RETIREMENT FUND CHARACTERISTICS AND FINANCIAL PERFORMANCE OF PENSION SCHEMES IN KENYA.

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DECLARATION

This Thesis is my original work and has not been presented for a degree at any other University or for any other award.

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DEDICATION

This Research Thesis is dedicated to my caring and lovely parents, Mr. Joash Ondieki Gisore and Mrs. Grace Nyaboke Ondieki, for their love, encouragement, and financial support. This Research Proposal would not have been possible without their constant support. I salute you and may the Almighty God bless you abundantly. To my beloved husband Albert Makiya and daughter Solana Makiya, I am truly grateful for your support and encouragement and time you sacrificed so I can accomplish this. I thank my sisters Barbara, Susan, and Kate, my brother Tom for their love, guidance, and moral support throughout the entire process.

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ABBREVIATIONS AND ACRONYMS

CSPS	Civil Servants Pension Scheme
DB	Defined Benefit
DC	Defined Contribution
FSA	Financial Services Authority
GOK	Government of Kenya
GDP	Gross Domestic Product
IRS	Individual Retirement Scheme
KNBS	Kenya National Bureau of Statistics
NACOSTI	National Commission for Science, Technology and Innovation.
NSSF	National Social Security Fund
OECD	Organization for economic cooperation and development
ORS	Occupational Retirement Schemes
PAYG	Pay as you go
RBA	Retirement benefits authority
SOE	State Owned Enterprises
SPSS	Statistical Package for Social Sciences
USA	United States of America

OPERATIONAL DEFINATION OF TERMS

Asset Allocation	it is the total assets after distributing them in different classes of assets for investment purposes.
Defined Benefit Scheme	it is where members are promised a pension calculated by multiplying the number of years of pensionable service by a proportion of the pensionable salary
Defined Contribution Scheme	it is where the benefits payable builds up from contributions over the years and investment returns
Fund design plans	Member's contributions received in the Defined contributory
Fund size	it is the value of net assets the schemes have in any given period year.
Occupational Retirement Schemes	these are private sector employer sponsored schemes excluding state and individual schemes
Pension Scheme	it is a retirement benefits arrangement where a series of periodic regular payments are made to members on attainment of the normal retirement age, that is an income during retirement
Performance of Pension Schemes	it is the returns the schemes generate after investing in different activities
Retirement Fund Characteristics	these are attributes of pension performance measured by the four variables: asset allocation, fund design plans, fund size, and social coverage span.

Regulations	the adherence to the retirement Benefit Authority accounting regulation.
Social Coverage Span:	it is the period in which the individuals in a given pension scheme make contributions to receive benefits in retirement.

ABSTRACT

Pension schemes play a vital role in how individuals plan for retirement. Saving for retirement is key as it determines how one's life is after they cease being employed. Individuals should plan to save for their retirement once they are employed to avoid situations where they have little income to support themselves. The performance of pension schemes is highly momentous noting the associated value to members and the country at large. Pension schemes have been fluctuating over the past ten years and thus could be attributed to the inflation and other crises experienced in the country. This has led to fluctuations in the return on assets received by the schemes as some years have had negative returns after investments prompting the funds to issue minimal benefits. In addition, some of the last years have experienced negative returns which creates a worrying trend as most of the individuals save for retirement to receive better benefits. Several factors such as the financial crisis in 2008 had a negative impact on the returns realized and the negative results influenced the benefits. It is key for the pension schemes to invest in worthy investments for them to maximize on the returns they make. It is in those regards that a study touching on the pension fund performance is highly imperative in providing critical insights regarding how benefits can be certainly maximized. Although empirical studies have be conducted in other parts of the world showing how retirement funds characteristics have an impact, effect to the test the same in Kenya is still scanty. This study sought to examine the effect of retirement funds characteristics on the financial performance of pension schemes in Kenya. Specifically, the study sought to establish the relationship between asset allocation, fund size, fund design plans and the social coverage span. The relationship was proposed to be moderated by the retirement benefits act regulations. This study used a descriptive study design. The population comprised of all the 1342 registered pension schemes and a purposive sampling was conducted to select schemes that have been consisted for the last ten years. 31 schemes were selected which had consistent data for the past 10years. Secondary data used which was sourced from the Retirement Benefit Authority and the company's websites and the results presented using SPSS version 24. The study findings were presented in tables for easy interpretation. The results showed that asset allocation, fund size, and fund design plans had a positive impact on the financial performance of the pension schemes. However, social coverage span had a non-significant effect on the financial performance of pension scheme. The results also showed regulations had a significant moderation effect on the relationship between asset allocation, fund size, and fund design plans and financial performance of pension schemes. However, it had a negative effect on relationship between social coverage span and financial performance of pension schemes. The study recommended pension schemes should efficiently invest their assets, adopt the use of defined contributory plans, and increase the value of their funds as a way of increasing their returns.

CHAPTER ONE

INTRODUCTION

1.1 The Background of the Study

Most economists asserts that economic growth is positively related with the financial development of any country. Pension schemes growth in the countries highly influence performance of the industry. According to Sun & Hu (2014), different countries have adopted measures that help the ageing population mitigate against the macroeconomic consequences. For instance, the United States transitioned from using the defined benefits to defined contributory plans as a way of financing their retirement in addition to the benefits from the social security. Most employees opted to join contributory pension schemes as away of increasing their retirement package. Also, fund managers play a fundamental responsibility in the increased performance of these pension schemes by investing wisely in different assets (Antolin, 2008). The pension schemes in the developed countries have seen an increased performance attributed to the policies and different measures adopted.

In Africa, pension schemes are very essential in providing social security for the old age to help them alleviate themselves against demographic pressures. Apart from a few countries, most have schemes with assets that are not properly invested creating schemes that perform poorly as they are pat-as-you-go (PAYG) schemes. Moreover, this can be attributed with how fund managers and trustees invest the assets available to yield returns. According to Stewart, & Yermo, (2009) more than a quarter of households in the sub-Saharan are led by an individual over the age of 55 years. Pension benefits reduces the poverty ratio gap by 13% thereby increasing the income of the poor by more than 50%.

Pension Schemes in Kenya in recent times have experienced quite an impressive growth. The tremendous development is attributed to the investor's confidence on the existing schemes, and importantly associated improvement of the socio-economic state, which therefore aid allocation of the extra-disposable income as savings entitled to cover one at an older age. In reference to the Retirement Benefits Authority Act (RBA) (2002), the schemes are legally protected from cases of mismanagement that previously plagued this industry as a result leading to low investment confidence, hence contributing to low uptakes. Nonetheless, that was addressed by the 1997 enactment. It is important to acknowledge this industry vibrancy as noted with recent growth has some positive spillover effects to the economic state.

The realized benefits spread from individual to the country at large. For instance, with favorable rates, the pension schemes create a high competition in the securities market which is instrumental in aiding high effectiveness (Meng & Paul, 2010). That is evidenced by the reduced lending rates and cost of capital, mainly intended to mitigate the potential loss of investment by the financial institutions. Low lending rates and cost of capital is good for investment as; ideally that creates an incentive, to borrow and invest, ultimately crucial in income maximization. In those regards, the government indirectly benefit from potential high taxes from the arising many income streams.

Pension schemes can either be open or closed. Where open pension schemes have no restriction on membership that is, it can support at least one plan. On the other hand, closed pension schemes are limited to specific employees, which is membership is limited to individual employers or organizations (Muia, 2015). Consequently, these plans should be administered appropriately and according to the legislation.

1.1.1 Retirement Fund Characteristics

Retirement fund characteristics are the different measures pension schemes use to measure its performance (Blake, 2007). There are numerous issues that influence the performance of pension funds. This study will focus on asset allocation, fund size, fund design plans, social coverage span, and retirement benefits regulations as the main factors that affect performance. According to Mwachanya (2015) there is a greater need for pension schemes to have principles set for asset allocation. Asset allocation therefore is the process of distributing the wealth of investors in different asset classes to yield high returns. Diversification in the different classes which help in reducing the portfolio volatility as he allocation decisions depends on its returns and volatility. According to Oluoch (2013) assets can be invested in different classes which include the government bonds, corporate equities, real estate, and money market instruments. For instance, in 2017, Zamara pension watch shows a range of asset classes that schemes under survey allocated their assets. The different classes include equity, fixed income, offshore, and property. Moreover, the investment policies need to be managed correctly to gain maximum wealth in the given market conditions. Thus Brown, (2013) stipulate that trustees should devote their time in ensuring the different strategies for asset allocation a scheme adopts will increase its financial performance.

The fund value is fundamental in determining the financial performance of the pension schemes which in turn increase in size. This can be measure by the density of contributions channeled to the scheme. For instance, Oluoch (2013), stipulate that a scheme with contributors channeling huge funds, then there will be enough funds for investment thus high returns. The high returns will in turn increase the fund value thereby increasing the size. According to Antolin & Stewart, (2009) the density of contributions hugely affects the performance in countries with large

informal sectors as more money will be injected into the economy to fund other pension supported projects.

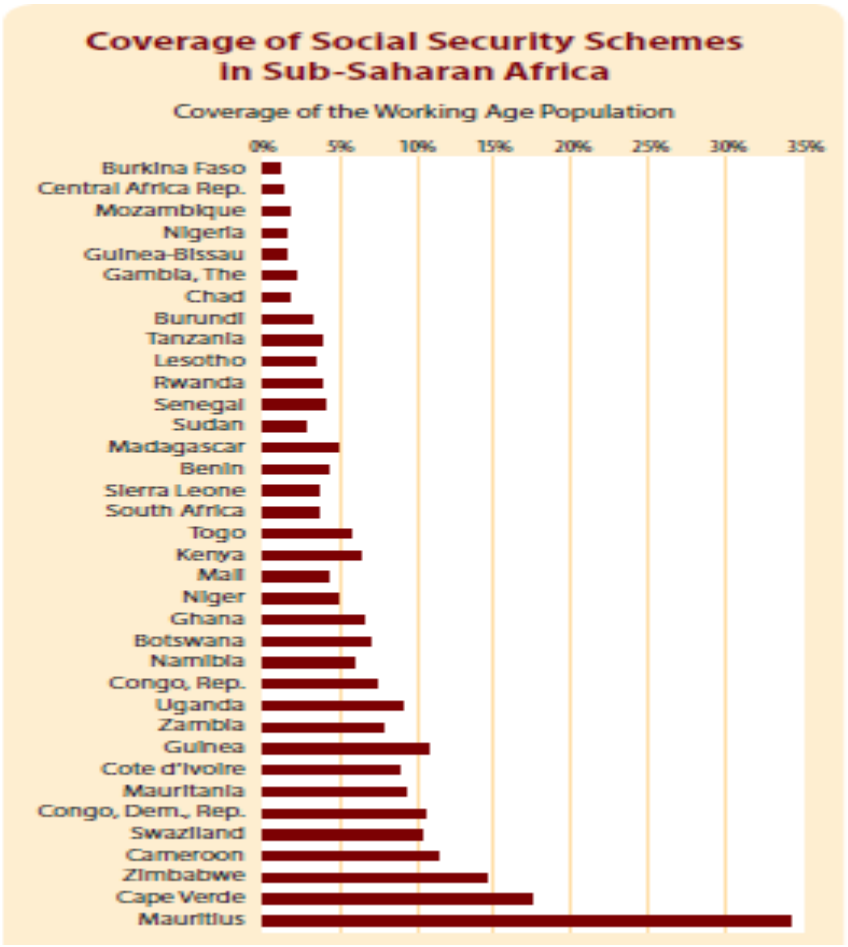
Meng and Pfau, (2010) stipulate that fund size is greatly associated with economies of scale whereby the efficiency of the fund depends on its size. Therefore, numerous returns are thus realized by larger schemes because of the administration of economies of scale. The economies of scale thus lead to advantages in the investment and administrative costs this is solely because the larger schemes can easily spread the costs in its larger assets. For instance, Mahon and Donhoe, (2006) point out that there is a greater chance of large pension schemes to achieve higher returns than the smaller ones. Bauer, Cremers, and Frehen (2010) establish that pension firms are of different sizes and there are different mechanisms in investing thus increasing the returns.

