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Factors Affecting Financial Performance of Pension Schemes in Kenya

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Abstract

The major function of pension funds is to provide ways for individuals to build up financial savings during their effective or working life in preparation for the funding of the consumption requires when they retire from active employment. Pension funds are the major sources of retirement income for many individuals worldwide. Despite the pension sub-sector growing, the faster growth in pension liabilities relative to assets as well as increasing life expectancy has elevated funding risks. In the defined contribution schemes, unremitted contributions have increased due to poor economic performance and the insufficient funding of quasi government schemes. This study sought to analyze the factors affecting financial performance of pension schemes in Kenya. The study specific objectives were to determine the influence of risk management, membership age, member contribution and firm size to determine their effect on the financial performance of the pension schemes. The study used 34 individual retirement benefits schemes registered with the Retirement Benefit Authority. The study used data for the period 2012-2021. The results revealed that there was a positive and significant relationship between risk management and financial performance of pension schemes. There was a negative and insignificant relationship between age of scheme members and financial performance of pension schemes. Member contribution had a positive and significant relationship with financial performance of pension schemes. Firm size revealed a positive and significant relationship with financial performance of pension schemes in Kenya. The null hypothesis on risk management, member contribution and firm size were rejected while that of age of the scheme members was not rejected. The study concluded that there is a strong correlation between risk management, age of scheme members, member contributions and firm size on financial performance of pension funds. The study recommended that pension funds should use the increasing value of their funds to generate returns for the pensioners. In addition, there is need to utilize assets to generate income for the pension funds and include the needs of the different age brackets in the management of the pension schemes.

Keywords: *Risk Management, Membership Age, Member Contribution and Firm Size Financial Performance & Pension Schemes*

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1.1 Introduction

Pension funds are the principal sources of retirement income for millions of people in the world. According to a definition by Drucker (2017), a pension fund is a pool of resources contributed by the employees to have enough resources to cater to their needs after retirement. The pension fund needs to be invested to meet the aim of the contributors. The main purpose of pension funds is to supply means for people to accumulate savings during their productive or working life in preparation for the financing of the consumption needs when they retire from active employment (Consigli, Moriggia & Uristani, 2018). Pension funds make payments to beneficiaries either using a lump sum or by the provision of an annuity, while also supplying funds to end-users such as corporations, other households through secured loans or governments for investment or consumption (Chohan, 2017).

In Kenya, only 20% of its workers are enrolled in pension schemes. This is attributed to pension services that are designed for workers in the formal workplace who are less than 20% of the working population. More than 80% of Kenyan employees work in the informal sector where they lack proper channels for contributing to retirement schemes. The efficiency of pension plan funds is for that reason crucial since they play a really significant role in the economic situation of any nation. There is a requirement for pension funds to engage in the appropriate monitoring of the sources handed over to them. According to Mutula and Kagiri (2018), pension funds need to gauge their financial performance versus long-term optimal benchmarks. Pension fund systems in Kenya were first put in place after independence in 1963. The first message independent pension plan fund body, the National Social Security Fund (NSSF), was established in 1965 (RBA, 2020). Before reforms, the pension fund system offered advantages as soon as an employee retired on obtaining the required retirement age of 55 (RBA, 2020). The guarantee was fixed as the employee's complete standard wage throughout his life or that of the widow as the regulation did not imagine a situation where the spouse would certainly sustain the other half. This law was personified in the NSSF Act and also the Pensions Act (Cap 189).

The pension plan fund system in Kenya has been supervised by the independent Retired life Benefits Authority (RBA) because 2000, which looks after the 1997 RBA Act that caused framework, defense and law to the pension plan fund industry. The RBA proceeds functioning to establish the sector and suggest the federal government on pension policy reforms. Kenya's pension plan fund system accepts 4 elements particularly the NSSF, Civil Servants Pension Plan (CSPS), Occupational Retirement Schemes (ORS) and Individual Retirement Schemes. Generally, the system is estimated to cover 15% of the workforce and also to have actually gathered properties of 18% of the GDP (Kakwani *et al*. 2016). The pension fund system covers an approximated 2 million employees leaving an approximated 5 million workers without insurance under any kind of retirement plan, of which a minimum of 10% are at or near the retirement age (Kakwani *et al.* 2016).

