CORPORATE GOVERNANCE, INVESTMENT STRATEGY, MACROECONOMIC VARIABLES AND FINANCIAL PERFORMANCE OF PENSION SCHEMES IN KENYA

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ABBREVIATIONS AND ACRONYMS

APT	Arbitrage Pricing Theory
CAPM	Capita Asset Pricing Model
CBK	Central Bank of Kenya
CEIPOS	Committee of European Insurance Occupational Pension Supervisors
CMA	Capital Markets Authority
CG	Corporate Governance
DB	Defined Benefit
DC	Defined Contribution
EME	Emerging Market Economies
ERISA	Employee Retirement Income Security Act
FMA	Financial Management and Accountability Act
ILO	International Labour Organisation
INPFRS	International Network of Pension Fund Regulators and Supervisors
IOPS	International Organization of Pension Supervisors
IRA	Independent Regulatory Agency
ISSA	The International Social Security Association
KEMRI	Kenya Medical Research Institute
KNAO	Kenya National Audit Office
KNBS	Kenya National Bureau of Statistics
LUPFUND	Local Authorities Provident Fund
NSSF	National Social security Fund
OECD	Organization for Economic Cooperation and Development
PBGC	Pension Benefits Guarantee Corporation
PPF	Pension Protection Fund
PPR	Prudent Man Rule
PSPS	Public Service Pension System
RBA	Retirement Benefit Authority
SCAC	State Corporations Advisory Committee
SR	Sharpe's ratio

ABSTRACT

The study investigated the impact of corporate governance, investment strategy and macroeconomic variables on the financial performance of pension schemes in Kenya. It examined the causal relation between the dependent and the independent factors from a developing country's perspective. Currently, a limited numbers of studies have been carried out to evaluate the impact of several factors on the financial performance of pension schemes in Kenya. Moreover, there is no unanimity on the impact of comparable independent variables such as corporate governance practices or investment strategies in studies undertaken in the developed world. In addition there were those that were inconclusive findings. Furthermore, none of the studies examined the moderating effect of macroeconomic factors nor the intervening effect of investment strategy on the relationship between corporate governance and financial performance of pension schemes. The studies too did not use the multi-equation approach to assess the influence of multiple factors on pension performance. The study sought to address the following key research question: What is the effect of corporate governance, macroeconomic variables and investment strategy on the financial performance of pension funds in Kenya? Qualitative, quantitative and correlational research designs were used to assess the effect of these factors on financial performance of pension funds. Quantitative data on annual return of pension funds and macroeconomic variables spanning the period 2012 to 2022 as well as qualitative data on governance indicators and investment strategies were used in the study. Return on investments (combined ROI of pension funds) was used as an indicator for pension fund performance. Primary data was collected using survey questionnaires from the pension schemes from both the corporate governance (CG) and investment strategy (IS) indicators. Qualitative analysis of this data resulted in both CG and IS indices. The main study findings show that indicators of corporate governance (Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, and Stakeholders interests in board decisions) as well as investment strategies impact differently on pension funding. The results revealed that the influence of CG indicators on pension performance was positive and significant. Besides, the intervening effect of investment strategy on the link between governance and pension performance was significant. Similarly, the impact of macroeconomic variables was significant. The individual contribution of both governance indicators and macroeconomic factors on pension performance, proxied by combined return of pension fund nonetheless, varied. The main conclusion of the study is that pension fund financial performance is influenced by the independent variables corporate governance, investment strategy and macroeconomic factors. The implication of the finding is that there is need to take into account the impact of these factors in the execution of investment plans of pension funds. They will therefore be key factors to be considered by managers of pension funds, policy makers, regulators of capital markets as well as retirement benefit schemes to ensure generation of adequate funds to provide retirement benefits to the members.

CHAPTER ONE
INTRODUCTION

1.1 Background of Study

Financial Performance indicates how well a firm utilizes its assets to make the most of the owners' wealth and profitability, a key aspect of financial risk management. Farah, Ijaz and Naqvi (2016) discern that financial performance is a complete evaluation of a firm's overall standing in assets, liabilities, equity, expenses, revenue, and profitability indicating the whole financial health of the organization over a given period of time. Previous financial literature has not yet come to a definitive conclusion as to what firm factors determine their performance during any state of the economy (Rumelt, 1991). Studies by Hawawini, Subramanian, and Verdin (2003) argue that industry or external firm factors play a more important role in dictating the influence of firm performance. Others by Opler and Titman (1994) suggest that firm specific (internal) factors seem to be the major determinants of the operating performance, and are the main drivers for competitive advantage which is crucial for surviving economic downturns.

Empirical literature on the relationship between corporate governance and company financial performance is extensive although the findings are mixed and not conclusive. Studies by Ficici and Aybar (2012), Clark and Urwin (2008), Moriarty and Zadorozny (2008), Chow (2005), Yang and Mitchell (2008) as well as Manuel and Andreas (2008) showed that that corporate governance is positively associated with firm performance whereas other studies show no such linkage (Larcker et al., 2007; Dalton et al., 1998; Heracleous, 2001; Bhagat & Black, 2002). The results showing positive correlation are based on the theory that agency costs can be reduced significantly by a competent board of directors.

Another crucial factor hypothesized to influence firm's financial performance is the Investment strategy. Stanko (2002), Eichholtz and Margaritov (2009) aver that investment strategy determines the investment mix of the asset portfolio which targets at having balance between investment risks and returns. The investment strategy is therefore a plan that guides the choice of the investments that firms make. According to Eaton and Nofsinger (2001) there is a positive association between risk and returns, meaning that a company will take more risk for better returns. Similarly, Tonks (2006) opined that there is a relationship between investment strategies adopted and pension financial performance. Thus, it is the authors' view that companies adopt apt investment strategies to attain higher returns for given investment risks.

The literature is rather limited in theories especially the the Arbitrage Pricing Theory (APT), the Modern Portfolio Theory (MPT), the Stakeholder theory, the Capital Asset Pricing Theory (CAPM) in a few emerging markets such as Turkey and Indonesia among others yet in the context of frontier stock markets, defined as less advanced and very small capital markets such as those in Africa, the evidence is nonexistent, although they have been tested in large developed stock markets now and then. None of the evidence from the existing studies on the impact of several factors on pension financial performance in Kenya has been reported yet.

This present work is the first pension scheme level analysis of the financial performance behaviour of Kenyan pension schemes involving a multi-factor model. Studies by Olweny and Omondi (2011), Ochieng and Oriwo (2012) as well as Osoro (2015) provided valuable evidence from a survey of firms in Kenya, though none was on the

pension sector. Since the overall pension regulatory reform was pursued in 1997, the pension sector financial performance in the country has not been intensively evaluated.

The research was supported by the Agency theory, the Modern Portfolio Theory (MPT), the Arbitrage Pricing Theory (APT), the Capital Asset Pricing Model (CAPM) as well as the Stakeholder Theory (SHT). The Agency Theory proposes that there is an association between organizational structure and firms' financial performance. It aims at reducing the conflict of interest and agency costs that arise due to risk preferences, information failure and shareholders having minimal influence in decision-making in the firm. In concurrence, Marashdeh (2014) observed improved performance of firms when agency problems were reduced. The Stakeholder Theory on the other hand states that the financial performance of a firm has a direct relationship with other stakeholders who have interest in the firm, apart from the shareholders. The theory argues that a wider population interests impacts firm performance.

The Markowitz (1952) Modern Portfolio Theory conversely provides a practical method to make asset management and allocation decisions in order to maximize their overall returns within an acceptable level of risk. This can be achieved by reducing risk through selecting proportions of various assets to combine dissimilar financial assets to form a diversified investment portfolio. The theory of Portfolio Diversification has been instrumental in paving the way for modern asset pricing models to measure risks associated with equity returns. Subsequently, Capital Asset Pricing Model (CAPM) was developed by Sharpe (1964), Linter (1965) and Mossin (1966). The CAPM financial model describes the relationship between the risk of a security and the market as a whole. The theory estimates the expected rate of return for an investment using the expected return on both the market and a risk-free asset, and the asset's correlation to the market (beta).

The Arbitrage Pricing Theory (APT) proposed by Ross (1976, 1977), has come as an alternative to CAPM measure of risk-return. The theory hypothesizes that there is a correlation between expected return of a security and a set of systematic factors that affect assets risks. It appears to be influenced by macroeconomic factors that intuitively affect capital investment. The theory is based on the assumptions and insights developed in Inter-temporal capital asset pricing model (ICAPM) and Efficient Market Hypothesis (EMH) and like CAPM it is a linear model though of multiple betas rather than single beta as in CAPM (Chen et al., 1986).

Inter-temporal capital asset pricing model developed from portfolio selection behaviour is an equilibrium model that assumes investors hedge risky positions in the future investment opportunity set (Merton, 1973). According to the EMH, stocks always trade at their fair value on stock exchanges, which makes it impossible for investors to either procure undervalued stocks or sell stocks for overestimated prices. Although it is a foundation of modern financial theory, the EMH is very controversial. The study consequently utilized the four financial theories to develop test hypotheses that were used to investigate the impact of corporate governance, investment strategy, and macroeconomic variables on financial performance of pension funds in Kenya.

The Retirement Benefits Industry plays a huge role in the world economy. Studies by Heijdra, Ligthart and Jency (2006); Watson (2007); and Yermo (2008) highlighted their significance by showing that they contribute immensely to growth and development of

world economies through provision of retirement benefits, growth of financial services as well as development of capital markets. The OECD, for instance established in 2017 that assets in Retirement Benefits Schemes amounted to 50.7% of GDP in the OECD countries and 19.7% of total GDP in the non-OECD countries. In Kenya, the Retirement Benefits Assets as a percentage of GDP stood at 14.4%. The industry grew from both member contribution and good performances leading to the assets under management growing to Kshs 1,547.4 billion in 2021, from Kshs 403.2 billion ten years ago, translating to a compound annual growth rate of 14.3% over the last 10-years (RBA, 2022).

In recent, years, corporate governance has attracted much attention following increased cases of high-profile scandals and the catastrophic failures and losses of giant companies worldwide. Kaur and Suveera (2009) reports that such scandals included the Bank of Credit and Commerce International (BCCI) of 1991 and the Maxwell Pension cases in the UK; the Enron and WorldCom cases in the US; as well as the Satyam, Reebok and the Sahara cases in India. The authors opine that the cases involved unethical conduct, abuse of corporate power and alleged criminal activity by key managerial personnel. Furthermore, the 2007-08 collapse of the subprime mortgage markets and regional market crisis further highlighted the significance of good governance. The later, according to Nam and Nam (2004) and Antolín and Stewart (2009) included the 1997 Asian financial crisis and the 2008 Global financial crisis. Subsequently a number of pension funds worldwide declined in their financial performance as indicated by major reductions in pension fund assets (OECD, 2008). Besley and Prat (2005) argues that the later development exacerbated the threat of pension funds failing to provide retirement income. Similarly, various challenges were witnessed in Kenya in the past two decades. They included operational malpractices, misappropriation of scheme funds, imprudent asset management, low coverage, unfunded liabilities, lack of transparency, and weak enforcement of pension laws among others. The situation was worsened by the deteriorating economy. It is noted that the impact of corporate governance, investment strategy and macroeconomic factors on financial performance of pension funds is widely studied in developed economies but there is a clear gap in in developing countries like Kenya necessitating further research in the subject.

1.1.1 Corporate governance
Carmichael and Palacios (2003) defined Corporate governance as systems and processes by which organizations attain their undertakings with the goal of mitigating conflicts among their stakeholders and get the best out of their wellbeing. The International Organization of Pension Supervisors (IOPS) (2008/9) described pension governance as the framework by which the management makes decisions about the pension fund's activities that encompass the formation of the board; the decision-making processes within the board; the required skills of the board; and the means by which the board is held responsible to shareholders.

Maher and Andersson (1999) were of the view that a major component of improving performance of pension funds is the application of corporate governance principles. The authors assert that governance influences the development and functioning of capital markets and exerts a strong influence on resource allocation. It impacts upon the behaviour and performance of firms, innovative activity, entrepreneurship, and the development of an active small and medium enterprises (SME) sector. In an era of

increasing capital mobility and globalization, the authors aver that corporate governance has become a crucial factor impacting industrial competitiveness of OECD countries. The authors therefore are of the view that improved corporate governance reveals itself in firm's better financial performance both in developed and developing countries.

Similarly, Shamim, Kumar and Soni (2014) avow that improved integrity and efficiency of firms as well as capital markets has an association with good corporate governance. The authors observe that poor corporate governance deteriorates company's potential leading to malpractices and declined performance. Moreover, they observe that firms implementing best corporate governance practices raise capital easily and are more profitable and competitive as they reduce many risks that arise from daily operations. Bushee, Carter and Gerakos (2007), as well as Leuz, Lins and Wamock (2007) support this assertion that investors exhibit preference for well-governed firms.

Another scholar, Chow (2005) argues that a firm's governance practices determines its behavior which subsequently impacts its stock market value. Equally, Shleifer and Vishny (1997) and Watson (2007) show that governance has a link with increased investor confidence, decline in fraud, reduction in regulation costs and increase in Growth Domestic Product (GDP) of countries. Donaldson et.al, (2001) nonetheless, observes that no globally accepted governance principles that safeguards and promote shareholders' assets exist meaning that their use varies across countries. Some vital components of good corporate governance identified by Bhasin (2013) comprise accountability, transparency, rule of law, inclusivity and disclosure.

Palacios (2001) is of the view that governance is crucial to pension schemes as indicated by the increase in reported high profile cases of governance failure and misconduct following an upsurge in regional market crisis and large corporate failures. Stewart and Yermo (2008) discerns that these included the Asian Financial crisis of 1997, the collapse of both the Enron Corporation in the US and the Swissfirst affair of Pensionskassen in Switzerland. The question that arises then is where were the regulators? It's a fair question after the failure of several ostensibly supervised financial institutions and companies as policymakers are once again set out to make the financial system less crisis-prone. Even so, there is an equally pressing question to answer: where were the directors? The collapse of these institutions suggests serious lapses of oversight not just from regulators but at the board level.

Jensen and Meckling (1976) suggests that the decline in value of pension assets can be reduced by Governance practices that help to reduce agency problems. The authors affirm that the Agency theory looks at management of companies as agents whose interest may depart from those of the principals who are the shareholders. Since both parties are utility maximizers, the authors avow that the agent or the principal will choose the option that increases his or her individual utility given the choice between the two alternatives. Eisenhardt (1989) nonetheless, affirms that the main focus of good governance is the implementation of contracts that result in improved business performance and decrease risk. Accordingly, David and Impavido (2003), opine that the theory encourage agents to act in the interest of shareholders as well as reduce them from acting inaptly.

Shleifer and Vishny (1997) argued that the board of directors critical role in the implementation of good corporate governance practices enhances financial performance of pension funds. In concurrence, Malik et al. (2016) and Yang et al. (2009) aver that board size influences management functions such as monitoring, decision making and disclosure, although they note that existing empirical research findings are mixed across countries and industries, making the subject be still an important area for further research. Gallo (2005) stated that the independence of the board of a firm can be evaluated by examining the presence of non-executive directors on board. Similarly, Butt and Hassan (2009) are of the opinion that these directors are more effective monitors, playing a major role in value creation for the firm. They mitigate the conflict of interest between contracting parties and act in the best interest of shareholders. Equally, advocates of the Agency theory avow that the higher number of non-executives in the board monitor effectively the top management and protect the shareholders and other stakeholders. They accomplish this by preventing collusion of top managers to expropriate minorities' wealth.

Aanu et al. (2014) as well as Epps and Cereola (2008) add that the audit committee serve to protect the rights of shareholders and improve the financial performance of companies. Moreover, the authors are of the view that effective oversight of the annual auditing process depends on the audit committees which likewise superintend the system of internal controls and ensure firms are compliant with legal systems. For the case of CEO duality, Yang and Zhao (2014) opine that this concept is one of the most contentious governance issues in recent times. It has opposing effects that the boards must address. In concurrence, Strier (2005 observes that the CEO duality is a major source of conflict of interest. It was described by Rechner and Dalton (1991) as a situation when the same person holds both the CEO as well as the board Chairperson positions in a company. The authors however, aver that there is no legislation that bars companies having CEO undertake both duties. Studies by Dalton et al. (1998) and Wellalage and Locke (2011) reveal mixed and inconclusive empirical evidence on the effect of CEO duality on firm performance, hence it is worthy to study these variables in new market environment.

Policy makers in a number of countries endeavored to mitigate flaws in governance through a number of measures that included legal and regulatory instruments besides voluntary codes and principles. Examples of such encompassed the Sarbanes Oxley Act (SOX) of 2002 in the US, the Cadbury Code in the UK, Cromme Code in Germany as well as the Code of Corporate Governance in Pakistan. In addition there was the Retirement Benefit Authority (RBA) Act Cap 197 of 1997 in Kenya besides, the Mwongozo Code of Governance for State Corporations (Kamran & Shah, 2014).

The RBA Act, Cap 197 serves to regulate, supervise and promote development of the pension sector and ensure their smooth functioning in Kenya. The Sarbanes-Oxley Act, the Sarbox or Sox, was an attempt by the government of the United States to legislate the Cadbury and OECD reports. The main objective was to protect investors from malpractices in addition to false financial reporting and improve their accuracy. The OECD on the other hand developed the first approved international code of corporate governance in 1999 in an attempt to address governance flaws on publicly traded companies with a primary goal of improving the legal, institutional and regulatory framework. Furthermore, the codes provided roles to be played by various players in

developing good corporate governance practices such as the capital markets, investors, corporations, and other parties.

Despite these efforts, Corporate governance flaws persist globally resulting in poor performance of a several pension funds. Consequently, one enquires why governance reforms are not protecting retirement benefits. Could there be other factors influencing performance in addition to the level of development of countries? Gul and Tsui (2004) are of the view that this could be attributed to such factors as the basic legal systems, political stability, market size, corporate ownership and financial systems. There is limited empirical evidence of the impact of corporate governance on financial performance of pension funds in developing countries hence the need for further studies.

1.1.2 Investment Strategy
Investment strategy is defined by Bilaus (2010) as a set of guidelines that help investors choose assets in a portfolio based on investment objectives and tradeoff between risk and return. Another scholar, Stanko (2002) explains it as a mixture of investment assets made by pension funds. According to Tonks (2006), the strategy plays a crucial role in portfolio management. The later forms part of the huge global investment management industry where pension assets are a significant part.

Obermann (2005) observed that the investment process of pension funds faces many challenges `including inflation risks, market, credit, and solvency risk. In addition, they face, governance and agency risks, legal and regulatory risks that all lead to poor pension performance. This is compounded by the fact that pension schemes are long-term saving vehicles in which the savings cannot be accessed until retirement. This is in contrasts with other saving schemes. Managing these risks is therefore critical for ensuring their sustainability. Consequently, it is critical that the investment function is managed responsibly. Tan and Luo (2021) argue that investment decisions are key to the financial performance of pension funds. In agreement, Liu and Zhang (2020) went further to propose that planned investments must be evaluated and adjusted to the level of risk and expected return of shareholders that will increase firm value. Empirical evidence from studies by Af¸sar and Karaçayir (2020), Al Daas et al. (2020), Pramartha et al. (2020), and Susanti et al. (2019) support the notion that investment decisions influence firm value.

Rudolph et al. (2010) observed that the type of pension schemes vary in the risks they are exposed to. They note that they have however, undergone reform since the early 1980s, moving from defined benefit (DB) systems and unfunded pay-as-you-go systems (PAYG) to arrangements in which the provision of pensions is backed by assets in schemes. The later have increasingly linked retirement incomes to the performance of these assets. It is noted that the type of risk determines the investment strategy to be employed to mitigate them. The risk exposes participants to uncertainties of investment markets that determine the level of benefits that they will ultimately receive at retirement.

The aging populations have also led to the explosion of the liabilities of public PAYG schemes, the implicit pension debt. In a move by governments to mitigate against this problem, there is a shift to funded schemes to diversify sources of retirement income and alleviate increasingly intergenerational transfers. Raz (2005) avers that application

of investment strategy is key to accomplish control of risks and expected returns both for short and long term goals. Because pension schemes vary, Urwin (2010) is of the view that there is that there is no one solution to the mitigation of investment risks. The author therefore outlined a number of strategies to be employed that vary from asset allocation to active or passive fund management; diversification; limitations on portfolio allocation; market timing; Indexing; as well as international investment.

The main investment theory that allows investors to assemble assets of a portfolio that maximizes expected return for a given level of risk is the Markowitz's (1952) Modern Portfolio Theory (MPT), the Efficient Frontier. MPT, a portfolio management tool is based on the mean-variance efficiency for assets allocation and assumes that investors are risk-averse; for a given level of expected return, investors will always prefer the less risky portfolio. MPT is based on diversification which is a portfolio allocation strategy that aims at minimizing idiosyncratic risk by holding assets that are not perfectly positively correlated. It is based on the principal that owning a portfolio of assets from different classes is less risky than holding a portfolio of similar assets.

MPT identifies two types of risk, the idiosyncratic risk and systemic risk. Idiosyncratic risk is specific to each asset whereas systematic risk is one that is common to the entire market. Diversification cannot lower systematic risk because all assets carry this risk. The MPT hypothesizes that diversifiability of idiosyncratic risk has a relationship with the expected rates of return on assets through optimal portfolio selection. It provides a framework to select the best combination of assets having minimum risk. In agreement with concept of MPT, Tonks (2006) affirms that there is an association between investment strategy used and performance of pension funds. To improve portfolio management, the OECD developed guiding principles on Pension Fund Asset Management that include setting pension fund objectives; prudential principles; prudent person standards; investment policy; portfolio limits; and valuation criteria of pension assets (OECD, 2006).

Sharpe (1992) established that asset allocation accounts for a large part of the variability in the return on a typical investor's portfolio. Elton, Gruber and Blake (1996) are of the view that it is possible to outperform the S&P 500. However, studies by Sharpe (1991) and Ippolito and Turner (1987) found that actively managed funds on average underperform the Index, net the costs. Similarly, Bogle (2002) shows that the Index performs better than the active managed portfolios in most cases. The results are in line with Fama's (1969) Efficient Markets Hypothesis (EMH), which states that financial markets are highly efficient and that prices of stocks fully reflect all available information. which states that asset's prices fully reflect existing information, making it impossible to beat the market. Consequently, the mixed results create a need for further research. Locally, empirical literature is limited on effects of investment strategy on pension performance.

1.1.3 Macroeconomic Factors

Macroeconomic factors are described by Brinson et al. (2009) as factors such as financial, natural, or geopolitical events that broadly impact either positively or negatively regional or national economy, affecting a large population and are uncontrollable and beyond but have a link to the state of the economy and government policy. Such factors include Gross Domestic Product, changes in interest rates, inflation rates, and unemployment rate, In addition, there exists natural disasters such as

earthquakes, changes in money supply as well as civil or international war that are meticulously observed by investors. Scholars such as Khaparde (2014) and Kahraman (2011) are of the view that financial decisions for instance investment, financing, working capital or dividend decisions whose goal is wealth maximization, differ from one company to the other. The authors nonetheless, are of the opinion that the decisions are influenced by the prevailing macroeconomic factors. In concurrence, Kahraman (2011) in addition to Liu and Pang (2009) affirm that investors select assets in a portfolio based on these factors to improve portfolio performance.

The Arbitrage Pricing Theory (APT) by Ross (1976) suggests that there is an association between financial position of firms and a number of variables including change in GDP, interest, inflation and exchange rates among others. The theory thus offers a multifactor pricing model for securities by proposing that the return of securities is a linear function of the macroeconomic factors. A number of scholars in developed countries and EME including Fama (1990); Clare and Thomas (1994); Mookerjee and Yu (1997); Kwon and Shin (1999); Humpe and Macmillian (2007); Bodie et al. (2008); and Pilinkus (2010) examined the impact real GDP, industrial production, lagged inflation and interest rate on stock performance. Their results indicated that these factors had a significant impact on portfolio performance. Studies in a developing country by Olweny and Omondi (2011) and Ochieng and Oriwo (2012) investigating the relationship between firm performance and the Nairobi Securities Exchange (NSE) Index revealed that a significant link between the two variables exist. Furthermore, Chelangat (2014) observed that these factors are closely monitored by businesses, governments and pension funds.

1.1.4 Financial Performance
Financial Performance is a measure of a company's overall financial health over a given period of time (Grabenwarter & Weidig (2005); Naz, Ijaz & Naqvi (2016)). The authors observe that it shows how well a firm utilizes its resources to maximize the shareholders wealth and profitability. Other scholars refer to it as the degree to which fiscal objectives have been met. Walker and Iglesias (2007) asserts that evaluation of portfolio performance is undertaken to determine whether portfolio managers add value compared to passive investment strategies that are indicated by well diversified benchmarks. This however, is negated by Fama's (1991) Efficient Markets Hypothesis which, suggests that it is impossible to beat the market consistently on a risk-adjusted basis as asset prices fully reflect all available information. The measurement nonetheless, remains a key aspect of financial risk management.

Carton (2004) argued that performance measurement is crucial in the effective and efficient management of firms, particularly in the enhancement of its processes to boost their total value. Kuratko and Morris (2003) however, noted that business environments have uncertainties that influence firms' performance. Cheema and Din (2013) note that pension schemes are under scrutiny on their performance by stakeholders including policymakers, investors and fund trustees. They aver that performance information enables stakeholders to measure and compare the efficiency of the investment.

Tapia (2008a,b) as well as Ijaz and Faizan (2016) opine that a complete evaluation of a firm's financial performance entails the examination of such measures as financial ratios particularly, liquidity, solvency, profitability and valuation ratios. In addition, the analysis includes analysis of trends, market value, average annual returns and standard

deviations. The authors aver that ratios express the numerical relationship between two or more variables and are crucial in determining the degree of improvement of the financial position of a firm relative to that of other firms in the same industry.

Other measure for evaluating the financial performance of companies include accounting-based performance metrics. They are a type of return on investments such as Return on Equity (ROE) and Return on Assets (ROA). Return on Assets is a ratio that shows how well a company is performing by comparing the profit it is generating to the capital it has invested in assets. It thus measures the profitability of a business relative to its total assets. In contrast, Return on Equity is a measure of a company's profitability that reveals how much profit a company generates with money that shareholders have invested in it. It looks at the firm's bottom line to gauge overall profitability for the firm's owners and investors. Stockholders are at the bottom of the pecking order of a firm's capital structure, and the income returned to them is a useful measure that represents excess profits that remain after paying mandatory obligations and reinvesting in the business. There is also market based measures such as Tobin Q (Daily & Dalton, 1993; Hermalin & Weisbach, 1991 and Lam & Lee, 2008).

For the case of pension funds, their performance can be examined using risk adjusted performance measures comprising Sharpe's, Sortino's, Treynor's ratios which quantify the ability of pension fund managers to deliver an active management risk premium, with respect to benchmarks. The ratios assess fund returns but incorporate measures of risk. Sharpe's ratio shows how well the return of an investment compensates for the risk investors take. The higher the Sharpe ratio the better it compensates for risk. The grading threshold of the ratios are provided as: i) <1 – Not good; ii) 1-1.99 – OK; iii) 2-2.99 – Really good; and iv)>3 – Exceptional (Sharpe, 1966), where Return on assets/portfolio = Net Income ÷ Average total assets.

$$\text{Sharpe's ratio} = \frac{\text{Return of a portfolio } (R_P) - \text{Risk free rate } (R_F)}{\text{Standard deviation of portfolio's excess return } (s_P)}$$

Fama and French (1996) aver that the risk-adjusted performance measures have a major weakness of aggravating the herding behaviour around the mean manager. Moreover the benchmark used such as the Market Index for comparison may be unsuitable.

1.1.5 Pension Schemes in Kenya
A Pension scheme is long term saving plan that is a legally binding contract with an objective of providing benefits to persons on retirement, on death, on having reached a particular age, on the onset of serious ill-health or disability, survivors benefits or in similar circumstances (OECD,2002). Schemes are classified into various categories. The OECD using the multi-pillar approach identified three types: the First pillar, publicly managed pension schemes, the second pillar and the third Pillar. The first pillar comprise Defined Benefits and Pay-as-You-Go schemes which are financed based on a payroll tax. The second pillar include privately managed pension schemes that are provided as part of an employment contract while the third pillar encompass personal pension plans that form saving and annuity schemes. Private schemes are managed by fund managers and insurance companies.

Retirement Benefit schemes may further be categorized based on two approaches: functional and institutional approaches resulting to plans being either public or private; occupational or personal; Defined Benefit (DB) or Defined Contribution (DC); funded or unfunded. For the case of Kenya, classification of pension schemes is based on the

multi-pillar approach of Pillars I, II and III. Pillar I comprise the Public Service Pension Scheme and the National Social Security fund (NSSF). Pillar II encompasses Occupational pension schemes while Pillar III includes Individual retirement benefit plans. In 2020 there were a total of 1,268 occupational pension plans, 41 individual pension schemes and 32 Umbrella Retirement Benefits schemes in Kenya. The later plans comprised pooled companies that found it was not financially feasible to create their own pension schemes.

The pension industry in Kenya was largely unregulated prior to 1997 and lacked wide-ranging policy frameworks for nurturing sustainable social protection programmes. Following the challenges facing the industry, the government in 1997 took the initiative to restructure the sector to address these and emerging issues by enacting the Retirement Benefit Authority (RBA) Act Cap 197. The Act's main purpose was to establish the RBA whose main function was to oversee the growth and development of the retirement benefits schemes and sector in the country.

Despite this noble development, the financial performance of pension schemes in Kenya nonetheless, continued to face major challenges ranging from operational malpractices, misappropriation of scheme funds and lack of transparency, resulting in declined pension assets. Such incidences included the Kenya Medical Research Institute (KEMRI) pension fund loss of KS 295 million held in trust account (Naftali, 2005) and the Kenya Ports Authority (KPA) Retirement Benefits Scheme loss of KS 700 million in 2018. The events were aggravated by poor performance of the economy. Limited empirical literature is available on the above factors on pension performance, hence the need for further research.

1.2 Research Problem
For the last decade, Pension industry in Kenya has been faced with a major problem of raising adequate financial resources to provide for retirement benefits to its members. Rumelt (1991) reports that previous financial literature has nonetheless, not yet come to a definitive conclusion as to what factors determine pension performance.

Studies by Opler and Titman (1994) suggest that firm specific or internal factors such as corporate governance, investment strategy seem to be the major determinants of the operating performance, and are the main drivers for competitive advantage which is crucial for surviving economic downturns. Studies by other scholars including Yang and Mitchell (2005), Manuel and Andreas (2008) and Clark and Urwin (2008) similarly established a link between good governance practices and firm financial performance. In contrast, Daines and Klausner (2001); Coles, et al. (2008); Bhagat and Black (2002) found mixed and inconclusive results on the association between corporate governance and pension fund financial performance. Disharmony on the empirical results on the subject makes the issue current necessitating further research to enable a better understanding of the association among the study variables.

 The importance of corporate governance in the pension industry has come to light of late following both regional and international market crisis and large corporate failures. Kuepper (2019) for instance reports that the Asian Financial Crisis of the "Tiger economies" of 1997 resulted in their capital markets and currencies lose 70% of their values. Similarly, Amadeo (2019) as well as Antolín and Stewart (2009) aver that the Global Financial Crisis of 2008 resulted in the great recession leading to an estimated

loss of US $5.4 trillion or about 20% of the value of pension assets in OECD countries. In the UK, corporate governance first came into the spotlight with the publication of the Cadbury Report, shortly after two large companies, Maxwell Communications plc and Polly Peck International plc collapsed. Ten years later, the US enacted the Sarbanes-Oxley Act to resolve challenges emanating from the collapse of Enron Corporation and WorldCom. A fair question after the failure of several ostensibly supervised financial institutions is: where were the regulators? This is the question that Policymakers are making as they set out, to make the financial system less crisis-prone. Even so, there is an equally pressing question to answer: where were the directors? The collapse of these institutions, suggests serious lapses of oversight not just from regulators but at the board level.

In Kenya a number of challenges were witnessed befalling the pension industry. They included operational malpractices, misappropriation of scheme funds and lack of transparency. The situation was worsened by deteriorating performance of the economy. Examples of such malpractices included the loss of KS 295 million held in trust account of the Kenya Medical Research Institute pension fund (Naftali, 2005) while the Kenya Ports Authority (KPA) Retirement Benefits Scheme lost KS 700 million through illegal purchase of assets. In spite of enactment of the RBA Act Cap 197 in 1997 that was to provide oversight on the growth and development of the pension industry in the country, pension challenges persisted. A number of retirement benefit schemes under-performed due to accounting scandals and poor governance.

The OECD (2008) and Rudolph et al. (2010) avow that governance problems that arises among managers, shareholders and stakeholders have endangered the sustainability of pension funds worldwide. In concurrence, Besley and Prat, (2005) were of the opinion that this has aggravated the threat of pension funds failing to provide future retirement benefits. Consequently, this has put pressure on stakeholders in the pension industry to initiate reforms to address the crisis in the industry. Palacios (2002) observes that a review of existing empirical literature reveals that only a limited number of researches were undertaken to investigate the influence of corporate governance on performance pension funds in Kenya. Besides, there are fewer studies that evaluated the impact of multiple factors on the relationship between corporate governance and Pension performance. Moreover, mixed findings have led to lack of clarity over many concepts.

A number of scholar are of the view that good corporate governance is an essential component of a well-functioning pension system as it is postulated to influence their investment performance and hence security of retirement benefits. Corporate governance is directed towards public limited companies whose securities are traded in recognized capital markets. Such organizations such as pension funds have hundreds or even thousands of shareholders whose wealth and income can be enhanced or compromised by the decisions of senior management, the agency problem. Potential and existing shareholders take investment decisions based on information that is historical and subjective, with little knowledge of the direction that the company will take in the future. They therefore place trust in those who take decisions to achieve the right balance between return and risk, to put appropriate systems of control in place, to provide timely and accurate information, to manage risk wisely, and to act ethically at all times. The agency problem becomes most evident when companies fail.

Scholars have also hypothesized that investment strategy is another major factor

determining performance of pension funds. It is a set of guidelines that help investors choose assets in a portfolio based on investment objectives and tradeoff between risk and return as argued by the Markowitz's Portfolio Theory. The theory provides a framework through which one can make sensible asset management and allocation decisions by suggesting that all investors are risk averse and that risk can be reduced by combining dissimilar financial assets to form a diversified investment portfolio. The issue of application of investment strategies to manage risks was highlighted by the recent Global economic turmoil that resulted in declined pension fund performance. Differential level of development of capital markets is also a potential source of variation in study results done in developing and emerging economies.

Researchers such as Brinson et al. (1991) are of the view that macroeconomic factors are also hypothesized to be major determinants of pension financial performance. They are therefore of critical consideration by institutional investors when it comes to assets under management. Ross (1976) argued that there is a relationship between market value of stocks and a set of systematic factors suggesting that the market value of pension funds', major investors in stocks in capital markets will be influenced by prevailing systematic factors.

Factors such as growth in GDP, changes in interest and inflation rates together with legal and regulatory environment were recognized by Flanery and Protopapadakis (2002) besides Singh (2010) to impact market value of stocks. Empirical evidence from studies by Fama and French (1989); Mookerjee and Yu (1997); Maysami and Koh (2000); and Kwon and Shin, (1999) in the developed world and EME are in concurrence with the assertion that there is a link between stock market return and systemic factors. In contrast, other researches resulted in mixed and inconclusive findings on the effect of systemic factors on stock returns (Durham, 2001). Chan et al. (1998), Balvers et al. (1990) in addition to Flannery and Protopapadakis (2002) fail to find support for the ability of macro variables to predict returns. The mixed outcomes necessitates further research on the subject. In Kenya, a limited number of researches have been carried out on the subject resulting in inadequate empirical evidence. The studies undertaken were based on different methodologies and were focused on other sectors of the economy. Mutegi (2014) and Njuguna (2011) for instance established that various CG practices influenced pension performance. However, they never investigated the effect of intervening or moderating variables on the above relationship.

Olweny and Omondi (2011), Ochieng and Oriwo (2012) in addition to Osoro (2015) investigated and established that interest and inflation rates, money supply, and real GDP impacted either positively negatively on stock returns and growth of the Nairobi Stock Exchange (NSE). Nevertheless, none of the studies examined the effect of unsystematic risk factors nor the impact of multiple factors on pension performance. In line with the above arguments, one can predict an asset's returns using the Arbitrage Pricing Theory, a multi-factor asset pricing model. The model shows that the financial performance of pension funds, major investors in stocks in capital markets, is determined by prevailing systematic risk factors.

Reviewed empirical literature identifies several research gaps. A limited number of local studies examined impact of multiple factors including governance practices, macroeconomic variables and investment strategy on financial performance of pension funds. Moreover, there was lack of unanimity on the effect of corporate governance

practices on pension or firm performance in developed, developing and emerging economies. The findings too were in a number of cases inconclusive. Furthermore, most studies did not take into consideration the influence of moderating and mediating factors on the relationship between governance and pension performance. The use of multi-equation approach to investigate the impact of multiple factors on pension performance was not also exploited.

The research thus examined the combined effect of corporate governance, investment strategy and macroeconomic variables on financial performance of retirement benefit schemes in Kenya. It was suggested that the study revealed the causal relation amongst study variables and showed its nature from an emerging country's perspective. Accordingly, the investigation sought to address the following key research question: What is the relationship between financial performance pension funds in Kenya and the factors corporate governance, investment strategy and macroeconomic variables? Factors determining financial performance of pension funds in Kenya have not been decisively investigated as limited empirical literature is available. The study is of great value to the sector given that the pension industry contributes 13% of the country's Gross Domestic Product.

1.3 Research Objectives
The main purpose of the research was to investigate the impact of corporate governance, investment strategy and macroeconomic factors on retirement benefit schemes performance in Kenya. Specifically, the study sought to:
i)   Assess the impact of corporate governance on pension funds performance in Kenya.
ii)   Evaluate the influence of investment strategy, an intervening factor on the link between corporate governance and retirement benefit schemes performance in Kenya.
iii)   Investigate the impact of macroeconomic variables, moderating factors, on the link between corporate governance and pension funds performance in Kenya.
iv)   Examine the combined impact of corporate governance, investment strategy and macroeconomic variables on Retirement benefit schemes performance in Kenya.

1.4 Value of the Study
The research results present empirical evidence on factors that impact financial performance of retirement benefit schemes in Kenya. The proof is provided in form of descriptive statistics and regression analysis outcomes. The factors include corporate governance, investment strategy and macroeconomic variables. The results indicate the integrated effect of these factors on pension performance and extrapolate the corporate governance and pension fund performance conversation. The study findings in addition, presented from a developing country's perspective, empirical evidence on application of the theories anchoring the study.

The theoretical and empirical evidence of the research contributed to a better understanding of the interaction of research variables. Furthermore, the findings provided valuable information for making comprehensive strategic decisions to achieve superior pension performance to practitioners, policy makers, trustees and plan members. Besides, the research results bridges the gap between research and practice. Certain scholars avow that research-based knowledge enhances organizational performance.

The crisis events of 2007-2008 that lead to financial meltdown and the large corporate failures brought to world attention the importance of Corporate governance and investment management. In particular, the research enabled the identification of good corporate governance practices and unearthed factors crucial to the investment process. Knowledge of the research findings will be crucial in decision making of various actors in portfolio management, especially investment managers; plan members and beneficiaries. Scholars argue that sound and informed investment decisions are a necessity in asset allocation, portfolio construction and risk management for one to improve financial performance of retirement benefit schemes. Research findings will also be of great value to the regulators of Capital Markets (CMA), pension schemes (RBA) and market participants (NSE) as they can use the results to guide the regulation process and to formulate necessary policies to guide investment management,

Empirical literature is rather limited in the theories especially the MPT, the stakeholder theory, the Agency theory, the APT, CAPM among others in emerging markets as is the case in large developed stock markets. Furthermore, in the context of frontier stock markets, defined as less advanced and very small capital markets, the evidence is nonexistent. For the case of Kenya, scant empirical evidence is available currently. Thus the research outcomes helped build both theoretical and empirical information from a developing country's perspective on the factors that influence retirement benefit schemes' financial performance.

Furthermore the study provided additional information on issues on governance, investment management, systemic factors and pension performance. It is envisaged that empirical knowledge on these factors will guide policy makers, investment managers, pension managers, academicians and researchers develop acceptable corporate governance models that will guarantee future sustainability of retirement benefit schemes for the developed and emerging economies. In concurrence, scholars such as Hess and Impavido (2003) recognize that knowledge of corporate governance theory, Modern Portfolio Theory, Arbitrage Pricing theory will help in the sustainable development of the pension industry.

The study revealed the applicability of the research theories and models in a developing country setting such as Kenya. The environment in this case differs significantly from that of developed countries, particularly in political, legal, economic, social and cultural settings. This provides the interpretation of study findings on the subject from a developing countries perspective. In addition, the study underscored the significance of the pension sector to the economy of the country. Chapter 2 provides an overview of the literature, both theoretical and empirical literature on financial performance of pension schemes and the factors influencing it.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

Literature on finance of pension systems tends to converge on the view that there is need to enhance financial solvency of retirement benefit systems. The chapter reviews both empirical and theoretical literature on the relationship between financial performance of retirement benefit schemes and multiple factors including corporate governance, investment strategy and macroeconomic variables.

2.2 Theoretical Foundation of the Study

The main theory anchoring the study is the Agency Theory. The research was nonetheless, supported by three other theories: The Modern Portfolio Theory (MPT), the Stakeholders Theory (SHT), the Arbitrage Pricing Theory (APT) and the Capital Asset Pricing Model (CAPM).

2.2.1 The Agency Theory

The Agency theory (AT) explains the relationship between the principal who employs another party the agent to work on its behalf in an organisation (Jensen & Meckling's, 1976). The authors argue that the agent may not act in the principal's best interests due to the separation of ownership and control. Demsetz and Lehn (1985) avow that this necessitates protection of shareholders' interests, minimise agency costs and align principal-agents interest. According to the Agency theory, the agents and principals who are considered as rational actors, pursue the objective of maximising their individual utility with the least possible expenditure. Thus, given the alternative options, either party will select the option that surges his or her individual utility. The principals will, nonetheless find it challenging to know ex-ante which agents will self-aggrandise. Williamson (1985) therefore found it prudent for them to limit potential losses to their utility.

According to Jensen and Meckling (1976), companies are considered as a network of contracts among various stakeholders such as shareholders or equity holders, bond holders, employees, and the society at large. Consequently, payments of claims of different classes of stakeholders varies. The authors affirm that potential conflicts among the stakeholders, the principal-agent problem is likely to occur if there is lack of alignment of interests of different stakeholders with those of the agents in the firm who control major decisions. They are of the view that each class of stakeholders pursues its own interest which may be at the expense of other stakeholders.

Classification of agency problems is done based on the conflicts between different parties of the organisation (Jensen & Meckling, 1976, Barnes et al., 1985, and John & Senbet, 1996). Such include disagreements the authors note could be between stockholders (principals) and management (agent) (managerial agency or managerialism); between stockholders (agents) and bondholders (debt agency); between the private sector (agent) and the public sector (social agency); and between the agents of the public sector (regulators) and the rest of the society or taxpayers (political agency).

The consequence of agency problems, according to John and Senbet (1998) is to diminish efficient operations of enterprises leading to adoption of ineffective investment strategies that are detrimental to economic growth and development. Thus,

the authors argue that economic environment that enhances the application of good corporate governance practices as well as the execution of quality contracts among parties with diverse interests, promotes efficient allocation of resources and, ultimately economic development. Furthermore, they discern that crucial to corporate governance mechanisms in market economies is the board of directors which is the main approach for shareholders to exercise control on top management. This is achieved in combination with external markets for corporate control as well as institutional and concentrated shareholdings. Although available literature on agency problem is extensive, a number of scholars state that the following crucial questions on the board of governance keep on recurring: How successful is the board in execution of its monitoring function? What is the contribution of the board to shareholder wealth? Does corporate control mechanisms act as a substitute for the board? How does board composition influence performance? What is the relationship between the board and management?

Maher and Andersson (1999) avow that the Agency theory's main purpose is to limit agency costs incurred by the principal. The authors note that this is attained by harmonising interests of the managers and the shareholders to maximize firm value. In agreement, agency theorists such as Demsetz and Lehn (1985) prescribe several governance mechanisms to protect shareholders interests, minimise agency costs and ensure principal-agents interest alignment. The measures include alternative executive compensation schemes and governance structures, as well as imposition of internal penalties to keep the self-serving agent's behaviour in check. The authors argue that financial incentives reward and punishes management with a purpose of aligning their interest with that of the board. The board of directors on the other hand execute audits and performance evaluations to keep potential self-serving managers in check. Moreover non-executive board members or independent directors of the board serve to ensure effective oversight of the management. They help share a neutral opinion as they are not attached to the existing management. The research therefore investigates the impact of corporate governance indicators on financial performance of retirement benefit schemes in Kenya. The governance indicators include Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decisions.

The Agency theory has however, encountered criticisms from a number of scholars. Such included Donaldson (1990) and Aguilera et al. (2008) who identified the theory's narrow nature that makes comparison and explanation of governance practices across different institutional and national context difficult. Similarly, Shapiro (2005) critiqued the theory for considering shareholders as the only ones with interests in the listed firms. Doucouliagos (1994) argued that there is failure to explain the complexity of human nature due to the theory's assumption that all motivations are self-serving. The theory nevertheless is justified for the research as it provides direct link between governance indicators and retirement benefit schemes' performance and explains the relation between parties' interest. In the event of disagreements, the author argues that the interests can be brought into alignment through monitoring and well-planned compensation system.

2.2.2 Stakeholder Theory

A growing number of scholars and practitioners such as Freeman, Harrison, Wicks, Parmar and De Colle (2010) opine that the "Stakeholder theory" (SHT) as an evolving concept attempts to explain how value is created and traded, the problem of connecting ethics and capitalism, and the problem of helping managers resolve the first two problems. Freeman (1984) hypothesised that the theory is an organizational management theory that accounts for multiple players impacted by business entities. The author suggested that the theory expounds the interconnected relations between a business and its stakeholders and puts attentions to a company's values, ethics, and goals while underscoring social responsibility over profit. The author avows that by managing strong stakeholder relationships, a business can improve its performance and longevity.

Preston and Donaldson (1995) as well as Post et al. (2002) discern that the stakeholders comprise individuals and constituencies with different interests and values that contribute to wealth creation of the firm and are its potential beneficiaries and or its risk bearers. Such include shareholders, employees, customers, investors, communities, suppliers, unions, trade associations, political groups, competitors among others who have a stake in the organization. The authors affirm that firms' performance has a correlation with other stakeholders who have interest in the firm, apart from the shareholders. Thus, a wider constituency of interests impacts firm value.

Similar views were echoed by other scholars and practitioners such as Mayer (1996) who asserted that stakeholder interests should be managed to serve public interest. In agreement, the author states that "The 21st Century is one of "Managing for Stakeholders" and affirms that companies' executives need to create value for all stakeholders, not just shareholders. Moreover, the author suggests that successful firms stand because they ensure stakeholder interests are aligned. In concurrence, Aguinis and Glavas (2011) acknowledge that the theory is about managing identified sets of participants in the corporation. It assumes that businesses can only be considered successful when they deliver value to the majority of their stakeholders.

The authors further argue that SHT supports the view that a healthy competitive environment benefits everyone. This may involves Corporate Social Responsibility (CSR) which impacts sustainability. Thus, they discern that profit cannot be the only measure of business success, and value creation is not just about money. The theory avers that companies play a vital role in the very fabric of our society such as creating jobs, innovating, among others and that their success must be valued as a whole, not just in the returns they make for their shareholders. It's about value maximization, not wealth maximization. They thus avow that the theory serves as a means to improve efficiency and economic success.

Preston and Donaldson (1995) besides Jones and Wicks (1999) assert that the STH has both normative and instrumental implications. They describe normative implications as a moral/ethical obligation to meet genuine claims of all stakeholders. In contrast, they state that instrumental implications means the theory has a profit/wealth creating responsibility to maximize organizational wealth. This implies that stakeholders need to be involved in corporate decision-making process to enhance efficiency to attain superior firm performance (Kelly & Parkinson, 1998). Similarly, Williamson (1985) argues that the theory is predominantly about how governance practices supports the

interests of both the shareholders and other stakeholders. Milton (1990) shareholder theory however, sharply contrasts the SHT. The former advocates the view that a company's sole motivation is to advance its shareholders' interests which is largely concerned with monetary growth. In essence, the theory is about "making more profit at all costs" approach to business.

 Critics of the SHT have however grown over time. Health and Norman (2004) observe that poor firm performance may be defended by managements' use of stakeholder reasons. Blair (1995) notes that there is a major challenge in accomplishing firms' wider objectives. Equally, Blattberg (2022), McAbee (2022) and Mansell (2013) observe that it is impossible to reconcile equitably the needs and interests of various stakeholder groups in a company as the stakeholders comprise multiple large and diverse groups. They argue that one or more of these groups will inevitably take a back seat at some point in the process. Other sets of stakeholders will hold more power than others, creating tension and disharmony. The SHT too undermines the principles on which a market economy is based. The authors claim that this arises due to the application of the 'social contract' political concept to the corporation which increases the opportunities of weak stakeholder exploitation by self-interested managers rather than to decrease them.

Other scholars such as Jensen (2000), Marcoux (2000), and Sternberg (2000) view SHT as a reason for managerial opportunism. They argue that management actions to benefit multiple and diverse groups makes the theory more difficult to defend than the shareholder theory which engages in self-dealing. Moreover, they note that it is easier to judge performance of managers serving shareholders. Phillips, Freeman and Wicks (2003) are of the opinion that most of the current managerial opportunism was carried out with the goal of shareholder maximization as was the case in the Enron and WorldCom sagas. They particularly critiqued Al Dunlap for mismanaging several firms for his own financial benefits. In addition, the authors were of the view that SHT was superior as it was creating more accountability from managers who have more obligations and duties to multiple and diverse groups and therefore less likely to engage in self-dealing.