The government has outlined a savings plan under the medium-term plan 2013-2017 as a way of encouraging people to save funds that they'll use after retirement. Through the pension reforms, pension schemes play a key role in ensuring they mobilize enough savings. However, according to a report by RBA (2013), there is stagnation at 15% in pension coverage of the working population. Different population groups face different risks and are affected by poverty in a different way. The elderly faces a higher risk since they are more vulnerable to diseases and disability.

The figure 1.1 below shows a survey conducted on 37 African countries with an average of 4.8% of individuals aged between 25 and 60 contribute to pension schemes. In Kenya, the median is at 6.5% which is slightly higher than the average median of the countries however, many other

countries in Africa like Mauritius, Zimbabwe, and Uganda which are arguably of low economic development compared to Kenya have a higher number of their population covered.

Figure 1. 1 Coverage of social security schemes in sub-Saharan Africa



Source: World Bank, (2012)

Lungu (2009) postulates that the age is an important factor in determining the growth of a scheme. When a majority of the pension contributors are the young people who are economically active in their careers, it means that there are more financial resources for investment, hence

earning more income. However, when most of the contributors are old, most of the resources are spent on servicing the retirement package which reduces the resources available for investment. Retirement coverage span thus plays a crucial role in determining the decisions made in the labor markets. The life expectancy of individuals will therefore determine how the returns are going to be affected. Notably, a higher life expectancy is seen to increase the benefit an individual will receive over a period. Fund characteristics therefore assist in reducing the risks that individuals may experience, thus the individuals can secure a poverty-free future. According to Mukami, (2016) fund characteristics increase liquidity as they attract deposits while the agency costs are reduced. Also, this reduces the taxes individuals incur hence an incredible move towards maximizing the socio-economic state.

Retirement funds characteristics in the pension sector have seen the increase in the number of transactions carried by these schemes (Omondi, 2008). Moreover, it has created an increase in the funds thus pension schemes have resorted to investing in capital markets. The characteristics in the sector have helped to reduce costs, risks and have improved the quality of products offered by the funds. Thus, this has led to client satisfaction and increase in membership. A high correlation is therefore presented by the vibrancy of the pension schemes and the fund allocation choices.

1.1.2 Financial Performance of Pension Schemes

The change in financial state on an institution because of the decisions made by the management is what entails financial performance (Oluoch, 2013). The fund managers measure performance as the degree of returns the schemes receive after investing in different activities. Different countries have adopted pension schemes as a way of reducing the poverty gap in the aging

populations. Thus, the different arrangements have been put in place in order to increase the retirement income for individuals. This has led to most schemes adopting assets and other characteristics to increase the income. Sharpe, (2007) stipulate that the change by the scheme to adopt different methods is because governments lessening the fiscal impact of the aging populations thus diversification of their sources of income during retirement.

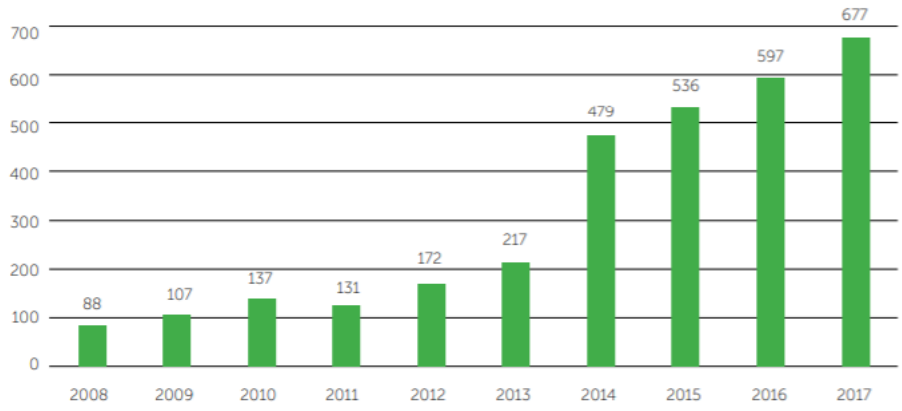
Financial performance of any organization is key as it helps it to earn income thus able to compete in the financial market. There are several factors that are used to measure the performance of an institution while most use profitability as an index for measuring it. A growth in the net income of an organization helps in evaluating the pension schemes' performance. The leading source of funds for these schemes are the contributions by the members. Moreover, this can arise when there is an increase in membership which can be attributed to an increase in the wealth of members (Muia, 2015). Net returns from investments by these funds can also by a key contributor to the sources of income of the schemes. Favorable economic factors may lead to an increase in the net returns as the investment decisions made are wise. Additionally, the performance of these schemes has led to increased attention with different countries showing different results. For instance, OECD countries tend to record a positive impact on investments whereas some of the non-OECD countries show negative returns.

For an economy to increase fiscal sustainability while trying to maintain the pension income, they adopt pension reforms which have a variety of measures (Muia, 2015). Thus, the need for a better-managed pension scheme has led to population growth throughout the globe. Most individuals depend on the pension schemes as they retire. For instance, 45% of retirees in Australia depend on pension schemes, 80% in France, South Africa has 75%, and in Kenya, 68%

depend on pension income. According to Raichura, (2008) the poverty incidence in Kenya is high among the elderly population than the average poverty incidence.

A survey conducted by the Zamara Consulting Actuaries Schemes among 70% of the funds shows an increase in assets from Ksh. 88bn in 2008 to Ksh. 677bn of the pension's schemes in Kenya. The survey shows a gradual increase in the assets over the years. The figure 1.2 below shows the asset performance.

Figure 1. 2 Asset growth in Kenya



Source: Zamara Pension Performance Watch, 2017

From the figure above the asset trend has been increasing gradually over the years. However, different crisis experienced in the country have had different impacts on the returns on assets of the schemes. Inflation tends to act as a cap in determining the effect of the spending power by pensions during retirement. High inflation erodes the value of pension income one is likely to receive during retirement. Trustees thus must consider the impact inflation will have on the returns of member's pensions and also consider the real rate of returns their schemes will earn.

The Kenya's pension schemes have experienced some crisis due to the fluctuations in the country. Table 1.1 below shows the trends of the returns on assets of the pension schemes.

Table 1. 1 Summary of pensions returns on assets against Inflation

Year	Median return	Inflation rate	Real return
2008	(5.1)%	17.8%	(22.9)%
2009	11.0%	5.3%	5.7%
2010	26.9%	4.5%	22.4%
2011	(9.9)%	18.9%	(28.8)%
2012	28.0%	3.2%	24.8%
2013	20.2%	7.1%	13.1%
2014	15.3%	6.0%	9.3%
2015	1.9%	8.0%	(6.1)%
2016	8.2%	6.4%	1.8%
2017	18.1%	4.5%	13.6%

Source: KNBS, 2017

From the table above, inflation experienced due to different crisis created negative returns. For instance, in 2008 the country experienced post-election violence which greatly impacted the pension market. In 2011 due to the high drought level, the currency volatility and the effects of the global sovereign crisis created a poor performance in the sector. Finally, in 2015 the effects of the banking Amendment Act 2016 Legislation also created a negative performance. Also, inflation highly contributed to the fluctuations in the returns.

1.1.3 Adherence to Regulations

Regulations play a fundamental role in monitoring different sectors by ensuring they adhere to the rules set. According to Black and Bladwin, (2010) there are two conceptions of regulations the rule-based and risk based. Rule based are the requirements that institutions need to follow while investing whereas risk-based is a framework used to determine whether institutions adopt a sound risk management framework. Different countries have adopted regulations in the pension industry to ensure schemes run smoothly without any hitches. Njeru (2012), stipulate that the adoption of the Retirement Benefit Act and other regulation by the pension schemes has seen a massive growth as schemes have become more structured and organized. Kusewa (2007) agreed with Njeru's assertions as there was positive significant effects on financial performance of occupational schemes when regulations were applied.

1.1.4 Pension Schemes in Kenya

Pension Schemes in Kenya play a crucial role, noting their connection to the advancement of the gross domestic product. Essentially, following the 1997 enactment, which paved the way for the fund's protections and improved governance about 1342 pension schemes are registered as at December 2017 (RBA, 2017). That is an indication that Kenyans indeed are now aware of the

immense role of enrolling in these schemes, particularly about the safeguarded retirement age. The resulting welfare maximization at the old age, and importantly the purchased government securities are economic stimulants, which therefore renders the move as a strategic establishment for Kenya's economic growth and development.

The RBA recognizes four constituents entailing: The Civil Servants Pension Scheme (CSPS), National Social Security Fund (NSSF), and the individual retirement scheme and occupational retirement scheme (ORS). The CSPS is a cover for individuals that are in the civil service (RBA, 2015). Usually, through an Act of Parliament, it has a pay as you go system. The ORS are schemes that involve defined benefit or contributions to employees and are fixed percentages or amounts. NSSF involves members of the public who can make contributions in the different sectors. Lastly, the Individual Retirement scheme is schemes that allow persons to save regularly for their future benefits.

Musembi, (2014) postulate that the retirement system covers an estimate of 15% of the labor force these accumulating assets of 18% of the country's GDP, June 2017 the fund managers and approved issuers held assets amounting to Ksh.811.17 billion. The NSSF had Ksh.63.25 billion administered to it, and the trustees of different schemes had Ksh.86.62 billion in property investments. He further stipulates that the schemes invest heavily on government securities with its asset base being 36.7% of the total assets thus the total assets of the (NSSF) grew by 2.5 % of the total funds. Therefore, the retirement funds act as a major contributor to ensuring financial stability in the aging population. Additionally, this has seen an increase in the asset base as many people are willing to save for retirement thus making the schemes to be funded. Growth in this sector has led the government to formulate their policies on the retirement sector.