1.2 Statement of the Problem

The Retirement Benefit Authority report (2021) indicated that despite the pension sub-sector growing, the faster growth in pension liabilities relative to assets as well as increasing life expectancy has elevated funding risks. In the defined contribution schemes, unremitted contributions have increased due to poor economic performance and the insufficient funding of quasi government schemes. Reports from Retirement Benefits Authority (2021) show the overall returns from pension industry have been inconsistent. The pension industry return was for the years

2016, 2017 and 2018 reported returns of negative 20%, 0% and 3 respectively, wiping out all the gains which were reported earlier (RBA, 2020). The total assets growth from 2017 to 2019 averaged 3% implying poor investment decisions and also higher expenses for managing the funds (RBA, 2020).

The problem is further aggravated by bad investment decisions characterized by lack of diversification, for instance, a pension fund such as NSSF with an overwhelming 72% of total assets was in real estate (Ngugi, Njuguna & Wambalaba, 2018). Additionally, 7% of the fund was invested in bank deposits with 16 financial banking institutions of which 10 have collapsed, thus leading up to 4.6% of the total fund assets (Mwangi, 2018). In addition, trustees who are the top managers of the employer and others are political appointees who misuse employer contributions, which has resulted in cases of poor pension investments, delays and denials in payments of dues to members, misuse and outright embezzlement of the scheme funds by the same trustees who are entrusted to guard the funds to the ultimate loss to the beneficiaries (Namusonge, Sakwa & Gathogo, 2017). It is, therefore, evident that there is a challenge with the pension funds investment management leading to poor performance. This therefore calls for the need for better and more specific measures to protect the interests of stakeholders.

Despite the studies carried out on performance of organizations and pension funds, there are no studies that have attempted to examine the determining factors in financial performance of pension funds. Pension funds are a unique type of organizations because they hold long term liabilities which belong to beneficiaries. This study sought to establish the determinants of performance of pension funds in Kenya in order to bridge this gap.

1.3 Objective of the Study

The main objective of this study was to analyze the factors affecting financial performance of pension schemes in Kenya.

The study was guided by the following specific objectives:

i. To determine the impact of risk management on the financial performance of pension schemes in Kenya.
ii. To determine the impact of membership age density on the financial performance of pension schemes in Kenya.
iii. To examine the effect of member contribution on the financial performance of the pension schemes in Kenya.
iv. To determine the impact of firm size on financial performance of pension schemes in Kenya.

1.4 Research Hypotheses

The study tested the following research hypotheses:

i. Risk management has no significant effect on the financial performance of pension schemes in Kenya.
ii. Membership age has no significant effect on the financial performance of pension schemes in Kenya.
iii. Member contributions have no significant effect on the financial performance of pension schemes in Kenya.

iv. Firm size has no significant effect on financial performance of pension schemes in Kenya.

2.0 Literature Review

2.1 Theoretical Review: Capital Asset Pricing Model Theory

The Capital Asset Pricing Model Theory was developed by Sharpe (1964) and refined by Black (1972). This model explains that investors must diversify their portfolios and that they must possess a given fraction of the financial institution's market portfolio. Investors without special investment knowledge are advised to hold diversified portfolios (Pagliardi, Poncet & Zenios, 2019). All investors need high levels of assurance of expected returns so as to invest in highly risky ventures. However, it should be known that in the presence of informational asymmetries and contract enforcement problems, financial institutions will not always commit their resources to businesses with high returns (Kuehn, Simutin & Wang, 2017). Making of corrections on estimation errors can greatly improve investment performance; this statement is supported by empirical evidence based on simulation analysis, mean-variance portfolio selection and sample portfolio performance. According to this model, investors always try to avoid risks and they only look at the variance and mean on their return on investment during a single period when choosing portfolios (Rossi, 2016). Since portfolios reduce the variance of portfolio return, given expected profits, and increase expected returns, given variance; investors always choose mean-variance-efficient portfolios.