Marcoux (2000) views the SHT as one that largely provided for the distribution of financial outputs. This makes it to be perceived as one that is about distribution of resources of the organization, creating inherent conflict between shareholders and other stakeholders in terms of who gets what. The notion that a firm has a fixed pie of surplus or profits to distribute, and the view that the SHT and the and shareholder theory provide different schemes for distributing that wealth, then the difference between the two appears to be sharp and glaring.

Other scholars including Freeman et al. (2003) assert that a critical part of the SHT is about process and procedural justice and not only about distribution. They note that this affects how they view the distribution of resources, and that their participation creates new openings for value creation or expanding the pie. Several studies referred to by the authors demonstrate stakeholders accepting results when they perceive the process as fair. Besides, they remark that distribution entails several resources apart from financial such as information. The later they note can be shared among stakeholders and does not pit shareholders against other stakeholders.

A number of scholars such as Gioia (1999), Marcoux (2000), and Sternberg (2000) are of the opinion that there is need to treat all stakeholders equally which encompasses egalitarianism and equalitarianism. This however, has resulted in critics highlighting the notion of treating stakeholders equally, particularly in discussions of what it means to manage stakeholders. Others such as Phillips, Freeman, and Wicks (2003) suggest that one can use forms of meritocracy to distribute the pie. Such include using Phillips'notion of fairness to give benefits proportionate to those received. Theorists of legitimacy and normative hubs suggest that meaningful distinctions among stakeholders can also be made, and that each firm may handle this issue differently depending on its own particular version of stakeholder theory.

The authors note that this criticism compounds the error of assuming the SHT to be primarily about distribution of financial outputs rather than as about process and concern in decision making. Hendry (2001a) and Van (2001) are of the view that the SHT requires review due to its weaknesses, particularly on the issue of shareholder management and that of making easier to practice SHT. They observe that there is need to remove the notion that doing anything other than shareholder management is illegal or to make SHT more transparent and easier to use without violating core principles of business law.

Although performance of pension funds is hypothesised to have a link with the interests of stakeholders, limited empirical evidence is available to that effect. Researchers such as Jones and Wicks (1999) evaluated the performance of companies using measures of social performance as well as economics. Others including Alkhafaji (1989) examined the firm's role to satisfy a wider set of stakeholders, including shareowners. Agle et al. (1999) and Wieland (2005) focused on the perception of the board members on their stakeholders or corporate social responsibility (CSR) orientation while Hillman et al. (2001) examined the representation of stakeholders on the board of directors. Their study findings indicate that firm performance improved with stakeholder engagement. Similarly, Demsetz and Lehn (1985) as well as Wallace and Cravens (1983) found that audit and shareholder relation committees that protect shareholder rights in large US public firms enhanced financial performance particularly, for firms with these nomination committees than those without.

Ackerman (1973), Graves and Waddock (1997) as well as Barnett (2007) investigated the empirical link between corporate social performance (CSR) and corporate financial performance (CFP) in 95 empirical studies. In the evaluation of these studies, Margolis and Walsh (2001) found that there were doubts in positive relationships claimed in over 50% of CSP-CFP studies. They assert that this uncertainty in the results was due to a variance in the way these studies were conducted. The sources of variation were identified to include the samples of firms used by researchers, the operationalization of CSP and CFP, and in control measures.

Other empirical research by scholars such as Preston and Sapienza (1990: 361); Sisodia, Wolfe and Sheth (2007); Fombrun and Shanley (1990); Greenley and Foxall (1997) supports the view that firms should serve the interests of multiple stakeholders which leads to higher financial performance and organizational performance. In contrast, studies by Aupperle, Carroll and Hatfield (1985); Agle, Mitchell and Sonnenfield, (1999) found conflicting results between social orientation and firm performance. They discern that social orientation is often taken as emblematic of "stakeholder orientation".

Locally, limited researches has been carried out to investigate the impact of stakeholder interests on financial performance of retirement benefit schemes.

2.2.3 The Stewardship theory

Although the agency theory remains the dominant paradigm underlying governance, other concepts have evolved to try and address limitations of this theory. Such include the Stewardship theory, which is one of the theories supporting the study. Introduced by Donaldson and Davis (1989) the theory describes the relationship between the principal and the steward. The theory postulates that shareholder interests are made best use of by shared incumbency of roles.

According to Caldwell, Hayes, Karri, and Bernal (2008), and Menyah, (2013), the theory suggests that managers are stewards whose motives are aligned not by their own goals or their individualistic self-serving behaviours but are naturally motivated to work for others or for organizations to achieve their set objectives with which they have been entrusted. They argue that people are pro-organizational rather than individualistic. Consequently they work to accomplish organizational, group, or societal goals since it gives them a higher level of contentment. Concurring, Davis, Schoorman and Donaldson (1997), besides Donaldson and Davis (1991) echo similar sentiments and state that stewards are inspired by inherent rewards, such as trust, reputational development, reciprocity, preference and autonomy, level of responsibility, job satisfaction, stability and tenure, and mission alignment.

2.2.4 Modern Portfolio Theory

The Modern Portfolio Theory (MPT) of Markowitz (1952) provides a framework apon which one can make sensible asset management and apportionment decisions. The theory, also referred to as the efficient frontier is an investment theory that proposes two main concepts: *i)* all investors pursue to attain maximum returns for any level of risk; ii) risk reduction can be achieved by by combining unrelated financial assets to form a diversified investment portfolio. Sharpe (1964) and Lintner (1965) classified risk into systemic and un-systemic risk. They described systematic risks as those inherent in the capital market whereas unsystematic risks are those associated with each particular stock. These risks are company-specific events that are lowered by diversification.

The concept of efficient Frontier is described by Markowitz (Ibid.) as a graphical representation of all possible combinations of risky assets based on the best level of risk and return. It represents a set of optimal portfolios that offer the highest expected return for a given level of risk or the lowest risk for a given level of expected return. The authors note that selection of optimum portfolios by investors is based on their specific risk predisposition and that they are risk averse. They therefore expect to be rewarded for taking additional risk.

The theory has, nonetheless been challenged by a number of scholars lately. Haugen and Heins (1975) as well as Murphy (1977) assessed the risk-reward relationship and established that it was far weaker than expected. Besides, behavioural economists established that not all investors act rationally (Gregory (2002)). Moreover, the MPT makes many assumptions about investors and markets which are incorrect. They compromise the theory to some degree. They include the use of normal distributions to model returns, the neglect of taxes and transaction fees.

One of the key assumptions of the MPT is the Efficient Market Hypothesis (EMH) which avows that financial markets are "informationally efficient", Fama (1970). Thus, asset prices reflect all available information implying that one cannot consistently achieve returns in excess of average market returns on a risk-adjusted basis at the time the investment is made. The author states that there are three types of the EMH: "weak", "semi-strong", and "strong". The weak form states that prices of traded assets such as stocks, bonds, or property reflect all past publicly available information. The semi-strong form avers that prices reflect all publicly available information and that prices change to reflect new public information. The strong form on the other hand affirms that prices instantly reflect even hidden or "insider" information. Andrei (2000) notes that there is evidence for and against the weak and semi-strong forms. Furthermore, there is stronger evidence against the strong form.

A number of studies have shown that stock markets are inefficient. Fortune (1991) argues that an efficient market is one in which stock prices fully reflect all available information thereby leading to efficient allocation of scarce capital resources. Hence, market inefficiency provides an economic foundation for public policy interventions in stock markets. Mookerjee and Yu (1999) as well as Kavussanos and Dockery (2001) were of the view that if the problem of inefficiency is not resolved, this could impact negatively the ability of the stock market to allocate funds to the most productive sectors of the economy and potentially hamper long-term growth. Studies by Kian, Robert, Jae (2007) for instance, examined the impact of the 1997 financial crisis on the efficiency of eight Asian stock markets on a country-by-country basis. They established that the crisis adversely affected the efficiency of most Asian stock markets, with Hong Kong being the hardest hit, followed by the Philippines, Malaysia, Singapore, Thailand and Korea. Most of these markets nonetheless, recovered in the post-crisis period in terms of improved market efficiency.

The financial crisis of the late 2000 Global Financial crisis was believed to have stemmed from the belief in rational markets. Supporters of the EMH such as Chambernan (1983) have nonetheless, stated that the concept of market efficiency does not mean having a risk less future, rather it is a simplification of the world which may not always hold true, and that the market is practically efficient for investment purposes for most individuals. Others opine that the market is asymmetrical with information due to insider trading hence not all investors are equally informed.

Other scholars such as Iyiola, Munirat and Nwufo, (2012) are of the opinion that the theory does not really model the market. To the authors, measures used by the MPT including risk, return, and correlation measures are based on forecasted values, which are mathematical statements about the future. This however, is not the case as investors need to make predictions based on current data of asset return and volatility for these values in the equations. Historical data fails to take account of new situations which did not exist when the historical data were generated. The authors acknowledge that investors use historical data in the MPT, models risk on the basis of the likelihood of losses, but says nothing about why those losses might occur. The risk measurements used are probabilistic in nature, not structural differing substantially with many engineering approaches to risk management.

Iyiola, Munirat and Nwufo (2012) observe that the theory in addition, does not take into account personal, environmental, strategic, or social dimensions of investment decisions. It aims at maximizing risk-adjusted returns, without regard to other risks. Consequently, the authors avow that the complete reliance on asset prices makes it vulnerable to all the standard market failures that arise from information asymmetry, externalities, or public goods. It also rewards malpractices in firms and does not consider new information other than historical returns as suggested by the MPT.

The theory too does not take cognisance of its own effect on asset prices. Although diversification reduces non-systematic risk, Chandra (2003) noted that it does increase systematic risk. The author argues that diversification is done primarily to reduce portfolio's non-systematic risk, forcing portfolio managers to invest in assets without evaluating their fundamentals. This results in increased demand, hence price of assets that, when analysed separately, would be of little fundamental value. The author opines that the consequence of this is that the whole portfolio becomes more expensive and, as a result, the likelihood of a positive return decreases. Thus, the author avows that the risk of the portfolio increases.

Several scholars have critiqued the MPT. One such is Sabbadini (2010) who noted that financial analysts who often cite Warren Buffett as a rule breaker have challenged the legitimacy of the theory. They observe that Warren Buffett is not a typical investor as he undertook successful financial takeovers contrasting the average mutual fund managers. The author states that Buffet provides firms with economies of scale, lower cost of capital and the benefits of his managerial wisdom. Besides, he adds that his great returns are a result of his managerial skills than his investment skills, or a blend of both which is not in line with the MPT advocates.

A review of studies investigating the performance of investment funds have revealed mixed results. The evaluation was done on the basis of the economic trade-off between portfolio risk and return. Blake, Lehmann and Timmermann (1999) examined a data set on UK pension funds and found that strategic asset allocation accounts for most of the ex post variation of the pension fund's returns. Other scholars including Coggin et al (1993); Daniel, et al (1997); Blake et al. (1999) established that the most pension funds had negative market-timing estimates. Oppolito (1989) on the other hand examined mutual fund data and found evidence that is consistent with optimal trading in efficient markets.

In contrast, Grinblatt and Titman (1989) investigated performance of mutual funds and established mixed findings. The results showed that the risk-adjusted gross returns of some funds were significantly positive although they were comparable to returns available in Index funds, net of fees and expenses, while others were not. The findings indicate that there are those that support market efficiency as well as those that reject it. The pro-market inefficiency proponents state that investors can apply the MPT to attain an ideal risky portfolio that are fully diversified to attain a higher return than those investing in an Index portfolio. This makes the theory relevant to the study. The mixed results necessitates further research.

2.2.5 The Arbitrage Pricing Theory
The Arbitrage Pricing Theory (APT), a multi-factor pricing model for securities, developed by Ross (1976) proposes that there is a link between expected return of a

security and a set of systematic risk factors. According to the author, diversification of portfolios reduces risks but not completely as there are economic forces that still influence stock returns. Chen (1986), Roll and Ross (1980), Cheng (1996), as well as Günsel and Çukur (2007) researched the model and showed that stock return was influenced by several independent variables such factors such as GDP, changes in inflation and interest rates.

Nevertheless, various scholars have identified a number of weaknesses of the theory. The main one is on its generality. Huberman (2005) avows that the theory fails to explain the theoretical reasons for choosing identified systemic factors as well as their number. Roll (1977) points out that it is difficult to test the theory, as the precise configuration of the market portfolio is not known. Methodologies used in the assessment of the model also pose further challenges. Despite these flaws, the applicability of the APT in establishing asset returns may still be valid. The theory was thus used in the study to investigate the association between pension financial performance, corporate governance, investment strategy and macroeconomic factors. The critical question was: can the theory be applied to non-systemic risk factors as it is applicable for systemic risks?

The APT model

$$R_{it} = \alpha_i + \beta_{i1} F_1 + \beta_{i2} F_2 + ... + \beta_{ik} F_k + e_{it}$$

Where:

R_{it} = the return of the stock i at month t,

α_i = the stock specific effect for stock i,

F_j's (j = 1, 2,....k) = macroeconomic factors (or factor scores),

$\beta_i = (\beta_{i1}, \beta_{i2} ... \beta_{ik})$, for each stock i are asset sensitivities, known as 'factor betas,' denoted number of factor betas.

e = the unsystematic return components of the stocks.

2.2.6 Capital Asset Pricing Model

The Capital Asset Pricing Model (CAPM), a portfolio theory was developed by Sharpe (1964), Lintner (1965) and Black (1972). The model measures the required return of an asset, reflecting the cost of equity financing. In addition, it measures the risk of the securities by estimating the sensitivity of the return of the security to the change in market's return indicated by beta coefficient. Contrasting the Arbitrage Pricing Theory (APT), it is a single factor model, incorporating the systemic and firm specific risk related to the overall market return.

Scholars such as Ross et al. (2008), Al Naimi et al. (2009) as well as Bodie and Kane (2010) state that the CAPM model is based on a set of assumptions that include: i) all market investors are planning the same holding period; ii) Lending and borrowing are carried out in accordance with the risk-free rate of return; iii) Information symmetry and full efficiency of financial markets; iv) All investors analyse the securities in the same way and have the same expectations; v) Absence of taxes and the costs of financial brokerage; vi) All investors are characterized by rationality, which means that the investment design based on comparison between return and risk; and vii) Investors do not affect the market individually. Fama, French (2004) and Sattar (2017) note that the model is grounded on a testable forecast of the association between risk and required return by choosing a portfolio that should be effective if the asset prices are clear to the market for all assets.

Hadad (2015) observed that the CAPM comprises a set of concepts that entail calculation of the required return. This involves the Security Market Line (SML) which captures the relationship between the required return and the market risk expressed by Beta Coefficient. The model classifies risk as either systematic or non-systemic. The later also referred to as firm specific risk or diversification risk results from financial and operating decisions taken by the company itself. The financial risks are related to financial leverage and capital structure while the operation risk are related to operations, administrative and competitiveness with other companies. This type of risk can't be predicted but can be minimised through diversification and portfolio formation in a way that the portfolio contains assets with a weak coefficient between these assets according to Markowitz's theory.

In contrast, Fama and French (2004) state that systematic risk results from the effect of market factors. The authors note that it impacts the market in general, and not just one company and is linked to economic changes and natural disasters, but can't reduce those risks through diversification but by predicting and hedging them. The risk is estimated through the beta coefficient of the company's shares using the trend of the security market line or using the covariance of the stock's return and market's return as in the following equation. The formula for calculating the expected return of an asset, given its risk, is as follows:

$$ER_i = R_f + \beta_i (ER_m - R_f)$$

where: ER_i = expected return of investment

R_f = risk-free rate

β_i = beta of the investment

$(ER_m - R_f)$ = market risk premium

Problems with the CAPM

Critiques of the theory avow that several assumptions behind the CAPM formula have been shown not to hold up in reality. Waves of empirical discovery of asset-pricing anomalies not satisfactorily explained by beta would eventually generate multifactor alternatives to the CAPM. Categorical exceptions to the conventional CAPM, particularly those based on value, size, and momentum, would populate the "factor zoo". Other criticisms preserve the mathematical underpinnings of the mean variance framework, but uses quantitative methods to overcome the limitations of the conventional CAPM. Other extensions go beyond the expansion of the CAPM to higher statistical moments. They challenge many of the model's fundamental assumptions. Early critics addressed temporal and spatial limits on the CAPM. Extensions such as the intertemporal CAPM, the consumption-based CAPM, and the evolutionary CAPM epitomize this approach. A focus on informational and behavioral heterogeneity among investors would eventually give rise to multifractal models grounded in complexity theory and econophysics (Peters, E.E., 1991).

2.3 Empirical Review

The section presents empirical literature outlining the relationship between corporate governance, investment strategy, systemic factors and financial performance of pension funds. The studies are relevant as they provide the empirical relationship of the variables and the applicability of the theories.

2.3.1 Corporate Governance and Firm Performance

Existing empirical literature on corporate governance is mainly from US and OECD firms (Maher & Andersson, 2000). Research finding showed that the financial performance of firms was influenced by the level of shareholder rights and the competence of existing court systems (Gompers et al., 2001; La Porta, et al., 2001; Lombardo & Pagamo, 1998). In particular, they established that enhanced shareholders' rights resulted in higher financial performance of firms. Besley and Prat (2003), Mitchell and Yang (2005), and Manuel and Andreas (2008) found positive relationship between good corporate governance and pension performance. Wagner et al. (1998) found that the probability of firms going under declined with boards controlled by outside directors. Zahra and Pearce (1989) aver that outsiders tend to be objective, unbiased and independent.

Mixed and sometimes inconclusive results on the relations between corporate governance and firm performance were also found by scholars such as Daines and Klausner, 2001 (examined takeover defenses), Larcker, et al. (2007) (examined board and ownership variables) and Coles, et al. (2008) (considered board size). Clarke (2009) observed that corporate governance systems failed to prevent financial crisis and corporate collapses across different economies. Heracleous (2001) reports that researchers failed to find any convincing connection between the best practices in corporate governance and organizational performance.

Studies on corporate governance of pension funds in Kenya are in the early stages of development and have tended to focus on different sectors. Available empirical evidence is therefore indirect and not related to pension funds. Moreover, different methodologies and variables were used. Mutegi (2014) established that corporate governance structures of occupational retirement benefit schemes in Kenya had a correlation with the financial performance of pension plans. Njuguna (2011) found that good corporate governance practices had a positive correlation with pension regulations, leadership and growth of schemes. None of these studies examined the influence of other factors on the above relationship. Ongore and Kobonyo (2011) assessed the relationship between financial performance of NSE listed firms and governance. They established significant relationships between ownership concentration and profitability of firms.

Miring'u (2011) showed that the performance of board members significantly influenced the financial performance of state firms. Lishenga (2012) assessed the effects of board meetings for corporate governance on firm performance and established that improved regularity of board meetings enhanced firm performance. Arising from these findings, one notes that the focus was on firms and not pension funds. None of the studies too assessed the effect of several factors using a multi-equation approach or a composite measure of corporate governance on pension performance. Further studies are thus required to establish the effect of these factors using a multi-equation approach from a developing country's perspective.

Melis (2000), D'Onza, Greco and Ferramosca (2014), Allegrini and Greco (2011) and Zona (2014) investigated the performance of Italian companies and identified some conflicting results regarding the impact on firm performance of a range of board characteristics, including the board structure, the role of independent directors and the CEO leadership and ownership concentration. Whereas Di Pietra, Grambovas, Raonic

and Riccaboni (2008) found no relationship between the board size and performance, Romano and Guerrini (2014) found a positive relationship, especially in the water utility sector. Research into CEO duality, whether the CEO simultaneously serves as board chairman also appears to generate ambiguous results in the Italian context. In particular, Allegrini and Greco (2011) showed that the CEO duality had negative effects while Zona (2014) revealed positive effects. Fratini and Tettamanzi (2015) established that CEO duality had no significant effects on performance. Consequently, it is still unclear if and how the assumptions of agency theory are verified in the Italian context.

Bansal1 and Sharma (2016) examined the role of audit committee characteristics (independence and frequency of meetings) in addition with other components of corporate governance (duality, promoter shareholding, board composition, and board size) in improving firm performance. Fixed effect panel data regression was applied on 235 non-financial public limited companies listed in NSE 500 for the period 2004 to 2013. Return on Assets, Return on Equity, Tobin's q and Market Capitalization were used as proxy of firm performance. Results reveal significant positive association of board size and CEO-Chairman dual role with firm performance. However, findings did not reveal any additional effect of audit committee independence and its meeting frequency on the financial performance of Indian firm.

Another scholar, Maury (2006) assessed evidence on Shareholder´s Rights. He examined how family-controlled firms perform in relation to firms with nonfamily controlling shareholders in Western Europe in a sample of 1672 non-financial firms. Active family control is associated with higher profitability compared to nonfamily firms, whereas passive family control does not affect profitability. Active family control continues to outperform nonfamily control in terms of profitability in different legal regimes. Active and passive family control is associated with higher firm valuations, but the premium is mainly due to economies with high shareholder protection. These results fit rather well with recent provided by Anderson and Reeb's (2003) evidence that indicated family control can increase firm value in a well-regulated economy, whereas family control may harm minority shareholders due to the risk of expropriation when transparency is low. The benefits from family control occur in non-majority held firms. Fama and Jensen (1983) argue that these results suggest that family control lowers the agency problem between owners and managers.

In contrast, Shleifer and Vishny (1997) aver family control gives rise to conflicts between the family and minority shareholders when shareholder protection is low and control is high. The findings are in line with study results from the US where family firms tend to have higher valuations and profitability than nonfamily firms (McConaughy et al., 1998, Anderson and Reeb, 2003). Villalonga and Amit (2004) find that the "US family premium" is mainly due to founding family CEOs. Anderson and Reeb (2003) show that the gains from family control starts to taper off when the ownership stake exceeds about 30%. In contrast to family premiums, Faccio et al. (2001) report that family control may harm minority shareholders in East Asian firms where transparency is low.

Mei Yu (2013) investigated the relationship between State ownership and firm performance of Chinese listed companies. The author observes that while the relationship between state ownership and firm performance has been widely researched, the empirical evidence has provided mixed results. The author applied

panel data regression techniques in the study to 10,639 firm-year observations of non-financial Chinese listed firms during 2003–2010 to examine the relationship between state ownership and firm performance. The results show that state ownership has a U-shaped relationship with firm performance. The Split Share Structure Reform in 2005–2006 played a positive role in enhancing the relationship between state ownership and firm profitability ratios. Although state ownership decreased significantly after 2006, it remains high in strategically important industry sectors such as the oil, natural gas and mining sector and the publishing, broadcasting and media sector. The findings reveal that a higher level of state ownership is superior to a dispersed ownership structure due to the benefits of government support and political connections. The Split Share Structure Reform made previously non-tradable shares legally tradable, improving corporate governance and reducing the negative effect of non-tradable state shares.

Another researcher, Muniandy (2015) examines the association of firm performance and board independence, in concert with growth options for South African firms. It is motivated by the recent reform of the King regime of corporate governance, King III, in 2010. Archival data for firms listed on the Johannesburg Stock Exchange in both the Pre-King III (2008–2009) and post-King III (2011–2012) eras are used. Cross-sectional levels and difference analyses are employed to determine whether change in board independence conjoint with growth status has a performance effect for firms. Transition from pre-to post-King III has had a positive impact on the relationship of independent non-executive directorship jointly with growth potential for firms' performance. The current study implies board independence is important.

In a study with a different focus, Kusnadi (2015) examines the effect of insider trading restrictions on corporate risk-taking. Using a cross-country sample of 38 countries over the 1990 to 2003 period, the author finds that corporate risk-taking is positively related to insider trading restrictions. This finding is robust to alternative regression specifications and sample periods, to the use of alternative measures of insider trading restrictions and risk-taking incentives, and to controls for possible endogeneity. Further investigation suggests that the relation between insider trading restrictions and corporate risk-taking is influenced by cross-sectional differences in stock market development and legal origin, and that the increase in risk-taking is beneficial to firms. In conclusion, the study highlights the role of insider trading restrictions as an important determinant of corporate risk-taking.

Mohamed, Kamilah, Khaw and Wah (2016) opines that corporate governance practices have been a concerned issue by many Asian countries after the Asian Financial Crisis in 1997 including Malaysia. The authors subsequently carried out a study that focused on corporate governance practices among Top 100 public listed companies in Bursa Malaysia and the relationship between corporate governance practices and firm performance. Two corporate governance's indicators (Board size and Board Independence) were chosen in testing the hypothesized relationship between corporate governance practices with firm performance, which was measured by return on asset (ROA) and return on equity (ROE). Descriptive and correlation analysis were used to examine the hypotheses in this study.

The result showed that board size has significantly weak negative relationship with ROA but it was found to be insignificant to ROE. The other finding indicated that there was no relationship between board independence and firm performance. Similarly, by

Jensen (1993) and Guest (2009) examined the effect of board structure and composition on firm performance. The authors established that a smaller board works more effectively in increasing firm performance than larger boards. These studies suggest that an increase in the board size increases agency problems, and thus, board members are less likely to participate in the management process. Finkelstein and Mooney (2003) nonetheless, found that 'independence' and performance of a firm are unconnected to each other.

Similarly Kudal and Dawa (2020) examined the effects of board composition on firm performance among 24 selected companies which are listed on the National Stock Exchange of India. The study strived to investigate the influence of corporate governance by testing 3 variables of board composition namely – board size, number of independent directors and the number of female directors on a company's profitability measured through the tool – Tobin's Q. One-way Anova test is used to establish a relationship between each of the three variables of board composition with firm profits. The study is conducted over a period of 5 years from 2013 to 2018 and concentrates on the following sectors - Auto, Financial Services, FM corporate governance, IT, Media, Metal, Pharma, and Realty. The results revealed a significant relationship between board size and number of independent directors with firm profits which meant a firm with a greater sized board or more independent directors also showed higher profits in comparison. While, no significant relationship was found between the number of women directors on a firms' board and firm performance.

A study by Fuzia, Halima and Julizaerma (2015) carried out in a few countries examined board independence and firm performance. The authors observed that the board requires the combination of executive and non-executive directors to pursue the shareholders' interest. They noted that non-executive directors on the board will not be able to exercise their duties effectively, unless they are independent from management and ensure they provide unbiased business judgment. Moreover, they were of the view that independent directors are persons entrusted by shareholders to represent them and help to reduce agency problems. Further, the Code of Corporate governance and regulators recommend the composition of board members to be balanced and consist of independent directors. The results showed a mixed association between proportions of independent directors and firm performance. They found that although the companies comprised the highest number of independent directors, it would not assure to enhance firm performance. Thus, they concluded that the existence of independent directors on board should be monitored in order to bring positive shareholder values.

Notwithstanding, a number of studies discovered that there is no any relationship between board composition and firm performance including those of Dalton et al. (1998) as well as those of Bhagat and Black (2002). Others such as Andres and Vallelado (2008) provide a U shaped relationship between firm performance and the composition of the boards. In their research, Dalton et al. (1998) undertook a meta-analysis on a sample of 69 that consists of 12,915 companies. They assessed the relationship between board composition, board structure and financial performance. Their findings indicate there was no relationship between these variables. Again, results from the moderator analysis carried out on the impact of company size, nature of the financial performance indicators and different board compositions shows only a little relationship between board structure and firm financial performance.

While focusing in another area, Ramdani and Witteloostuijin (2010) evaluated the impact of CEO duality and independence of the boards on firm performance on a sample of companies listed in the stock exchange market of four East Asian countries: Indonesia, Malaysia, Korea and Thailand using quartile regression analysis. Their finding demonstrated that while CEO/Chairperson duality is effective in some organizations, it was found to be ineffective in others. But their overall result shows a positive relationship between duality and firm performance. This seems to agree with the findings from a research conducted by Peng et al (2010) on 300 state owned enterprises (SOE's) and privately owned enterprises (POS's) in China. The results show that while CEO/Chairperson duality is positive in POS's, it was however found to be negative in SOE's.

In contrast, it was found that other researches showed a negative relationship. Such include that of Lyengar and Zampelli (2009). They investigated a sample of 1880 firms selected from different industries in the United States for the periods 1995-2003. The sample selection was based on firms which during the period under consideration were managed by CEO/Chairperson duality structure. Their findings suggests that CEO duality is negatively related to firm performance. This view is supported by Judge et. Al. (2003) and Mustinaet et. Al. (2010). The authors established that CEO duality is negatively related to firm financial performance.

Equally, Melville, and Merendino, (2019) investigated the relationship between board structure and firm performance, to evaluate the effectiveness and applicability of agency theory in the context of Italian corporate governance practice. The study measured and quantified the relationship between the board of directors' structure and the performance of Italian firms listed on the STAR segment of the Italian Stock Exchange over the period 2003-2015 taking into account into account those aspects which are considered to be fundamental to agency theory (Jensen, 1993): board size, independent directors, CEO/CM duality (when the CEO acts simultaneously as Chairman) and ownership. Their results suggest a non-linear relationship between independent directors and firm performance; a positive effect of board size on firm performance only for lower number of directors; and a lack of influence of directors appointed by minority shareholders on performance.

Another study by Chaghadari and Chaleshtori (2011) investigated the relationship between relationship between corporate governance and firm performance on a randomly selected sample of companies listed on Bursa Malaysia. Epps and Cereola 2008 were of the view that the importance of Corporate governance (corporate governance) is to reduce agency conflicts between those who control and those who own the residual claims in a firm based on agency theory. Furthermore, agency theory assumes an opportunistic behaviour that is individuals want to maximize their own expected interests and are resourceful in doing so (McCullers & Schroeder 1982).

Therefore, there will be a conflict of interest between managers and stakeholders. Corporate governance as a mechanism helps to align management's goals with those of the stakeholders that are to increase firm performance by monitoring managers' performance (Brickley & James 1987). Since the value creation of corporate governance can be measured through the firm performance, the study sought to answer the question: "is there any relationship between corporate governance and firm performance?" Four board characteristics were investigated: board independency, CEO

duality, ownership structure, and board size. They applied the linear multiple regression as the underlying statistical test. The results established that CEO duality had a negative relationship with firm performance (Return on Equity and Return on Asset) but there is no significant relationship between board independency, board size and ownership structure as independent variables and firm performance as dependent variable. Keywords: corporate governance, board of directors, firm performance.

Equally, Balagobei (2018) explored the impact of corporate governance on firm performance of listed companies in Sri Lanka. Fifty listed companies were selected as a sample by using proportion random sampling method. Apart from that secondary data were collected from the annual report of listed companies in Sri Lanka from 2010 to 2015. Corporate governance is measured by board size, board independence, CEO duality, director's ownership and audit committee as the independent variable while firm performance is measured by ROA and Tobin's Q as a dependent variable. Multiple regressions and Pearson's correlation analyses were employed as the main tool of analysing data. The results reveal that the board size and audit committee have significant impact on ROA and board size has significant impact on Tobin's Q, whereas board independence, CEO duality and director's ownership have insignificant impact on both firm performance measures such as ROA and Tobin's Q. Furthermore the board size and audit committee have negative relationship with firm performance. This study suggests that small boards are associated with higher firm performance, possibly through closely monitored managements.

Locally, Kobuthi, K'Obonyo and Ogutu (2015) investigated the effect of Corporate Governance on Performance of Firms Listed on the Nairobi Securities Exchange (NSE). The authors used a corporate governance index as a proxy for corporate governance based on the seven attributes of the revised Capital Markets Authority (CMA) draft code of corporate governance practices for public listed companies in Kenya that included board operations and control, rights of shareholders, stakeholder relations, ethics and social responsibilities, accountability, risk management and internal audit, transparency and disclosure and supervision and enforcement.

A survey questionnaire was used for data collection and was distributed to 56 CEOs and corporation secretaries. The response rate was 87.5%. Annual reports for 2015 were used to compute the CGI score for the different organizations. The study established that there was a statistically significant relationship between corporate governance and non-financial performance of firms listed on the NSE. The finding validates the view that organizations can increase their performance by employing good corporate governance practices.

Similarly, Aluoch, Mwangi, Kaijage and Ogutu (2020), examined the relationship between board structure and performance of firms listed at the Nairobi Securities Exchange, anchoring the study on agency theory, resource dependency theory, transaction cost theory, political theory and a census approach. Data was extracted from annual reports of 60 listed firms at the NSE between 2002 and 2016. They evaluated the relationship between the variables using longitudinal descriptive research in addition to the panel data regression analysis that used the random effects model.

They established that gender diversity and occupational expertise had significant effect on Return on Assets, while board independence and board age had significant effect on

Tobin's Q of listed firms in Kenya. On the contrary, board size had an insignificant effect on both Return on Assets and Tobin's Q. The overall effect of board structure on Returns on Assets and Tobin's Q was significant. The authors concluded that various board structure mechanisms except board size have significant effect on performance of listed firms in Kenya, and the overall board structure had significant effect on performance of listed firms. The study recommended that management should incorporate board structure mechanisms to enhance performance of firms and regulatory authorities should review the current board structure variables to make them more relevant to improve performance of listed firms in Kenya.

2.3.2 Corporate Governance, Investment Strategy and Firm Performance

The effect of governance on investment decisions in institutional investors, private equity funds and pension funds was examined Khanna and Zyla (2012) in emerging markets (EME). They established that corporate governance was key when making investment decisions and investors were prepared to pay better prices for firms executing good corporate governance practices compared to those poorly governed. The study however, did not investigate the role of trustees in the investment process. In contrast, Useem and Mitchell (2008) showed that corporate governance has no relationship with the financial performance of investing firms. The authors however, showed that governance influenced the kind of investment strategy used, which had a positive correlation to the financial performance of investments of pension funds. Thus, the financial performance of the funds' investments is indirectly affected by corporate governance. In Switzerland, Manuel and Christian (2016) investigated the relationship between corporate governance, asset allocation and financial performance of 139 Swiss pension plans undertaking investment opportunities. They established that there is a direct relationship between corporate governance and financial performance of pension plans. The relationship however, is only slight to the category of assets selected.

Ambachtsheer, Capelle and Scheibelhut (1998) evaluated the impact of quality of governance structures on financial performance of pension funds undertaking investment opportunities through a survey of an international group of senior pension fund executives in Australia, New Zealand, Canada, Europe and United States. Their findings showed that the relationship was positive. In Poland, Jackowicz and Kowalewski (2012) showed that there is a positive correlation between the number of non-executive directors on trustee boards, the level of education, and the market values of the funds. Similarly, Eccles et al. (2011) conducted an empirical study of two matched sets of firms covering an 18-year period. They found that, over the long-term, corporations that voluntarily adopted aggressive investment strategy many years ago significantly outperformed those that had adopted a conservative investment strategy, both in terms of stock market and accounting performance.

Locally, Osano (2013) investigated the effect of investment strategies adopted by investment funds in Kenya on financial performance of the funds. The population of study was all investment funds in Kenya and census was carried out on the nineteen investment funds listed by the Capital Market Authority Cap. 485A as of 2013. Both primary and secondary data were used. Descriptive analysis was used to find the type of investment strategy applied, either active investment strategy or passive investment strategy. The study results established that active investment strategy is one that was found to be integrated into operation investment funds in Kenya. Besides, financial performance is of positive influence to investment funds performance and greatly so is

liquidity which means the investment firms utilize liquid assets to make quick investment which translates to good returns.

A review of the studies above indicates that identifying and understanding the persistence of the poor performance of some fund managers is an important issue despite the fact that the average disguises the fact that some fund managers perform well, and others perform poorly. Most of the studies were carried out in developed economies. Furthermore, the level of capital market development varies between the developed and developing countries, Kenya included. This may affect the outcome of the study. Studies carried out too did not take into account the interaction of multiple factors. It is against this backdrop that this study is undertaken to fill the gap. A limited number of local studies so far have investigated the impact of corporate governance and investment strategy on financial performance of retirement benefit schemes.

2.3.3 Corporate Governance, Macroeconomic factors and Pension Performance

Most of the evidence available on studies examining the sources of return variation is indirect and not necessarily linked to pension funds but to securities that pension funds invest in. Research in developed countries and EME by scholars such as Chen (1991); Black, Fraser and MacDonald (1997); Humpe and Macmillian (2007); Mukherjee and Yu (1997) as well as Kwon and Shin (1999) showed that real GNP, industrial production, lagged inflation and interest rate influenced stock performance. Likewise, Muhammad and Rasheed (2002) evaluated the influence of interest rates on stock return for firms in Pakistan, India, Bangladesh and Sri Lanka using monthly data from 1994 to 2000. Their findings indicated a positive link between the two variables for firms in Bangladesh and Sri Lanka only. No relationship was however, found for companies in India and Pakistan.

In another study involving the Bombay Stock Exchange (BSE) Sensex, Singh (2010) assessed the impact of exchange rates, industrial production, and wholesale price Index on stock return from 1994/95 to 2008/09. The results found were mixed. The three factors had a positive link with stock return. However, when the Granger causality test was used to evaluate the findings, Index of industrial production was the only factor having bilateral causal relationship with BSE Sensex. The author concluded that in the Indian Capital Market asset's prices fully reflect existing information on exchange and inflation rates.

In Kenyan, studies by Olweny and Omondi (2011) and Ochieng and Oriwo (2012) found a positive link between the Nairobi Securities Exchange All Share Index (NASI), the firm's financial position, foreign exchange rate, interest rate and inflation rate. Wanjiku (2012) as well found that pension performance was heavily influenced by selected macroeconomic variables. She concluded that in the Kenyan Capital Market, asset prices do not fully reflect existing information. There is therefore need to monitor macroeconomic environment since these changes affect security returns. A review of the existing literature nevertheless reveals that none of the studies investigated used a multifactor model to evaluate the impact of CG, macroeconomic variables and investment strategy on financial performance of pension funds.

Equally, Kobuthi, K'Obonyo and Ogutu (2015) investigated the effect of Corporate Governance on Performance of Firms listed on the Nairobi Securities Exchange (NSE). The authors used a corporate governance index as a proxy for corporate governance based on the seven attributes of the revised Capital Markets Authority (CMA) draft

code of corporate governance practices for public listed companies in Kenya that included board operations and control, rights of shareholders, stakeholder relations, ethics and social responsibilities, accountability, risk management and internal audit, transparency and disclosure and supervision and enforcement. A survey questionnaire was used for data collection and was distributed to 56 CEOs and corporation secretaries. The response rate was 87.5%. Annual reports for 2015 were used to compute the CGI score for the different organizations. The study established that there was a statistically significant relationship between corporate governance and non-financial performance of firms listed on the NSE. The finding validates the view that organizations can increase their performance by employing good corporate governance practices.

2.3.4 Empirical evidence on the joint effect of corporate governance and investment strategy and macroeconomic factors on pension performance

Empirical studies focusing on the effect of multiple factors on the association between corporate governance and pension fund financial performance are limited both in the developed and developing countries. This is a research area that needs attention. Previous studies on the relationship between corporate governance and pension performance attribute the mixed findings of inconclusiveness or contradictions to the use of two variables at a time (Uwuigbe, 2012). The study will therefore try to address this gap by using a multifactor model to investigate the joint effect of corporate governance, investment strategy and macroeconomic factors on pension performance.

2.4 A Summary of Knowledge Gaps
Table 2.1: A Summary of Knowledge Gaps

Study	Area of Focus	Study Analysis Model	Research Findings	Research Gaps	Focus of Current Study
I. Corporate governance and Pension Performance					
Manual and Andreas (2008)	Evaluation of the effect of corporate governance on the financial performance of pension funds in Switzerland	Cross sectional survey	Governance practices on organization and target setting had a significant association with the financial performance of pension funds	The study did not consider the effects of intervening or moderating factors on pension performance	using a multifactor model, the research will examine the impact of corporate governance, investment strategy and factors financial performance of pension funds
Fich and Shivdasani (2006); Coles et al. (2008)	Analysis of the consequences of busy boards and assessment of the impact of board size on firm performance	Combined ROI of pension funds/ROA	Outcomes yielded mixed findings on the relations between corporate governance measures and firm performance	Mixed and sometimes inconclusive findings; The studies did not put attention on developing economies	examine impact of corporate governance practices, investment strategy, institutional characteristic and factors on pension performance
Ongare and Kobonyo (2011)	The impact of corporate governance on firm performance on firms listed at the NSE where ownership as a key variable	Survey; combined ROI of pension funds/ROA/ROE	There were significant relationships between ownership concentration and profitability of firms	The study did not consider effects of mediating and moderating factors on firm performance. Focus too was not on pension funds	The study will take into account the effect of interaction of corporate governance, mediating and moderating factors on pension performance
Nazir and Afza (2018)	Role of corporate governance in enhancing firm value	Panel modelling	Inside ownership manifest negative impact on value and foreigner's shareholding do not affect value	Intergrade ownership by foreigners and insiders on value for Pakistan	Impact of corporate governance on pension fund financial performance
Melville, R. and Merendino, A. (2019)	investigated the relationship between board structure and firm performance	Regression analysis	a non-linear relationship between independent directors and firm performance; a positive effect of board size on firm performance only for lower number of directors; and a lack of influence of directors appointed by	Inconclusive and mixed findings	Examine the relationship between corporate governance practices, investment strategy and pension performance

Study	Area of Focus	Study Analysis Model	Research Findings	Research Gaps	Focus of Current Study
			minority shareholders on performance.		
Ongore (2011)	Ownership structure, agency costs and governance indicators	Panel data estimation model	Higher insider ownership has higher agency costs	The study considered only smaller firms and insider ownership	Ownership and shareholding impact on pension performance
Balagobei, S. (2018)	Investigated the impact of corporate governance measured by board size, board independence, CEO duality, director's ownership and audit committee on firm performance measured by ROA and Tobin's Q of listed companies in Sri Lanka.	Multiple regressions and Pearson's correlation analyses were employed as the main tool of analyzing data.	The results reveal that the board size and audit committee have significant impact on ROA and board size has significant impact on Tobin's Q, whereas board independence, CEO duality and director's ownership have insignificant impact on both firm performance measures such as ROA and Tobin's Q. Furthermore, the board size and audit committee have negative relationship with firm performance. This study suggests that small boards are associated with higher firm performance, possibly through closely monitored managements.	Inconclusive and mixed findings	Examine the effect of Board structure and composition on pension performance
II. **Corporate Governance, Investment Strategy and Pension Performance**					
Khanna & Zyla (2012)	The impact of corporate governance on investment decisions in different type of institutions in emerging countries	Survey, ROA	Governance was key when making investment decisions	The study did not consider the effects of mediating and moderating factors on the relationship between corporate governance, investment strategy and pension performance	The study will take into account the interaction of corporate governance, mediating and moderating factors on pension performance
Brinson, Hood and	Determinants of Portfolio Performance	ROA Survey	Market timing and stock selection account for only 6% of the variation in returns in a	The study did not investigate the impact of corporate governance, mediating and	The study will take into account the interaction of corporate governance,

Study	Area of Focus	Study Analysis Model	Research Findings	Research Gaps	Focus of Current Study
Beebower (1986)			portfolio whereas investment policy accounts for 94%	moderating factors on pension performance	moderating factors and investment strategy on pension performance
Osano (2013)	Examined the impact of investment strategies adopted by investment funds in Kenya on financial performance of the funds.	Regression analysis	Active investment strategy was found to be integrated into operation investment funds in Kenya and that financial performance is of positive influence to investment funds performance and greatly so is liquidity which means the investment firms utilize liquid assets to make quick investment which translates to good returns.	• There is need for examining actual performance and focusing upon those frequently cited factors for their contributory role. • a replicate study be carried out in the entire investment sector, an in-depth approach to uncover more.	The study will examine the mediating effect of investment strategy on the relationship between governance and pension performance
III. Corporate Governances, Macroeconomic Factors and Performance of Pension Funds					
Kwon & Shin (1999)	Impact of macroeconomic factors on value of securities measured by stock prices	Survey Cointegration test & a Granger causality test	There is an association between Korean stock price indices and a set of macroeconomic variables	• The studies did not take into account the interaction of CG, mediating factors and macroeconomic factors on firm performance	The study will take into account the interaction of CG and mediating factors on the market value of pension funds.
Ochieng & Oriwo (2012	Effect 91day T-bill and inflation rate on the Nairobi Securities Exchange All Share Index (NAS)	Autoregressive distributed lag(ARD) bound test approach	There is an association between 91day T-bill and inflation rate and the NASI.	• The studies did not consider the effect of CG & mediating factors on relationship between macroeconomic factors and firm performance.	The study will take into account the interaction of CG and mediating factors on the market value of pension funds.

Source: Author's primary analysis, 2023

2.5 Conceptual Framework

The conceptual model is anchored on the theoretical foundation of the Agency Theory, the Modern Portfolio Theory, the CAPM theory, the Stakeholder Theory and the Arbitrage Pricing Theory to show the relationship between corporate governance, investment strategy, macroeconomic variables and pension financial performance and how they relate to the research study. The conceptual framework illustrates the expected relationship between the study variables. It defines the relevant objectives for the research process and maps out how they come together to draw coherent conclusions.

The study conceptualizes corporate governance as an independent variable with a multidimensional construct that influences the financial performance of pension funds. Chow (2005) argued that a firm's various corporate governance practices shape its behaviour and eventually affect its stock market value. It is argued that corporate governance mechanisms and management control effectiveness play significant roles in enhancing financial performance of pension funds. Thus, there exists a link between corporate governance attributes and pension financial performance (H_1).

The Agency concept postulates that there is a relationship between organizational structure and firms' financial performance. The theory seeks to resolve conflict of interest and agency costs that arise as a result of variation in risk preferences, information failure and shareholders having minimal influence in decision-making in the firm, a role left to the management. Marashdeh (2014) postulated that reduced agency problems raise share value leading to improved performance. The Stakeholder Theory states that, apart from the shareholders, the achievement of a firm has a correlation with other stakeholders who have interest in the firm. It suggests that a wider constituency interests judge firm performance. The study as well hypothesizes that investment strategy (IS) intervenes the relationship between corporate governance and financial performance of pension funds (H_2). IS is a practical method for selecting investments in order to maximize their overall returns within an acceptable level of risk. An intervening variable alters the effect that an independent variable has on a dependent variable. The intervening change the "effect" component of the cause-and-effect relationship. In particular, it affects the strength and direction of that relationship. Markowitz (1952) Modern Portfolio Theory (MPT) postulates that all investors have a basic objective of attaining maximum returns for any level of risk and that risk can be reduced by combining dissimilar financial assets to form a diversified investment portfolio.

The Arbitrage Pricing Theory (APT) of Ross (1976) on the other hand postulates that there is an association between expected return of a security and a set of systematic and un-systemic factors that affect the assets risks. The theory offers a multi-factor pricing model for securities. The study postulates that macroeconomic variables moderate the relationship between corporate governance and financial performance of pension funds as indicated by loop H_3.

In addition, the study hypothesizes that the joint effect of corporate governance, investment strategy and macroeconomic factors on pension performance is significant (H_4). Loop H_4 depicts the conceptualized combinative influence of corporate governance (CG) indicators (Board structure and composition, Board responsibility, Board procedures, Stakeholders role and rights, Transparency & disclosure,

Commitment to corporate governance), macroeconomic variables (inflation rate, GDP growth rate, interest rates, unemployment levels and investment strategy (IS) on pension performance. Equally the CAPM theory proposes that the return of an asset is a function of both systemic and non-systemic factors. It defines the price of financial assets according to the premium demanded by investors for bearing excess risk.

Figure 2.1: Conceptual Model

INDEPENDENT VARIABLE   **INTERVENING VARIABLE**   **DEPENDENT VARIABLE**

MODERATING VARIABLE
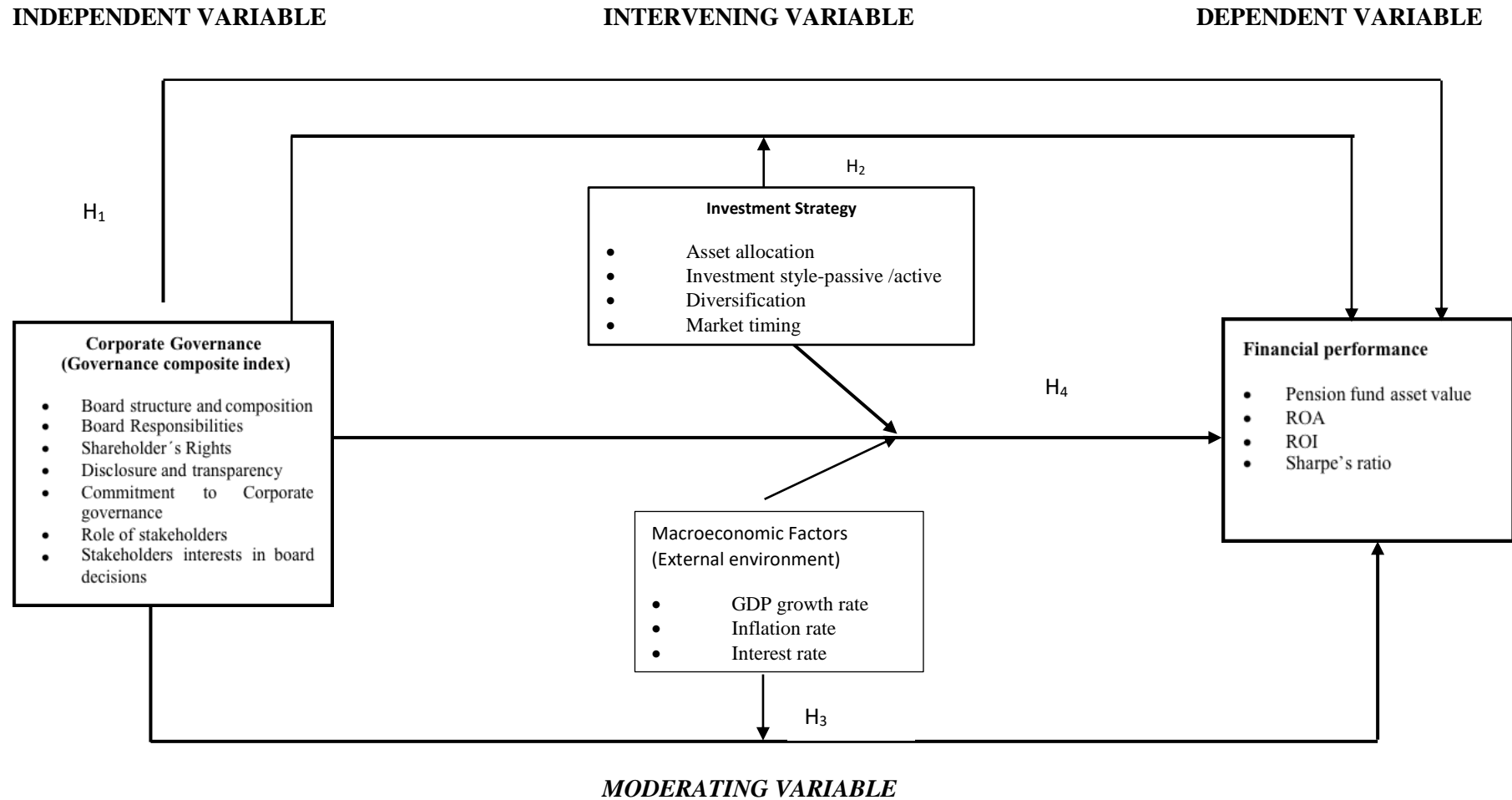
Source: Author's primary analysis, 2023

Figure 2.1 above shows the relationship amongst the study variables.

