ANTECEDENTS OF INVESTMENT MANAGEMENT STRUCTURE CHOICE AMONG INSURANCE COMPANIES IN KENYA

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Antecedents of Investment Management Structure Choice among Insurance Companies in Kenya

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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This thesis has been submitted for examination with our approval as the University Supervisors.

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DEDICATION

To my daughter Sandra Gatwiri for her resilience and support.

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Other than the gratitude expressed here, I bear the responsibility over this work and any errors or opinions therein.

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ABBREVIATIONS AND ACRONYMS

AuM	Assets under Management
AICD	Australian Institute of Company Directors
BCG	Boston Consulting Group
BNY	Bank of New York
CAPM	Capital Asset Pricing Model
CEO	Chief Executive Officer
CFO	Chief Finance Officer
CG	Corporate Governance
CIFR	Centre for International Finance and Regulation
CIO	Chief Investment Officer
CMA	Capital Markets Authority
DOPU	Drop off/Pick up
EF	Investment Efficiency
FS	Firm Size
G20	Group of 20 largest economies in the world
GDP	Gross Domestic Product
GoK	Government of Kenya

GPI	Gross Premium Income
G-SIFIs	Global Systemically Important Financial Institutions
HR	Human Resources
IEP	Internet Encyclopedia of Philosophy
III	Insurance Information Institute
IMF	International Monetary Fund
IMS	Investment Management Structure
IRA	Insurance Regulatory Authority
JV	Joint Venture
KES	Kenya Shillings
MD	Market Dynamics
MPT	Modern Portfolio Theory
NACOST	National Council for Science and Technology
OECD	Organization for Economic Cooperation and Development
SMA	Separately Managed Accounts
SPV	Special Purpose Vehicle
SR fund	Socially Responsible Fund
SRI	Socially Responsible Investment

SSA	Sub Saharan Africa
UK	United Kingdom
US	United States of America
VIF	Variable Inflation Factor

DEFINITION OF KEY TERMS

Antecedent Something that logically precedes another especially as the cause or origin of something (Cambridge University Press, 2022).

Broken agency A situation whereby the agents who bear short term risks and receive short term rewards are different from those that bear long term risks and receive long term rewards (Clark & Monk, 2012).

Delegated investment management This refers to a situation where an investor can decide to use a single manager or several managers to execute her investment management strategy (Leung, 2015).

Fiduciary This is a person who is entrusted with the direct management or oversight of another person's assets or funds such as a board director or a trustee (Hodgson et al., 2000).

Float This is the investment funds and reserves held by insurance companies from premium collections (Miles, 1967).

In-sourcing This is where an investor takes charge of the investment decision making process through a committee of internal executives (Clark & Monk, 2012).

Institutional investor These are large investors with a corporate identity who invest their own funds or on behalf of other asset owners (Reilly & Brown, 2009).

Insurance A method of risk transfer where an insured pays a premium to an underwriter for compensation in the event of the occurrence of the insured event (Impavido & Tower, 2009).

Investment management structure This is the framework that establishes how investment assets should be divided amongst different investment approaches and investment managers (Hodgson, Breban, Ford, Streatfield & Urwin, 2000).

Investor governance The structure of an investor's board, together with the complex of rules and practices that guide its oversight over the investment assets (Useem & Mitchel, 2000).

Pooled fund This is where assets from several investors are comingled and managed together as is the case for an investment company or mutual fund (Schonfeld & Kerwin, 1993).

Separately managed accounts This is an investment management delegation arrangement where an investor's funds are invested in a separate identifiable account as opposed to being mixed with other investors' funds (Peterson, Iachini & Lam, 2011).