This model assumes that the qualities of assets or loans are key items in any given financial institutions portfolio since a financial institution's portfolio comprises of both assets and liabilities. It therefore is the prerogative of bank management bodies to come up with portfolios that will give the highest returns a reduced risks and costs. This model is relevant to this study because it is used in estimating of cost of capital for pension schemes and in evaluation of performance appraisals of financial instrument portfolios. The theory reveals the relationship between yields and risks.

2.2 Empirical review

2.2.1 Risk Management and Financial Performance

Gordon, Loeb and Tseng (2019) studied 112 US companies in 2015 to examine the impact of risk management on performance using linear regression. Enterprise risk management was measured using enterprise risk management index created by the author and performance was measured using excess stock market return. The results showed a significant positive relation between enterprise risk management and firm performance. The study also revealed that this was contingent upon proper match between a firm's enterprise risk management system and five firm specific factors.

Pagach and Warr (2010) examined 106 US companies in a bid to determine the impact of risk management on financial performance using logit and matched sample model. Risk management was measured using risk managers indicators as proxies and financial performance was measured using several financial variables. The results showed a significant decrease in stock price volatility after introducing risk management.

According to the OECD (2016) there should be appropriate controls in place to ensure that all persons and entities with operational and oversight responsibilities act in accordance with the

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objectives set out in the pension entity's by-laws, statutes, contract, or trust instrument, or in documents associated with any of these, and that they comply with the law. Such controls should cover all basic organisational and administrative procedures; depending upon the scale and complexity of the plan, these controls will include performance assessment, compensation mechanisms, information systems and processes and risk management procedures. Such governance requirements are echoed in the licensing guidelines, which specifically mention codes of conduct, fit and proper requirements for members of the governing body and the functional separation between investment and settlement/bookkeeping roles.

2.2.2 Age of Scheme Members and Financial Performance

Oluoch (2013) established the determinants of performance of pension schemes in Kenya. The research study was done on Kenyan pension plan schemes at accumulated level using annual data on fund value, assets, age, returns and contributions. The information was from in between 2000 through 2012. Time collection regression analysis was made use of to identify the connection in between returns as the reliant variable and fund worth, assets, age as well as the contributions of pensioners as the independent variables. The study established a solid positive partnership between age of the financiers gauged by nationwide life expectancy of Kenya suggesting that a longer life assumption positively impacted returns. Weak positive partnerships between returns as well as fund worth, assets as well as payments of pensioners was weak which showed that fund values, possessions, as well as payments were not used in the generation of earnings for the pension plan plans in Kenya.

Nyangeri (2014) studied the effect of membership age, fund size, fund design and density of contribution on the financial performance of pension schemes in Kenya. The study was conducted through the use of a descriptive survey design. The data to be representative enough, the study reviewed secondary data for a five year period, preferable latest, that is, 2009-2013. There were strong, significant and positive correlations between ROI and: Density of contributions, Fund value, fund size, and fund returns. Weaker, significant and positive correlations were established between ROI and Fund design and Age.

Defau and De Moor (2018) did a research on pension plan funds possession allowance and also participant age: a test of the life process version. They found out that pension plan funds take the standard of their member's age into account. However, the ordinary age of their youthful individuals has been incorporated a lot more highly in the financial investment practices than the typical ages of retired as well as dormant participants Indicating that, more rate of interest is revealed to the active individuals than retired as well as dormant individuals.

Ngugi, Njuguna and Wabalaba (2018) examined the influence of pension plan maturation on investment techniques of pension funds in Kenya. The study results problems the life process theory by stating that plan maturation does not affect the investment strategies of occupational systems in Kenya. This study differs in that it has financial investment techniques as independent variables whereas DCs economic performance is the dependent variable.