2.6 Hypotheses

The study tested the following hypotheses:

i. H_1: Corporate governance has a significant relationship with the financial performance of pension schemes.

ii. H_2: Investment strategy has a significant intervening effect on the relationship between governance and financial performance of pension plans.

iii. H_3: Macroeconomic variables have significant moderating effect on the relationship between governance and fiscal position of occupational pension plans. In particular: $H_{3(a)}$: GDP growth rate has a significant moderating influence on the association between CG practices and fiscal position of pension plans; $H_{3(b)}$: Inflation rate has a significant moderating influence on the relationship between CG practices and financial position of pension plans; $H_{3(c)}$: Interest rate has a significant moderating effect on the link between CG practices and market value of pension plans; $H_{3(d)}$: Unemployment rate has a significant moderating influence on the relationship between CG practices and fiscal position of pension plans; $H_{3(e)}$:Exchange rate has a significant moderating influence on the relationship between CG practices and fiscal position of pension plans; $H_{3(f)}$: Balance of Payments has a significant moderating effect on the relationship between CG practices and financial position of pension plans; $H_{3(g)}$:CBK 91-Day T Bill has a significant moderating influence on the relationship between CG practices and fiscal position of pension plans; $H_{3(h)}$:NSE 20 Share Index has a positive moderating effect on the relationship between CG practices and financial position of pension plans.

iv. H_3: The joint effect of corporate governance, Macroeconomic variables and investment strategy on the pension performance is significant.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

The section comprises a review of the research procedure that comprises the research philosophy, design, population and sample of the study, data gathering, tests of validity and reliability as well as analysis of data.

3.2 Research Philosophy

Research philosophy refers to a set of beliefs and assumptions that guide the development of new knowledge in a particular area (Saunders et al., 2019). Kuhn (1962) describes it as a system of scientists' beliefs and agreements that enables one to understand problems and find their solutions. The philosophy comprises assumptions that support research strategy and the methods one chooses and encompasses the concepts of epistemology, ontology and axiology. Epistemology is the study of knowledge acquisition and justified beliefs (Easterby et al., 2008). It entails creation and propagation of knowledge in specific areas of research (Gertler, 2015). Ontology concerns the overall nature of reality specifying assumptions involved (Gruber, 1995) while axiology refers to the role of values and ethics in research (Heron, 1996).

A research paradigm is an approach to undertake a study (Kuhn, 1962). Guba and Lincoln (1982) refer to it as a basic set of beliefs that guide action in research. Two main paradigms exist: positivism and phenomenological (Sekaran, 2003; Westland, 2004). The authors affirm that positivism involves working with an observable single reality that can be measured and known using quantitative methods to create law like generalizations. The generalizations help explain and predict behaviour and events in organizations. The focus on positivism is on scientific empirical approaches designed to provide unbiased data. It uses present theories to develop hypotheses to be tested and confirmed or refuted.

Phenomenological paradigm on the other hand emphasizes that humans are different from physical phenomena because they create meanings (Saunders et al., 2019). Interpretivists study these meanings. They believe that there is no single reality or truth, known only indirectly through the interpretations of people. To get those multiple realities, they use qualitative methods of observation, interviewing and description. The purpose of this type of research is thus to create new, richer understandings and interpretations of social worlds and contexts (Crotty, 1998). Since the study seeks to test quantitative hypotheses, a positivistic research approach will be used.

3.3 Research Design

Research design is overall strategy one chooses to integrate the different components of the study in a coherent and logical way to address the research problem (Trochim, 2006). Zikmund (2003) referred to it as the main plan for the collection, measurement, and analysis of data to address a research problem. Creswell (2008) identifies three research designs: qualitative, quantitative, or mixed methods. The quantitative method, which is based in the scientific method, relies on statistical procedures for data analysis. Quantitative implies using numerical data. The data is numbers and statistics. Its advantage is that one can collect and analyse much more information and make general statements about what is likely to be true overall. In addition, the results are usually generalizable to larger populations. Its key shortcoming is lack of depth such as reasons

why, context, emotions or feelings. Besides, it requires mathematical and/or statistical knowledge to be able to analyse the data effectively. Consequently, quantitative methods rely on experiments and surveys to collect measurable data such that statistical processes can be applied (Creswell, 2003).

In contrast, qualitative methods rely on the descriptive narrative for data analysis (Berrios & Lucca, 2006). The methodologies are used to analyse and evaluate non-numerical information. Qualitative studies try to understand intangible evidence, such as emotion and behaviour. Qualitative data includes words, opinions, thoughts, feelings and behaviours. Their main advantage is that one get lots of detail about specific cases, people or group. The disadvantages are that you can't make general statements, and that analysis is time consuming. Others argue that the analysis is also very subjective, but this depends on one's approach.

Qualitative methods are applicable to studies that involve relationships between individuals, individuals and their environments, and motives that drive individual behaviour and action. Berrios and Lucca (2006, p. 174) claimed that qualitative methods provide for a "better understanding of human development." The methods do not impose rigid rules and procedures similar to quantitative methodologies. Qualitative methods allow "richness of the personal experience" by providing in-depth information in the natural language of the experience. This allows data categorization by witnessing the experience in its natural setting, disallowing preconceived hypotheses, and using critical researcher judgment (Berrios & Lucca, 2006, p. 181).

A mixed methods approach has recently emerged which combines quantitative and qualitative methods into a new methodology. The approach collects and uses quantitative and qualitative data in the same study. Many researchers believe this is a new methodology, but quantitative and qualitative data have been collected by researchers for many years. The combination of the two methods is a recent event.

Creswell and Clark (2007, p. 5) is quoted defining mixed methods research as: "Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative approaches in many phases in the research process. As a method, it focuses on collecting, analysing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone."

The study uses both quantitative and qualitative research designs. The qualitative research design of in-depth interview was used to assess both the impact of corporate governance structures and investment strategies on financial performance of pension schemes. They examined about persons and the reason behind the thinking through collection of no-numeric data. The design is more descriptive and is used to draw inferences. It involves five methods: content analysis, in-depth interview, focus groups, ethnographic and case study research. The in-depth interview involved survey questionnaires, interviews and documentation review (Neuman, 2006). Both the

Corporate governance Index and investment strategy Index were estimated using this method.

Quantitative research designs assess the level of association between study variables using statistical analysis techniques (Creswell, 2013). They are classified as descriptive, correlational, quasi-experimental and experimental research designs, observing and describing the behaviour of a subject without influencing it in any way. Descriptive research describes the characteristics of the population or phenomenon that is being studied focusing more on the "what" of the research subject rather than the "why" aspect. It describes a subject population's critical variables that will provide answers to the questions of who, what, when, where, and how related with a specific study problem (Cooper & Schindler, 2003). The design involves three methods in data collection: observational, case study methods as well as survey research. This design is used when one wants to define respondent characteristics, measure data trends, conduct comparisons and validate existing conditions.

Correlation studies investigate associations between variables and none of the variables are manipulated (Waters, 2017). Developmental studies evaluate changes over time. The study used descriptive, correlational, survey and developmental quantitative research designs to assess the relationship between financial performance of pension funds and the variables corporate governance structures, investment strategy, interest, exchange and inflation rates and change in Gross Domestic Product (GDP). The study was also longitudinal as sample members were measured repeatedly over time. The quantitative data collected included performance measurements of pension funds, NSE 20 share Index, exchange, inflation and interest rates, changes in GDP.

The research design as well took into consideration key ethical issues that arose across the various stages and duration of the research project to ensure maintenance of high ethical standard, responsible conduct, strived to minimize harms and risks, maximize benefits, respected human dignity, privacy and autonomy. Saunders et al. (2009) defined research ethics as the appropriateness of ones behaviour in relation to the rights of those who become the subject of or are affected by ones work.

These issues relate to the: privacy of possible and actual participants; voluntary nature of participation and the right to withdraw partially or completely from the process; consent and possible deception of participants; maintenance of the confidentiality of data provided by individuals or identifiable participants and their anonymity; reactions of participants to the way in which you seek to collect data, including embarrassment, stress, discomfort, pain and harm; effects on participants of the way in which you use, analyse and report your data, in particular the avoidance of embarrassment, stress, discomfort, pain and harm; behaviour and objectivity of you as researcher. The research therefore anticipated these ethical issues at each stage of the research process and developed a range of strategies to help deal with them.

3.4 Population of the Study

Population of a study is described as the entire set of subjects (people, objects, events, or measurements) that have similar characteristics that are the interest of a researcher (Mugenda & Mugenda, 2003). The common characteristics of the groups distinguish them from other individual, institutions, objects and so forth. Polit and Hungler (1999)

referred to it as the entirety or an aggregate or totality of all the subjects that conform to certain specifications.

For the case of this study, the research population comprises 73 public and private pension funds registered with the RBA as at 31st December 2020 organised as either individual (41) or umbrella (32) pension schemes (Appendix III and IV). The unit of analysis was each of the individual or umbrella pension schemes or targeted fund managers from these pension schemes.

3.5 Sample Design

A sample is a subsection of a population carefully chosen to take part in the study (Brink, 1996; Polit & Hungler 1999:227). LoBiondo-Wood and Haber (1998) refers to sampling as the method of selecting part of the population to represent the entire set of subjects. To produce results that can be generalized to the population, random sampling method was applied. Sample size was estimated using Cochran's sample size formula (1963:75):

$$n_0 = Z^2 pq/ e^2.$$

Where n_0 is the sample size; Z^2 is the critical value of the Normal distribution at $\alpha/2$, for example Z= 1.96 for a confidence level of 95%, α is 0.05; e is the required accuracy level; p is the sample fraction with a characteristic; and N is the entire set of subjects. The selection of the period of study is informed by the fact that major corporate governance reforms were effected during that time, providing a scope to evaluate the influence of corporate governance as well as investment strategy and factors on pension fund financial performance. Size of the sample for the study was 61 estimated:

$$n = Z^2 * N * \partial_p /\{(N-1) * e^2 + (Z^2 * \partial^2_p)\}$$
$$n = \frac{1.96^2 * 73 * 0.5^2}{\{(73-1)*0.05^2+(1.96^2*0.5^2)\}}$$
$$= 67.2768 / 1.1016$$
$$= 61.0718954$$

Where; N=73, the population size; e= 0.05, margin of error; ∂p = 0.5, the standard deviation of the population; and Z = 1.96 at 95% confidence level. A sample of 61 pension schemes will therefore be studied.

3.6 Data Collection

Data used in the study comprised both primary and secondary sources entailing time series and cross-sectional data covering the years 2012-2020, the time when major pension regulatory reforms were undertaken in sector. Data were derived from several sources. Quantitative data on monthly value of pension assets and their returns was obtained from individual pension funds records, annual reports or archives. Market surveys, annual reports and publications from the Central Bank of Kenya and the Kenya National Bureau of Statistics provided quantitative data on GDP, inflation and foreign exchange rates while the Capital Markets Authority provided NSE 20 share Index, corporate bond and T- bill rates.

Primary data comprising corporate governance and investment strategy indices were obtained after analysis of qualitative data collected using survey questionnaires from the pension schemes. Corporate governance Index is used as a proxy measure of the effectiveness of the corporate governance mechanism. A corporate governance Index is build where governance mechanisms constitute inputs and governance standards from the codes of good practices constitute the outputs. The respondents for the

questionnaires included elected members of the schemes' trustee sponsor, elected trustee, corporate trustee scheme administrator, scheme manager, custodian actuary and any other person with knowledge on the institution.

3.7 Tests for Reliability and Validity

Reliability and validity are concepts used to evaluate the quality of research. They indicate how well a method, technique or test measures something. Reliability is about the consistency of a measure, and validity is about the accuracy of a measure. Reliability is "the degree of consistency with which the instrument measures an attribute" (Polit & Hungler 1999:255). De Vos (1998) described it as the level to which the use of a specific research tool in another study, yields equivalent outcomes under similar settings. Another scholar, Cronbach (1951) referred to it as how closely related a set of items are as a group. All the definitions embody the concept of repeatability or replicability of research findings.

Joppe (2000) avers that the research instrument is reliable if the study findings can be reproduced under a comparable condition. Reliability is estimated using Cronbach's Alpha Coefficient ranging from 0-1. If all items are not correlated, then $\alpha = 0$; and, if all of the items have high covariance, with α approaching 1, they probably measure the same underlying concept. For this study, the Test - re-test approach was used to evaluate the reliability of the two sets of questionnaires of corporate governance and investment strategy. The questionnaires were administered and later repeated after an interval of one month to management personnel of several independent pension funds. The results from Time 1 and 2 were then evaluated to see if there was any association over time.

Validity on the other hand is a test that measures the extent to which study scores represent what it is purported to measure (Wren, 2006). It determines how truthful the research results are and is measured by the presence or absence of systemic error of data (Campbell & Stanley, 1963). The systemic error assesses how well the results correspond to established theories and other measures of the same concept. Middleton (2017) identifies four main types of validity namely, construct validity; content validity; face validity; and criterion validity. Under construct validity the issue is, does the test measure the concept that it's intended to measure? Content validity on the other hand indicates whether the test is a fully representative of what it aims to measure. Face validity is about whether a test appears to measure what it's supposed to measure. It is concerned with whether a measure seems relevant and appropriate for what it's assessing on the surface. Criterion validity indicates whether the results correspond to a different test of the same thing.

3.8 Diagnostic tests

Model diagnostics is concerned with testing the goodness of fit of a model and, if the fit is poor, suggesting appropriate modifications. The tests are applied to evaluate model residuals, which also serve as tests of model adequacy. They are designed to examine the dependence (correlation) structure of a time series. If a time series is serially uncorrelated, no linear function of the lagged variables can account for the behaviour of the current variable. The tests include multicollinearity, heteroscedasticity and homoscedasticity tests (Schulzer, 1994).

3.8.1 Multicollinearity

Multicollinearity occurs when the explanatory variables are very highly correlated with each other in a model. Its presence can adversely affect the regression results: R^2 will be high but the individual coefficients will have high standard errors. The regression becomes very sensitive to small changes in the specification. The confidence intervals for the parameters will be very wide, and significance tests might therefore give inappropriate conclusions. Detecting multicollinearity is through calculation of correlation coefficients for all pairs of predictor variables. If the correlation coefficient, r, is exactly +1 or -1, this is called perfect multicollinearity. If r is close to or exactly -1 or +1, one of the variables should be removed from the model if at all possible (Schulzer, Ibid.).

Multicollinearity is also determined by the analysis of correlations between the variables and the variance inflation factor (VIF) values (Taylor, 1990). The VIF estimates how much the variance of a regression coefficient is inflated due to multicollinearity in the model. For the correlation coefficient, the range of values from 0.68 to 1 is considered which was specified by Taylor in 1990 and accepted by many researchers as an indicator of the strong correlation between the variables. As for the VIF value, 4 is decided out of the values from 4, 5 and 10 which are accepted by the most researchers as indicators of upper limit that there is no multicollinearity problem (O'Brien, 2007; Farrar et al., 1967; Wichers, 1975). Detection-tolerance or the Variance Inflation Factor (VIF) for multicollinearity: Tolerance= $1-R_j^2$; VIF = 1/tolerance
Where R_j^2 is the coefficient of determination of a regression of explanator j on all the other explanators. A tolerance of less than 0.20 or 0.10 and/or a VIF of 5 or 10 and above indicates a multicollinearity (Schulzer M., 1994).

3.8.2 Heteroscedasticity

Heteroscedasticity in statistics, especially in the context of linear regression or for time series analysis, describes the case where the variance of errors or the model is not the same for all observations, while often one of the basic assumption in modeling is that the variances are homogeneous and that the errors of the model are identically distributed. Thus, it occurs when the variance of the errors varies across observations (Field, 2005; Grimm, & Yarnold, 1995). Heteroscedasticity tests let you check if the residuals of a regression have changing variance. If the errors are heteroscedastic, the OLS estimator remains unbiased, but becomes inefficient. More importantly, estimates of the standard errors are inconsistent. The estimated standard errors can be either too large or too small, in either case resulting in incorrect inferences. Given that heteroscedasticity is a common problem in cross-sectional data analysis, methods that correct for it are important for prudent data analysis. They include redefining the variables, using weighted regression and transforming the dependent variable. Currently four tests exist for detecting heteroscedasticity: Bartlett Test; Breusch Pagan Test; Score Test; and the F Test.

James (2019) opines that while heteroscedasticity does not cause bias in the coefficient estimates, it does make them less precise. Lower precision increases the likelihood that the coefficient estimates are further from the correct population value. Moreover, the author avers that heteroscedasticity tends to produce p-values that are smaller than they should be. This effect occurs because heteroscedasticity increases the variance of the coefficient estimates but the OLS procedure does not detect this increase.

Consequently, OLS calculates the t-values and F-values using an underestimated amount of variance. This problem can lead you to conclude that a model term is statistically significant when it is actually not significant.

3.8.3 Homoscedasticity

The concept of homoscedasticity, the opposite of heteroscedasticity meaning "same variance" is central to linear regression models. Tabachnick and Fidell (2001) opine that homoscedasticity describes a situation in which the error term (that is, the "noise" or random disturbance in the relationship between the independent variables and the dependent variable) is the same across all values of the independent variables. The impact of violating the assumption of homoscedasticity is a matter of degree, increasing as heteroscedasticity increases.

Testing for Homogeneity of Variance can be done using a number of tests including Bartlett's Test, Box's M Test, Brown-Forsythe Test, Hartley's Fmax test and Levene's Test (Snedecor, *et al.* 1989; Brown, Forsythe & Robust, 1974).

3.9 Operationalization of study variables

The study variables were operationalized as per the previous studies as indicated below. The corporate governance scores were calculated using multifactor Indexes such as those used in prior studies of Bhagat et al. 2008; Bebchuk et al. 2009; Daines et al. (2010). The Index comprised eight sections. High scores for the Index denote quality corporate governance and vice versa.

Table 3.1: Operationalization of Study Variables

Variable	Indicator	Operational definition	Measurement	Nature of variable	Supporting evidence from literature
Dependent- Pension fund performance	Return on Investment (combined ROI of pension funds)	Return on investment (combined ROI of pension funds) is a metric used to understand the profitability of an investment. Combined ROI of pension funds compares how much you paid for an investment to how much you earned to evaluate its efficiency.	combined ROI of pension funds = (Net Profit / Cost of Investment) x 100 Combined ROI of pension funds = (Present Value − Cost of Investment / Cost of Investment) x 100 Combined ROI of pension funds = $\frac{\text{Net Return on Investment}}{\text{Cost of Investment}} \times 100\%$ Combined ROI of pension funds =. $\frac{FVI-IVI}{\text{Cost of Investment}} \times 100\%$ where: FVI=Final value of investment IVI=Initial value of investment	Ratio	Farris, Paul W.; Neil T. Bendle; Phillip E. Pfeifer; David J. Reibstein (2010) Pearce, J. M. (2016).
	Sharpe's ratio: Excess Return to Variability	Composite measure of performance, where: S_t = the Sharpes Index, R_p = the annually average return on portfolio, R_f = the risk-free rate ∂_p = the standard deviation of the return of the portfolio	$S_t = \dfrac{R_p - R_f}{\partial_p}$	Ratio	Sharpe (1964)
	Pension fund market/asset value	Actual net or gross annual return of the fund assets		Continuous	

Variable	Indicator	Operational definition	Measurement	Nature of variable	Supporting evidence from literature
Independent – corporate governance composite Index	Board structure & composition	Ownership and shareholding (Outside ownership)	corporate governance sub Index 1	Continuous	Shleifer, A., R. Vishny (1997);
		Board size: number of trustees	corporate governance sub Index 2		
		Board independence: percentage of outsiders in the board	corporate governance sub Index 3		Carvalhal da Silva (2005)
		Independence of the chairman: if outsider or if insider (CEO's duality)	corporate governance sub Index 4		Carter et al., 2003
		Board diversity: measured by gender, nationality, age,	corporate governance sub Index 5		Masulis et al., 1999
	Management practices	Commitment to corporate governance- code of ethics	corporate governance sub Index 8		OECD (2005); Conyon & Peck (1998)
		Board procedures			
		Audit committees			
		Remuneration of directors			
	Transparency and disclosure	Certified annual financial statements, audited and unaudited.	corporate governance sub Index 9	Continuous	Menon & Schwartz, (1986); OECD. (2005)
	Shareholders' right	Protection and equitable treatment of minority shareholders	corporate governance sub Index 6		Carvalhal da Silva (2005)
		Established Legal and mutual rights of stakeholders	corporate governance sub Index 7		Carter et al., 2003
Firm Size	LOGTA	It is defined as the natural logarithm of total assets.	The data are extracted from individual pension schemes.	Continuous	(Rizzotti & Greco, 2013: Mehta, 2017; Elangkumaran & Karthika,2013)
Intervening - Investment strategy	Asset allocation policy	Composite measure evaluated by whether application of the investment strategies is undertaken	Investment Strategy Index	Continuous	Feldestein (1983)
	International diversification				
	Market timing,				Humpe & Macmillan (2007)
	Portfolio selection,				

Variable	Indicator	Operational definition	Measurement	Nature of variable	Supporting evidence from literature
	Restrictions on portfolio performance				
Moderating - Macroeconomic factors	Gross Domestic Products (GDP)	Annual growth rate of the GDP		Continuous	Humpe & Macmillan (2007)
	Inflation rate	A general increase in prices of most goods and services measured monthly	Consumer Price Index	Continuous	Olweny & Omondi (2011)
	Interest rate	The price paid by individual or business to borrow money measured daily	% of the shilling borrowed	Continuous	Feldestein (1983)
	Exchange rate	The rate at which one currency will be traded for another, measured daily	Price	Continuous	Kane & Marcus, 2008
	Unemployment rate	a measure of the extent to which available labour resources (people available to work) are being used	the percentage of people in the labour force who are unemployed.	Continuous	
Performance Benchmarks	Stock Market Index (NSE 20 share Index)	An annual capitalization-weighted Index of 20 stocks from a broad range of industries in the NSE financial market, with each asset weighted according to the total market value of their outstanding shares.	NSE 20 share Index	Discrete/ Continuous	Olweny, T. and Kennedy O. (2011).
	Short-term local interest Rate	Kenyan 3-month Treasury Bill Yield	3 months T- Bill	Discrete/ Continuous	Walker & Iglesias (2010)
	Long-term local interest Rate	Kenyan 10-year T-Bonds	10 year T-Bill		

Source: Author's primary analysis, 2023

3.10 Data Analysis

The unit of analysis was individual pension funds. Data was analysed in two stages. First there was descriptive analysis that entailed computations of frequency distributions, mean scores, standard deviations and coefficient of variation of the pension fund /assets value, and the volatility of gross real return of the pension funds. Secondly, the analysis involved testing for relationships between and among variables to establish their nature and magnitude. This involved multiple regression analyses, Pearson's product moment and analysis of variance (Baron & Kenny, 1986) for this model:

$$\text{Pension Financial Performance} = a + b_1 CG + b_2 IS + b_3 Macro + e.$$

Where CG = Corporate Governance; IS = Investment Strategy; Macro = Macroeconomic factors; e= error term. Below are the regression models and the hypotheses tested.

3.10.1 Corporate Governance (CG) and Pension Performance

The first objective was to investigate the impact of corporate governance practices on pension performance of pension schemes registered by the RBA by 31st December 2020. The independent variable corporate governance was disaggregated as Board structure & composition (BSC), Management practices (MP), Transparency and disclosure (TD) and Shareholders' right (SR). The dependent variable was proxied by the variable combined ROI of pension funds. The regression model was:

$$\textbf{Pension Financial Performance (combined ROI of pension funds)}$$
$$= a + b_1 GG + b_2 IS + b_3 MEV + e.$$
$$\textbf{Combined ROI of pension funds} = a + b_1 BSC + b_2 MP + b_3 TD + b_4 SR + b_6 IS + b_7 MEV + e.$$

Where:

Combined ROI of pension funds = Return on investment

BSC = Board structure & composition

MP = Management practices

TD = Transparency and disclosure

SR = Shareholders' right

IS = Investment strategy Index

MEV = Macroeconomic variables (Unemployment rate, interest rate, GDP growth rate, NSE 20 share Index)

e. = error term

3.10.2 Corporate Governance, Investment strategy (IS) and pension performance

The second objective of the research was to establish the relationship between CG practices and IS.

H_2: Investment strategy has a significant intervening effect on the relationship between governance and financial performance of pension plans.

Figure 3.1: Mediation Path diagram
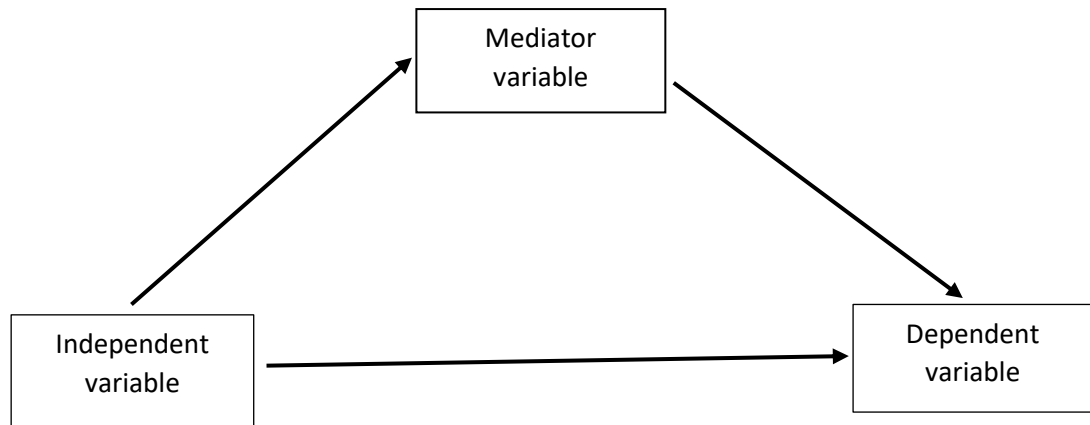
Source: Author's primary analysis, 2023

The study used the Baron and Kenny (1986) method, a statistical analysis strategy to test mediation hypothesis. The authors state that mediation analysis quantifies the extent to which a variable participates in the transmittance of change from a cause to its effect. It is inherently a causal notion, hence it cannot be defined in statistical terms. In the intervening variable model of the study, the independent variable corporate governance is postulated to exert an effect on outcome variable Combined ROI of pension funds through the intervening variable IS, the mediator (Hayes A. F. (2009).

Path analysis/Stepwise regression analysis, a statistical method of testing cause/effect relationships of Kenny and Baron (1986) was used to investigate the intervening effect of IS on the relationship between corporate governance and pension performance. The following model involving four steps was used in the intervention analysis.

Step 1: $Y = a_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$

Step 2: $Me = a_0 + \beta_1 X_1 + \varepsilon$

Step 3: $Y = a_0 + \beta_2 Me + \varepsilon$

Step 4: $Y = = a_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_2 Me + \varepsilon$

Where:

Y= composite score for financial performance (combined ROI of pension funds)

a_0=regression constant

X_1= composite score for Board structure & composition (BSC)

X_2= composite score for Management practices (MP)

X_3= composite score for Transparency and disclosure (TD)

X_4= composite score for Shareholders' right (SR)

Me=mediating factor-composite score for IS

R^2 = Pearson's product moment correlation

Step 1-3 establishes whether zero order relationship among the variables exists. If one or more of these relations are not significant, then mediation is not possible. But if significant proceed to step 4. Full mediation is supported if corporate governance is no longer significant when IS/IC is controlled. Partial mediation is supported if both corporate governance and IS significantly predict pension performance. R^2 assesses how much change in financial performance is due to corporate governance and IS. If R^2 is > 0.7 there is a positive relationship and below 0.5 there is a weak relationship.

3.10.3 Corporate governance practices, Macroeconomic variables and pension fund financial performance

The third objective of the study was to establish the moderating effect of Macroeconomic variables on the relationship between CG practices (BSC, MP, TD and SR) and pension fund financial performance (combined ROI of pension funds).

H_3: Macroeconomic variables have a significant moderating effect on the relationship between CG practices (BSC, MP, TD and SR) and pension fund financial performance (combined ROI of pension funds). Moderation analysis was done by adding one or multiple interaction terms in a regression analysis.

$$Y=\beta_0+\beta_1*X+\beta_2*Z+\beta_3*X*Z+\epsilon$$
$$=\beta_0+\beta_2*Z+(\beta_1+\beta_3*Z)*X+\epsilon.$$

Figure 3.2: Moderation Path diagram
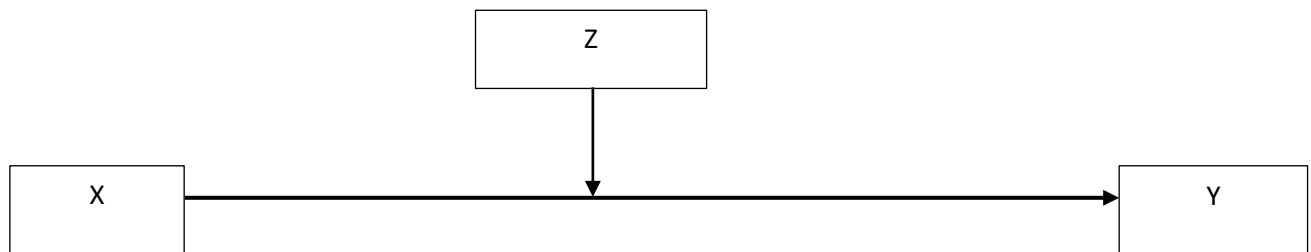
Corporate governance practices, investment strategy, macroeconomic variables and pension fund financial performance (The joint effect)

The fourth objective of the study was to establish the joint effect of CG practices (BSC, MP, TD and SR), Investment strategy, macroeconomic variables and pension fund financial performance (combined ROI of pension funds) of the pension funds registered by the RBA by December 31 2020.

H_4: The joint effect of corporate governance and investment strategy is greater than the sum total of the individual effects of the independent variables on pension performance. The investigation was done using the following regression equation:
$Y= =a_0 + \beta_1X_1+ \beta_2X_2 + \beta_3X_3 + \beta_4X_4 +\beta_5Xn + \varepsilon$
Combined ROI of pension funds = $=a_0 + \beta_1BSC + \beta_2MP + \beta_3TD + \beta_4SR +\beta_5IS + MEV_6 + \varepsilon$

Table 3.2: Study Hypotheses and Analytical Models
Summary of Analytical Models

Objectives	Hypothesis	Analytical Model	Interpretation	Questionnaire item
1. Determine the influence of corporate governance (CG) on pension performance	H_A: corporate governance practices significantly influence the performance of pension plans in Kenya: i.Board structure & composition i.Management practices i.Transparency and disclosure v.Shareholders' right H_0: $b_n = 0$ H_A: $b_n \neq 0$	1. Simple regression analysis, where Pension performance =f (corporate governance) $Y = a + b_n X_n + e$ Where Y= Mean score of the Sharpe's ratio a=Intercept/constant b_n = regression coefficient (Beta) X= Aggregate mean score of the corporate governance e = error term R= Pearson's product moment correlation	Pearson's product moment correlation coefficient (R) determination - The model establishes that a set of independent variables explains a proportion of the variance in a dependent variable at a significant level (through a significance test of R^2). Range = +1 to -1 R= ≥ 0.7 indicates a strong positive relationship. Range = ≤ 0.3 indicates a weak relationship	Model Summary Tables
		2. ANOVA test -	A way to find out if survey or experiment results are significant. It entails testing groups to see if there's a difference between them. The F value in one way ANOVA helps you answer the question "Is the variance between the means of two or more independent groups significantly different?" H_0: All group means are equal. H_A: At least one group mean is different from the rest. The larger the F-statistic, the greater the evidence that there is a difference between the group means. A sufficiently large F-value indicates that the term or model is significant. The F value also determines the P value; The p-value is a probability that measures the evidence against the null hypothesis. Lower probabilities provide stronger evidence against the null hypothesis. If this p-value is less than $\alpha = .05$, we reject the null hypothesis of the ANOVA and conclude that there is a statistically significant difference between the means of the three groups.	The ANOVA Tables

Objectives	Hypothesis	Analytical Model	Interpretation	Questionnaire item
			Otherwise, if the p-value is not less than $\alpha = .05$ then we fail to reject the null hypothesis and conclude that we do not have sufficient evidence to say that there is a statistically significant difference between the means of the three groups.	
		3. Coefficient analysis	It shows shared and unique contributions of the independent variables. It also indicates the single strongest predictor in the model.	The Coefficient Tables.
2. Asses the moderating effect of macroeconomic factors on the relationship between CG performance of pension funds	H_A: The influence of CG on performance of pension funds is significantly moderated by macroeconomic factors. H_0: $b_n = 0$ H_A: $b_n \neq 0$	Regression analysis $Y = a_0 + \beta_1 X_1 + \varepsilon$ $Y = a_0 + \beta_1 X_1 + \beta_2 X_2$ $Y = a_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_{1-p} X_{1-p}.Z_{1-p} + \varepsilon_i$ Where: Y_1= Sharpe's ratio a_0 = regression coefficient and intercept a_{1-p} = Regression coefficient s or change induced in Y by each independent variable X X_{1-p}=independent variable Z_{1-p} = moderator if the relationship between X and Y is a function of the level of Z The coefficient (a_{1-p}) of the moderating and independent variables indicate the magnitude of the respective relationship between that variable and the first dependent variable. 4. Pearson's product moment correlation R	H_0: $b_{1-p} = 0$ H_A: $b_{1-p} \neq 0$ To conduct test a t test to determine individual significance of the relationship To conduct an F test (AOV test) to assess overall robustness and significance of the simple regression model. -Reject H_0 if p value $\leq$ a, otherwise fail to reject H_0 if p-value is >a Pearson's product moment correlation coefficient (r) The model establishes that a set of independent variables explains a proportion of the variance in a dependent variable at a significant level (through a significance test of R^2). Range = +1 to -1 R= ≥ 0.7 indicates a strong positive relationship. Range = ≤ 0.3 indicates a weak relationship	Asses the moderating effect of macroeconomic factors on the relationship between CG performance of pension funds
3. Determine the influence of Investment Strategy (IS) on pension performance	H_A: IS practices significantly influence the performance of pension plans in Kenya. H_0: $b_n = 0$ H_A: $b_n \neq 0$	1. Simple regression analysis, where Pension performance =f (IS) $Y = a + b_n X_n + e$ Where Y= Mean score of the Sharpe's ratio a=Intercept/constant b_n = regression coefficient (Beta) X= Aggregate mean score of the IS e = error term Pearson's product moment correlation R.	Pearson's product moment correlation coefficient (R) determination - The model establishes that a set of independent variables explains a proportion of the variance in a dependent variable at a significant level (through a significance test of R^2). Range = +1 to -1 R= ≥ 0.7 indicates a strong positive relationship. Range = ≤ 0.3 indicates a weak relationship	Model Summary, ANOVA and Coefficient Tables: Investment Strategy of pension funds in annual reports
		2. ANOVA test -	H_0: All group means are equal.	The ANOVA Tables

Objectives	Hypothesis	Analytical Model	Interpretation	Questionnaire item
			H_A: At least one group mean is different from the rest. The larger the F-statistic, the greater the evidence that there is a difference between the group means. A sufficiently large F-value indicates that the term or model is significant. If this p-value is less than $\alpha = .05$, we reject the null hypothesis of the ANOVA and conclude that there is a statistically significant difference between the means of the three groups. Otherwise, if the p-value is not less than $\alpha = .05$ then we fail reject the null hypothesis and conclude that we do not have sufficient evidence to say that there is a statistically significant difference between the means of the three groups.	
		3. Coefficient analysis	It shows shared and unique contributions of the independent variables. It also indicates the single strongest predictor in the model.	The Coefficient Tables.
4. Establish the mediating effect (Me) of investment Strategy (IS) on the relationship between corporate governance (x) and pension performance (Y)	H_2: The investment strategy does not mediate the effect of corporate governance practices on performance of pension plans in Kenya. .	Path analysis/Stepwise regression analysis: a statistical method of testing cause/effect relationships. Step 1: $Y = a_0 + \beta_1 X_1 + \varepsilon$ Step 2: $Me = a_0 + \beta_1 X_1 + \varepsilon$ Step 3: $Y = a_0 + \beta_2 Me + \varepsilon$ Step 4: $Y = a_0 + \beta_2 Me + \beta_1 X_1 + \varepsilon$ Where Y= composite score for financial performance a0=regression constant X= composite score for corporate governance Me=mediating factor-composite score for IS 1. Pearson's product moment correlation R	Step 1-3 establishes whether zero order relationship among the variables exists. If one or more of these relations are not significant, then mediation is not possible. But if significant proceed to step 4. Full mediation is supported if corporate governance. is no longer significant when IS/IC is controlled Partial mediation is supported if both corporate governance and IS/IC significantly predict pension performance. R2 to asses how much change in financial performance is due to corporate governance and IS or IC If R is > 0.7 there is a positive relationship and below 0.5 there is a weak relationship.	Establish the mediating effect (Me) of investment Strategy (IS) on the relationship between corporate governance (X) and pension performance (Y)
5. To determine whether the joint effect of corporate governance & IS	The joint effect of corporate governance and IS on pension	1. $Y = a_0 + \beta_1 X_1 + \beta_{1-p} X_{1-p}.Z_{1-p} + \beta_n$ Men $+ \varepsilon_i$ Where: Y= Sharpe's ratio	H_0: $b_1 = b_2 \ldots = b_n = 0$ There is no linear relationship between Y and the set of independent variables	Model Summary, ANOVA and Coefficient Tables: the joint effect of corporate

Objectives	Hypothesis	Analytical Model	Interpretation	Questionnaire item
on pension performance on pension performance is significant.	performance in Kenya is significant.	a_0 = regression coefficient and intercept β_1 = Regression coefficient or change induced in Y by each independent variable X X_1=independent variable X_{1-p}=independent variable Z_{1-p} = moderator if the relationship between X and Y is a function of the level of Z Men= mediating variable if the relationship between X and Y is a function of the level of Xnjn ε_i = error term Pearson's product moment correlation R	H_A: At least one of bn $\neq 0$ (There is a linear relationship between Y and the set of independent variables) To conduct a t test to determine individual significance of each parameter To conduct an F test (AOV test) to assess overall robustness and significance of the multiple regression model. Reject H_0 if p value $\leq$ a, otherwise fail to reject H_0 if p-value is >a If r > 0.7 with a positive b and p<0.05 it indicates corporate governance as a positive and significant effect on pension performance.	governance & IS on pension performance
		2. ANOVA test -	H_0: All group means are equal. H_A: At least one group mean is different from the rest. The larger the F-statistic, the greater the evidence that there is a difference between the group means. A sufficiently large F-value indicates that the term or model is significant. If this p-value is less than α = .05, we reject the null hypothesis of the ANOVA and conclude that there is a statistically significant difference between the means of the three groups. Otherwise, if the p-value is not less than α = .05 then we fail to reject the null hypothesis and conclude that we do not have sufficient evidence to say that there is a statistically significant difference between the means of the three groups.	The ANOVA Tables
		3. Coefficient analysis	It shows shared and unique contributions of the independent variables. It also indicates the single strongest predictor in the model as well as indicates the effect of addition of each independent variable on the models R squared.	The Coefficient Tables.

Source: Author's primary analysis, 2023

The next chapter of the paper, Chapter 4 reports the empirical results of the study.

CHAPTER FOUR
DESCRIPTIVE ANALYSIS AND RESULTS

4.1 Introduction

The chapter presents the descriptive analysis and results of the research which entails discussion of the statistics of the dependent variables corporate governance practices (BSC, MP, TD and SR), moderating variables macroeconomic factors, mediator variable investment strategy and pension fund financial performance (combined ROI of pension funds). It will also involve trend analysis, diagnostic tests, correlational analysis and chapter summary. The research period covers the years 2012-2020 and data was obtained from the pension industry and the country's economic indicators.

4.2 The Study Sample

The sample for the study was obtained from a population of 73 pension schemes registered by the RBA as at 31st December, 2020 comprising 41 individual pension schemes and 32 umbrella pension schemes. The sample data for the study was estimated using Cochran's sample size formula (1963:75): $n_0 = Z^2pq/ e^2$ to 61 pension schemes. To produce results that can be generalized to the population, random sampling method was applied. Nonetheless adequate data for 57 pension schemes was accessed representing a success rate of 57/61= 93.443%. The sample of 57 pension schemes yielded 513 observations for the study period 2012-2020. Due to lack of some data, observations for pension schemes vary from 1 year to the maximum of 9 years. The mean observations were 7.281 for each pension firm reflecting 80.90% of the total sampled pension schemes' observations and thus yielding a balanced panel data set
.

The Appendix I summarizes the descriptive statistics of the combined ROI of pension funds; Investment strategy proxied by IS index; as well as corporate governance indicators of Board structure and composition; Board Responsibilities; Disclosure and Transparency; Shareholders' right; Commitment to Corporate governance; and Stakeholders interests in board decisions. In addition, descriptive statistics were obtained from macroeconomic factors of unemployment rate, interest rate (Commercial Banks weighted average lending interest rates), GDP growth rate, NSE 20 share Index, NSE market capitalization; exchange rate (KS/US$); 91 day T Bills; and Balance of payments which was a representation of the sample of the population. It is broken down into measures of central tendency and measures of variability (spread). Measures of central tendency include the mean, median, and mode, while measures of variability include standard deviation, variance, minimum and maximum variables, kurtosis, and skewness.

4.3 Pension Schemes combined ROI of Pension Funds Descriptive Statistics
Table 4.1: Combined ROI of pension funds descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Combined ROI of pension funds	46	-1.77	354.29	32.6311	57.02374	4.398	.350	23.013	.688
Valid N (listwise)	7								

Source: Author's primary analysis (2023)

The pension schemes combined ROI of pension funds values varies from -1.77 to 354.29 with a mean of 32.63 and a standard deviation of 57.02, revealing a significant variation in combined ROI of pension funds among the RBA registered pension funds. The above mean combined ROI of pension funds and standard deviation indicates that pension schemes generally created value for pension beneficiaries during the study period. In addition, the above combined ROI of pension funds maximum and minimum values point to heterogeneity and diversity in values among sampled pension schemes.

Skewness and kurtosis indicate the shape of variables distributions and aid to check for normality and heteroscedasticity in a distribution. Kurtosis is a measure of the combined weight of a distribution's tails relative to the centre of the distribution. It is a measure that describes the shape of a distribution's tails in relation to its overall shape. When a set of approximately normal data is graphed via a histogram, it shows a bell peak and most data within three standard deviations (plus or minus) of the mean. However, when high kurtosis is present, the tails extend farther than the three standard deviations of the normal bell-curved distribution.

The study results established that the combined ROI of pension funds data had a score of 4.398 indicating that the data are extremely skewed as suggested by Bulmer (1979) rule of thumb which states that if skewness is lower than -1 (negative skewed) or greater than 1 (positive skewed), the data are extremely skewed. Moreover, the study findings show that the combined ROI of pension funds distribution is fairly peaked with a kurtosis of 23.01, indicating Leptokurtic distribution (kurtosis > 3.0). Leptokurtic distribution is one with long tails, a consequence of outliers, which stretch the horizontal axis of the histogram graph, making the bulk of the data appear in a narrow ("skinny") vertical range. Thus, the distributions of the combined ROI of pension funds are characterized as concentrated toward the mean with occasional extreme outliers that

are a more relevant issue particularly for investors. In finance and investing, excess kurtosis is interpreted as a type of risk, known as "tail risk," or the chance of a loss occurring due to a rare event, as predicted by a probability distribution.

4.3.1 Board Structure and Composition Descriptive Statistics

Kudal and Dawa (2020) referred to corporate governance as a system of practices, rules and processes through which a firm is being controlled and directed by the board. Huse (2007) sees Corporate governance as the interaction between various internal and external actors and the board members in directing a firm for value creation, accountability, policy making, monitoring and supervision of executive activities of corporate entity.

Board structure refers to whether the chief executive officer (CEO) concurrently serves as chairperson of the board of directors (Zahra and Pearce, 1989) whereas Board composition refers to the relative proportions of inside (management) and outside directors. The composition of the board of directors typically consists of three or more independent members; its members are normally appointed by the board on the recommendation of the chairman of the board with the concurrence of the nominating (and governance) committee. The composition of a board tends to have a great impact on its corporate governance and thereby indirectly on firms' performance. The board develops the mission, policies, and overall direction for an organization.

The effect of board composition on governance framework have the following significance: i) to encourage the efficient use of the resources; ii) to require accountability for the stewardship of those resources; and iii) to align as nearly as possible to interests of individuals, corporations and society. The role of the board is to plan and strategize goals and objectives for the short- and long-term good of the company and to put mechanisms in place to monitor progress against the objectives. To this regard, board directors must review, understand and discuss the company's goals. The descriptive statistics on Board structure and composition are summarized below:

Table 4.2: Board Structure and Composition Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Board structure and composition	57	.04	.96	.5989	.24476	-.518	.316	-.349	.623

Source: Author's primary analysis (2023)

The results in table 4.2 indicates that the minimum value of Board structure and composition was 0.04 with a maximum of 0.96 implying that the board to a large extent provided overall direction to the organization which had a positive impact on performance of the pension funds. In addition the table shows that the average score on BSC was 0.5989 meaning that the positive effect of BSC on pension performance was experienced by a wide range of pension schemes.

The Board structure and composition is negatively and moderately skewed at a score of -.0.518 as suggested by Bulmer (1979) rule of thumb (If skewness is between −1 and −½ or between +½ and +1, the distribution can be called moderately skewed). This

implies cases of average effect of BSC on some pension schemes' performance. The negative skewness of a distribution indicates that an investor may expect frequent small gains and a few large loses from the investment. The negative skewed distributions of investment returns are generally less desired by investors since there is some probability of loosing huge profits that can cover all the frequent large losses. The Kurtosis of BSC peaked at -0.349 meaning that few pension schemes experienced a lower effect of BSC on pension fund performance. The results thus show a distribution described as platykurtic (kurtosis <3). Its tails are shorter and thinner, and its central peak is lower and broader. Westfall (2016) was of the view that lower kurtosis means fewer of the variance is the result of infrequent extreme deviations, as opposed to frequent modestly sized deviations. They note that it's the tails that mostly account for kurtosis, not the central peak.

4.3.2 Descriptive Statistics of Board Responsibilities

The board remains the epicenter of corporate governance in any enterprise. All the principles of good corporate governance centre on the board of directors. Tricker (2009) identified four major functions of the board which include strategy formulation, accountability, policy making and monitoring and supervision of executive activities of the corporate entity.

Similarly, Boland and Hofstrand (2021) outline the major responsibilities of the board of directors to include: recruit, supervise, retain, evaluate and compensate the manager; provide direction for the organization; establish a policy based governance system; govern the organization and the relationship with the CEO; and fiduciary duty to protect the organization's assets and member's investment; monitor and control function. The OECD (2015) opines that corporate governance framework should ensure the strategic guidance of the company, the effective monitoring of management by the board, and the board's accountability to the company and the shareholders.

Table 4.3: Descriptive Statistics of Board Responsibilities

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Board Responsibilities	57	1.00	.00	1.00	.6954	.2521	-1.349	.316	1.110	.623

Source: Author's primary analysis (2023)

The summary descriptive statistics for the Board Responsibilities (BR) are outlined in Table 4.3. The table shows that Board responsibilities has a mean score of 0.695 with a corresponding standard deviation of 0.252 which discloses that registered pension funds do not vary significantly in the effects of BR on pension performance. With the minimum score of BR of 0.00 while the maximum score 1.00 indicates greater heterogeneity between the smallest and the largest pension fund on effects of BR.

The skewness score of BR was -1.349 which suggests that the distribution is highly skewed. Bulmer (1979) rule of thumb posits that if skewness is less than −1 or greater than +1, the distribution can be called highly skewed indicating a relative symmetrical distribution. The kurtosis value of 1.11signifies a platykurtic distribution (kurtosis <3) as its tails are shorter and thinner, and its central peak is lower and broader leading to less extreme positive or negative events. When choosing where to invest, investors will consider which statistical distributions are correlated with the various types of investments. More risk-averse investors may prefer platykurtic-distributed assets and markets because those assets are less likely to yield severe results.

4.3.3 Descriptive Statistics of Shareholder´s Rights (SR)

The shareholders of any company have a responsibility to ensure that the company is well run and well managed. They do this by monitoring the performance of the company and raising their objections or giving their approval to the actions of the management of the company. Nestor and Jesover (2000) opine that common shareholders are granted six rights namely voting power, ownership, the right to transfer ownership, dividends, the right to inspect corporate documents, and the right to sue for wrongful acts.

