

**AN EVALUATION OF FINANCIAL PERFORMANCE ON
PORTFOLIO HOLDINGS BY PENSION FUNDS IN KENYA**

BY

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DECLARATION

This project management paper is my original work and has not been presented for a degree in another University.

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This management research project has been submitted for examination with my approval as University Supervisor.

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DEDICATION

This research proposal is dedicated to my wife Rosemary Wangari and my lovely daughter Kayla Nkatha for your emotional support and encouragement.

ABSTRACT

The primary role of pension funds in the country Kenya is to ensure that staffs both in public and private corporations have a form of income regular or lump sum on retirement. Recently most of the pension funds prefer the pensions system that guarantees a regular income for life to the pensioners. This has been informed by the poor saving culture of Kenyans. Retirement Benefits Authority (RBA) regulates all pension funds in Kenya. Lately there has been a concern on the financial performance of pension funds in Kenya holding assets worth 548.8 billion as at June 2013. With the recent NSSF Act 2013 in place the portfolio will get into trillions. Where there are doubts on the financial performance of a particular pension fund, RBA recommends adoption of an annuity through an insurance company or any other financial provider approved by the Insurance Regulatory Authority (IRA) and the Central Bank of Kenya. Majority of pension funds in Kenya invest in the Nairobi Stock Exchange (NSE) except for investments in property, offshore, unquoted equity and cash and cash equivalents. The study will evaluate the financial performance of the portfolio holdings of these pension funds. Using a sample of 35 pension funds, the study established that equities performed better than all other asset classes over a period of 1 year and 3 years. The performance was however poor over a 3 month period. Equities performed better in large funds compared to medium and small funds. Offshore performance was the least especially for medium pension funds. The performance of all funds was better over 3 year period than 3 month and 1 year period. The majority recommendations proposed to address the level of financial management knowledge to the trustees of the various pension fund boards, lobbying for the government to reduce the tax burden to the pensioners and increased member education.

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LIST OF ABBREVIATIONS AND ACRONYMS

AGM	-	Annual General Meeting
AUM	-	Asset Under Management
AVC	-	Additional Voluntary Contribution
BOT	-	Board of Trustees
BV	-	Bond Valuation
CBR	-	Central Bank Rate
CGT	-	Capital Gains Tax
CY	-	Current Yield
DC	-	Defined Contribution
DB	-	Defined Benefits
FSSR	-	Financial Sector Stability Report
FV	-	Fund Value
ICPAK	-	Institute of Certified Public Accountants of Kenya
IDARP	-	Interest Distribution and Reserve Policy
IPS	-	Investment Policy Statement
IRA	-	Insurance Regulatory Authority
IRR	-	Internal Rate of Return
KRA	-	Kenya Revenue Authority

MST	-	Market Segmentation Theory
NSE	-	Nairobi Stock Exchange
NSSF	-	National Social Security Fund
ORBS	-	Occupational Retirement Benefits Schemes
PAYE	-	Pay As You Earn
PE	-	Personal Emoluments
PF	-	Pension Fund
PHT	-	Preferred Habitat Theory
PMB	-	Pension Member Benefits
RBA	-	Retirement Benefits Authority
SPSS	-	Statistical Package for the Social Sciences
TAV	-	Total Asset Value
TDR	-	Trust Deed and Rules
TR	-	Total Return
YTC	-	Yield To Call
YTM	-	Yield to Maturity

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

A portfolio holding is a group of assets. Financial portfolio holdings means stocks, bonds or other securities or property. Elton (1995). In the case of pension funds in Kenya, a portfolio holding means the composition of assets that a Scheme holds. Return is the income received on an investment plus any change in the market price, usually expressed as a percentage of the beginning market price of the investment. Van Horne and Wahowicz (2010), returns are very core to any pension fund because that is what is shared amongst members on top of the normal contributions.

There are various theories used in portfolio management. The theory of liquidity preference holds that long-term securities provide higher returns than short-term obligations because investors are willing to sacrifice some yields to invest in short-term maturity obligations to avoid the higher price volatility of long term bonds. The segmented market/preferred habitat/institutional or the hedging pressure theory, asserts that different institutional investors have different maturity needs that lead them to confine their security selections to specific maturity segments. Other theories include total portfolio theory, capital market theory, capital asset pricing model (CAPM) and the Markowitz portfolio theory. Reilly and Brown (2006).

A pension fund means a fund established voluntarily by the employer for the benefit of employees, employed on permanent and pensionable terms for purposes of paying benefits when the member or staff is leaving employment with the particular employer. The benefits are paid on normal retirement, early retirement, on ill-health and withdrawal before retirement. There are various forms of retirement benefits schemes in the Kenyan set up (RBA Act C.197).

These Schemes mainly invest for long term, since most of the liability only matures if members retire or leaves the employer for any of the reasons mentioned earlier. Pension funds may invest in a guaranteed scheme/pooled funds or in a segregated manner. The researcher will mainly consider scheme investing in a segregated manner.

1.1.1 Portfolio Holdings

Van Horne et al (2010), a portfolio holding is a combination of two or more securities or assets, the various asset classes that a fund has invested in. These are guided by the Retirement Benefits Authority (RBA) guidelines on the maximum percentages of asset classes that a Scheme may hold. These are; Local equities 70%, Cash and demand deposits 5%, Fixed deposits 30%, treasury bonds 90%, Offshore 15%, Unquoted equities 5% and property 30%. Genesis Kenya (2013).

In constructing a portfolio of assets, pension funds seek to maximize the expected return from their investment given some level of risk they are willing to accept. Portfolios that certify this requirement are called efficient portfolios. Fabozzi and Modigliani (2009). An investor holding a portfolio of treasury securities until the maturity date faces no uncertainty about monetary outcome. The value of the portfolio at maturity of the securities will be identical with the predicted value; the fund bears no price risk. In the case of a portfolio composed of common stocks, however it will be impossible to predict the value of the portfolio at any future date. The best a pension fund can do is make a best guess or most likely estimate, qualified by statements about the range and likelihood of other values.

In this case the fund does not bear price risk. Defining risk in terms of price risk, one measure of risk is the extent to which future portfolio values are likely to diverge from the expected or predicted value. More specifically, risk for most pension funds is related to the chance that future portfolio values will be less than expected.

Chandra (2009), the most important decision in portfolio management is the asset mix decision. This is concerned with the proportions of stocks (equity shares and units/shares of equity oriented mutual funds) and bonds (fixed income investment vehicles in general) in the portfolio. The appropriate stock-bond mix depends mainly on the risk tolerance and investment horizon of the pension fund. Generally pension funds pursue an active stance with respect to security selection. For stock selection, pension funds commonly go by fundamental analysis and/or technical analysis. The factors that are considered in selecting bonds (or fixed income instruments) are yield to maturity, credit rating, term to maturity, tax shelter and liquidity.

Sharpe et al, within the pension industry, a distinction is often made between passive management – holding securities for relatively long periods with a small and infrequent change - and active management. Passive managers generally act as if the security markets are relatively efficient. Their decisions are consistent with the acceptance of consensus estimates of risk and return. The portfolio they hold may be surrogates for the market portfolio that are known as index funds, or they may be portfolios that are tailored to suit clients with preferences and circumstances that differ from those of the average investor. In either case passive portfolio managers do not try to outperform their designated benchmarks.

When management is passive, the optimal mixture is altered only when; the client's preferences change or the risk free rate changes or the consensus forecast about the risk return of the benchmark portfolio changes. It is useful to think of a portfolio as having two components, one, a benchmark portfolio and two, deviations designed to take advantage of security mispricing.

Active management on the other hand involves a systematic effort to exceed the performance of a selected target. It entails the search for mispriced securities or for mispriced group of securities. Accurately identifying and adroitly purchasing or selling these mispriced securities to provide the pension funds with the potential to outperform the passive investor.

1.1.2 Pension Performance

Van Horne et al (2010), pension performance is the earnings that members receive after investment of their contributions. These vary from one pension fund to another. A portfolio return is simply a weighted average of the expected returns of the securities constituting that portfolio. The weights are equal to the proportion of total funds invested in each security (the weights must sum to 100 percent). Sharpe, et al (2003), superior performance in a pension fund may resort from good luck in which such performance may not be expected to continue in the future. On the other hand, superior performance in the past may have resulted from the actions of a highly skilled investment manager. Conversely, inferior performance in the past may have been the result of bad luck, but it may also have resulted from excessive turnover, high management fees or other costs associated with an unskilled investment manager.

In a pension fund the performance may also be affected by high administrative fees such as payment to other service providers like insurance companies, auditors, allowance to the board of trustees, costs on member education and annual general meetings. The essential idea behind performance evaluation is to compare the returns obtained by the investment manager through active management with the returns that could have been obtained for the client if one or more appropriate alternative portfolios had been chosen for investment.

The reason for this comparison is straight forward; performance should be evaluated on a relative basis not on an absolute basis. Such comparison portfolios are often referred to as benchmark portfolios. In selecting them, the pension fund should be certain that they are relevant, feasible, and known in advance, meaning that they should represent alternative portfolios that could have been chosen for investment instead of the portfolio being evaluated. That is, the benchmark should reflect the objectives of the pension fund. Hence if the objective is to earn superior returns by investing in small stocks, the S&P 500 would be an inappropriate benchmark. Instead, an index such as Russell 2000 would be more suitable. Return is a key aspect of performance, of course but some way must be found to account for the portfolios exposure to risk. The choice of benchmark portfolios may be restricted to portfolios perceived to have similar levels of risk, thereby permitting a direct comparison of returns.

Chandra (2009), pension funds look at various items when considering the investments, that is, current income, capital appreciation, and safety of the principal. They have to be good in portfolio execution, that is implementing the portfolio plan by buying and /selling specified securities in given amounts.

Buying undervalued stocks and selling overvalued stocks and locking gains on interest bearing assets like government's securities and corporate bonds. Some of the errors made by pension funds during investments include; inadequate comprehension of returns and risk, vaguely formulated investment policies, naive extrapolation of the past, cursory decision making (base their decisions on tips and fads , rather than on thoughtful, quantified assessment of business), untimely entry and exits, high costs (trading excess fully and spending a lot on investment management) over-diversification and under-diversification and having wrong attitude towards losses and profits (in case of losses, the pension fund should admit the mistake and cut the losses).

For pension funds to maximize returns, they may need to adopt some good traits of successful investing; Have patience, contrary thinking (they may go with the market during incipient and intermediate phases of bullishness and bearishness but go against the market when it moves towards extremes but never follow the crowd or a wave), have composure (relying more on hard numbers and less on judgment influenced by emotions of greed and fear), be flexible and open to the macroeconomic conditions. Trustees also need to be decisive. For measuring or evaluating the performance of a portfolio it is necessary to consider both risk and return. This is what the Treynor measure, the Sharpe measure, the Jensen measure, and the M^2 measure – the four popularly employed portfolio performance measures - precisely do.

1.1.3 Effect of Portfolio Holdings on Pension Performance

It will be interesting to find out if the variation of returns from the various pension funds is as a result of the difference in portfolio holdings.

A pension fund may invest in different asset classes for various reasons, these may include, the risk appetite of the trustees, the age profile of the members among other reasons. Different asset classes have different returns. For example treasury bonds are considered less risky but the returns are moderate. Therefore a pension fund with a larger holding on bonds is likely to give modest consistent returns because of the certainty. On the other hand, equities are considered more risky and have higher returns. A pension fund with higher equity holdings is likely to have higher inconsistent returns. The return for a pension fund is a combination of the average return by the different asset classes (portfolio holdings). Chandra (2009), once a certain asset mix is chosen, an appropriate portfolio strategy has to be hammered out. Two broad choices are available, an active portfolio strategy or a passive portfolio strategy.