Augusztinovics (2012) states that the ageing of the population is a process that is cyclical rather than continuous. The current ageing crisis in the country is attributed to three major factors: the number of births in the 1950s; the baby boom; and its echo in the late 1970s. These factors have resulted in oscillations in the world's population age structure and forced policymakers to address age demographics in an attempt to improve efficiency of pension funds (Augusztinovics 2012).

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Whelan (2015) assert that prolonged life expectancies and also lower fertility rates required pension plan schemes to reassess their financial investment plans. While pension schemes with younger participants are inclined to invest much more in equities and more dangerous assets, funds with older members have a tendency to spend extra in guaranteed funds and also dealt with return protections (Whelan, 2015). As a result, the age of pension plan system participants affects the scheme's financial investment plan as well as levels of performance. In addition, young members in a pension plan take into consideration saving for retirement a long-term endeavor, thus the do not take it seriously.

2.2.3 Member Contributions and Financial Performance

The funds of payments that pension plan funds get from the contributors is also a really crucial factor of their efficiency. If a fund has several factors that are capable of channeling big funds to the scheme, then there was enough funds to invest and also this will assist the fund to make better incomes (Bodie *et al*., 2019). The reverse is likewise most likely to take place if the amounts of payments gotten from the factors are not large sufficient to allow the fund to become part of any purposeful possession financial investment. The average amount of contribution during the year was used as the measurement (Bodie *et al*., 2019).

In a study by Forteza *et al* (2014) in South America it was established that density of contributions are particularly low at early ages with the average densities ranging between 20 to 39 in Chile, Uruguay and Argentina. As expected, densities increase as workers mature with mature workers contributing twice as early workers to their pension plan schemes. The study also established that density of contribution negatively correlate with income levels, with the study proving that low contributions are related with low income earners and high contributions with high income earners.

In another study carried out in Jordan Forteza and Mussio (2012) it was established that workers contribute on average about one third of their working life., with the study finding out that there is no gender difference between men and women. The densities of contribution in Jordan were established to be considerably smaller than densities reported in the Latin American countries for which similar analysis have been conducted (Argentina, Chile and Uruguay). Similarly the study found out that low contribution corresponds to those with low income levels and having no incomes.

Simbabrashe *et al* (2013) conducted an empirical study on the efficiency of pension schemes in Zimbabwe in the post multicurrency era from 2010 to 2013. The research was based on quantitative data such as portfolio returns of pension funds and their asset sizes. The research sample was 20 standalone pension funds and 9 fund administered pension funds using a cluster sample. Based on the data presented on Zimbabwean pension fund, the analysis demonstrated that there was no relationship between the density of contribution and its investment performance. Therefore, the study established that density of contribution alone does not determine the performance of a pension.

2.2.4 Firm Size and Financial Performance of Pension Schemes

Njuguna (2010) evaluated approaches to enhance pension fund effectiveness in Kenya. The findings from the research study suggest that fund size is as a significant component of the economic performance of pension plan plans. Empirical results additionally developed that those smaller sized schemes are regarded to be more financially effective than bigger ones. It was nonetheless clear that the size of the pension fund did not have any kind of significant impact on

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the operational efficiency of pension systems. It was likewise obvious that fund laws influence just how systems are governed and also led. Adherence to the identified fund policies were revealed to improve fund governance as well as management.

According to Mahon and Donohoe (2016), considerable economic situations of range exist in pension fund management. They suggest that smaller sized pension funds birth excessive operating costs per participant considering that much of their costs are taken care of. The most vital variable affecting pension fund costs as a result is dimension determined on the basis of the number of participants in the pension funds. Acknowledging the remarkable impacts that pension plan fund size can carry efficiency, the Irish Funds Industry Organization (2019), pointed out in Mahon and Donohoe (2016), prompts small pension funds to pool their properties. According to the organization, pension merging would certainly allow pension funds to pool assets into a single investment car that would certainly buy assets, such as worldwide equities, bonds and money on behalf of the spending pension funds. This mean that the larger the pension plan fund size the lower the costs that it's most likely to sustain thus raising pension plan fund returns.