Table 4.4: Descriptive Statistics of Shareholder´s Rights (SR)

					Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Shareholder´s Rights	57	-.78	.56	-.3247	.25334	1.112	.316	2.742	.623

Source: Author's primary analysis (2023)

Table 4.4 outlines the summary descriptive statistics for Shareholder´s Rights. The minimum score of SR was -0.78 while the maximum was 0.56 signifying that the share SR were lowly observed. On average, the SR stood at -0.325 implying that SR were lowly affected in the registered pension funds. The SR positive skewness of 1.112 is highly skewed as it is greater than +1 as per Bulmer (1979) classic rule of thumb. .This implies that a substantial number of pension schemes lowly affect SR in the registered pension funds. The Kurtosis of 2.742 reveals a platykurtic distribution of SR (a distribution with kurtosis <3 (excess kurtosis <0)

4.3.4 Descriptive Statistics of Disclosure and Transparency
Table 4.5: Descriptive Statistics of Disclosure and Transparency

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Disclosure and transparency	57	.08	.92	.5905	.25361	-.338	.316	-1.211	.623
Valid N (listwise)	7								

Source: Author's primary analysis (2023)

Table 4.5 above summarizes descriptive statistics of Disclosure and transparency. The minimum score was 0.08 which implies that some registered pension schemes poorly implemented D&T principles. The maximum score of 0.92 reveals that some registered pension schemes effected D&T principles. On average the pension schemes D&T principles score stood at 0.591 implying that a sizable number of pension schemes implemented D&T principles. The skewedness of -0.338 indicates that the distribution does not deviate further from a normal distribution as per Bulmer (1979) classic rule of thumb which suggests that if skewness is between −1 and −½ or between +½ and +1, the distribution be called moderately skewed. A kurtosis of -1.211 reveals a platykurtic distribution (kurtosis <3 (excess kurtosis <0). Compared to a normal distribution, its tails are shorter and thinner, and often its central peak is lower and broader.

Transparency and disclosure (T&D) are essential elements of a robust corporate governance framework as they provide the base for informed decision making by shareholders, stakeholders and potential investors in relation to capital allocation, corporate transactions and financial performance monitoring. The OECD (2020) avows that ensuring a high quality of transparency and accountability is the very basis of any sound corporate governance regime. The organization notes that information disclosure and higher standards of accountability in firms, can contribute to their improved efficiency and performance. Information disclosure including both financial and non-financial data is essential for the stakeholders to be effective owners; to evaluate the performance of the firms as an owners; the media to raise awareness on firms efficiency; and taxpayers and the general public to have a comprehensive picture of the firms performance.

Transparency too is a critical component of corporate governance because it ensures that all of a company's actions can be checked at any given time by an outside observer (Farah 2022). The OECD (2004) observes that a key element of 'good' governance is 'transparency', which incorporates a system of checks and balances among the board of directors, management, auditors and other stakeholders. Transparency ensures that management will not engage in improper or unlawful behavior since their conduct can be and will be scrutinized. To achieve transparency, a company should adopt accurate accounting methods, make full and prompt disclosure of company information and make disclosure of conflict of interests of the directors or controlling shareholders among others. Fung (2014) affirms that corporate transparency is the extent to which a corporation's actions are observable by outsiders.

The author notes that transparency is related to the continuous dissemination through accessibility to media, consistent communication with stakeholders and periodic

disclosure of firm-specific information on a voluntary or mandatory basis (Bushman, Piotroski and Smith, 2004; Yadong, 2005; Patel, 2002; and Pope, 2003). Such disclosure and dissemination can have a positive efficiency effect on obtaining capital (Uren, 2003) or enhance the firm's reputation (Bennis, Goleman and O'Toole, 2008; Fombrun, 1990, 1996, 2000).

Fung (2014) observes that financial reporting is a critical information component for investors in their decision making. Major risk in corporate financial reporting is that financial statements are not fairly presented due to inadvertent or intentional errors. The author opines that transparency in financial reporting enables investors, creditors, and market participants to evaluate the financial condition of an entity. In addition to helping investors make better decisions, transparency increases confidence in the fairness of the markets. Disclosure on the other hand is the process of making facts or information known to the public including customers, investors, and any people involved in doing business with the company aware of pertinent information.

The OECD (2018) outlined Disclosure on board practices to include disclosure on Board & executive remuneration, Board composition, Board nomination practices, Chair/CEO separation and Board responsibilities and committees. The G20/OECD Principles of Corporate governance affirm that corporate governance framework should ensure that timely and accurate disclosure is made on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company. Moreover, it observes that a strong disclosure regime that promotes real transparency is a pivotal feature market based monitoring of companies and is central to shareholders ability to exercise their shareholders right on an informed basis (OECD, 2015).

Fung (2014) outlines five pillars of T&D which comprise: i) Truthfulness – information disclosed must provide accurate description of circumstances, ii) Completeness – information disclosed must be sufficient to enable investors to make informed decisions. Information must include both financial and non-financial matters, iii) Materiality of information – information disclosed must be material to influence investment decisions iv) Timeliness – information disclosed must be timely to enable investors to react as quickly as possible, v) Accessibility – information disclosed must be easily accessible and available to investors at low cost. The OECD (2015) affirms that corporate governance framework should ensure that timely and accurate disclosure is made on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company.

4.3.5 Descriptive Statistics of Commitment to Corporate Governance
The OECD (2015) avows that corporate governance framework should promote transparent and fair markets, and the efficient allocation of resources. It should be consistent with the rule of law and support effective supervision and enforcement. Effective corporate governance requires a sound legal, regulatory and institutional framework that market participants can rely on when they establish their private contractual relations. This corporate governance framework typically comprises elements of legislation, regulation, self-regulatory arrangements, voluntary commitments and business practices that are the result of a country's specific circumstances, history and tradition. The OECD observes that the desirable mix

between legislation, regulation, self-regulation, voluntary standards, among others will therefore vary from country to country.

Table 4.6: Descriptive Statistics of Commitment to Corporate Governance

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Commitment to Corporate governance	57	1.83	-1.00	.83	-.3447	.3922	.798	.316	.846	.623

Source: Author's primary analysis (2023)

The results in table 4.6 show that the minimum Commitment to Corporate governance (CG) was -1.00 which signifies that some pension schemes were not committed to corporate governance principles. The maximum value of 0.83 reveals that some pension schemes were committed to corporate governance practices. On average, the commitment to corporate governance was -0.345 implying that generally a sizable proportion of pension schemes were not committed to corporate governance. The corporate governance positive skewness of 0.798 indicates a moderately skewed distribution as per BuImers (1979) rule of thumb (If skewness is between −1 and −½ or between +½ and +1, the distribution can be called moderately skewed). The Kurtosis value of 0.846 reveals a platykurtic distribution (a distribution with kurtosis <3 (excess kurtosis <0). Compared to a normal distribution, its tails are shorter and thinner, and its central peak is lower and broader.

4.3.6 Descriptive Statistics of Role of Stakeholders (RS)

The OECD (2015) avows that the corporate governance framework should recognise the rights of stakeholders established by law or through mutual agreements and encourage active co-operation between corporations and stakeholders in creating wealth, jobs, and the sustainability of financially sound enterprises. The OECD observes that the competitiveness and ultimate success of a corporation is the result of teamwork that embodies contributions from a range of different resource providers including investors, employees, creditors, customers and suppliers, and other stakeholders. In addition, it notes that corporations should recognise that the contributions of stakeholders constitute a valuable resource for building competitive and profitable companies. It is, therefore, in the long-term interest of corporations to foster wealth-creating co-operation among stakeholders. The governance framework should thus recognize the interests of stakeholders and their contribution to the long-term success of the corporation.

Table 4.7: Descriptive Statistics of Role of Stakeholders (RS)

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Role of stakeholders	57	.83	.00	.83	.366	.2246	.760	.316	-.535	.623

The descriptive statistics on table 4.7 show that the RS as measured by the aggregate score has a mean value of 0.366 with a corresponding standard deviation of 0.225 which discloses that the registered pension funds vary significantly in the recognition of the RS. The minimum score was 0.00 whereas the maximum was 0.83 indicating greater heterogeneity between RS of the various RBA registered pension schemes. The skewness score of RS was 0.76 (moderate skewness) an indication of a relative symmetrical distribution while the kurtosis value of -0.535 signifies a negative platykurtic distribution of data compared to a normal distribution, its tails are shorter and thinner, and its central peak is lower and broader.

4.3.7 Descriptive Statistics of Stakeholders interests in Board Decisions

Edward Freeman (1980s) described a stakeholder as a person with an interest in a business venture and its business- or project-related decisions and can either be directly or indirectly affected by the achievement of the organisation's objective. Similarly, the World Business Council for Sustainable Development (WBCSD) defines a stakeholder as a person or group that has an interest in a company and can affect or be affected by its activities. They could be employees, Customers, Investors, Leaders, Government, Communities, Suppliers and vendors among others. Freeman's (2021) central idea about the board's role in governing the corporation and that any business creates or sometimes destroys value for its stakeholders has finally emerged.

Table 4.8: Descriptive Statistics of Stakeholders interests in Board Decisions

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosi	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Stakeholders' interests in board decisions	57	1.22	-.22	1.00	.4577	.2983	-.400	.316	-.622	.623

The minimum score of the SIBD was -0.22 which implied that some registered pension schemes did not consider SIBD. The maximum SIBD score of 1.00 reveals that some RBA registered pension schemes considered SIBD. On average SIBD consideration stood at 0.458 implying that about half of the RBA registered pension schemes effected SIBD. The SIBD negative skewness of -0.40 indicates that a substantial number of RBA registered pension schemes did not affect SIBD. The negative kurtosis of -0.622 reveals a platykurtic distribution of pension schemes in effecting SIBD.

4.3.8 Descriptive statistics of Investment Strategy Index

An investment strategy is a plan designed to help individual investors achieve their financial and investment goals. It is a set of rules, behaviors or procedures, designed to guide an investor's selection of an investment portfolio. Investment strategies are adopted at organizational, industry and market level and serve as a guide for entering and selecting investment portfolios (Farma & French, 1992). Two main investment

strategies are employed: active investment strategy, a portfolio management strategy where the manager makes specific investments with the goal of outperforming an investment benchmark Index and passive strategy where investments are in accordance with a pre-determined strategy that doesn't entail any forecasting. Eccles et al. (2011) empirical study of two matched sets of firms covering an 18-year period found that, over the long-term, corporations that voluntarily adopted aggressive investment strategy many years ago significantly outperformed those that had adopted a conservative investment strategy, both in terms of stock market and accounting performance. Several theories that relate to investment attempt to show relationship between selection of portfolio and expected return for a given amount of portfolio risk. They include the MPT, the APT, the CAPM and the three-factor model.

Table 4.9: Descriptive Statistics of Investment Strategy Index

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
IS Index	57	.98	.00	.98	.5016	.2772	-.177	.316	-.496	.623

Source: Author's primary analysis (2023)

The results in table 4.9 show that the mean IS Index was 0.502 which signifies that about half of the registered pension schemes adopted investment strategies to improve their combined ROI of pension funds. The minimum value of 0.00 reveals none of the RBA registered pension schemes ignored the adoption of investment strategies. The maximum score of 0.98 implies that a large proportion of pension funds utilized investment strategies to improve combined ROI of pension funds. The IS Index is negatively skewed at a score of -0.177 indicating that the distribution is approximately symmetric (If skewness is between −½ and +½, the distribution can be called approximately symmetric, Bulmer 1979 classic rule of Thumb). The kurtosis of IS Index peaked at -0.496 signifying that about half of the pension schemes used various investment strategies to help improve combined ROI of pension funds.

4.3.9 Descriptive statistics of Growth Domestic Product (GDP) Growth Rate
Table 4.10: Population Descriptive Statistics of GDP Growth Rate

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
GDP Growth Rate	9	-.30	5.60	4.0889	1.75602	-2.329	.717	6.098	1.400

Source: Author's primary analysis (2023)

The descriptive statistics on table 4.9 shows that the GDP Growth Rate as measured by the aggregate score has a mean value of 4.089with a corresponding standard deviation of 1.756which discloses that the GDP Growth Rate vary significantly. The minimum score was -.30 whereas the maximum was 5.60 indicating greater heterogeneity. The skewness score of GDP Growth Rate was -2.329 (high skewness) an indication of extremely skewed data distribution (If the skewness is lower than -1 (negative skewed) or greater than 1 (positive skewed), the data are extremely skewed. The kurtosis value of 6.098 signifies a positive leptokurtic distribution of data (A distribution with kurtosis >3 (excess kurtosis >0). Compared to a normal distribution, its tails are longer and fatter, and often its central peak is higher and sharper.

4.3.10 Descriptive Statistics of Inflation Rate
Table 4.11: Population Descriptive Statistics of Inflation rate

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Inflation rate	9	4.690	9.380	6.460	1.476	0.969	0.717	0.619	1.400

Source: Author's primary analysis (2023)

The results in table 4.11 show that the mean inflation was 6.46 with a corresponding standard deviation of 1.476 which discloses that the inflation rate varies significantly. The minimum value of 4.69 with a maximum score of 9.38 implies that inflation rate varied significantly. The results show that inflation is positively skewed at a score of 0.969 indicating that the distribution is moderately symmetric (If skewness is between +½ and 1, the distribution can be called moderately symmetric, Bulmer (1979) classic rule of Thumb). The kurtosis of inflation peaked at 0.717 signifying a positive platykurtic distribution of data (a distribution with kurtosis <3 (excess kurtosis <0) is called platykurtic. Compared to a normal distribution, its tails are shorter and thinner, and often its central peak is lower and broader.)

4.3.11 Descriptive Statistics of Exchange rate (KS/US$)

Table 4.12: Population Descriptive Statistics of Exchange rate (KS/US$)

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Exchange rate (KS/US$)	9	84.660	106.620	96.961	8.295	-0.653	0.717	-1.489	1.400

Source: Author's primary analysis (2023)

 The descriptive statistics on table 4.12 show that the Exchange rate (KS/US$)) as measured by the aggregate score has a mean value of 96.961 with a corresponding standard deviation of 8.295 which discloses that the macroeconomic variable vary significantly in the recognition of the Exchange rate. The minimum score was 84.66 whereas the maximum was 106.62 indicating greater heterogeneity between Exchange rate of the various years. The skewness score of Exchange rate was -0.653 (moderate skewness) an indication of a relative symmetrical distribution while the kurtosis value of -1.489 signifies a negative platykurtic distribution of data compared to a normal distribution. Its tails are shorter and thinner, and its central peak is lower and broader.

4.3.12 Descriptive Statistics of NSE Market Capitalization
Table 4.13: Population Descriptive Statistics of Macroeconomic variables

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
NSE Market Capitalization	9	1,270.000	2,739.000	2,050.222	454.955	-0.135	0.717	-0.356	1.400

Source: Author's primary analysis (2023)

The descriptive statistics on table 4.13 show that NSE Market Capitalization as measured by the aggregate score has a mean value of 2050.222 with a corresponding standard deviation of 454.955 which discloses that the NSE Market Capitalization variable vary significantly. The minimum score was 1270.000 whereas the maximum was 2739.000 indicating greater heterogeneity between NSE Market Capitalization variables during the study. The skewness score of NSE Market Capitalization variable was -0.135 (low skewness) an indication of a relative symmetrical distribution while

the kurtosis value of –0.356 signifies a negative platykurtic distribution of data compared to a normal distribution.

4.3.13 Descriptive Statistics of Commercial Banks weighted average Lending Interest Rates

The descriptive statistics on table 4.14 shows that Commercial Banks weighted average lending interest rate as measured by the aggregate score has a mean value of 14.833 with a corresponding standard deviation of 2.546 which reveals that the Commercial Banks weighted average lending interest rate variable vary significantly.

Table 4.14: Population descriptive statistics of commercial banks weighted average lending interest rates statistics of commercial banks weighted average lending interest rates

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Commercial Banks weighted average lending interest rates	9	12.020	18.300	14.833	2.546	0.333	0.717	-1.830	1.400

Source: Author's primary analysis (2023)

The minimum score was 12.02 whereas the maximum was 18.30 indicating greater heterogeneity between the average lending interest rates variable of the various years. The skewness score of Commercial Banks weighted average lending interest rates variable was 0.333 (low skewness) an indication of a relative symmetrical distribution while the kurtosis value of –1.83 signifies a negative platykurtic distribution of data compared to a normal distribution.

4.3.14 Descriptive Statistics of CBK 91-Day T Bill

Table 4.15: Population Descriptive Statistics of CBK 91-Day T Bill

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CBK 91-Day T Bill	9	6.900	8.930	8.059	0.756	-0.429	0.717	-1.372	1.400

Source: Author's primary analysis (2023)

Table 4.15 shows the descriptive statistics of CBK 91-Day T Bill as measured by the aggregate score with a mean value of 8.059 with a corresponding standard deviation of 0.756 which reveals that the CBK 91-Day T Bill variable vary significantly. The minimum score was 6.90 whereas the maximum was 8.93 indicating heterogeneity between CBK 91-Day T Bill variable of the various years. The skewness score of CBK 91-Day T Bill variable was -0.429 (low skewness) an indication of a relative symmetrical distribution while the kurtosis value of –1.372 signifies a negative platykurtic distribution of data compared to a normal distribution.

4.3.15 Descriptive Statistics of Balance of Payments

Table 4.16: Population Descriptive Statistics of Balance of Payments

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Balance of Payments,	9	-0.590	-0.360	-0.477	0.076	0.119	0.717	-0.892	1.400

Source: Author's primary analysis (2023)

The results in table 4.16 show that the mean Balance of Payments was -0.477 with a

corresponding standard deviation of 0.076 which reveals that the variable vary significantly. The minimum score was -0.590 whereas the maximum was -0.360 indicating heterogeneity between the variable during the study years. The skewness score of Balance of Payments variable was 0.119 (low skewness) indicating that the distribution is approximately symmetrical while the kurtosis value of –0.892 signifies a negative platykurtic distribution of data compared to a normal distribution (If skewness is between −½ and +½, the distribution can be called approximately symmetric, Bulmer (1979) classic rule of Thumb).

4.3.16 Descriptive Statistics of NSE 20 Share Index
Table 4.17: Population Descriptive Statistics of NSE 20 Share Index

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
NSE 20 Share Index	9	1,868.000	5,113.000	3,547.444	1,080.452	0.111	0.717	-0.897	1.400

Source: Author's primary analysis (2023)

Table 4.17 shows the descriptive statistics of NSE 20 Share Index as measured by the aggregate score with a mean value of 3,547 with a corresponding standard deviation of 1,080 which reveals that the variable varied significantly. The minimum score was 1,868 whereas the maximum was 5,113 indicating heterogeneity between the variable of the various years. The skewness score of NSE 20 Share Index variable was 0.111 (low skewness) an indication of a relative symmetrical distribution while the kurtosis value of -0.897 signifies a negative platykurtic distribution of data compared to a normal distribution.

4.3.17 Descriptive Statistics of Unemployment Rate
Table 4.18: Population Descriptive Statistics of Unemployment Rate

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Unemployment rate	9	2.800	5.700	3.600	1.115	1.121	0.717	-0.153	1.400

Source: Author's primary analysis (2023)

The results in table 4.18 show that the mean unemployment rate was 3.60 with a corresponding standard deviation of 1.115 which reveals that the variable differ significantly. The minimum score was 2.80 whereas the maximum was 5.70 indicating heterogeneity between the variable during the study years. The skewness score of unemployment rate variable was 1.121 (high skewness) indicating that the distribution is extremely asymmetrical while the kurtosis value of -0.153 signifies a negative platykurtic distribution of data compared to a normal distribution (If the skewness is lower than -1 (negative skewed) or greater than 1 (positive skewed), the data are extremely skewed. A distribution with kurtosis <3 (excess kurtosis <0) is called platykurtic. Compared to a normal distribution, its tails are shorter and thinner, and often its central peak is lower and broader).

4.4 Correlation Analysis
Correlation coefficient indicates the strength of the relationship between variables (Cooper and Schindler, 2008). Understanding that relationship is useful because one can use the value of one variable to predict the value of the other variable. The study variables correlations are presented based on Pearson's product moment correlation or coefficient. A positive correlation indicates that as one variable increases the other variable tends to increase. A correlation near zero indicates that as one variable increases, there is no tendency in the other variable to either increase or decrease. A negative correlation indicates that as one variable increases the other variable tends to decrease. Pearson's coefficient r >0.8 or > 0.9 indicate multi-collinearity.

Correlation results are presented by table 4.18 below at a significance of 0.05 and 0.01 in line with other studies such as those of Mwangi (2014) and Kithinji (2017). The table shows a correlation matrix of the association among the variables Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance and Role of stakeholders, In addition, it shows the correlation matrix of the association among the factors Stakeholders interests in board decisions, IS Index, GDP Growth Rate , Inflation rate, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rates,

CBK 91-Day T Bill, NSE 20 Share Index, Unemployment rate and combined ROI of pension funds..

4.4.1 Correlations between all the study variables Correlations
Table 4.19: Correlations between all the study variables with significance levels

		Board structure and composition	Board Responsibilities	Shareholder´s Rights	Disclosure and transparency	Commitment to Corporate governance	Role of stakeholders	Stakeholders interests in board decisions	IS Index	GDP Growth Rate (%)	Inflation	Exchange rate (KS/US$)	NSE Market Capitalization	Commercial Banks weighted average lending interest rates	CBK 91-Day T Bill	Balance of Payments,	NSE 20 Share Index	Unemployment rate	Combined ROI of pension funds
Board structure and composition	Pearson Correlation	1																	
	Sig. (2-tailed)																		
Board Responsibilities	Pearson Correlation	.904**	1																
	Sig. (2-tailed)	<.001																	
Shareholder´s Rights	Pearson Correlation	.057	.108	1															
	Sig. (2-tailed)	.672	.424																
Disclosure and transparency	Pearson Correlation	.818**	.758**	.248	1														
	Sig. (2-tailed)	<.001	<.001	.063															
Commitment to Corporate governance	Pearson Correlation	.050	.061	.146	.056	1													
	Sig. (2-tailed)	.711	.652	.280	.677														
Role of stakeholders	Pearson Correlation	.526**	.430**	-.231	.348**	-.116	1												
	Sig. (2-tailed)	<.001	<.001	.084	.008	.391													
Stakeholders interests in board decisions	Pearson Correlation	.014	-.026	-.162	-.096	-.036	.116	1											
	Sig. (2-tailed)	.918	.850	.228	.476	.792	.389												
IS Index	Pearson Correlation	.944**	.884**	.082	.810**	-.007	.559**	-.014	1										
	Sig. (2-tailed)	<.001	<.001	.544	<.001	.959	<.001	.917											
GDP Growth Rate (%)	Pearson Correlation	.257	.280	.149	.275	.012	.183	-.205	.284	1									
	Sig. (2-tailed)	.505	.465	.701	.474	.976	.637	.596	.459										
Inflation (%)	Pearson Correlation	-.275	-.333	.107	-.379	.677*	-.353	.426	-.284	.116	1								
	Sig. (2-tailed)	.474	.381	.784	.315	.045	.351	.253	.458	.767									
Exchange rate (KS/US$)	Pearson Correlation	.033	.005	.083	.095	.207	-.073	-.542	.018	-.357	-.478	1							
	Sig. (2-tailed)	.933	.989	.832	.809	.593	.852	.132	.964	.346	.193								
NSE Market Capitalization (In Bns)	Pearson Correlation	.167	.145	-.384	.327	.029	.098	-.518	.189	-.515	-.624	.813**	1						
	Sig. (2-tailed)	.667	.709	.307	.391	.940	.801	.154	.626	.156	.073	.008							
Commercial Banks weighted average lending interest rates (%)	Pearson Correlation	-.295	-.367	.197	-.334	.100	-.120	.714*	-.304	.328	.589	-.782*	-.786*	1					
	Sig. (2-tailed)	.442	.331	.611	.380	.798	.759	.031	.426	.390	.095	.013	.012						

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		Board structure and composition	Board Responsibilities	Shareholder´s Rights	Disclosure and transparency	Commitment to Corporate governance	Role of stakeholders	Stakeholders interests in board decisions	IS Index	GDP Growth Rate (%)	Inflation	Exchange rate (KS/US$)	NSE Market Capitalization	Commercial Banks weighted average lending interest rates	CBK 91-Day T Bill	Balance of Payments,	NSE 20 Share Index	Unemployment rate	Combined ROI of pension funds
CBK 91-Day T Bill	Pearson Correlation	.105	.110	-.056	-.103	.026	.083	.509	.091	.399	.443	-.733*	-.756*	.786*	1				
	Sig. (2-tailed)	.788	.778	.887	.792	.947	.832	.162	.816	.287	.232	.025	.018	.012					
Balance of Payments,	Pearson Correlation	-.308	-.291	.613	-.352	-.344	-.043	.644	-.371	.114	.293	-.555	-.720*	.641	.431	1			
	Sig. (2-tailed)	.420	.447	.079	.353	.365	.913	.061	.325	.771	.445	.121	.029	.063	.246				
NSE 20 Share Index	Pearson Correlation	.078	.083	-.176	-.044	-.082	.105	.473	.096	.477	.395	-.881**	-.751*	.818**	.927**	.370	1		
	Sig. (2-tailed)	.841	.831	.651	.910	.833	.787	.199	.806	.195	.292	.002	.020	.007	<.001	.328			
Unemployment rate	Pearson Correlation	-.126	-.099	-.190	.080	-.147	-.116	-.514	-.097	-.549	-.549	.677*	.848**	-.791*	-.943**	-.515	-.840**	1	
	Sig. (2-tailed)	.747	.801	.625	.838	.706	.766	.157	.803	.126	.125	.045	.004	.011	<.001	.156	.005		
Combined ROI of pension funds	Pearson Correlation	.606**	.541**	-.183	.429**	-.145	.587**	.225	.683**	-.449	-.323	-.292	.144	.259	.331	.145	.379	-.193	1
	Sig. (2-tailed)	<.001	<.001	.222	.003	.338	<.001	.132	<.001	.312	.479	.526	.758	.574	.468	.756	.402	.678	
**. Correlation is significant at the 0.01 level (2-tailed).																			
*. Correlation is significant at the 0.05 level (2-tailed).																			

Source: Author's primary analysis (2023)

The summary of the study results having Pearson's coefficient r >0.8 showing significant correlation findings indicating multi-collinearity include: the strong positive and significant correlation between Board Responsibilities and Board structure and composition, r = .904**, n=57, p < .001.; the strong positive and significant correlation between Disclosure and transparency and Board structure and composition, r= .818**, n=57, p < .001; the strong positive and significant correlation between IS Index and Board structure and composition, r= .944**, n=57, p< .001; the strong positive and significant correlation between IS Index and Board Responsibilities, r= .884**, n=57, p< .001.

Besides, there was a strong negative and significant correlation between NSE 20 share Index and Exchange rate, r= -.881**, n=57, p< .001; a strong positive and significant correlation between NSE 20 share Index and Commercial Banks weighted average lending interest rates, r=.818**, n=57, p< .001; a strong positive and significant correlation between NSE 20 share Index and CBK 91-Day T Bill rates, r = .927**, n=57, p < .001; as well as a strong negative and significant correlation between unemployment rate and CBK 91-Day T Bill, r= -.943**, n=57, p< .001; and a strong positive and significant correlation between unemployment rate and NSE 20 share Index, r= -.840**, n=57, p< .001. Below are the study results for the correlations among the study variables.

4.4.2 Correlation between Corporate Governance and IS Index

The study investigated the nature and strength of the relationship between corporate governance indicators of Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decisions and IS Index based on Pearson product moment correlation. The results of the study are summarized in table 4.19.

Table 4.19 shows a strong positive and significant correlation between IS Index and Board structure and composition, r = .944**, p < .001 which implies that as the activities on Board structure and composition are adopted, meaning that the pension fund has at least 50 percent outside directors (Board independence), the chairman of the board and the CEO are not the same persons (CEO's duality) while the fund has a full-time CEO and the board chairman is an outside director, among other characteristics, the IS Index increases. The results in addition show that there was a highly positive correlation between IS Index and Board Responsibilities (BR) with r =.884**, p< .001) implying that as the BR measures were implemented, there was an increase in the IS Index.

Disclosure and transparency as well demonstrated a highly positive and significant correlation (r = .810**, p < .001) with IS Index meaning that as D&T measures were implemented the IS Index increased. Similarly, the study revealed that there was a moderately positive and significant correlation between IS Index and Role of Stakeholders (r = .559**, p < .001). The study however, revealed a lowly positive but insignificant association between IS Index with Shareholder´s Rights (r = .082, p= .544) and lowly negative but insignificant correlation with Commitment to Corporate governance (r = -.007, p = .959) as well as Stakeholders interests in board decisions (r = -.014, p = .917).

4.4.3 Correlation between Corporate Governance and Combined ROI of Pension Funds

The nature as well as the strength of the relationship between combined ROI of pension funds and corporate governance indicators was evaluated based on the Pearson product moment correlation. The results are summarized in table 4.19. The table shows that there is a positive and moderately significant correlation between Board structure and composition and combined ROI of pension funds of pension schemes (r = .606**, p <.001), implying that enhancing Board structure and composition measures by ensuring that the pension fund has at least 50 percent outside directors (Board independence), the chairman of the board and the CEO are not the same persons (CEO's duality), the fund has a full-time CEO and that the board chairman is an outside director, leads to the value of combined ROI of pension funds of pension schemes improving.

A positive and significant correlation between combined ROI of pension funds and Board Responsibilities (BR) (r =.541**, p <.001 was noted implying the value of combined ROI of pension funds improved with the implementation of BR measures. A lowly negative and insignificant correlation between combined ROI of pension funds and Shareholder´s Rights (SR) (r = -.183, p = .222) was noted implying the value of combined ROI of pension funds declined with the lack of implementation of SR measures. A positive and significant association was however, revealed between combined ROI of pension funds and Disclosure and transparency (r =.429**, p <.001) indicating that pension schemes executing Disclosure and transparency measures resulted in improved combined ROI of pension funds. Role of stakeholders suggests a positive and significant correlation with combined ROI of pension funds of pension schemes (r = .587**, p <.001) meaning that as Role of stakeholder measures were adopted, the value of combined ROI of pension funds of pension schemes improved. The study findings however, showed a positive but insignificant relation between combined ROI of pension funds and Stakeholders interests in board decisions as indicated respectively by the Pearson correlation coefficients (r =.225, p = .132).

4.4.4 Correlation between IS Index and Combined ROI of Pension Funds

The research investigated the nature and the strength of the relationship between IS Index and combined ROI of pension funds based on the Pearson's product moment correlation. The results are summarized in Table 4.19 that shows a positive and statistically significant correlation exists between IS Index and combined ROI of pension funds of pension schemes (r = .683**, p <.001). This implies that application of various investment strategies by pension funds resulted in improvement of combined ROI of pension funds of pension schemes.

4.4.5 Correlation between IS Index and Macroeconomic Variables

Table 4.18 shows IS Index has a statistically insignificant correlation with macroeconomic variables GDP Growth Rate (r = .284, p = .459); Inflation (r = -.284, p = .458); Exchange rate (KS/US$)(r = .018, p = .964); NSE Market Capitalization (r = .189, p = .626); Commercial Banks weighted average lending interest rates (r = -.304, p = .426); CBK 91-Day T Bill (r = .091, p = .816); Balance of Payments (r = -.371, p = .325); NSE 20 Share Index (r = .097, p = .803); and Unemployment rate (r = -.097, p = .803).

4.4.6 Correlation between CG indicators and Macroeconomic Variables

The study results reveal in Table 4.18 that only Commitment to Corporate governance had a positive and significant relationship with Inflation rate (r = .677*, p = .045)

whereas Stakeholders interests in board decisions had a positive and significant relationship with Commercial Banks weighted average lending interest rates (r = .714*, p = .031). The other corporate governance indicators (Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Role of stakeholders and Board Responsibilities) had no significant relationship with the macroeconomic variables (GDP growth rate, inflation, exchange rate (KS/US$), NSE market capitalization, commercial banks weighted average lending interest rates, CBK 91-day T bill, balance of payments, NSE 20 share index and unemployment rate).

4.4.7 Correlation between Combined ROI of Pension Funds and Macroeconomic Factors

The study results reveal in Table 4.18 that none of the macroeconomic factors had any significant statistical relationship with the combined ROI.

4.5 Diagnostic Tests

4.5.1 Multi-collinearity test of CG indicators and Combined ROI of Pension Funds

Table 4.20 below presents the multi-collinearity test results which reveal that Variance Inflation Factor (VIF) which determines the strength of correlation between the independent variables, ranged from 1.043 to 8.621 while the tolerance varied from 0.116 to 0.959. Small VIF values, VIF < 3, indicate low correlation among variables under ideal conditions. The default VIF cut off value is 9; only variables with a VIF less than 9 were included in the model. However, note that many sources say that a VIF of less than 10 is acceptable as indicators of upper limit that there is no multi-collinearity problem (O'Brien, 2007; Farrar et al., 1967; Wichers, 1975). Schulzer M., 1994A on the other hand is of the view that tolerance of less than 0.20 or 0.10 and/or a VIF of 5 or 10 and above indicates a multi-collinearity.

Table 4.20: Multi-collinearity test of CG indicators and Combined ROI of pension Funds

	Model	Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Board structure and composition	.116	8.621
	Board Responsibilities	.178	5.631
	Shareholder´s Rights	.792	1.263
	Disclosure and transparency	.283	3.538
	Commitment to Corporate governance	.959	1.043
	Role of stakeholders	.632	1.582
	Stakeholders interests in board decisions	.945	1.058
a. Dependent Variable: Combined ROI of pension funds			

Source: Author's primary analysis (2023)

Table 4.21: Collinearity Diagnostics the relationship between corporate governance and the combined ROI of pension funds

Collinearity Diagnostics[a]

Variance Proportions

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Model	Dimension	Eigenvalue	Condition Index	(Constant)	Board structure and composition	Board Responsibilities	Shareholder´s Rights	Disclosure and transparency	Commitment to Corporate governance	Role of stakeholders	Stakeholders interests in board decisions
1	1	6.483	1.000	.00	.00	.00	.00	.00	.01	.00	.00
	2	.571	3.369	.00	.00	.00	.04	.01	.67	.00	.00
	3	.407	3.992	.00	.00	.00	.35	.01	.27	.00	.11
	4	.275	4.852	.00	.00	.00	.25	.00	.01	.05	.67
	5	.164	6.292	.04	.00	.00	.10	.01	.00	.77	.05
	6	.058	10.594	.80	.03	.01	.17	.02	.05	.10	.14
	7	.032	14.140	.00	.03	.21	.05	.78	.00	.01	.01
	8	.010	25.666	.16	.93	.77	.03	.17	.00	.06	.02

a. Dependent Variable: Combined ROI of pension funds

Source: Author's primary analysis (2023)

Table 4.22: Residuals Statistics

<div align="center">

Residuals Statisticsa

</div>

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-25.7224	106.0639	32.6311	21.56535	115
Residual	-64.41373	248.22609	.00000	28.60951	115
Std. Predicted Value	-1.896	2.387	.000	.701	115
Std. Residual	-1.476	5.688	.000	.656	115

a. Dependent Variable: Combined ROI of pension funds

Source: Author's primary analysis (2023)

Table 4.20 shows the Eigenvalue for the study variables that ranged from 0.010 to 6.483. Several Eigen values close to 0 are an indication for multi-collinearity (IBM, n.d.). Since "close to" is somewhat imprecise it is better to use the next column with the Condition Index for the diagnosis. The condition Index varied from 1.000 to 25.666 and are calculated from the Eigen values. Values above 15 can indicate multi-collinearity problems, values above 30 are a very strong sign for problems with multi-collinearity (IBM, n.d.). The results tend to collaborate the findings on the Collinearity Statistics of Tolerance and VIF as shown on Table 4.19.

The Section of Variance Proportions in the regression coefficient variance-decomposition matrix, Table 4.20 shows that for each regression coefficient, its variance is distributed to the different Eigen values and the numbers in the table, the and variance proportions, add up to one column by column (Hair, Black, Babin, & Anderson, 2013). According to Hair et al. (2013) for each row with a high Condition Index, you search for values above .90 in the Variance Proportions. If you find two or more values above .90 in one line you can assume that there is a collinearity problem between those predictors. If only one predictor in a line has a value above .90, this is not a sign for multi-collinearity. The study results establish that only one predictor in a line has a value above .90, indicating no sign of multi-collinearity.

The histogram of standardized residuals shows the residuals are normally distributed (Histogram A). A P-P plot was created to assess the assumption that the values of the residues are normally distributed. The dots in the normal P-P plot are close to the line indicating no violation of this assumption (P-P Plot B). A scatter plot to assess the assumption that variance of the residues was constant (homoscedasticity). The plot showed no obvious pattern in scatter plan. It did not follow a white noise pattern that is identically and independently distributed, about the mean of 0. The plot is thus random and does not fun out as the values of predicted Y increase, a suggestion that heteroscedasticity is not a problem (unequal variance of the residual distribution). This indicates no violation of the assumption of both homoscedasticity and heteroscedasticity (Scatterplot C).

HISTOGRAM A

Histogram

Dependent Variable: % ROI

Mean = -1.11E-16
Std. Dev. = 0.656
N = 115

P-P PLOT B

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: % ROI

SCATTERPLOT C

82
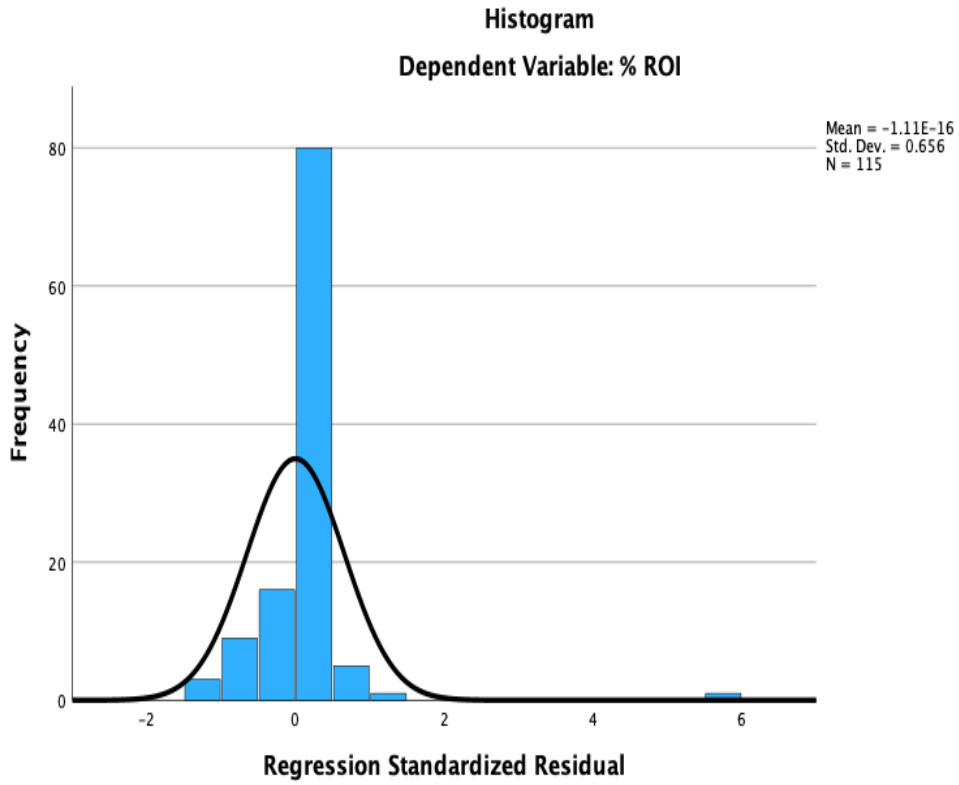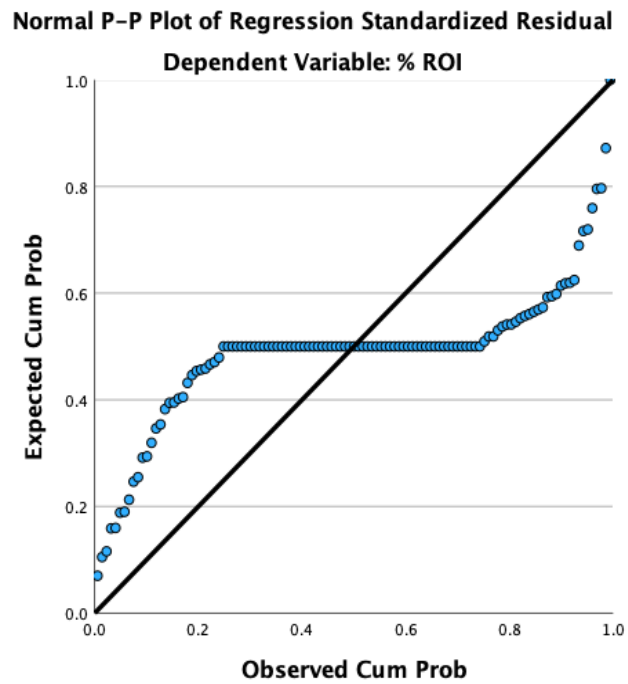
Scatterplot
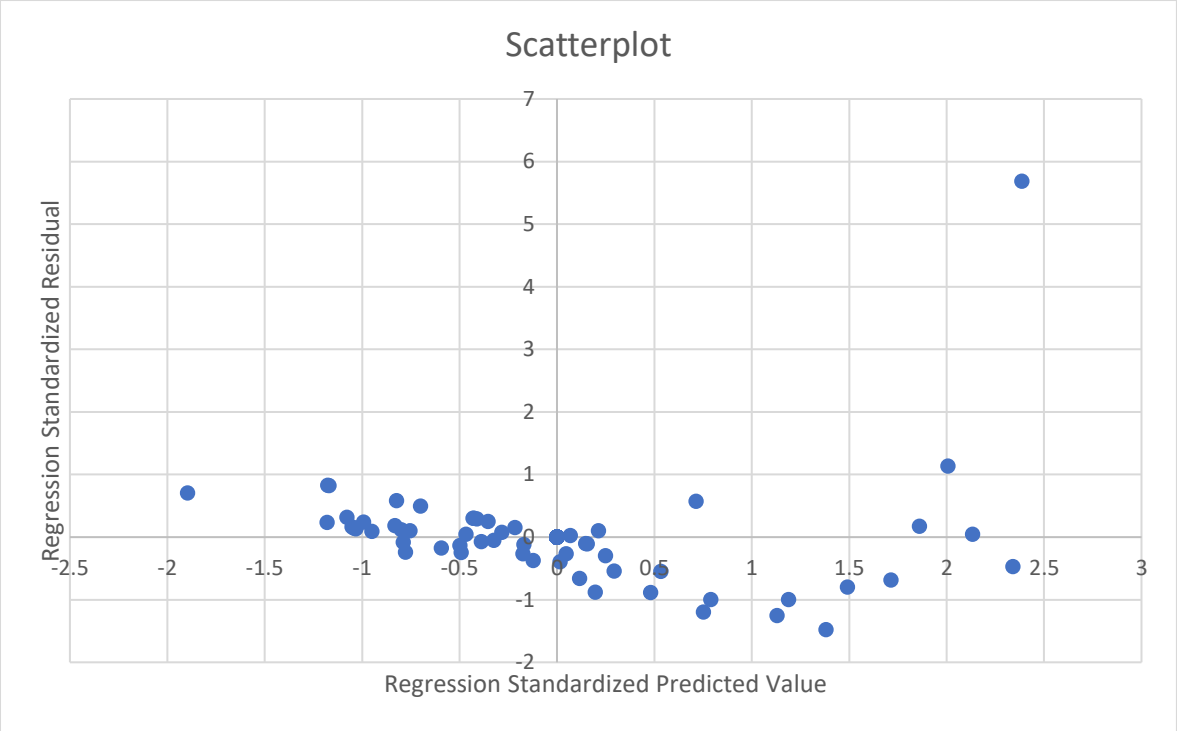
4.5.2 Diagnostics of IS Index and CG indicators
Table 4.23: Collinearity Diagnostics[a] of IS Index and CG indicators

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	(Constant)	Board structure and composition	Board Responsibilities	Shareholder´s Rights	Disclosure and transparency	Commitment to Corporate governance	Role of stakeholders	Stakeholders interests in board decisions
											Variance Proportions
1	1	6.484	1.000	.00	.00	.00	.00	.00	.01	.00	.00
	2	.572	3.366	.00	.00	.00	.04	.01	.66	.00	.00
	3	.405	4.002	.00	.00	.00	.35	.01	.27	.00	.11
	4	.275	4.856	.00	.00	.00	.25	.00	.01	.06	.66
	5	.164	6.279	.04	.00	.00	.11	.01	.00	.75	.06
	6	.057	10.636	.79	.04	.01	.17	.02	.05	.11	.14
	7	.032	14.253	.00	.03	.22	.05	.77	.00	.01	.01
	8	.010	25.662	.17	.93	.76	.03	.18	.00	.06	.02

a. Dependent Variable: IS Index

Source: Author's primary analysis (2023)

Table 4.23 shows the Eigenvalue for the study variables that ranged from 0.010 to 6.483. Several Eigen values close to 0 are an indication for multi-collinearity (IBM, n.d.). The condition Index varied from 1.000 to 25.662 and are calculated from the Eigen values. Values above 15 can indicate multi-collinearity problems while values above 30 are a very strong sign for problems with multi-collinearity (IBM, n.d.). The results tend to collaborate the findings on the Collinearity Statistics of Tolerance and VIF as shown on Table 4.20.

The Section of Variance Proportions in the regression coefficient variance-decomposition matrix, Table 4.23 shows that for each regression coefficient, its variance is distributed to the different Eigen values and the numbers in the table, the and variance proportions, add up to one column by column (Hair, Black, Babin, &Anderson, 2013). According to Hair et al. (2013) for each row with a high Condition Index, you search for values above .90 in the Variance Proportions. If you find two or more values above .90 in one line you can assume that there is a collinearity problem between those predictors. If only one predictor in a line has a value above .90, this is not a sign for multi-collinearity. The study results establish that only one predictor in a line has a value above .90, indicating no sign of multi-collinearity.

The histogram of standardized residuals shows the residuals are normally distributed (Histogram D). A P-P plot was created to assess the assumption that the values of the residues are normally distributed. The dots in the normal P-P plot are close to the line indicating no violation of this assumption (P-P Plot E). A scatter plot to assess the assumption that variance of the residues was constant (homoscedasticity). The plot showed no obvious pattern in scatter plan. It did not follow a white noise pattern that is identically and independently distributed, about the mean of 0. The plot is thus random and does not fun out as the values of predicted Y increase, a suggestion that heteroscedasticity is not a problem (unequal variance of the residual distribution). This indicates no violation of the assumption of both homoscedasticity and heteroscedasticity (Scatterplot F).

