e. either quantitatively or qualitatively. However, there are studies where the researcher will require both techniques to collect data. This method is called mixed methods; a study which will require a qualitative approach in a quantitative research and vice versa (Lee and Lings 2008).   The next research approach; outcome, is about the outcome of the research i.e. whether the results of the research being carried out will be applied to address a particular existing problem in other words, will it be put to use to bring about a change in the way things are being done for instance? If so,this they termed applied research. On the other hand, will the results or findings just contribute to improve general knowledge irrespective of whether it is applied or not? This they termed basic research. Their next classification; logic of the research, talks of the deductive and inductive approach of the research. Some studies originated from empirical observation i.e. from a generally observed fact. Such a study is done using the deductive approach, which seeks to test the observed fact in a given study. An inductive study on the other hand, is exactly the opposite (Lee and Lings 2008). Such a study moves from a specific observation to general theories hence establishing a theory from the specific observed.

Drawing from these classifications, the purpose of this present study is both an exploratory and a predictive research type. Exploratory because the concept of client affiliation and its relationship with fund performance apparently has not been researched upon as highlighted in chapter two hence meeting the exploratory definition of Collis and Hussey (2009). The predictive aspect of the study is based on the fact that it has already been theoretically proven that there exists a

causal relationship between fund performance and the underlying skills of the fund manager. The predictive approach of this study will further test the existing empirical results to again confirm the above relationship.

This study adopted a quantitative process since the data available is quantitative in nature. The study seeks to evaluate the performance of fund managers which is in the form of monthly return figures. The outcome of this study is both an applied and a basic one. Basic in the sense that the causal relationship of fund performance and fund manager skills under research which was already established from prior studies is again being confirmed by this study, and will serve as a tool for investors to use when making decisions on where to invest their resources. The applied aspect of the results in relation to the client affiliation and performance relationship will contribute new knowledge to the empirical world hence will meet the applied research classification of Collis and Hussey (2009). The logic used in this study will be both deductive and inductive. A deductive approach will be in line with the causal aspect of the study, while the inductive approach will be in line with the exploratory aspect of the study. Deductive, because there already exists prior studies on the relationship between fund performance and fund managers' skills. Inductive, because the client affiliation relationship with performance is being developed from an observed occurrence into a theory.

3.3   A Brief Analysis of Different Research Methods

There exist varying methods that researchers use to conduct research and come up with reliable, valid and significant results. These include: survey method, experimental research method, statistical techniques, etc. It should be noted that there are numerous other methods which have not been outlined in this study but could be further read about in text books and articles on

research methods. Below is a brief description of each of the methods outlined above indicating where they will most appropriately be used as well as why they were chosen or not chosen for this study.

3.3.1 The Survey Method

A survey as a method to advance scientific research has three distinct characteristics i.e. it has as primary concern to produce quantitative descriptions of the relationship between variables for the population under study. It is done by use of questionnaires having structured and predefined questions. Its unit of analysis forms a sample of the population that can be generalised. (Pinsonneault and Kraemer, 1993).

3.3.2 Experimental Method

This is a classical form of research that owes much to natural sciences (Saunders, Lewis and Thomhill, 2000). In this type of research, the researcher is able to manipulate or control the variables, that is he or she can introduce a planned change on one or more of the variables (Cooper and Schindler, 2001) (Saunders et al, 2000). Though it is particular to the natural science, this method has also been extensively used in the social sciences (Saunders et al, 2000). Experimental studies also aim to provide a causal study however of a smaller number of variables.

3.3.3 Statistical Techniques

According to Mouton (2001) the aim of statistical studies is to ensure that results obtained build up and authenticate in a precise manner the real world situation. This is done by the use of some statistical techniques such as factor analysis, regression analysis, multiple regression, t-test, cluster analysis, analysis of variance (ANOVA), multivariate analysis of variance (MANOVA), etc. These statistical techniques can be classified into two groups in terms of what they measure

namely; techniques that measure relationship between variables and those that compare groups (Pallant, 2005). For example, t-test, ANOVA and MANOVA are most appropriate to measure the relationships between variables while factor analysis, regression analysis and multiple regression are appropriate to compare groups. Each of these techniques will further individually best fit specific studies depending on a number of issues related to the type of sample available. For example, a nominal scale is used to measure the independent variables of the study which is presented in categories such as high low, strong weak, etc. Therefore in the case where the independent variables are nominal and the two dependent variables are metric, the most appropriate method for such a data set is the MANOVA (Sharma, 1996).

Below is an outline of a selection of one technique of each of the two classifications of statistical techniques discussed above. The selection was based on their appropriateness to the current study.
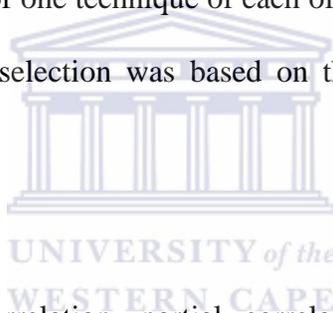
3.3.3.1 Multiple regression

According to Pallant (2005), correlation, partial correlation, multiple regression, logistic regression and factor analysis are the methods that best explore exploratory relationships between independent variables and continuous dependent variables. This method in general addresses research questions such as how well a set of variables is able to predict a particular outcome, which variable is the best predictor of the outcome, etc? The predictability of the multiple regression method was also confirmed by Chatterjee and Hadi (2006). It is a model in which a number of explanatory variables can be used to forecast the value of the dependent variable (Levine, Stephan Krehbiel and Berenson, 2005). It provides information about a construct as a whole and how the related variables contribute to the makeup of the construct.

This method is used when multiple variables which are deemed independent and are called the predictors (Collis and Hussey, 2009), predict the outcome of one dependent variable.

3.3.3.2 T-Test

T-tests are generally used to compare mean scores of two different variables made up of independent samples or they are used to compare the mean of the same group of variables on two different occasions. The former is called independent-samples test and the latter is called paired - sample t-test. When the groups under study are from the same category or have some common factors, an independent t-test is used. The independent t-test means are compared against continuous variables (Pallant, 2005; Collis and Hussey, 2009).

3.4   Method Chosen for the Study

Though a survey study also has the ability to test the relationship between variables, it will not be appropriate for this study. The questionnaire data collection method for surveys will not be able to bring out accurately the desired outcome as a fund manager's impression about their performance will vary and may be biased. As a result using the survey method could bring about a threat to the validity and the reliability of the conclusions reached in this study. Experimental studies on the other hand have a capacity to deal with very few variables and hence are not appropriate for a study that deals with multiple variables on both the independent and dependent constructs. One of the main shortcomings of this method is the difficulty faced with generalising its result as the relationship of the variables has to be tested over many years before they can be generalised (Goldstein, 2003).

Due to the exploratory nature of this study and the many variables involved, the method that would be most appropriate is a statistical technique that explores relationship among variables. The multiple regressions method which is one of such techniques would be most appropriate for analysing the relationship among the variables in the study. This method will be applied to measure the relationship between fund performance (excess return of portfolio) and benchmark (excess market return) of the fund in a way that demonstrates the skills underlying the performance achieved, namely selectivity and market timing.

Nassir *et al* (1997) used the Treynor and Mazuy Model (TM) of 1966, a quadratic multiple regression model which they derived from the Jensen Model on the measurement of selectivity ability. This model has the ability to incorporate both the selectivity and the market timing ability of the fund manager unlike the Jensen model which catered for only the selectivity ability. Bello and Janjigian (1997) confirmed that the TM Model has been extensively used in unit trusts studies and has been accepted in other studies as an appropriate model to measure timing abilities of fund managers. However, they used an extended form of the model which they believed was less biased and was able to demonstrate the abilities of the fund managers better. The extended model included multiple benchmarks whereas the traditional TM model only makes room for one benchmark. Despite their advocate for the use of the extended benchmark, other studies after theirs such as Philippas (2005) and Sehgal and Jhanwar (2008) still used the traditional TM model. This model, however, is not without its limitations as it does not take into consideration negative and inferior market timing. The TM model previously mentioned, is a quadratic multiple regression model where the portfolio returns per fund per period are the dependent variables and the market returns and market returns-squared per period are the independent variables.

The next method that will be used to compare the performance of the independent fund managers with those of dependent fund managers is the t-test. The independent two-sample t-test would be the most appropriate as both fund managers are in the same industry, thus having something in common. In order to arrive at the mean performance of both fund manager used for the t-test, the same benchmark (market return) was used. This has been further discussed below under *computing the variable* section. The independent t-test however does not come without its drawbacks (Collis and Hussey, 2009). Collis and Hussey (2009) believe that because of the independence of the two samples, their difference demonstrated through the independence t-test could be caused by varying factors which the results of the test will not be able to clearly point out. This led them to prescribe the use of the independent t-test for independent variables that have at least one common factor. The continuous data used will be the mean of the returns of the respective fund managers.
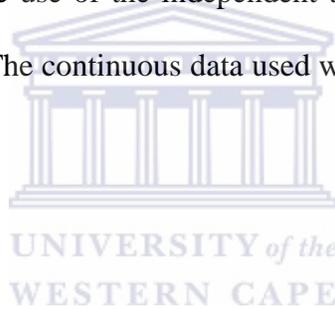
3.5   Scope of the Study

This study was restricted to include the performance of fund managers of general equity funds and balanced funds in South Africa that falls within the variables being studied. The study analyses their 5 years performance for the period 1st January 2005- 31st December 2009.

3.6   Operationalising the Constructs

This section of the chapter explains how the independent and the dependent constructs were measured to obtain the results used for the analysis.

3.6.1 Independent Construct: - Client Affiliation

The unit of analysis for the independent variable i.e. the fund managers, focused only on fund managers as a firm or organisation. However, the fund manager as an individual is an important aspect which was taken into consideration during the classification of the fund into the two fund manager categories. The fund manager categories in this study are; the independent and dependent fund managers. A detailed description of what differentiates the fund managers into these two categories has been explained in chapter one of this study which is where the definition and measurement of the concept client affiliation lies.

In order to determine whether independent fund managers perform better than the dependent fund managers the independent t-test was used. This is appropriate as the classification of one group affects the classification of the other group (Oakshott 2001). Any fund that is not an independent fund is by default a dependent fund and vice versa. A 5% level of significance was used to measure the significance of the results obtained. Based on the research question posed, two hypothesis where developed which were idea accepted or rejected. The null hypothesis is accepted if the client affiliation relationship affected performed and rejected if otherwise.

3.6.2 Dependent Construct: - Performance Attribution

Fund manager's performance measure is the return on investment generated from the funds managed. It can be derived using Jensen's Method (Jensen, 1968). However for this study the return on investment of the funds selected did not need to be calculated as they were publicly available. The only additional calculations that were done on the return figures were adjusting the returns to the market-adjusted returns. A detail on how the market adjusted return was done has been further discussed in section 3.8 in this chapter. The selectivity and the market timing

skills for both sets of managers were measured using the TM model aided by 'Stata version 10' a data analysis and analytical software (www.stata.com). The values that attributed to these skills obtained from the TM model were the values of the intercept and coefficient of the market return squared (quadratic effect of the equation) for the selectivity and the market timing skills respectively.