The argument that pension fund sizes lowers costs has been championed in Nigeria where small pension funds were merged together to form larger pension funds, with the results been improved pension performance in Nigeria (Ahmad, 2019). The smaller sized funds videotaped management costs equal to 0.78% of their possession values whilst the larger funds taped management expenses of 0.44% of the asset value (Ardon, 2016). The research concentrated on evaluating the yearly financial investment yields (yearly prices of return) of both personal pension funds versus fund size over a period of 10 years wrapped up that there was no substantial connection in between the fund's mean asset dimension and also its financial investment return. Thereby ending that fund dimension cannot be made use of to anticipate the financial returns of pension plan funds.

In his research on aspects determining performance of pension plan funds in Kenya, Oluoch, (2013) keeps in mind that the connection between fund worth and returns among pension plan funds in Kenya is not very solid. Through merging, big pension plan funds were developed which caused reduced typical deal prices as well as custodial charges for the investors. Vittas et al. (2018), observed that large pension funds enjoy the benefit of reduced operating expense due to the fact that they prevent large marketing costs. These economies might nonetheless be deteriorated by bad investment efficiency.

2.3 Conceptual Framework

Conceptual framework helps the reader see proposed relationships between the variables in the study and shows the interaction of variables diagrammatically (Kothari, 2013). In general, the research is looking at risk management, membership age, member contribution and firm size (independent variables) and their influence on financial performance of pension schemes in Kenya (Dependent variable). The variables together with their indicators/measures are shown on Figure 1.

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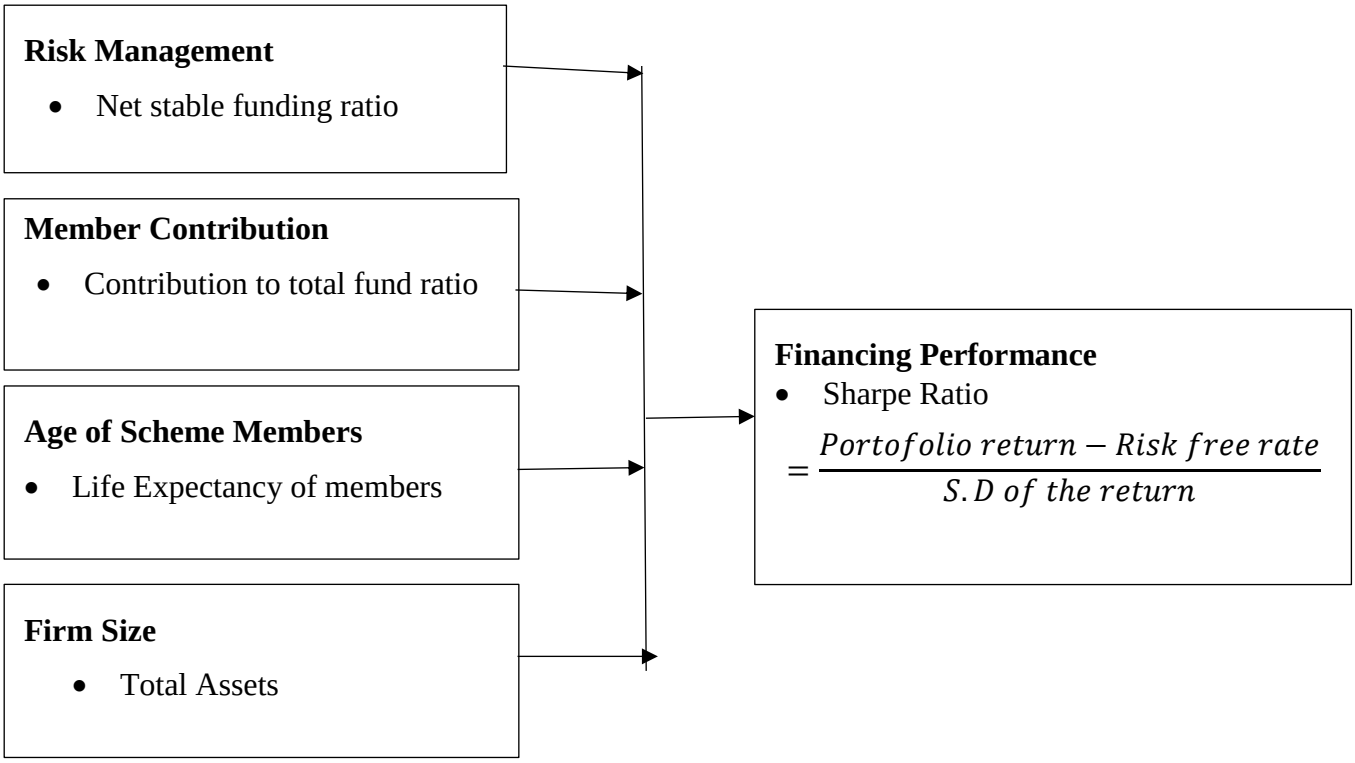