HISTOGRAM D

Histogram

Dependent Variable: IS INDEX

Mean = 1.45E-15
Std. Dev. = 0.656
N = 115
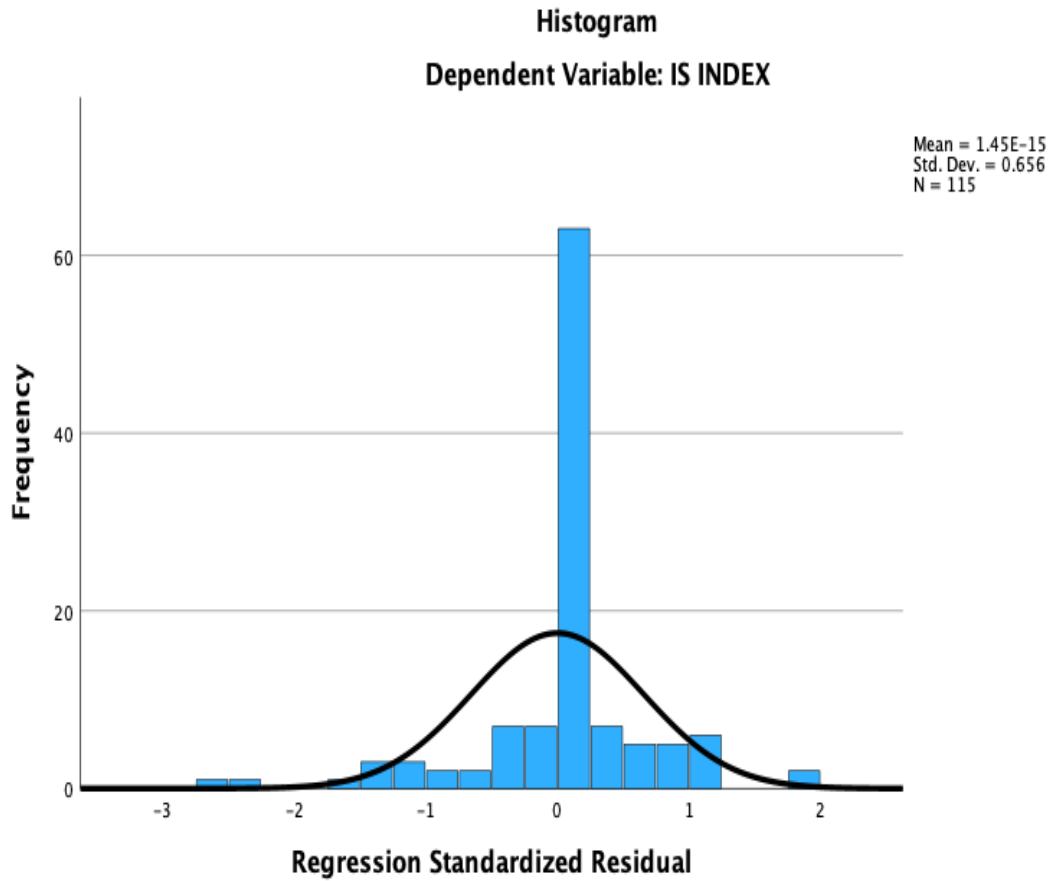
P-P PLOT E

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: IS INDEX

SCATTERPLOT F

Scatterplot
Dependent Variable: IS INDEX
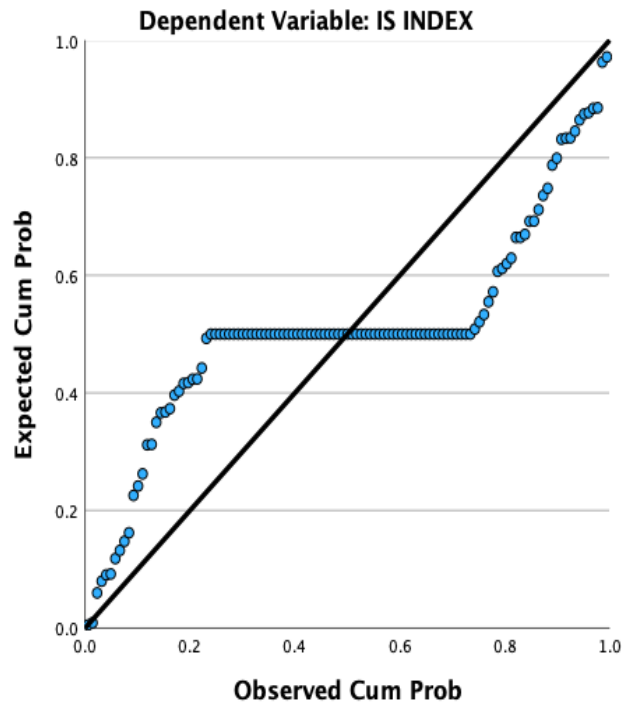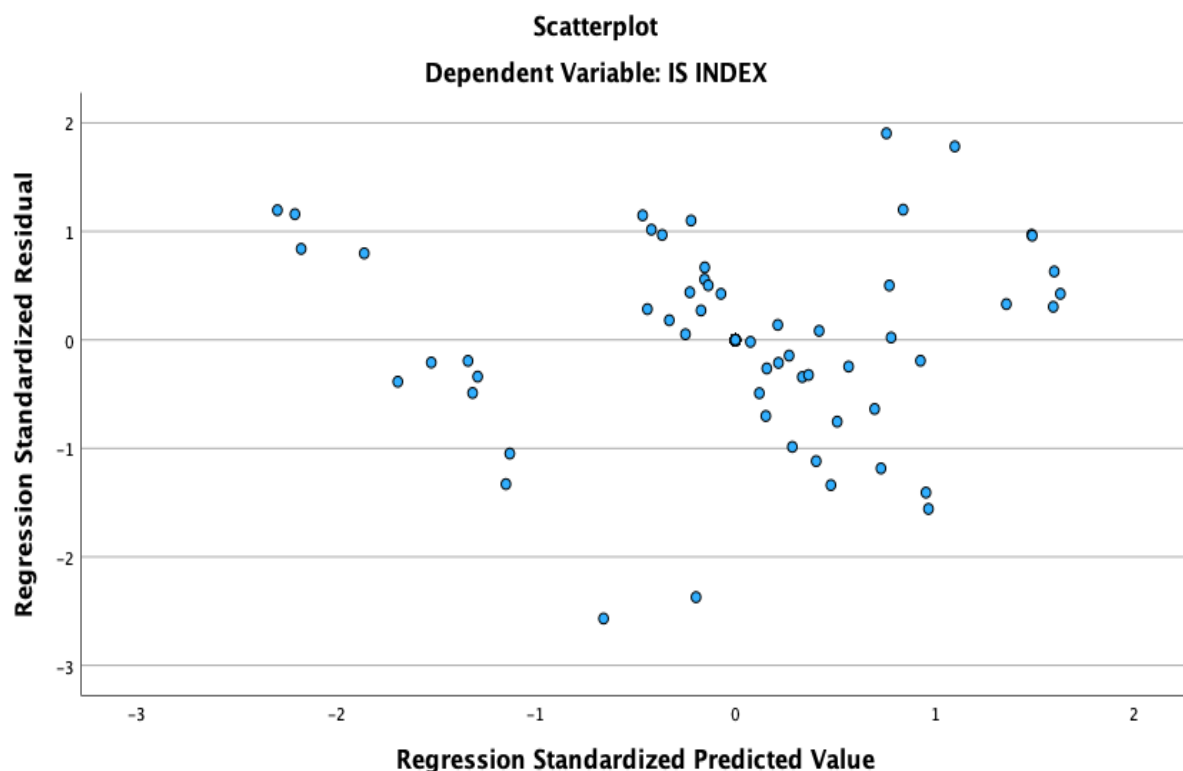
4.5.3 Diagnostics result of the Joint effect of CG indicators, IS Index and Macroeconomic Variables on the Combined ROI of Pension Funds

Table 4.24: Multi-collinearity Diagnostics result of the Joint effect of CG indicators, IS Index and macroeconomic variables on the combined ROI of pension funds

Model	Collinearity Statistics	
	Tolerance	VIF
1(Constant)		
Board structure and composition	.074	13.531
Board Responsibilities	.152	6.562
Shareholder´s Rights	.740	1.351
Disclosure and transparency	.238	4.195
Commitment to Corporate governance	.790	1.266
Role of stakeholders	.503	1.988
Stakeholders' interests in board decisions	.864	1.158
IS Index	.080	12.500
GDP Growth Rate (%)	.078	12.776
Inflation (%)	.023	43.667
Exchange rate (KS/US$)	.003	390.896
Commercial Banks weighted average lending interest rates	.008	123.424
CBK 91-Day T Bill	.002	528.445
Balance of Payments,	.009	111.210
NSE 20 Share Index	.001	1617.168

	.013	79.371
Unemployment rate		

Source: Author's primary analysis (2023)

4.5.4 Tests of Assumptions for the Joint Effect of CG Indicators, IS Index and Macroeconomic Variables on the Combined ROI of Pension Funds

The coefficient of determination between the predictors suggests that the assumption of multi-collinearity is not violated if it is less or closer to 0 than 0.7 and -0.7. The study results established that the assumption of multi-collinearity was not violated with the exception of Board Responsibilities and Board structure and composition- r = 0.904; Disclosure and Transparency and Board structure and composition r = 0.818; Disclosure and Transparency and Board responsibilities r = 0.758; NSE 20 Share Index and Exchange rate (KS/US$) (-.881), NSE 20 Share Index and Commercial Banks weighted average lending interest rates (.818) , NSE 20 Share Index and CBK 91-Day T Bill (.927); IS Index and Board structure and composition (.944); IS Index and Board Responsibilities (.884); unemployment rate and Commercial Banks weighted average lending interest rates (-.791); unemployment rate and CBK 91-Day T Bill(-.943); unemployment rate and NSE 20 Share Index (-.840) (Table 4.27)..

Table 4.25 shows the multi-collinearity tests summary which indicates that the Variance inflation factor varied from 1.158 to 1617.168 while the Tolerance range from .001 to .864. The study findings show that the Tolerance values of predictor variables are mainly above 0.1 with the exception of IS Index (.080), GDP Growth Rate (.078), (Inflation (.023), Exchange rate (KS/US$) (.003), Commercial Banks weighted average lending interest rates (.008), CBK 91-Day T Bill (.002), Balance of Payments, (.009), NSE 20 Share Index (.001), and Unemployment rate (.013). The results tend to collaborate the findings of the Variance Inflation Factor (VIF) whose values are below 10, indicating none violation of this assumption with the exception of the variables IS Index, GDP Growth Rate, (Inflation, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments, NSE 20 Share Index, and Unemployment rate (Table 4.26). The later factors were however, not within the benchmark criteria of VIF of less than 10 indicating high multi-collinearity (Everett and Skrondal, 2010).

The Durbin-Watson statistic lies in the range 0-4, with a value of 2.0 indicating zero autocorrelation. Values below 2.0 mean there is positive autocorrelation and above 2.0 indicates negative autocorrelation. The DW value of the residual for the regression model was 1.438 which lies outside the acceptable range of 1.50 - 2.50 suggesting that the Test of the Assumption of Independent Errors was violated (Model summary Table 5.23). Autocorrelation is considered when DW value is < 1.5 or > 2.5.

The histogram of standardized residuals shows the residuals are normally distributed (Histogram G). A P-P plot was created to assess the assumption that the values of the residues are normally distributed. The dots in the normal P-P plot are close to the line indicating no violation of this assumption (P-P Plot H). A scatter plot to assess the assumption that variance of the residues was constant (homoscedasticity). The plot showed no obvious pattern in scatter plan. It did not follow a white noise pattern that is identically and independently distributed, about the mean of 0. The plot is thus random and does not fun out as the values of predicted Y increase, a suggestion that heteroscedasticity is not a problem (unequal variance of the residual distribution. This

indicates no violation of the assumption of both homoscedasticity and heteroscedasticity (Scatterplot I).

4.5.5 Diagnostic of the Joint effect of CG Indicators, IS Index and Macroeconomic Variables on the Combined ROI of Pension Funds

Table 4.25: Correlations of the Joint effect of the combined ROI of pension funds, Macroeconomic variables, IS Index and CG indicators

		the combined ROI of pension funds	Board structure and composition	Board Responsibilities	Shareholder´s Rights	Disclosure and transparency	Commitment to Corporate governance	Role of stakeholders	Stakeholders interests in board decisions	IS INDEX	GDP Growth Rate (%)	Inflation (%)	Exchange rate (KS/US$)	Commercial Banks weighted average lending interest rates	CBK 91-Day T Bill	Balance of Payments,	NSE 20 Share Index	Unemployment rate
Pearson Correlation	Combined ROI of Pension Funds	1.000																
	Board structure and composition	.366	1.000															
	Board Responsibilities	.245	.904	1.000														
	Shareholder´s Rights	-.170	.057	.108	1.000													
	Disclosure and transparency	.302	.818	.758	.248	1.000												
	Commitment to Corporate governance	-.133	.050	.061	.146	.056	1.000											
	Role of stakeholders	.539	.526	.430	-.231	.348	-.116	1.000										
	Stakeholders interests in board decisions	.200	.014	-.026	-.162	-.096	-.036	.116	1.000									
	IS Index	.429	.944	.884	.082	.810	-.007	.559	-.014	1.000								
	GDP Growth Rate (%)	-.038	.116	.112	.012	.122	.004	.087	-.062	.143	1.000							
	Inflation	-.227	-.124	-.133	.009	-.168	.252	-.168	.128	-.144	.116	1.000						
	Exchange rate (KS/US$)	-.272	.015	.002	.007	.042	.077	-.035	-.164	.009	-.357	-.478	1.000					
	Commercial Banks weighted average lending interest rates	.155	-.133	-.146	.016	-.148	.037	-.057	.215	-.154	.328	.589	-.782	1.000				
	CBK 91-Day T Bill	.258	.047	.044	-.005	-.046	.010	.040	.154	.046	.399	.443	-.733	.786	1.000			
	Balance of Payments,	.110	-.139	-.116	.050	-.156	-.128	-.020	.194	-.188	.114	.293	-.555	.641	.431	1.000		
	NSE 20 Share Index	.297	.035	.033	-.014	-.020	-.031	.050	.143	.048	.477	.395	-.881	.818	.927	.370	1.000	
	Unemployment rate	-.159	-.057	-.039	-.016	.035	-.055	-.055	-.155	-.049	-.549	-.549	.677	-.791	-.943	-.515	-.840	1.000

Source: Author's primary analysis (2023)

Table 4.26: Collinearity Diagnostic of the Joint effect of CG Indicators, IS Index and Macroeconomic Variables on the Combined ROI of Pension Funds

Collinearity Diagnostics[a]																				
Variance Proportions																				
Model	Dimension	Eigenvalue	Condition Index	(Constant)	Board structure and composition	Board Responsibilities	Shareholder´s Rights	Disclosure and transparency	Commitment to Corporate governance	Role of stakeholders	Stakeholders interests in board decisions	IS Index	GDP Growth Rate	Inflation	Exchange rate (KS/US$)	Commercial Banks weighted average lending interest rates (%)	CBK 91-Day T Bill	Balance of Payments,	NSE 20 Share Index	Unemployment rate
1	1	15.036	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.623	4.914	.00	.00	.00	.07	.00	.36	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
	3	.476	5.619	.00	.00	.00	.04	.00	.39	.02	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00
	4	.355	6.504	.00	.00	.00	.38	.00	.05	.09	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
	5	.260	7.604	.00	.00	.00	.14	.00	.01	.00	.79	.00	.00	.00	.00	.00	.00	.00	.00	.00
	6	.130	10.735	.00	.00	.01	.24	.02	.01	.67	.03	.01	.00	.00	.00	.00	.00	.00	.00	.00
	7	.041	19.262	.00	.00	.01	.00	.16	.00	.02	.01	.02	.01	.00	.00	.00	.00	.00	.00	.00
	8	.033	21.220	.00	.01	.08	.05	.59	.00	.01	.00	.02	.01	.00	.00	.00	.00	.00	.00	.00
	9	.016	31.020	.00	.00	.55	.00	.06	.01	.07	.00	.47	.00	.00	.00	.00	.00	.00	.00	.00
	10	.014	33.177	.00	.02	.07	.00	.01	.00	.00	.06	.00	.07	.00	.00	.00	.00	.00	.00	.00
	11	.008	43.259	.00	.91	.19	.03	.06	.01	.00	.01	.33	.00	.00	.00	.00	.00	.00	.00	.00
	12	.004	58.654	.00	.01	.01	.00	.01	.05	.01	.00	.00	.01	.02	.00	.00	.00	.00	.00	.00
	13	.002	87.705	.00	.00	.02	.01	.02	.06	.03	.01	.11	.00	.00	.00	.00	.00	.01	.00	.01
	14	.001	106.079	.00	.03	.00	.01	.01	.00	.00	.00	.01	.01	.01	.00	.00	.00	.00	.00	.03
	15	.000	215.991	.00	.00	.04	.00	.01	.04	.00	.00	.00	.00	.01	.00	.05	.00	.01	.00	.01
	16	5.434E-6	1663.379	.99	.00	.03	.01	.00	.00	.07	.01	.00	.29	.14	.04	.01	.06	.06	.01	.90
	17	1.042E-6	3798.633	.00	.01	.00	.01	.05	.00	.01	.00	.01	.59	.82	.96	.93	.94	.91	.99	.05

a. Dependent Variable: % Combined ROI of pension funds

Source: Author's primary analysis (2023)

Table 4.27: Residuals Statistics of the Joint effect of CG Indicators, IS Index and Macroeconomic Variables on the Combined ROI of Pension Funds

<div align="center">

Residuals Statistics[a]

</div>

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-31.4598	324.6002	32.6311	32.48916	115
Residual	-51.26727	58.18697	.00000	15.10043	115
Std. Predicted Value	-1.383	6.299	.000	.701	115
Std. Residual	-2.011	2.283	.000	.592	115

a. Dependent Variable: Combined ROI of pension funds
Source: Author's primary analysis (2023)

HISTOGRAM G

Histogram

Dependent Variable: ROI

Mean = −3.72E−15
Std. Dev. = 0.838
N = 58

P-P PLOT H

Normal P−P Plot of Regression Standardized Residual

Dependent Variable: ROI

SCATTERPLOT I
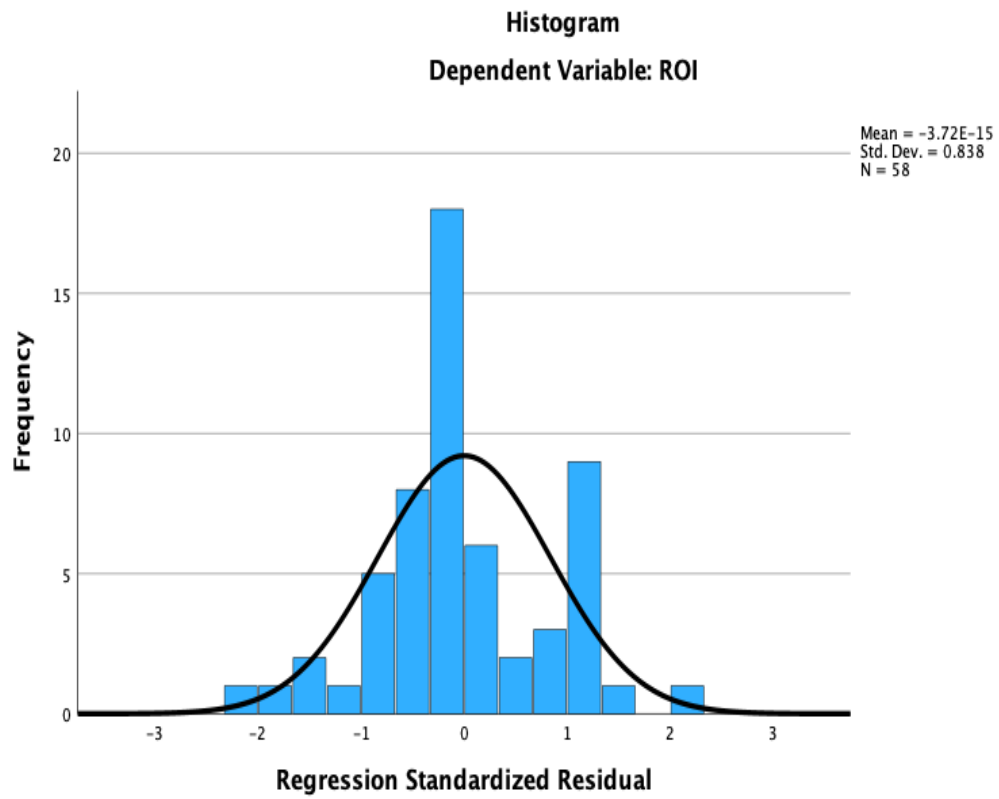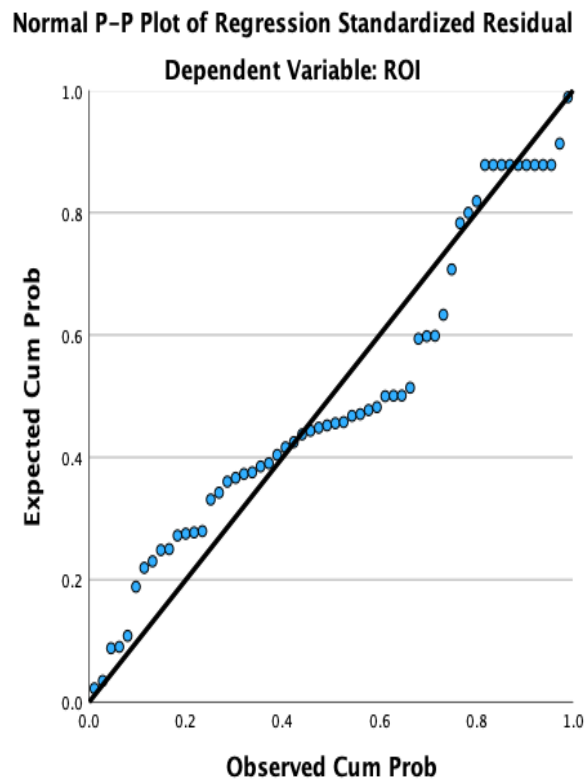
Scatterplot
Dependent Variable: ROI
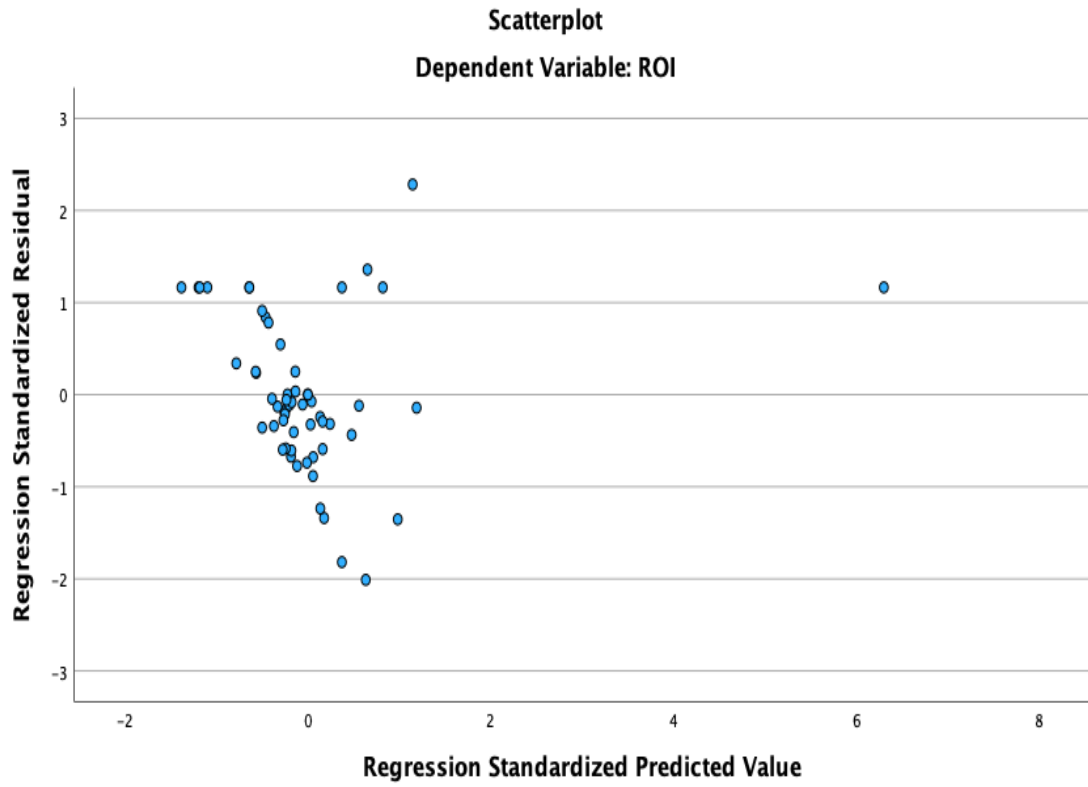
4.6 Chapter Summary

The chapter outlines the descriptive analysis of the study variables that included the corporate governance, investment strategy, macroeconomic factors and combined return on investments. The corporate governance indicators included Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decisions. The intervening variable investment strategy was proxied by the IS while the macroeconomic factors included GDP Growth Rate, Inflation, Exchange rate (KS/US$), NSE Market Capitalization, Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments, NSE 20 Share Index and Unemployment rate. The studied population comprised 73 pension schemes registered with the RBA as of 31st December 2020. Data was obtained from a sample of 57 pension schemes and used in the analysis. A total of 513 firm year observations were collected to enable the research analysis in addition to 81 macroeconomic variable observations.

The RBA registered pension funds Mean combined ROI of pension funds was 32.6311 with a maximum value of 354.29 and minimum value of -1.77 indicating a significant variation in combined ROI of pension funds value of registered funds. The mean IS Index was with a minimum of 0.00 and a maximum of 0.98. The average value of Stakeholders interests in board decisions was 0.458 varying from -0.22 to 1.00. The Role of stakeholders had an average score of 0.366 with a minimum of 0.00 and a maximum of 0.83 whereas Commitment to Corporate governance had a mean score of -0.345 with a minimum score of -1.00 and a maximum of 0.83. Board structure and composition had an average score of 0.599 varying from 0.04 to 0.96. Board Responsibilities on the other hand had a minimum score 0.00 and a maximum of 1.00 with a mean of 0.695 while Shareholder´s Rights had a mean score of -0.325 varying from -0.78 to 0.56. The final factor, Disclosure and transparency had a mean score of 0.591 with a minimum value of 0.08 and a maximum of 0.92.

The study findings in. addition, reveal in Table 4.19 that the Pearson's product correlation coefficient showed mixed findings, with some being statistically significant and others not: Board Responsibilities and Board structure and composition (r = .904**, p <.001); Shareholder´s Rights and Board structure and composition (r = .057, p = .672); Shareholder´s Rights and Board Responsibilities (r = .108, p .424); Disclosure and transparency and Board structure and composition (r = .818**, p = <.001); Disclosure and transparency and Board Responsibilities (r = .758**, p <.001); Disclosure and transparency and Shareholder´s Rights (r = .248, p =.063);Commitment to Corporate governance and Board structure and composition (r = .050, p = .711); Commitment to Corporate governance and Board Responsibilities(r = .061, p = .652); Commitment to Corporate governance and Shareholder´s Rights (r = .146, p = .280); Commitment to Corporate governance and Disclosure and transparency (r = .056, p = .677).

Moreover, the findings show the association between study variables Role of stakeholders and Board structure and composition (r = .526**, p < .001); Role of stakeholders and Board Responsibilities (r = .430**, p < .001); Role of stakeholders and Shareholder´s Rights (r = -.231, p = .084); Role of stakeholders and Disclosure and transparency (r = .348**, p = .008); Role of stakeholders and Commitment to

Corporate governance(= r-.116, p = .391); Stakeholders interests in board decisions and Board structure and composition (r = .014, p = .918); Stakeholders interests in board decisions and   Board Responsibilities (r = -.026, p = .850); Stakeholders interests in board decisions and Shareholder´s Rights (r =-.162, p = .228); Stakeholders interests in board decisions and Disclosure and transparency (r = -.096, p = .476). The results in addition, shows the strength and nature of association between Stakeholders interests in board decisions and Commitment to Corporate governance (r = -.036, p = .792); Stakeholders interests in board decisions and Role of stakeholders (r = .116, p = .389); Combined ROI of pension funds and Board structure and composition (r = .606**, p ,<.001); Combined ROI of pension funds and Board Responsibilities (r = .541**, p <.001): Combined ROI of pension funds and Shareholder´s Rights (r = -.183, p = .222); Combined ROI of pension funds and Disclosure and transparency (r = .429**, p <.001); Combined ROI of pension funds and Commitment to Corporate governance(r = -.145, p = .338); Combined ROI of pension funds and Role of stakeholders (r = .587**, p <.001); and Combined ROI of pension funds and Stakeholders interests in board decisions (r = .225, p = .132).

The final part of the chapter summarizes the analysis of study variable correlations outlining the association between macroeconomic variables, CG indicators, IS Index and combined ROI of pension funds. The findings on the Pearson's product correlation coefficient established that only the corporate governance indicators Commitment to Corporate governance and Stakeholders interests in board decisions had statistically significant association with macroeconomic variables: Commitment to Corporate governance and Inflation rate and (r = .677*, p = .045); Stakeholders interests in board decisions and Commercial Banks weighted average lending interest rates (r = .714*, p = .031). The study findings however, indicate that there were no statistically significant results between macroeconomic variables and the other CG indicators of Board structure and composition, Board Responsibilities, Shareholder´s Rights and Disclosure and transparency and Role of stakeholders.

CHAPTER FIVE
HYPOTHESES TESTING AND DISCUSION OF THE FINDINGS

5.1 Introduction

The study investigated hypotheses that evaluated the relationship among Corporate governance indicators of Board Structure and Composition, Board Responsibilities, Shareholder´s Rights, Disclosure and Transparency, Commitment to Corporate Governance, Role of Stakeholders and Stakeholders Interests in Board decisions, IS Index, macroeconomic variables GDP Growth Rate, Inflation rate, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments, NSE 20 Share Index, unemployment rate and the combined ROI of pension funds..

Regression analysis was used to examine the relationship between the variables of interest. In particular, the coefficient of determination (R^2 or r-squared) together with the significance level (P- value) of the estimated coefficient will be used to test the study hypothesis. The coefficient of determination (R^2) is a statistical measure in a regression model that determines the proportion of variance in the dependent variable that can be explained by the independent variable. Diagnostic tests were done to assess the conformity of the research data with assumptions of ordinary least square to enable fit robust regression approximation and mitigate on both type 1 and type 2 errors.

5.2 The Relationship between corporate governance and the combined Return on Investment (ROI) of pension funds

The first hypothesis of the study tests and establishes the effect of corporate governance (CG) indicators on the combined return on investments (combined ROI of pension funds) of RBA registered pension funds in Kenya:

H_A: Corporate governance has a significant relationship with the combined ROI of pension funds in Kenya.

Table 5.1: Model Summary[b] of effect of corporate governance on the combined ROI of pension funds

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
					Change Statistics					
1	.602[a]	.362	.271	43.63799	.362	3.977	7	49	.002	1.993

a. Predictors: (Constant), Stakeholders interests in board decisions, Board structure and composition, Commitment to Corporate governance, Shareholder´s Rights, Role of stakeholders, Disclosure and transparency, Board Responsibilities
b. Dependent Variable: Combined ROI of pension funds

The results show that R^2 for the overall model of the influence of CG indicators on combined ROI of pension funds was .362 with an adjusted R^2 of .271 indicating a weak size effect of the model (Table 5.1). This implies that 36.2% of the variation in the combined ROI of pension funds is accounted by the regression, a linear combination of the predictor variables Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decisions (corporate governance indicators).

Table 5.2: ANOVA[a] of the relationship between corporate governance and the Combined ROI of pension funds

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53017.341	7	7573.906	3.977	.002[b]
	Residual	93309.450	49	1904.274		
	Total	146326.791	56			

a. Dependent Variable: Combined ROI of pension funds
b. Predictors: (Constant), Stakeholders interests in board decisions, Board structure and composition, Commitment to Corporate governance, Shareholder´s Rights, Role of stakeholders, Disclosure and transparency, Board Responsibilities

ANOVA Table 5.2 shows that the F statistic, the test of the entire regression shows at $\alpha = .5$, the regression is statistically significant because the p value is < 0.05. The model is therefore significant in predicting the combined ROI of pension funds with F (7,49) = 3.977, p < .05.

The study results in the coefficient Table 5.3 below however, indicate that only the Role of stakeholders (RS) (t = 2.143, p < .05) show a statistically significant positive effect

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on combined ROI of pension funds. Board structure and composition (t = .765, p = .448), Disclosure and transparency (t = 1.073, p = .288), and Stakeholders interests in board decisions (t = 1.252, p = .217), had a positive but statistically insignificant effect on the combined ROI of pension funds. In contrast, Board Responsibilities (t = -1.203, p = .235), Shareholder´s Rights (t = -.583, p = .562), and Commitment to Corporate governance (t = -.633, p = .530), had a negative but statistically insignificant effect on the combined ROI of pension funds. The predictor model taking into account the significance levels is as specified below:

Combined ROI of pension funds = -35.689 + 53.518BSC - 66.058BR - 15.084SR + 46.419DT - 9.610CCG + 95.770RS + 25.162SIBD

Table 5.3: Coefficient[a] of the relationship between corporate governance and the combined ROI of pension funds

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	-35.689	22.902		-1.558	.126					
Board structure and composition	53.518	69.951	.256	.765	.448	.366	.109	.087	.116	8.621
Board Responsibilities	-66.058	54.893	-.326	-1.203	.235	.245	-.169	-.137	.178	5.631
Shareholder´s Rights	-15.084	25.867	-.075	-.583	.562	-.170	-.083	-.067	.792	1.263
Disclosure and transparency	46.419	43.249	.230	1.073	.288	.302	.152	.122	.283	3.538
Commitment to Corporate governance	-9.610	15.185	-.074	-.633	.530	-.133	-.090	-.072	.959	1.043
Role of stakeholders	95.770	32.643	.421	2.934	.005	.539	.387	.335	.632	1.582
Stakeholders interests in board decisions	25.162	20.104	.147	1.252	.217	.200	.176	.143	.945	1.058

a. Dependent Variable: Combined ROI of pension funds

Table 5.4: Summary results of objectives one hypothesis

Objectives	Hypotheses	Sub-Hypothesis	Result	Table	Interpretation
To establish the relationship between corporate governance and the combine Combined ROI of pension funds.	Corporate governance has a significant relationship with the combined ROI of pension funds. in Kenya.	The relationship between Board structure and composition and the combined ROI of pension funds. in Kenya is significant	Reject	5.3	The relationship between Board structure and composition and the combined ROI of pension funds. in Kenya is not significant (t = .765, p =.448)
		Board Responsibilities has a significant relationship with the combined ROI of pension funds. in Kenya.	Reject	5.3	The relationship between Board Responsibilities and the combined ROI of pension funds. in Kenya is not significant (t = -1.203, p = .235).
		Shareholder´s Rights has a significant relationship with the combined ROI of pension funds. in Kenya.	Reject	5.3	The relationship between Shareholder´s Rights and the combined ROI of pension funds. in Kenya is not significant (t = -.583, p = .562).
		Disclosure and transparency has a significant relationship with the combined ROI of pension funds. in Kenya.	Reject	5.3	The relationship between Disclosure and transparency and the combined ROI of pension funds. in Kenya is not significant (t = 1.073, p =.288)
		The relationship between Commitment to Corporate governance and the combined ROI of pension funds. in Kenya is significant.	Reject	5.3	The relationship between Commitment to Corporate governance and the combined ROI of pension funds. in Kenya is not significant (t = -.633, p = .530).
		Role of stakeholders has a significant relationship with the combined ROI of pension funds. in Kenya.	Accept	5.3	Role of stakeholders has a significant relationship with the combined ROI of pension funds. in Kenya (t = 2.934, p < .05).
		Stakeholders' interests in board decisions has a significant relationship with the combined ROI of pension funds. in Kenya.	Reject	5.3	The relationship between Stakeholders' interests in board decisions and the combined ROI of pension funds. in Kenya is not significant (t = 1.252, p = .217).

5.3   The intervening effect of IS Index on the relationship between corporate governance indicators (Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decisions) and the effect of combined ROI of pension funds

The second objective was to establish the intervening effect of investment strategy (IS Index) on the relationship between corporate governance and financial performance of pension plans (combined ROI of pension funds).

H₂: Investment strategy has a significant intervening effect on the relationship between governance and financial performance of pension plans.

A composite value was not computed for the corporate governance but each indicator was adopted for corporate governance (Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions). Seven sets of regression on models were utilized to separately establish the intervening effect of IS Index on the relationship between governance and financial performance of pension plans. Baron and Kenny's (1986) as well as Hsu, Wang and Hsu's (2012) three steps were followed to examine the intervening effect. The below path analysis/Stepwise regression analysis was utilized.

5.4 Path analysis/Stepwise regression analysis
This is a statistical method of testing cause/effect relationships and entail four steps.
Step 1: $Y = a_0 + \beta_1 X_1 + \varepsilon$
Step 2: $Me = a_0 + \beta_1 X_1 + \varepsilon$
Step 3: $Y = a_0 + \beta_2 Me + \varepsilon$
Step 4: $Y = a_0 + \beta_2 Me + \beta_1 X_1 + \varepsilon$
Where
Y= composite score for financial performance
a_0=regression constant
X= composite score for corporate governance indicator
Me=mediating factor-composite score for IS
2.   Pearson's product moment correlation R
5.4.1 Step one of testing the effect of Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decisions (CG indicators variables) on the combined ROI of pension funds.
Step 1: $Y = a_0 + \beta_1 X_1 + \varepsilon$

Step one of the mediating effects of investment strategy (IS Index) on the relationship between corporate governance and combined ROI of pension funds excluded the mediator, IS Index from the regression model. The results on Table 5.1 shows that R^2 for the overall model was .362 with an adjusted R^2 of .271 indicating a weak size effect of the model (Value of < 0.3 is weak, Value between 0.3 and 0.5 is moderate and Value > 0.7 means strong effect on the dependent variable, Srinivasan, 2020). Thus 36.2% of

the variation in the combined ROI of pension funds is accounted by the regression, a linear combination of the predictor variables Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions (corporate governance indicators). The F statistic, the test of the entire regression shows that at $\alpha = .01$ this regression is statistically significant because the p value is < 0.001. The model is therefore significant in predicting the combined ROI of pension funds with $F(7,49) = 3.977$, $p < .05$ shown by the ANOVA Table 5.2.

The study findings established that only the Role of stakeholders (RS) had a statistically significant positive effect on combined ROI of pension funds whereas Board structure and composition (BS&C), Disclosure and transparency (D&T) and Stakeholders interests in board decisions (SIBD) showed a positive but statistically non-significant effect on combined ROI of pension funds. In contrast, Board Responsibilities (BR), Shareholder´s Rights (SR) and Commitment to Corporate governance (CCG) had a negative and statistically non-significant effect on the combined ROI of pension funds as indicated in Table 5.3. The predictor model taking into account the significance levels is as indicated below:

Combined ROI of pension funds. = -35.689 + 53.518 BSC - 66.058 BR - 15.084SR + 46.419 D&T - 9.610 CCG + 95.770 RS + 25.162 SIBD

The implication of the ANOVA table 6.2 findings which, indicates that relationship between Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions (CG indicators) and the combined ROI of pension funds is significant with $F(7,49) = 3.977$, $p < .05$) is that it enables one to proceed to step 2.

5.4.2. Step two of testing the relationship between Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decisions (corporate governance indicators) and investment strategy (IS Index)

Step 2: Me= $a_0 + \beta_1 X_1 + \varepsilon$

Step two investigates the effect of corporate governance indicators on the investment strategy (IS Index) which is the mediator. The results are indicated in Tables 5.5 -5.7. The results show that R^2 for the overall model in step two was .911with an adjusted R^2 of .899 indicating a strong size effect of the model. Thus 91.1% of the variation in the mean IS Index Dummy Variable, the intervening factor is accounted by the regression, a linear combination of the predictor variables Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decisions (corporate governance indicators) Tables 5.5. The F statistic, the test of the entire regression shows that at $\alpha = .01$, this regression is statistically significant because the p value is < 0.001. The model is therefore significant in predicting the Mean IS Index Dummy Variable with $F(7, 49) = 71.819$, $p < .001$ shown by ANOVA Table 5.6.

The coefficient Table 5.7 however, reveals that that only the Board structure and composition (BS&C) (t = 5.032, p < .001 and Role of stakeholders (RS) (t = 2.143, p <

.05) show a statistically significant positive effect on IS Index of pension funds. Board Responsibilities (BR) (t = 1.802, p = .078), Shareholder´s Rights (SR) (t = .614, p = .542) and Disclosure and transparency (D&T) (t = 1.382, p =.173), had a positive but insignificant effect on IS Index of pension funds. In contrast, Commitment to Corporate governance (CCG) (t = -1.092, p =.280) and Stakeholders interests in board decisions (SIBD) (t = -.410, p =.683) had a negative but non-significant effect on IS Index of pension funds. The predictor model taking into account the significance levels is as specified below:

IS Index = -0.181 + 0.712BS&C + 0.200BR + 0.032SR + 0.121D&T - 0.034CCG+ 0.142RS – 0.017SIBD

Although the ANOVA table 5.6 shows that the relationship between corporate governance indicators and the combined ROI of pension funds is significant with $F_{(7, 49)}$ = 71.819, p <.001), the non-significant relations between Board Responsibilities (BR), Shareholder´s Rights (SR), Disclosure and transparency (D&T), Commitment to Corporate governance (CCG) and Stakeholders interests in board decisions (SIBD) and IS Index mean that these factors fail the required mediation criteria. They thus do not have mediating influence on the combined ROI of pension funds. Nonetheless, the mediation testing progresses to step 3 based on the significance of Board structure and composition (BS&C) and Role of stakeholders (RS) on IS Index.

Table 5.5: Model Summary[b] of IS Index and CG indicators

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.955[a]	.911	.899	5.57871	.911	72.006	7	49	<.001	1.441

a. Predictors: (Constant), Stakeholders interests in board decisions, Board structure and composition, Commitment to Corporate governance, Shareholder´s Rights, Role of stakeholders, Disclosure and transparency, Board Responsibilities
b. Dependent Variable: IS Index

Table 5.6: ANOVA[a] of IS Index and CG indicators

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.921	7	.560	71.819	<.001[b]
	Residual	.382	49	.008		
	Total	4.304	56			

a. Dependent Variable: IS INDEX

b. Predictors: (Constant), Stakeholders interests in board decisions, Board structure and composition, Commitment to Corporate governance, Shareholder´s Rights, Role of stakeholders, Disclosure and transparency, Board Responsibilities

Table 5.7: Coefficients[a] of IS Index and CG indicators

Model	B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
	Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
1 (Constant)	-.181	.046		-3.906	<.001					
Board structure and composition	.712	.142	.629	5.032	<.001	.944	.584	.214	.116	8.621
Board Responsibilities	.200	.111	.182	1.802	.078	.884	.249	.077	.178	5.631
Shareholder´s Rights	.032	.052	.029	.614	.542	.082	.087	.026	.792	1.263
Disclosure and transparency	.121	.088	.111	1.382	.173	.810	.194	.059	.283	3.538
Commitment to Corporate governance	-.034	.031	-.047	-1.092	.280	-.007	-.154	-.046	.959	1.043
Role of stakeholders	.142	.066	.115	2.143	.037	.559	.293	.091	.632	1.582
Stakeholders' interests in board decisions	-.017	.041	-.018	-.410	.683	-.014	-.059	-.017	.945	1.058

a. Dependent Variable: IS Index

5.4.3 Step three of testing the relationship between combined ROI of pension funds and investment strategy (IS Index)

Table 5.8: Model Summary of Combined ROI of pension funds and IS Index

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.429[a]	.184	.169	46.59898	.184	12.386	1	55	<.001	2.160

a. Predictors: (Constant), IS Index
b. Dependent Variable: Combined ROI of pension funds

Table 5.9: ANOVA[a] of Combined ROI of pension funds and IS Index

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	26896.217	1	26896.217	12.386	<.001[b]
Residual	119430.574	55	2171.465		
Total	146326.791	56			

a. Dependent Variable: Combined ROI of pension funds
b. Predictors: (Constant), IS Index

Table 5.10: Coefficients[a] of Combined ROI of pension funds and IS Index

Coefficients[a]

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Partial	Part
1 (Constant)	-7.084	12.842		-.552	.583			
IS INDEX	79.179	22.455	.429	3.526	<.001	.429	.429	.429

a. Dependent Variable: Combined ROI of pension funds

The third step involved expressing combined ROI of pension funds as a function of intervening factor IS Index. The results on Table 5.8 show that R^2 for the overall model in step three was .184 with an adjusted R^2 of .169 indicating a weak size effect of the model (value of < 0.3 is weak, value between 0.3 and 0.5 is moderate and value > 0.7 means strong effect on the dependent variable, Srinivasan, 2020). This implies that 18.4% of the variation in the Combined ROI of pension funds variable is accounted by the regression, a linear combination of the predictor variable IS Index variable. The F statistic, the test of the entire regression shows that at α = .01 this regression is statistically significant because the p value is < 0.001. The model is therefore significant in predicting the combined ROI of pension funds variable with $F (1, 55) = 12.386$, $p <$ .001 shown by ANOVA Table 5.9.

Table 5.10 shows the results of the regression indicating the coefficients of the model. The study establishes a significant effect of IS Index ($t = 3.526$, $p < .001$) on combined

RIO of pension funds. The predictor model taking into account the significance levels is as specified below:

Combined ROI of pension funds. = -7.084+ 79.179IS Index

It is noted that Step 1-3 establishes whether zero order relationship among the variables exists. If one or more of these relations are not significant, then mediation is not possible. Since all the 3 steps were significant, the study proceeded to step 4.

5.4.4. Step four of testing the relationship between Combined ROI of pension funds, corporate governance indicators and investment strategy (IS Index)

Step 4: Y= a_0 +β_2Me + β_1X$_1$ + ε

Table 5.11: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
					Change Statistics				
1	.637[a]	.405	.306	42.582	.405	4.087	8	48	<.001

a. Predictors: (Constant), IS INDEX, Commitment to Corporate governance, Stakeholders interests in board decisions, Shareholder´s Rights, Role of stakeholders, Disclosure and transparency, Board Responsibilities, Board structure and composition

Table 5.12: ANOVA[a]

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59291.006	8	7411.376	4.087	<.001[b]
	Residual	87035.785	48	1813.246		
	Total	146326.791	56			

a. Dependent Variable: Combined ROI of pension funds
b. Predictors: (Constant), IS INDEX, Commitment to Corporate governance, Stakeholders interests in board decisions, Shareholder´s Rights, Role of stakeholders, Disclosure and transparency, Board Responsibilities, Board structure and composition

Table 5.13: Coefficients[a]

Coefficients[a]

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1 (Constant)	-12.490	25.593		-.488	.628					
Board structure and composition	-37.750	84.064	-.181	-.449	.655	.366	-.065	-.050	.076	13.075
Board Responsibilities	-91.704	55.311	-.452	-1.658	.104	.245	-.233	-.185	.167	6.004
Shareholder´s Rights	-19.205	25.338	-.095	-.758	.452	-.170	-.109	-.084	.786	1.273
Disclosure and transparency	30.918	43.017	.153	.719	.476	.302	.103	.080	.272	3.676

Commitment to Corporate governance	-5.311	14.996	-.041	-.354	.725	-.133	-.051	-.039	.936	1.068
Role of stakeholders	77.630	33.312	.341	2.330	.024	.539	.319	.259	.578	1.730
Stakeholders interests in board decisions	27.301	19.652	.159	1.389	.171	.200	.197	.155	.942	1.062
IS INDEX	128.119	68.878	.695	1.860	.069	.429	.259	.207	.089	11.260

a. Dependent Variable: Combined ROI of pension funds

The fourth step involved expressing Combined ROI of pension funds as a function of intervening factor IS Index and corporate governance indicators. The study results show that R^2 for the overall model in step four was .405 with an adjusted R^2 of .306 indicating a moderate size effect of the model (Value of < 0.3 is weak, Value between 0.3 and 0.5 is moderate and Value > 0.7 means strong effect on the dependent variable, Srinivasan, 2020) (Table 8.3). This implies that 30.6% of the variation in the Combined ROI of pension funds variable is accounted by the regression, a linear combination of the predictor variable CG indicators and IS Index variable (Table 5.11). The F statistic, the test of the entire regression shows that at $\alpha = .01$ this regression is statistically significant because the p value is < 0.001. The model is therefore significant in predicting the combined ROI of pension funds variable with $F (8, 48) = 4.087$, $p < .001$ (ANOVA Table 5.12).

Table 5.13 shows the results of the regression indicating the coefficients of the model. The study establishes a significant positive effect of Role of stakeholders ($t = 2.330$, $p < .05$) on combined RIO of pension funds. The other factors of CG indicators and IS Index were nonetheless, non-significant in predicting combined ROI of pension funds. The predictor model taking into account the significance levels is as specified below:

Combined ROI of pension funds = -12.490 - 37.750 BS&C- 91.704BR - 19.205 SR + 30.918 D&T - 5.311 CCG + 7 7.630 RS + 27.301SIBD + 128.119 IS

Table 5.14: Summary results of objective 2 Hypothesis

Objectives	Hypothesis	Sub-Hypothesis	Result	Table	Interpretation
To establish the mediating effect of investment strategy on the relationship between corporate governance and the Combined ROI of pension funds	The mediating effect of investment strategy on the relationship between corporate governance and the Combined ROI of pension funds of pension schemes is significant	The mediating effect of investment strategy on the relationship between Board structure and composition and the Combined ROI of pension funds of pension schemes is significant	Reject	5.13	The mediating effect of investment strategy on the relationship between Board structure and composition and the combined the combined ROI of pension funds of pension schemes is not significant (t = -.449. p = 655).
		The mediating effect of investment strategy on the relationship between Board Responsibilities and the Combined ROI of pension funds of pension schemes is significant	Reject	5.13	The mediating effect of investment strategy on the relationship between Board Responsibilities and the combined the combined ROI of pension funds of pension schemes is not significant (t = -1.658, p =.104)
		The mediating effect of investment strategy on the relationship between Shareholder´s Rights and the Combined ROI of pension funds of pension schemes is significant	Reject	5.13	The relationship between Shareholder´s Rights and the combined the combined ROI of pension funds of pension schemes is not mediated by IS Index (t =-.758, p =.452).
		The mediating effect of investment strategy on the relationship between Disclosure and transparency and the Combined ROI of pension funds of pension schemes is significant	Reject	5.13	The mediating effect of investment strategy on the relationship between Disclosure and transparency and the the combined ROI of pension funds of pension schemes is not significant (t = .719, p =.476)
		The mediating effect of investment strategy on the relationship between Commitment to Corporate governance and the Combined ROI of pension funds of pension schemes is significant	Reject	5.13	The relationship between Commitment to Corporate governance and the combined the combined ROI of pension funds of pension schemes is not mediated by IS Index (t = -.354, p=.725). .
		The mediating effect of investment strategy on the relationship between Role of Stakeholders and the Combined	Accept	5.13	The relationship between Role of Stakeholders and the combined the combined ROI of pension funds of pension schemes is mediated by IS Index. (t =2.330, p <.05).

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Objectives	Hypothesis	Sub-Hypothesis	Result	Table	Interpretation
		ROI of pension funds of pension schemes is significant.			
		The mediating effect of investment strategy on the relationship between Stakeholders' interests in board decisions and the Combined ROI of pension funds of pension schemes is significant.	Reject	5.13	The relationship between Stakeholders' interests in board decisions and the combined the combined ROI of pension funds of pension schemes is not mediated by IS Index ($t = 1.389$), $p = .171$)
		The mediating effect of investment strategy on the relationship between corporate governance indicators and the combined ROI of pension funds of pension schemes is significant.	Reject	5.13	The relationship between corporate governance indicators and the combined the combined ROI of pension funds of pension schemes is not significant by IS Index ($t = 1.860$, $p = .069$).

5.4.5 The moderating effect of macroeconomic factors on the relationship between CG indicators and combined ROI of pension funds

The third objective of the study investigated the moderating effect of macroeconomic factors on the relationship between corporate governance and financial position of pension plans. Moderation occurs when the relationship between two variables depends on a third variable, the moderator. The effect of a moderating variable is characterized statistically as an interaction; that is, a categorical such as sex, race, class or quantitative such as level of reward variable that affects the direction and/or strength of the relation between dependent and independent variables (Baron and Kenny,1986).

H_3: Macroeconomic variables have a significant moderating effect on the relationship between corporate governance and financial performance of pension plans.