An active portfolio strategy or a passive portfolio strategy. An active portfolio strategy strives to earn superior risk adjusted returns by restoring to market timings, or sector rotation, or security selection, or some combination of these. A passive portfolio strategy, on the other hand involves holding a broadly diversified portfolio and maintaining a pre-determined level of risk exposure.

1.1.4 Pension Industry in Kenya

Kenya pension industry has heavily invested in the Nairobi Stock Exchange (NSE). (FSSR 2013), in 2013, the pension funds in Kenya were 1,262 in number with a membership of 17 million members. The pension coverage stood at 15% the total formal labour force.

The assets held by the funds stood at Kshs. 548.8 billion, of this Kshs. 436.7 billion were managed by fund managers and Kshs. 82.1 billion held by the National Social Security Fund (NSSF), the balance being invested in properties managed by the Schemes.

RBA Act 197, it is a requirement that all pension funds in Kenya must have a fund manager, a custodian and an administrator. The fund must have a minimum of four (4) trustees, and a maximum of nine (9) trustees for a Defined Benefits (DC) scheme. The member elected trustees must not be less than half of the board composition. The balance are sponsor nominated trustees. The minimum number of trustees for the Defined Benefit (DB) scheme is three (3) trustees, two thirds of which must be sponsor nominated trustees with a maximum number of nine (9) trustees. The Pension fund must be registered with RBA. They must have an Investment Policy Statement (IPS) and the policy must be reviewed every three (3) years. The fund must appoint an auditor.

Accounts must be audited every year and submitted to RBA and KRA within six (6) months after the financial year end. The fund must hold an Annual General Meeting (AGM) within the year. Due to the volatility in the market, schemes are discouraged to commit much of the investments in risky asset classes. RBA allows a pension fund to invest up to 90% of its fund in government securities due to the certainty of returns. RBA discourages investments in assets like property beyond 30% of the fund value. This is because property may not be easily converted to cash like some other short terms investments.

1.2 Research Problem

Jones (1994), evaluating portfolio performance is about considering how well the various portfolios have performed. If pension A consistently outperforms pension B, other things being equal, then members in pension A are better off.

Alternatively if neither A nor B outperforms an index fund, other things being equal, neither pension fund is better off. The performance of a pension fund is mainly measured by the return generated by the fund. This return is generated from the various assets in the portfolio. Chandra(2009), based on the pension fund objectives and constraints, the pension fund has to specify the asset allocation, that is, the pension fund has to decide how much of the portfolio has to be invested in each of the following asset categories, cash, bonds, stocks, real estate, precious metals and others. It is not clear if the choice of the assets in a portfolio affects the performance of the pension fund. Bulow (1982) indicates that valuation of ordinary corporate bond depends on three types of factors. The contract, the values of assets backing the securities and any covenants guiding the firm's behavior.

Peter O. Dietz and Jeannette R Kirschman said that for accuracy of computations, performance should be computed as often as practical, but results should not be taken as significantly by the investor or the investment manager until a reasonable period of time, such as market cycle for equities or an interest rate cycle for fixed income securities, has lapsed. Due to the confidentiality of the information it may be challenging to compare the various pension funds and their performance. They also differ in terms of maturity of liabilities, the funding (Defined Contribution or Defined Benefits), the size (membership and fund value) and the risk appetite by the board of trustees.

Therefore the researcher seeks to fill some of these gaps starting with the research gap on the performances of the pension funds and their portfolios. Corporate pension liabilities (worker benefits) can be analyzed in the same manner.

However, discussions of pension liabilities by top financial economists (such as Trenor (1976) and Trenor, Priest, and Regan (1977)) and the commonly used actuarial methods (see, e.g., Winklevoss (1977)) generally produce results at variance with normal corporate securities evaluation. Pension funds declare different returns every year to their members. In some cases, these pension schemes are invested by the same fund manager. All pension funds in Kenya mainly invest in the NSE except for a small percentage of the portfolio invested in offshore, unquoted equities and property. Most of the real estate investments are also in Kenya. The researcher is interested to find out the reason for the variation in the returns with the few dynamics in the investment of the pension funds portfolio. Why would one pension fund make a return of 25% and another 10% having invested in the same market?

Why the inconsistency in the returns? These years a pension fund may make 21%, next year 5%, what influences the inconsistency in these returns? Trustees always want to understand why their pension fund is not performing the same as the other pension fund with the similarity in the investment dynamics. Is the pension financial performance a result of the portfolio holdings held by the pension funds, in Kenya? Bulow (1982) conducted a research to try and establish what the corporate pension liabilities are. As much as he looked at the pension liabilities, he did not dwell much on the investments of the portfolio holdings and the returns made by the pension funds. Wambua (2010) surveyed pension coverage of informal sector workers in Nairobi County. He did not look at how the pension funds invest the contributions.

The survey was limited to Nairobi County. Mwangi 2011, focused on risk management strategies and returns by pension funds in Kenya. The researcher concentrated on the strategies and returns. Karanja (2011) looked at the competitive strategies applied by fund managers in Kenya. The research was on the fund managers and not the specific pension funds.

Kairu (2011) researched on the impact of risk management on profitability of the Kenya Power and Lighting Company Staff Retirement Benefits Scheme. This was a case study of a specific pension fund and did not spread the research across the various pension funds in Kenya. Were (2011), researched on the determinants of the amount of benefits accessed before retirement age in Kenya. She did not look at the contribution of each of the asset classes to the overall benefit received by the pension fund members. (Onyango 2011) researched on the relationship between investment strategies and financial performance of pension funds in Kenya but did not look at the contribution of the specific asset classes to the overall performance of the Scheme. The researcher has not come across a study evaluating the financial performance of portfolio holdings held by pension funds in Kenya.

1.3 Research Objective

The objective is to establish the financial performance on portfolio holdings held by pension funds in Kenya.

1.4 Value of the Study

The research will be of great value to all the stakeholders in the pension industry.

Theoretically the study will help to identify if the difference in portfolio holding has an effect on the returns. It will also indicate if the variation is significant.

The research will strengthen the segmented market theory in checking if there is a pattern in the various institutions concentrating in certain asset classes based on their maturity needs. It will also prove the theory on liquidity preference if indeed the long-term securities do provide a higher return as compared to the short-term securities.

It will help to recommend the distribution of the portfolio holdings in the pension funds. This may inform Retirement Benefits Authority (RBA) to revise the current limitations on the asset classes based on the performance of the classes. It will be a great insight to fund managers and the pension funds management in making investment decisions. They will know what asset classes to concentrate on in order to achieve higher returns for the members. The management will be encouraged to prepare management accounts periodically to monitor any significant disparities in the returns from the various asset classes. Pension fund trustees will be able to compare the performance of their schemes relative to their peers within the broader pension industry.

The survey will consider the returns over a rolling three (3) year period and trustees can gain valuable insight into how similar sized funds performed over the same period. The Survey will further analyze the allocation across the various asset classes, equity; fixed income, property, and offshore. The benefit of this is that trustees will gain valuable insight into how similar sized schemes are invested and how asset class allocation contributes to the specific scheme's performance. This analysis will assist the Trustees in understanding which of the asset classes contributed much to the overall performance of their scheme.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this chapter the researcher is interested in finding out more information on evaluation of the financial performance on portfolio holdings held by pension funds in Kenya. The theoretical literature review will give a highlight on some of the theories that explain the concept of portfolio holding and financial performance. The empirical literature review will cover studies carried out in the field to confirm if the issue on portfolio holdings and financial performance in Kenya has been covered exhaustively. The studies will target both local and international research materials. Kothari (2008) empirical research relies on experience or observation alone, often without due regard for system and theory.

The researcher is interested in filling the research gap to see how the securities in a given portfolio holdings affect the financial performance of a pension fund. This may give details into the diverse returns by the various pension funds in Kenya with the limited investment alternatives. The researcher aims at identifying if the theories associate the financial performance to the portfolio holdings. The empirical review will check on the studies carried out and if there has been findings giving evidence on the matter.

2.2 Theoretical Literature Review

The research will be based on the following theories, namely Markowitz portfolio theory, Capital market theory, the capital asset pricing model (CAPM) and the total portfolio theory.

2.2.1 Markowitz Portfolio Theory

It's one of the theories used in portfolio management. It is based on several assumptions regarding investor behavior, that investors consider each investment alternative as being represented by a probability distribution of expected returns over some holding period, that investors maximize one period expected utility and their utility curves demonstrates diminishing marginal utility of wealth, that investors estimate the risk of the portfolio on the basis of the variability of expected returns, that investors base decisions solely on expected return and risk, so their utility curves are a function of expected return and the expected variance (or standard deviation) of returns only, that for a given risk level, investors prefer higher returns to lower returns, similarly, for a given level of expected return, investors prefer less risk to more risk. The fund manager has to have a very good understanding of the member's age profile in a pension fund before determining the asset classes to expose them. This is also determined by the risk appetite of the trustees.

Younger staff will be exposed to risky assets with higher returns like equities while older members will be exposed to less risky assets with higher certainty of returns like government and corporate bonds. The coupon payments will act as good cash flows to pay the members resigning and the pensioner's liability. Reilly et al (2006), under this assumptions a single asset or portfolio of assets is considered to be efficient if no other asset or portfolio of assets offers higher expected return with the same (or lower) risk or lower risk with the same (or higher) expected return.

2.2.2 Capital Market Theory

It contends that there should be an upward-sloping market line, meaning that greater return should be accompanied by greater risk.

Van Horne et al (2010) showed that during periods of high economic uncertainty, such as recessions, the risk premiums on bonds increased substantially because the risk of default for low-rated obligations increased. Capital market theory also relates the risk-return behavior of fixed income securities to other financial assets. This is key to pension funds investments when determining the asset class mix. Fixed-income securities are considered relatively conservative investments, we would expect them to be on the lower end of the capital market line. A study by Reilly and Wright (2004) examined the comparative risk-return characteristics of thirty six (36) classes of long term securities. The basic finds of the study confirmed the priori expectations.

Specifically the, government and high-grade corporate bonds were at the lower end of the risk spectrum, and it progressed to high-quality common stocks, small cap stocks and finally emerging-market stocks.

2.2.3 The Capital Asset Pricing Model (CAPM)

It is expected to provide a framework for explaining realized security returns as a function of nondiversifiable market risk. Bond returns should be linked directly to risk of default and interest rate risk. Although interest rate risk for investment-quality bonds should be nondiversifiable, some evidence exists that default risk also is largely nondiversifiable because default experience is closely related to the business cycle as demonstrated by Lucas and Lonski (1992). Evidence on the usefulness of the CAPM for the bond market is mixed. Reilly et al (2006), specifically, there are problems regarding the appropriate market index to use, the systematic risk measure is unstable, and the risk-return relationship using beta did not hold for the higher quality bonds. There was relationship between the systematic risk measure and some characteristics of the firm.

2.2.4 The Total Portfolio Theory

It confirms that the performance of bonds has improved even more than indicated by returns alone because bonds offer substantial diversification benefits. In an efficient market, neither stocks nor bonds should dominate a portfolio, but some combination of them should provide a superior risk-adjusted return compared to either one (assuming low correlation between stocks and bonds). Reilly and Wright (2004) showed that, due to the low correlation between bonds and equities (about 0.27), the combination of stocks and bonds in a portfolio vastly improved the return per unit of risk. This would end up maximizing the overall return to pension fund members. The bond portfolio balances both the liquidity and return in the portfolio. The Scheme purchases long term bonds that yield high returns and also purchases shorter bonds that can easily be sold to lock in gains and provide the required liquidity.

(IPS 2012), the maturity of the assets is timed to match the maturity of the Scheme liabilities. Genesis (2012), the bonds yield varies from day to day depending on the current market conditions.