There are other methods of measuring the performance attributions of fund managers. Bodie *et al* (2007) demonstrated a method which required information on the weights of the different asset classes that made up the portfolio return especially in the case of balanced funds. This method could not be used in this study as information on the asset class weights was not available. Nassir *et al* (1997) also mentioned that Grinblatt and Titman (1989) used a different model from the TM model which like the Bodie *et al* (2007) method needed asset class weights. Nassir *et al*, (1997) confirm the difficulty in obtaining data on asset class weights. The TM model does not require information on the asset class weights in order to reveal the skills of the fund managers. The TM model used is stated below.

$$\left(R_{pt} - R_{ft} \right) = \alpha + \beta \left(R_{mt} - R_{ft} \right) + \gamma \left(R_{mt} - R_{ft} \right)^2 + \varepsilon_t \text{ (Sehgal and Jhanwar. 2008; Nassir}$$

et al, 1997)

Where:

2. $(R_{pt} - R_{ft})$ and $(R_{mt} - R_{ft})$ are excess portfolio and market returns at month t. Where R_{ft} is the risk free rate (91days treasury bill at month t)

3. α = the estimated selectivity ability of the fund manager

4. β = measures the sensitivity of the fund to the market return or the beta risk of the unit trust.

5. γ = Measures the market timing ability of the fund manager. Gamma (γ) is positive (good timing ability) when the fund manager increases or decreases the exposure of the portfolio to the market because he or she anticipates a future increase or decrease in market return which eventually increases or decrease respectively as anticipated. On the other hand, it is negative (poor timing ability) when the manager increases or decreases exposure of the portfolio to the market in anticipation of a future increase or decrease in market returns respectively which over turns out to be a decrease or increase. -which quadratic effect on the performance of the fund managers $(R_{pt}-R_{ft})$

6. ε_t is an error term.

The TM model being a multiple regression model generated other important values other than the coefficients and intercept values the study is particularly interested in. These values included the R^2 and the F statistical values which were also used for further analysis of the results.
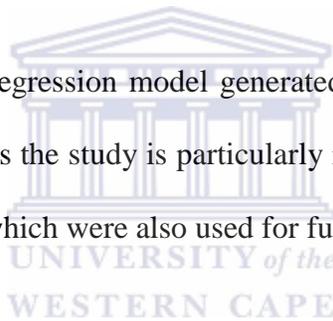
3.7   Data Collection

The data of the returns and the type of fund (domestic equity and balanced funds) was obtained from Plexus Asset Management and is based on historical monthly total return data over the past five years (2005 to 2009) of fund manager in South Africa. The returns collected per fund managers are for South African based funds only (also termed domestic funds). Other information (e.g. fund manager as an individual, etc.) that was needed to further classify and group the fund managers into the appropriate group were obtained from the fact sheets whose information is found online in the website of the respective funds or their associates.

The market return information was obtained from the FTSE JSE All Share index (J203T) as provided by I-Net Bridge. For purposes of comparison, all equity funds were compared using the same benchmark. While it is important to note that funds use different benchmarks to measure their respective performance a majority of South African funds used the FTSE JSE All Share index (J203T) as their benchmark. Hence we assumed in this study that a blended benchmark of 95% JSE All Share and 5% money market index is the appropriate benchmark for local equity funds as these funds must maintain a liquidity of at least 5%. The benchmark therefore represents the performance of a fully-invested equity fund.

The individual fund's monthly return for both the equity fund and balanced fund were market adjusted. The details of how these market adjusted returns were calculated have been discussed further under section 3.8. The Market Adjusted Return (MAR) is chosen because the funds selected have different benchmarks and to be able to compare them the MAR must be used. The variables that were used for the computation are the FTSE JSE All Share index and the money market rate, which is considered the risk free rate. The 91-day Treasury bill can also be used in place of the money market rates. These rates were obtained online from I-Net and the South African Reserve Bank (SARB). The market return was also adjusted for risk.

The returns of the balanced funds were also adjusted for market risk using the same benchmark used for equity as well as the same risk free rate. It was discovered from the fact sheet that more than 50% of the funds used Consumer Price Index (CPI) plus a percentage for their benchmark. The percentage that was used by most of the fund managers was 6%. The CPI rates can be obtained online from the Statistics South Africa website. Due to the varying benchmarks used by the different funds, the FTSE JSE All Share index and the money market risk-free rates were used to calculate the market adjusted return of the balanced funds as well. Though it is common

knowledge that balanced funds have more than just equities, and that it might not be appropriate to use J203T, it is also important to note that the JSE All Share Index is the most common domestic performance benchmark and is widely used as such, even by balanced funds. All returns calculated were used as inputs in both the independent sample T-test and the TM model calculation as is explained further below.

3.7.1 The Sample

The sample of the type of funds selected was restricted to funds that existed for the full five year period of our study. This implies that for the two categories of funds that were studied all had been in existence from the first month of 2005 and were still in existence at the end of 2009. Pawley (2006) indicated that a number of studies have used this approach in selecting the funds to be studied. In his opinion, these studies are plagued by with survivorship bias in the sampling methodology. This was in contrast with Meyer (1998) who considers the non- existence of survivorship bias as none of the funds used in her study had ceased to be in operation at the end of the period under study. The same argument holds for the sampling selection used in this study. None of the funds that started at the beginning of the period under study ceased to operate by the end of 2009 hence no survivorship bias. The funds selected were those with fund size of R 40 million and more, for all fund types. The R 40-million cut-off was arbitrary chosen to include all the major funds, while excluding those that do not compete in the large funds category as small funds do not have the same liquidity constraints as the larger funds and therefore would be unfair to compare very large funds with very small funds. During the selection of the fund we found that for the general equity funds most of small funds were those without a 5-year track record which we needed for the syudy period selected. Tracker funds and index funds for all fund types selected in the study were not included in the sample as they are defined as funds with a passive

strategy. Data collected also excluded multi-manager funds, Islamic funds and funds of fund as they do not reflect the performance of the manager and have special mandated restrictions. A special elimination criterion was used for funds that met the selection criteria above but for which there exists another fund managed by the same fund manager in the same period. These types of funds were excluded from the sample with only one fund selected per fund manager per category. A total of 36 unit trust independent and dependent funds were selected for the study and were made up of 16 balanced funds and 20 domestic equity funds.

3.8   Computing Variables

3.8.1   Market Adjusted Return (MAR)

As already mentioned above the return figure must be market adjusted. This was done using the following steps
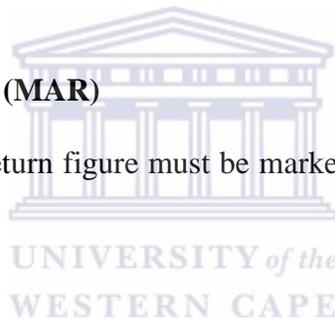
1. The portfolio beta is calculated using the formula from Bodie et al (2007)

   $E(R_{pt} - R_{ft}) = \alpha + \beta(R_{mt} - R_{ft})$; Where

   $R_{pt} - R_{ft}$ is the excess portfolio return at month t

   $R_{mt} - R_{ft}$ excess market return at month t

   R_{ft} is the risk free rate (money market rates or 91 days treasury bill)

   α = intercept

   β = is the beta, the relative market risk of the portfolio.

The market price index was used to calculate the market return (R_{mt}). The following formula was used to calculate the monthly market return;

$$R_{mt} = \frac{I_t - I_{t-1}}{I_{t-1}}$$

Where I_t is the market price index at month t and I_{t-1} is market price index one month before month t.

2. The market adjusted return was calculated as shown below using the portfolio beta calculated above, the return of the portfolio. When the returns have been properly adjusted to the market, their new beta is 1. This is how to test that the return has been properly adjusted to the market. The following formula was used for market adjusted return computation.

$$MAR = W_{Bp} (R_{pt}) + (1 - W_{Bp})(R_{ft}),$$

Where W_{Bp} is the (1/ portfolio beta) the beta weight of the portfolio

And $(1 - W_{Bp})$ is (1- (1/portfolio beta)) by Merton and Mogliani (M2) (Bodie *et al,* 2007).

This market adjusted return was done for all the returns obtained for balanced funds and equity funds. These calculations were done using Microsoft Excel by inserting the formulae as seen above.

3.8.2   Measuring selectivity and market timing

As already mentioned above, the TM model was used to measure the selectivity and the market timing skills. The portfolio return used was the market adjusted return and the market return used was adjusted for risk as indicated in 3.8.1 above. The TM model being a multiple regression model generated other important values when run through the Stata Version 10 statistical

analysis software (www.stata.com). These values other than the correlations the study is particularly interested in included the p-value, t-stats and the R^2. These were all software generated. However, further analysis was done too by calculating the averages of t-stats, R^2 for both selectivity and market timing abilities but the p-value average was for the R_{mt}^2 variable only which is related to the timing abilities of the fund managers.

3.9   Data Analysis

The data was analysed using the TM model multiple regression and independent sample t-test at 5% level of significance. The performance variances per attributions was calculated for the different categories of fund managers and the final results were ranked so as to show which fund manager characteristic demonstrated best performance as well as which category of performance attribution added more value to the return on the portfolios. A number of steps were required to produce the results. Step one compared market adjusted returns of the two fund manager categories using the independent sample t-test. Step two used the TM model to calculate the skills of the manager. Step three and four analysed both fund types based on results obtained from step two while step five concluded on the analysis of the selectivity and timing abilities of both funds. These steps have been outlined in more details below as follows:

 a) **Step One (S1)**

An independent sampled t-test was performed using the market adjusted returns of the respective fund managers (independent and dependent) in order to establish whether one fund manager performs better than the other.

b) Step Two (S2)

From the TM model used the first measures provide values for the selectivity and the market timing abilities exhibited by the fund managers for both fund categories. The values generated were α and γ of each fund manager in the respective fund categories of dependent and independent funds as well as the p-value, t-stat and R^2.

c) Step Three (S3)

With the information obtained above, an analysis of whether the independent and the dependent fund managers exhibit selectivity skills (α) was performed. This analysis was aided by calculating the percentage of positive alphas compared to negative alphas (α) for each fund in each respective fund manager category. An average alpha was calculated for each fund category. The independent and dependent fund manager's selectivity abilities were denoted as α_{ind} and α_d respectively.
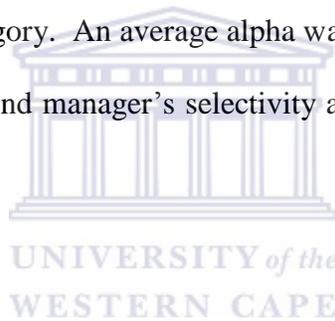
d) Step Four (S4)

With the information obtained from step two, an analysis of whether the independent and the dependent fund managers exhibit market timing (γ) skills was performed. This analysis was aided by calculating the percentage of positive gammas (γ) compared to negative gammas in each respective fund manager category. An average gamma was calculated for each fund category. The independent and dependent fund manager's market timing abilities were denoted as γ_{ind} and γ_d respectively.

e) Step five (S5)

An analysis was performed using the information from step two to four above to determine and compare the selectivity and market timing abilities between the independent fund managers and the dependent fund managers. These results provided information as to which fund manager

category possesses selectivity and/or market timing skills more than the other as well as the statistically significant of the results.