Figure 1: Conceptual Framework

Risk management involves analysis, identification and either adoption or palliation of uncertainty is involved in decision-making of investment (Jin, Merton & Bodie, 2016). The age of the members determines the pension promises that employers will make to them since younger employees have a longer time horizon to invest compared with the older members, which in turn influences the type of pension fund design on which to anchor the pension fund (Jothi, Ramakrishnan & Selvaraj, 2016). The member contribution are the total annual contributions towards the pension scheme. The contributions vary from monthly, bi-monthly to annual contributions (Lauria & Consigli, 2017). Firm size is a basis of competitive advantage in the sense that larger companies tend to be more efficient than their smaller counterparts and have better resources to survive economic downturns (Lemmon, Roberts & Zender, 2018).

3.0 Research Methodology

This study used 34 individual retirement benefits schemes registered with the Retirement Benefit Authority. The study used data for the period 2012-2021. Descriptive statistics was presented in mean, median, standard deviation while the inferential statistics included diagnostics tests and multiple linear regression model. The hypotheses was tested at 5% significance level.

4.0 Results and Findings

4.1 Descriptive Statistics

Table 2 shows the mean, standard deviation, minimum and maximum values of the variables financial performance (Sharpe ratio), risk management (Net Stable Funding ratio), age of scheme

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members(Life expectancy of the members), member contribution(Contribution to total fund ratio) and firm size (Log Total Assets) for the pension funds for the period 2012-2021.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Net Stable Funding ratio	340	1.34479	0.23862	0.94	3.81
Life expectancy of the members	340	67.66768	2.328195	59.0	69.0
Contribution to total fund ratio	340	19.58147	5.226908	10.0	29.0
Log Total Assets	340	8.096618	2.058472	5.41	12.32
Sharpe Ratio	340	2.040559	0.5536321	0.81	3.01

The net stable funding ratio had a mean of 1.344794 and a standard deviation of 0.23862. The minimum ratio was 0.94 and the maximum of 3.81. The minimum required ratio is usually at 1 and this implied that some of the pension funds had difficulties maintain it to 100%. The Life expectancy of the members had a mean of 67.66768 and a standard deviation of 2.328195. The minimum ratio was 59.0 and the maximum of 69.0. This implied that most of the pension members had a life expectancy close to the national record of 69 years old and the higher life expectancy is usually a liability to the pension funds.