2.3 Portfolio Holdings and Pension Performance

Bodie, Kane and Marcus (2008), the expected return of a portfolio is the weighted average of the component security expected returns with the investment proportions as weights. Sharpe et al (2008), bonds and stocks are different kinds of securities, with quite different characteristics. Making an investment decision between them should not be based on some simple one-dimensional comparison. In many cases this decision, known as asset allocation will involve investing in both bonds and stocks.

Although historical relationship may not be useful for predicting future relationships accurately, it is instructive to examine the average values, standard deviations and correlations of past stock and bond returns. On the basis of average returns, stock appears to have a substantial advantage for the investor with a reasonably long horizon. However there is good reason to believe that the average returns on the long-term bonds are not representative of the investors' expectations for future returns.

Sharpe et al (2003) the returns show the results obtained by purchasing a long-term government bond, holding it for a period of time then replacing it with another long term government bond. The total returns include both income and capital gains or losses. The correlation between stocks and bond returns has been low, and during various multiyear sub periods it has even had negative values. This low correlation indicates that portfolios combining both stocks and bonds benefited considerably from diversification. More recently however, correlations have been considerably more positive than in the past, owing in part to common reactions to changes in inflationary expectations. Consequently, the gains from diversification have recently been reduced substantially. Nevertheless, from the historical record it would be reasonable to expect that, in future bonds will offer diversification benefits.

Jones (1994), Investing is a two-dimensional process based on return and risk. When a portfolio performance is evaluated, the total return to the investor is relevant. A proper measure of this return is the total return (TR), which captures both the income component and the capital gains (or losses) component of return. Forbes (2013), a survey conducted by Alexander Forbes Consulting Actuaries in December 2013 had 30 Schemes participating. The analysis was based on returns of pension funds invested in segregated vehicles with both discretionary and non discretionary mandates.

Funds invested on an insured deposit administration basis were excluded as well as funds having incomplete performance periods or returns. The funds were divided into small, medium and large funds based on the value of assets under management. The weighted average return over three years was 11.8%, 11.4% and 11.9% for small, medium and large funds respectively. The research only compared the asset value sizes but did not look at the composition of the different asset classes per portfolio. The researcher is interested to know if the weighting on the asset mix has an influence to the pension performance. The returns in these 30 pension funds seem the same. It is not clear if the portfolios had the same weighting.

Levy (1972) Using the pioneering work of Markowitz and Tobin, on portfolio selection and uncertainty, Sharpe, Lintner and Treynor have developed an equilibrium model for asset price determination. The model which assumes that investors make decisions according to the mean-variance rule, led to the development of one-parameter measures of portfolio performance. Using historical data, Sharpe, Treynor, Mazuy and Jensen have analyzed the ex post performance of mutual funds over several periods.

Levy (2008), the higher the variance (or standard deviation) of the return on an asset, the higher the risk and therefore the higher the required risk premium. Hence the variance of the returns on an asset appears to measure the risk of that asset. Although this is true if an investor holds only one asset, the variance is not the sole measure of risk if the investor holds more than one risky asset in his or her portfolio (like the case of pension funds), in a portfolio, the risk of an individual asset is a function not only of its own variance but also of its degree of dependency with the other assets in the portfolio.

The degree of dependency measures how the returns on two assets move together. If both go up or down together, they are said to have a positive dependency, if one asset goes up when the other goes down, or vice versa, we say they have negative dependency. Sharpe et al (2003), the more negative the degree of dependency between the assets in a portfolio, the lower the risk of the portfolio, and hence the lower the required risk premium for each specific asset. Risk averse trustees will require a risk premium on the risky portfolio held. That decreases as the degree of dependency between the risky assets in the portfolio decreases.

No matter the assumed degree of dependency between two assets, the variance of the portfolio returns is a function of their dependency, the lower the dependency, the lower the variance. In case of an extreme negative dependency, the portfolio's variance is reduced to zero. It is clear that if a pension fund holds more than one risky asset in a portfolio, the risk of each asset is a function of both the asset's own variance and its degree of dependency with the other assets held in the portfolio. The larger the portfolio variance, the higher the required risk premium on the portfolio and therefore, on average, the larger the required risk premium on each asset.

Bodie et al, (2008) to obtain reasonably reliable performance measures, we need to maximize the number of observations by taking more frequent return readings and specify the exact makeup of the portfolio to obtain better estimates of the risk parameters at each observation period. Rather than focus on risk adjusted returns, practitioners often want simply to ascertain which decisions resulted in superior and inferior performance. Levy and Thierry (2005), superior investment performance depends on an ability to be in the "right" securities at the right time.

Such timing and selection ability may be considered broadly , such as being in equities as opposed to fixed income securities when the stock market is performing well or it may be defined at a more detailed level such as choosing the relatively better performing stocks within a particular industry. Performance attribution studies attempt to decompose overall performance into discrete components that may be identified with a particular level of the portfolio selection process. For example, one attribution system decomposes performance into three components, one, broad asset market allocation choices across equity, fixed income and money markets, two, industry (sector) choice within each market and three security choice within each sector.

2.4 Empirical Literature Review

Different scholars have studied different aspects on portfolio holdings on pension funds. Local studies done on pension schemes include;

Karanja (2011), objective of his study was to identify competitive strategies and challenges faced by the fund managers in Kenya. The study found out that most fund managers were offering similar products with a higher concentration on equity funds. The study concluded that none of the firms was a distinct market leader in application of competitive strategies. Fund managers applied a mix of competitive strategies which were in line with the porters (1980) generic strategies. The study focus was on the investment managers and not the specific individual pension funds that they manage. Wamagata (2011) study sought to establish whether risk management practices at the Kenya Power and Lighting Company Staff Retirement Benefits Scheme (KPLC SRBS) has had an impact on profitability of KPLC SRBS.

The study evaluated the impact of a risk assessment exercise done by KPLC SRBS in year 2007 to determine whether the exercise and subsequent risk management practices had impacted on profitability of the Scheme. The study found that the mean profitability for the period after the risk assessment exercise had increased as compared to the period prior to the risk assessment exercise. The study further found out that the standard deviation of profitability had decreased for the period after the risk assessment exercise as compared to the period prior to the risk assessment exercise. The study concluded that the risk assessment exercise and subsequent risk management practices at the KPLC SRBS had a positive impact on profitability of the Scheme by increasing and reducing the volatility of profitability. The study did not look at the factors contributing to the profitability.

Onyango (2011), researched on how investment strategies affect financial performance in Kenya pension funds. Pension funds are managed in diverse ways, with governance policies distinguished according their board composition and size, how the trustees structure their investment decisions, what restrictions are placed on their investments and whether they have independent performance evaluations.

Wambua (2010), sought to establish the extent of coverage by retirement benefits schemes of informal sectors in Nairobi County and to investigate the factors that determine the coverage by retirement benefit schemes of informal sector workers in Nairobi County, Kenya. The study revealed that only a small extent of the informal sector workers in Nairobi County was covered by retirement /pension schemes.

Mwangi (2011) study was to determine the various risk management strategies given the different investment returns reported by various schemes considering the prevailing Kenyan environment.

The study enlightens the stakeholders in the pension industry on the effects of strategies arising from risk exposure. The study revealed that pension fund regulations aim at promoting high levels of benefit security at an acceptable cost. Accounting standards in turn aim at ensuring the transparent disclosure of information to stakeholders. Some of the key variables analyzed such as the funding cost and the volatility of contributions provide an order of magnitude for the potential cost of regulations. The study is key in explaining the reasons for important strategic policies on investment decisions and their effects on risk exposures but does not give any insights into the diversification of the pension portfolios.

Were (2011), discussed the determinants of the amount of benefits accessed before retirement age in Kenya but did not confirm if members accessed the best value of their benefits. The research was carried out from the existing pension administrators across Kenya. So far I have not come across a study that has looked at an evaluation of financial performance on portfolio holdings held by pension funds in Kenya. It will therefore be interesting to do an evaluation on the financial performance of portfolio holdings held by pension funds in Kenya.

International markets, Paul Wren (1954), looks at the characteristics of a pension fund portfolio and compares it to that of a pension trust account. He indicates that during the first years of the pension plan, the annual disbursements of the fund are usually much less than the cash contributions paid by the employer. Eventually a point is reached where barring a larger working force and raising pay scales, the fund has enough earnings so that, together with the annual contribution it will meet the liability as determined by the estimates of the actuaries. Because of this feature the investment returns should be measured by combining income and principal performance of the fund.

The trustee of the pension trust is lulled into a state of complacency by the periodic additions of cash, which he can use for the purchase of bonds, preferred stocks, or common stocks as he sees fit. Under the new circumstances, the cash might be a half or a quarter of the previous figure, or in extreme cases it might be omitted entirely. Will he take advantage of the lower prices of common stocks by securing buying power from the sale of bonds or will he simply confine his program to the smaller amount of cash available? The research is mainly comparing the composition of the pension fund portfolio to that of a pension trust account. It does not indicate the variation on financial performance as a result of the composition of the portfolio in the pension fund.

Eli and Shlomo (1998) examined the correlation between the expected rate of return (ERR) on pension assets in America, as reported in the financial statements, and the composition of the pension portfolio, measured as the percentage invested in equities (%Equity). The evidence indicates that the ERR and %Equity are related but the relation is rather weak. They also examined whether ERR and %Equity are correlated with future returns on pension assets. Only %Equity is correlated with future pension returns. The research was carried out in America which has different market dynamics compared to NSE. The regulations both from the tax implications and the regulator are different in Kenya and America, The two economies differ significantly. The labour force, retirement ages and other social security dynamics are different. It will be good to see if the research will end up with closer results for the Kenyan pension industry.

Joanne Hill (1980) researched on reducing forecast error in portfolio management: Sample clustering and alternative risk specifications.

This study examines some modifications of the Modern Portfolio Theory (MPT) selection procedures that are aimed at reducing the effect of random estimation error on performance results; it also compares the characteristics and performances of portfolios selected considering solely market risk with those chosen on the basis of both market and non-market risk measures.

Specifically, expected and realized returns of four alternative portfolio selection strategies at six different ex ante risk levels (points along the efficient frontier) are analyzed. The first two strategies involve selection based on the minimization of total risk (market and non-market), as defined by Sharpe in a quadratic form. They differ in that the second utilizes inputs from security groups rather than from individual securities in order to reduce the amount of estimation error in the risk and return forecasting process. Groups are formed by a cluster technique based on factor scores derived from the individual security return and risk characteristics.

The second set of selection methods maximizes end-of-period wealth subject to linear risk constraints, one defining risk solely as a security's beta and the other using a security risk measure reflecting both the market and non-market risk of each security. The form of this latter constraint is based on a linear approximation to non-market risk suggested by Stone [14] that involves the addition to the problem of an upper limit (U) on the proportion of the portfolio invested in each individual security. Key consideration is given to return per unit of risk offered by the four strategies and also to the degree of accuracy in the forecasted return and risk levels when compared to actual performance.

It is shown that the easy-to-implement linear model that considers the total risk of securities and uses security group-based inputs provides risk-adjusted returns better than or equivalent to those from portfolios selected using the more complex Sharpe algorithm. This can be attributed to the reduced effect of estimation error on the composition of solution portfolios. The study concentrates on the risk return correlation. It will be interesting to find out the reason for the portfolio chosen by trustees of the pension funds in Kenya. Whether it is mainly because of the risk appetite of the board members, or the discretion of the fund managers.

As much as there are guidelines by RBA, some schemes may invest at the extremes of the strategic allocations set in the Investment Policy Statement (IPS) whereas others may be conservative within the same allocations. Nicholas Michas (1984) carried a study on pension funds diversification. He explains that case for international diversification of a fund's portfolio rests on the logic of reducing risk by diversifying across a range of assets whose returns are not perfectly correlated.