3.9.1 Interpretation of TM Model Test

According to Nassir *et al* 1997, a positive alpha means that the fund manager exhibits selectivity skills while a negative alpha depicts the opposite. A positive gamma reveals the market timing ability of the fund manager, while a negative one reveals no timing ability of the manager. Alpha is the intercept and gamma is one of the coefficients that explain the contribution the market return (square) brings to the performance variable (y-variable). One other important aspect of the multiple regression method from which the TM equation has been modelled is that it can measure the correlation between the independent variable and the dependent variable. This measure validates the strength of that kind of relationship. It was therefore necessary in selecting the data that the variables be related to each other by calculating the market adjusted return of the performance of the fund managers, this being one of the variables that uses the market return as the benchmark to ensure some degree of correlation (Pallant, 2005 and Salkind, 2000).

The study's aim (using the TM model) was to establish the underlying factor behind the performance of the fund manager. Our predictor variable according to Salkind (2000) in this study was the market return and the market return squared values, meaning these two variables could be used to predict the performance of the fund manager. The units used as the predicted variable were the monthly market adjusted returns of each unit trust.

Apart from the coefficients that the TM model measured there were also the T-stats and the p-values which were also important values in the analysis of the results. Each of the predictor variables had p-values which indicated the significance of their contribution to the return of the

fund. The R^2 which according to Nassir *et al* (1997) serves to validate the models as it measures

to what extent the model explains the observed values of (Pallant 2005).

3.9.2   Interpretation of Independent Two-Sample T-test

When interpreting the results of the independent two-sample t-test, one has to take note of the

following values.

Determining significance	
pP-value (sig 2 test)	Measures the significant difference between the two means. If equal to or less than 0.05 then there is a significant difference between the two means at the 5% level of significance. If p-value is greater than 0.05, then there is no significant difference between the two means.
t-stats	If the obtained value is greater than the critical value on the t-table, then reject the null hypothesis which states that the difference between the mean of the two groups is equal to zero.

Comparing the mean valued	If the t-value is positive, the mean of the first group is larger than the mean of the second group and vice versa.

In interpreting the results on the comparison of the performance of independent vs. dependent

funds, if the p-value is less than 0.05 the null hypothesis will be rejected. If the p-value is

however greater than 0.05 this implies that there is a greater probability that rejecting the null

hypothesis will cause a type I error. This implies that there is no significant difference between

the performance of the two categories of fund managers. The sign of the t-Stats (i.e. –ve or +ve)

is also an indication of which fund manager is performing better. A positive sign indicates that the first group is performing better than the second group while a negative sign indicates that the second group is performing better than the first group.

3.9.3   Assumptions Made in the Study

3.9.3.1 Data

It was assumed that the JSE All Share Index is the benchmark market return index (used by all the fund managers for the funds selected in this study. The assumption was derived from the fact that more than 50% of the equity funds selected for the study actually used this benchmark in the period under study. The assumption was also supported by the fact that the returns of both the equity and the balanced funds were adjusted for market risk, with the market return being that of the JSE All Share Index.
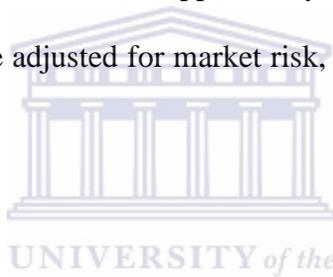
3.9.3.2 Data analysis

Some assumptions are taken into consideration when using certain statistical methods for analysis of data. Some of these assumptions are general in that they run across different methods while others are specific to the particular method used. The t-test has as major assumption that the amount of variability between the two groups is equal (Salkind, 2000). Applying this to the study this assumption however could be presumably be confirmed quite easily statistically whether amount of variation between the returns of the dependent fund and independent fund were equal. Another assumption was that the observations that make up the data are independent (Pallant, 2005). Applying this to the study, the observation of portfolio returns and market returns are independent of each other and are normally distributed.

3.10 Reliability and Validity of Statistical Techniques

3.10.1 Definition of Reliability and Validity

Reliability of a method tests the consistency of the method i.e. its ability to consistently produce the same results if repeated in the same context hence it is concerned about the output of the research (Collis and Hussey, 2009).

Validity is the other aspect that ensures the credibility of the results. It is concerned with the strength of the findings, i.e. whether the outcome is actually what was been measured (Saunders, Lewis and Thomhill, 2000) or in other words validity measures whether the method used to produces the results was the right method to measure the concepts under study.

Internal validity of an experiment is the degree to which the outcome of a study results from the variables that are manipulated, measured, or selected in the experiment rather than from other variables not systematically manipulated. (Grimm, 1993)
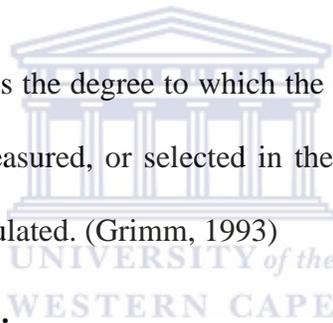
3.10.2 Level of Significance Testing

In statistical terms the most appropriate word to describe the word 'significance' will be 'reliable' (Rowntree 1981).

There are two levels of significance that statisticians generally use namely; the 5% level of significance and the 1% level of significance. Results can be generalised or considered reliable if the level of significance can be tested and proven to be significant. Business statistics models mostly use the 5% level of significance (Collis and Hussey, 2009).

Statistical models seek to make the results reliable by incorporating the null hypothesis in testing the significance of the relationship that the study seeks to demonstrate.

A null hypothesis H_0 (as defined in relation to the study in section 1.4) means that there is no association or no difference in the mean between variables being tested. Applying this to this study it will mean there is no significant difference between performance of the independent and dependent fund managers. One may accept a difference as significant when it is not; this is known as type 1 error = rejecting the null hypothesis when it is in fact the correct one (Rowntree, 1981).

A type II error on the other hand is to accept the H_0 when it is false. This can happen when we seek a bigger difference between the sample mean.

Hence incorporating levels of significance gives one the probability at which a type I or II error can be accepted. The test that will be performed in this study will be done using 5% as the significant level.

3.10.3 Analysing Relationships

The correlation coefficient is used to analyse the strength of relationship between variables while regression analysis determines validity or appropriateness of the relationship as specified in the model used i.e. is it linear, curvilinear, etc.

Correlation is however based on a sample hence it is not proper to generalise the result without considering two factors namely the size of the correlation and the sample size (Rowntree, 1981). These two factors can be used to calculate the standard error of the correlation coefficient.

Both test to be performed; TM model using 'stata version 10' data analysis and statistical software (www.stata.com) and the Independent two-sample t-test also displays the correlation coefficient which will determine the strength of the relationship between the variables. Hence in

using this type of measure, it is possible to know the strength of the relationship between the variables as well as an indication as to whether there is even any relationship.

The R^2 measured by the multiple regression model using the TM model, serves as a value that validates the relationship that exist between the fund's performance and the market returns. This value will justifies the TM model as the appropriate method to be used to explain the underlying skills of the fund managers behind the performance achieved.

In conclusion, the multiple regression analysis and the t-test performed are both considered reliable and valid methods for this study as they both test the correlation coefficient of the variables involved as well as incorporate levels of significance in their testing. They are therefore appropriate for the study.

3.11   Funds Selected for the Study

Tables below outlines the funds selected for the study

Table 3.11.1: List of Equity Funds

Independent Funds	
1	Allan Gray Equity
2	Coronation Equity Fund
3	Element Earth Equity
4	Foord Equity Fund
Dependent Funds	
5	ABSA Equity Fund
6	ABSA Select Equity
7	PSG Growth Fund
8	RMB Equity Fund
9	SIM General Equity
10	Stanlib Equity Fund
11	Community Growth Fund
12	Coris Capital General Equity
13	FNB Growth Fund
14	Investec Equity Fund
15	Metropolitan General Equity Fund
16	Nedgroup Equity
17	Oasis General Fund
18	Old Mutual Active Quant Fund
19	Prescient Equity Quant Fund A1
20	Prudential Equity

Table 3.11.2: List of Balanced Funds

Independent Funds	
1	Centaur Flexible Fund
2	Coronation Absolute Fund
3	Coronation Market Plus Fund
4	Element Flexible Fund
5	Melville Douglas Dynamic Strate
6	Rezco Value Trend Fund
Dependent funds	
7	Absa Flexible Fund
8	Interneuron Capital Freestyle
9	Investec Opportunity Fund
10	Old Mutual Flexible Fund
11	PSG Alphen Flexible Fund
12	PSG Tanzanite Flexible Fund
13	RCI flexible Managed Fund
14	RMB High Tide Fund
15	Stanlib Quants Fund
16	Visio Actinio Portfolio

CHAPTER FOUR

RESULTS AND ANALYSIS

4.1 Introduction

This chapter presents the results and the analysis of the study in an attempt to answer the research questions posed in chapter one. The results are presented and analysed in the order as stipulated in chapter three. The first part focused on an analysis of the differences between the means of the fund managers in terms of their client affiliation classification were the information used to calculate the means was their market adjusted returns (see table 4.6(a) to (g) for an example of how the MAR was calculated). This was done for both the balanced funds and the equity funds. The total number of funds analysed in this chapter were 36 funds of which there were 20 equity funds and 16 balanced funds. The next presentation and analysis is done using the TM model to verify if the fund managers' performance was due to the skills they possess. The skills tested by the model used are the selectivity and market timing skills of the fund managers. The findings were then used to answer the research questions posed at the beginning of the study.

4.2 Presentation and Analysis of the Independent Two-Sample T-Test

4.2.1 Equity Funds

The aim of this test was to find out if there is a difference in the performance of the dependent and the independent fund managers and where a difference was established the next step was to find out which fund performed better than the other. Table 4.1.1 below shows the results of the

independent two sample t- test performed for 20 equity funds using Microsoft excel t-test of two samples.