The Contribution to total fund ratio had a mean of 19.58147 and a standard deviation of 5.226908. The minimum ratio was 10.0 and the maximum of 29.0. This implied that while the Contribution to total fund ratio was high for some pension funds, others recorded low values of the Contribution to total fund ratio. The log total assets had a mean of 8.096618 and a standard deviation of 2.058472. The minimum ratio was 5.41 and the maximum of 12.32. The maximum log of total assets at 12.32 was recorded by NSSF which is the largest pension fund in the country while the small and upcoming pension funds held lower sizes of assets. The Sharpe Ratio had a mean of 2.040559 and a standard deviation of 0.5536321. The minimum ratio was 0.81 and the maximum of 3.01. This implied that there were pension funds that were operating at low performance as the favorable Sharpe ratio should be above 100% for the pension funds.

4.2 Correlation

The study conducted correlation analysis for the various variables that are Net stable funding ratio, life expectancy of the members, contribution to total fund ratio and log total assets on financial performance in order to examine the nature of the statistical relationships between each pair of variables. Table 3 shows the correlation matrix of all the variables included in the study.

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Table 3: Correlation Matrix

	Financial performance	Risk Management	Age of Scheme Members	Member Contribution	Firm Size
Financial performance	1.000				
Risk Management	0.7702 0.000	1.000			
Age of Scheme Members	-0.2237 0.000	0.2441 0.000	1.000		
Member Contribution	0.7131 0.000	0.6913 0.000	0.1982 0.000	1.000	
Firm Size	0.7409 0.000	0.6967 0.000	0.2791 0.000	0.7431 0.000	1.000

The results in Table 3 show that risk management (r=0.7702*, p-0.000) had a positive and significance relationship on financial performance of pension schemes in Kenya. Age of Scheme Members (r= -0.2237, 0.000) had a negative and significance relationship on financial performance of pension schemes in Kenya. Member contribution (r=0.7131, 0.000) had a positive and significance relationship on financial performance of pension schemes in Kenya. Firm Size (r= 0.7409, 0.000) had a positive and significance relationship on financial performance of pension schemes in Kenya. This implies that an increase in risk management, member contribution and firm size led to an increase on financial performance of pension schemes in Kenya. However, the increase in the age of scheme members had a negative effect on the financial performance of pension schemes in Kenya as higher life expectancy is usually a liability to the pension funds.

4.3 Regression Analysis

The study sought to carry out regression analysis to establish the statistical significance relationship between risk management, age of scheme members, member contribution and firm size on financial performance of pension schemes in Kenya. According to Chatterjee and Hadi (2015), regression analysis is a statistical process of estimating the relationship among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent and one or more independent variables. The results are presented in Table 4.

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Table 4: Regression Analysis

Financial Performance	Coef.	Std. Err.	z	P>|z|
Risk Management	0.9869974	0.1060624	9.31	0.000
Age of Scheme Members	-0.0005833	0.0053044	-0.11	0.912
Member Contribution	0.0209738	0.0051665	4.06	0.000
Firm Size	0.0800608	0.0133983	5.98	0.000
Constant	0.3091169	0.3228381	0.96	0.338
chi2(4)=744.45				
Prob>chi2= 0.000				
Within = 0.6908				
Between = 0.6881				
Overall = 0.6895				

The regression equation was as shown below;

$FP_{it} = -0.3091169 + 0.9869974RM_{1it} - 0.0005833AG_{2it} + 0.0209738MC_{3it} + 0.0800608FS_{4it}$

RM_{1it} = Risk Management of Pension Schemes *i* at time *t*

AG_{2it} = Age of Scheme Members of Pension Schemes *i* at time *t*

MC_{3it} = Member Contributions of Pension Schemes i at time t

FS_{4it} = Firm Size of Pension Schemes i at time t

The overall R squared of 0.6895 implied that the four variables namely risk management, age of scheme members, member contributions and firm size explained 68.95% on the variations on performance for the pension firms. The overall model was significant as indicated by the Prob>chi2 of 0.000 with a Wald chi2 (4) of 744.45. In addition, the constant of 0.309 showed that when risk management, age of scheme members, member contributions and firm size are held constant, performance will remain at 0.309 units.