Also, much of the funds from these pension schemes are often redirected to the government securities, therefore highly momentous for the country's economic development. There is a great need for the pension schemes of the country to be managed effectively as the play an essential role in its development. Most developing countries should try to tap into the pension schemes scheme to reduce the massive debt and for development purposes. Moreover, the high amounts of funds collected by pension schemes can be channeled to capital markets for development purposes.

1.2 Statement of the Problem

The performance of a pension scheme highly impacts the benefits individuals will receive during retirement. However, poor performance leads to minimal benefits and this could lead to more individuals pooling out of these schemes (Okeiga, 2015). The performance of the firms encourages more people to save thus creating competition in the different sectors. Due to changing times in the economy, most of the pension firms have adopted new ways of conducting business. However, the schemes have received tremendous fluctuations over the recent years thus causing changes in the real returns.

For instance, in 2008, due to the post-election violence experienced in the country, inflation increased highly which in turn reduced the returns the pension schemes received to a point the schemes had a negative return of 22.9% (Zamara, 2017). The study further asserts that the returns stabilized for the next two years, however, currency volatility due to the drought in the country led to minimal results. In 2015, the effects of the banking amendment act were felt in the financial market causing a negative impact on the returns received in that year. Fluctuations have been enormous thus warranting investigation.

It is imperative to acknowledge that the performance of the pension schemes is dependent on some factors. Several studies have been conducted to show the connection between these variables and performance of pension schemes. For instance, Crose, Kaminer, and Stewart (2011) in a study investigated how pension funds help finance green growth programs. This can be attributed to low environmental policy support, which to a large extent has created a disincentive in such an investment. Other contributing factors are in relation to the market liquidity and knowledge inadequacy of green growth portfolios. The study attributes the low funds to the contributions received and also the coverage span of the contributors. However, this study focuses on the role of the funds and little is mentioned on the retirement funds characteristics that can also positively impact these initiatives.

In reference to the locally assumed research, Njuguna (2010) studied the relationship of risk-based supervision and pension funds' performance. The study recognized the existence of a positive correlation between risk-based supervision and high enrollment to the pension, and to those regards encouraged Kenyan authorities to institute the same in line with accelerating the growth of the sector. However, this study did not show how the fund characteristics have an impact on performance as it based it on the risk aspect. Mukami, (2016) undertook a similar study examining the elements of the pension schemes governance efficiency. From the research, it's outward that information flow to clients and members' participation in governance are the key factors towards high enrollment and ultimately vibrancy of the industry. However, the study does not focus on the fund characteristics that have an impact on good governance thus having an impact on performance.

Nonetheless, it is apparent from the previously undertaken studies that minimal research has been undertaken to explore the connection amongst the retirement fund's characteristics and

financial performance of pension schemes. In those regards, the research was instituted to investigate the presented gap by examining the impacts of the retirement fund characteristics on the financial performance of pension schemes in Kenya.

1.3 The Study Objectives

The general objective of the study was to establish the effect of retirement fund characteristics on financial performance of pension schemes in Kenya which was moderate by the RBA accounts regulations.

1.3.1 Specific Objectives

i. To examine the effect of asset allocation on the financial performance of pension schemes in Kenya.

ii. To establish the effect of fund design plan on the financial performance of pension schemes in Kenya.

iii. To find out the effect of the fund size on the financial performance of pension schemes in Kenya.

iv. To evaluate effect of social coverage span on the financial performance of pension schemes in Kenya.

v. To establish the moderating effect of regulations on the relationship between retirement fund characteristics and financial performance of pension schemes in Kenya.

1.4 Research Hypothesis.

The study tested the following Hypothesis:

H_{01}- Asset allocation has no significant effect on the financial performance of pension schemes in Kenya.

H_{02}- Fund design plan does not have a significant effect on the financial performance of pension schemes in Kenya.

H_{03}- Fund size has no significant effect on the financial performance of pension schemes in Kenya.

H_{04}- Social coverage span does not have a significant effect on the financial performance of pension schemes in Kenya.

H_{05}- Regulation has no significant moderating effect on the relationship between retirement funds characteristics and the financial performance of pension schemes in Kenya.

1.5 Significance of the Study

The research was instituted with the aim of reviewing pension schemes approved by the Kenyan Retirement Benefits Authority. The findings will be of most prominence predominantly to all pension schemes in general were educative (especially to those schemes struggling to increase their funds) on the factors that leading pension schemes consider in dealing with fund characteristics issues hence act as a guideline for other schemes. The findings will also help the schemes to understand the broader association between fund features and the performance of the pension schemes hence help them in decision-making processes.

The study will also assist economists and scholars to appreciate the Kenyan pension scheme sector and how pension schemes respond to the different applicability of fund characteristics in Kenya. The findings will also be helpful to scholars who would like to compare the performance of these variables in developing economies the developed ones.

The GOK plays an essential role in regulating and supervising pension schemes in Kenya through the RBA. Whenever a pension scheme collapses, the Kenyan market is affected, and hence government policy makers as well as other policy makers in the private sector will benefit from the study. That is with respect to the fact that it will point out to them what works and what does not when it comes to fund characteristics and hence will enable them to play a more vigilant regulatory role as well as make relevant policies addressing the challenges. The findings of this research will also be relevant to students and researchers who may want to conduct further studies on related research as this study will then act as a reference point.

1.6 Scope of the Study.

The main aim of this research was to delineate the retirement funds characteristics and their effects on financial performance of pension's schemes. This study used asset allocation, fund design plans, fund size, and social coverage span as measures of performance. The period concerned for the study was 2009 to 2017. This period was important as it showed the fluctuations experienced in the performance of pension schemes in Kenya. Also, this study population comprised of 45 pension schemes out of the 1342 that had their data consistent for the period under study.

1.7 Organization of the Study

The study has five chapters, the foregoing chapter provides insights on the study's background, research objectives, significance, scope, and limitations of the study. The second chapter explored the theoretical review pertaining some of the previously undertaken researches both internationally and locally. In those respects, the subject topic of the study was comprehensively undertaken. In the third chapter, it deals with the methodology of the study which shows an explanation of how the data was obtained and analyzed. Chapter four provides the data analysis, presentation, and interpretation. Chapter five gives a summary of the study, conclusions, and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction.

The section sought to present an in-depth review of the previous researchers relating to the study problem. For precision and understandability, this section is sub-divided into theoretical framework entailing different theories of the pension schemes performance, empirical literature and lastly a summary of the available literature review, and the conceptual framework

2.2 Theoretical Framework.

In this section, the research explored the postulations of the stakeholder theory and the theory of constraint, as a pertinent assessment of the determinants of the pension schemes' performance.

2.2.1 Stakeholder Theory

The stakeholder theory is greatly infiltrated in the management practice citing some crucial insight it offers in a broad spectrum of disciplines such as law, business administration, and public policy. Initially postulated by Freeman (1994), the theory suggests that as much as companies focus on yielding a high shareholder's value, the same attention must be entitled to the stakeholders who certainly are key for the business success. According to Freeman (2004), Company's stakeholders are ideal groups that support an organization; hence with their absence, the organization's going concern will be momentously threatened.

In practice, the theory holds an assumption that values are pivotal in the business undertaking. With those regards, it is the responsibility of the managers to formulate values that ensure

smooth operations and co-existence with the organization's stakeholders (Freeman, 2004). They are therefore prompted to be clear about their policies and strategies, communicate the same to the stakeholders to deliver organization success. Unlike other theories, it is imperative to note that the stakeholder theory highly connects to today's business practice. Essentially, the existing high competition in the business environment demands high partnership or team work rather for the business success. It is in those respects that the provisions of the stakeholder theory highly align with the pension schemes administration/ management.

An establishment of stakeholder-oriented corporate governance as dictated by the theory is highly imperative in building relationships amongst the involved institutions. Indeed, such a setting critically underscores and legitimizes a dynamic consideration of the beneficiaries through the undernoted fund/ firms' positive relationship. Improved corporate governance is greatly crucial for the overall success of the fund management (Antolin & Stewart, 2009). Essentially, with a high correlation between the efficiency and the relationship levels, the fund size is likely to increase therefore creating a positive spillover effect. In those concerns, the provisions of the stakeholder theory align with the subject area of this study therefore highly relevant and worth consideration. Therefore, this theory guides the study in explaining the stakeholder's expectations as their main focus is the success of the schemes which can be reflected on the return on assets of the fund. Thus, the study explores on the moderating effect of retirement benefits act regulations on the relationship between the variables.

2.2.2 Theory of Constraint (TOC)

TOC is a highly applicable approach of business operations/management within any organization setting. Initially postulated by Goldratt (1984), the theory suggests that the constraints can hinder

output, however, if properly managed it improves performance thus creating growth. Essentially, the theory of constraints is formulated to ensure that organizations meets their targets through prudent resource utilization. High financial value is only achievable when the best cost minimization mechanism is instituted in the pursuit of optimal results (Rosenthall & Horn, 2013). It is in that light that the theory of constraints highly applies to the pension schemes' funds management.

Members' contribution in a pension scheme must be managed effectively for a high value. Organizations are therefore demanded to establish best-fit strategies that will ultimately guarantee a high value from the contribution (Rosenthall & Horn, 2013). Essentially, that entails coming up with plans regarding the investment choices and the respective allocations. For instance, it is imperative to acknowledge that much of the contributions are often redirected to the government securities noting the apparent zero-risk on investment. This theory is therefore relevant to this study given that performance of pension schemes largely depends on prudent resource utilization.

2.2.3 Financial Intermediation Theory

Initially postulated by Gurley and Shaw (1960), which is based on information asymmetry and agency theory where institutions are present in the business world for the urpose of reducing the existing information and transactional costs. Financial intermediaries are important in an economy since there are high transactional costs and there is minimal information in the markets due to the imperfect market conditions. According to Kigen, (2016) in his observations of Allen and Santomero (1996) study, in perfect market resource allocation is efficient. However, this is not possible in a real market. Most individuals cannot create portfolios when investing their

resources hence need for financial intermediaries. Financial intermediaries are given the authority to invest funds through buying and selling assets on behalf on beneficiary. It is a way that the beneficiaries can increase their savings in a pooled way in turn reducing the liquidity risk that exists. The theory also stipulates that the mediators should be regulated as a way of influencing the liquidity risks which might arise and the solvency of organizations.

Activities carried by pension schemes are largely considered as financial intermediation activities since they pool funds, save, and invest them for a specific period. Pension schemes act as mediators as they receive huge amounts of funds from individuals who plan to save for retirement purposes. Thus, the role of financial intermediation is clearly met by these schemes through the investments they make in various assets (Tirimba, 2013). Several costs arise and it is up to the financial intermediators to adopt ways that can regulate and minimize the risks as the is hugely impacts the scheme's performance and sustainability. The theory is key in this study as it helps explain the importance of investing beneficiaries' funds and how the returns impact fund size and performance.