Table 4.1.1 - Independent Two-Sample T-test - Equity Funds Results

Summary results of independent t-test done to compare the means of two categories of fund managers for equity funds for the period 2005-2009		
	DEP MEAN	*INDEP MEAN*
Mean	0.00095234	0.000680647
Variance	8.24856E-06	1.14945E-05
Observations	60	60
Pooled Variance	9.87155E-06	
Hypothesized Mean Difference	0	
Df	118	
t Stat	0.473638383	
P(T<=t) one-tail	0.318316463	
t Critical one-tail	1.657869523	
P(T<=t) two-tail	0.636632926	
t Critical two-tail	1.980272226	

Table 4.1.2 Analysis of the T-test Results of Equity Fund Managers

t Stat	0.47364	T-value
P(T<=t) one-tail	0.31832	Denotes the level of significant of the difference between the two categories at 5% significance at two-tail
t Critical one-tail	1.65787	Compares with P-value one-tail. Also denotes level of significance
P(T<=t) two-tail	0.63663	Denotes the level of significant of the difference between the two categories at 5% significance at two tail
t Critical two-tail	1.98027	Compares with P-value two-tail. Also denotes level of significance

Note: The focus of the analysis is on the two tail test results.

4.2.1.1 Analysing the T-test Results of Equity Fund Managers

According to Pallant (2005), when the p-value is less than or equal to 0.05 which was the level of significance used, it is an indication that there is a significant difference between the two means. However, in the case where the p-value is greater than the 0.05 (as is the case in the analysis of the two fund managers as seen in Table 4.1.2 where the p-value was 0.64), this indicates that there is no significant difference between the performance of the independent fund managers and the dependent fund managers. The p-value is a probability value which is analysed statistically as there is a 64% chance that rejecting the null hypothesis will result to type I error. The 5% significance level is set as a limit which indicates that when the p-value is above 5% it therefore means rejecting the null hypothesis will cause a significant error. As a result, the alternative hypothesis was not accepted. There are other statistical analyses that could be obtained from the results in table 4.1.2 to further establish the acceptance or the rejection of the null hypothesis as discussed in the next paragraph.

The next analysis was to compare the t-stat value to the t-Critical two-tail value to further verify whether the null hypothesis should be accepted or not. Where the t-stat value is more than the t-Critical value the null hypothesis (H_0) is rejected as the value does not fall within the acceptable range of the distribution. From the results obtained above this is not the case. The t-stat value was 0.47 (ignoring the sign), which is less than the t-Critical value of 1.98, therefore the H_0 is again accepted indicating that there is no significant difference between the performance of independent fund managers and that of the dependent fund managers as their performance falls within the area of the normal distribution.

Accepting the null hypothesis as indicated in the analysis above makes it a bit difficult to verify which fund manager group between the two categories under study performed better. It is known that the sign in front of t-stat indicates from face value which fund performs better than the other. A negative t-stat value indicates that the second group performed better while a positive t-stats value indicates the first group performed better. This therefore helped to further analyse the results obtained. From the results in table 4.1.2, the t-stats has a positive sign which is an indication that the dependent equity fund managers performed better than their counterparts the independent equity fund managers.

In conclusion, the t-test has indicated that there is no significant difference between the performances of the equity dependent fund managers and that of the independent fund managers. This led to the conclusion that we cannot reject of the H_0. The results further revealed the fact that the dependent fund managers performed better than the independent managers though their difference was statistically insignificant.

4.2.2   Balanced Funds

As with the equity funds above, a t-test was also performed for the balanced funds to find out if there is a difference in the performance of the dependent and independent fund managers. Where a difference was established, the next step was to find out which fund group performed better than the other. The balanced funds tested were 16 in number. Table 4.1.3 presents the results from the independent sample t-test performed using Microsoft excel t-test of two samples assuming equal variance between the two funds groups.

Table 4.1.3 Independent T-test- Balanced Fund Managers

Summary results of independent t-test done to compare the means of two categories of fund managers for equity funds for the period 2005-2009		
	DEP Mean	*INDEP Mean*
Mean	0.00038	0.000641475
Variance	1.01928E-05	1.06824E-05
Observations	60	60
Pooled Variance	1.04376E-05	
Hypothesized Mean Difference	0	
df	118	
t Stat	-0.44718	
P(T<=t) one-tail	0.32778	
t Critical one-tail	1.65786	
P(T<=t) two-tail	0.65556	
t Critical two-tail	1.98027	

Note: The focus of the analysis is on the two tail test.

Table 4.1.4 Analysing the Results of the Independent Two-Sample T- test

t Stat	-0.44718	T-value
P(T<=t) one-tail	0.32778	Denotes the level of significance of the difference between the two categories at 5% significance at two tail
t Critical one-tail	1.65787	Compares with P-value one tail. Also denotes level of significance
P(T<=t) two-tail	0.65556	Denotes the level of significance of the difference between the two categories at 5% significance at two tail
t Critical two-tail	1.98027	Compares with P-value two tail. Also denotes level of significance

4.2.2.1   Analysing the independent two-sample T-test results of balanced funds

Analysing the results based on Levine *et al* (2005) on the comparison of t-stat value and the t-Critical two-tail, the results in table 4.1.4 indicate that there is no significant difference between the performances of the two categories of fund managers as the t-value obtained of -0.45 (ignoring the sign) is greater than t-Critical two-tail value of 1.98. The H_0 is therefore accepted since the t-stats falls within the accepted area of the distribution. This reiterates the fact that there is no difference in the performance of the independent balanced fund manager and the dependent fund managers as earlier analysed for the equity fund.

The p-value from the results in table 4.1.4 is 0.66 (66%) and it is greater than 0.05 (5%) significance level. To statistically interpret this according to Levine *et al* (2005) and Pallant (2005), the H_0 cannot be rejected since the 66% indicates a significant percentage of no difference between the performance of the independent fund managers and the dependent fund

managers of the balanced funds selected. Due to this high percentage, there is a probability in this case of getting type I error if H_0 is rejected when it should have been accepted.

In comparing which fund manager performed better though the difference between their mean performance is insignificant, the sign of the t-stats is considered. In this case, the value of the t-stats was negative; -0.45, implying that the performance of the independent fund managers which was the second group is better than that of the dependent fund managers.

From the results analysed above it is evident that there is no difference in the performance of the two categories of the balanced fund managers. However, though the null hypothesis is not rejected there is still an indication of which fund manager category performed better. The result of the balanced funds indicates that the independent balanced fund managers performed better than the dependent fund managers.

The results of the t-test set out to reveal whether there is a difference in the performance between the two categories of fund managers for the two funds tested namely; the equity fund and the balanced fund. In conclusion, it is obvious from the analysis of the results that both equity fund managers (dependent and independent) and the balanced fund managers (dependent and independent) have no significant difference in their performance given that the H_0 was not rejected. However, how well the one group of fund managers performed over the other was obvious. The equity fund t-test demonstrated that the dependent fund managers performed better than the independent fund managers whereas the balanced fund t-test demonstrated that the independent fund managers performed better though statistically insignificant.

4.3 Responding to the Research Question

Restating the research question and ensuring that the results above have contributed to giving an answer will be of utmost importance. Thus far, the research questions for which answers have been attempted are the first two as follows:

1. Does client affiliation affect fund performance in general?

2. Will performance differ between dependent and independent fund managers given the two fund types selected for the study?

4.3.1 Does Client Affiliation Affect Fund Performance in general?

The client affiliation here relates to the classification of the fund managers into dependent and independent fund managers. This client affiliation relationship had already been defined in chapter one but in summary this study classifies fund managers into two categories namely; the dependent fund managers who are considered to be influenced by the clients they serve because of their structure and other parameters and the independent fund managers who are considered not to be influenced by their clients as already discussed in chapter one.

Explaining the relationship of client affiliation and performance based on the results obtained from the t-test, it was found that there is no difference in the mean performance of both fund manager categories for both fund types. This finding is based on the significance of the probability value obtained which led to the acceptance of the null hypothesis. This therefore means that in response to research question 1 above the client affiliation status of a fund manager does not really affect performance. Despite the above observation, analysing the other values obtained from the t-test results, it is possible to respond to the second research question.

4.3.2 Will performance differ between dependent and independent fund managers given the fund type selected?

Despite the above fact, the t-test provided other results as indicated in the t-test analysis section which gave information on which fund managers performed better than their counterparts for both fund types. The dependent fund managers performed better than the independent fund managers for equity funds whereas the independent fund managers performed better than the dependent fund managers for balanced funds. Hence in response to the research question performance does vary between the two fund manager groups but this is dependent on the fund type selected.

The next question to consider is; what makes the performance of these fund managers to be different for the different fund types. This led to the analysis that investigated what the underlying factors behind their performance are. From the literature that was reviewed, it is evident that there are many factors that could contribute to their performance with their skills being one of them. In this study their selectivity and market timing skills were measured. The following section presents and analyses these results.

4.4 Presentation and Analysis of TM Model

In this section, an examination of the selectivity and the market timing abilities of the fund managers are done using the Treynor and Mazuy model used by Nassir *et al* (1997). The portfolio or fund returns used were market adjusted and the market return used was the JSE All Share index. Thirty six (36) unit trust funds where measured of which 20 where equity funds and 16 where balanced funds. The results of both fund types are presented below.

4.4.1 Balanced Unit Trust Funds

Tables 4.2.1 (A) and (B) shows the results of the 16 balanced funds sample selected and measured for the selectivity and market timing abilities of the fund manager categories. The balanced funds selected were made up of 10 dependent fund manager funds (table 4.2.1 A) and 6 independent fund managers (table 4.2.1 B). The criteria for selection which led to the number of samples selected had already been explained in previous chapters. Column (1); funds, shows the name of the balanced unit trust funds, the column (2) shows the value of the measure of the selectivity ($\alpha_{d \text{ and }} \alpha_{ind}$) abilities of the respective fund managers and column (3) shows the value of the measure of the market timing ($\gamma_{d \text{ and }} \gamma_{ind}$) skills or abilities of the fund managers.

Table 4.2.1- Selectivity and Market Timing Performance-TM Model Results Balanced Funds

A) Selectivity and Markets Timing Performance-TM Model Balanced funds		
Dependent Funds	α_d	γ_d
ABSA Flexible fund	-0.00586	-0.07572
Interneuron Capital Freestyle	-0.00858	0.171534
Investec Opportunity fund	-0.0061	0.004328
Old Mutual Flexible fund	-0.00581	-0.04254
PSG Alphen Flexible funds	-0.00625	-0.01085
PSG Tanzanite Flexible fund	-0.00616	0.010995
RCI Flexible Managed fund	-0.00559	-0.09792
RMB High Tide fund	-0.00562	-0.00562
Stanlib Quants fund	-0.00501	-0.14451
Visio Actinio Portfolio	-0.0061	-0.0029

B) Selectivity and timing Performance-TM Model Balanced funds		
Independent Funds	α_{ind}	γ_{ind}
Centaur flexible fund	-0.00594	-0.02839
Coronation Absolute fund	-0.00588	-0.02855
Coronation Market Plus fund	-0.00564	-0.03914
Element Flexible Fund	-0.00532	-0.09544
Melville Douglas Dynamic Strategy	-0.00555	-0.08573
Rezco Value Trend fund	-0.00692	0.135557

4.4.2 Equity Unit Trust Funds

The tables 4.2.2 (A) and (B) below shows the results of the 20 Equity funds sample selected and measured for the selectivity and timing abilities for different fund managers groups. The equity funds selected was made up of 16 dependent fund manager funds (table 4.2.2 A) and 4 independent fund managers (table 4.2.2 B). The criteria for selection that led to the samples having this number was set in previous chapters. Column (1); funds, shows the name of the equity unit trust funds, column (2) shows the value of the measure of the selectivity ($\alpha_{d \text{ and }} \alpha_{ind}$) abilities of the respective fund managers and column (3) shows the value of the measure of the timing ($\gamma_{d \text{ and }} \gamma_{ind}$) skills of the respective fund managers.