The standard method of determining whether a moderating effect exists entailed the addition of an (linear) interaction term in a multiple regression model. Thus, a moderator analysis is really just a multiple regression equation with an interaction term, Aguinis, 2004; Jaccard and Turrisi, 2003; Jose, 2013.

5.4.6 The stepwise analysis of the moderating effect of macroeconomic variables on the relationship between CG indicators and the combined ROI of pension funds

Table 5.15: Model Summary[e]

Model Summary[e]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.539[a]	.290	.277	43.45326	.290	22.496	1	55	<.001	
2	.603[b]	.363	.340	41.53071	.073	6.210	1	54	.016	
3	.662[c]	.438	.407	39.37951	.075	7.061	1	53	.010	
4	.713[d]	.509	.471	37.18350	.070	7.445	1	52	.009	1.964

a. Predictors: (Constant), Role of stakeholders
b. Predictors: (Constant), Role of stakeholders, NSE 20 Share Index
c. Predictors: (Constant), Role of stakeholders, NSE 20 Share Index, Inflation (%)
d. Predictors: (Constant), Role of stakeholders, NSE 20 Share Index, Inflation (%), GDP Growth Rate (%)
e. Dependent Variable: the combined ROI of pension funds

Table 5.16: ANOVA[a]

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42476.570	1	42476.570	22.496	<.001[b]
	Residual	103850.221	55	1888.186		
	Total	146326.791	56			
2	Regression	53187.612	2	26593.806	15.418	<.001[c]
	Residual	93139.180	54	1724.800		
	Total	146326.791	56			
3	Regression	64137.277	3	21379.092	13.786	<.001[d]
	Residual	82189.514	53	1550.746		
	Total	146326.791	56			
4	Regression	74430.932	4	18607.733	13.458	<.001[e]
	Residual	71895.860	52	1382.613		
	Total	146326.791	56			

a. Dependent Variable: the combined ROI of pension funds
b. Predictors: (Constant), Role of stakeholders
c. Predictors: (Constant), Role of stakeholders, NSE 20 Share Index
d. Predictors: (Constant), Role of stakeholders, NSE 20 Share Index, Inflation (%)
e. Predictors: (Constant), Role of stakeholders, NSE 20 Share Index, Inflation (%), GDP Growth Rate (%)

Table 5.15 shows that the "R Square Change", indicates the increase in variation explained by the addition of the interaction term (the change in R^2). The change in R^2 in models 2-4 are .073, .075, and .070 respectively which is a proportion. This implies that the change in R^2 is 7.3%, 7.5% and 7% which is the percentage increase in the variation explained by the addition of the interaction variable NSE 20 Share Index in

model 2, NSE 20 Share Index and Inflation rate in model 3 and NSE 20 Share Index, Inflation rate and GDP Growth Rate in model 4. The increase is statistically significant as indicated in the "Sig. F Change" column ($p < .05$), in all the 3 models. The study results suggests that the macroeconomic variables NSE 20 Share Index, Inflation rate and GDP Growth rate do moderate the relationship between CG indicators and the combined ROI of pension funds.

Table ANOVA Table 5.16 suggests that the F statistic, the test of the entire regression shows that at $\alpha = .01$ the regression of the four models are statistically significant because their p values are < 0.001. The models are therefore significant in predicting the combined ROI of pension funds: Model 1 $F (1,55) = 22.496$, $p < .001$; Model 2 $F (2,54) = 15.418$, $p < .001$; Model 3 $F (3,53) = 13.786$, $p < .001$; Model 4 $F (4,52) = 13.458$, $p < .001$. The predictor model taking into account the significance levels is as indicated below for the various models:

Model 1
The combined ROI of pension funds = -12.250 + 122.579 RS

Model 2
Combined the combined ROI of pension funds = -131.407 + 119.485 RS +
.034 NSE 20 share Index

Model 3
The combined ROI of pension funds = -1.200 + 106.432RS + .049NSE 20
Share Index - 27.886Inflation

Model 4
The combined ROI of pension funds = 38.714 + 109.841RS + .068NSE 20
Share Index - 29.974Inflation -23.366GDP Growth Rate

5.4.6 Regression analysis of the moderating effect of macroeconomic variables on the relationship between CG indicators and the combined ROI of pension funds
Table 5.17: Model 5 Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.885[a]	.784	.705	27.77042	.784	9.916	15	41	<.001	1.457

a. Predictors: (Constant), Unemployment rate, Shareholder´s Rights, Board structure and composition, Commitment to Corporate governance, Stakeholders interests in board decisions, GDP Growth Rate (%), Role of stakeholders, Balance of Payments, Inflation (%), Exchange rate (KS/US$), Disclosure and transparency, Commercial Banks weighted average lending interest rates (%), Board Responsibilities, CBK 91-Day T Bill, NSE 20 Share Index
b. Dependent Variable: the combined ROI of pension funds

Table 5.18: ANOVA

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	114707.750	15	7647.183	9.916	<.001[b]
	Residual	31619.041	41	771.196		
	Total	146326.791	56			

a. Dependent Variable: the combined ROI of pension funds

b. Predictors: (Constant), Unemployment rate, Shareholder´s Rights, Board structure and composition, Commitment to Corporate governance, Stakeholders interests in board decisions, GDP Growth Rate (%), Role of stakeholders, Balance of Payments, Inflation (%), Exchange rate (KS/US$), Disclosure and transparency, Commercial Banks weighted average lending interest rates (%), Board Responsibilities, CBK 91-Day T Bill, NSE 20 Share Index

The results on Table 5.17 shows that R^2 for the overall model was .784 with an adjusted R^2 of .705 indicating a strong size effect of the model (value of < 0.3 is weak, value between 0.3 and 0.5 is moderate and value > 0.7 means strong effect on the dependent variables, Srinivasan, 2020). Thus 78.4% of the variation in the combined ROI of pension funds is accounted by the regression, a linear combination of the predictor variables corporate governance indicators (Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions and macroeconomic variables (GDP Growth Rate, Inflation rate, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments and NSE 20 Share Index, unemployment rate). Study results establish that unlike stepwise analysis, inclusion of all the CG indicators and all macroeconomic variables, results in a further increase in variation in the combined ROI of pension funds accounted by the regression (51.0% in model 4 in stepwise regression to 78.4% in model 5).

The F statistic, the test of the entire regression shows that at $\alpha = .01$ this regression was statistically significant because the p value is < 0.001. The model is therefore significant in predicting the combined ROI of pension funds with $F(15, 41) = 9.916$, $p < .001$ shown by the ANOVA (Table 5.18).

The Coefficients Table 5.19 below shows that only the Role of stakeholders (RS) (t =2.277, $p < .05$) had a statistically significant positive effect on the combined ROI of pension funds among the CG indicators whereas the macroeconomic variables inflation rate (t = -6.790, $p < .001$), exchange rate (t = -6.079, $p < .001$), balance of payments (t = -5.956, $p < .001$) and NSE 20 share index (t = -5.713, $p < .001$) had a negative but statistically significant effect on the combined ROI of pension funds. In contrast, commercial Banks weighted average lending interest rates (t = 5.802, $p < .001$) and CBK 91-Day T Bill (t = 4.943, $p < .001$) had a positive but statistically significant effect on the combined ROI of pension funds. The predictor model taking into account the significance levels is as indicated below:

Model 5: Moderating effect of macroeconomic factors

Combined ROI of pension funds =	3765.447 + 65.836BS&R - 59.126BR - 16.420SR + 5.267D&T + 2.280CCG + 50.620RS + 11.292SIBD + 39.113 GDP - 298.125IR - 142.011ER (KS/US$) + 248.618CBWALI + 1477.433CBK91-DT Bill - 8066.328BP- 2.087 NSE 20 Share Index - 73.318UR.

Table 5.19: Coefficients

	Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics

	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	3765.447	1340.057		2.810	.008		
Board structure and composition	65.836	45.846	.315	1.436	.159	.109	9.144
Board Responsibilities	-59.126	36.245	-.292	-1.631	.110	.165	6.062
Shareholder´s Rights	-16.420	16.824	-.081	-.976	.335	.758	1.319
Disclosure and transparency	5.267	29.363	.026	.179	.859	.248	4.027
Commitment to Corporate governance	2.280	10.412	.017	.219	.828	.826	1.211
Role of stakeholders	50.620	22.231	.222	2.277	.028	.552	1.812
Stakeholders interests in board decisions	11.292	13.372	.066	.844	.403	.865	1.156
GDP Growth Rate (%)	39.113	20.035	.508	1.952	.058	.078	12.840
Inflation (%)	-298.125	43.908	-3.253	-6.790	<.001	.023	43.558
Exchange rate (KS/US$)	-142.011	23.363	-8.710	-6.079	<.001	.003	389.578
Commercial Banks weighted average lending interest rates	248.618	42.849	4.680	5.802	<.001	.008	123.432
CBK 91-Day T Bill	1477.433	298.888	8.259	4.943	<.001	.002	529.691
Balance of Payments,	-8066.328	1354.306	-4.534	-5.956	<.001	.009	109.930
NSE 20 Share Index	-2.087	.365	-16.670	-5.713	<.001	.001	1615.517
Unemployment rate	-73.318	78.120	-.604	-.939	.353	.013	78.659

a. Dependent Variable: the combined ROI of pension funds

5.4.7 The Joint effect of Corporate Governance indicators, Macroeconomic Variables and Investment Strategy (IS) Index on the Combined ROI of Pension Funds.

The fourth objective of the research is to examine the combined effect of corporate governance indicators, macroeconomic factors and investment strategy (IS Index) on the combined ROI of pension funds registered by the RBA. The following alternative Hypothesis was investigated.

H_4: The joint effect of corporate governance (Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decisions), macroeconomic variables (GDP Growth Rate, Inflation rate, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments, NSE 20 Share Index and unemployment rate) as well as investment strategy is statistically significant on financial performance (the combined ROI of pension funds) of pension schemes registered by the RBA.

The regression results for the joint effect of corporate governance, macroeconomic variables, investment strategy and the combined ROI of pension funds registered by the RBA are tabulated on tables 5.20-5.22. The joint effect involves expressing the

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combined ROI of pension funds of pension schemes as a function of IS Index and of corporate governance indicators (Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decisions) and macroeconomic variables (GDP Growth Rate, Inflation rate, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments, NSE 20 Share Index and unemployment rate.

Table 5.20: Model Summary of the Joint effect of CG indicators, IS Index and macroeconomic variables on the combined ROI of pension funds

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
					Change Statistics					
1	.907[a]	.822	.751	25.49247	.822	11.573	16	40	<.001	1.438

a. Predictors: (Constant), Unemployment rate, Shareholder´s Rights, Board structure and composition, Commitment to Corporate governance, Stakeholders interests in board decisions, GDP Growth Rate (%), Role of stakeholders, Balance of Payments, Inflation (%), Exchange rate (KS/US$), Disclosure and transparency, Commercial Banks weighted average lending interest rates (%), Board Responsibilities, IS Index, CBK 91-Day T Bill, NSE 20 Share Index
b. Dependent Variable: Combined ROI of pension funds

Table 5.21: ANOVAa of the Joint effect of CG indicators, IS Index and macroeconomic variables on the combined ROI of pension funds

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	120332.160	16	7520.760	11.573	<.001[b]
	Residual	25994.631	40	649.866		
	Total	146326.791	56			

a. Dependent Variable: Combined ROI of pension funds
b. Predictors: (Constant), Unemployment rate, Shareholder´s Rights, Board structure and composition, Commitment to Corporate governance, Stakeholders interests in board decisions, GDP Growth Rate (%), Role of stakeholders, Balance of Payments, Inflation (%), Exchange rate (KS/US$), Disclosure and transparency, Commercial Banks weighted average lending interest rates (%), Board Responsibilities, IS Index, CBK 91-Day T Bill, NSE 20 Share Index

Table 5.22: Coefficients of the Joint effect of CG indicators, IS Index and Macroeconomic Variables on the combined ROI of pension funds

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	3516.697	1233.038		2.852	.007					
Board structure and composition	-20.829	51.371	-.100	-.405	.687	.366	-.064	-.027	.073	13.624
Board Responsibilities	-86.814	34.577	-.428	-2.511	.016	.245	-.369	-.167	.153	6.547
Shareholder´s Rights	-22.141	15.566	-.110	-1.422	.163	-.170	-.219	-.095	.746	1.340
Disclosure and transparency	-8.190	27.340	-.041	-.300	.766	.302	-.047	-.020	.241	4.143
Commitment to Corporate governance	8.100	9.760	.062	.830	.412	-.133	.130	.055	.792	1.262
Role of stakeholders	33.588	21.213	.148	1.583	.121	.539	.243	.106	.511	1.957
Stakeholders' interests in board decisions	12.120	12.278	.071	.987	.330	.200	.154	.066	.865	1.156
IS Index	127.791	43.438	.693	2.942	.005	.429	.422	.196	.080	12.495
GDP Growth Rate (%)	37.243	18.402	.484	2.024	.050	-.038	.305	.135	.078	12.855
Inflation (%)	-287.343	40.473	-3.136	-7.100	<.001	-.227	-.747	-.473	.023	43.918
Exchange rate (KS/US$)	-135.784	21.551	-8.328	-6.301	<.001	-.272	-.706	-.420	.003	393.373
Commercial Banks weighted average lending interest rates	239.778	39.449	4.513	6.078	<.001	.155	.693	.405	.008	124.152
CBK 91-Day T Bill	1428.483	274.875	7.985	5.197	<.001	.258	.635	.346	.002	531.639
Balance of Payments,	-7594.110	1253.534	-4.268	-6.058	<.001	.110	-.692	-.404	.009	111.763
NSE 20 Share Index	-2.001	.337	-15.988	-5.947	<.001	.297	-.685	-.396	.001	1627.602
Unemployment rate	-58.870	71.880	-.485	-.819	.418	-.159	-.128	-.055	.013	79.028

a. Dependent Variable: Combined ROI of pension funds

The results show that R^2 for the overall model was .822 with an adjusted R^2 of .751indicating a strong size effect of the model (Table 5.20). This implies that 82.2% of the variation in the combined ROI of pension funds variable is accounted by the regression, a linear combination of the predictor variables Board structure and

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composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decisions (corporate governance indicators), IS Index, GDP Growth Rate, Inflation, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments, NSE 20 Share Index, and unemployment rate.

The study results reveal on ANOVA Table 5.21 that the F statistic, the test of the entire regression shows that at $\alpha = .01$ this regression is statistically significant because the p value is < 0.001. The model is therefore significant in predicting the combined ROI of pension funds of RBA registered pension funds with $F (16,40) = 11.573$, $p < .001$ suggesting that the final model had great explanatory power.

The Coefficients Table 5.22 suggests that only the Board Responsibilities ($t = -2.511$, $p < .05$), Exchange rate (KS/US$) ($t = -6.301$, $p < .001$), Balance of Payments ($t = -6.058$, $p < .001$), NSE 20 Share Index ($t = -5.947$, $p < .001$) showed a negative but statistically significant effect on combined ROI of pension funds. The other factors, IS Index ($t = 2.942$, $p < .05$) GDP, Growth Rate ($t = 2.024$, $p < .050$), Inflation ($t = 7.100$, $p < .001$), Commercial Banks weighted average lending interest rates ($t = 6.078$, $p < .001$) and CBK 91-Day T Bill ($t = 5.197$, $p < .001$) show a statistically significant positive effect on combined ROI of pension funds. Board structure and composition ($t = -.405$, $p = .687$), Disclosure and transparency ($t = -1.422$, $p = .163$, Shareholder´s Rights-($t = -.300$, $p = .766$) showed a negative but statistically insignificant effect on Combined ROI of pension funds. whereas commitment to corporate governance ($t = .830$, $p = .412$), Role of stakeholders ($t = 1.583$, $p = .121$), Stakeholders interests in board decisions ($t = .987$, $p = .330$) showed a positive but insignificant effect. The predictor model taking into account the significance levels is as specified below:

The joint effect Model combined ROI =	**3516.697- 20.829BSC - 86.814BR - 22.141SR - 8.190&T + 8.100CCG+ 33.588RS + 12.120SIBD + 127.791IS Index + 37.243GDP - 287.343 Inflation - 135.784 EC + 239.778CBWALIR + 1428.483CBK - 7594.110BP – 2.001 NSE –58.87UR.**

Table 5.23: Summary results of objective 4 Hypothesis

Objectives	Hypothesis	Sub-Hypothesis	Result	Table	Interpretation
To establish the joint effect of corporate governance, investment strategy and macroeconomic factors on the financial performance of pension funds	The joint effect of corporate governance, investment strategy and macroeconomic factors on the financial performance of pension funds is significant.	The joint effect of Board Responsibilities, IS Index and macroeconomic factors on the financial performance of pension funds is significant	Accept	5.25	The mediating effect of investment strategy on the relationship between Board structure and composition and the combined the combined ROI of pension funds of pension schemes is not significant (t = -.449. p = 655).

5.5 Discussion of the Findings

The main objective of the research was to investigate the relationship between the variables corporate governance, investment strategy, macroeconomic variables and Combined ROI of pension funds registered by the RBA by 31st December 2020. The study findings for the hypotheses tested are discussed in this section.

5.5.1. The relationship between Corporate Governance and Combined Return of Pension Funds

The first objective of the study was to examine the relationship between corporate governance and combined return of pension funds registered by the RBA. The study hypothesis stated that the relationship between corporate governance indicators and combined return of pension funds registered by the RBA was statistically significant. The results however, revealed mixed findings for the individual contribution of corporate governance indicators. The roles of stakeholders indicated a positive and statistically significant effect on the Combined ROI of pension funds. with $t = 2.934$, $p < .05$. This suggests that implementation of the role of stakeholder's (RS) measures resulted in increase in the combined ROI of pension funds registered by the RBA.

This finding implies that the role of stakeholders has a positive and significant effect on performance-enhancing mechanisms. The results are in concurrence with Frémond (2000) Stakeholder model which states that the purpose of the corporation is to serve a wider range of interests that include but not limited to employees, shareholders, management, creditors, trade unions, suppliers, the local community, future generations. Similarly, the shareholder model opines that the purpose of the corporation is to promote shareholder value.

The findings are also in agreement with the G20/OECD Principles of Corporate governance (2015) which affirm that corporate governance ensures that interests of many constituents are taken into account. This helps to assure that corporations operate for the benefit of society as a whole. Various scholars argue that stakeholders can play an active role in strengthening corporate governance systems. Based on agency theory, the importance of corporate governance (CG) is to reduce agency conflicts between those who control and those who own the residual claims in a firm. In other words, corporate governance as a mechanism helps to align management's goals with those of the stakeholders that are to increase firm performance. The importance of stakeholder relations in building sustainable enterprises has been recognized by the OECD principals of corporate governance when it states that "the *competitiveness and ultimate success of corporations is the result of team work that embodies contributions from a range of different resource providers. It is therefore in the interest of corporations to foster wealth creating corporations among stakeholders." (OECD, 2006).*

Besides the study also found that the research findings are in agreement with the results on Board structure and composition ($t = .765$, $p = .448$), Disclosure and transparency ($t = 1.073$, $p = .288$) and Stakeholders' interests in board decisions ($t = 1.252$, $p = .217$) which were positive but nonetheless insignificant on the effect on the combined ROI of pension funds registered by the RBA. It is envisaged that the Board of Directors holds the ultimate and overall responsibility for an entity's corporate governance arrangements. The Board therefore has the first level responsibility for executing the essential pillars of corporate governance: accountability; oversight and monitoring; risk

management; transparency; legal and regulatory compliance; strategy formulation; and policy development.

The Board's structure and composition on the other hand should ensure that it can fulfil its fundamental responsibilities and ensure adequate oversight of the entity's operations, taking into account the nature, size and complexity of its business. In addition, it should be composed of persons who, as a group, have the required diversity of knowledge, judgment, and experience to complete their tasks in an appropriate and professional manner. This suggests that effective implementation of Board structure and composition standards should have a positive correlation with pension funds financial performance. The board for instance is responsible for monitoring managerial performance and achieving an adequate return for shareholders, while preventing conflicts of interests and balancing competing demands on the corporation. In addition, it has the authority to replace the management of the corporation.

Mehran (1995) finds empirical evidence to support the view of the substitutive effects between direct monitoring by owners and compensation incentives; board monitoring or monitoring by institutional investors may also substitute for direct shareholder monitoring. In theory, the use of these other mechanisms should reduce the level of pay-incentives needed to align managers' incentives with those of shareholders. In practice, however, board members become like management and agency costs are expected. The author finds that the presence of outside directors, rather than decreasing the level of executive remuneration, actually increases the percentage of equity-based compensation. Conyon and Leech (1993) found no evidence that separating the roles of chairman and CEO had any effect on executing compensation levels. Separating the roles of chairman and CEO is considered a way of preventing boards from becoming entrenched like management and, in principle, should increase accountability.

Cosh and Hughes (1997) do not find any evidence that institutional holdings in the UK alter the level of executive remuneration or the pay-performance relationship. It is hypothesized that monitoring by institutional investors has a substitutive effect with compensation incentives. While direct shareholder monitoring is a good substitute for compensation incentives, the evidence suggests that the board and monitoring by institutional investors, on the other hand, are relatively weak monitoring devices and not a good substitute for direct monitoring.

Transparency and disclosure (T&D) are essential elements of a robust corporate governance framework as they provide the base for informed decision making by shareholders, stakeholders and potential investors in relation to capital allocation, corporate transactions and financial performance monitoring. The G20/OECD Principles of Corporate governance (2015) affirms that Disclosure and transparency principle should ensure timely and accurate release is made on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company.

According to the OECD, strong disclosure regime that promotes real transparency is a pivotal feature of market-based monitoring of companies and is central to shareholders' ability to exercise their shareholder rights on an informed basis. Experience shows that disclosure can also be a powerful tool for influencing the behaviour of companies and for protecting investors. A strong disclosure regime can help to attract capital and maintain confidence in the capital markets. By contrast, weak disclosure and non-

transparent practices can contribute to unethical behaviour and to a loss of market integrity at great cost, not just to the company and its shareholders but also to the economy as a whole (OEC, 2015). This suggests that effective implementation of Disclosure and Transparency measures should have a positive correlation with pension funds financial performance. The study results are in congruence with the G20/OECD Principles of Corporate governance (2015) on T&D.

In contrast, the study results on Board Responsibilities (BR) (t = -1.203, p = .235), Shareholder´s Rights (SR) (t = -.583, p = .562) and Commitment to Corporate governance (CCG) (t = -.633, p =.530) had a negative but insignificant effect on the combined ROI of RBA registered pension funds. This implies that non adherence to BR, SR and CCG measures resulted in decline of the combined ROI of pension funds. This could have been a result of none implementation of the stated CG framework by pension funds. The results are in-line with the G20/OECD Principles of Corporate governance (2015) or the Agency and the Stakeholder theories.

The study outcomes tend to partially agree with a number of research findings. Studies by Melis, 2000; D'Onza, Greco and Ferramosca, 2014; Allegrini and Greco, 2011; Zona, 2014 on Italian companies for instance resulted in conflicting results regarding the impact on firm performance of a range of board characteristics, including the board structure, the role of independent directors, the CEO leadership and ownership concentration. Di Pietra, Grambovas, Raonic and Riccaboni (2008) found no relationship between the board size and performance whereas Romano and Guerrini (2014) found a positive relationship, especially in the water utility sector. Research into CEO duality (whether the CEO simultaneously serves as board chairman) also appears to generate ambiguous results in the Italian context. In particular, CEO duality has negative effects (Allegrini and Greco, 2011) or positive effects (Zona, 2014) or no significant effects on performance (Fratini and Tettamanzi, 2015). Consequently, it is still unclear if and how the assumptions of agency theory are verified in the Italian context.

Similarly, Ongore and K'Obonyo (2011) investigated locally the interrelations among ownership, board and manager characteristics and firm performance in a sample of 54 firms listed at the Nairobi Stock Exchange (NSE). The study results collaborates the results of the above scholars. The governance characteristics, designed to minimize agency problems between principals and agents in this study were operationalized in terms of ownership concentration, ownership identity, board effectiveness and managerial discretion. The ownership identities at the NSE were government, foreign, institutional, manager and diverse ownership forms. Firm performance was measured using Return on Assets (ROA), Return on Equity (ROE) and Dividend Yield (DY). Using PPMC, Logistic Regression and Stepwise Regression, the study established significant positive relationship between foreign, insider, institutional and diverse ownership forms and firm performance. However, the relationship between ownership concentration and government and firm performance was significantly negative. The role of boards was found to be of very little value, mainly due to lack of adherence to board member selection criteria. The results also show significant positive relationship between managerial discretion and performance.

The study results are in addition in line with the OECD (2015) corporate governance framework. The later was designed to ensure strategic guidance of the company, effective monitoring of management by the board, and accountability to the company and the shareholders by the board. The board is therefore chiefly responsible for monitoring managerial performance and achieving an adequate return for shareholders, while preventing conflicts of interest and balancing competing demands on the corporation. In addition, it is responsible for overseeing the risk management system and systems designed to ensure that the corporation obeys applicable laws, including tax, competition, labour, environmental, equal opportunity, health and safety laws as well as being accountable to the company and its shareholders but also having a duty to act in their best interests. Furthermore, boards are expected to take due regard of, and deal fairly with, other stakeholder interests including those of employees, creditors, customers, suppliers and local communities (G20/OECD Principles of Corporate governance, 2015). Thus, it is postulated that there should be a positive correlation between pension financial performance and implementation of the CG framework.

For the case of shareholders rights, the OECD (2015) is of the view that corporate governance framework should protect and facilitate the exercise of shareholders' rights and ensure the equitable treatment of all shareholders, including minority and foreign shareholders. All shareholders should have the opportunity to obtain effective redress for violation of their rights. Investors' confidence such as pension funds, that the capital they provide will be protected from misuse or misappropriation by corporate managers, board members or controlling shareholders is an important factor in the development and proper functioning of capital markets. Thus, it is expected that application of shareholders rights should result in improved performance of pension funds.

The study findings contrast those by Maury, 2006 who examines how family-controlled firms perform in relation to firms with nonfamily controlling shareholders in Western Europe. The sample consists of 1672 non-financial firms. Active family control is associated with higher profitability compared to nonfamily firms, whereas passive family control does not affect profitability. Active family control continues to outperform nonfamily control in terms of profitability in different legal regimes. Active and passive family control is associated with higher firm valuations, but the premium is mainly due to economies with high shareholder protection. The benefits from family control occur in non-majority held firms.

These results suggest that family control lowers the agency problem between owners and managers (Fama and Jensen, 1983), but gives rise to conflicts between the family and minority shareholders when shareholder protection is low and control is high (Shleifer and Vishny, 1997). The author is also of the view that while active family control increases profitability compared to nonfamily firms even when different judicial settings are considered within Western Europe, such increased profitability does not translate into higher valuations when shareholder protection is low. These results fit rather well with recent evidence that family control can increase firm value in a well-regulated economy such as the US (McConaughy et al., 1998, Anderson and Reeb, 2003), whereas family control may harm minority shareholders due to the risk of expropriation when transparency is low such as East Asian firms (Faccio et al., 2001).

The study results are also in partial agreement with those of Mei Yu (2013). The later observes that while the relationship between state ownership and firm performance has been widely researched, the empirical evidence has provided mixed results. The author applied panel data regression techniques in the study to 10,639 firm-year observations of non-financial Chinese listed firms during 2003–2010 to examine the relationship between state ownership and firm performance. The results show that state ownership has a U-shaped relationship with firm performance. The Split Share Structure Reform in 2005–2006 played a positive role in enhancing the relationship between state ownership and firm profitability ratios. Although state ownership decreased significantly after 2006, it remains high in strategically important industry sectors such as the oil, natural gas and mining sector and the publishing, broadcasting and media sector. The findings reveal that a higher level of state ownership is superior to a dispersed ownership structure due to the benefits of government support and political connections. The Split Share Structure Reform made previously non-tradable shares legally tradable, improving corporate governance and reducing the negative effect of non-tradable state shares.

Similar findings were also observed by studies by Maher and Andersson (2000) who established that the financial performance of firms was influenced by the level of shareholder rights and the competence of existing court systems (Gompers et al., 2001; La Porta, et al., 2001; Lombardo & Pagamo, 1998). In particular, they ascertained that enhanced shareholders' rights resulted in higher financial performance of firms. Besley and Prat (2003), Mitchell and Yang (2005), and Manuel and Andreas (2008) found positive relationship between good corporate governance and pension performance. Wagner et al. (1998) found that the probability of firms going under declined with boards controlled by outside directors. Zahra and Pearce (1989) aver that outsiders tend to be objective, unbiased and independent.

Other comparable empirical research results supporting the notion that business organizations can and should serve the interests of multiple stakeholders (Preston & Sapienza, 1990: 361) and that such service is associated with higher financial performance (Sisodia, Wolfe and Sheth, 2007), reputation (Fombrun and Shanley, 1990), and organizational performance (Greenley and Foxall, 1997) were observed. Nevertheless, some studies find conflicting results between social orientation and firm performance (Aupperle, Carroll and Hatfield, 1985; Agle, Mitchell and Sonnenfield, 1999), and social orientation is often taken as emblematic of "stakeholder orientation".

Moreover, mixed and sometimes inconclusive results on the relations between corporate governance and firm performance were also found by scholars such as Daines and Klausner, 2001 (examined takeover defenses), Larcker, et al. (2007) (examined board and ownership variables) and Coles, et al. (2008) (considered board size). Clarke (2009) observed that corporate governance systems failed to prevent financial crisis and corporate collapses across different economies. Heracleous (2001) reports that researchers failed to find any convincing connection between the best practices in corporate governance and organizational performance. A possible explanation for these results is that there could be other factors influencing the above. Renders et al. (2010) attribute it to the differing and limitation of methods of measuring corporate governance and econometric problems.

5.5.2 The relationship between Investment Strategy and Combined Return of Pension Funds

The second objective of the study was to establish the mediating effect of investment strategy on the relationship between corporate governance and combined ROI of pension funds of RBA registered pension funds. The hypothesis to be tested was that the intervening effect of investment strategy on the relationship between governance and financial performance of pension plans is significant. The IS Index was adopted as the indicator of investment strategy derived from a questionnaire administered to pension funds' management. Path analysis/Stepwise regression analysis was used for evaluating the mediation effect. The statistical method of testing cause/effect relationships and entail four steps:

Step 1: $Y = a_0 + \beta_1 X_1 + \varepsilon$;

Step 2: $Me = a_0 + \beta_1 X_1 + \varepsilon$;

Step 3: $Y = a_0 + \beta_2 Me + \varepsilon$;

Step 4: $Y = a_0 + \beta_2 Me + \beta_1 X_1 + \varepsilon$).

The research establishes in step one that the influence of corporate governance on combined ROI of pension funds is partly explained by corporate governance indicators of Stakeholders interests in board decisions, Board structure and composition, Commitment to Corporate governance, Shareholder´s Rights, Role of stakeholders, Disclosure and transparency and Board Responsibilities. The influence of the Role of stakeholders was positive and significant. The effects of Board structure and composition, Disclosure and transparency and Stakeholders' interests in board decisions were all positive but statistically insignificant on combined ROI of pension funds registered by the RBA. This implies that there was a marginal improvement in combined ROI of pension funds with enhancement of implementation of activities outlined by these corporate governance indicators.

In contrast, the influence Board Responsibilities, Shareholder´s Rights and Commitment to Corporate governance were all negative but statistically insignificant on combined ROI of pension funds registered by the RBA. These findings suggest that there was no adherence to these corporate governance measures leading to negative influence on the combined ROI of pension funds. The result are in line with the G20/OECD Principles of Corporate governance which are meant to support economic efficiency, sustainable growth and financial stability of companies. In particular, they help build an environment of trust, transparency and accountability necessary for fostering long-term investment, financial stability and business integrity, thereby supporting stronger growth and more inclusive societies. Besides, the principles recognise the interests of employees and other stakeholders and their important role in contributing to the long-term success and performance of the company.

The study findings are consistent with the results of Rais (2009) in his study on Stakeholder orientation and financial performance in Indonesia where the author examined the role of stakeholder management on organizational performance. The results revealed that the firm's achieved superior performance through the management of its relationships with its stakeholders. They noted that the policies, practices and outcomes may vary amongst the stakeholders of a given firm forcing firms to make tradeoff amongst its practices towards diverse stakeholders. Ontita and Kinyua (2020) using a select 89 management staff of Commercial Banks in Nairobi City County to

form the sample, structured questionnaires for data collection and both descriptive statistics and inferential statistics for data analysis found that stakeholder management positively influences affected performance of Commercial Banks in Kenya.

The findings are partly consistent with the study by Balagobei, S. (2018) who reported mixed results. The board size and audit committee have significant impact on ROA and board size has significant impact on Tobin's Q, whereas board independence, CEO duality and director's ownership have insignificant impact on both firm performance measures of ROA and Tobin's Q. Furthermore the board size and audit committee have negative relationship with firm performance. This study suggests that small boards are associated with higher firm performance, possibly through closely monitored managements.

Step two of the analysis revealed that variation in the mean IS Index Dummy Variable, the intervening factor is accounted by the regression, a linear combination of the predictor variables Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decisions (corporate governance indicators). Specifically, Board structure and composition and Role of stakeholders had positive and statistically significant influence on IS Index whereas Board Responsibilities, Shareholder´s Rights and Disclosure and transparency had positive but statistically insignificant influence on IS Index.

Comparable results were found on several studies done to examine the impact of CG on investment strategies. Khanna and Zyla (2012) studied the effect of governance on investment decisions in institutional investors, private equity funds and pension funds in emerging markets (EME). They established that corporate governance was an important factor when making investment decisions and investors were prepared to pay better prices for firms executing good corporate governance practices compared to those poorly governed. In contrast, Useem and Mitchell (2008) showed that corporate governance has no relationship with the financial performance of investing firms. The authors however, showed that governance influenced the kind of investment strategy used, which had a positive correlation to the financial performance of investments of pension funds. Thus, the financial performance of the funds' investments is indirectly affected by corporate governance. In Switzerland, Manuel and Christian (2016) investigated the relationship between corporate governance, asset allocation and financial performance of 139 Swiss pension plans undertaking investment opportunities. They established that there is a direct relationship between corporate governance and financial performance of pension plans. The relationship however, is only slight to the category of assets selected.

The step three of the mediation effect established that the combined ROI of pension funds of RBA registered pension funds is influenced by investment strategy. The effect of IS Index is positive and statistically significant implying that enhanced application of various investment strategies had the effect of increasing the combined ROI of pension funds. The studies are consistent with those by Blake, Lehmann and Timmermann (1999) who analyzed a data set on UK pension funds and found that strategic asset allocation accounts for most of the ex-post variation of UK pension funds' returns. Other studies established that the vast majority of funds had negative

market-timing estimates (Coggin et al., 1993; Daniel, et al. 1997; Blake et al., 1999). Oppolito (1989) looked at mutual fund data and found evidence that is consistent with optimal trading in efficient markets. Grinblatt and Titman (1989) looked at mutual fund performance and tests indicated that the risk-adjusted gross returns of some funds were significantly positive.

They concluded that risk-adjusted returns in the mutual fund industry, net of fees and expenses, are comparable to returns available in Index funds. The findings show that there are those that support market efficiency as well as those that reject it. The latter are of the view that investors can apply the MPT to attain an optimal risky portfolio that is fully diversified to achieve a higher return than investing in an Index portfolio. Other studies by Christensten (2005), Chen and Liang (2005), Treynor and Mazuy (1966) and Merton and Henricksson (1981) found mixed conclusions on the ability of market timing to deliver superior or above market returns. While Chen and Liang (2005) find evidence of positive relationship between market timing and returns. This means that there is no clear nut shell in the area of study. It is noted that Step 1-3 establishes whether zero order relationship among the variables exists. If one or more of these relations are not significant, then mediation is not possible. The results show that all the relations tested were significant hence the analysis proceeded to step four.

Step four of the mediation process which involved expressing combined ROI of pension funds. as a function of intervening factor IS Index and corporate governance indicators revealed that the combined effect of the independent variables had a moderate size effect as indicated by the R^2 of the overall model of .405 with an adjusted R^2 of .306 implying that 40.5% of the variation in the combined ROI of pension funds variable is accounted by the regression, a linear combination of the predictor variable CG indicators and IS Index variable. The F statistic, the test of the entire regression shows that at $\alpha = .01$ the regression was statistically significant because the p value was < 0.001. The model was therefore significant in predicting the combined ROI of pension funds Variable with F (8,48) = 4.087, p < .001 shown by ANOVA Table 5.29.

The study establishes a significant positive effect of Role of stakeholders (t = 2.330, p < .05) on combined RIO of pension funds. In addition, the findings reveal a positive but insignificant effect of Disclosure and Transparency, Stakeholders interest in board decisions, and investment strategy Index. The other factors of Board Structure and Composition, Board Responsibilities, Shareholders Rights and Commitment To Corporate Governance had a negative but insignificant effect in predicting combined ROI of pension funds.

The mediation tests of the study imply that corporate governance influences combined ROI of pension funds through investment strategy. Thus, governance impacts the type and quality of investment strategies which in turn influences the combined ROI of pension funds. A well planned investment strategy is thus essential before making any investment decisions. Fama & French (1992) observed that investment strategies are ways by which an investor can acquire the expected return, given a specific risk tolerance level. Companies that embrace corporate governance achieve greater accountability in their investment decision-making processes.

Corporate governance sets high integrity thresholds for protecting the interests of shareholders, creditors, suppliers and employees. Company boards that seek to meet these thresholds must be accountable, ethical and sensitive in their investment decisions. As such, corporate governance enables company boards to prioritize accountability when making investment decisions. Moreover, corporate governance grants company boards sufficient independence from the management teams and other stakeholder in companies empowering them to perform duties without undue interference from the management or dominant shareholders. This way, directors can protect the investment objectives of companies from conflict of interests among competing parties.

The study results are in agreement with Fama 1978 who opined that investment decisions are one of the factors that can increase firm value. Studies by Bajo et al. 1998, Santos et al. 1993, Efni (2017), Soumaya (2015) and Susanti et al. (2019) established that investment decisions can increase firm value. In contrast, study findings by Brio et al. (2003), and Lin and Kulatilaka (2007) showed that investment decisions tend to suppress increases in firm value. Based on these observed patterns, Gunardi et al. (2022) concluded that a firm's value can be increased through investment decisions.

Studies by Christensen (2005), Chen and Liang (2005), Treynor and Mazuy (1966) and Merton and Henricksson (1981) nonetheless, established mixed conclusions on the ability of market timing to deliver superior or above market returns. Chen and Liang (2005) find evidence of positive relationship between market timing and returns. This implies that there is need for further research in the area of study.

5.5.3 The relationship between Macroeconomic Variables, Corporate Governance and Combined Return of Pension Funds

The third objective was to investigate the moderation effect of macroeconomic factors on the relationship between CG indicators and combined ROI of pension funds. A multiple regression was carried out to investigate moderating effect of macroeconomic variables GDP Growth Rate, Inflation, Unemployment rate, Commercial Banks weighted average lending interest rates in addition to such factors as Exchange rate (KS/US$), CBK 91-Day T Bill, Balance of Payments and NSE 20 Share Index (moderators) on the relationship between corporate governance and financial performance of pension plans. The results of the stepwise analysis of the regression indicated that the "R Square Change", which indicates the increase in variation explained by the addition of the interaction term (the change in R^2) was realized in the models 2-4 of 0.073, 0.075, and 0.070 respectively. This implies that the change in R^2 is 7.3%, 7.5% and 7% which is the percentage increase in the variation explained by the addition of the interaction variable NSE 20 Share Index in model 2, NSE 20 Share Index and Inflation rate in model 3 and NSE 20 Share Index, Inflation rate and GDP Growth Rate in model 4. The increase is statistically significant as indicated in the "Sig. F Change" column ($p < .05$), in all the 3 models.

The study results suggests that the macroeconomic variables, Inflation rate and GDP Growth rate in addition to the factor NSE 20 Share Index, do moderate the relationship between CG indicators and combined ROI of pension funds. The results are collaborated by findings in the ANOVA Table 5.18 which shows that the F statistic,

the test of the entire regression shows that at α = .01 the regression of model 5 is statistically significant because their p values are < 0.001. The models are therefore significant in predicting the combined ROI of pension funds: Model 1 F (1, 55) = 22.496, p < .001; Model 2: F (2, 54) = 15.418, p < .001; Model 3: F (3, 53) = 13.786, p < .001; Model 4: F (4,52) = 13.458, p < .001.

The regression analysis of all the macroeconomic factors collaborates the findings of the stepwise regression analysis above. The results on Table 5.17 shows that R^2 for the overall model was .784 with an adjusted R^2 of .705 indicating a strong size effect of the model. Thus 78.4% of the variation in the combined ROI of pension funds. is accounted by the regression, a linear combination of the predictor variables corporate governance indicators Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions and macroeconomic variables GDP Growth Rate, Inflation rate, unemployment rate, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments and NSE 20 Share Index. Study results establish that unlike stepwise analysis, inclusion of all the CG indicators and all macroeconomic variables results in an increase in variation in the combined ROI of pension funds accounted by the regression from 47.1% in model 4 in stepwise regression to 78.4% in model 5 for all the macroeconomic variables.

In addition, the F statistic, the test of the entire regression shows that at α = .01 this regression was statistically significant because the p value is < 0.001. The model was therefore significant in predicting the combined ROI of pension funds with F (15,41) = 9.916, p <.001 shown by the ANOVA (Table 5.18). The results thus indicate that there is significant regression relationship between the dependent variable and the predictor variables as is indicated by a large F value and a small significance level. This suggests that the null hypothesis was not true, meaning that the 15 predictor variables are not all equal to each other and could be used to predict the dependent variable, combined ROI of pension funds.

The relative importance of the independent variables in moderation is judged for by the magnitude of the t statistics. Commercial Banks weighted average lending interest rates (t = 5.802, p < .001) and CBK 91-Day T Bill (t = 4.943, p < .001) had a positive but statistically significant effect on the combined ROI of pension funds. In contrast, Inflation rate (t = -6.790, p < .001), Exchange rate (t = -6.079, p < .001), Balance of Payments (t = -5.956, p < .001) and NSE 20 Share Index (t = -5.713, p < .001) had a negative but statistically significant effect on combined ROI of pension funds. The Role of stakeholders (RS) (t =2.277, p < .05) however, was the only factor among the CG indicators which had a statistically significant positive effect on combined ROI of pension funds (Coefficients Table 5.19).

The results show strong evidence to reject the null hypotheses that the coefficients are equal to each other and that they equal zero (no effect). The study results are in concurrence with the research findings of Chen (1991), Black, Fraser & MacDonald (1997), Muhammad & Rasheed (2002) and Humpe & Macmillian (2007), Mukherjee & Yu (1997) and Kwon & Shin (1999) in developed countries and EME which

indicated that real GNP, industrial production, lagged inflation and interest rate influenced stock performance.

The established results tend to agree with the fact that macroeconomic factors are influential fiscal, natural, or geopolitical events that broadly affect a regional or national economy. Macroeconomic factors thus tend to impact wide swaths of populations, rather than just a few select individuals. The study findings are in concurrence with the Arbitrage Pricing Theory (APT) of Ross (1976) which postulates that there is an association between expected return of a security and a set of systematic risk factors as well as the study results by Chen (1986); Roll & Ross (1980) which established that factors such as GDP, changes in inflation and interest rates affect expected stock return.

The finding on the Role of stakeholders (RS) (t =2.277, p < .05) affirms the Stakeholder Theory of Freeman (1984), a view of capitalism that stresses the interconnected relationships between a business and its customers, suppliers, employees, investors, communities and others who have a stake in the organization. The theory argues that a firm should create value for all stakeholders, not just shareholders.

In general, the study establishes the acceptance of six hypotheses involving macroeconomic variables:
a)   Commercial Banks weighted average lending interest rates has a significant positive moderating effect on the relationship between CG practices and financial performance of pension plans.
b)   CBK 91-Day T Bill has a significant positive moderating effect on the relationship between CG practices and financial performance of pension plans.
c)   Exchange rate has a significant negative moderating effect on the relationship between CG practices and financial performance of pension plans.
d)   Inflation rate has a significant negative moderating effect on the association between CG practices and financial performance of pension plans.
e)   Balance of Payments has a significant negative moderating effect on the relationship between CG practices and financial performance of pension plans.
f)   NSE 20 Share Index has a significant negative moderating effect on the relationship between CG practices and financial performance of pension plans.

5.5.4 The Joint Effect of Corporate Governance, Investment Strategy and Macroeconomic Variables, and Combined Return of Pension Funds

The fourth objective of the study was to examine the joint effect of corporate governance, investment strategy and macroeconomic variables on combined ROI of pension funds registered by the RBA as at 31st December 2020. The study hypothesis established that the joint effect of corporate governance, investment strategy and macroeconomic variables on combined ROI of pension funds was statistically significant. The results however, revealed mixed findings particularly for CG indicators and macroeconomic variables.

The results show that R^2 for the overall model was .822 with an adjusted R^2 of .751indicating a strong size effect of the model (Table 5.20). This implies that 82.2% of the variation in the combined ROI of pension funds variable is accounted by the regression, a linear combination of the predictor corporate governance indicators, IS Index and macroeconomic variables. The results further reveal that the F statistic, the

test of the entire regression shows that at α = .01, the regression was statistically significant because the p value was < 0.001 (ANOVA Table 5.21). The model was therefore significant in predicting the combined ROI of pension funds of RBA registered pension funds with $F_{(16, 40)} = 11.573$, $p < .001$ suggesting that the final model had great explanatory power.

The Coefficients Table 5.22 suggests that only the Board Responsibilities (t = -2.511, p < .05), Exchange rate (KS/US$) (t = -6.301, p <.001), Balance of Payments (t = -6.058, p <.001), NSE 20 Share Index (t = -5.947, p <.001) showed a negative but statistically significant effect on combined ROI of pension funds. The other factors, IS Index (t = 2.942, p < .05) GDP, Growth Rate (t = 2.024, p <.050), Inflation (t = 7.100, p <.001), Commercial Banks weighted average lending interest rates (t = 6.078, p <.001) and CBK 91-Day T Bill (t = 5.197, p <.001) show a statistically significant positive effect on combined ROI of pension funds. Board structure and composition (t = -.405, p = .687), Disclosure and transparency (t = -1.422, p = .163, Shareholder´s Rights-(t = -.300, p = .766) showed a negative but statistically insignificant effect on Combined ROI of pension funds. whereas commitment to corporate governance (t = .830, p =.412), Role of stakeholders (t = 1.583, p = .121), Stakeholders interests in board decisions (t = .987, p = .330) showed a positive but insignificant effect.

The negative and statistically significant (t = -2.511, p < .05) impact of Board Responsibilities on the joint effect on combined ROI of pension funds of pension funds suggests that none implementation of the Board Responsibilities measures leads to statistically significant decline in the combined ROI of pension funds. Moreover, Board structure and composition, Shareholder´s Rights and Disclosure and transparency were negative but statistically insignificant suggesting that non adoption of the measures of these indicators resulted to the decline though statistically insignificant in the combined ROI of pension fund. In contrast, the results were positive but statistically insignificant for Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions. Thus, application of these CG indicator measures resulted to increase in the combined ROI of pension funds though it was not statistically significant (Table 5.22).

The findings are in agreement with the G20/OECD Principles of Corporate governance (2020) that aim to promote transparent and fair markets, efficient allocation of resources, be consistent with the rule of law and support effective supervision and enforcement. Under the principles of corporate governance, the board for instance approves corporate strategies that are intended to build sustainable long-term value; selects a chief executive officer (CEO); oversees the CEO and senior management in operating the company's business, including allocating capital for long-term growth and assessing and managing risks; and sets the "tone at the top" for ethical conduct (Business Roundtable, 2016).

For an effective approach for companies, the board structure will be determined by the Board Composition which will depend on the size, composition, diversity, tenure, characteristics, experience, independence, election and time commitments. It is postulated that size should bring the benefit of a broader mix of skills, backgrounds and experience while composition of a board should reflect a diversity of thought, backgrounds, skills, experiences and expertise and a range of tenures that are

appropriate to perform its oversight function effectively. Moreover, on characteristics, the director should have integrity, strong character, sound judgment, an objective mind and the ability to represent the interests of all shareholders. The organisation should also have Board Committee Structure that permits the board to address key areas in more depth than may be possible at the full board level such as the audit and compensation committee. This suggests that application of CG principles will lead to improved financial performance of pension firms.

Based on the Agency theory, the importance of corporate governance is to reduce agency conflicts between those who control and those who own the residual claims in a firm. In other words, corporate governance as a mechanism helps to align management's goals with those of the stakeholders that are to increase firm performance. The Board Responsibilities therefore should ensure the strategic guidance of the company, effective monitoring of management by the board, and the board's accountability to the company and the shareholders. In concurrence with the above findings, the IFC (2018) observed that good corporate governance contributes to sustainable economic development by enhancing the performance of companies and increasing their access to outside capital. In addition, it ensures that the companies have proper rules, policies and practices to create long-term shareholder value.

Equally, Alduais et. al. (2022) affirmed that corporate governance is an important and effective technique for enhancing investors' confidence in existing and prospective companies and for creating opportunities for safe investment. This they note entails having the responsibilities of the board being well outlined to ensure the strategic guidance of the company, effective monitoring of management by the board, and the board's accountability to the company and the shareholders; protect and facilitate the exercise of shareholders' rights and ensure the equitable treatment of all shareholders, including minority and foreign shareholders and recognise the rights of stakeholders established by law or through mutual agreements. In addition, they should encourage active co-operation between firms and stakeholders in creating wealth, jobs, and the sustainability of financially sound enterprises; improve access to capital, create capital markets, reduce investment risk and ensure timely and accurate disclosure on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company. This implies that the significance of good corporate governance goes far beyond the interests of the shareholders in an individual company (G20/OECD, 2020) as envisaged by the Stakeholder Theory.