2.3 Empirical Literature.

2.3.1 Asset Allocation and Financial Performance

Kiplagat (2014) did an empirical study on the association between fiscal performance of pension funds and asset allocation. The study used multiple regression model and time series data for the last 5years to a period ending December 2013. The findings of the study show that asset allocation contributes a great percentage of the changes in the performance of the pension schemes. The estimated model was a single regression equation with the return on investment measuring the performance being the dependent variable. The explanatory variables were cash

in the fund, unquoted and quoted equities, government securities, fixed deposits, immovable property, and offshore investments. Also, the findings show that government securities and cash deposits had a negative relationship, and the rest of the explanatory variables had a significant relationship. The variability that asset allocation contribute to performance of the schemes are enormous however, this study did not consider other characteristics that also contribute to the variability.

Thomas and Tonks (2001) investigated the performance of the United Kingdom equity portfolios controlled by investment managers, in contrast to the performance of the balanced portfolios studied by Blake (2007). The conclusions made by were consistent with Blake's (2007) findings. The difference in the methods utilized in examining the quality of fund performance all showed that there is a very small cross-sectional difference in returns. However, this study does not show how the different characteristics also contribute to the negative returns.

A study conducted by Nguthu (2009) examining how asset allocations affects retirement funds performance in Kenya used time series analysis and its findings show that asset allocation accounted for approximately 62% of pension funds returns in Kenya. However, the study had a substantial limitation in scope since it did not show how the individual asset categories influenced the fund's overall performance. This is important as policymakers and trustees in Kenya were guided on the specific asset categories with the most significant influence on the fund performance to be adequately informed when conducting the selection. Thus, there is scanty information to show how individual asset categories influence pension funds' performance in Kenya.

2.3.2 Fund Size and Financial Performance

In reference to a study undertaken by Njuguna (2010) investigating the approaches of improving the efficiency of Kenya's pension fund between 2001 and 2008 showed that the size of pension schemes was noted to bear minimal influence on the returns. That is after an undertaking of empirical tests that evaluated the relationship between size and financial value. Instead, his research findings emphasized that indeed it is the level of efficiency that determines the expected returns. With those regards, for achievement of high returns, it is imperative for the corporate management to adhere with best practices that assure an impressive financial return. Ideally, a consideration of the stakeholder theory that requires the active involvement of all players and establishment of effective strategies aimed at improving stakeholders' relations affirms the result of this study. The study suggests for further work to be conducted on the global cruses that influence size which in turn affect financial efficiency.

Kigen (2016) also investigated the impacts of fund size on pension funds's performance. The study used the fixed effects model and empirical results were used for data between 2011 and 2015. The findings show that the contributions for the pensions, the costs and accumulated fund assets have an impact on the performance. Thus, schemes with more members will have high value compared to smaller ones. Also, in a study by Bikker and Dreu (2006), it was found out that economies of scale are a huge contributor to the value attainment. That is in connection with the size characteristics. From a conducted observation, it was apparent that low value or rather a relatively smaller size was costly to manage than a large on. That is in connection to the administrative expense, and importantly the expected yield of an investment.

Also, Bikker and Dreu (2006) research established that it was costly to manage the defined benefits than the defined contribution. Their findings provide crucial insights that unquestionably there exist the characteristic of an enrolled pension system determine value. In sum, high size is more valuable to manage than a smaller one. On the same note, a design such as defined contribution unlike the defined benefit is more valuable and should be largely considered. Essentially, the research states it's the mandate of the management to establish policies that encourage high uptake in line with capitalizing from high uptakes. The same case applies to the defined contribution, where essentially immense attention should be directed on the same for a higher value. However, this study solely focused on the size aspect of the funds thus he suggests further work to be done linking size with other variable that influence performance.

Oluoch (2013) investigated the elements influencing the pension funds' performance in his study which incorporated key data about the pension schemes in the period between 2002 and 2012. The data was subjected to some regression test to determine the connection between the identified factors and the financial value. In those respects, it was found out that there is an association between financial value and age. That ideally means that a longer life expectancy is attached to a greater value. That is in regard to the fact that with a higher life expectancy, such provides an opportunity for the fund's re-investments, hence instrumental in the attainment of a high value. Nonetheless, it is apparent from study that a weak correlation exists between returns and fund value.

Essentially, that somewhat contradicts the earlier provision by Biker and Dreu (2006), which affirmed that higher financial value was instrumental in the attainment of the economies of scale, and ultimately improved returns. Regarding the effectiveness of governance for a higher value, research by Meng & Paul (2015) provides critical insights that are worth consideration.

Improved corporate governance is significant for attainment of a higher value. The study conducted a survey of large multinational companies versus a smaller organization that specializes in the pension fund management. Large multinational companies with their immense financial capability were identified to be more effective than their smaller counterparts, citing the availability of an appropriate manpower to expedite key activities. In essence, that aligns with the stakeholder theory and the theory of constraints.

The ability to manage effectively through high engagements and importantly wise selection of the investment portfolio demands excellence in management. Besides a complete understanding of market also influence excellence in corporate management and ultimately the yielded financial value. Notably, though fairly large, some of the multinational companies rely on struggled to achieve value. As provided by the stakeholders' theory, lack of proper engagement with all stakeholders is detrimental for business success. In those regards, the provisions of the (Meng & Paul, 2015) findings highly correlates with the stakeholder's provisions, therefore provides a reasonable explanation that corporate governance is key for higher yields even in a pension schemes setting.

The correlation between pension fund governance and potential returns were also examined, as presented by Amman and Zingg (2008) study. Using 96 pension schemes sample, the research established a positive correlation between effective corporate governance and returns. Indeed, that emphasizes the provision of the stakeholder theory.

2.3.3 Fund Design Plans and Financial Performance

Okeiga (2015) analyzed how different types of pension plans impact retirement incentives by presenting a theoretical model for the association. The study used times series data between 2001

and 2014. Findings reveal that defined contributory plans ensured that employees stayed in their jobs as long as they could while defined benefits schemes was an incentive for employees to retire earlier. Blöndel and Scarpetta (1998), and Gruber and Wise (1999) showed the empirical evidence for various nations establishing that there is a close association between the type of pension plan and the decision to retire. From the model, they concluded that the pension reform variables influence the labor distributions of people between fifty-five and sixty-four years. However, the study does not focus on the performance part.

Fund design is vital in determining the performance of pension schemes. According to Tonks (2005) pensions schemes have transformed from defined benefits plan that the employer contributes to defined contributory plans that involves both the employer and employee. Employers such as corporations, trade groups, industry and companies are responsible in remitting funds on behalf of their employees in defined benefits plans. Brady (2009) stipulate that individuals can contribute funds either internally or externally and the returns to members depends on the market forces or the rate by their sponsors.

In the recent years, defined contributory plans have had a tremendous growth compared to defined benefits schemes as employers look to minimize the risks, they are exposed to by allowing the employees contribute to the schemes in an endeavor to increase the retirement savings for the workforce. According to RBA, (2014) occupational retirement schemes were established in Kenya and operates on defined benefit and contribution structures.

Defined contribution plans require employees to contribute funds in a specified period. However, pension coverage has rapidly shifted from defined benefits plans. In pension schemes, participation is voluntary. Higher income is more likely than their lower income counterparts to

participate in a retirement plan (Wu, Rutledge, & Penglase, 2014). Individuals are encouraged to save for their retirement to be assured of a stable future. Individuals earn different incomes and about half of the working lower income earners contribute to pension schemes. Among the working class, only about 60% work in organizations that provide pension. This study focused on the different plans used and their effects on the participation by individuals. However, it does not show how the different plans the individuals take affect the pension schemes' financial performance.

2.3.4 Social Coverage Span and Financial Performance

Pension fund exists as a social security for the individuals who retire from active employment. Notably, the funds help the people to be able to meet their daily needs during retirement thus the funds safeguard individuals from financial impairment in retirement. According to Augusztinovics (2002) ageing is a cyclical process which creates the ageing crisis that has prompted policymakers to address the demographics of age to improve the efficiency of the pension funds. Demographic changes such as increase in life expectancy and decline in population growth have greatly influenced the pension fund policies to be formulated. The decline in the growth rate leads to increase in the contributions. Rabikauskaitė & Novickytė (2015) study explored the government pension schemes in regards to their size and age was used as a control variable. The findings show that the fund return reduces when people exit early in the schemes making age to have a significant effect on performance. However, the study does not show how an individual's life expectancy and exit age has an impact on the schemes' performance.

The social coverage span of a pension scheme contributor is a key instrument in determining performance. For instance, when most of the scheme's contributors are young implying they are far from retirement, then funds can be channeled for investment activities thus generating more income. However, when most of the contributors are old thus nearing retirement age, schemes will spend most of the funds to service the packages for retirement thus less funds will be available for investment as the individuals will be exiting. When the schemes have huge funds being channeled there, funds will be available for investment thus good revenues earned thereby increasing its size. According to Oluoch, (2013) the reverse is true; when the value is minimal, funds available for investment will be low thus less investments.

2.3.5 Adherence to Regulations and Financial Performance

The management of pension firms has become easy to handle with the introduction of the Retirement Benefit Act and other reforms. The adoption of the act has seen the improvement and growth of schemes due to the efficiency in operations. However, this has come with some challenges such as increase in administrative expenses creating constraints on the pension schemes. In his research Kipkoech (2012) stipulates that, regulatory checks play a role in the development of pension schemes which lead to an enhanced economy. Research has shown that the introduction of regulations has led to improvements in the occupational schemes. These controls have provided policy makers especially the trustees to be open with beneficiaries in implementing investment strategies.

2.4 Review Summary and Gaps in Literature

From the examined studies, it is apparent that much of the findings are inconclusive. That is with regards to the fact that most of them focused on size and the general corporate governance. Besides, a lot of contradicting elements are apparent for instance in the case of size and the returns. While a large is identified as crucial in the attainment of the economies of scale, hence instrumental in cost minimization, ultimately translating to higher financial values. Other studies questioned the proposition by instead noting a weak correlation between the size and the expected returns. In essence, most of the studies highly focus on the corporate governance at the expense of evaluating the most functional characteristics namely, size, design, age, and value all together for precision.

It is therefore imperative to incorporate the three in one study in line with providing crucial information regarding the pension fund management. The study will, therefore, offer an explicit analysis of the contribution of the size, coverage span, fund design plans and asset allocation (independent variables) all together to the pension funds. That will be instrumental in addressing the apparent research gap arising from the previously conducted studies. A comprehensive literature summary focusing on the effects of retirement fund characteristics on Kenya's pension schemes is sketched in Table 2.1 below.

Table 2. 1 Summary of Literature Review and Gaps.

Researcher	**Topic of study**	**Methodology**	**Findings**	**Research gap**
Tonks (2005)	Investment performance and	Ordinary least squares	The pension scheme value will	This study focused on assessing the

	management of Pension fund		increase which in turn will increase the investment returns thus leading to change in the pension funds during retirement.	fund value at the end of the investment. However, it did not show the role and the decisions fund managers play and other factors contribute in ensuring good performance.
Antolin (2008)	"Pension Fund Performance" in private pensions and insurance	Multivariate regression model	The results show that pension schemes operate under different regulations thus are subject to the different constraints experienced.	The study focused on Sharpe's ratio to measure portfolio performance. However, the ratios did not give conclusive results in comparing them among countries.