Table 4.2.2- Selectivity and Market Timing Performance-TM Model Equity Funds

A)Selectivity and Market Timing Performance-TM Model Equity funds		
Dependent Funds	α_d	γ_d
Absa Equity Fund	0.00013	-0.00695
Absa Select Equity	0.00039	0.01416
PSG Growth Fund	-3.84E-07	0.00722
RMB Equity Fund	0.00667	0.06984
SIM General Equity	0.00003	0.02929
Stanlib Equity Fund	-0.01265	-0.18058
Community Growth Fund	0.00016	-0.03501
Coris Capital General Equity	0.00002	0.01142
FNB Growth Fund	0.00003	-0.03866
Investec Equity Fund	0.00667	0.06984
Metropolitan General Equity Fund	-0.00006	-0.00167
Nedgroup Equity	-0.00008	-0.00956
Oasis General Fund	0.00012	-0.00134
Old Mutual Active Quant Fund	-9.64E-06	-0.00925
Prescient Equity Quant Fund A1	-0.00002	-0.00002
Prudential Equity Fund	0.00688	0.09687

B) Selectivity and Market Timing Performance-TM Model Equity funds		
Independent Funds	α_d	γ_{ind}
Allan Gray Equity	-0.00008	0.10518
Coronation Equity Fund	0.00002	0.04823
Element Earth Equity	0.00017	-0.00143
Foord Equity Fund	0.00020	-0.01116

4.5 Analysing the TM Model Results

The TM model as already mentioned was the model used by Nassir *et al* (1997), Philippas (2005) and many others to analyse the selectivity and the market timing of fund managers. In this section the selectivity and the timing abilities of the fund managers will be analysed to inform as to whether the fund managers possess these skills and which fund managers have performed better than the others. From our independent t-test analysis done above it is evident that there is some difference in the performance of the two fund manager categories under study. The TM model has tried to dig a little deeper in order to reveal an estimate of the underlying factors that led to the differences found in the performance of both fund manager categories though not too significant as revealed by the t-test.

4.5.1 Selectivity Analysis

Alpha (α) measures the selective ability of the fund manager. When positive, it is an indication that the fund manager group possesses selectivity skills while a negative value implies the fund manager does not have these skills (Philippas, 2005 and Nassir et al, 1997).

4.5.1.1 Analysing the results obtained in Table 4.2.1 A and B- Balanced Funds

The results as presented in table 4.3.1 revealed that the α-values of both the independent and the dependent fund managers for all 16 funds were negative. This is an indication that the balanced

fund managers do not possess selectivity skills. Analysing further, it meant the selectivity skills contributed negatively to the performance of both fund manager categories. This is in contrast with the results of Nassir *et al*, (1997) obtained from the analysis of 18 balanced funds which showed averagely a positive selectivity skill.

Furthermore, the average selectivity value for both fund manager categories was calculated. The result as presented in table 4.3.1 revealed that both fund managers do not possess selectivity skills and hence have both contributed negatively to the performance of the funds. Analysing how each fund manager category performed respectively on average, the independent fund managers have contributed less negatively to the average performance of the funds with a value of -0.00587 while the dependent fund managers have contributed more negatively to the average performance of the funds with the value of -0.00611. However, the difference between their averages was significantly very small.
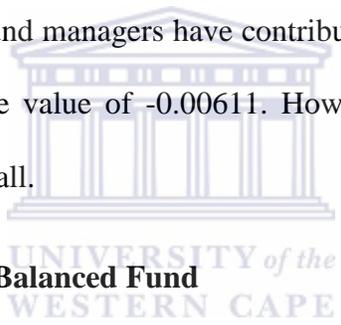
Table 4.3.1- Selectivity Measure Balanced Fund

Balanced Funds Managers-Selectivity Measure			
No. of funds	**Percentage**	**comments**	**Fund**
6	100%	No selectivity skills	Independent
10	100%	No selectivity skills	Dependent
Average	-0.00587	Independent	
Average	-0.00611	dependent	

4.5.1.2 Analysing the results obtained in Table 4.2.2 C and D-Equity Funds

The summary of the results in table 4.2.2 is found in table 4.3.2 (a) and (b). From the results presented, 6 dependent fund equity managers were found to possess no selectivity skills which

represented 38% of the 100% sample size made up of 16 dependent fund manager equity funds. Their α_d is negative, indicating no skills as analysed by the TM model. However, 10 of the funds had positive α_d indicating selectivity skills. This result represents 63% of the 16 dependent fund manager equity funds in the sample. The average selectivity value of the dependent fund managers was calculated and, because many of the funds had positive α_d, the average results for these fund manager group revealed that they do have selectivity skills with an average value of 0.00052. The p-value was not needed for the selective skills analysis given that it is the intercept and does not form one of the predictor variables.

The independent fund manager summary on the other hand has recorded a high percentage of selectivity ability (α_{ind}) which represents 75% of the independent manager equity sample made up of 3 funds. The other 25% which represents 1 fund reported no selectivity skills (α_{ind}). The average selectivity skills of the independent fund manager came to 0.00008 which is an overall indication of selectivity.
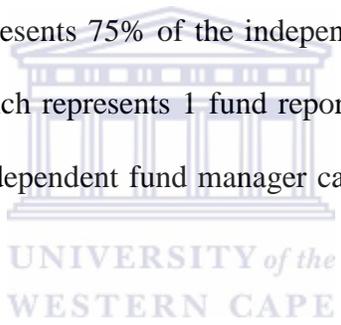
On comparing the performance of both fund manager groups respectively the dependent fund managers, on average, demonstrated selectivity skills for the equity funds more than the independent fund managers as presented in table 4.3.2 (a) and (b) respectively.

Table 4.3.2 (a) - Selectivity Measure – Dependent Equity Funds

Dependent Equity Fund anagers		
Number of funds	**Percentage**	**comments**
6	38%	No selectivity skill
10	63%	Selectivity skills
Average	0.00052	

Table 4.3.2 (b) - Selectivity Measure – Independent Equity Funds

Independent Equity Fund Managers		
Number of funds	**Percentage**	**comments**
1	25%	No selectivity skill
3	75%	Selectivity skills
Average	0.00008	

To conclude based on the results and the analysis above, for selectivity skills it is evident that the equity fund managers possessed more selectivity skills than the balanced fund managers. However, while the balanced fund's results indicated that the independent fund managers performed better that the dependent fund managers, the dependent fund managers performed better in the equity funds. The results for the equity funds is in line with that obtained above from the independent sample t-test where the results indicated that the dependent fund managers performed better than their counterparts and the same goes for the balanced funds where the independent fund managers performed better than the dependent fund managers, though neither possess selectivity skills.

On a more general note, the equity fund managers appears to possess selectivity skills when the average selectivity skills of the entire 20 unit trust equity funds were calculated as can be seen in table 4.3.2 (c). On the other hand, the balanced funds on average appear not to possess selectivity skills.

Table 4.3.2 (c) Average Selectivity Skills by Fund Type

α – Equity Funds		α- Balanced fund	
Average	0.00043	Average	-0.00602

4.5.2   Market Timing Analysis

Gamma (γ) which is the coefficient of the quadratic effect on performance which indicated the market timing component that contributes to the performance of the fund managers, is analysed in this section based on the summary of results obtained as shown in table 4.4.1 (a) and (b) and 4.4.2(a) and (b) for both balanced funds and equity funds respectively. According to Nassir *et al* (1997) and Philippas (2005), a positive γ indicates a positive contribution to the performance of a fund. The results with positive gammas are an indication of the fact that the fund manager possesses market timing skills. The purpose of this analysis was to find out if there is evidence of any marketing skills and if so, which of the fund managers possessed these skills more than the other.

4.5.2.1 Analysis of the results obtained from A and B in table 4.2.1- Balanced Funds

The results presented in 4.4.1 (a) revealed that 5 of the independent balanced fund managers that make up 83% of the sample did not possess timing skills for the balanced funds. On the other hand, one fund manager who represents 17% of the balanced fund sample selected possessed these skills. This brought the average skills of the independent balanced fund managers as measured by the gamma to -0.02361 which is evidence of no market timing skills on the part of these 6 fund managers in the independent fund group.

Table 4.4.1 (a) Market Timing Measure –Balanced Funds

Independent Balanced Fund Managers		
Number of funds	**Percentage**	**Comments**
5	83%	No timing skill
1	17%	Timing skills
Average	-0.02361	Independent

The results of the dependent fund managers were not very different from those of the independent fund managers reported above. The results in table 4.4.1 (b) revealed that 6 of the dependent fund managers possessed no timing skills which made up 60% of the dependent fund sample. However 40% of the fund managers which was made up of 4 funds possessed timing skills. The average timing skills of the dependent fund managers as a whole was a negative value of -0.01932 as present in table 4.4.1 (b) which is also evidence of no timing abilities like those for independent funds stated above.

Table 4.4.1 (b) Market Timing Measure –Balanced Funds

Dependent Balanced Fund Managers		
No. of funds	**Percentage**	**Comments**
6	60%	No timing skill
4	40%	Timing skills
Average	-0.01932	dependent

4.5.2.2 Analysis of the results obtained from table 4.2.1 C and D- Equity Fund

The results in table 4.4.2 (a) revealed that 56% of dependent equity fund managers did not possess any timing skills while 44% did. However on average, equity dependent fund managers appear to possess market timing skills of 0.00097. This is in contrast to the performance of dependent balanced fund managers who, on average, appear not to possess any such skills and by majority in terms of percentage.

Table 4.4.2 (a) - Market timing- Equity Funds

No. of Funds	Percentage	Comments
Dependent Equity Fund Managers		
9	56%	No market timing ability
7	44%	Market timing ability
Average	0.00097	

Independent equity fund managers on the other hand had an equal number of fund managers demonstrating market timing and no market timing skills respectively; 50% of the fund managers possessed the timing skills whereas 50% did not as presented in table 4.4.2 (b). On average, the independent equity fund managers did appear to possess market timing skills with a positive average gamma of 0.03520.

