

RETIREMENT FUND CHARACTERISTICS AND PERFORMANCE OF SELECTED PENSION SCHEMES IN KENYA

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Abstract: 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 census was conducted to select schemes that have been consisted for the last ten years. 45 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 performance of the pension schemes. However, social coverage span had a non-significant effect on the 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 performance of pension schemes. However, it had a negative effect on relationship between social coverage span and 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.

Keywords: Asset Allocation, Fund Size, Fund Design Plans, Social Coverage Span, Regulations and Performance.

1. INTRODUCTION AND BACKGROUND

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 and 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.

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.

1.1 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 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 performance of pension schemes in Kenya.

1.2 Study Objectives

1.2.1 General Objective

The general objective of the study was to establish the effect of retirement fund characteristics on performance of selected pension schemes in Kenya.

1.2.2 Specific Objectives

- i. To examine the effect of asset allocation on the performance of pension schemes in Kenya.
- ii. To establish the effect of fund design plan on the performance of pension schemes in Kenya.

- iii. To find out the effect of the fund size on the performance of pension schemes in Kenya.
- iv. To evaluate effect of social coverage span on the performance of pension schemes in Kenya.
- v. To establish the moderating effect of regulations on the relationship between retirement fund characteristics and performance of pension schemes in Kenya.

Null hypotheses were formulated and tested in view of the specific objectives

2. THEORETICAL FRAMEWORK

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 momentarily threatened. 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.

Theory of Constraint (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 meet 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 (Rosenthal & 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 (Rosenthal & Horn, 2013). Essentially, that entails coming up with plans regarding the investment choices and the respective allocations.

2.1 Empirical Literature

2.1.1 Asset Allocation and 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 5 years 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.

2.1.2 Fund Size and 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 crises 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 one. 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 and 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.

2.1.3 Fund Design Plans and 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.

2.1.4 Social Coverage Span and 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.

3. RESEARCH METHODOLOGY

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. The target population for the study was 45 pension schemes out of the 1342 that were consistent for the period under study in a census. The census was conducted to record the secondary data on the retirement fund characteristics and the performance of pension schemes from 2009 to 2017 in a more systematic way.

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. The specification procedure included the use of time series regression analysis based on Field (2009) as shown below:

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

Where;

β_i ; 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 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:

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

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

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)

4. DATA ANALYSIS AND PRESENTATION

4.1 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 4.1 below;

Table 4.1: 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 4.1 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.

4.2 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.

4.3 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.

4.3.1 Direct Effect Test

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

Table 4.2: 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 4.2 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 these variables positively impacts the changes in net assets thus impacting performance. However social coverage span shows an insignificant relationship with the performance of the pension firms having a coefficient of -2.11 and its 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 was formulated and tested. The outcome in Table 4.2 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 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 asset allocation on the performance of pension schemes in Kenya. In line with this objective, a null hypothesis was formulated and tested. The outcome in Table 4.2 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 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 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 changes of net assets.

The third specific objective of the study was to examine the effect of fund size on the performance of pension schemes in Kenya. In line with this objective, a null hypothesis was formulated and tested. The outcome in Table 4.2 indicates a p-value of 0.045 which 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 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 changes in net 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 performance of pension schemes in Kenya. In line with this objective, a null hypothesis was formulated and tested. The outcome in Table 4.2 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 performance as it is statistically insignificant. 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 changes in net assets.

Hence the study model became as follows:

$$Y = 3.01AA + 1.98FDP + 0.33FS - 2.11SCS$$

4.3.2 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 4.3 below

Table 4.3: 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
	-12.81242	3.55506	-3.604	0.024	-22.67710	-2.94773

Source: Researcher, 2021

Table 4.3 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 R² of 0.8174 indicating that 81.74 variations in 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 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 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 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 performance. Whereby a unit change in social coverage span and regulations leads to decrease in 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.

4.3.3 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 performance of pension schemes as shown in table 4.4 below;

Table 4.4: 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 4.4 show 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 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 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 performance of pension schemes in Kenya. The results in Table 4.4 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 performance of pension schemes in Kenya. The results in Table 4.4 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 notion that sound 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 performance of pension schemes in Kenya. The results in Table 4.4 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 notion 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 performance of pension schemes in Kenya. The results in Table 4.4 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 performance of the schemes.

5. 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 performance of pension schemes in Kenya. Regarding the first objective, asset allocation was found to be statistically significant thus had a significant relationship with 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 performance. 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 performance. Consequently, the fourth objective showed a negative statistical significance, therefore, implying a negative relationship between social coverage span and 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 performance of pension schemes before application of RBA regulations are better than after the regulations are applied.

5.1 Policy 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 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.

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