The results revealed that there was a positive and significant relationship between risk management and financial performance of pension schemes in Kenya (β= 0.987, p=0.000). There was a negative and insignificant relationship between age of scheme members and financial performance of pension schemes in Kenya (β= -0.00058, p=0.912). Member contribution had a positive and significant relationship with financial performance of pension schemes in Kenya (β= 0.0209, p=0.000). Lastly, firm size revealed a positive and significant relationship with financial performance of pension schemes in Kenya (β= 0.080, p=0.000).

This is consistent with Gordon, Loeb and Tseng (2019) whose results showed a significant positive relation between enterprise risk management and firm performance. The study also revealed that this was contingent upon proper match between a firm's risk management system and firm specific factors. However, the findings differ with Pagach and Warr (2010) whose results showed a significant decrease in stock price volatility after introducing risk management.

Under members' age, the findings are in line with Oluoch (2013) who established a significant positive relationship between ages of the financiers gauged by national life expectancy of Kenya suggesting that a longer life assumption positively impacted returns. Weak positive partnerships between returns as well as fund worth, assets as well as payments of pensioners was weak which showed that fund values, possessions, as well as payments were not used in the generation of earnings for the pension plan plans in Kenya. Nyangeri (2014) also established a significant and positive correlations between financial performance and density of contributions, Fund value, fund size, and fund returns. Weaker, significant and positive correlations were established between financial performance and Fund design and Age.

5.1 Conclusion

Based on the study findings the study concluded that there is a strong correlation between risk management, age of scheme members, member contributions and firm size on financial performance of pension funds. The relationship between members' contributions and performance of the pension fund was strong and statistically significant. This indicates that returns of the pension funds are responsive to the member's contributions of the pensioners. Risks expose pension funds to greater losses in the event of failure of the stock markets. Pension funds are therefore called upon to set strategies that enable them to achieve returns while carefully considering the risks that they expose members to using the favorable net stable funding ratios. Achievement of an acceptable balance between risk and returns in the investment strategy is therefore a distinguishing factor between performance and non-performance of pension funds.

The coefficient of age was not statistically significant indicating that general age of the contributors was not a contributor to the returns of the pension funds in Kenya. This indicates that variability of the age of the contributors was independent from the variability of the returns of the pension funds as opposed to the theoretical positions which claim a close relationship.

Fund size has been confirmed as a significant determinant of the financial efficiency of pension funds. The results revealed that smaller funds are perceived to be more financially efficient than bigger ones. Fund size however did not exert an influence on the operational efficiency of pension funds. In addition, the regression analysis was statistically insignificant indicating that there are other factors; other than those investigated in this research that seem to determine the behavior of the performance of the pension funds.

6.1 Recommendation

Based on the findings of this study, the following recommendations arise.

The study recommends that the pension funds' risk management needs to pay particular attention to pension fund risks. A risk management framework should be drawn up, identifying a set of procedures, which include procedures to define, identify, assess, monitor and control risk. Further, the risk management system needs to be well integrated into the organizational structure and in the decision making process of the pension fund.

The study recommends on inclusion on the needs of the different age brackets in the management of the pension schemes. While the older pensioners are satisfied with stable old age income, the younger want their funds to be used in more income generating activities. The fact that age did not seem to affect the returns of the pension funds indicates that the pension fund managers have equated the needs of all contributors to old age income needs..

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The study recommends that the pension funds should use the increasing value of their funds to generate returns for the pensioners. This is because relationship between fund value and returns among pension funds in Kenya are is not strong indicating that this advantage is not utilized. Increase values of funds can be used as assets that can be a generator of further income for the benefit of pensioners.

The study recommends that the pension fund need to utilize assets to generate income for the pension funds to enable them increase in asset growth that in turn increase their returns. It appeared that the assets acquired by the pension schemes were not properly used to generate higher returns. If the assets were well utilized it would mean that the assets available in the pension funds are used to generate income leading to a strong relationship between asset values and returns.

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