Table 4.4.2 (b) - Market timing- Equity Funds

Independent Equity Fund Managers		
Number of Funds	**Percentage**	**Comments**
2	50%	No market timing ability
2	50%	Market timing ability
Average	0.03520	

In conclusion, comparing the market timing skills of the dependent fund managers with those of the independent fund managers, the results and analysis above demonstrate that their performance varies based on these skills. Though the equity independent fund managers and the equity dependent fund managers both demonstrated market timing skills; the independent fund managers on average demonstrated more skills than the dependent fund managers. This is in contrast with the results obtained from the t-test which demonstrated that the dependent fund managers performed better than the independent fund managers. The likely reason for this could be that the factor that contributed to the better performance of the dependent equity fund managers was their selectivity skills as explained in the 4.5.1 section above.

The balanced fund managers on the other hand did not possess market timing skills as they both had negative gamma values. The independent fund manager demonstrated lesser skills with a value of 0.01932 than the dependent fund managers with a gamma value of 0.02361. These results again where in contrast with the t-test performance which demonstrated that the independent fund managers performed better. Reasons for this difference could again be attributed to the other factors that contribute to fund performance such as the selectivity skills of the fund manager.

The results in table 4.4.2 (c) revealed that equity fund managers on average demonstrate more timing abilities than balanced fund managers.

Table 4.4.2 (c) Average Timing Skills by Fund Type

γ – Equity Funds		γ- Balanced Funds	
Average	0.00782007	Average	-0.02093064375

4.6 Significance of the Results of TM Model

The R^2 value is an important value which indicates whether the model used was most appropriate. For the model to be appropriate it should be able to explain a reasonable percentage of the variance in R_{pt} (portfolio return) (Pallant, 2005). The results obtained from the TM model used in this study gave the following results as presented on table 4.5.1 and 4.5.2; 78% and 17% of the variation in the return of the equity and the balanced funds respectively. The result was very good for the equity funds (this is based on Pallant (2005) explanation of reasonableness or R^2, where a high percentage is an indication of a good model) meaning the TM model was an appropriate model to use in explaining variation in equity funds but poor for the balanced fund. Nassir *et al*, (1997) obtained an R^2 which ranged from 1% to 57%. This they considered weak. In order to find out how best-fit the model was in relation to the fund manager category the independent equity fund managers on average showed a larger percentage variance of 81.5 % than the dependent fund managers of 77.3% as presented in table 4.5.1 (a) and (b). For the balanced funds as presented in table 4.5.2 (a) and (b), the independent fund managers still showed a larger percentage than the dependent funds.

The *significance* F (p value) is also an important parameter that explains that the model used was appropriate to measure the variance in the returns of the funds. If p-value (F-stats) is less than 5% level of significance it therefore means there is a significant relationship between the predictor variable and the predicted variable. The results obtained from the study as presented in table 4.5.1 and 4.5.2 were 0.0000 and 0.0068 which are the p-values obtained from using the TM model for the equity funds and the balanced fund respectively. Analysing these results, both funds showed statistical significant results as their p-values were less than 5% level of significance. This was an indication of a significant quadratic relationship between the portfolio returns and the market return benchmark used.

Table 4.5.1 Significance of the Results from the TM Model- Equity Funds

No	Fund name	categories	R2	P-value
1	Allan Gray Equity	INDEP	0.8184	0.000
2	Coronation Equity Fund	INDEP	0.8205	0.000
3	Element Earth Equity	INDEP	0.8200	0.000
4	Foord Equity Fund	INDEP	0.8019	0.000
5	Absa Equity Fund	DEP	0.9255	0.000
6	Absa Select Equity	DEP	0.8636	0.000
7	PSG Growth Fund	DEP	0.8096	0.000
8	RMB Equity Fund	DEP	0.2326	0.000
9	SIM General Equity	DEP	0.8528	0.000
10	Stanlib Equity Fund	DEP	0.7115	0.000
11	Community Growth Fund	DEP	0.9272	0.000
12	Coris Capital General Equity	DEP	0.8499	0.000
13	FNB Growth Fund	DEP	0.8302	0.000
14	Investec Equity Fund	DEP	0.2326	0.000
15	Metropolitan General Equity Fund	DEP	0.8881	0.000
16	Nedgroup Equity	DEP	0.8573	0.000
17	Oasis General Fund	DEP	0.8516	0.000
18	Old Mutual Active Quant Fund	DEP	0.9037	0.000
19	Prescient Equity Quant Fund A1	DEP	0.9887	0.000
20	Prudential Equity	DEP	0.6366	0.000

Equity Funds Average				
t-stats-α	t-stats-γ	p-value (γ)	R^2	P-value (F)
3.0425	1.513666667	0.5075	0.781115	0.000

Table 4.5.1 (a)

Equity Funds Average – Dependent fund	
R^2	P-value (F)
0.772594	0.000

Table 4.5.1 (b)

Equity Funds Average- Independent	
R^2	P-value (F)
0.8152	0.000

Table 4.5.2 Significance of the Results from the TM Model –Balanced Funds

No.	Funds	Category	R squared	F-stats
1	Absa Flexible Fund	DEP	0.1863	0.0028
2	Interneuron Capital Freestyle	DEP	0.1062	0.0408
3	Investec Opportunity Fund	DEP	0.1656	0.0057
4	Oldmutual flexible Fund	DEP	0.1671	0.0055
5	PSG Alphen Flexible Funds	DEP	0.2038	0.0015
6	PSG Tanzanite Flexible Fund	DEP	0.1948	0.0021
7	RCI Flexible Managed Fund	DEP	0.2143	0.001
8	RMB High Tide Fund	DEP	0.1634	0.0062
9	Stanlib Quants Fund	DEP	0.185	0.0029
10	Visio Actinio Portfolio	DEP	0.1806	0.0034
11	Centaur Flexible Fund	INDEP	0.1997	0.0018
12	Coronation Absolute Fund	INDEP	0.1588	0.0072
13	Coronation Market Plus Fund	INDEP	0.146	0.0111
14	Element Flexible Fund	INDEP	0.193	0.0022
15	Melville Douglas Dynamic Strate	INDEP	0.248	0.0003
16	Rezco Value Trend Fund	INDEP	0.1381	0.0145

Balanced funds Average				
T-statsα	T-stats γ	p value γ	R squared	P-value (F)
-2.67125	-0.325625	0.569063	0.178169	0.006813

Table 4.5.2 (a)

Balanced Funds Average-dependent	
R^2	P-value (F)
0.17671	0.00719

Table 4.5.2 (b)

Balanced Funds Average-independent	
R^2	P-value (F)
0.180600	0.006183

4.7 A Review of Literature In Relation To Findings

Drawing from results reported in literature consulted, Sehgal and Jhanwar (2008) reiterated the fact that frequency of the data collection has an effect on market timing results obtained. From their study it was clear that daily returns displays better market timing abilities of the fund managers than monthly returns. Their results on selectivity went in the same line. Their decision to use daily returns because it is a higher observation frequency than monthly returns came from an idea from Bollen and Busse (2001) as discussed in their study.

From the results of Phillippas (2005), using the TM model, 15 out of 19 funds had selectivity skills though only 4 of the funds had significant selectivity skills at a 5% significant level. He found their market timing skills to be weak as only 5 of the 19 funds showed timing skills and 14 had a negative market timing coefficient. An equity fund manager was the most successful in terms of selectivity whereas a balanced fund manager demonstrated best market timing skills. This was in line with the results obtained in this study where the fund with the best selectivity skills was an equity fund; Prudential Equity Fund ($\alpha = 0.69\%$). The fund whose fund manager demonstrated the best market timing skill was a balanced fund by name of Interneuron Capital Freestyle fund ($\gamma = 17.15\%$). Moreover, both funds are dependent funds according to their client

affiliation classification done in this study. Philippas (2005) attributed the non-selectivity and market timing skills of the fund managers to their age and experience which he believes is an area which needs to be further researched on. Oldfield and Page (1997) had also in earlier years had similar results of fund managers in comparison to Sehgal and Jhanwar (2008) and Phillippas (2005) where the fund managers had no ability to outperform the market based on their selectivity and their timing abilities. Their study was based on South African unit trusts though they happened not to have used the TM model; however they used other appropriate quantitative methods such as simple linear regression method designed by Jensen in 1968 as well as the use of F-statistics and the t-statistics to evaluate the skills of the fund managers.

On average, both the selectivity ability and the market timing ability of the fund managers were negative when the equity and balanced funds were combined (not considering their client affiliation categories whether independent or dependent). This was partly in line with Nassir *et al* (1997)'s results which showed that the fund managers on average showed positive selectivity abilities and negative market timing abilities.

4.8 Responding to the Research Question

Coming back to the third research question posed in chapter one, this section attempts to provide an answer to the question. The question follows thus;

1. Could performance attribution be responsible for the variation in (2) above, where (2) refers to the question already answered in section 4.3?

Though it is obvious that both the independent and the dependent fund managers have not demonstrated selectivity and timing skills on average, their negative skills still had an impact on

the performance though negatively. It was already reported in the results above that the results from the t-test sometimes varied from those of the TM model. This could be explained by the varying contribution that the selectivity or market timing ability brought to overall performance. Hence if an independent fund manager appears to have performed well in the t-test as a whole but did not exhibit a selectivity skill in comparison to the dependent fund one could attribute the performance to their market timing skills as both contribute to performance.

4.9 Chapter Summary

In summary this chapter had as aim to respond to all three research questions posed in the first chapter. From the analysis discussed above, the independent t-test gave answers to the research questions 1 and 2 where it revealed that there is an insignificant difference in the performance of both fund manager categories. It also revealed that the difference though insignificant still demonstrated that one fund performed better than the other for both equity and balanced funds respectively. In response to the third research question, the TM model was used to measure the reason behind the difference in performance which was attributed to the skills of the fund managers. Both fund managers of the equity funds demonstrated selectivity and timing skills while both fund managers of the balanced funds demonstrated no market timing skills. The independent fund managers performed better in the equity fund and worse in the balanced fund in comparison to the dependent fund managers when analysing their selectivity skills while the dependent fund managers performed better (though negative ability) in the balanced funds and worse in the equity funds in comparison to the independent fund managers. From the analysis in this chapter, it is clear that the equity fund performs better than the balanced fund which is important addition information. The next chapter will follow from here with an outline of what

the study initially set out to accomplish and whether the objectives have been met not forgetting

difficulties encountered during the study and recommendations for future research.