Various scholars such as Gobalet (1979), Sener and Selcuk (2019), Core et al. (1999) Pettinger (2019) and Chung et al. (2022)observe that one of the most salient relationships in economic life is the positive link between investment and economic growth. As key functions of the financial system, the investment process involves three steps: to mobilise capital; allocate capital among alternative ends; and monitor the use of the invested capital. The result will nonetheless, be highly dependent on the institutional framework of laws, regulations and business practices that shape and affect the interactions between equity investors and the corporation, often summarized as corporate governance. A weak corporate governance framework will severely impede all stages of the investment process and hence the economy's overall prospects to build a strong private sector basis for economic growth.

Researchers such as Almasria (2018); Almasria (2022b); Suman and Singh (2020); Chen et al. (2017); Habib and Jiang (2015); Alduais et al. (2022a) are of the view that corporate governance emerged as a response to the agency problem and a conflict of interest between a company's management, shareholders, and stakeholders. Moreover, instability and turmoil have affected some financial markets, as well as international companies, during periods of manipulation of financial statements, lack of corporate transparency, violation of shareholder rights, and the lack of a sound administrative structure capable of allowing shareholders to achieve their goals. Bimo et al. (2022); Feng et al. (2020); Nguyen et al. (2015); Shahid and Abbas (2019); Otman (2019) affirm that corporate governance is a good guide for companies, especially in balancing conflicts of interest between investors, company management, and other stakeholders.

Khanna and Zyla (2012) examined the effect of governance on investment decisions in institutional investors, private equity funds and pension funds in emerging markets (EME). They established that corporate governance was an important factor when making investment decisions and investors were prepared to pay better prices for firms executing good corporate governance practices compared to those poorly governed. In contrast, Useem and Mitchell (2008) showed that corporate governance has no relationship with the financial performance of investing firms.

The authors however, showed that governance influenced the kind of investment strategy used, which had a positive correlation to the financial performance of investments of pension funds. In Switzerland, Manuel and Christian (2016) established that there is a direct relationship between corporate governance and financial performance of pension plans. The relationship however, is only slight to the category of assets selected. The study findings imply that application of good corporate governance framework and investment strategies by pension funds is postulated to enhance financial performance of pension funds.

The study results in addition, indicate that the individual contribution of investment strategy on the joint effect of the model was positive and significant ($t = 2.942$, $p < .05$) (Table 5.22). The results are in concurrence to the Modern Portfolio Theory (MPT) of Markowitz (1952) that provides a framework within which to make sensible asset management and allocation decisions. The theory postulates two main concepts: i) all investors have a basic objective of attaining maximum returns for any level of risk, ii) risk can be reduced by combining dissimilar financial assets to form a diversified investment portfolio. Investors select their preferred portfolios based on their specific risk predisposition.

The theory functions on assumption of investors being risk averse, hence they expect to be rewarded for taking additional risk; are rational; and have access to comparable information. The study findings were in line with the Markowitz's (1952) theory of Portfolio Diversification which has been instrumental in paving the way for modern asset pricing models to measure risks associated with equity returns such as the Capital Asset Pricing Model (CAPM) of Sharpe (1964), Linter (1965) and Mossin (1966). The research results revealed that the investment strategies employed positively and significantly influenced the combined ROI of pension funds as indicated by the coefficient IS Index of $t = 2.942$, $p < .05$ (Table 5.21).

A review of studies on the performance of investment funds have revealed mixed results. Blake, Lehmann and Timmermann (1999) analysed a data set on UK pension funds and found that strategic asset allocation accounts for most of the ex-post variation of UK pension funds' returns. In contrast, studies by Coggin et al., 1993; Daniel, et al. 1997; Blake et al., 1999 established that the vast majority of funds had negative market-timing estimates. Oppolito (1989) evaluated mutual fund data and found evidence that is consistent with optimal trading in efficient markets. Similarly, Grinblatt and Titman (1989) looked at mutual fund performance and tests indicated that the risk-adjusted gross returns of some funds were significantly positive. They concluded that risk-adjusted returns in the mutual fund industry, net of fees and expenses, are comparable to returns available in Index funds. The findings show that there are those that support market efficiency as well as those that reject it.

The study findings in addition, established that the effect of macroeconomic variables on the joint effect of the model were mixed. GDP Growth Rate (t = 2.024, p <.05), Commercial Banks weighted average lending interest rates (t = 6.078, p <.001) and CBK 91-Day T Bill (t = 5.197, p <.001) had a positive and statistically significant joint impact on the combined ROI of pension funds. In contrast, Inflation (t = -7.100, p < .001), Exchange rate (KS/US$) (t = -6.301, p <.001), Balance of Payments (t = -6.058, p <.001), NSE 20 Share Index (t = -5.947, p <.001) had a negative and statistically significant joint effect on combined ROI of pension funds. Unemployment rate however, had a negative but statistically insignificant joint effect on the combined ROI of pension fund (Table 5.20).

The study results reveal on ANOVA Table 5.19 indicate that the F statistic, the test of the entire regression of the joint effect shows that at α = .01 the regression was statistically significant because the p value is < 0.001. The model was therefore significant in predicting the combined ROI of RBA registered pension funds with F (16,40) = 11.573, p < .001 suggesting that the final model had great explanatory power. Moreover, the Coefficients Table 5.20 nevertheless, shows that Board structure and composition (t = -.405, p = .687), Shareholder´s Rights (t = -1.422, p = .163, Disclosure and transparency (t = -.300, p = .766) showed a negative but statistically insignificant effect on combined ROI of pension funds. On the contrary, Commitment to corporate governance (t = .830, p =.412), Role of stakeholders (t = 1.583, p = .121), Stakeholders interests in board decisions (t = .987, p = .330) showed a positive but statistically insignificant effect on the combined ROI of pension funds.

The study findings are therefore in concurrence with the Arbitrage Pricing Theory (APT) of Ross (1976) which postulates that there is an association between expected return of a security and a set of systematic risk factors. Similarly, the study results are in agreement with those by Chen (1986); Roll & Ross (1980) which established that factors such as GDP, changes in inflation and interest rates affect expected stock return. Similarly, researchers including Fama (1990); Clare and Thomas (1994); Mookerjee and Yu (1997); Kwon and Shin (1999); Humpe and Macmillian (2007); Bodie et al. (2008); and Pilinkus (2010) found that factors such as real GDP, industrial production, lagged inflation and interest rate had a positive impact on stock performance. Furthermore, Chelangat (2014) observed that these factors are closely monitored by businesses, governments and pension funds. Locally studies by Olweny and Omondi

(2011) and Ochieng and Oriwo (2012), investigating the relationship between firm performance and the Nairobi Securities Exchange (NSE) Index established that there is a significant association between the two variables.

The study findings thus established that the joint effect of corporate governance, macroeconomic variables and investment strategy on the pension performance is significant. The Arbitrage Pricing Theory (APT) by Ross (1976) suggests that there is an association between financial position of firms and a number of variables including change in GDP, interest, inflation and exchange rates among others. The theory thus offers a multifactor pricing model for securities by proposing that the return of securities is a linear function of the variables corporate governance, investment strategy and macroeconomic factors.

5.6 Chapter Summary

The Chapter outlines an overview of research hypothesis testing on the relationship between corporate governance, investment strategy and combined return of pension funds registered by the RBA of Kenya. Regression analysis was used to evaluate the relationship among the factors and diagnostic tests to assess the conformity of the research data and mitigate on type 1 and type two errors. In addition, the chapter presents a discussion on the results of hypothesis testing. Below is a summary of the results of the specific hypothesis of the joint effect of CG indicators, IS Index, Macroeconomic variables and the combined ROI of pension funds (Table 5.20): Research Hypothesis test results Table 5.24: Joint effect of CG indicators, IS Index, Macroeconomic variable on combined ROI of pension funds.

Table 5.24: Research Hypothesis test results

Objective	Hypothesis	Test result
i) Assess the influence of corporate governance on financial performance of pension funds.	$H_{1(i)}$: Board structure and composition has a significant relationship with the financial performance of pension schemes.	Reject
	$H_{1(ii)}$: Board Responsibilities has a significant relationship with the financial performance of pension schemes.	Accepted
	$H_{1(iii)}$: Shareholder´s Rights has a significant relationship with the financial performance of pension schemes.	Reject
	$H_{1(iv)}$: Disclosure and transparency has a significant relationship with the financial performance of pension schemes.	Reject
	$H_{1(v)}$: Commitment to Corporate governance has a significant relationship with the financial performance of pension schemes.	Reject
	$H_{1(vi)}$: Role of stakeholders has a significant relationship with the financial performance of pension schemes.	Reject
	$H_{1(vii)}$: Stakeholders interests in board decisions has a significant relationship with the financial performance of pension schemes.	Reject
ii) Investigate the intervening effect of investment strategy on the relationship between corporate governance and financial performance of pension funds.	H_2: Investment strategy has a significant intervening effect on the relationship between governance and financial performance of pension plans.	Accepted
iii) Investigate the moderating effect of macroeconomic variables on the relationship between corporate governance and financial performance of pension funds.	$H_{3(i)}$: GDP growth rate has a significant moderating effect on the relationship between CG practices and financial performance of pension plans.	Accepted
	$H_{3(ii)}$: Commercial Banks weighted average lending interest rates has a significant moderating effect on the relationship between CG practices and financial performance of pension plans.	Accepted
	$H_{3(iii)}$: CBK 91-Day T Bill has a significant moderating effect on the relationship between CG practices and financial performance of pension plans.	Accepted
	$H_{3(iv)}$: Exchange rate has a significant n moderating effect on the relationship between CG practices and financial performance of pension plans.	Accepted

Objective	Hypothesis	Test result
	$H_{3(v)}$: Inflation rate has a significant moderating effect on the association between CG practices and financial performance of pension plans.	Accepted
	$H_{3(vi)}$: Balance of Payments has a significant moderating effect on the relationship between CG practices and financial performance of pension plans.	Accepted
	$H_{3(vii)}$: NSE 20 Share Index has a significant moderating effect on the relationship between CG practices and financial performance of pension plans.	Accepted
	$H_{3(vii)}$: unemployment rate has a significant moderating effect on the relationship between CG practices and financial performance of pension plans	Rejected
iv) Evaluate the joint effect of corporate governance, investment strategy and macroeconomic factors on the financial performance of pension funds.	H_4: The joint effect of corporate governance, investment strategy and macroeconomic factors on the pension financial performance is significant.	Accepted

CHAPTER SIX
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction
The research investigated the effect of corporate governance, investment strategy, and macroeconomic variables on the financial performance of pension funds as indicated by the combined ROI of pension funds for the study period of 2012 to 2020. Corporate governance indicators included Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions and investment strategy on the financial performance of pension funds while macroeconomic variables comprised GDP Growth Rate, Inflation, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rate, CBK 91-Day T Bill, Balance of Payments, NSE 20 Share Index and unemployment rate. The paper documents a summary of the findings of the study for both the descriptive statistics and the research hypothesis testing. In addition, it outlines the drawn conclusions from the tested hypothesis and policy recommendations, study limitations and areas of future research.

6.2 Summary of the findings
The study's main objective was to establish the joint effect of corporate governance, investment strategy and macroeconomic variables on the financial performance of pension funds in Kenya for the period 2012 to 2020. The study utilized a set of four variables to investigate the relationship. The combined ROI of pension funds was adopted as the dependent variable, investment strategy as the mediating (intervening) variable, macroeconomic variables as the moderating factors and corporate governance as the independent variable. Corporate governance was proxied by Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions. Macroeconomic factors included: GDP Growth Rate, Inflation, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rate, CBK 91-Day T Bill, Balance of Payments, NSE 20 Share Index and unemployment rate.

The study specifically investigated the relationship between corporate governance and combined ROI of pension funds registered by the RBA, the intervening effect of investment strategy on the relationship between corporate governance and the combined ROI of pension funds, the moderating effect of macroeconomic variables, the relationship between corporate governance and the combined ROI of pension funds and the joint effect of corporate governance, investment strategy and macroeconomic factors on the combined ROI of pension funds registered by the RBA for the period 2012-2020.

To establish these relationships, the following hypothesis were formulated: i) H_1: Corporate governance has a significant relationship with the financial performance of pension schemes; ii) H_2: Investment strategy has a significant intervening effect on the relationship between governance and financial performance of pension funds; iii) H_3: macroeconomic variables have a significant moderating effect on the relationship between governance and financial performance of pension funds iv) H_4: The joint effect

of corporate governance, investment strategy and macroeconomic variables on the financial performance of pension funds is significant.

The first objective of the study was to investigate the relationship between corporate governance and pension performance proxied by combined ROI of pension fund. Regression analysis was used to assess the relationship between the factors. The study established that only the Role of stakeholders had a positive and statistically significant effect on the combined ROI of pension funds in Kenya. Board structure and composition, Disclosure and transparency and Stakeholders interests in board decisions revealed a positive but statistically insignificant effect on the combined ROI of pension fund. The other factors comprising Board Responsibilities, Shareholder´s Rights and Commitment to Corporate governance showed a negative but statistically nonsignificant effect on the combined ROI of pension fund.

The second objective of the research was to investigate the mediating effect of investment strategy on the relationship between corporate governance and pension performance proxied by combined ROI of pension fund. Seven sets of regression models were utilized to separately establish the intervening effect of IS Index on the relationship between governance indicators (Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions) and financial performance of pension plans. Baron and Kenny's (1986) as well as Hsu, Wang and Hsu's (2012) three steps were followed to examine the intervening effect.

Step one of the mediation examined the effects of investment strategy (IS Index) on the relationship between corporate governance and performance of pension funds proxied by the combined ROI of pension fund. The test excluded the mediator, IS Index from the regression model. The results showed that the model was significant in predicting the combined ROI of pension fund with $F_{(7,49)} = 6.705$, $p < .001$. Thus, the combined effect of predictor variables Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions (Corporate governance indicators) had a statistically significant positive effect on the combined ROI of pension fund. The finding allowed one to proceed to step 2.

Step two entailed investigating the effect of corporate governance on the IS Index, the mediator. The results on Table 5.17 shows that R^2 for the overall model was .911 with an adjusted R^2 of .899 indicating a strong size effect of the model. Thus 91.1% of the variation in the mediating factor IS index is accounted by the regression, a linear combination of the predictor variables corporate governance indicators Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions. The study results show that the model is positive and statistically significant in predicting the IS Index with an $F_{(7,49)} = 71.819$, $p < .001$. This implies that the combined effect of Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests

in board decisions has a statistically significant positive effect on the IS Index thus allowing one to proceed to step 3.

The third step in investing the mediating effect of IS on the relationship between corporate governance and pension performance, involved expressing combined ROI of pension fund as a function of intervening factor IS Index. The results on Table 5.24 shows that R^2 for the overall model was .184 with an adjusted R^2 of .169 indicating a weak size effect of the model. Thus 18.4% of the variation in the combined ROI of pension funds is accounted by the regression, a linear combination of the predictor variable mediating factor IS index. The research established that the test of the entire regression shows that the regression is positive and statistically significant in predicting the combined ROI of pension fund with an F (1, 55) = 12.386, p <.001.

It is noted that Step 1-3 establishes whether zero order relationship among the variables exists. Since all these relations are significant, then mediation is possible, thus allowing the study to proceeded to step 4. The study therefore confirms that IS Index has a mediating effect on the relationship between corporate governance and pension fund performance. Corporate governance thus influences pension financial performance through investment strategies being utilized.

The fourth step was to examine the mediating effect of IS index on the relationship between corporate governance and financial performance of pension funds. The results on Table 5.28 shows that R^2 for the overall model was .405 with an adjusted R^2 of .306 indicating a moderate size effect of the model. Thus 40.5% of the variation in the combined ROI of pension funds is accounted by the regression, a linear combination of the predictor variables mediating factor IS index and corporate governance indicators Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions. The study established that the test of the entire regression indicates that the regression is positive and statistically significant in predicting the combined ROI of pension fund with an F (8, 48) = 4.087, p <.001.

The third objective of the research was to investigate the moderating effect of macroeconomic variables on the relationship between corporate governance and financial performance of pension funds. The results suggests that the moderating effect of macroeconomic factors is significant. The results of the stepwise analysis on Table 5.39 shows that the "R Square Change", which indicates the increase in variation explained by the addition of the interaction term (the change in R^2). The change in R^2 in models 2-4 are .073, .075, and .070 respectively. This implies that the change in R^2 is 7.3%, 7.5% and 7% which is the percentage increase in the variation explained by the addition of the interaction variable of NSE 20 Share Index in model 2, NSE 20 Share Index and Inflation rate in model 3 and NSE 20 Share Index, Inflation rate and GDP Growth Rate in model 4. The increase is statistically significant as indicated in the "Sig. F Change" column (p < .05), in all the 3 models. The study results suggests that the macroeconomic variables NSE 20 Share Index, Inflation rate and GDP Growth rate do moderate the relationship between CG indicators and the combined ROI of pension funds.

In addition, the ANOVA results on Table 5.40 shows that the F statistic, the test of the entire regression shows that at $\alpha = .01$ the regression of the four models are statistically significant because their p values are < 0.001. The models are therefore significant in predicting the combined ROI of pension funds: Model 1 $F_{(1,55)} = 22.496$, $p < .001$; Model 2 $F_{(2,54)} = 15.418$, $p < .001$; Model 3 $F_{(3,53)} = 13.786$, $p < .001$; Model 4 $F_{(4,52)} = 13.458$, $p < .001$.

The analysis also revealed that the moderating effect of all macroeconomic variables on the relationship between CG indicators and the combined ROI of pension funds as indicated by the results on Table 5.46 shows that R^2 for the overall model was .784 with an adjusted R^2 of .705 indicating a strong size effect of the model. This implies that 78.4% of the variation in the combined ROI of pension funds is accounted by the regression, a linear combination of the predictor variables corporate governance indicators (Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions and macroeconomic variables (GDP Growth Rate, Inflation rate, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments and NSE 20 Share Index, unemployment rate). Study results establish that unlike stepwise analysis, inclusion of all the CG indicators and all macroeconomic variables results in an increase in variation in the combined ROI of pension funds. accounted by the regression (51.0% in model 4 in stepwise regression to 78.4% in model 5).

Moreover, the F statistic, the test of the entire regression shows that at $\alpha = .01$ this regression was statistically significant because the p value is < 0.001. The model is therefore significant in predicting the combined ROI of pension funds with $F_{(15,41)} = 9.916$, $p < .001$ shown by the ANOVA (Table 5.47). The Coefficients Table 5.48 shows that the study established that only the Role of stakeholders (RS) ($t = 2.277$, $p < .05$) had a statistically significant positive effect on the combined ROI of pension funds. among the CG indicators whereas the macroeconomic variables Inflation rate ($t = -6.790$, $p < .001$), Exchange rate ($t = -6.079$, $p < .001$), Balance of Payments ($t = -5.956$, $p < .001$) and NSE 20 Share Index ($t = -5.713$, $p < .001$) had a negative but statistically significant effect on the combined ROI of pension funds. In contrast, Commercial Banks weighted average lending interest rates ($t = 5.802$, $p < .001$) and CBK 91-Day T Bill ($t = 4.943$, $p < .001$) had a positive but statistically significant effect on the combined ROI of pension funds.

The final objective of the study was to examine the joint effect of corporate governance indicators, investment strategy and macroeconomic variables on financial performance of pension funds. The results suggests that the joint effect of these factors is significant. The results on Table 5.53 shows that R^2 for the overall model was .822 with an adjusted R^2 of .751indicating a strong size effect of the model. This implies that 82.2% of the variation in the combined ROI of pension funds is accounted by the regression, a linear combination of the predictor variables mediating factor IS index, corporate governance indicators Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions and macroeconomic factors GDP Growth Rate, Inflation, Exchange rate (KS/US$), Commercial Banks weighted

average lending interest rates, CBK 91-Day T Bill, Balance of Payments, NSE 20 Share Index and unemployment rate.

In addition, the study established that the test of the entire regression indicates that the regression is positive and statistically significant in predicting the combined ROI of pension fund with an $F_{(16, 40)} = 11.573$, $p < .001$. The model is therefore significant in predicting the combined ROI of pension fund of RBA registered pension funds. Moreover, the study results show that only the Role of stakeholders ($t = -2.511$, $p < .05$, IS Index ($t = 2.942$, $p < .05$) and GDP Growth Rate ($t = 2.024$, $p < .05$) show a statistically significant effect on combined ROI of pension fund. Commitment to Corporate governance, Role of stakeholders, Stakeholders interests in board decision, Commercial Banks weighted average lending interest rates and CBK 91-Day T Bill on the other hand showed a positive but insignificant effect on combined ROI of pension fund. In contrast, Board structure and composition, Shareholder´s Rights, Disclosure and transparency, Inflation, Exchange rate (KS/US$), Balance of Payments, NSE 20 Share Index and unemployment rate 1 showed a negative but statistically non-significant effect on combined ROI of pension fund.

6.3 Conclusions

The research investigates the relationship between financial performance of pension funds registered by the RBA Corporate governance indicators of Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions, investment strategy and macroeconomic variables comprising GDP Growth Rate, Inflation, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments, NSE 20 Share Index and unemployment rate.

The first hypothesis of the research investigated the effect of corporate governance on pension performance proxied by combined ROI of pension fund. The results indicated that the null hypothesis was rejected. The study findings reveal that only the Role of stakeholders had a statistically positive and significant effect on the combined ROI of pension fund. This is in agreement of the Stakeholders theory of Freeman (1984) which stresses the interconnected relationships between a business and its customers, suppliers, employees, investors, communities and others who have a stake in the organization. The theory is based on the assumption that businesses can only be considered successful when they deliver value to the majority of their stakeholders. The conclusion from this finding is that a firm should create value for all stakeholders, not just shareholders.

In addition, the study results show that Board structure and composition, Disclosure and transparency and Stakeholders interests in board decisions revealed a positive but insignificant effect on combined ROI of pension fund. Though insignificant, it is in line with the Agency theory of Jensen and Meckling's (1976) which expounds on the association between the principal and the agent who may not act in the principal's best wishes hence the need to protect shareholders' interests, minimise agency costs and align principal-agents interest (Demsetz & Lehn, 1985).

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Agency theorists such as Demsetz and Lehn (1985) prescribe various governance mechanisms to achieve that, including enhancing Disclosure and transparency mechanisms and taking into account Stakeholders interests in board decisions. The former will ensure that timely and accurate disclosure is made regarding the corporation including the financial situation, performance, ownership and governance of the company. This will help in making informed decisions by investors. As for the later it is in line with the stakeholder's theory which stresses the interconnected relationships between various stakeholders who have a stake in the organization and the theory's assumption that businesses can only be considered successful when they deliver value to the majority of their stakeholders.

The study findings on the variables Board structure and composition, Board Responsibilities, Shareholder´s Rights, Commitment to Corporate governance however, show a negative and non-significant effect on the combined ROI of pension fund. The findings imply that there was non-adherence to these governance frameworks by pension funds leading to declined performance of pension funds. This is in agreement with the Agency and Stakeholders theories.

The Agency theory aims at reducing agency costs incurred by the principal by imposing internal controls that keep the self-serving agent's behaviour in check. To achieve that agency theorists, prescribe various governance mechanisms including Board structure and composition, Board Responsibilities, Shareholder´s Rights and Commitment to Corporate governance. This harmonizes the interests of the managers and the shareholders to maximize company value (Maher & Andersson, 1999). For governance structures, boards of directors keep potential self-serving managers in check by performing audits, performance evaluations and prescribing alternative executive compensation schemes to provide rewards and punishments that are aimed at aligning principal agents' interests. Outside (non-management) board leadership and membership are desirable to ensure that proper management oversight occurs. The study results confirm the hypothesis that corporate governance has a significant effect on the financial performance of pension funds.

The second hypothesis of the research investigated the mediating effect of investment strategy on the relationship between corporate governance and pension performance. The later was proxied by combined ROI of pension fund. The findings indicated that the null hypothesis was rejected. Investment strategy was found to have a positive and significant effect on the relationship between corporate governance and combined ROI of pension fund. Corporate governance was found to influence combined ROI of pension fund through investment strategies, consistent to the Modern Portfolio Theory (MPT) that guides investment management decisions. The theory needs to be considered as it takes into account the different risk factors that determine the financial performance of the pension funds.

Step 2 of the research findings established that the entire regression indicates that the regression is positive and statistically significant in predicting the IS index with an $F_{(7,49)} = 71.819$, $p < .001$. Moreover, only Board structure and composition ($t = 5.032$, $p < .001$) had a positive and significant effect on the IS index whereas Board Responsibilities, Shareholder´s Rights, Disclosure and transparency and Role of stakeholders had a positive but insignificant effect. Furthermore, Commitment to

Corporate governance and Stakeholders' interests in board decisions had a negative but insignificant effect on the IS index. Step 3 of the study on the other hand showed that the entire regression indicates that the regression is positive and statistically significant in predicting the combined ROI of pension funds with an $F_{(8, 48)} = 4.087$, $p < .001$. Moreover, IS index ($t = 3.526$, $p < .001$) had a positive and significant effect on the pension performance proxied by combined ROI of pension funds.

Step 4 of the study results nonetheless indicate that the entire regression indicates that the regression is positive and statistically significant in predicting the combined ROI of pension funds with an $F_{(1, 55)} = 12.386$, $p < .001$. The results are in concurrence with the research findings reported by Suartawan and Yasa (2016), Resti et al. (2019), SyamsudinI et al. (2020), Suardana et al. (2020), Mumpuni and Indrastuti (2021), and Agustin and Anwar (2022), which indicate that investment decisions have a positive effect on firm value. This implies that investment decisions can increase a firm's value. On the contrary, the research results presented by Amaliyah and Herwiyanti (2020), Komalaet al. (2019), and Attarie et al. (2018) indicate that investment decisions had no effect on firm value.

In addition, the research indicated that only the Role of stakeholders showed a statistically significant positive effect on combined ROI of pension funds with a $t = 2.330$, $p < .05$. Disclosure and transparency, Stakeholders interests in board decisions and IS Index had a positive but insignificant effect on the Index combined ROI of pension funds. In contrast, Board structure and composition, Board Responsibilities, Shareholder´s Rights and Commitment to Corporate governance, had a negative but insignificant effect on combined ROI of pension funds.

The findings confirm that through various prescribed governance mechanisms including Board structure and composition, Board Responsibilities, Shareholder´s Rights and Disclosure and transparency, combined ROI of pension fund can be improved through their influence on investment strategies. For instance, corporate governance enables the board and directors to provide the necessary oversight of the review of the core purpose and strategic investment plan. The study results however, indicate that Board Responsibilities, Shareholder´s Rights and Commitment to Corporate governance had a negative and non-significant effect on combined ROI of pension fund implying non adherence to the governance indicators.

The study findings suggest that different risk factors in the investment markets need to be taken into account when making investment management decisions as they differ in their influence on pension fund performance. Besides, the results suggest that knowledge of unsystematic risk factors is critical in the management of investments of various pension funds. This risk refers to those that are not shared with a wider market or industry. They are unique to a specific company or investment and are due to their management, financial obligations, or location. They can be reduced by diversifying one's investments through application of investment strategies. Jones (2009) defines investment strategy as a set of rules or procedures that guide an investor's selection of an investment portfolio. The strategy is designed around the investor's risk-return trade off. Thus, a well-planned investment strategy is essential before having any investment.

Decisions are ways by which an investor can acquire the expected return, given a specific risk tolerance level. Fama and French (1992 observed that investment strategies are adopted at organizational, industry and market level and serve as a guide for entering and selecting investment portfolios in anticipation of future gains (Butler, Davies, Pike, & Sharp, 1993). Hammer (2009) was of the view that the value of any firm can be viewed as the sum of the value of its investment projects. Thus, making the correct strategic investment decisions is of critical importance to maximizing the value of the firm. The study results confirm the hypothesis that IS Index has a significant mediating effect on the relationship between corporate governance and pension performance.

The third hypothesis investigated the moderation effect of macroeconomic variables on the relationship between corporate governance and combined ROI of pension funds. The results of the stepwise analysis of the regression indicated that the "R Square Change", which indicates the increase in variation explained by the addition of the interaction term (the change in R^2), was realized in the models 2-4 of 0.073, 0.075, and 0.070 respectively. This implies that the R^2 change in the models 2-4 was 7.3%, 7.5% and 7% respectively, which is the percentage increase in the variation explained by the addition of the interaction variable NSE 20 Share Index in model 2, NSE 20 Share Index and Inflation rate in model 3 and NSE 20 Share Index, Inflation rate and GDP Growth Rate in model 4. The increase is statistically significant as indicated in the "Sig. F Change" column ($p < .05$), in all the 3 models. The study results suggests that the macroeconomic variables, Inflation rate and GDP Growth rate in addition to the factor NSE 20 Share Index, do moderate the relationship between CG indicators and combined ROI of pension funds.

The results are collaborated by findings in the ANOVA Table 5.42 which shows that the F statistic, the test of the entire regression shows that at $\alpha = .01$ the regression of the four models are statistically significant because their p values are < 0.001. The models are therefore significant in predicting the combined ROI of pension funds: Model 1 F $(1,55) = 22.496$, $p < .001$; Model 2: F $(2,54) = 15.418$, $p < .001$; Model 3: F $(3,53) = 13.786$, $p < .001$; Model 4: F $(4,52) = 13.458$, $p < .001$.

The regression analysis of all the macroeconomic factors collaborates the findings of the stepwise regression analysis above. The results thus indicate that there is significant regression relationship between the dependent variable and the predictor variables as is indicated by a large F value and a small significance level. This suggests that the null hypothesis was not true, meaning that the 15 predictor variables are not all equal to each other and could be used to predict the dependent variable, combined ROI of pension funds.

The results are consistent with those by Chen, Roll and Ross (1986) who tested a set of economic data variables to explain the U.S stock return. They examined the influence of macroeconomic variables term structure, industrial production, risk premium, inflation, market return, consumption and oil prices in the period of Jan 1953- Nov 1984 on stock market return. There findings indicated that several of these economic variables were significant in explaining expected stock return during the tested period. Similar research findings were observed by scholars including Shanken (1982), Brown and Weinstein (1983), Cho, Elton and Gruber (1984), Connor and Korajczk (1986),

Burmeister and McElroy (1988), Lehman and Modest (1988). The research findings thus confirm the hypothesis that macroeconomic variables have a significant moderation effect on the relationship between corporate governance and pension performance proxied by combined ROI of pension funds.

The final hypothesis of the study examines the joint effect of corporate governance, investment strategy and macroeconomic factors on financial performance of pension funds. The findings indicates that the joint effect is positive and statistically significant as the final model had great explanatory power for the independent variables corporate governance, investment strategy and macroeconomic factors. The research findings thus confirm the joint effect hypothesis that corporate governance, investment strategies and macroeconomic variables have a significant effect on the combined ROI of pension funds though the individual contribution effects of the factors varied.

The findings suggest that implementation of the corporate governance framework has a positive impact on the financial performance of pension funds in concurrence with the Agency and Stakeholder theories. Moreover, the results suggest that different risk factors in the investment markets need to be taken into account when making investment management decisions as they influence financial performance of pension funds. This is in concurrence with the Modern Portfolio Theory (MPT), the APT and the CAPM theory.

Knowledge of both systematic and unsystematic risk factors is therefore critical in the management of investments of various pension funds. This implies that the MPT that guides investment management decisions as well as the APT. The later postulates that there is an association between expected return of a security and a set of systematic risk factors and the CAPM theory that describes the relationship between systematic risk, or the general perils of investing, and expected return for assets, needs to be taken into consideration as they take into account different risk factors that determine the financial performance of the pension funds. This confirms that pension funds management should focus on implementing all dimensions of corporate governance and investment strategies to improve pension fund financial performance. The research findings thus confirm the hypothesis that the joint effect of corporate governance, IS Index and macroeconomic variables on combined ROI of pension funds was significant.

6.4 Implications of study Findings
The research results provide a number of significant contributions to knowledge in the areas of corporate governance, investment strategy, macroeconomic factors and performance of pension funds. In addition, it outlines major contributions in finance theory by showing relationships among the variables. The findings besides have substantial implications on policy implementation.

6.4.1 Contribution to Theory and Knowledge
The findings of the study will contribute to the existing body of knowledge on corporate governance, investment strategy, macroeconomic factors and financial performance of pension funds, achieved by testing empirically their effects. The available empirical study evidence helps to explain, predict, and understand the pension fund financial performance phenomena and extends existing knowledge within the limits of critical

bounding assumptions from the developing countries perspective. This will be very helpful for national policy makers, researchers and corporate managers.

The study results generated data on social and financial return of pension funds as well as macroeconomic variables that enhanced the understanding of the local environment and the process of change occurring in the country. Data on corporate governance and investment strategies enhanced the knowledge of the effects of these factors on pension performance from a third world perspective. This will be critical in developing and formulating strategies and policies to address the problem of poor pension fund performance as influenced by governance, investment strategy and macroeconomic variables.

Theories are formulated to explain, predict and understand phenomena as well as to challenge and extend existing knowledge within the limits of critical bound assumptions. The contribution of the study results to theory is that they provided critical information concerning key investment risk factors particularly, both systematic and unsystematic in Kenya to the players in the pension industry. The study results tend to confirm and extend knowledge of the Modern Portfolio Theory (MPT), the Agency and Stakeholder Theories, the Arbitrage Pricing Theory (APT) and the Capital Asset Pricing Model (CAPM) from a developing countries perspective.

One of the main contributions of the study is it brings about the understanding on the nature of the relationship between corporate governance indicators (Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions), investment strategy, macroeconomic variables (GDP Growth Rate, Inflation, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments, NSE 20 Share Index and unemployment rate) and financial performance of pension funds registered by the RBA of Kenya.

The research confirms the first hypothesis that corporate governance has significant influence on the combined ROI of pension funds registered by the RBA in Kenya though the influence of various CG indicators varies. The study showed that the influence of the Role of stakeholders was positive and significant whereas the effects of Board structure and composition, Disclosure and transparency and Stakeholders' interests in board decisions were all positive but statistically insignificant on combined ROI of pension funds.

The Board effectiveness in its monitoring function is however, determined by its independence, size, and composition. This implies that enhanced application of these governance structures has the effect of improving pension fund financial performance, consistent with the hypothesis of the Agency and Stakeholder theory. In contrast, the impact of Board Responsibilities, Shareholder´s Rights and Commitment to Corporate governance were all negative but statistically insignificant on combined ROI of pension fund registered by the RBA. These findings suggest that non-adherence to corporate governance framework had negative influence on the combined ROI of pension fund despite the insignificant effect. These results are consistent with the Agency theory.

A further contribution of the study is that the results show that the corporate governance is positive and statistically significant in predicting the IS Index. This implies that the combined effect of implementation of corporate governance activities (Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions) has a statistically significant positive effect on the IS Index.

Corporate governance was found to influence combined ROI of pension fund through its mediating effects on investment strategies, consistent to the Modern Portfolio Theory (MPT). Good corporate governance practices improve board members' monitoring function, hence moderately control shareholders' interests, therefore firm managers make decisions effectively. The results are consistent with institutional owners monitoring the firm's investment policies as well as with high insider ownership allowing managers to follow their own investment agendas. These findings imply that the effectiveness of corporate governance systems helps in aligning managers and shareholders' interests.

A number of scholars opine that one of the key functions of a financial system include managing investments. The investment process entails mobilization of capital; allocation of capital among alternative ends; and monitoring the use of the invested capital. In market economies, they are carried out by a multitude of individual investors and the overall outcome will to a large extent depend on the institutional framework summarised in the term corporate governance, the system by which business corporations are directed and controlled. The study results thus contribute in establishing the nature of relationship between corporate governance, investment strategy and financial performance of pension funds, confirming the entrenchment of the Agency theory and the MPT dimensions. It confirms the mediating effect of investment strategy on the relationship between corporate governance and combined ROI of pension funds.

In addition, the study shows the significance of the risk factors in the model that predicts returns. It confirms the moderating effect of macroeconomic variables on the relationship between corporate governance and combined ROI of pension funds. This is in agreement with the APT and the CAPM. The APT postulates that there is an association between expected return of a security and a set of systematic factors that affect the assets risks. The theory offers a multi-factor pricing model for securities. The CAPM model on the other hand measures the required return, which reflects the cost of equity financing. This model measures the risk of the securities by measuring the sensitivity of the return of the security to the change in market's return, the market's risk in this model is measured by Beta Coefficient (B).

Another major contribution of the research is in establishing the joint effect of corporate governance and investment strategy and macroeconomic variables on pension fund financial performance. The study confirms that the three factors have a statistically significant effect on the combined ROI of pension funds though their individual effect varies as indicated by ANOVA Table 5.54 with an $F(16,40) = 11.573$, $p < .001$. Thus, Board structure and composition, Board Responsibilities, Shareholder´s Rights, Disclosure and transparency, Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions and investment strategy,

GDP Growth Rate, Inflation, Exchange rate (KS/US$), Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments, NSE 20 Share Index and unemployment rate jointly predict combined ROI of pension funds.

The study however, reveals that the Board Responsibilities and IS INDEX, GDP Growth Rate, Inflation, Exchange rate, Commercial Banks weighted average lending interest rates, CBK 91-Day T Bill, Balance of Payments and NSE 20 Share Index show a statistically significant positive effect on combined ROI of pension fund.
Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions showed a positive but statistically insignificant effect on combined ROI of pension funds. This implies that adherence to corporate governance indicators has a positive contribution to the combined ROI of pension funds. In contrast, Board structure and composition, Shareholder´s Rights and Disclosure and transparency revealed a negative but statistically insignificant effect on combined ROI of pension funds. This suggests that non-adherence to corporate governance indicators has a negative effect to the combined ROI of pension funds.

The Agency Theory explains the relationship between agents and principals. Using various corporate governance practices, pension funds pursue means of mitigating the conflict between the two. This harmonizes the interests of the managers and the shareholders to maximize firm value. The Stakeholder theory on the other hand outlines the relationship between various stakeholders in an organisation. It stresses the interconnected relationships between a business and its customers, suppliers, employees, investors, communities and others who have a stake in the organization.

The theory argues that a firm should create value for all stakeholders, not just shareholders. Consequently, the task of executives is to create as much value as possible for stakeholders without resorting to tradeoffs. Great companies endure because they manage to get stakeholder interests aligned in the same direction. The management should intensify application of corporate governance structures and procedures to align principal-agent interest to maximize pension value when undertaking investment activities. The study therefore presents significant contribution to theory by enlightening the relations among the study variables as indicated by the coefficients Table 5.55.

The outcomes of the study are significant as they provide critical information concerning key investment risk factors in Kenya to the players in the pension industry, particularly to existing or potential members, pension managers, policy makers and the government, to make investment decisions that will determine pension performance. Knowledge of the different types of investment risks, systemic or unsystemic will therefore be critical in mitigation and minimization of risk in pension fund performance. Since the investment process is critical in contributing to the generation of adequate pension funds, there is need for pension fund managers to apply Markowitz's MPT when making investment management decisions to manage investment risks through selection of a collection of assets that maximize expected return based on a given level of market risk, emphasizing that risk is an inherent part of higher reward.

The research in addition, provides both theoretical and practical evidence on the application of the Agency Theory, the Stakeholder theory, the Modern Portfolio Theory, the Arbitrage Pricing Theory and the CAPM from the developing country's perspective. The available empirical study evidence helps to explain, predict, and understand the pension fund financial performance phenomena and extend existing knowledge within the limits of critical bounding assumptions from the developing countries perspective. Moreover, the study results generated pension data on social and financial structure that enhanced the understanding of the local environment and the process of change occurring in the country. Data on corporate governance, investment strategies, macroeconomic variables and financial returns of pension funds enhanced the knowledge of the effects of these factors on pension performance from a third world perspective. This will be crucial in developing and formulating strategies and policies to address the problem of poor performance of pension funds in future.

It is worth noting that theories are formulated to explain, predict and understand phenomena as well as to challenge and extend existing knowledge within the limits of critical bound assumptions. The contribution of the study results to theory is that they provided critical information concerning key investment risk factors, both systemic and unsystematic in Kenya to the players in the pension industry such as existing or potential members, pension managers, policy makers and the government.

The study results tend to confirm and extend knowledge of the Modern Portfolio Theory, the Agency Theory, the stakeholder theory, the Arbitrage Pricing Theory and the Capita Asset Pricing Model from a developing countries perspective. For the case of the MPT, the study established that corporate governance, investment strategy and macroeconomic factors influenced pension performance. The models can thus be used to benefit investors. Investment managers of pension funds for instance should take into account the risk and return for each of the assets when constructing a portfolio that is diversified. Similarly, the study confirmed the existence of the agency problem through its effects on corporate governance.

It is noted that formulation of its remedies is ongoing research in both the corporate and academic world and that a proper governance system can relegate the agency conflict. This is in agreement with Eisenhardt (1989) who made two proposals to minimize the problem: *i)* to have an outcome-based contract, where the action of the agents' can be checked; *ii)* the principal needs to form a strong information structure, where the principal is aware of all the information about the agents' action and they cannot misrepresent the principals. The APT and CAPM on the other hand the study confirmed that pension fund return is a function of a number of systemic risk factors. Investment management decisions therefore need to take into consideration these factors.

In terms of the research practical contribution, knowledge of these factors will help in the formulation of strategies and policies to guide investment and corporate governance practices of pension funds that will ensure their future viability. In particular, knowledge on corporate governance, investment strategy and macroeconomic variables will help pension investment managers guided by the MPT, develop effective and efficient asset portfolios. The APT and the CAPM will help in identifying critical systemic and un-systemic risk factors determining pension returns. In summary, the study findings could aid the development of applied strategies of enhancing good

corporate governance practices and investment opportunities for improving performance of pension funds. Moreover, the study creates links between research, academics and policymakers as the evidence being collected and analysed is relevant to the needs of decision-makers. Young (2008) once observed that for research to have any impact, the findings must inform and shape policies and programmes to be adopted into practice. Use of research results in policy decision-making, formulation, and implementation is the way for future.

The study as well helped to find solutions to problems arising from poor pension performance; underpinned professional knowledge, skills and understanding; and connected one with sources of information and networks of professional support. On the whole, the study findings established that the tested hypotheses were acceptable on the effects of these factors on pension performance. These findings are important to policy makers, pension managers, the academic and scientific communities as they provide empirical support to the application of the Modern Portfolio Theory, Arbitrage Pricing Theory, the CAPM, the Agency and the Stakeholder theories as they guide key players in the pension industry make critical decisions on investment and corporate governance variables.

6.4.2 Recommendations for policy and practice

The research results have major contributions to policy makers, board of directors, pension managers, investment managers, corporate executives, regulators, and investors among other stakeholders. The study results confirm that corporate governance has a significant positive relationship with the combined pension fund return. The results tend to agree with the agency theory which aims at reducing agency problems of conflict of interest and agency costs that impact negatively on the market value of firms. The findings imply that corporate governance can be used to change the rules under which the agent operates and restore the principal's interests. Good corporate governance can therefore help companies build trust with investors and the community thereby help promote financial viability by creating a long-term investment opportunity for market participants. The study offers suggestive evidence for application of the Agency Theory.

The study as well showed that the combined pension fund return had different sensitivities to corporate governance indicators. In particular, the findings showed that in the joint effect of the independent variables, Board Responsibilities had a statistically significant negative effect on combined ROI of pension fund whereas Board structure and composition, Shareholder´s Rights, Disclosure and transparency and unemployment showed a negative but insignificant effect on combined ROI of pension funds. The results tend to support the Agency and stakeholder theory as they indicate that none adherence to corporate governance framework leads to decline in pension fund performance. The framework enhances means of mitigating the conflict between the agent and the principal. This harmonizes the interests of the managers and the shareholders to maximize firm value. The Stakeholder theory on the other hand stresses the interconnected relationships between a business and its stakeholders who have a stake in the organization. The theory argues that a firm should create value for all stakeholders, not just shareholders.

The study however, indicated that Commitment to Corporate governance, Role of stakeholders and Stakeholders interests in board decisions showed a positive but statistically insignificant effect on combined ROI of pension fund. The findings are attributed to pension funds adhering but weakly to the corporate governance (CG) framework of this indicators. This necessitates further investigation to find why there was weak adherence to the CG activities. The results nonetheless tend to support the Agency and Stakeholder theories as none implementation of CG activities is likely to lead to the interests of the managers and the shareholders not being harmonized. The negative results could also be attributed to the instrument used to gather data for the corporate governance variables. It did not probably provide adequate information on the factors to generate a strong corporate governance Index. The use of improved attributes of the corporate governance questionnaire is highly recommended to address the issue of inadequate information to be used to develop a strong CG Index dummy variable.

The effect of different sensitivities of various corporate governance indicators to the combined ROI of pension fund suggests that individual pension funds should mitigate these risk factors to enhance their financial performance through application of the various finance theories including the MPT, the APT, the CAPM, the Agency theory and the Stakeholder theory. The study therefore recommends that policy maker, pension managers, investment managers take into account corporate governance framework in the management of pension funds as they impinge upon the financial performance of pension schemes. Because there is no single perfect model of corporate governance, each scheme through time has to develop a wide variety of mechanisms to overcome the agency problems arising from the separation of ownership and control. Such measures include but not limited to concentrated ownership, executive remuneration schemes, the market for takeovers, cross-shareholdings, shareholder model whose objective is to maximize maximise shareholder wealth, stakeholder models amongst schemes. Recommendations include those advocated by scholars such as Maher M. and Andersson T. (1999) who supported an effective corporate governance framework that minimises the agency costs and hold-up problems associated with the separation of ownership and control.

Other scholars opine that there exist broadly three types of mechanisms that can be used to align the interests and objectives of managers with those of shareholders and overcome problems of management entrenchment and monitoring: i) to induce managers to carry out efficient management by directly aligning managers interests with those of shareholders for example executive compensation plans, stock options, direct monitoring by boards; ii) strengthening of shareholder's rights so shareholders have both a greater incentive and ability to monitor management. This approach enhances the rights of investors through legal protection from expropriation by managers. Such include protection and enforcement of shareholder rights and prohibitions against insider-dealing; iii) the use of indirect means of corporate control such as that provided by capital markets, managerial labour markets, and markets for corporate control for example take-overs. Other scholars are of the view that pension schemes should implement sound risk management practices that entail appropriate board and senior management oversight; adequate risk management policies and procedures; appropriate risk measurement, monitoring and control functions; and comprehensive internal controls and independent audits.

The research findings in addition, shows that investment strategy had significant influence in the financial performance of pension funds studied. The findings on the joint effect are also in line with the MPT, the APT, the CAPM, the Agency and the Stakeholder theories and tend to support them. This suggests that the pension funds should strive to apply the APT, the CAPM theories in the evaluation of financial performance of funds and the MPT, the Agency and the Stakeholder theories in guiding investment of their funds to ensure maximum returns hence adequate pensions. The MPT is an investment portfolio tool in portfolio decision making, advocates for the application of the Markowitz efficient frontier in asset allocation decision that is based on portfolio optimization-reconciling risk and return in selecting the securities to be included (Brodie, 2009). Besides, the results are in agreement with Sharpe's (2004) view that investment is about risk and expected return hence investment strategy needs to be taken into account when managing pension schemes investment portfolios as outlined by the MPT. The study results suggests their importance to policy makers, pension managers, the academic and scientific communities as they provide empirical support to the application of the Modern Portfolio Theory, Arbitrage Pricing Theory, the CAPM, the Stakeholder theory the Agency Theory.

6.4.3 Limitations of the study

The outcomes of the study are significant as they provide critical information concerning key investment risk factors in Kenya, a developing country, to the players in the pension industry, particularly existing or potential members, pension managers, policy makers and the government. The players make investment decisions that determine pension performance, hence pension benefits. The study nonetheless faced a number of challenges during its undertaking. Key among them include lack of adequate available and or reliable historical data from some of the pension funds particularly, in the early years of the study, limited access to data and time constraints.

Access to people, organizations, data, or documents was in some cases denied or limited. This was as a result of lack of cooperation and time by scheme management during the administration of the questionnaires. This limited the scope of the analysis, the size of the sample which was a significant obstacle to finding trend and a meaningful relationship. This resulted in varying pension fund observations from 1 to 9 years. The study nonetheless adopted panel data of 9 years to enlarge the depth and quality of captured information that yielded adequate pension fund year observations. This could have resulted from the time some schemes were established during the study period or from the time reforms were undertaken by some of the funds during the study period. In addition, the research was subject to limitations on issues of sample and selection.

The results of this study are based on a sample of 57 RBA registered pension schemes that significantly vary in size hence not reflecting the general population or appropriate population of the different types of schemes in the economy. This leads to selection bias. They included both individual pension funds, Umbrella retirement benefits schemes, Occupational Pension Schemes and Public Service Superannuation Schemes.

The study findings as well show that the questionnaire used to gather information for the corporate governance and investment strategy variable did not have adequate data or information to generate reliable dummy variable indices. Besides the study had

limited previous research studies on the topic particularly from developing countries. Prior research studies constitute the basis of the literature review for the study and provide the theoretical foundations for the research questions being investigated. Besides, the results are for the period studied (2012-2020). They should be extrapolated to more current time periods. Other variables such as Sharpe's ratio, ROA, ROE, profitability and Tobin's Q were not all used to measure financial performance. More variables should be considered to give a clear indication of the relationship of corporate governance, investment strategy, macroeconomic variables and financial performance of pension schemes in Kenya.

6.5 Suggestions for further Research

The individual impact of the various factors on financial performance of pension funds as indicated by the table on the coefficients of the joint effect of CG indicators, IS Index and macroeconomic variables on the combined ROI of pension funds was varied. Board Responsibilities, Inflation, Exchange rate (KS/US$), Balance of Payments and NSE 20 Share Index show a negative but statistically significant effect on combined ROI of pension fund. Shareholder´s Rights, Disclosure and transparency and unemployment rate showed a negative but statistically insignificant effect on combined ROI of pension fund. The insignificant finding will need to be addressed in future studies to explore the effect of these factors on pension performance. This may entail addition of more information on the questionnaires of the affected variables. A study in this direction will be useful to provide addition insight on the effect of these variables on pension financial performance.