The relevant analysis is due to Markowitz (1952), who demonstrated that, although the anticipated return on a portfolio is the weighted average of the expected returns on the component assets, the variability of returns for the portfolio (i.e., the riskiness of the portfolio) depends on both the variability of each individual asset and the correlation among rates of return on the component assets. Traditionally, portfolio managers spread holdings over different securities in different industries to offset possible losses with even greater gains. Markowitz's approach to diversification is far more sophisticated than such a rule of thumb. It suggests that assets should be included in a portfolio based on their relationships with each other - their coefficients of correlation.

If returns on risky assets exhibit perfect negative correlation, diversification of a portfolio could completely eliminate risk; if returns display perfect positive correlation, then no amount of diversification will reduce risk. If returns are completely or partially independent, diversification will reduce risk. Unfortunately, for portfolio construction purposes, there is a strong tendency for the major elements in a nation's economy to move together. For this reason, a pension fund's ability to find domestic assets whose returns are not highly correlated is limited.

However, various studies (Grubel and Fadner, 1971; Lessard, 1974; Solnik, 1973) have shown that there are significantly lower correlations among returns on securities in different national markets. International diversification of pension funds may reduce risk, or increase returns, or both. The intention of the study was to bring an argument to the Canadian government to increase the 10% limitation on pension funds investments offshore. He zeroed on the offshores and not the entire pension fund portfolio. Strzeleckib (2013) looks at pension reforms as an instrument of poverty protection in old age in Poland, a case of the defined contribution system. This is similar to what the Kenyan government is doing through the NSSF Act 2013. However Strzeleckib does not give details of how pension is invested in Poland.

Arno and Franziska (2013) research on the preferences for redistribution and pensions. The researcher indicates that, people do not prefer the maximin rule, but rather favor a utilitarian justice concept appended with a safety net for the poorest. Another result is that people are willing to accept income inequalities as long as these are due to choices for which people can be held accountable. In the second type of situation, individuals make choices in front of the veil of ignorance and know their position. Experiments show that preferences for redistribution are strongly dependent on a person's own position.

People in a relatively disadvantaged position want more redistribution than those in a relatively advantaged position, which shows that preferences for redistribution are clearly affected by self-interest. Still, even many of those in an advantaged position display a preference for redistribution. This holds, in particular, if inequality is due to chance rather than effort. There are also significant differences in preferences between the genders and between people with different political orientations. The research was carried out in the United Kingdom.

Forman and Murrah (2006), the retirement system can be thought to have four pillars. These four pillars each contribute to a standard of living for households throughout their retirement. The first pillar, Social Security, will be unable to pay full benefits as scheduled in law without additional financing after 2041. The second pillar, employer-provided pensions, currently covers less than half of U.S workers, and the extent to which these pensions replace career wages in the future is uncertain. Meanwhile, private wealth, which is the third pillar, is being called upon to stretch over a longer and longer spans of life spent in retirement.

Retiree health care (taking federal and employer benefits together) is the fourth pillar and has the most precarious financing situation out of any of the pillars, raising the prospect that future retirees will have to pay much more out-of-pocket for their health care. He did not consider to what extent the portfolio holdings affect the value of the benefits available for payment. His main focus was on the introduction of a mandatory universal pension system.

2.5 Summary of Empirical Review

Karanja (2011), study was to identify competitive strategies and challenges faced by the fund managers in Kenya.

Wamagata (2011) study sought to establish whether risk management practices at the Kenya Power and Lighting Company Staff Retirement Benefits Scheme (KPLC SRBS) has had an impact on profitability of KPLC SRBS. Onyango (2011), researched on how investment strategies affect financial performance in Kenya pension funds. Were (2011) looked at the various reasons that justify member access to their benefits. Wambua (2010), sought to establish the extent of coverage by retirement benefits schemes of informal sectors in Nairobi County and to investigate the factors that determine the coverage by retirement benefit schemes of informal sector workers in Nairobi County, Kenya.

International markets, Paul Wren (1954), looked at the characteristics of a pension fund portfolio and compared it to that of a pension trust account. Joanne Hill (1980) researched on reducing forecast error in portfolio management: Sample clustering and alternative risk specifications. Nicholas Michas (1984) carried a study on pension funds diversification. His focus was on offshore and not the entire portfolio. This is evident that the research on pension funds has not been exhaustive. All these researchers did not look at the effect of the portfolio holdings on the benefit returns of pension funds in Kenya. The closest to that was the research by Eli and Shlomo (1998) who examined the correlation between the expected rate of return (ERR) on pension assets in America, as reported in the financial statements, and the composition of the pension portfolio, measured as the percentage invested in equities (%Equity). The research was carried out in America sixteen (16) years back.

It is for this reason that the researcher seeks to carry out an evaluation on how the financial performance of a pension fund may be affected by a combination of asset classes in the portfolio for pension funds in Kenya.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter outlines the research design and methodology that will be used in conducting this study. It describes the process that the researcher will use to conduct the study, as well as the data collection methods and analysis.

3.2 Research Design

The research design that the researcher will adopt will be a survey. The research will focus on the entire pension industry to determine if variation in the portfolio holding has an effect on the benefit returns to members. This will be necessary to assist the trustees when looking at the reports presented by the fund managers. It will help the board in decision making.

Cooper R. and Schindler S (2011), A survey is a measurement process used to collect information during a highly structured interview-sometimes with a human interview and other times without. Questions are carefully chosen or crafted, sequenced and precisely asked of each participant. The goal of the survey is to derive comparable data across subsets of the chosen sample so that similarities and differences can be found. When combined with statistical probability sampling for selecting participants, survey findings and conclusions are projectable to large and diverse populations. The great strength of the survey as a primary data collecting approach is its versatility. Abstract information of all types can be gathered by questioning others. Additionally a few well-chosen questions can yield information that would take much more time and efforts to gather by observation.

A survey that uses mail, a computer, e-mail or internet as the medium of communication can expand geographic coverage at a fraction of the cost and time required by observation. Because of the magnitude of the pension industry, the researcher will sample few schemes in the pension industry with a segregated arrangement. Deming (1990), sampling is the science that guides quantitative studies of content, behavior, performance, materials, cause of differences. Our quantitative knowledge of nature is based on theory combined with studies of small batches of material, some of which may be good samples, some bad. Even if we study a complete census or 100% of a crop in a field in 1960, or all the accounts for a year, or inspect 100% of a month product, we must interpret the results as one of the samples that cause system can and will produce, if we hope to reach sensible answers to our problems. This is true in everyday life and of scientific research as well.

Wiley (1953) , a person's opinion of an institution that conducts thousands of transactions every day is often determined by the one or two encounters which he has had with the institution in the course of several years. Deming (1990), some advantages of sampling include, improvement of an entire statistical program, through clarification of aims and purposes, improved reliability, sampling possesses the possibility of better interviewing (or testing) , more thorough investigation of missing ,wrong or suspicious information, better supervision and better processing than if possible with a complete coverage, precision governable ,tailored to the requirements, speed (and hence greater utility of the data),low cost (permitting expansion of the statistical program and expanded usefulness), reduced burden of response.

Kothari (2009) when the field of enquiry is too large, census method is practically beyond the reach of ordinary researchers. Perhaps, government is the only institution which can get the complete enumeration carried out. Even the government adopts this in very rare cases such as population census conducted once in a decade. The researcher is influenced by the variations on returns declared by different pension funds in Kenya bearing in mind that all pension funds in Kenya invest mainly through the NSE. He therefore seeks to examine the implication of the portfolio choice in the overall financial performance by a pension fund.

The aim is to establish the link between the final return to member benefits and to generate an intensive examination of the investment portfolios of pension funds as that may form the basis of theoretical analysis. The researcher aims to conduct interviews with trustees, pension officers, principal officers and pension administrators working in the various pension funds for a lengthy period. The researcher also aims to inject additional longitudinal element by analyzing archival information on the pension funds.

3.3 Population of the Study

The population of interest will be the 1,262 pension funds in Kenya. The researcher will major on pension funds with a segregated arrangement. Pooled funds may not clearly indicate the diversification of the portfolios for the specific individual pension funds since the funds are invested as one. The researcher will assess the contribution of the various assets classes to the overall financial performance by the fund. The return in this case is the gross return before retention of interest and before considering the administration costs but after considering the investment and custody costs. This is because various pension funds have different retention policies.

Considering the return before the administration expenses will give better results because the pension funds differ in administration needs. That is the return as per the fund manager's report.

3.4 Sample design

Kothari (2009), a sample design is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample. Sample design may as well lay down the number of items to be included in the sample i.e the size of the sample. Sample design is determined before data are collected. The researcher will use non-probability sampling design. It is also known as deliberate sampling, purposive sampling and judgment sampling.

In this type of sampling, items for the sample are selected deliberately by the researcher, his choice concerning the items remains supreme. In other words, under non-probability sampling the organizers of the inquiry purposively choose the particular units of the universe for constituting a sample on the basis that the small mass they so select out of a huge one will be typical or representative of the whole. Thus the judgment of the researcher plays an important part in this sampling design. Rukwaru (2007), judgmental sampling is where a researcher uses certain properties or entities which afterwards are used to get the sample. Although this method does not strictly follow random procedures, it is very useful. A sample of thirty five (35) segregated schemes will suffice for the study. This is because the weighting of the various asset classes is to a greater extent uniform based on the RBA guidelines.

The only difference between the various pension funds is the strategic plan guided by the IPS. For example, RBA as the regulator dictates that all schemes invest local equities shares up to a maximum of 70% without a minimum limit.

The trustees of a pension fund based on the uniqueness of the fund members and funding may strategically want to invest up to a maximum of 45% and a minimum of 25% of the fund value. But globally no pension fund will expose funds to more than 70% to local equities however aggressive the trustees may be. This justifies the use of non-probability sampling design. It may not be easy to associate certain assets to certain pension funds in case of the pooled funds/guaranteed funds/umbrella funds because they are all invested together. The interest is then shared pro-rata.

3.5 Data Collection

The study will use secondary data collected from the pension fund administrators. The Scheme administrator will assist with the necessary information and calculations of the returns in the bond portfolio. The data to be collected will include the pension fund portfolio, the price schedules, the investment reports, advisory from the fund advisor and the audited financial accounts. The researcher will use a mail questionnaire. Chava F. and Nachmias D. (1996), mail questionnaire is an impersonal survey method. Under these conditions and for the intended research purposes, an impersonal method of data collection will be useful. As with any method, however, mail questionnaire have both advantages and disadvantages.

Some of the advantages include, low cost, reduction in biasing error, greater anonymity, considered answers and consultations (mail questionnaires are preferred when questions demand a considered rather than an immediate answer or if answers require respondents to consult personal documents or other people), accessibility (the mail questionnaire permits wide geographic contact at minimal cost).

Some of the disadvantages include the fact that it requires simple questions for the respondents to easily understand, it does not provide an opportunity for probing and the researcher has no control over who fills the questionnaire. The use of the secondary data will be beneficial to ensure the data the researcher will be using is authentic. The researcher will also share with the Scheme administrator on other possible areas that require more research.

3.6 Data Analysis

The data collected will be used to analyze the returns of the thirty five (35) pension funds within three (3) years in a particular pension fund. The three (3) years will be used to get an average return for the specific fund. It will be important to consider the returns of the pension fund for a number of years in order to take care of fluctuations in the different years. For example if one was to collect returns of property in Lamu – Kenya in 2014 only, the data would be misleading because of the recent terror threats.