Table 4.6 (a) Means of Excess Market Adjusted Returns (EMAR) of Balanced Funds

Year	DEP Mean	INDEP Mean	Year	DEP Mean	INDEP Mean
01-2005	-0.0008	0.0001	07-2007	-0.0004	-0.0007
02-2005	0.0016	0.0015	08-2007	-0.0003	-0.0007
03-2005	-0.0027	-0.0019	09-2007	0.0013	0.0018
04-2005	-0.0017	-0.0023	10-2007	0.0040	0.0034
05-2005	0.0036	0.0055	11-2007	-0.0032	-0.0035
06-2005	0.0009	0.0013	12-2007	-0.0021	-0.0027
07-2005	0.0055	0.0056	01-2008	-0.0067	-0.0074
08-2005	0.0009	0.0016	02-2008	0.0059	0.0051
09-2005	0.0051	0.0048	03-2008	-0.0013	-0.0011
10-2005	-0.0021	-0.0010	04-2008	-0.0003	0.0006
11-2005	0.0020	0.0022	05-2008	0.0016	0.0008
12-2005	0.0050	0.0056	06-2008	-0.0047	-0.0048
01-2006	0.0071	0.0070	07-2008	-0.0050	-0.0046
02-2006	-0.0003	-0.0003	08-2008	0.0009	0.0017
03-2006	0.0025	0.0036	09-2008	-0.0063	-0.0059
04-2006	0.0009	0.0016	10-2008	-0.0062	-0.0055
05-2006	-0.0036	-0.0027	11-2008	-0.0025	-0.0013
06-2006	-0.0006	-0.0004	12-2008	0.0006	0.0020
07-2006	-0.0007	-0.0009	01-2009	-0.0037	-0.0025
08-2006	0.0025	0.0027	02-2009	-0.0066	-0.0069
09-2006	0.0007	0.0016	03-2009	0.0023	0.0036
10-2006	0.0025	0.0037	04-2009	0.0008	0.0009
11-2006	0.0023	0.0033	05-2009	0.0037	0.0040
12-2006	0.0036	0.0029	06-2009	-0.0007	-0.0009
01-2007	0.0021	0.0032	07-2009	0.0050	0.0052
02-2007	0.0003	-0.0001	08-2009	0.0021	0.0023
03-2007	0.0027	0.0030	09-2009	0.0007	0.0009
04-2007	0.0030	0.0028	10-2009	0.0020	0.0027
05-2007	-0.0002	0.0004	11-2009	-0.0008	-0.0018
06-2007	-0.0019	-0.0026	12-2009	0.0022	0.0019

- Note- Table was used for the independent t-test comparison of the dependent and the independent fund manager's performance for balanced funds.

Table 4.6 (b) Means of Excess Market Adjusted Return (EMAR) of Equity Funds

Date	DEP MEAN	INDEP MEAN	DATE	DEP MEAN	INDEP MEAN
01-2005	0.0006	-0.0001	07-2007	0.0003	-0.0006
02-2005	0.0022	0.0024	08-2007	0.0001	-0.0004
03-2005	-0.0011	-0.0017	09-2007	0.0022	0.0017
04-2005	-0.0019	-0.0025	10-2007	0.0033	0.0030
05-2005	0.0045	0.0058	11-2007	-0.0022	-0.0026
06-2005	0.0014	0.0020	12-2007	-0.0018	-0.0032
07-2005	0.0053	0.0056	01-2008	-0.0052	-0.0070
08-2005	0.0009	0.0009	02-2008	0.0056	0.0059
09-2005	0.0046	0.0060	03-2008	-0.0011	-0.0018
10-2005	-0.0013	-0.0019	04-2008	0.0016	0.0008
11-2005	0.0020	0.0025	05-2008	0.0014	0.0010
12-2005	0.0045	0.0050	06-2008	-0.0031	-0.0054
01-2006	0.0054	0.0064	07-2008	-0.0029	-0.0025
02-2006	-0.0001	-0.0010	08-2008	0.0017	0.0018
03-2006	0.0032	0.0035	09-2008	-0.0069	-0.0075
04-2006	0.0014	0.0012	10-2008	-0.0058	-0.0070
05-2006	-0.0024	-0.0031	11-2008	-0.0001	-0.0014
06-2006	0.0006	0.0007	12-2008	0.0019	0.0023
07-2006	-0.0003	-0.0008	01-2009	-0.0024	-0.0022
08-2006	0.0029	0.0025	02-2009	-0.0054	-0.0069
09-2006	0.0014	0.0011	03-2009	0.0050	0.0044
10-2006	0.0029	0.0034	04-2009	0.0020	0.0009
11-2006	0.0024	0.0028	05-2009	0.0050	0.0049
12-2006	0.0034	0.0037	06-2009	-0.0002	-0.0004
01-2007	0.0023	0.0020	07-2009	0.0050	0.0056
02-2007	0.0008	0.0000	08-2009	0.0026	0.0032
03-2007	0.0031	0.0033	09-2009	0.0008	0.0003
04-2007	0.0026	0.0026	10-2009	0.0027	0.0031
05-2007	0.0005	-0.0002	11-2009	0.0002	-0.0012
06-2007	-0.0009	-0.0019	12-2009	0.0020	0.0020

Note-Table was used for the independent t-test comparison of the dependent and the independent fund manager's performance for equity funds

Table 4.6 (c) Money Market Rates (risk free rate -Rft) and Excess Market Return (Rmt)

Year	Money Market (risk free rate)	Excess Market Return	Year	Money Market (risk free rate)	Excess Market Return
01-2005	0.0057	0.0079	07-2007	0.0074	0.0062
02-2005	0.0051	0.0084	08-2007	0.0075	0.0061
03-2005	0.0057	0.0079	09-2007	0.0075	0.0061
04-2005	0.0054	0.0082	10-2007	0.0078	0.0057
05-2005	0.0053	0.0082	11-2007	0.0079	0.0057
06-2005	0.0052	0.0084	12-2007	0.0083	0.0052
07-2005	0.0054	0.0082	01-2008	0.0088	0.0047
08-2005	0.0055	0.0081	02-2008	0.0080	0.0055
09-2005	0.0052	0.0084	03-2008	0.0086	0.0049
10-2005	0.0053	0.0082	04-2008	0.0084	0.0051
11-2005	0.0052	0.0083	05-2008	0.0090	0.0046
12-2005	0.0054	0.0082	06-2008	0.0088	0.0048
01-2006	0.0054	0.0081	07-2008	0.0093	0.0042
02-2006	0.0049	0.0086	08-2008	0.0094	0.0041
03-2006	0.0055	0.0081	09-2008	0.0091	0.0045
04-2006	0.0053	0.0083	10-2008	0.0094	0.0041
05-2006	0.0055	0.0081	11-2008	0.0091	0.0044
06-2006	0.0054	0.0082	12-2008	0.0094	0.0041
07-2006	0.0058	0.0077	01-2009	0.0092	0.0044
08-2006	0.0059	0.0076	02-2009	0.0080	0.0055
09-2006	0.0059	0.0076	03-2009	0.0083	0.0052
10-2006	0.0062	0.0073	04-2009	0.0075	0.0060
11-2006	0.0063	0.0072	05-2009	0.0072	0.0063
12-2006	0.0067	0.0069	06-2009	0.0062	0.0074
01-2007	0.0070	0.0065	07-2009	0.0059	0.0076
02-2007	0.0064	0.0071	08-2009	0.0059	0.0076
03-2007	0.0070	0.0065	09-2009	0.0054	0.0081
04-2007	0.0068	0.0068	10-2009	0.0056	0.0080
05-2007	0.0070	0.0066	11-2009	0.0054	0.0082
06-2007	0.0069	0.0067	12-2009	0.0056	0.0080

Note- Tables was used for the calculation of the MAR.

Table 4.6 (d) Market Adjusted Return- An Example Balanced Fund Centaur Flexible Fund

Year	Centaur Flexible Fund	ER Centaur Flexible Fund	MAR Centaur Flexible Fund	EMAR Centaur Flexible Fund	Year	Centaur Flexible Fund	ER Centaur Flexible Fund	MAR Centaur Flexible Fund	EMAR Centaur Flexible Fund
01-2005	0.0331	0.0274	0.0075	0.0018	07-2007	-0.0137	-0.0211	0.0060	-0.0014
02-2005	0.0075	0.0024	0.0053	0.0002	08-2007	-0.0442	-0.0516	0.0040	-0.0035
03-2005	-0.0225	-0.0282	0.0038	-0.0019	09-2007	0.0324	0.0249	0.0091	0.0017
04-2005	-0.0099	-0.0153	0.0043	-0.0010	10-2007	0.0588	0.0509	0.0113	0.0034
05-2005	0.0849	0.0796	0.0107	0.0054	11-2007	-0.0496	-0.0574	0.0040	-0.0039
06-2005	0.0235	0.0183	0.0064	0.0012	12-2007	-0.0065	-0.0148	0.0073	-0.0010
07-2005	0.0722	0.0668	0.0099	0.0045	01-2008	-0.1483	-0.1571	-0.0018	-0.0106
08-2005	0.0325	0.0271	0.0073	0.0018	02-2008	0.0783	0.0703	0.0128	0.0047
09-2005	0.0672	0.0620	0.0093	0.0042	03-2008	0.0022	-0.0064	0.0082	-0.0004
10-2005	0.0024	-0.0030	0.0051	-0.0002	04-2008	0.0199	0.0114	0.0092	0.0008
11-2005	0.0323	0.0271	0.0070	0.0018	05-2008	0.0005	-0.0084	0.0084	-0.0006
12-2005	0.0724	0.0670	0.0099	0.0045	06-2008	-0.0332	-0.0420	0.0059	-0.0028
01-2006	0.0819	0.0765	0.0105	0.0051	07-2008	-0.0558	-0.0651	0.0050	-0.0044
02-2006	0.0268	0.0218	0.0064	0.0015	08-2008	0.0214	0.0120	0.0102	0.0008
03-2006	0.0352	0.0297	0.0075	0.0020	09-2008	-0.0548	-0.0639	0.0048	-0.0043
04-2006	0.0230	0.0177	0.0065	0.0012	10-2008	-0.0718	-0.0813	0.0040	-0.0055
05-2006	-0.0442	-0.0497	0.0021	-0.0033	11-2008	-0.0255	-0.0346	0.0068	-0.0023
06-2006	-0.0237	-0.0291	0.0034	-0.0020	12-2008	0.0654	0.0560	0.0132	0.0038
07-2006	0.0152	0.0094	0.0064	0.0006	01-2009	-0.0430	-0.0521	0.0056	-0.0035
08-2006	0.0274	0.0214	0.0074	0.0014	02-2009	-0.0946	-0.1027	0.0011	-0.0069
09-2006	0.0241	0.0182	0.0071	0.0012	03-2009	0.0692	0.0609	0.0124	0.0041
10-2006	0.0724	0.0662	0.0107	0.0045	04-2009	0.0428	0.0352	0.0099	0.0024
11-2006	0.0389	0.0326	0.0085	0.0022	05-2009	0.0318	0.0246	0.0089	0.0017
12-2006	0.0499	0.0433	0.0096	0.0029	06-2009	0.0194	0.0132	0.0071	0.0009
01-2007	0.0232	0.0162	0.0081	0.0011	07-2009	0.0729	0.0669	0.0104	0.0045
02-2007	0.0357	0.0293	0.0084	0.0020	08-2009	0.0545	0.0486	0.0092	0.0033
03-2007	0.0397	0.0326	0.0092	0.0022	09-2009	0.0246	0.0191	0.0067	0.0013
04-2007	0.0537	0.0469	0.0099	0.0032	10-2009	0.0492	0.0437	0.0085	0.0029
05-2007	0.0058	-0.0012	0.0069	-0.0001	11-2009	-0.0337	-0.0391	0.0027	-0.0026
06-2007	-0.0377	-0.0446	0.0039	-0.0030	12-2009	0.0704	0.0648	0.0099	0.0044