Nguthu (2009)	The effects of asset allocation on retirement benefits fund performance in Kenya	Ordinary least squares	The findings show that the disparities in returns for pension schemes are determined by the investments adopted by the trustees.	The study focused on asset allocation however it does not explain how individual asset categories directly affect the fiscal performance of Kenya's pension funds.
Oluoch (2013)	Determinants of pension scheme performance	Multiple regression model	The study shows that the determinants of pension scheme performance have both a negative and positive impact.	The study has some inconclusive results as the link between the variables is not clearly brought out.
Kiplagat (2014)	The effect of asset allocation on financial	Multiple regression model and	The findings show that asset allocation	The study focused on the asset part of the pension schemes

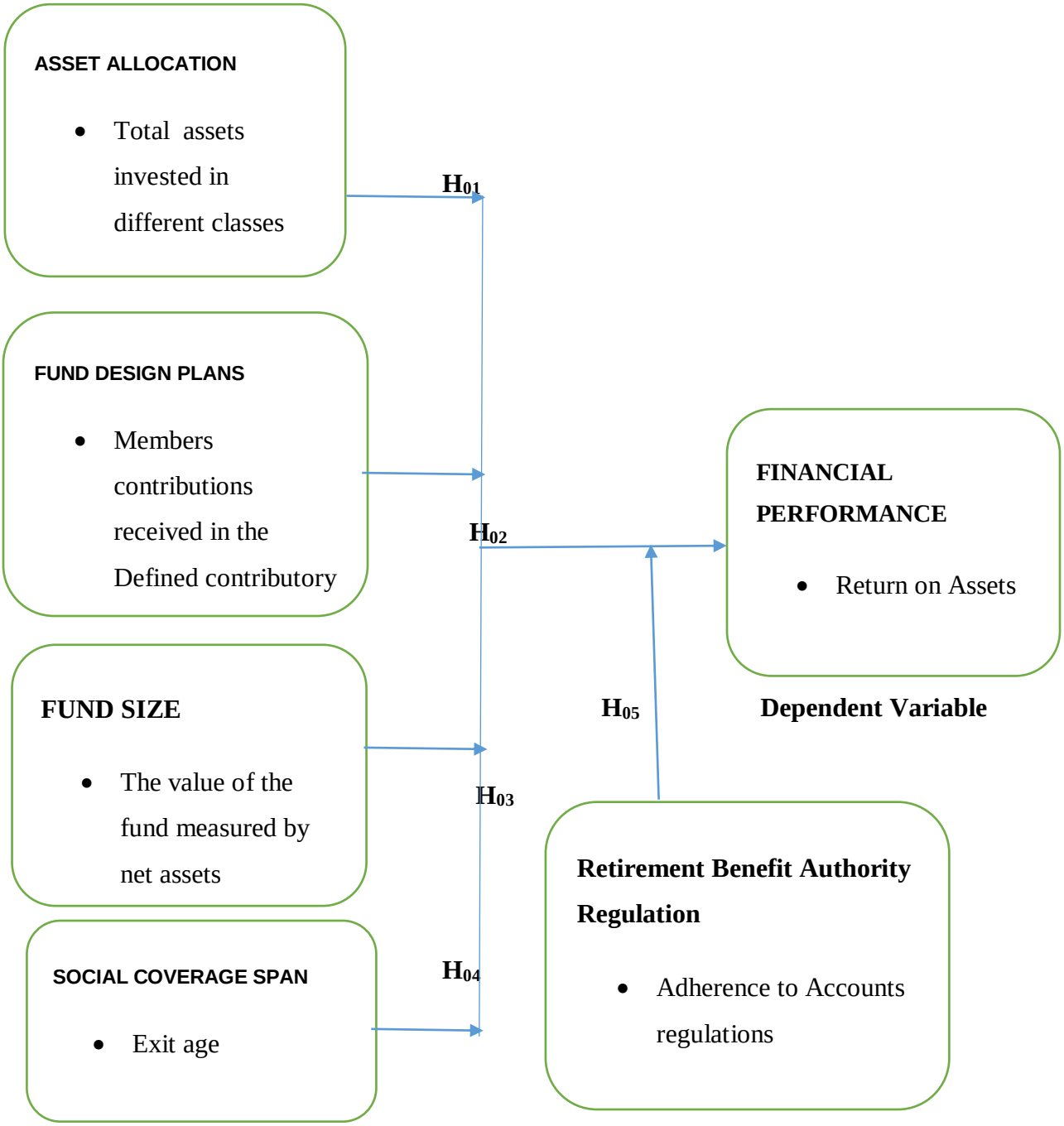
	performance of pension funds	Time series analysis	contributes a great percentage of the variability of the performance of the funds.	however it did not explain the extent to which the assets greatly impact financial performance
Kigen (2016)	The effect of fund size on the performance of pension funds in Kenya.	Multiple regression model	The finds show that costs, contributions, and administration expenses greatly contribute to the size of a fund.	The study centered its research on the size of the fund only ignoring other factors.

Source: Researcher, 2021

2.6 Conceptual Framework

The figure below shows the link between fund size, asset allocation, fund design plans, and social coverage span (independent variables) which were moderated by the RBA regulatory framework (adherence to the accounts regulations) and the financial performance of Kenya's pension schemes (dependent variable). The research therefore sought to define the association between retirement funds characteristics and Kenya's pension schemes' financial performance.

Figure 2. 1 Conceptual Framework



Source: Researcher, 2021

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The section highlights the methodology part of the study. It includes the study design, sampling population, and procedure of determining the sampling techniques, data collection, analysis and importantly the presentation criteria.

3.2 Research Philosophy

This describes the beliefs on the right procedure of data collection and analysis, which incorporated positivism doctrine in its assessment. Hudson & Ozanne (1988) stated that a researcher acts in a positive manner when conducting research. Also, an opportunistic researcher tends to use a logical and rational approach into determining objectivity in research to evaluate the significance of using mathematical and statistical procedures that qualify structure and organization of techniques. This study used a positivism philosophy as the theoretical analyses were drawn from existing theories. The study hypothesis were tested with the aim of rejecting or not rejecting the null hypotheses.

3.3 Research Design

In reference to Cooper & Schindler (2009), the collection of data, its evaluation, and interpretation are concepts that assist in the determination of a research design. This study used descriptive research design. It is clear from the arguments of Cooper and Schindler (2004) that descriptive studies tend to be more organized and generally formal; hence, they have both a hypothesis and research questions. Kothari (2004) states that the traits of the variables in a study

and the sample population are in line with a description study and determining the population size, which will be narrowed down to a sample size that represents the interests of the research. According to Cooper and Schindler (2008), the use of this design allows the finding of a study to be interpreted in a general way to fit the needs of the population. This design is adopted as it gives a detailed explanation about the trends of large groups.

3.4 Target Population and Sampling

The target population for the study was the 31 pension schemes out of the 1342 that were consistent for the period under study. Judgmental sampling was conducted to record the secondary data on the retirement fund characteristics and the financial performance of pension schemes from 2009 to 2017 in a more systematic way. Purposive sampling was considered appropriate as some of the pension schemes do not publish their information on a consistent way. Since the study period was 10 years, the 31 companies selected had consisted of data that was used for analysis.

3.5 Data Collection Instrument

This study utilized secondary data as it can be examined over a long period. Secondary data was retrieved from the pension schemes' websites and the RBA websites. The study sourced secondary data on the financial performance of pension schemes and retirement fund characteristics from the published official reports of the pension schemes, which entailed the annual financial reports and statistics. The study used the document review guide template in Appendix 1 and the data collection sheet in Appendix 2 to collect and record the data.

3.6 Data Collection Procedure

A research permit was obtained from NACOSTI before commencing the secondary data collection. The study used the RBA website to source data for each of the pension schemes. The researcher obtained annual reports and financial statements from 2009- 2018 for each pension scheme and recorded in the secondary data collection sheet and template using tool in Appendix 1. The annual financial reports downloaded contained asset allocation, fund design, and social coverage span. Each data collected was recorded for all the 31 schemes was tallied using the data collection schedule using tool in Appendix 2. The data was collected in a period of two months.

3.7 Data Analysis and Presentation

After the actual selection of data and the determination of the sample population, the SPSS statistical package was crucial for the data analysis. The descriptive statistics was displayed in several forms which include means, maximum, minimum and standard deviations. That were extremely important in understanding the association between the known dependent and the respective independent variables. Since the data was quantitative, it used inferential statistics to establish the relationship between the variables. Regression analysis was used to test the hypotheses on the effect of retirement fund characteristics and the moderating effect of regulations on the relationship between the variables. The researcher made use of SPSS version 24 for analyzing the data.

3.7.1 Model Specification

The specification procedure included the use of panel data regression analysis based on Field (2009) as shown below:

$$FP_{it} = \beta_0 + \beta_1 AA_{it} + \beta_2 FDP_{it} + \beta_3 FS_{it} + \beta_4 SCS_{it} + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.1$$

Where;

βi; represents a vector parameter estimates for each independent variable defined in equation 3.2.

To establish whether regulations moderated the relationship between fund characteristics and financial performance of pension schemes, there was use of two models. First, model 3.2 introduces regulations as an explanatory variable. Secondly, Model 3.3 includes regulations as a moderating variable based on Whisman and McClelland (2005) as shown:

$$P_{it} = \beta_0 + \beta_1 AA_{it} + \beta_2 FDP_{it} + \beta_3 FS_{it} + \beta_4 SCS_{it} + \beta_5 REG_{it} + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.2$$

$$P_{it} = \beta_0 + \beta_1 AA_{it} + \beta_2 FDP_{it} + \beta_3 FS_{it} + \beta_4 SCS_{it} + \beta_5 REG_{it} + \beta_6 REG*AA_{it} + \beta_7 REG*FDP_{it} + \beta_8 REG*FS_{it} + \beta_9 REG*SCS_{it} + \varepsilon \ldots\ldots\ldots\ldots 3.3$$

Where;

P_{it} = Performance

AA_{it} = Asset Allocation

FDP_{it} = Fund Design Plan

FS_{it} = Fund Size

SCS_{it} = Social Coverage Span

REG_{it} = Moderating Variable (regulations) is a dummy coded as 1 if the schemes adheres to the accounts regulations at period t, if otherwise, it is coded as 0.

* = Interaction term

The moderation test had the primary aim of assessing whether the coefficient of the interaction term will be equal to zero statistically (Whisman and McClelland, 2005)

3.7.2 Operationalization of Variables

Table 3.3 shows the variable operationalization matrix. It summarizes the variables under study, namely asset allocation, fund design plans, fund size, social coverage span, and adherence to the accounts regulation.