A structured questionnaire will be used to collect the data. The data will be entered and analyzed using the Statistical Package for the Social Sciences (SPSS - version 20). The researcher will use inferential statistics to determine if there is a significant statistical difference in the asset classes using the $p\text{-value} < 0.05$. The results will be displayed in graphs and tables. In order to find out if diversification of the portfolio will affect the financial performance of the pension funds, the researcher will compare the composition of the various pension fund portfolio and the weighting of the various asset classes vis a vis the returns declared. In this case the only changing elements will be the weighting of the asset classes and the return per asset class. The return of the entire portfolio is a sum of the return generated by the various asset classes.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This section covers the analysis of data and discussing the results. The study focused on how portfolio holdings may affect the financial performance of a pension fund. The first step in analyzing the data was through descriptive measures. This was done using SPSS. Secondary data was obtained through administration of questionnaires to the various pension fund administrators. The pension fund administrators submitted data of 70 schemes. The data was compiled and only data of 35 pension funds were found to be valid.

The data was in three main categories of asset classes, fixed income, equities and offshore. The researcher classified the returns into 3 months (quarterly), 1 year and 3 years. This is because the fund managers report quarterly to the trustees. Trustees report annually to the members of the pension fund through the AGM and interest is declared annually by issuing member statements. Actuarial reviews are conducted every three years as per the RBA Act 197. Therefore the researcher found it important to capture the performance of the portfolio holding at the reporting periods. All the pension funds had invested in fixed income and equities, but only 25 had invested in offshore. Descriptive statistics, regression and inferential statistics were used to interpret the data. The asset value ranged from Kshs. 14 million to 8 billion.

Table 1: Size Categorization of Participating Schemes

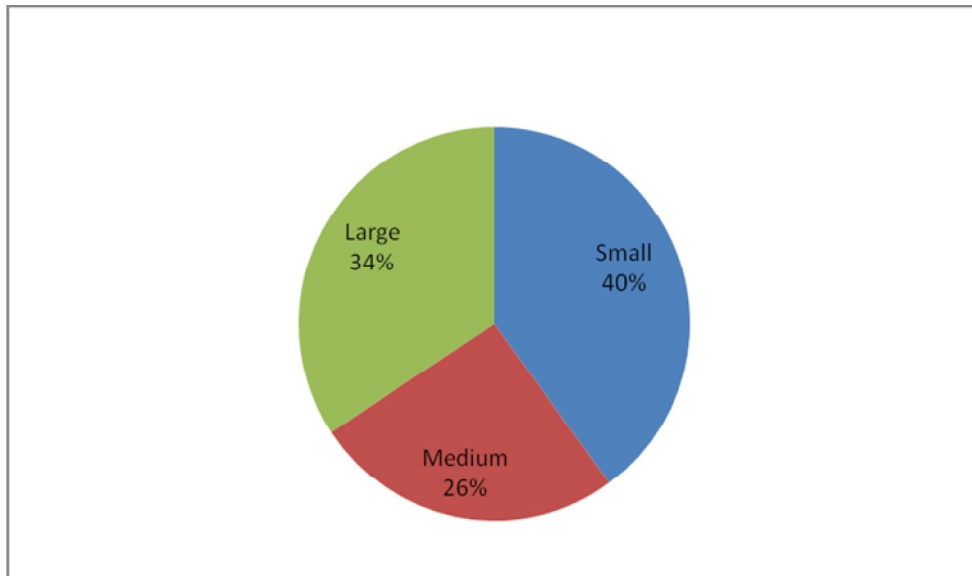
Size of the pension fund	Market Value (Kshs. M)	Number of pension funds	Pension fund percentage (%)	Asset percentage (%)	AUM in (Kshs. M)
SMALL	≤ 250	14	40%	4%	1,636
MEDIUM	250 - 999	9	26%	9%	4,234
LARGE	≥ 1,000	12	34%	87%	40,678
TOTAL		35			46,548

Source: Author's calculations (2014)

4.2 Descriptive Statistics

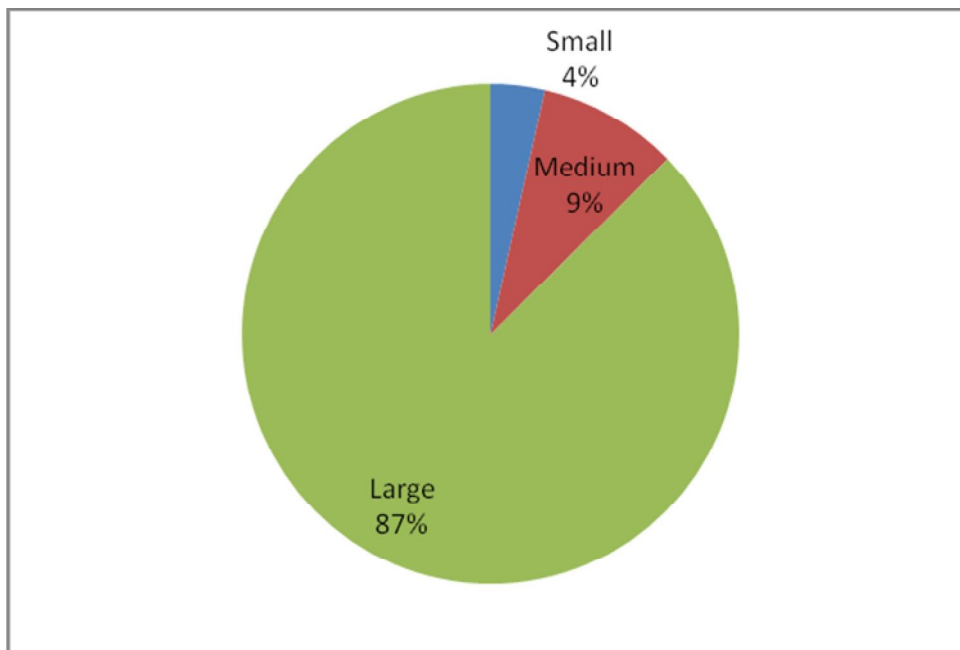
For confidentiality reasons the fund administrators could not reveal the names of the pension funds. The researcher therefore coded the pension funds from P.F 1 to P.F 35. Cross tabulation results indicate that majority, 40% of the pension funds had an asset value less than Kshs. 250 million and that their total asset value combined was the least at 4% of the total asset value under consideration, Kshs. 46.5 billion. Pension funds with asset value above 1 billion, large funds, were 34% contributing majority 87%, Kshs 40.68 billion of the asset value under consideration.

Graph 1: Distribution of Participating Pension Funds by Number



Source: Author (2014)

Graph 2: Distribution of Participating Pension Funds by Asset Size



Source: Author (2014)

4.3 Portfolio Holdings Performance

Table 2: Pension Fund Performance Analysis per Asset Classes

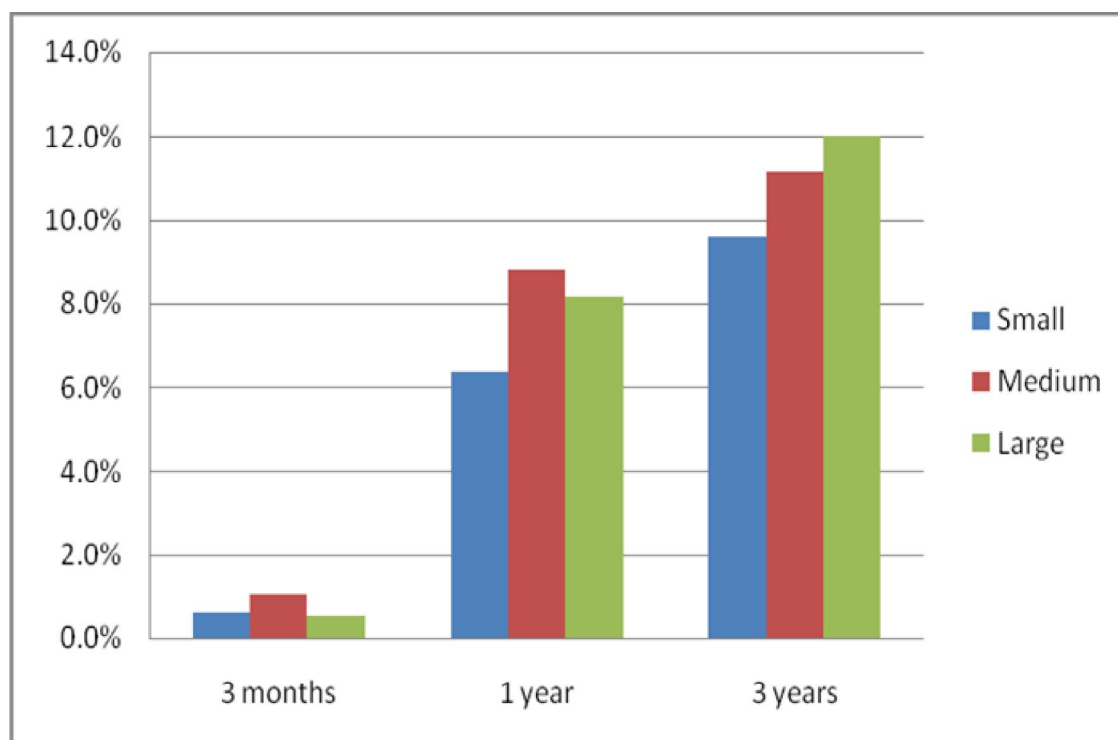
(i) Fixed Income

Size of the fund	3 months (%)	1 year (%)	3 year (%)
Small	0.6%	6.4%	9.6%
Medium	1.1%	8.8%	11.2%
Large	0.5%	8.1%	12.0%

Source; Author's calculations (2014)

Large pension funds earned the highest returns on fixed income with a return of 12.0% over a 3 year period. Small pension funds performed least over the entire period under consideration. Over 3 month period and 1 year period medium funds earned the highest return of 1.1% and 8.8% respectively but with a small range of 0.6% and 0.7% respectively against the large funds. There was less range on returns across the small, medium and large schemes over a 3 month period at 0.6%, 1.1% and 0.5% respectively.

Graph 3: Fixed Income



Source: Author (2014)

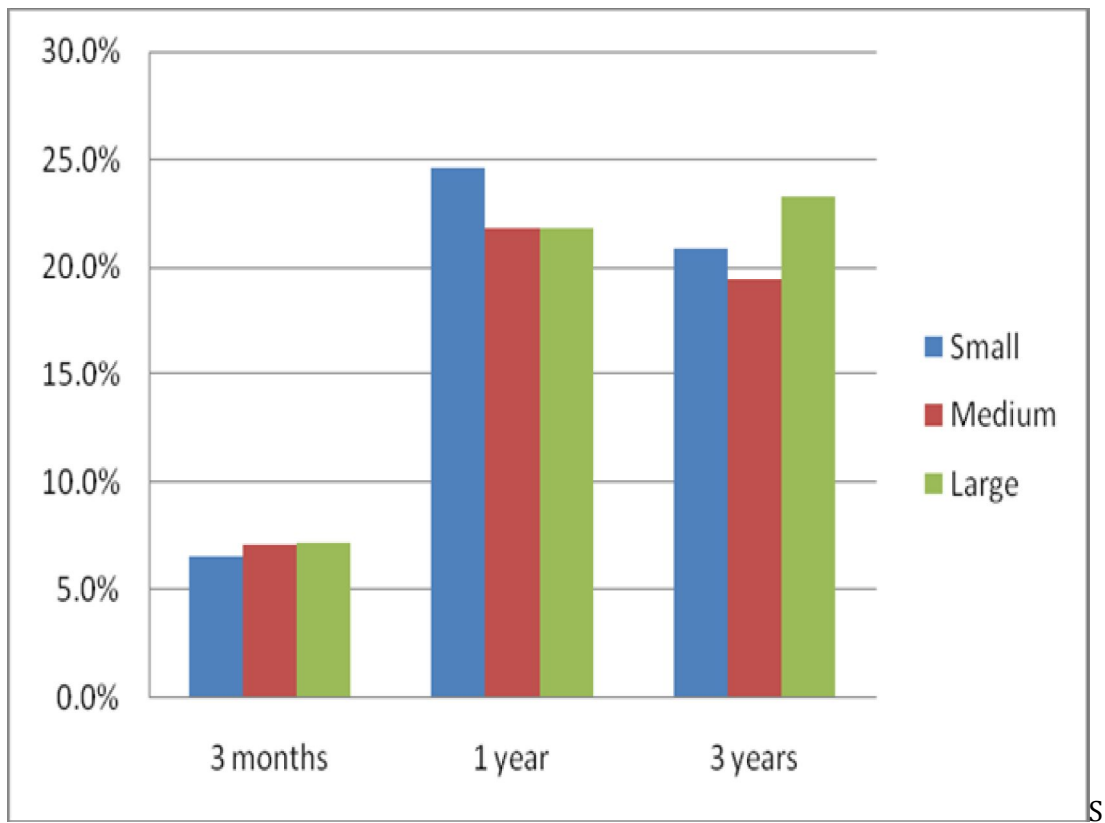
(ii) Equities

Size of the fund	3 months (%)	1 year (%)	3 year (%)
Small	6.5%	24.6%	20.9%
Medium	7.2%	21.8%	19.4%
Large	7.2%	21.8%	23.2%