Table 4.6 (e) Betas used in the Calculation of MAR for Centaur Flexible Fund

Weight (1/ portfolio beta)	0.067257
Portfolio Beta	14.86843

Where:

ER   -   Excess return

MAR   -   Market adjusted Return

EMAR -   Excess market adjusted return

Table 4.6 (f) Summary of Average Performance (returns) and Beta Data for Balanced Funds
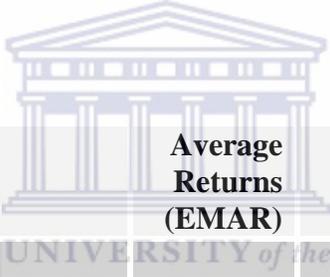
Name of Funds	Average Returns (EMAR)	Beta
Dependent Funds		
ABSA Flexible Fund	0.00015	12.41441
Interneuron Capital Freestyle Portfolio	-0.00019	6.30941
Investec Opportunity Fund A	0.00068	8.17879
Old Mutual Flexible Fund A	0.00052	11.73534
PSG Alphen Flexible Fund A	0.00039	10.12382
PSG Tanzanite Flexible Fund	0.00068	10.62923
RCI Flexible Managed Fund A	0.00021	12.14871
High Tide Fund A	0.00037	10.73403
STANLIB Quants Fund A	0.00035	11.02904
Visio Actinio Portfolio	0.00062	11.91916
Independent Funds		
Centaur Flexible Fund	0.00053	14.86843
Coronation Absolute Fund A	0.00059	9.06726
Coronation Market Plus Fund A	0.00073	9.60236
Element Flexible Fund A	0.00050	6.91818
Melville Douglas Dynamic Strategy Fund A	0.00037	11.41259
Rezco Value Trend Fund	0.00113	7.75461

Table 4.6 (g) Summary of Average Performance (returns) and Beta Data for Equity Funds

Name of fund	Average returns (EMAR)	Betas
Independent funds		
Allan Gray Equity Fund	0.00077	13.12466
Coronation Equity Fund	0.00071	12.96713
Element Earth Equity Fund	0.00064	11.88439
Foord Equity Fund	0.00060	15.30761
Dependent Funds		
Absa General Fund	0.00060	13.13492
Absa Select Equity Fund	0.00095	11.99831
PSG Alphen Growth Fund	0.00045	17.90546
RMB Equity Fund	0.00680	14.58085
SIM General Equity Fund	0.00064	13.78907
STANLIB Equity Fund	-0.01260	16.91197
Community Growth Fund	0.00056	13.72789
Coris Capital General Equity Fund	0.00057	13.58034
FNB Growth Fund	0.00039	14.62605
Investec Equity Fund	0.00680	14.65428
Metropolitan General Equity Portfolio	0.00045	14.65583
Nedgroup Investments Equity Fund	0.00037	14.75791
Oasis General Equity Fund	0.00059	13.43085
Old Mutual Active Quant Equity Fund	0.00045	14.01379
Prescient Equity Quant Fund	0.00062	16.08469
Prudential Equity Fund	0.00760	12.47807

CHAPTER FIVE

# CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Unit trust funds in South Africa have grown significantly over the years (Pillay et al 2010). The assets size as well as the number of unit trusts listed have increased from 30 to 900 (between 1988-2008) and 4.3bn to 700bn (1988-2008) respectively. Investors who before could not dream of ever having a chance to enjoy the returns earned from investing in profitable companies requiring high investment capital because they could not afford, are now able to do so through the unit trust scheme. In addition, they also enjoy the benefits of diversification of their investments which is done for them by expert professionals. Due to this growth, there has been a proliferation of literature on the performance of these funds. Researcher pose different questions as they evaluate the performance of the unit trust fund managers. Academics pose questions such as; are unit trust investment as profitable as the fund managers present them to be? What are the underlying reasons behind their performance? Many researchers have looked at different aspects of the performance of fund managers that have provided some answers to the above questions. This study has also contributed in providing some answers to the above questions.

The outcome of this study as presented in chapter four and summarised below has contributed to the already existing research articles in this industry by giving investors who are concerned about fund performance a reason to consider the client affiliation status of fund managers when choosing a fund manager. From the results of this study, individual investors, institutional investors and fund management companies have been provided with some information on the

impact selectivity and market timing skills of fund managers has on performance. This will help them substantiate their respective investment decisions and strategies. As a result, fund management companies will reevaluate whether they really possess the skills they claim to have while investors will be careful about which fund management company they will entrusts their savings. This study also gives insight on the performance of the fund managers based on the fund's investment objectives as it compared the performance of equity funds to those of balanced funds. This will enable investors to appraise the performance of both fund types as well as inform other third parties on which fund type performs better than the other when put under the same conditions.

This section also highlights the limitations encountered during the study as well as made proposal of areas in need of further research. In addition, some recommendations have also been discussed here.
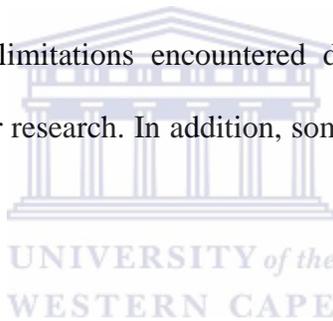
5.2 Summary of Results

From the results and analyses report in the preceding chapter, there is no significant difference in the performance of independent fund managers and dependent fund managers. Looking at the performance of the fund managers by the investment objectives of the fund, equity funds revealed that the dependent fund managers performed better than the independent fund managers. The balanced funds on the other hand revealed that the independent fund managers performed better than the dependent fund managers. Given that the results reported an insignificant difference in the performance of both fund manager categories (which is based on their client affiliation grouping), and the fact that one fund manager group performs better than the other alternatively when different investment objective were tested (equity or balanced fund), it can be inferred that client affiliation does not contribute greatly to the performance of unit trust

funds. As a result, other factors could be considered that will assist the investors in making decisions as to which unit trust to invest in.

The performance attributions of the fund managers gave a little more insight in to the reason behind the varying performance of the fund manager groups thereby revealing the effect of client affiliation on performance attribution. In the overall both independent and dependent fund managers with a balanced fund investment objective demonstrated no selectivity skills. However comparing the one with the other, the independent fund managers performed better than the dependent fund managers. The funds with equity fund investment objectives both possessed selectivity skills though the dependent fund managers performed better than their independent counter parts.

With respect to the timing skills of the managers, the balanced fund managers possessed no timing skills while equity fund managers appeared to possess these skills. However for both investment objectives the independent fund managers performed better than the dependent fund managers.

Hence contributing to the investment objective decision, the equity fund managers have both selectivity skills and market timing skills more than balanced fund managers. Investors should note that these results were calculated on an average basis and will therefore have to look at the individual performance of the funds to be able to come up with the best decision. The above results are however an important take-off point for investors.

5.3 Limitations and Suggestions for Further Research

Most of the individual funds that made up the equity funds and balanced funds selected for this study used different benchmarks from the funds in their respective fund types. However, the

common benchmark that was used by a majority of the equity funds was the JSE All Share Index (J203T) which was then considered as the standard benchmark for all the funds; equity and balanced funds alike. The same goes for the balanced funds where consumer price index (CPI) plus a percentage was used of which the most used percentage was CPI plus 6%. Unlike the case of the equity funds where the JSE All Share Index was used because a majority of the funds used it as their benchmark, the balanced funds had to also use the JSE All Share Index given that their returns had been adjusted to the market using the JSE All Share Index as the market return for the adjustment which brought the beta of each fund to 1(market beta). The returns of the equity funds were also market adjusted which also brought their beta to a market beta of 1. This then made it possible to compare both funds assuming they were measured using the same benchmarks after the adjustments.

This however was still a limitation experienced as the study used the JSE All Share Index benchmark which was different from that which some of the fund managers of the respective funds may have used (fund managers used different benchmarks based on the fund's individual investment objectives). This limitation could be further avoided by using different criteria for selection and classification of the funds ensuring that funds with the same benchmarks are classified together.

Another limitation identified was that of the use of monthly return data instead of daily return of the funds selected which Sehgal and Jhanwar (2008) considered to be the most appropriate to use in measuring the selectivity and market timing skills of the fund managers. Daily data they said was more effective and efficient in bringing out the skills of the fund managers than monthly data. It was difficult to obtain the daily return data as mostly monthly data was available.

Another limitation was that experienced in the use of the TM model which revealed a weak R^2 for balanced funds. It will be important for further research to be conducted on this by incorporating the extensions to the TM model or other models suggested by other researchers interested in the skills of fund managers. These models include; "dynamic allocation attribution methodology" derived by Hsu *et al* (2010) from the traditional Brinston attribution analysis, extended TM Model by Sehgal and Jhanwar (2008) which they believe provided a more complete deduction of the market timing ability of the fund manager, Henriksson and Merton (HM) Model by Sehgal and Jhanwar (2008) and Philippas (2005), etc.

5.4 Recommendation and Conclusion

The study reveals that the client affiliation concept has little or no significant effect on the performance of fund managers in South Africa. This area of research as already indicated in the literature review section has not yet been exploited. It is therefore of great important for investors and fund management companies to use the results obtained from this study with regards to client affiliation with caution and note that it is an opportunity for further research. It is recommended that more research should be done in this area to establish a theory which must have been confirmed by repeated research on the client affiliation concept. This study has provide an idea of what the results could be but further research could justify the idea, expand on the idea or introduce different concepts to the idea.

In conclusion it should be noted that there are many other factors that play a role in the performance of unit trusts. The debate is ongoing and research continuously seeks to find out what contributes to the fund's performance. In the South Africa context, very little research has been carried out on this topic when compared to what has been done in other countries where research has been carried out focusing on concepts such as ownership, fund manager's

educational background and experience, etc. South Africa being an emerging economy it is a good place to replicate some of the other methodologies that have been tried in other countries so as to give confirmations or not to some of the results already obtained from other countries and establish convincing theories to the benefit of investors and all those affected by the performance of the unit trust sector.

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