Table 3. 1 Measurement and Operationalization of Variables

TYPE	VARIABLE	INDICATOR	MEASUREMENT
Dependent variables	Financial performance of pension schemes	Return on Assets	Net income/ Average total assets
Independent Variables	Asset allocation	Total assets invested	Value of total assets invested in Ksh
	Fund design plan	Members contributions received in the Defined contributory plan.	Contributions
	Fund size	The value of the fund measured by net assets	Value of net assets
	Social coverage span	Exit age	Years
Moderating Variable	RBA Regulatory framework	Accounts Regulations	Adherence to Accounts Regulations

Source: Researcher, 2021

3.8 Diagnostic Tests

It is important to acknowledge that it is impossible to have a 100% correct conclusion. That is following possible cases of a sampling error, which ultimately may result in potential research bias. In those regards, conducting a test of significance was crucial in ascertaining the effectiveness of the study. Nonetheless, the population determination and the actual data analysis was undertaken with utmost competence to support our findings. Importantly, being highly relevant to the business practice, engaging utmost diligence in the entire process was highly imperative. On the same point, the involvement of test of significance was crucial in the determination of effectiveness.

The researcher conducted diagnostic tests for stationarity using the Augmented Dicker-Fuller test (ADF), normality test using the Dornik Hansen test, test for heteroskedasticity using the Whites test, test for autocorrelation using the Durbin Watson test, test for multicollinearity using the Correlation matrix. The tests were conducted to ensure the model chosen id fit.

3.8.1 Stationarity test

Most of the time series data have challenges and the common one is that they can exhibit nonstationarity of variables. According to Chris (2008), time series data should always have constant mean, variance, and auto-covariance. The researcher tested for stationarity among the variables using the ADF test. The stationary variables are integrated to order zero I (0) and those that were not stationary integrated to order one I (1).

3.8.2 Normality Test

In a regression analysis, the data is expected to have a normal distribution. Normality was ascertained using Doornik Hansen Test. The null hypothesis of the test states that the research data is characterized by a normal distribution. The findings reveal that the p-values for all the study variables are above 0.05, thus the null hypothesis was not rejected.

3.8.3 Heteroscedasticity Test

The initial step is to examine if there is a constant variance in the error term. If there are changes in the variance of the error term with changes in the values of independent variable, then the assumption is disregarded. According to Ghozali (2002), heteroscedasticity tests helps to interpret the regression model and determine whether there is a different residual variance. The test for heteroskedasticity was done using the whites test. If the p value is <0.05 the null hypothesis is rejected meaning that there is no constant variance hence no heteroskedasticity. The p value was 0.35 which is less than the 5 percent significance level. Thus, there was no heteroskedasticity.

3.8.4 Autocorrelation Test

The first step is to find out if the errors in different observations are correlated with each other**.** Primarily, autocorrelation tests help in examining the correlation between linear regression models trouble errors at time t. The test for autocorrelation was carried out using the Durbin Watson statistic. This is based on a threshold of 2. In the event of issues of autocorrelation, the data set is transformed.

3.8.5 Multicollinearity Test.

According to Chris (2008) multicollinearity arises because of high correlation between any explanatory variable. The correlation matrix was applied in assessing multicollinearity. The threshold is a correlation coefficient of 0.8, a coefficient above 0.8 implies the existence of severe correlation and the highly correlated variable is eliminated in such a situation.

3.9 Ethics Consideration

To ensure the study adheres to the required ethical standards, the research obtained an authorization letter form from NACOSTI. The researcher sought consent from the Retirement Benefits Authority to obtain confidential data for analysis. The information from RBA was treated with utmost faith. The researcher also ensured that there was no misconduct such as misrepresentation of research work, plagiarism, and falsifications.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter presents the results and analyses of the findings. The analyses was done on the descriptive statistics, diagnostic tests and the hypotheses.

4.2 Diagnostic Tests

This part presents diagnostic tests conducted before the evaluation of the regression model. Pre-estimation tests conducted included normality and stationarity test. Post diagnostic tests include Durbin Watson test to check for autocorrelation, the Whites test to check for heteroskedasticity, and Correlation Matrix to test for multicollinearity.

4.2.1 Normality Test

This test used the Doornik Hansen test which examined the skewness, kurtosis as well as the p values test as shown in Table 4.1 below;

Table 4. 1 Summary of the test for normality

Test for univariate normality

			joint	
Variable	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
Performance	0.8186	0.0858	3.5400	0.1707
Asset Alocation	0.1618	0.9436	2.3300	0.3115
Fund Design	0.1897	0.2647	3.5100	0.1732
Fund Size	0.8404	0.2262	1.7500	0.4170
Coverage	0.1641	0.6571	2.5500	0.2791
Regulations	0.8559	0.1208	2.9500	0.2288

Test for multivariate normality

Doornik-Hansen chi2(12)= 15.762 Prob<chi2 = 0.2024

Source: Researcher, 2021

The findings in Table 4.2 presents the outcome of the normality test which was carried out based on Doornik Hansen test. The null hypothesis of the test states that the research data is characterized by a normal distribution. The findings reveal that the p-values for all the study variables are above 0.05, thus the null hypothesis was not rejected and hence the data is normally distributed.

4.2.2 Stationarity Test

When conducting a time series analysis the test for stationarity is very vital as having non-stationarity variables may lead to model mis-specifications. Therefore, the ADF test was used to test for stationarity as presented in Table 4.2 below;

Table 4. 2 Stationarity Test Result

Variable	Test statistic	P-value
Performance	-3.537	0.0071
Asset Alocation	-6.127	0.0000
Fund Design	-4.123	0.0058
Fund Size	-8.384	0.0000
Coverage	-6.379	0.0000
Regulations	-1.96	0.0500

Source: Researcher, 2021

The findings in Table 4.2 shows the outcomes for stationarity test. The test was done using the ADF test. A p-value of <0.05 indicates that the data set is stationary while a p value of >0.05 is an evidence of the non stationarity. From the Table 4.2 the variables P values is less than the significance level therefore the null hypotheses was rejected and conclude that the data set is stationary.

4.2.3 Test for Autocorrelation

The Durbin Watson test was used to check for autocorrelation among the variables as shown in Table 4.3 below;

Table 4. 3 Autocorrelation Test Results

Prais-Winsten AR (1) regression -- iterated estimates

Source	ss	df	ms			
				Number of obs	=	10
				F(4,5)	=	0.69
Model	0.01716541	4	0.00429135	Prob > F	=	0.6287
Residual	0.0310221	5	0.00620442	R-squared	=	0.5208
				Adj R-squared	=	0.5034
Total	0.04818751	9	0.01049577	Root MSE	=	0.0415

Performance	Coef.	Std. Err.	t	p>|t|	[95% Conf .	Interval]
Asset Allocation	3.007072	0.4936100	6.09	0.000	-3.452003	9.466148
Fund Design	1.972766	0.8795212	2.24	0.025	-1.664102	5.609635
Fund Size	0.325635	0.0683963	4.76	0.000	-0.291416	0.942686
Coverage	-2.107276	2.8866795	-0.73	0.501	-9.572229	5.357676
_cons	-8.082596	5.4245611	-1.49	0.196	-22.009850	5.844658
rho	0.4776841					

Durbin-Watson statistic (original) 0.859119

Durbin-Watson statistic (transformed) 1.994087

Source: Researcher, 2021

The findings for Table 4.3 show the test for autocorrelation that was carried out using the Durbin Watson statistic. The original Durbin Watson statistic of 0.859119 shows positive correlation among the variables. After transformation a new value of 1.994 was obtained and this is equal to the threshold of 2 hence with the new value this shows there is no autocorrelation.

4.2.4. Test for Multicollinearity

The correlation matrix method was used to determine multicollinearity among the regressors as shown in Table 4.4 below;

Table 4. 4 Multicollinearity Test Results

	AssetAllocation	FundDesign	FundSize	Coverage	Regulations
AssetAllocation	1.0000				
FundDesign	-0.0495	1.0000			
	0.8921				
FundSize	0.4281	-0.5839	1.0000		
	0.2171	0.0764			
Coverage	0.5942	0.1887	0.1610	1.000	
	0.0700	0.6015	0.6568		
Regulations	0.5150	-0.0231	0.0080	0.1823	1.0000
	0.1277	0.7452	0.9109	0.5986	

Source: Researcher, 2021

The findings for Table 4.4 show the multicollinearity test done using the correlation matrix. If a pair of variable has a correlation of 0.1 or -0.1, then the pair is strongly correlated and this means that multicollinearity exists. From the Table 4.4 above, none of the pair of association has r of more than 0.8 hence the data has no multicollinearity problem.

4.2.5. Test for Heteroskedaticity

White's test was used to test for heteroskedasticity as a way of checking if the data set had a constant variance as shown in Table 4.5 below;

Table 4. 5 Heteroskedasticity Test Results

```
White's test for Ho: homoskedasticity
         against Ha: unrestricted heteroskedasticity

         chi2(9)      =     10.00
         Prob > chi2  =    0.3505

Cameron & Trivedi's decomposition of IM-test
```

Source	chi2	df	p
Heteroskedasticity	10.00	9	0.3505
Skewness	5.81	5	0.3254
Kurtosis	0.47	1	0.4924
Total	16.28	15	0.3638

Source: Reasercher, 2021

Table 4.5 above shows the findings for heteroskedasticity that was done using the whites test. The null hypothesis is that there is constant variance while the alternative hypothesis is that there is no constant variance. If the p value is <0.05 the null hypothesis is rejected meaning that there is no constant variance hence no heteroskedasticity. From the results obtained the chi2 of 10 corresponds with a probability value of 0.35 which is less than the 5 percent significance level. Thus, there was no heteroskedasticity.

4.3 Descriptive statistics

Descriptive analysis utilized mean, standard deviation, maximum and minimum to highlight detailed information of the variables. Data capturing for social coverage span was presented in years and the log form was used to ensure data consistency with other time series data. This findings were illustrated as shown in the Table 4.6 below;

Table 4. 6 Summary of Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Performance	31	0.1415	0.0732	0.0448	0.2454
Asset Allocation	31	0.2349	0.0254	0.1898	0.2625
Fund Design	31	3.0426	0.0487	2.9996	3.1143
Fund Size	31	5.7638	0.1910	5.4845	6.0258
Coverage	31	58.88	0.0164	55.85	60.00
Regulations	31	2.8012	0.3540	0.0000	1.0000

Source: Researcher, 2021

The findings from Table 4.6 shows the descriptive statistics which indicate fund design, fund size, and regulations, have a high mean generated throughout the years. For instance, in asset allocation, the schemes had a mean of 0.23 and a standard deviation of 0.03. Asset allocation had a minimum of 0,1898 and a maximum of 0.2625 with a standard deviation of 0.025 which shows that the weights of the assets were dispersed in a range of values. It implies that on average schemes should have 0.2349 of their assets allocated in the different asset classes to yield maximum returns. The standard deviation of 0.0254 indicates that the variations in asset allocation are minimal. Fund design plays a pivotal role in realizing the returns. For instance, fund design has a mean of 3.04 and a standard deviation of 0.0487 which implies that the defined contributory plan is more effective in increase the returns as it is the most preferred plan as it has a maximum of 3.11 and a minimum of 2.99.