Source: Author's calculations (2014)

Small pension funds performed better over 1 year period at 24.6%. However the range on the returns across the small, medium and large pension funds was not significant. Small pension funds earned the least return over a 3 month period at 6.5%. Large pension funds earned the highest returns of 23.2% over a 3 year period. Generally all funds seemed to earn better returns over 1 year and 3 year period as compared to 3 month period.

Graph 4: Equities



Source: Author (2014)

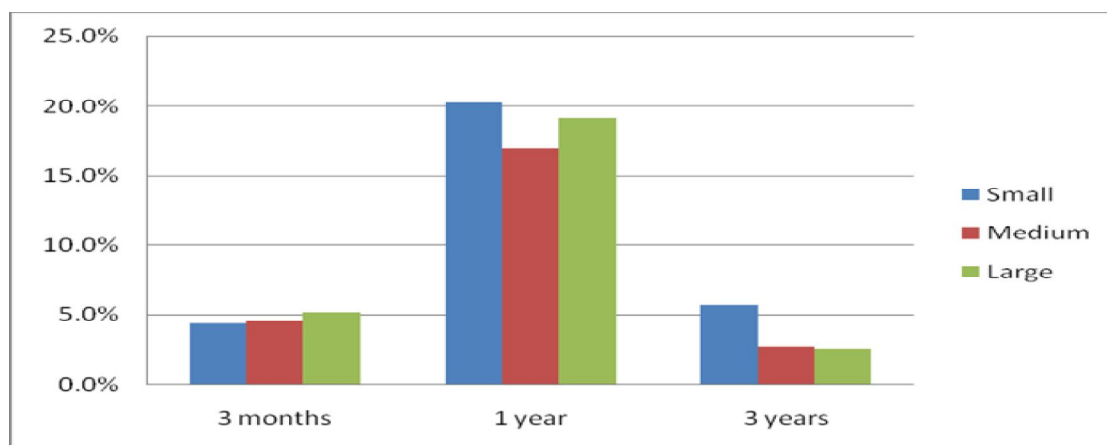
(iii) Offshore

Size of the fund	3 months (%)	1 year (%)	3 year (%)
Small	4.3%	20.3%	5.7%
Medium	4.5%	16.9%	2.7%
Large	5.1%	19.1%	2.5%

Source: Author's calculations (2014)

There was a big range in performance of off shore over the various financial periods under consideration. The best performance was noted at 1 year period for all funds. Small funds earned the highest return at 20.3% and 5.7% over one and three year period respectively. Large funds earned the least return of 2.5% over a 3 year period. Medium and large funds performed worst with a return of 2.7% and 2.5% respectively over 3 year period. Small fund performance was worst over 3 month period with a return of 4.3%. Generally performance over 3 month and 3 year period was dismal.

Graph 5: Offshore



Source: Authr (2014)

4.4 Performances Based on Asset Allocation

Table 3. Analysis of asset allocation over a 3 year period.

Small funds

	Fixed income	Equities	Offshore
Average	4%	21%	6%
Range of returns	8%	11%	6%
Lowest	4%	18%	3%
25th Percentile	10%	18%	4%
Median	11%	21%	4%
75th Percentile	11%	22%	8%
Highest	12%	29%	9%

Source: Author's calculations (2014)

The average return for small funds was 4% on fixed income, 21% on equities and 6% on offshore. Equities had the highest range on returns with the highest return being 29% and the least being 18%. However overall the least return on equities of 18% was higher than the best return on offshore and fixed income at 9% and 12% respectively. The range on returns for both offshore and fixed income was modest at 6% and 8% respectively. Fixed income highest return was 12% and offshore 9%. The median return was 11% on fixed income, 21% on equities and 4% on offshore.

Medium funds

	Fixed income	Equities	Offshore
Average	11%	19%	3%
Range of returns	9%	5%	7%
Lowest	8%	18%	-1%
25th Percentile	10%	18%	0%
Median	11%	19%	2%
75th Percentile	11%	21%	5%
Highest	17%	23%	6%

Source: Author's calculations (2014)

The average return on medium funds was 11% for fixed income, 19% for equities and 3% for offshore. Equities recorded the highest return on medium funds at 23% return. Offshore earned the least return of -1%. The range on returns was most significant in fixed income at 9%, recording a high of 17% and a low of 8%. Equities least return of 18% was higher than the highest return recorded by all other asset classes. The median return was 11% for fixed income, 19% for equities and 2% for offshore.

Large funds

	Fixed income	Equities	Offshore
Average	12%	23%	3%
Range of returns	16%	13%	6%
Lowest	9%	17%	0%
25th Percentile	10%	20%	1%
Median	11%	23%	3%
75th Percentile	11%	24%	3%
Highest	26%	30%	6%

Source: Author's calculations (2014)

The average return for large funds was 12% for fixed income, 23% for equities and 3% for offshore. Equities recorded the highest return at 30% with offshore recording the least return at 0%. The highest range on returns was on fixed income with a range of 16% and the least was on offshore at 6%. The median return was 11% on fixed income, 23% on equities and 3% on offshore.

All pension funds

	Fixed income	Equities	Offshore
Average	11%	21%	4%
Range of returns	22%	13%	10%
Lowest	4%	17%	-1%
25th Percentile	10%	18%	2%
Median	11%	21%	3%
75th Percentile	11%	23%	5%
Highest	26%	30%	9%

Source: Author's calculations (2014)

The overall average return for all pension funds was 11% on fixed income, 21% on equities and 4% on offshore. The highest return was earned on equities at 30% with offshore earning the least return at -1%. Interestingly the highest range of return was on fixed income at 22% and the least on offshore at 10%. The median return was 11% on fixed income, 21% on equities and 3% on offshore.

Table 4: Descriptive Statistics of Asset Allocation and Returns Variables

N=35 Pension Funds

Proportion	N	Minimum	Maximum	Mean	Std. Deviation
Fixed Income Allocation	35	.33	.82	.6092	.09686
FI Returns (3mnths)	35	-.01	.04	.0070	.00732
FI Returns (1yr)	35	.00	.22	.0760	.03224
FI Returns (3yrs)	35	.04	.26	.1082	.03427
Equities Allocation	35	.15	.37	.3072	.04261
Eq. Returns (3mnths)	35	.03	.11	.0694	.02371
Eq. returns (1yr)	35	.15	.50	.2293	.06583
Eq. Returns (3yrs)	35	.17	.30	.2131	.03459
Offshore Allocation	25	.01	.10	.0465	.01887
Offsh. Returns (3mnths)	25	.02	.09	.0469	.02031
Offsh. Returns (1yr)	25	.09	.29	.1886	.05860
Offsh. Returns (3yrs)	25	-.01	.09	.0357	.02654

Source: Author's calculations (2014)

Table 5. Comparing means of the Asset Classes Returns

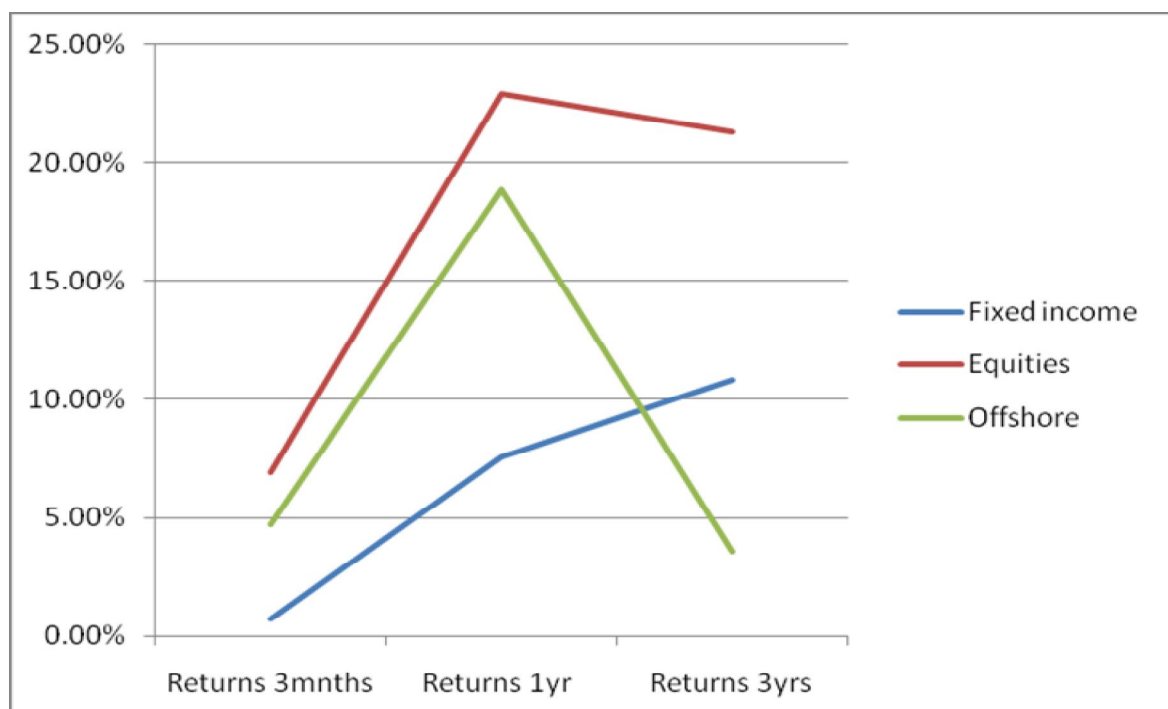
Asset class	Return 3 months	Return 1 year	Return 3 years	Weighted Average
Fixed income	0.70%	7.60%	10.82%	6.37%
Equities	6.94%	22.93%	21.31%	17.06%
Offshore	4.69%	18.86%	3.57%	9.04%
Average return	4.11%	16.46%	11.90%	10.82%

Source: Author's calculations (2014)

Analysis on the returns indicate that fixed income which is considered a long term asset, earned better returns when invested in long term at 10.82% compared to 0.7% return earned over a 3 month period. Return over a 1 year period for fixed income was moderate at 7.60%. Equities which are considered a short term asset gave a higher return of 22.93% over a one year period. Return over a 3 year period for equities was 21.31%. There was a significant range on the return by off shores. One year period gave the highest return at 18.86% compared to 3 year period at 3.57% and 3 months 4.69%. Overall one year period gave the highest return at 16.46% for the entire portfolio holdings. For the asset classes weighted average returns, equities gave the highest return at 17.06% with fixed income earning the least return at 6.37%. In all the periods 3 month, 1 year and 3 year, equity gave the best returns at 6.94%, 22.93% and 21.32% respectively.