On the contrary, IS Index, GDP Growth Rate, Commercial Banks weighted average lending interest rates and CBK 91-Day T Bill showed a positive but statistically significant effect on combined ROI of pension fund. Commitment to Corporate governance, role of stakeholders and stakeholders interests in board decisions revealed a positive but statistically insignificant effect on combined ROI of pension funds. The insignificant impact of these independent variables on pension funding will need to be addressed in future studies to examine the cause. It is thus suggested that further in-depth review be undertaken on each of the sub-indices showing governance quality.

To address the limitations of lack of adequate available and/or reliable historical data from some of the schemes particularly, in the early years of the study, limited access to data and time constraints, sample size as well as scope of discussions and analysis, further research needs to be undertaken taking into account the time frames, data availability, sample size and types of schemes involved. It will be critical to select a time frame when data was available. The study should also explore current data and consider the time the schemes were established.

To enhance access to people, organizations, data, or documents which in some cases was denied or limited, there will be need to provide more time for further consultation with the management of the institutions. This will help explain the importance of the study during the administration of the questionnaires. It is also suggested that further literature review be done to expand knowledge on limited previous research studies on the topic particularly from developing countries. It is hoped that this will address unanswered aspects of the above research problems as well as solve problems of research quality. Further studies can be carried out by segmenting the study to the

various types of pension schemes in the country. This would provide a general pool of research findings that can be compared across classes of pension schemes for the formulation of optimal policy.

Future issues to consider in similar studies is to utilize quarterly data returns instead of monthly for funding values rather than the annual figure. To ensure exhaustive study, one could also concentrate on a limited number of pension funds of comparable size. Moreover, it is also suggested that the research could examine constructs or variables that were not included in the conceptual framework or theoretical model. Additional dependent and independent variables could be considered to investigate their effects. Such includes other firm performance measures comprising Sharpe's ratio, Return on Assets (ROA), Return on Equity (ROE), and Tobin's Q to give a clear indication of the relationship between corporate governance, investment strategy, macroeconomic variables and financial performance of pension schemes in Kenya.

Further discourse efforts may focus on the intervening and or moderating effects of factors such as value of pension assets. One could as well focus on certain classes of pension funds in the country namely First pillar, publicly managed pension schemes with defined benefits and pay-as-you-go finance; the second pillar, privately managed pension schemes; and the third pillar, personal pension plans. This would provide a general pool of research findings that can be compared across classes of pension schemes for the formulation of optimal policy. It is also suggested that future research examine the conceptual framework or test the theoretical model in a new context, location and/or culture. Establishing other factors that influence pension financial performance can help the regulators to safeguard pension funds as appropriate results are obtained.

To address the problem of multi-collinearity in macro-variables the study suggests the need to run regressions using principal components analysis (PCA). The technique, a method of multivariate statistics, removes multi-collinearity in macro-variables and enhance statistical accuracy of the results. PCA is a feature extraction technique that generates new features which are linear combination of the initial features. The characteristic feature of principal components is their uncorrelatedness, hence coefficient of principal components (PC) remained unaltered even though another PC is incorporated into the equation whereas in the case of original variables any addition/ removal of variable changes the contribution and coefficient of regression model. This holds true when multicollinearity is present in the model (Flury and Riedwyl,1988).

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APPENDICES

APPENDIX I: Macroeconomic Factors

Year	GDP Growth Rate (%)	Inflation (%)	Exchange rate (KS/US$)	NSE Market Capitalization (In Bns)	Commercial Banks weighted average lending interest rates (%)	CBK 91-Day T Bill	Balance of Payments,	NSE 20 Share Index	Unemployment rate
2012	4.60	9.38	84.66	1,270	18.15	8.300	-0.356	4,133	2.80
2013	3.80	5.72	86.20	1,940	16.99	8.925	-0.417	4,927	2.80
2014	5.00	6.88	88.08	1,685	15.99	8.931	-0.528	5,113	2.80
2015	5.00	6.58	98.70	1,918	18.3	8.513	-0.434	4,040	2.80
2016	4.20	6.30	101.52	1,800	13.66	8.440	-0.410	3,186	2.8
2017	3.80	7.98	103.39	2,400	13.64	8.010	-0.594	3,172	3.5
2018	5.60	4.69	101.33	2,200	12.51	7.340	-0.505	2,834	4.2
2019	5.10	5.20	102.15	2,500	12.24	7.170	-0.536	2,654	5.0
2020	-0.30	5.41	106.62	2,739	12.02	6.900	-0.510	1,868	5.7

APPENDIX II: Investment income of pension funds income (F1-F18)

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16	F17
Year	Kengen Staff Retirement Benefits Scheme	CIC Life Assurance Limited	Kenya Ports Authority Pension Scheme	Heritage Insurance Company	Laptrust	CPF individual pension fun	LAPTRUST (Umbrella) DC Retirement Fund	Teleposta Provident Fund	National Social Security Fund (NSSF)	Jubilee Holdings	Jubilee Life Insurance Ltd	Old Mutual Holdings	Old Mutual Holdings	Kenindia Life Insurance	APA Life Insurance	ICEA Lion Life Assurance	Britam Holdings
2012	0.951	0.002	1.125	0.714	0.830		5,182	0.951	5.304	7.940			1.748	0.413			2.020
2013	0.403	0.004	1.141	0.751	1.050	0.062	5,324	0.403	6.626	8.660		0.527	2.900	0.409	0.250	5.651	2.990
2014	0.289	0.104	1.350	0.515	1.450	0.324	5,225	0.289	7.482	9.280		0.748	4.600	0.301	0.357	5.353	3.480
2015	0.419	0.352	0.896	0.381	1.683	0.726	5,441	0.419	7.348	10.950		0.608	3.300	0.397	0.362	3.755	4.550
2016	0.487	0.295	0.799	0.478	1.909	0.038	6,370	0.487	7.863	13.050		0.868	3.100	0.353	0.310	5.443	5.220
2017	0.460	0.374	0.532	0.561	1.776	0.068	5,247	0.460	7.683	14.290	0.917	1.319	3.700	0.505	0.414	8.022	4.450
2018	0.413	0.497	1.176	0.525	1.778	0.061	6,346	0.413	7.727	17.660	1.281	0.957	2.900	1.496	0.480	7.495	6.670
2019	0.551	0.674	1.197	0.463	1.980	0.119	6,991	0.551	7.978	18.290	5.261	2.051	3.682	1.665	0.635	10.730	6.970
2020	0.512	0.113	1.080		1.832	0.222	8,698	0.512	7.921	20.390	0.104	1.448	4.129		0.622	8.708	7.930

APPENDIX III: % Return

Year	F1 Kengen Staff Retirement Benefits Scheme	F2 CIC Life Assurance Limited	F3 Kenya Ports Authority Pension Scheme	F4 Heritage Insurance Company	F5 Laptrust	F6 CPF individual pension fun	F7 LAPTRUST (Umbrella) DC Retirement Fund	F8 Teleposta Provident Fund	F9 National Social Security Fund (NSSF)	F10 Jubilee Holdings	F11 Jubilee Life Insurance Ltd	F12 Old Mutual Holdings	F13 Old Mutual Holdings	F14 Kenindia Life Insurance	F15 APA Life Insurance	F16 ICEA Lion Life Assurance	F17 Britam Holdings
2012																	
2013	(57.62)	100.00	1.42	5.18	26.51		2.74	(57.62)	24.92	9.07			65.90	(0.97)			48.02
2014	(28.29)	2,500.00	18.32	(31.42)	38.10	422.58	(1.86)	(28.29)	12.92	7.16		41.94	58.62	(26.41)	42.80	(5.27)	16.39
2015	44.98	238.46	(33.63)	(26.02)	16.07	124.07	4.13	44.98	(1.79)	18.00		(18.72)	(28.26)	31.89	1.40	(29.85)	30.75
2016	16.23	(16.19)	(10.83)	25.46	13.43	(94.77)	17.07	16.23	7.01	19.18		42.76	(6.06)	(11.08)	(14.36)	44.95	14.73
2017	(5.54)	26.78	(33.42)	17.36	(6.97)	78.95	(17.63)	(5.54)	(2.29)	9.50		51.96	19.35	43.06	33.55	47.38	(14.75)
2018	(10.22)	32.89	121.05	(6.42)	0.11	(10.29)	20.95	(10.22)	0.57	23.58	39.69	(27.45)	(21.62)	196.24	15.94	(6.57)	49.89
2019	33.41	35.61	1.79	(11.81)	11.36	95.08	10.16	33.41	3.25	3.57	310.69	114.32	26.97	11.30	32.29	43.16	4.50
2020	(7.08)	(83.23)	(9.77)	(100.00)	(7.47)	86.55	24.42	(7.08)	(0.71)	11.48	(98.02)	(29.40)	12.14	(100.00)	(2.05)	(18.84)	13.77
Average	(1.77)	354.29	6.87	(15.96)	11.39	100.31	7.50	(1.77)	5.48	12.69	84.12	25.06	15.88	18.00	15.65	10.71	20.41

APPENDIX IV: Investment income of pension funds income (F19-F35)

Year	F18 Britam Life Assurance (Kenya) Ltd pension fund	F19 Kenya Power pension fund (DB)	F20 Kenya Ports Authority Pension Scheme	F21 ICEA LION E LIFE ASSURANCE	F22 BRITISH AMERICAN INSURANCE UMBRELLA	F23 APA LIFE LIFE UMBRELLA/APA INSURANCE	F24 the Jubeilee Insurance umbrella scheme	F25 ICEA LION umbrella retirement benefit scheme	F26 CICUMBRELLA retirement benefit scheme	F27 CO--OPTRUST INVESTMENT retirement benefit scheme	F28 (Kenindia Assurance Company ltd)	F29 Mayfair Insurance	F30 Madison umbrella retirement benefit scheme	F31 Britam individual provident fund	F32 ICEA general insurance	F33 Old mutual life assurance Compay	F34 Sanlam Kenya
2012	1.072		1.125	5,941					2,146		2,261	118,158					5,441
2013	1.279	2,263,605.	1.141	5,549					1,159		2,492	292,012	497,000	76,780,975	610,450		5,324
2014	1.847	2,717,957	1.350	3,972	144,382,337				675		2,472	192,899	10,660,000	124,533,037	790,449		5,247
2015	2.568	1,159,356	0.896	5,743	121,708,380	885,251			3,168		4,017	193,601	47,660,000	110,091,441	893,258	550,885	5,182
2016	0.917	1,632,740	0.799	8,392	169,450,027	1,101,306			1,190		3,195	207,401	90,748,000	101,158,283	809,159	668,400	5,225
2017	0.803	1,876,436	0.532	7,899	258,557,286	1,061,006			-246		3,951	218,960	258,429,000	285,877,931	1,093,698	749,694	6,370
2018	3.080	878,316	1.176	11,216	288,988,306	837,343	350,827,140		3,243	1,424,171,809	4,275	244,437	422,125,000	242,449,124	745,712		6,346
2019	8.708	1,954,887	1.197	9,325	595,003,718	1,162,104	564,212,856		2,050	1,946,824,314	4,651	281,803	747,643,000	519,236,636	1,008,902		6,991
2020	4.482	717,976	1.080	12,736	415,006,546	657,743	624,363,238	29,866,247	2,849	886,643,000	5,314	354,297	1,056,521,000	424,236,636	809,039		8,698

APPENDIX V: % Return

Year	F18 Britam Life Assurance (Kenya) Ltd pension fund	F19 Kenya Power pension fund (DB)	F20 Kenya Ports Authority Pension Scheme	F21 ICEA LIONE LIFE ASSURANCE	F22 BRITISH AMERICAN INSURANCE UMBRELLA	F23 APA LIFE LIFE UMBRELLA/ APA INSURANCE	F24 the Jubeile Insurance umbrella scheme	F25 ICEA LION umbrella retirement benefit scheme	F26 CIC UMBRELLA retirement benefit scheme	F27 CO--OPTRUST INVESTMENT retirement benefit scheme	F28 (Kenindia Assurance Company ltd)	F29 Mayfair Insurance	F30 Madison umbrella retirement benefit scheme	F31 Britam individual provident fund	F32 ICEA general insurance	F33 Old mutual life assurance Compay	F34 Sanlam Kenya
2012																	
2013	19.31		1.42	(6.60)					(45.99)								(2.15)
2014	44.41	20.07	18.32	(28.42)					(41.76)			(33.94)	2,044.87	62.19	29.49		(1.45)
2015	39.04	(57.34)	(33.63)	44.59	(15.70)				369.33			0.36	347.09	(11.60)	13.01		(1.24)
2016	(64.29)	40.83	(10.83)	46.13	39.23	24.41			(62.44)			7.13	90.41	(8.11)	(9.41)	21.33	0.83
2017	(12.43)	14.93	(33.42)	(5.87)	52.59	(3.66)			(120.67)			5.57	184.78	182.60	35.16	12.16	21.91
2018	283.56	(53.19)	121.05	41.99	11.77	(21.08)			(1,418.29)		8.20	11.64	63.34	(15.19)	(31.82)	(100.00)	(0.38)
2019	182.73	122.57	1.79	(16.86)	105.89	38.78	60.82		(36.79)	36.70	8.80	15.29	77.11	114.16	35.29		10.16
2020	(48.53)	(63.27)	(9.77)	36.58	(30.25)	(43.40)	10.66		38.98	(54.46)	14.25	25.73	41.31	(18.30)	(19.81)		24.42
Average	55.47	3.51	6.87	13.94	27.25	(0.99)	35.74		(164.70)	(8.88)	10.42	4.54	406.99	43.68	7.42	(22.17)	6.51

APPENDIX VI: Investment income of pension funds income (F36-F46)

	F35	F36	F37	F38	F39	F40	F41	F42	F43	F44	F45	F46

Year	CIC insurance group	East Africa Reisurrancecompany Ltd. (in millions)	ZamaraFanaka Retirement Fund	Kenya Power pension fund (DC)	The Kenya Alliance Insurance Company Ltd umbrella Fund	OLD MUTUAL LIFE ASSURANCE COMPANY	UAP Holdings Plc	Liberty Life Assurance Kenya Limited	Liberty Life Assurance Kenya Limited	Fusion Umbrella Retirement Benefits Scheme	Ngao Umbrella Pension Scheme	CICAM Umbrella Retirement Fund
2012	8,901,993		112,216,654.000		208,095,843.000		2,957.000	2,028,137	2,028,137		8,901,993	118,158
2013	10,887,100		67,745,582.000	755,464.000	193,493,598.000	527,562.000	3,727.000	2,304,937	2,304,937	64,081,000	10,887,100	292,012
2014	14,519,875	406	146,392,066.000	1,005,762.000	181,529,667.000	748,306.000	5,424.000	2,027,000	2,027,000	324,418,000	14,519,875	192,899
2015	13,017,360	830	195,611,446.000	686,089.000	265,852,998.000	550,885.000	4,442.000	1,536,593	1,536,593	725,996,000	13,017,360	193,601
2016	13,826,552	607	227,317,669.000	722,938.000		668,400.000	6,275.000	2,098,697	2,098,697	2,112,391,000	13,826,552	207,401
2017	15,608,262	659	202,918,296.000	1,342,091.000		749,694.000	5,568.000	1,719,571	1,719,571	4,753,183,000	15,608,262	218,960
2018	14,261,486	677	242,510,193.000	243,725.000	332,048,530.000			1,824,470	1,824,470	7,858,929,000	14,261,486	244,437
2019	14,396,887			2,039,307.000	285,568,014.000		3,833.000	1 675 710	1 675 710	13,876,978,000	14,396,887	281,803
2020	13,938,978			715,607.000			4,128.929	1 904 538	1 904 538	16,594,036,000	13,938,978	354,297

APPENDIX VII: % Return

	F35	F36	F37	F38	F39	F40	F41	F42	F43	F44	F45	F46

Year	CIC insurance group	East Africa Reisurranc ecompany Ltd. (in millions)	ZamaraFa naka Retirement Fund	Kenya Power pension fund (DC)	The Kenya Alliance Insurance Company Ltd umbrella Fund	OLD MUTUAL LIFE ASSURAN CE COMPAN Y	UAP Holdings Plc	Liberty Life Assurance Kenya Limited	Liberty Life Assurance Kenya Limited	Fusion Umbrella Retirement Benefits Scheme	Ngao Umbrella Pension Scheme	CICAM Umbrella Retirement Fund
2012												
2013	22.30		(39.63)		(7.02)		26.04	13.65	13.65			
2014	33.37		116.09	33.13	(6.18)	41.84	45.53	(12.06)	(12.06)	406.26		(33.94)
2015	(10.35)	104.43	33.62	(31.78)	46.45	(26.38)	(18.10)	(24.19)	(24.19)	123.78		0.36
2016	6.22	(26.87)	16.21	5.37	(100.00)	21.33	41.27	36.58	36.58	190.96		7.13
2017	12.89	8.57	(10.73)	85.64		12.16	(11.27)	(18.06)	(18.06)	125.01		5.57
2018	(8.63)	2.73	19.51	(81.84)		(100.00)	(100.00)	6.10	6.10	65.34	(8.63)	11.64
2019	0.95	(100.00)	(100.00)	736.72	(14.00)					76.58	0.95	15.29
2020	(3.18)			(64.91)	(100.00)		7.72			19.58	(3.18)	25.73
Average	6.70	(2.23)	5.01	97.48	(30.12)	(10.21)	(1.26)	0.34	0.34	143.93	(3.62)	4.54

APPENDIX VIII: Investment Income of pension funds income (F47-F57)

	F47	F48	F49	F50	F51	F52	F53	F54	F55	F56	F57
Year	Zamara Vuna Pension Plan	Mercantile Personal Provident Fund Scheme	Pan Africa Life Personal Pension Plan	Minet Individual Pension Plan	Kivuli Umbrella Fund	Pioneer Assurance Individual Retirement Benefits Scheme	Stanlib Individual Pension Plan	Mafao Fund	GA Life Personal Provident Plan	GA Life Personal Pension Plan	Mercantile Personal Provident Fund Scheme
2012		2,261		2,146	5,441	2,261	5,441	5,941	118,158		1.75
2013	76,780,975	2,492	610,450	1,159	5,324	2,492	5,324	5,549	292,012	497,000	2.90
2014	124,533,037	2,472	790,449	675	5,247	2,472	5,247	3,972	192,899	10,660,000	4.60
2015	110,091,441	4,017	893,258	3,168	5,182	4,017	5,182	5,743	193,601	47,660,000	3.30
2016	101,158,283	3,195	809,159	1,190	5,225	3,195	5,225	8,392	207,401	90,748,000	3.10
2017	285,877,931	3,951	1,093,698	(246)	6,370	3,951	6,370	7,899	218,960	258,429,000	3.70
2018	242,449,124	4,275	745,712	3,243	6,346	4,275	6,346	11,216	244,437	422,125,000	2.90
2019				2,050	6,991	4,651	6,991	9,325	281,803	747,643,000	3.68
2020				2,849	8,698	5,314	8,698	12,736	354,297	1,056,521,000	4.13

APPENDIX IX: % Return

Year	F47 Zamara Vuna Pension Plan	F48 Mercantile Personal Provident Fund Scheme	F49 Pan Africa Life Personal Pension Plan	F50 Minet Individual Pension Plan	F51 Kivuli Umbrella Fund	F52 Pioneer Assurance Individual Retirement Benefits Scheme	F53 Stanlib Individual Pension Plan	F54 Mafao Fund	F55 GA Life Personal Provident Plan	F56 GA Life Personal Pension Plan	F57 Mercantile Personal Provident Fund Scheme
2012											
2013					(2.15)		(2.15)	(6.60)	147.14		
2014	62.19		29.49	(41.76)	(1.45)	(0.80)	(1.45)	(28.42)	(33.94)	2,044.87	
2015	(11.60)	62.50	13.01	369.33	(1.24)	62.50	(1.24)	44.59	0.36	347.09	
2016	(8.11)	(20.46)	(9.41)	(62.44)	0.83	(20.46)	0.83	46.13	7.13	90.41	
2017	182.60	23.66	35.16	(120.67)		23.66	21.91	(5.87)	5.57	184.78	
2018	(15.19)	8.20	(31.82)	(1,418.29)		8.20	(0.38)	41.99	11.64	63.34	(21.62)
2019	(100.00)	(100.00)	(100.00)	(36.79)	10.16					77.11	26.90
2020				38.98	24.42		24.42			41.31	12.23
Average	**18.32**	**(5.22)**	**(10.60)**	**(181.66)**	**5.10**	**14.62**	**5.99**	**15.30**	**22.98**	**406.99**	**5.83**

APPENDIX X: Study variables of the pension funds (CG Index – Raw data)

Total score	27	18	9	12	6	6	9	63	
Fund	Board structure and composition	Board Responsibilities	Shareholder´s Rights	Disclosure and transparency	Commitment to Corporate governance	Role of stakeholders	Stakeholders interests in board decisions	IS INDEX	% Combined ROI of pension funds
1	8	7	-3	3	-1	1	7	8	-1.77
2	26	18	-4	11	-5	5	7	61	354.29
3	14	12	-4	4	-3	1	4	30	6.87
4	7	5	-3	3	-1	1	6	5	(2.80)
5	18	15	-3	5	-3	2	4	34	11.39
6	25	16	-4	10	3	3	4	60	79.58
7	26	17	-3	11	-4	5	4	62	100.31
8	14	13	-4	8	-3	1	0	30	7.50
9	8	7	-4	3	-3	1	5	8	(1.77)
10	18	14	-5	8	-4	4	3	32	12.69
11	19	15	-2	7	-3	1	8	35	17.46
12	26	17	-5	11	-1	5	7	62	84.12
13	22	16	-3	10	-2	2	7	45	25.06
14	18	14	-3	11	-4	1	5	35	15.88
15	19	15	-4	9	-3	2	6	39	18.00
16	19	14	-2	10	-3	1	5	36	15.65
17	18	9	-5	5	-3	4	4	31	10.71
18	20	15	0	9	-1	2	2	40	20.41
19	24	17	-3	11	-6	4	5	56	55.47
20	14	9	-4	6	-3	3	5	27	3.51
21	15	12	-4	8	-3	1	2	30	6.87
22	18	14	-2	7	-2	1	4	33	13.94

Total score	27	18	9	12	6	6	9	63	
Fund	Board structure and composition	Board Responsibilities	Shareholder´s Rights	Disclosure and transparency	Commitment to Corporate governance	Role of stakeholders	Stakeholders interests in board decisions	IS INDEX	% Combined ROI of pension funds
23	23	17	-4	9	-2	2	0	46	27.25
24	8	8	-1	4	3	1	6	7	(0.99)
25	23	17	-2	7	0	2	9	47	35.74
26	13	8	-4	5	-1	2	6	6	-
27	18	14	-2	11	-6	1	3	32	12.48
28	4	3	-4	4	-2	1	6	5	(8.88)
29	18	14	-2	8	-2	1	2	36	13.13
30	21	15	0	10	-1	2	4	40	22.36
31	17	13	0	9	-2	3	4	31	8.82
32	23	17	-3	4	-4	3	6	52	43.68
33	13	13	-3	4	-2	2	1	30	7.42
34	2	1	-3	2	-2	1	0	0	(22.17)
35	14	12	-2	4	-5	1	2	31	6.51
36	14	13	0	5	-5	2	-1	32	6.70
37	6	8	-4	3	-5	4	0	7	(2.23)
38	14	13	1	10	1	0	-2	28	5.01
39	25	17	-2	11	-6	5	1	60	97.48
40	1	0	-3	2	-5	1	8	0	(30.12)
41	2	2	-6	2	-3	1	7	1	(10.21)
42	7	12	-7	1	-3	3	7	5	(1.26)
43	14	14	-7	5	-3	3	5	15	0.34

Fund	Board structure and composition 27	Board Responsibilities 18	Shareholder´s Rights 9	Disclosure and transparency 12	Commitment to Corporate governance 6	Role of stakeholders 6	Stakeholders interests in board decisions 9	IS INDEX 63	% Combined ROI of pension funds
44	26	18	-6	11	1	5	5	62	143.93
45	20	16	-7	10	-3	4	5	55	43.68
46	15	14	-4	5	3	3	2	33	6.70
47	7	1	-5	2	-3	1	3	1	(11.58)
48	22	15	-2	10	1	2	1	37	22.36
49	20	14	-1	10	2	2	-1	36	20.29
50	23	16	-4	9	-4	3	8	39	25.72
51	24	16	-3	9	-1	2	5	40	27.22
52	14	12	5	9	-1	4	6	33	13.30
53	14	15	4	8	-1	1	8	32	12.48
54	18	14	-4	7	5	3	5	30	7.42
55	13	13	-5	7	-2	1	4	26	4.66
56	15	13	0	9	-1	1	0	33	13.30
57	14	15	-4	8	-1	1	5	34	15.11

The table header's top row shows "Total score" at left.

APPENDIX XI: Study variables of the pension funds (CG Index - processed data)

Fund	Board structure and composition	Board Responsibilities	Shareholder´s Rights	Disclosure and transparency	Commitment to Corporate governance	Role of stakeholders	Stakeholders interests in board decisions	IS INDEX	COMBINED ROI OF PENSION FUNDS
1	0.30	0.39	-0.33	0.25	-0.17	0.17	0.78	0.13	-1.77
2	0.96	1.00	-0.44	0.92	-0.83	0.83	0.78	0.97	354.29
3	0.52	0.67	-0.44	0.31	-0.45	0.17	0.44	0.48	6.87
4	0.26	0.28	-0.33	0.25	-0.17	0.17	0.67	0.08	(2.80)
5	0.67	0.83	-0.33	0.42	-0.50	0.33	0.44	0.54	11.39
6	0.93	0.89	-0.44	0.83	0.50	0.50	0.44	0.95	79.58
7	0.96	0.94	-0.33	0.92	-0.67	0.83	0.44	0.98	100.31
8	0.52	0.72	-0.44	0.67	-0.50	0.17	0.00	0.48	7.50
9	0.30	0.39	-0.39	0.25	-0.50	0.17	0.56	0.13	(1.77)
10	0.67	0.78	-0.56	0.67	-0.70	0.67	0.33	0.51	12.69
11	0.70	0.83	-0.22	0.58	-0.50	0.17	0.89	0.56	17.46
12	0.96	0.94	-0.50	0.92	-0.12	0.83	0.80	0.98	84.12
13	0.81	0.89	-0.38	0.83	-0.38	0.33	0.82	0.71	25.06
14	0.67	0.78	-0.33	0.92	-0.67	0.17	0.56	0.56	15.88
15	0.70	0.83	-0.44	0.75	-0.50	0.33	0.67	0.62	18.00
16	0.70	0.78	-0.22	0.83	-0.50	0.17	0.56	0.57	15.65
17	0.67	0.50	-0.56	0.42	-0.50	0.67	0.44	0.49	10.71
18	0.74	0.83	0.00	0.75	-0.17	0.33	0.22	0.63	20.41
19	0.89	0.94	-0.33	0.92	-1.00	0.67	0.56	0.89	55.47
20	0.52	0.50	-0.44	0.50	-0.50	0.50	0.56	0.43	3.51
21	0.56	0.67	-0.44	0.67	-0.50	0.17	0.22	0.48	6.87
22	0.67	0.78	-0.22	0.58	-0.33	0.17	0.44	0.52	13.94
23	0.85	0.94	-0.44	0.75	-0.33	0.33	0.00	0.73	27.25

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Fund	Board structure and composition	Board Responsibilities	Shareholder´s Rights	Disclosure and transparency	Commitment to Corporate governance	Role of stakeholders	Stakeholders interests in board decisions	IS INDEX	COMBINED ROI OF PENSION FUNDS
24	0.30	0.44	-0.11	0.33	0.50	0.17	0.67	0.11	(0.99)
25	0.85	0.94	-0.22	0.58	0.00	0.33	1.00	0.75	35.74
26	0.48	0.44	-0.44	0.42	-0.17	0.33	0.67	0.10	-
27	0.67	0.78	-0.22	0.92	-1.00	0.17	0.33	0.51	12.48
28	0.15	0.17	-0.44	0.33	-0.33	0.17	0.67	0.08	(8.88)
29	0.67	0.78	-0.22	0.67	-0.33	0.17	0.22	0.57	13.13
30	0.78	0.83	0.00	0.83	-0.17	0.33	0.44	0.63	22.36
31	0.63	0.72	0.00	0.75	-0.33	0.50	0.44	0.49	8.82
32	0.85	0.94	-0.33	0.33	-0.67	0.50	0.67	0.83	43.68
33	0.48	0.72	-0.33	0.33	-0.33	0.33	0.11	0.48	7.42
34	0.07	0.06	-0.33	0.17	-0.33	0.17	0.00	0.00	(22.17)
35	0.52	0.67	-0.22	0.33	-0.83	0.17	0.22	0.49	6.51
36	0.52	0.72	0.00	0.42	-0.83	0.33	-0.11	0.51	6.70
37	0.22	0.44	-0.44	0.25	-0.83	0.67	0.00	0.11	(2.23)
38	0.52	0.72	0.11	0.83	0.17	0.00	-0.22	0.44	5.01
39	0.93	0.94	-0.22	0.92	-1.00	0.83	0.11	0.95	97.48
40	0.04	0.00	-0.33	0.17	-0.83	0.17	0.89	0.00	(30.12)
41	0.07	0.11	-0.67	0.17	-0.50	0.17	0.78	0.02	(10.21)
42	0.26	0.67	-0.78	0.08	-0.50	0.50	0.78	0.08	(1.26)
43	0.52	0.78	-0.78	0.42	-0.50	0.50	0.56	0.24	0.34
44	0.96	1.00	-0.67	0.92	0.17	0.83	0.56	0.98	143.93
45	0.74	0.89	-0.78	0.83	-0.50	0.67	0.56	0.87	43.68
46	0.56	0.78	-0.44	0.42	0.50	0.50	0.22	0.52	6.70

Fund	Board structure and composition	Board Responsibilities	Shareholder´s Rights	Disclosure and transparency	Commitment to Corporate governance	Role of stakeholders	Stakeholders interests in board decisions	IS INDEX	COMBINED ROI OF PENSION FUNDS
47	0.26	0.06	-0.56	0.17	-0.50	0.17	0.33	0.02	(11.58)
48	0.81	0.83	-0.22	0.83	0.17	0.33	0.11	0.59	22.36
49	0.74	0.78	-0.11	0.83	0.33	0.33	-0.11	0.57	20.29
50	0.85	0.89	-0.44	0.75	-0.67	0.50	0.89	0.62	25.72
51	0.89	0.89	-0.33	0.75	-0.17	0.33	0.56	0.63	27.22
52	0.52	0.67	0.56	0.75	-0.17	0.67	0.67	0.52	13.30
53	0.52	0.83	0.44	0.67	-0.17	0.17	0.89	0.51	12.48
54	0.67	0.78	-0.44	0.58	0.83	0.50	0.56	0.48	7.42
55	0.48	0.72	-0.56	0.58	-0.33	0.17	0.44	0.41	4.66
56	0.56	0.72	0.00	0.75	-0.17	0.17	0.00	0.52	13.30
57	0.52	0.83	-0.44	0.67	-0.17	0.17	0.56	0.54	15.11

APPENDIX XII: Descriptive statistics of study variables

Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
Board structure and composition	57	.04	.96	.5989	.24476	-.518	.316	-.349	.623
Board Responsibilities	57	.00	1.00	.6954	.25208	-1.349	.316	1.110	.623
Shareholder´s Rights	57	-.78	.56	-.3247	.25334	1.112	.316	2.742	.623
Disclosure and transparency	57	.08	.92	.5905	.25361	-.338	.316	-1.211	.623
Commitment to Corporate governance	57	-1.00	.83	-.3447	.39216	.798	.316	.846	.623
Role of stakeholders	57	.00	.83	.3661	.22468	.760	.316	-.535	.623
Stakeholders interests in board decisions	57	-.22	1.00	.4577	.29834	-.400	.316	-.622	.623
IS INDEX	57	.00	.98	.5016	.27722	-.177	.316	-.496	.623
GDP Growth Rate (%)	9	-.30	5.60	4.0889	1.75602	-2.329	.717	6.098	1.400
Inflation (%)	9	4.69	9.38	6.4600	1.47580	.969	.717	.619	1.400
Exchange rate (KS/US$)	9	84.66	106.62	96.9611	8.29485	-.653	.717	-1.489	1.400
NSE Market Capitalization (In Bns)	9	1270.00	2739.00	2050.2222	454.95461	-.135	.717	-.356	1.400
Commercial Banks weighted average lending interest rates (%)	9	12.02	18.30	14.8333	2.54573	.333	.717	-1.830	1.400
CBK 91-Day T Bill	9	6.90	8.93	8.0588	.75603	-.429	.717	-1.372	1.400
Balance of Payments,	9	-.59	-.36	-.4767	.07601	.119	.717	-.892	1.400
NSE 20 Share Index	9	1868.00	5113.00	3547.4444	1080.45154	.111	.717	-.897	1.400
Unemployment rate	9	2.80	5.70	3.6000	1.11467	1.121	.717	-.153	1.400
Combined ROI of pension funds	46	-1.77	354.29	32.6311	57.02374	4.398	.350	23.013	.688
Valid N (listwise)	7								

APPENDIX XIII: Table 43 of the RBA: Investment Guidelines

Item	Categories of Assets	Maximum percentage of aggregate financial performance of total assets of scheme or pooled fund
1.	Cash and Demand Deposits in institutions licensed under the Banking Act of the Republic of Kenya	5%
2.	Fixed Deposits, Time Deposits and Certificates of Deposits in Institutions licensed under the Banking Act of the Republic of Kenya	30%
3.	Commercial Paper, Corporate Bonds, Mortgage Bonds and loan stocks approved by the Capital Markets Authority and collective investment schemes incorporated in Kenya and approved by the Capital Markets Authority reflecting this category	30%
4.	4. Kenya Government Securities and collective investment schemes incorporated in Kenya and approved by the Capital Markets Authority reflecting this category	70%
5.	Preference shares and ordinary shares of companies quoted in a stock exchange in Kenya, Uganda or Tanzania and collective investment schemes incorporated in Kenya and approved by the Capital Markets Authority reflecting this category	70%
6.	Unquoted shares of companies incorporated in Kenya and collective investment schemes incorporated in Kenya and approved by the Capital Markets Authority reflecting this category	5%
7.	Offshore investments in bank deposits, government securities, quoted equities and rated Corporate Bonds and offshore collective investment schemes reflecting these assets	15%
8.	Immovable property in Kenya and units in property Unit Trust Schemes incorporated in Kenya and collective investment schemes incorporated in Kenya and approved by the Capital Markets Authority reflecting this category	30%
9.	Guaranteed Funds	100%
10.	Any other assets	5%

Source: RBA (2016)

APPENDIX XIV: Survey Questionnaire

I. General Information

1. Name of the pension Fund.

....

2. When was the scheme/fund established?

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....

3.   Ownership. Is your organization a
i)   Private occupational   ( )
ii)   Public   ( )
iii)   Mixed system   ( )
4.   How long has your scheme been in existence?
i)   Less than 1 Year   ( )
ii)   3 Years   ( )
iii)   4- 6 Years   ( )
iv)   More than 7 years   ( )

2.   Is the scheme contributory or non-contributory?
……………………………………………………………………………
3.   Is the scheme Define Contribution or Defined Benefit?
……………………………………………………………………………
4.   Staff Level (size)
....
5.   Name of respondent (optional)
....
6.   Performance of respondent
i.   Member Elected
ii.   Trustee Sponsor
iii.   Elected Trustee
iv.   Corporate Trustee Scheme Administrator
v.   Scheme Manager Scheme
vi.   Custodian Scheme Actuary
vii.   Other (specify)

II.Corporate governance (CG)

The quality of governance of Kenyan pension funds, the Kenya Pension Fund Governance Index (KPGI) will be measured using a model that will be based on the revised OECD Principles of Corporate governance (OECD, 2016). The KPGI will comprise eight sub-indices showing governance quality with regard to foundations for management and oversight, board structure and composition, board responsibilities, board procedures, shareholder´s rights, disclosure and transparency, commitment to corporate governance, and role of stakeholders.

The different CG principals are represented by specific questions as indicated below. The respondents, will be asked to grade the CG principal of their retirement benefit funds on a five Likert scale with -3 as strong disagreement and 3 as strong agreement. Since the Likert scale measure is categorical and ordinal, the median used to determine the average score for each indicator.

Table 210:

	Strongly agree	**Agree**	**Slightly agree**	**Slightly disagree**	**Disagree**	**Strongly disagree**
Score	3	2	1	-1	-2	-3

Table 211: Corporate governance (CG) Survey Questionnaire

Principle of corporate governance	Best practice and Assessment criteria Please indicate your agreement or disagreement with the statements below. There are no wrong answers	Strongly agree	Agree	Slightly agree	Slightly disagree	Disagree	Strongly disagree
1. **Board structure and composition**	1.1. **Board independence**. The pension fund has at least 50 percent outside directors						
	1.2. **CEO duality** The Chairman of the Board and the CEO not the same person (CEO's duality) (0 for Same person occupies the post of chairman and chief executive and 1 for separate).						
	1.3. **The CEO.** The fund has a full-time CEO						
	1.4. **The chairman.** The board chairman is an outside director						
	1.5. **Audit committee**. The fund has the Audit committee						
	1.6. **Size of audit committee.** Total numbers of audit committee members ranges between 2-4.						
	1.7. The number of meeting of audit committee. The audit committee members meet at least quarterly						
	1.8. **Board size.** The number of board members ranges between 5-7.						
	1.9. **Compensation committee.** The fund has a compensation committee (Remuneration of directors)						
	Subtotal score						
2. **Board Responsibilities**	2.1. The board sets performance objectives and monitors implementation						
	2.2. The board takes into account the interests of other stakeholders and applies high ethical standards.						
	2.3. The board establishes board of directors' committees (audit committee, remuneration committee, and human resource committee)						
	2.4. The board monitors executive performance. Annual review of the minimum required return						
	2.5. The board has a committee or committees to oversee risk						

Principle of corporate governance	Best practice and Assessment criteria Please indicate your agreement or disagreement with the statements below. There are no wrong answers	Strongly agree	Agree	Slightly agree	Slightly disagree	Disagree	Strongly disagree
	2.6. The board oversees the implementation of the code of conduct						
	Subtotal score						
3. Shareholder´s Rights	3.1. The fund has a charter established for arbitration to resolve corporate conflicts						
	3.2. The fund facilitates participation of minority shareholders in shareholder meetings to enable them contribute to key corporate decisions.						
	3.3. The Fund treats equally all shareholders and ensures equal access to corporate information.						
	Subtotal score						
4. Disclosure and transparency	4.1. The fund has a written policy for complying with its continuous disclosure obligations under the Listing Rules.						
	4.2. The fund makes timely and accurate disclosure on all material matters regarding the corporation.						
	4.3. The fund adopts internationally accepted accounting standards when preparing their financial reports						
	4.4. An independent external audit is conducted of the financial reports						
	Subtotal score						
5. Commitment to Corporate governance	5.1. The fund has a corporate governance code of ethics and/or policies of good corporate governance practices						
	5.2. The fund has a designated officer responsible for ensuring compliance with the company's corporate governance policies and code of ethics						
	Subtotal score						
6. Role of stakeholders	6.1. Legal and mutually established rights of stakeholders are respected						
	6.2. Stakeholders have the right to whistle blow to the board without risk of retribution						
7. Stakeholders	7.1. Pension fund has indicators of stakeholder approach to corporate						

Principle of corporate governance	Best practice and Assessment criteria Please indicate your agreement or disagreement with the statements below. There are no wrong answers	Strongly agree	Agree	Slightly agree	Slightly disagree	Disagree	Strongly disagree
interests in board decisions	governance(board diversity, and stakeholder engagement)						
	7.2. Pension fund has a Corporate social responsibility (CSR) board committee with explicit CSR function						
	7.3. CSR is a function at board diversity and engagement level (there is evidence of dealing with customers, employees, and external stakeholders-local communities, NGOs and the government)						
	Subtotal score						
	Grand total score						

III.Investment Strategy: Investment Strategy Survey Questionnaire

The study will explore the univariate nature of the independent variable investment strategy. Staff members will be asked to respond to the Investment strategy questions as a factor in influencing fund growth. The respondents, will be asked to grade the investment strategy indicators of their retirement benefit funds on a five Likert scale with -3 as strong disagreement and 3 as strong agreement. Since the Likert scale measure is categorical and ordinal, the median used to determine the average score for each indicator.

Table 212:

	Strongly agree	Agree	Slightly agree	Slightly disagree	Disagree	Strongly disagree
Score	3	2	1	-1	-2	-3

Table 213: IsIndex

| Investment Strategies adopted by pension funds

Please indicate your agreement or disagreement with the statements below. There are no wrong answers	Strongly agree	Agree	Slightly agree	Slightly disagree	Disagree	Strongly disagree
1. Investment policy fully documented and publicly available						
2. The Fund increased its reliance on relevant professional advisors in making investment decisions.						
3. The investment policy was used to guide investments of pension funds						
4. Asset allocation. Does the fund diversifying across asset classes?						
5. The fund employs best practice investment regulations that cover objectives and general principles, investment organization, investment guidelines and controlling and reporting						
6. The fund has a target rate of return based on a long-term funding ratio objective						
7. All major risks have been identified and taken into consideration in forming the investment policy						
8. The fund has a risk management plan						
9. Supervision is risk-based						
10. Supervision is based on a prudent person standard						
11. The Investment strategies of market timing was employed in investment strategies of pension assets						
12. The Fund's assets are more diversified in different asset classes as compared to the past						
13. The Investment strategies of Security selection was employed in investment strategies of pension assets						
14. Investment parameters are defined in terms of restrictions						

Investment Strategies adopted by pension funds Please indicate your agreement or disagreement with the statements below. There are no wrong answers	Strongly agree	Agree	Slightly agree	Slightly disagree	Disagree	Strongly disagree
and prohibitions or in terms of modern portfolio concept						
15. The fund has a detailed analysis of asset structuring						
16. The fund has a clear process for evaluating and selecting external managers.						
17. The pension fund employed below regulatory restrictions on performance:						
18. Minimum return guarantee in investment strategies of pension assets						
19. Investment only in authorized instruments of pension assets.						
20. Limits by instruments.						
21. Limits by set of instruments of pension assets						
22. Limits by issuer of pension assets						
23. Limits by risk minimum return guarantees of pension assets						
24. Foreign limits of pension assets (restrictions on portfolio non performance)						
25. Passive portfolio management was employed in investment strategies of pension assets.						
26. Active portfolio management was employed in investment strategies of pension assets.						
27. The Fund provides quarterly or annually reports on the status of investments						

Note: The investment organization governs the duties and competencies associated with the investment process. The investment guidelines govern the investment strategy, the investment style, the investment form and the approved investment instruments

APPENDIX XV: Individual retirement benefits schemes registered with RBA as at 31st December 2020

Scheme Postal	Postal Address	Telephone No
1. Amana Personal Pension Plan	9480-00100 Nairobi	313356
2. Apollo Insurance Co. Ltd. Individual Pension Arrangement	30389 Nairobi	223562
3. Benefits At Work Personal Pension Scheme	27932-00100 Nairobi	0700688248
4. Blue MSMEs Jua Kali Individual Retirement Benefits Scheme (Mbao Pension Plan)	30664-0000 Nairobi	4946500
5. British American Personal Pension Plan	30375-00100 Nairobi	2710927
6. CFC Life Individual Pension Plan	30364-00100 Nairobi	2866000
7. Chancery Personal Pension Plan	55537-00200 Nairobi	2711555
8. CIC (Jipange Personal Pension Plan)	59485-00200 Nairobi	2823000
9. NCBA Individual Pension Plan	30437-00100 Nairobi	2884000
10. CPF Individual Pension Scheme	28938-00200 Nairobi	2248408
11. Cytonn Personal Retirement Benefits Scheme	20695-00200 Nairobi	0709 101000
12. Dry Associates Personal Provident Plan	684-00606 Nairobi	4450520
13. Enwealth Diaspora & Expatriates Retirement Fund	52840-00200 Nairobi	8160312 i
14. Enwealth Personal Pension Scheme	52840-00200 Nairobi	
15. Fahari Retirement Plan	52439-00200 Nairobi	4969000
16. GA Life Personal Provident Plan	42166-00100 Nairobi	271633 i
17. GA Life Personal Pension Plan	42166-00100 Nairobi	271633
18. Gencap Individual Pension Plan	9959-00100 Nairobi	0709185000
19. ICEA Lion Individual Retirement Benefits Scheme	46143 Nairobi	221652
20. Jubilee Insurance Company Ltd Personal Pension Plan	30376 Nairobi	340343
21. Kenindia Assurance Co. Ltd. Personal	30377 Nairobi	316099

Scheme Postal	Postal Address	Telephone No
Pension Plan		
22. Kenyan Alliance Insurance Co. Ltd. Individual Retirement Benefits Scheme	30170 Nairobi	241626
23. Madison Insurance Personal Pension Plan	47382 Nairobi	2721970
24. Mafao Fund	58013-00200 Nairobi	703071000
25. Mercantile Personal Provident Fund Scheme	20680-00200 Nairobi	2243681
26. Minet Individual Pension Plan	48279-00100 Nairobi	4974000
27. Mwavuli Individual Pension Plan	10472-00100 Nairobi	2220099
28. NTISL Personal Pension Plan	72866-00200 Nairobi	2828356
29. The Heritage AII Company Ltd. Individual Retirement Benefits Scheme	30390-00100 Nairobi	3749118
30. The Kenya Orient Individual Pension Plan	34530-00100 Nairobi	2728603
31. The Monarch Personal Pension Plan	44003 Nairobi	310048
32. Octagon Personal Pension Scheme	10034-00100 Nairobi	0708726830/ 0732343595
33. Old Mutual Individual Retirement Benefits Scheme	30059-00100 Nairobi	2829000
34. Pan Africa Life Personal Pension Plan	44041-00100 Nairobi	247600
35. Prudential Individual Retirement Benefits Scheme	25093 -00100 Nairobi	2712591/2
36. Pioneer Assurance Individual Retirement Benefits Scheme	20333-00200 Nairobi	2220814
37. Stanlib Individual Pension Plan	30550-00100 Nairobi	3268508
38. UAP Life Assurance Individual Retirement Benefits Plan	43013-00100 Nairobi	2850000
39. Wakili Personal Retirement Benefits Scheme	72219-00200 Nairobi	0709 087000
40. Zamara Vuna Pension Plan	52439-00200 Nairobi	4969000
41. Zimele Personal Pension Plan	76528-00508 Nairobi	246273

APPENDIX XVI: Umbrella retirement benefits schemes registered with RBA as at 31st December 2020

Schemes set up by companies who have fulfilled the requirements of registration according to the Retirement Benefits Act and Regulations. Their purpose is to pool companies, usually small or medium size, which may not find it financially viable to establish their own retirement, benefits schemes.

Scheme Postal	Postal Address	Telephone No
1. Amana Umbrella Pension Scheme	9480-00100 Nairobi 313356	313356
2. APA Life Umbrella Retirement Fund	30389-00100 Nairobi	3641000
3. British American Insurance Umbrella Retirement Fund	30375-00100 Nairobi	2710927.
4. CFC Life Assurance Ltd Umbrella Fund	30364-00100 Nairobi	2866000
5. CIC Umbrella Retirement Benefits Scheme	59485-00200 Nairobi	2823000
6. CICAM Umbrella Retirement Fund	59485-00200 Nairobi	2823000 0703 099132
7. Co-optrust Investment Retirement Benefits Scheme	48231-00100 Nairobi	070 3071000
8. County Pension Fund	28938-00200 Nairobi	2046901
9. Cytonn Umbrella Retirement Benefits Scheme	20695-00200 Nairobi	0709 101000
10. Enwealth Umbrella Fund	52840-00200 Nairobi	020-8160312
11. Fusion Umbrella Retirement Benefits Scheme	47538-00100 Nairobi	27101149
12. ICEALION Umbrella Retirement Benefits Scheme	46143-00100 Nairobi	2750000
13. ICEALION Guaranteed Umbrella Fund	46143-00100 Nairobi	2750000
14. Kenindia Umbrella Provident Fund	30377-00100 Nairobi	3310699
15. Kenya Orient Umbrella Pension Fund	34530-00100 Nairobi	2728603
16. Kivuli Umbrella Fund	79217-00200 Nairobi	2323343
17. Madison Umbrella Retirement Benefits Scheme	47382-00100 Nairobi	2864000
18. Minet Kenya Umbrella Retirement Fund	20102-00200 Nairobi	4975000
19. Mwavuli Pension Fund	15850-00100 Nairobi	2220099

Scheme Postal	Postal Address	Telephone No
20. Ngao Umbrella Pension Scheme	30375-00100 Nairobi	2710927
21. Octagon Umbrella Retirement Benefits Scheme	10034-00100 Nairobi	6001948
22. Old Mutual Umbrella Retirement Benefits Scheme	30059-00100 Nairobi	2728881
23. Sanlam Umbrella Retirement Fund	44041-00100 Nairobi	2781000
24. Pioneer Umbrella Retirement Fund	20333-00200 Nairobi	2220814
25. Prudential Umbrella Retirement Benefits Scheme	25093 -00100 Nairobi	2712591/2
26. Suluhu Umbrella Scheme	58013-00200 Nairobi	2717137
27. Takaful Umbrella Fund	1811-00100 Nairobi	2725134
28. The Jubilee Insurance Umbrella Scheme	30376-00100 Nairobi	3281000
29. The Kenyan Alliance Insurance Company Limited Umbrella Fund	30170 Nairobi	221449
30. The Monarch Umbrella Retirement Fund	44003-00100 Nairobi	310032
31.UAP Umbrella Retirement Benefits Scheme	23842-00100 Nairobi	2850000
32. Zamara Fanaka Retirement Fund (Provident & Pension Sections)	52439-00200 Nairobi	4969000