The largest fund size had a maximum value of 6.03 and the lowest had a value of 5.48 with a mean of 5.76 and a standard deviation of 0.19 indicating that the value the schemes accumulate over the years plays a vital role on how they perform. The value a scheme accumulates over this period thus implies that the schemes invested in worthy projects that saw their value increase thus increasing the size. It's key to note that schemes with high value had accumulated more

contributions and interests over a long period. The natural logarithm of Social coverage span has a mean of 58.88 and a standard deviation of 0.0164. The maximum age is 60 while the minimum is at 55.85. It implies that majority of the members exit the scheme at 58years. Regulation was measured as a dummy variable equal to 1 if a scheme adheres to the account's regulation. The results indicate all schemes analyzed adhere to the regulations by RBA with a mean of 2.8012 and a standard deviation of 0.3540.

4.4 Inferential Statistics

To determine the effects of retirement fund characteristics on the performance of pensions firms, a time series regression analysis was applied. Regression involved showing how a study variable is related to one or more other study variables. The study adopted the direct effects test which shows the extent in which the dependent variable changes as the independent variable increases. Table 4.7 below was used for analysis.

4.5 Hypotheses Testing

The hypotheses testing of the study were carried out in line with the specific objectives of the study. The p-value method was applied based on 0.05 significance level. The direct relationship was tested using the findings in Table 4.7 while the moderation effect was tested using the outcome in Table 4.9

4.5.1 Direct Effect Test

The first model was the regression of time series without the moderating variable and results presented in the Table below;

Table 4. 7 Direct Effect Test Results

Equation	Obs	parms	RMSE	"R-sq"	F	P
Performance	31	5	0.078768	0.6174	0.6916605	0.6287
Performance	Coef.	Std. Err.	t	p>|t|	[95% Conf.	Interval]
Asset Allocation	3.016813	0.583523	5.170	0.035	-3.692235	9.725861
Fund Design	1.976705	0.412587	4.791	0.041	-5.618677	9.572088
Fund Size	0.326096	0.071954	4.532	0.045	-1.167974	1.820165
Coverage	-2.10826	5.019664	-0.420	0.678	-12.05900	7.842485
_cons	-8.0993	15.88097	-0.510	0.608	-39.08035	22.88176

Source: Researcher, 2021

From Table 4.7 above R squared is a coefficient of determination that is used to show us the variations in the dependent variable due to the changes of the independent variable. The findings above show a value of 0.6174 indicating that the changes in asset allocation, fund design, fund size and social coverage span explain the 61.7% variation on performance of pension firms while the rest is determined by other factors.

Results indicate that asset allocation, fund design, and fund size are significant predictors of performance and this is because their p-values are less than 0.05. With beta coefficients of 3.02, 1.98, and 0.33 the relationship between this variables positively impacts the return on assets thus impacting performance. However social coverage span shows an insignificant relationship with the performance of the pension firms having a coeffient of -2.11 and it's p-value is more than 0.05

The first specific objective of the study was to examine the effect of asset allocation on the performance of pension schemes in Kenya. In line with this objective, a null hypothesis which

stated that asset allocation has no significant effect on the financial performance of pension schemes was formulated and tested. The outcome in Table 4.7 indicates that a unit change in asset allocation leads to a 3.02 change in performance. Also, p-value of 0.035 which is less than 0.05 indicates significance. As such, the null hypothesis was rejected significant at 0.05 significance level. The significant effect can be attributed to the notion that higher allocation of assets translates to improved performance of firms. When these assets are wisely invested, they in turn yield higher returns. Moreover, when pension schemes allocate their assets in different classes creates a variability which in turn have an impact on performance. The findings are in line with the findings of Kiplangat, (2014) that the variability in assets have an impact on performance. Also, they are in line with those of Bodie, Detemple, and Rindisbacher, (2009) who argued that in the long run, assets have a strong impact on the financial performance of pension schemes.

The findings of the study agree with the theoretical explanation of the Stakeholders theory by Freeman et.al (2004). The authors suggest that the stakeholders need influence the performance of a pension scheme. Thus, justifying the findings of this study. The descriptive statistics suggested that schemes allocated their assets in meaningful investments that yielded high results thus in turn increasing the change on net assets. Asset allocation has the highest mean of 0.26 and a minimum of 0.17 indicating that most schemes efficiently allocate their assets to worth investments

The second specific objective of the study was to examine the effect of fund design plans on the financial performance of pension schemes in Kenya. In line with this objective, a null hypothesis which stated that fund design plans have no significant effects on the financial performance of pension schemes was formulated and tested. The outcome in Table 4.7 indicates a p-value of

0.041 which indicates significance. As such, the null hypothesis was rejected significant at 0.05 significance level. The significant effect can be due to the fact that individuals prefer contributory plans translates to the increased performance of the schemes.

Fund design plans were statistically significant to financial performance and this is attributed to the contributory plans that individuals prefer. According to Oluoch, (2013) fund design plans have a weak relationship on the financial performance of pension schemes. The author argues that plans do not impact the contributory payments by individuals as some plans have low contributions. However, her findings differed from those of Oxera Consulting Ltd (92208) who stipulated that contributory plans had a greater impact thus supporting this findings.

Consequently, findings by Brady (2009), Faktum (2009), and Crane et.al (2008) stipulate that the defined contributory (DC) pension schemes perform better than the defined benefit (DB) schemes. This is attributed to the fact that the DC are cost effective than the DB ones because of the benefits paid not tied to the contributions. Therefore, the findings are in conformity in that a unit change in fund design plans measured by defined contributory plans leads to a 1.98 increase in performance as measured by return on assets.

The third specific objective of the study was to examine the effect of fund size on the financial performance of pension schemes in Kenya. In line with this objective, a null hypothesis which stated that fund size has no significant effect on the financial performance of pension schemes was formulated and tested. The outcome in Table 4.7 indicates a p-value of 0.045 which indicates significance. As such, the null hypothesis was rejected significant at 0.05 significance level. Also, a unit change in fund size leads to 0.33 change in the financial performance of

pension schemes. The significant effect can be attributed to the notion that the value of a scheme accumulated over a period increases its size which in turn increases its performance.

Fund size was also significant as the value the schemes generate over the period are seen to increase. The findings agree with those of Njuguna and Arnolds (2010) who stipulate that in the 362 pension schemes in Kenya fund size plays a vital role in influencing financial efficiency. According to Nyangeri (2009), funds that receive sizeable contributions are likely to influence the return on assets of a scheme. Although the large schemes are exposed to higher risks in the investment markets, they are prone to invest in profitable opportunities which in turn will yield high returns thus increasing their fund value. Therefore, the findings of the study show the largest fund size had a mean of 6.02 and the smallest having 5.48 in the schemes sampled indicating that fund size largely impacts performance.

The fourth specific objective of the study was to examine the effect of social coverage span on the financial performance of pension schemes in Kenya. In line with this objective, a null hypothesis which stated that social coverage span has no effect on the financial performance of pension scheme was formulated and tested. The outcome in Table 4.7 indicates a p-value of 0.678 which indicates non significance. As such, the null hypothesis was not rejected significant at 0.05 significance level. However, social coverage span had a negative impact on financial performance as it is statistically insignificant. Whereby, a unit change in social coverage span leads to a decrease in financial performance by 2.11. That is, with all factors held constant, social coverage span will decrease the level of performance. Notably, social coverage span had a t statistic of -0.42 and a p value of 7.84 indicating a negative relationship. These findings differ from those of Oluoch (2013) and Nyangeri (2009), who stipulated that there is a positive

relationship among this variables as the exit age plays a vital role in influencing investment decision which will have an impact on the return on assets.

4.6 Moderation Specification Test

To check whether the model is correctly specified, Ramsey tests were conducted. The first model conducted a test where the moderator is introduced as an explanatory variable as shown in Table 4.8 below

Table 4. 8 Moderation Tests (Step One) Results

Equation	Obs	parms	RMSE	"R-sq"	F	P
Performance	31	6	0.046905	0.8174	3.580537	0.1202
Performance	Coef.	Std. Err.	t	p>|t|	[95% Conf.	Interval]
Asset Allocation	3.12842	0.76489	4.090	0.083	-1.02722	7.28405
Fund Design	0.88137	0.33512	2.630	0.046	-1.64461	3.40735
Fund Size	2.27653	0.63062	3.610	0.023	0.52661	4.02646
Coverage	-1.72566	1.72566	-1.000	0.376	-6.53845	3.08714
Regulations	-1.17378	0.36911	-3.180	0.034	-2.19920	-0.14835
_cons	-12.81242	3.55506	-3.604	0.024	-22.67710	-2.94773

Source: Researcher, 2021

Table 4.8 shows the moderator (regulations) being introduced as an explanatory variable. Regulations as an explanatory variable is seen to have a weak relationship on performance with a P-value of more than the significance level of 0.05 and an R^2 of 0.8174 indicating that 81.74 variations in financial performance can be explain by fund characteristics while the rest are explained by other factors. The regression coefficient of asset allocation was 3.13 implying that a unit change in asset allocation leads to a 3.13 increase in financial performance; the P value was more than the significance level of 0.05 implying that the relationship was statistically

insignificant. Fund design have a positive relationship implying that a unit change in fund design plans leads to 0.88 increase in financial performance. It has a P value of 0.046 which is less than the significance level of 0.05 implying the relationship is statistically significant.

Also, a unit change in fund size leads to a 2.28 increase in financial performance. It has a P value of 0.023 which is less than the significance level implying the relationship is significant. However, social coverage span and regulations have a negative impact on financial performance. Whereby a unit change in social coverage span and regulations leads to decrease in financial performance by -1.73 and -1.17 respectively. Also, social coverage span has a P value of 0.376 which is greater than the significance level hence the relationship is insignificant.

4.7 Moderation Test (Step Two)

The second model tests the null hypothesis on hypothesis that regulations have no impact on the relationship between the retirement fund characteristics and financial performance of pension schemes as shown in Table 4.9 below;

Table 4. 9 Moderation Test (Step Two) Results

Equation	Obs	parms	RMSE	"R-sq"	F	P
Performance	31	9	0.014995	0.9736	26.71274	0.0294
Performance	Coef.	Std. Err.	t	p>|t|	[95% Conf.	Interval]
Asset Allocation	-58.20252	1.67696	-34.710	0.018	-79.51035	-36.89470
Fund Design	-7.20053	0.68559	-10.500	0.060	-15.91176	1.51069
Fund Size	3.90904	0.10584	36.930	0.017	2.56418	5.25390
Coverage	0.53596	0.24952	2.150	0.277	-2.63450	3.70641
Regulations	-3.72178	0.72371	-5.140	0.122	-12.91733	5.47376
ReguAssetallocation	22.52932	0.61781	36.470	0.017	14.67928	30.37936
RegFundDesign	2.38391	0.27897	8.550	0.074	-1.16071	5.92853
RegFundsize	-1.54168	0.08041	-19.170	0.033	-2.56334	-0.52001
RegCoverage	-1.13683	0.52642	-2.160	0.163	-3.40184	1.12818
_cons	-7.86137	4.31431	-1.820	0.210	-26.42433	10.70160

Source: Researcher, 2021

The findings in Table 4.9 shows that the Ramsey-Reset test is well specified as no variable was omitted. The model has a p= 0.03 which is less than the significance level thus the null hypothesis was not rejected. The findings indicate that 97.4 % of the variations can be explained by the model variables of performance and the rest explained by other factors.