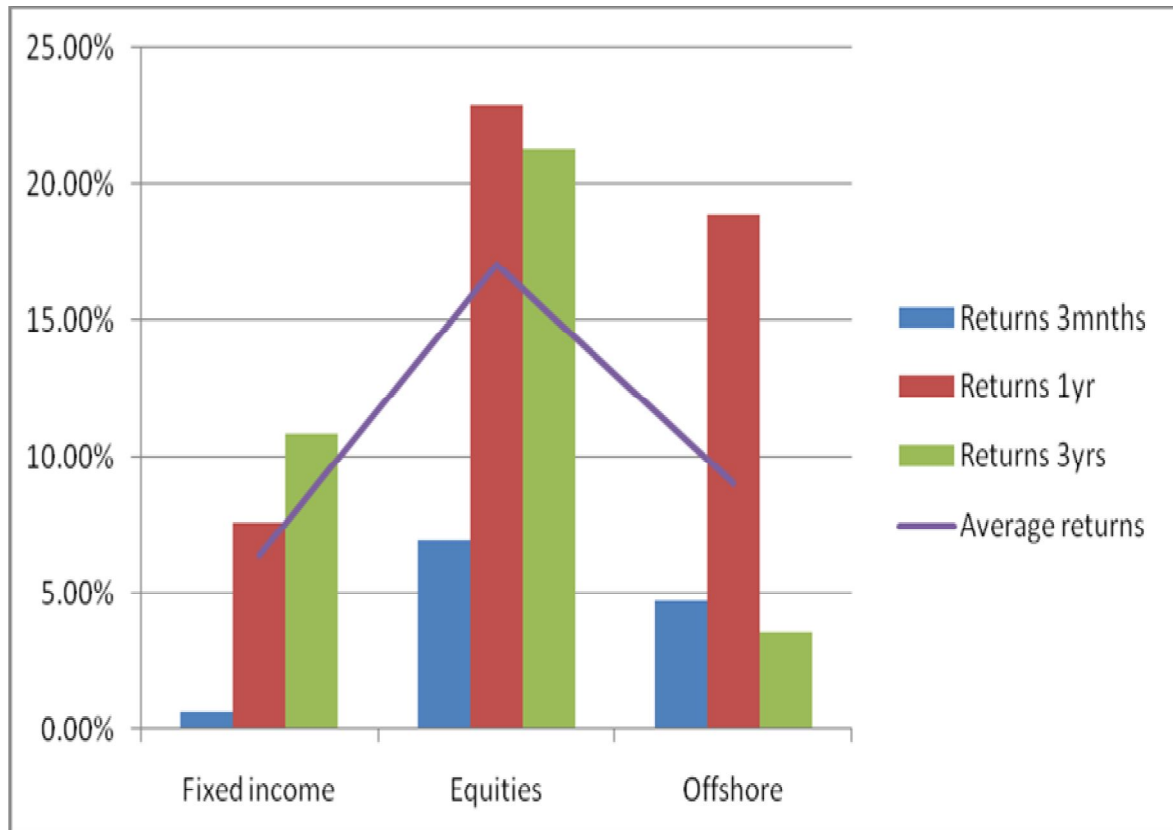
Offshore gave a better return, 4.69% and 18.86% than fixed income, 0.70% and 7.60% for the 3 month and 1 year period respectively. However fixed income had a better return 10.82% over 3 year period compared to offshore at 3.57%. The range in offshore and fixed income returns was significant in all periods.

Graph 6: Comparison of average return of securities



Source: Author (2014)

Graph 7: Average weighted return on fixed income, equity and offshore investments



Source: Author (2014)

4.5 Pension Funds Performance

Table 6: Analysis and distribution of returns for all pension funds

	3 months (%)	1 year (%)	3 year (%)
Average	3%	13%	13%
Range of returns	4%	15%	16%
Lowest	1%	7%	9%
25th Percentile	2%	12%	11%
Median	3%	13%	13%
75th Percentile	3%	14%	14%
Highest	6%	22%	25%

Source: Author's calculations (2014)

The weighted average return of the participating pension funds was 3% quarterly, 13% over one year and annualized 13% over three years. However an interesting observation was the significant range in returns with the lowest one year return being 7% and the highest being 22%. The same was observed with the three year return, the lowest being 9% and the highest 25%. The median was 3% over 3 month period, 13% for both 1 year and 3 year return. Three year period gave the highest return at 25%. Quarterly return gave the least return of 1%.

4.6 Regression Statistic

4.6.1 Correlation between asset allocation and returns

To determine if there is any significant association between the portfolio holdings and the financial performance, the researcher did a correlation for all the selected variables using the spearman's rank coefficients of correlation coefficient. There was no significant correlation for fixed income allocation and returns at 3 months, 1 year and 3 years. In Equities, there was significant correlation between the allocation and the returns at 1 year but none at 3 months and 3 years. For offshore, correlation was only significant at 3 months.

Table 7: Correlation table between portfolio holding and financial performance at different reporting periods

		Fixed Income				Equities				Offshore			
		Fixed Income Alloc.	Returns 3M	Returns 1Yr	Returns 3Yr	Equity Allocation	Returns 3M	Returns 1Yr	Returns 3Yr	Offshore Allocation	Returns 3M	Returns 1Yr	Returns 3Yr
Fixed Income	Fixed Income Alloc.	1.000	-.060	-.217	-.033	-.531**	.141	.112	-.113	-.172	-.339	-.299	.301
	Returns 3M	-.060	1.000	.524**	.153	.057	.073	.067	-.054	-.133	.172	.312	.368
	Returns 1Yr	-.217	.524**	1.000	.344*	.283	.201	-.027	.129	-.091	.462*	.482*	.104
Equities	Returns 3Yr	-.033	.153	.344*	1.000	.420*	.029	.000	.014	.106	-.210	-.241	.009
	Equity Allocation	-.531**	.057	.283	.420*	1.000	-.090	-.339*	-.194	-.137	.046	.012	.007
	Returns 3M	.141	.073	.201	.029	-.090	1.000	-.001	.256	.357	.441*	.441*	-.219
Offshore	Returns 1Yr	.112	.067	-.027	.000	-.339*	-.001	1.000	.637**	.101	.160	.290	.194
	Returns 3Yr	-.113	-.054	.129	.014	-.194	.256	.637**	1.000	.047	.440*	.488*	-.050
	Offshore Allocation	-.172	-.133	-.091	.106	-.137	.357	.101	.047	1.000	.461*	.329	-.331
	Returns 3M	-.339	.172	.462*	-.210	.046	.441*	.160	.440*	.461*	1.000	.922**	-.031
	Returns 1Yr	-.299	.312	.482*	-.241	.012	.441*	.290	.488*	.329	.922**	1.000	.152
	Returns 3Yr	.301	.368	.104	.009	.007	-.219	.194	-.050	-.331	-.031	.152	1.000

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Author's calculations (2014)

4.7 Ordinary Least Squares (OLS) Regression

The researcher tested if there is any significance on financial performance of different asset classes based on the asset allocation. The dependent variables were the returns at third year and the independent variables were the asset allocation on the asset classes.

The model used was:

$$\text{Return on Asset (3}^{\text{rd}} \text{ year)} = \text{Constant} + X_1 (\text{Fixed income allocation}) + X_2 (\text{Equities allocation}) + X_3 (\text{Offshore allocation}) + \varepsilon$$

The results are as follows:

	Fixed income returns			Equities returns			Offshore returns		
Independent variables	Parameter Estimate	Standard Error	P Value*	Parameter Estimate	Standard Error	P Value*	Parameter Estimate	Standard Error	P Value*
Intercept	.011	.050	.825	.296	.102	.009	.048	.084	.574
Fixed income alloc.	.040	.041	.333	-.232	.083	.011	.087	.068	.213
Equities Alloc.	.245	.135	.084	.131	.275	.638	-.141	.225	.537
Offshore Alloc.	-.104	.172	.550	.143	.349	.686	-.363	.286	.219

*P-value figures are the probabilities of significance based on the standard errors.

Source: Author's calculations (2014)

From the table above, it is clear that the coefficient indicates that the asset allocation on asset classes will contribute significantly to the returns on equities at the end of three years.

4.8 Discussion of Findings

Financial performance of pension funds in Kenya is greatly influenced by the portfolio holding. From the analysis of the data collected equity had the highest returns of 30%, followed by fixed income at 26% and offshore at 9%. This supports the capital market theory that fixed income security are considered relatively conservative investments and are expected to be on the lower end of the capital market line.

Bodie et al (2008) indicates that on the basis of average returns, stock appears to have a substantial advantage for the investor with a reasonably long horizon. This has been confirmed by the analysis with equities having the highest average return of 21%, followed by fixed income at 11% and offshore at 4%. However equity performed better in 1 year period at 24.6% and 21.8% against 20.9% and 19.4% for small and medium funds respectively. For large funds equity performance in the 3 year period was better at 23.2% compared to the 1 year period at 21.8%. The return in this case is the total return (TR), which captures both the income component and the capital gains (or losses) component of return as highlighted by Jones (1994).

The findings confirm Onyango (2011) statement that risky assets (equity investments) generally generate higher returns compared to the less risky ones (bonds). Karanja (2011) study found out that most fund managers were offering similar products with a higher concentration on equity funds. From the analysis, this may have been an attempt to ensure they achieve higher returns from the pressure by trustees and members of the pension funds. This is because equities have proved to provide superior returns.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The present study has evaluated the financial performance on portfolio holdings held by pension funds in Kenya. The study further examined how the funds are invested in different asset classes. Some studies that have been reviewed in this paper suggest that indeed the portfolio holding held by pension funds in Kenya has an effect on the financial performance. The objective of this paper was to present logical and empirical evidence on evaluation of financial performance on portfolio holdings held by pension funds in Kenya.

The research shows that discretionary and non discretionary investment mandates to the fund managers affect the performance of the pension funds. The most pertinent concern was lack of trustees to clearly understand and put proper benchmarks to monitor the performance of the funds. RBA has noted the gap and issued a prudential guideline for capacity building of trustees of pension funds pursuant to section 26(3) and 55(3) of the retirement benefits Act.

Asset allocation requires a sophisticated approach in order to balance between the returns from the asset classes, the period of reporting and the maturity of the pension fund liabilities. Lack of liquidity in a pension fund can be catastrophic especially to a pension fund that pays monthly pension to pensioners. The fund is required at all times to have money to pay pensioners. The alternative is to outsource the service through purchase of annuities from insurance companies to the retiring members. Administration costs of pension funds must also be keenly monitored in order not to erode the returns earned from the investments.

5.2 Conclusion

The research highlights the potential to improve the efficiency of pension funds to achieve their ultimate objective of providing income replacement in retirement by choosing the right portfolio holdings that will optimize returns of the pension funds. This is done in consideration of the dynamic pension fund needs and maturity of pension liabilities through member's resignations and retirement. Trustees must also consider the risk exposure to the members of the pension funds and exercise their fiduciary responsibility within the limits of the RBA regulations.

From the research, equities performed better compared to all other asset classes under study. Equities performed better in large pension fund compared to medium and small funds. Offshore performance was the least for all pension funds and especially in the medium pension funds. Pension fund may want to reduce their exposure into offshore unless well convinced of the expected returns. If a pension fund must invest in offshore, it should only be for 1 year period. Equity performed better in 1 year and 3 year period compared to 3 month period. The highest return was from pension funds that invested over long term period of 3 years. This may be because the funds were able to overcome the fluctuations during the other periods. The least return was from the investments over a 3 month period. These clearly inform the pension funds to invest in long term. Small funds performed poorly in fixed income. Generally fixed income performance was best for 3 year period.