The fifth specific objective of the study was to establish the moderating effect of regulations on the relationship between retirement fund characteristics and financial performance of pension schemes in Kenya. In view of this objective, a null hypothesis was formulated which stated that regulation has no significant moderating effect on the relationship between retirement fund characteristics and financial performance of pension schemes in Kenya. In line with this hypothesis four null sub hypotheses were tested to capture the individual interaction effect of regulation and each of the four retirement fund characteristics used.

The first null sub hypothesis stated that regulation has no significant effect on the relationship between asset allocation and financial performance of pension schemes in Kenya. The results in Table 4.9 indicate a p-value of 0.017 for the interaction between regulation and asset allocation which indicates significance. In view of this result, the study therefore failed to reject the null hypothesis. The significant effect of the interaction between regulation and allocation can be attributed to the notion that sound regulations bring about stability of firms and in turn better performances.

The second null sub hypothesis stated that regulation has no significant effect on the relationship between fund design plans and financial performance of pension schemes in Kenya. The results in Table 4.9 indicate a p-value of 0.074 for the interaction between regulation and fund design plans which indicates significance. In view of this result, the study therefore failed to reject the null hypothesis. The significant effect of the interaction between regulation and the design plans can be attributed to the belief that regulations makes schemes choose proper design to invest in.

The third null sub hypothesis stated that regulation has no significant effect on the relationship between fund size and financial performance of pension schemes in Kenya. The results in Table 4.9 indicate a p-value of 0.033 for the interaction between regulation and fund size which indicates significance. In view of this result, the study therefore failed to reject the null hypothesis. The significant effect of the interaction between regulation and size can be attributed to the perception that the bigger the scheme the more returns it makes leading to better performance.

The fourth null sub hypothesis stated that regulation has no significant effect on the relationship between social coverage span and financial performance of pension schemes in Kenya. The

results in Table 4.9 indicate a p-value of 0.163 for the interaction between regulation and social coverage span which indicates non-significance. In view of this result, the study therefore rejected the null hypothesis. The non-significant effect of the interaction between regulation and social coverage span can be attributed to the notion that the coverage span does not affect the financial performance of the schemes.

CHAPTER FIVE

SUMMARY, CONCULSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusions, and the recommendations of the research results of the study. The general objective of the study was to determine the effect of retirement fund characteristics on the financial performance of pension schemes in Kenya. Therefore, the summary, conclusions and recommendations were drawn from the findings and interpretations in chapter four.

5.2 Summary of the Research Findings

The study sought to analyze the effect of retirement fund characteristics on the financial performance of pension schemes. The time series analysis results indicated that retirement fund characteristics explain the variations on financial performance of pension schemes. The first objective determined the effect of assets allocation on the financial performance of pension schemes in Kenya. The time series regression analysis results showed asset allocation had a significant effect on performance these schemes in Kenya. Therefore, the study rejects the null hypothesis. The second objective sought to determine the effect of fund design plans on the financial performance of pension schemes. The analysis results showed that fund design plans have a significant effect on the performance of pension schemes in Kenya. Therefore, the study rejects the null hypothesis.

The third objective sought to determine the influence of fund size on the financial performance of pension schemes. The results showed that fund size had a positive effect on the performance

of pension schemes in Kenya thus the null hypothesis was rejected. The fourth objective sought to determine the effect of social coverage span on the financial performance of pension scheme in Kenya. The regression results showed there was no significant effect of social coverage span on the performance of pension schemes. Therefore, the null hypothesis was not rejected.

The fifth objective sought to determine the moderating effect of regulations on the relationship between retirement fund characteristics and financial performance of pension schemes in Kenya. The null hypothesis of the study proposed that there is no moderating effect on the relationship between retirement fund characteristics and performance of pension schemes in Kenya was tested using the RBA regulations. The study showed there was evidence of the moderating effect among the variables under study.

5.3 Conclusion of the Study

Retirement fund characteristics are key factors in determining the growth of the sector. Moreover, they act as tools that a scheme can use to measure its stability in the sector. This study investigated the relationship between retirement fund characteristics and the financial performance of pension schemes in Kenya. Regarding the first objective, asset allocation was found to be statistically significant thus had a significant relationship with financial performance. Pension schemes need to effectively allocate its assets in the different asset classes for them to yield returns hence leading to better performance. The second objective on the fund design plans was found to have a positive statistically significant effect on the dependent variable implying the fund design plans have a positive effect on the financial performance. The existence of several design plans in the pension industry has given pension managers a chance to determine the best and most applicable one in improving their performance. Defined contributory plans is

less expensively for the firms since members need to contribute also. The third objective on the fund size had a positive statistical significance on the dependent variable thus inferring that there is a positive relationship with financial performance. Consequently, the fourth objective showed a negative statistical significance, therefore, implying a negative relationship between social coverage span and financial performance. The fifth objective showed a positive significant relationship with the variables in the subject except for social coverage span. Thus, indicating regulations played a moderating role between the variables under study. The study found that financial performance of pension schemes before application of RBA regulations are better than after the regulations are applied.

5.4 Recommendations

Pension fund efficiency is critical in the operations of any schemes and fund ratios indicate their efficiency. The efficiency will in turn enable these schemes to maximize its activities thus improving performance. It's key for the schemes to efficiently invest in the different asset classes to achieve efficiency. Efficient investing of assets will ensure that each scheme will increase its returns which also will increase their income. Also, by maintaining adequate assets that can cover their liabilities, schemes are assured of fund efficiency.

Secondly, fund design plans play a vital role in the financial performance of schemes. Recommending for schemes to encourage their members to adopt the defined contributory plans will see them commendably use the plans well. Thirdly, pension schemes should try and increase the value of their funds as a way of increasing their returns. From the findings the relationship between the schemes fund value which in turn results to its fund size does not clearly show the

advantage being utilized. By taking advantage of this, the schemes will increase their value thus generating more income.

Schemes that have existed for a long period and which have efficiently ensured that the contributions are collected and interested accrued re-invested are seen to have large fund value. The study recommends that contributions be efficiently collected to ensure that the fund value is increased which in turn increases the size. Finally, the study recommends the schemes to adhere to the RBA regulations. Implementing these regulations will have an impact on the funds which in turn will improve performance.

5.5 Limitations of the study

Due to the unavailability of yearly data of all the schemes as not all schemes published the data, the researcher resorted to use purposive sampling and 31 schemes were selected as these schemes had consisted of data for the stipulated period. Also, the schemes which were considered were the ones that were regulated by the RBA only limiting other schemes not regulated.

Secondly, the study period was on a 10-year period from 2009 to 2018. A long period would incorporate the different economic trends thus giving a broader analysis of the problem. Since the study used secondary data, it was challenging to acquire some information which was considered confidential. Also, the data availed by the retirements Benefits Authority and some administrators was a small representation of the entire population. However, the data and period used was sufficient to capture the dynamics of the study

The study also focused on Kenya only. The results would have higher efficiency if they incorporated other east African countries as a region and would be relevant beyond the country.

5.6 Suggestions for further research

Financial professionals advise their investors to hold 5%-15%of their assets in gold depending on the age of the scheme and the risk tolerance. Therefore, studies should be done on the schemes that hold some of their assets in gold. It will key in informing most developing countries on the appropriate way of increasing fund value. The study recommends that a study be done on the effects of fund characteristics on economic growth of Kenya. This will be key in determining the impact the schemes have of the economy. Also, a study should be done on the impact of RBA regulations have on the performance of the schemes. This will enlighten the key stakeholders on the need to adhere to the regulations and the impact it will have on performance.

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Appendix 1: Secondary Data Collection Template

DATA COLLECTION FORM

Data Collection Form No.	
Company Name	
Financial Year Ended	

A. Data from Financial Statement obtained from RBA Reports 2009-2018 and Companies' Websites

1. Return on assets	
2. Current Assets	
3. Non-Current Assets	
4. Total Assets	
5. Net Assets available for members	
6. Contributions received	

B. Data from Individual Pension scheme Websites

7. Exit Age	
8. Type of design	

Appendix 2: Data collection Schedule

Year	Total Assets invested	Defined contributory fund	Value of the fund	Exit age	Accounts Regulations	Return on assets
2009						
2010						
2011						
2012						
2013						
2014						
2015						
2016						
2017						
2018						

Appendix 3: List of Pension Schemes

1.	AAR Holdings Limited Staff Pension Scheme
2.	Afya Sacco Society Limited Staff Retirement Benefits Scheme
3.	Bamburi Cement Limited Staff Retirement Benefits Scheme
4.	Cfc Life Assurance Staff Pension Scheme
5.	Chemelil Savings & Credit Co.-Operative Society Staff
6.	Pension Scheme
7.	Co-operative Bank Savings and Credit Society Limited Staff Provident Fund
8.	Co-optrust Limited Individual Pension Plan
9.	Development Bank of Kenya Staff Retirement Benefits Scheme
10.	Diamond Trust of Kenya Limited Staff Pension and Life Assurance
11.	East African Breweries Limited Staff Provident Fund
12.	East African Packaging Industries Limited Staff Retirement Benefits Scheme
13.	Equity Bank Staff Retirement Benefits Scheme
14.	Harambee Sacco Staff Retirement Benefits Scheme
15.	Hazina Sacco Ltd Staff Pension Scheme
16.	Icea Individual Retirement Benefits Scheme

17.	Kenafric Industries Limited Staff Retirement Benefits Scheme
18.	Kenindia Assurance Company Limited Pension Scheme
19.	Kenya Ports Authority Pension Scheme
20.	Kenya Power and Lighting Company Ltd Staff Provident Fund
21.	Kenya Tea Development Authority Retirement Benefits Scheme
22.	Kenyatta University Staff Retirement Benefits Scheme
23.	Kerio Valley Development Authority Staff Retirement Benefits Scheme
24.	KPMG Kenya Certified Public Accountants Staff Provident Fund
25.	Maseno University College Staff Retirement Benefits Scheme
26.	Mwalimu Co-operative Savings & Credit Society Limited Staff Pension Scheme
27.	National Housing Corporation Staff Provident Fund
28.	NIC Bank Limited Staff Provident Fund
29.	The Standard Group Limited Staff Pension Scheme
30.	Sasini Limited - Staff Pension Scheme
31.	Williamson Tea Kenya Staff Provident Fund