From the analysis it is clear that portfolio holding has a significant effect on the financial performance of a pension fund in Kenya. Therefore it is very critical for a pension fund to consider the asset mix in the fund.

5.3 Recommendations

Based on this study, it is clear that trustees need to acquire some financial management knowledge in order to properly oversee the operations of the pension funds. Members of the pension funds electing trustees to represent them in the pension fund board need to bear that in mind. They may need to ensure that finance officers and accountants are part of the board. But also include trustee with integrity and proper governance skills. The pension funds must also invest in members of the fund by conducting regular member education. An educated membership will put trustees to task during the AGM on the performance of the fund. Through education, members will know how they can improve the pension expected on retirement by contributing Additional Voluntary Contribution (A.V.C) which also reduces the amount the members pays as Pay As You Earn (P.A.YE) tax at source.

The pension funds through Associations of Retirement Benefits Schemes (ARBS), Retirement Benefits Authority (RBA), Kenya Revenue Authority (KRA) and Institute of Certified Public Accountants (ICPAK) must lobby for fair tax systems to the senior citizens. These include increasing the tax exempt amount from the current Kshs. 20,000.

5.4 Limitations of the Study

As with any research, this study had a range of challenges. The data used was secondary data availed by pension fund administrators. Some of the data received were not complete; some had the overall return missing, the total asset value not indicated or one period return not included. The researcher therefore had to discontinue analyzing the data of pension funds that had some of the data missing.

It would have been much better to consider data over a long period of time say 10 years, bearing in mind that pension funds are considered long term investments. The researcher had limited time and funds to collect the information. Most of the pension funds lacked proper records of archived data therefore making it very difficult to retrieve the historical data. Due to confidentiality, it was difficult to get more information on the choice of the asset classes and the maturity patterns in the various pension funds. It was also difficult to gather specific trustee's views. Different pension funds had different maturity periods which interrupted the investments unexpectedly. This was especially due to employees resigning. Some investments were sold prematurely to meet the unexpected liquidity requirement.

5.5 Suggestions for Further Research

There is need for further research on the impact on mandates to the fund managers by the trustees, asset management styles and approaches. The researchers should look at the effects of the discretionary and non discretionary investment mandates to the fund managers. That is the level of freedom (discretion) given to a fund manager by the trustees to invest the funds in accordance with the fund managers best investment view. In many instances broad parameters were set by the trustees but the fund managers had complete autonomy in the investment decision making.

In some few cases the trustees were involved in the investment decision making and would instruct the fund manager how and in which assets to invest. This was common in the financial sector where most of the trustees had financial and investment knowledge. Significant volatility was noted on fixed income for large funds. This was unusual. There may be need to investigate the reason for the big range in returns on fixed income for large funds.

One may also want to research on the financial performance of segregated pensions funds compared to guarantee or self administered pension funds. It will also be interesting to find out the effect of the recently introduced capital gains tax (CGT) on the financial performance of pension funds.

REFERENCES

- Alexander Forbes Financial Services (East Africa) Limited (2013),
www.alexanderforbes.co.ke
- Arnold and Franziska. (2013). “Preferences for redistribution and pensions: What can we learn from the experiments? Journal of Economics and Finance. Cambridge University Press
- Bodie Z., Kane A. and Marcus J.A (7th Ed.), (2008) “Investments” McGraw –Hill International Edition, Asia
- Bowerman L.B,O’Connell T.R and Murphree S.E (5th Ed) (2009) , Business Statistics in Practice , McGraw – Hill Education, Asia.
- Brigham and Ehrhard. (January 2010). “Financial Management, Theory and Practice” University of Tennessee and Florida
- Bryman A. (2nd Ed) (2004) , Social Research Methods” Oxford University Press , New York.
- Bulow J.I (1982) “What are corporate pension liabilities?” The quarterly journal of Economics vol. 97No.3 pp. 435-452
- Carasso A.L and Forman J.B (2006). “A Mandatory Universal Pension System” in New York University Review of Employee Benefits and Compensation (Alvin D. Lurie ed).
- Chandra P. (2009). “Investment Analysis and Portfolio Management” Third Edition, Tata Mc Graw –Hill Publishing Company Limited, New Delhi.

Chava F. and David N. (5th Ed). (2009). “Research Methods in the Social Sciences”
St. Martins Press, Inc.

Cooper R and Schindler S (11th Ed) (2011) “Business Research Methods” The
McGraw-Hill Companies Inc, New York

Deming W.E (1990) “ Sample Design in Business Research” Wiley Classics Library
Ed.

Ehrhard and Brigham (2005) “Financial Management “Text and Cases” University
of Tennessee and Florida.

Elton, E.J (5th Ed). (1995).“Modern Portfolio and Investment Analysis” Hamilton
Printing, United States of America.

Ernst & Young. (July 2013). “International Accounting Standard Board” (IASB)
IFRS 9, www.ey.com

Financial Sector Stability Report (2012), Issue Number 4.

Forman J. and Murrah A.P (2006) “Achieving Retirement Income Adequacy with
Add-On Social Security Accounts” Law and Society Association Annual
Meeting, Baltimore, MD.

Frank J.F and F. Modigliani. (4th Ed), (2009). “Capital Markets, Institutions and
Instruments” Prentice Hall, New Jersey.

Frank K. R and Keith C.B. (8th Ed). (2006) “Investment Analysis and Portfolio
Management” University of Norte Dame, Cengage Learning Private Limited.

Frank K.R and David J.W. (2004). “An Analysis of Risk Adjusted Performance of
Global Market Assets” Portfolio Management journal 30, no.3, 63-77.

Genesis Management (K) Limited. (2013). Interest bearing assets seminar for trustees,
Southern Sun - Mayfair

Herbert B, Mayo (2007) “Basic Finance, An Introduction to Financial Institutions,
Investment and Management” College of New Jersey.

Hill J.M (1980) “Reducing Forecast Error in Portfolio Management: Sample
Clustering and Alternative Risk Specifications” Financial Management Vol. 9, No. 4,
42 -50.

Hirt and Danielson (13th Ed.) “Foundations of Financial Management” Mc Graw Hill
International.

Jones P. C (4th Ed) (1994), Investments Analysis and Management, John Wiley and
Sons Inc. New York.

Karanja F.N (2011) “Competitive Strategies Applied by Fund Managers in Kenya”
Unpublished MBA Thesis, University of Nairobi, Kenya.

Kothari C.R (2nd Ed.). (2004). “Research Methodology, (methods and techniques),
New Age International Publishers.

Kothari C.R and Garg G, (3rd Ed), 2014 “Research Methodology”, New Age
International Publishers.

Levy H. (2008) “Fundamentals of Investments” Pearson Education Limited,
England.www.booksites.net

Levy H. (Aug., 1972), “Portfolio Performance and Investment Horizon” Management
Science Journal, Vol. 18, No. 12, Application Series pp. B645-B653

Levy H. and Thierry P. (2005) “Investments” Prentice Hall of India, New Delhi

- Macharia J.M. (2011) “Risk Management Strategies and Returns by Pension Funds in Kenya” Unpublished MBA Thesis, University of Nairobi, Kenya.
- Munnell A. and Soto M. (2005). “What Replacement Rates do Households Actually Experience in Retirement” CRR WP 2005, Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Mwangi A.N. (2011). “The Reliability of Valuation Methods used by Investment Banks in Emerging Markets Relative to the Market Trading Prices; a Case of the Kenyan Market” Unpublished MBA Thesis, University of Nairobi, Kenya
- Nicholas A. Michas (1984) “Pension Funds: More diversification” Canadian Public Policy / Analyze de Politiques, Vol. 10, No. 1, 47-53, University of Toronto Press.
- Onyango D. A. (2011) “The relationship between Investments Strategies and Financial Performance of Pension Funds in Kenya” Unpublished MBA Thesis, University of Nairobi.
- Pawel S. (2013), The minimum pension as an instrument of poverty protection in the defined contribution system. An example of Poland.
http://journals.cambridge.org/abstract_S1474747212000418
- Retirement Benefits Act (2010) Chapter 197, National Council for Law Reporting.
- Rukwaru M. (2007), “Fundamentals of Social Research” Eureka Publishers, Meru, Kenya
- Sharpe, F.W. Gordon,(5th Ed.). (1996). J.A. Jeffrey, B.V. “Investments” Prentice Hall of India, New Delhi.

Sharpe, F.W., Gordon, J.A. and Jeffrey, B.V. (6th Ed). (2003) “Investments” Prentice Hall of India, New Delhi.

Treasury Circular No. 18/2010, Public Service Retirement Benefits Schemes Approval by the Treasury Prior to Registration by the Retirement Benefits Authority (RBA), EPN 171/07 Vol. P (64)

Van Horne J.C and Wachowicz J.M Jr. (13th Ed). (2010). “Fundamentals of Financial Management, 13th Ed. Pearson Education Limited.

Wamagata K. (2011) “The impact of risk management on profitability of the Kenya Power and Lighting Company Staff Retirement Benefits Scheme” Unpublished MBA Thesis, University of Nairobi. Kenya.

Wambua G.W (2010) “A Survey of Pension Coverage of Informal Sector Workers in Nairobi County” Unpublished MBA Thesis, University of Nairobi. Kenya.

Were M.A. (2011) “An Investigation of the Determinants of the Amount of Benefits Accessed Before Retirement Age in Kenya” Unpublished MBA Thesis, University of Nairobi. Kenya.

William R.L (5th Ed.). (2008) “Financial Management, a practice approach” Nichols College.

Wren P.I (1954). “The Pension Fund Portfolio” The Analysis Journal, Vol.10. No.3 Proceedings, Seventh Annual Convention National Federation of Financial Analysis Societies, pp 58-59, Published by CFA Institute.

Www. Investopedia.com/university/advancedbond/advancedbond2.asp

Www.centralbank.go.ke/index.php/financial.markets/treasury-bonds

www.rba.go.ke; (2013), Prudential Guideline for Capacity Building of Trustees of Retirement Benefits Schemes

Zvi B.A., Alan J.M., and Pitabas M. (6th Ed). (2006). "Investments "Tata MC Grant Hill Publishing Company Limited, New Delhi.

APPENDICES

Appendix I: Letter of Introduction

Dear Sir/Madam,

RE: Research Information

I am a postgraduate student in the school of business, University of Nairobi. As part of my MBA (Finance) course requirement I am undertaking a research project that seeks to conduct “An evaluation on financial performance of portfolio holding held by pension funds in Kenya”

To fulfill information requirement for my study I intend to collect data relating to portfolio holdings and returns in your pension fund. The information is needed purely for academic purpose and will be treated in strict confidence and will not be used for any other purpose other than for my research.

I would be most grateful if you can allow me access to all the relevant information pertinent for this research. Any additional information you might consider necessary for this study is most welcome. I appreciate your assistance in assessing the much needed information.

Thank you in advance.

Yours Sincerely

Supervisor

Sammy E. Njeru

Mr. Omoro

Appendix II: Data Collection Form

1. Name of the Pension Fund.....

2. What is the schemes policy of investments? (Tick the appropriate box(es))

Purely as per IPS Fund Managers discretion Trustees have an input

All the above apply. Other.....

3. Provide details of the pension fund portfolio holdings.

Average Fund Value within the last three (3) years.		
Asset Class	Average % in the Portfolio over the last three (3) years	Average return per asset class over the last three (3) years
Overall average pension fund return over the last three (3) years as per the investment manager		

4. Any other

comments.....

.....