ABSTRACT

Using a binary logistic regression approach, this study investigated the antecedent factors in the Investment Management Structure (IMS) choice among insurance companies in Kenya. The IMS choice is a critical decision because there are many alternatives that could be adopted ranging from in-house management to complex multi manager structures with diverse implications on the investor. The overall objective of the study was to explore the IMS choices of insurance companies in Kenya. Specific objectives sought to describe the effect of four main categories of antecedents on IMS choice, namely: investment efficiency, corporate governance, firm size and market dynamics. Business category was built into the analysis as a moderating variable. Agency theory, transaction cost theory and regret theory were the main theories adopted. A descriptive research design was applied with a target population of forty six (46) companies licensed to undertake business in Kenya as at the end of 2017. Both primary and secondary data were collected for the study. Primary data was collected directly from the respondents using a self-administered questionnaire. Secondary data was collected from the regulatory agency using a secondary data collection sheet. Data processing and analysis was conducted using STATA. Descriptive analysis was done using frequency, mean, standard deviation and correlation analysis. Data distribution testing was carried out using the Kernel density estimate and Shapiro-Wilk test for normality, variance inflation factors for multicollinearity and box plots for outlier testing. Model diagnostic testing was undertaken using the Hosmer-Lemeshow test for goodness of fit. The research found that 66% of the respondents used in-house IMS. Investment efficiency, corporate governance, firm size and market dynamics were found to be statistically significant positive antecedents of delegation IMS with odds ratios of 1.1243, 1.2285, 1.482 and 1.050 respectively. On its own, business category was a negative antecedent of the delegation IMS choice with an odds ratio of 0.8563 which was not statistically significant. As a moderator, business category amplified the positive effect of investment efficiency and market dynamics on life insurers towards delegation with odds ratios of 1.3186 and 1.1592 respectively. It diminished the positive effect of firm size towards delegation on life insurers to an odds ratio of 1.1015. The corporate governance positive effect to delegation was diminished for life companies with an odds ratio of 1.0595. The study concluded that investment efficiency, firm size and market dynamics affect insurance companies IMS choices in favour of delegation and that this effect was more pronounced for life companies. Corporate governance was a positive antecedent of IMS choices regardless of their business category. This research recommends that insurance companies should pay close attention to their investment efficiency needs, firm size and market dynamics as they choose their IMSs; companies with large capital and asset base should delegate their investment management activities to external professionals in order to benefit from higher returns, lower investment risk exposures and lower costs of investment management; good corporate governance practices should always be employed as a guide to all critical decisions such as IMS choice.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Globally, Assets under Management (AuM) by various investment management professionals grew to US $ 79.2 trillion in 2017 from US $ 48.2 trillion in 2007 (BCG, 2018). Investment management firms intermediated assets equivalent to 100% of global GDP and 40% global financial assets in 2013 (IMF, 2015). As institutional investors, insurance companies occupy a high place in terms of their AuM. IMF (2011) notes that existing aggregated data on assets held by institutional investors are not comprehensive on a truly global scale. That notwithstanding, using OECD data sets drawn from 17 member countries, IMF (2011) estimates that the insurance industry investment portfolios doubled from US $ 10.4 trillion in 2000 accounting for 45.6% of the OECD countries' GDP to US $ 20 trillion accounting for 57.7% of the GDP in 2009. IMF (2011) further demonstrates that insurance assets as a proportion of total assets stood at 33% in 2009 placing the insurance industry as one of the largest players in the financial markets. The US was the largest holder of assets under management in 2009 controlling 45% of assets, having recorded a decline of 3% since 1995 (IMF, 2011). Appendix I shows the distribution of assets under management across the main institutional investors.

Ashraf and Kumari (2016) explain that the insurance industry is an important and integral part of the economy that acts as a savings mobilizer, a financial intermediary, a promoter of investment activities, a stabilizer of financial markets and a risk manager. Ashraf and Kumari (2016) continue to expound that insurance companies generally have two main business functions: underwriting activity and investment activity. As a result of this business duality, there are more variables to be considered in their portfolio management decision making processes compared to the other institutional investors. According to Auma (2013), insurance companies are closely regulated and their

financial performance heavily dependent on how well they manage their investment funds or float.

The insurance industry is a large investor in the financial markets (IMF, 2011). According to Schich (2009) this is because of their longer investment horizons compared to other financial sector players like banks. The insurance industry collects funds from its policy holders which are then channeled for investment in the financial markets. The industry therefore serves as an important component of the financial system of any economy offering essential risk management and intermediation services. Maroney (2010) expounds that as financial intermediaries, insurance companies have the advantage of receiving premiums upfront, which are also not the subject of haphazard withdrawal. They therefore enjoy the advantage of investing long term in the financial markets and through asset and liability management achieve their risk diversification objectives.

Investment Management Structures

Hodgson et al. (2000) define the investment management structure (IMS) of an investor as the framework that establishes how investment assets should be divided amongst different investment approaches and investment managers. Hodgson et al. (2000) further explain that the investment approaches can encompass expected risk, return and investment styles. These structures range from single in-house investment teams to complex multi manager structures.

Sharpe (2011) argues that there are generally two approaches to investment management. First, advisors who make investment recommendations which the investor can accept or reject then make appropriate trades to realize the advice. Second, an investment organization or individual provides both the needed advice and implementation. Both approaches involve some division of labour between the investor and an advisor. This simplified model represents what is generally viewed as the investment management structure of an investor.

According to Reilly and Brown (2009), globally and over time, investment management has been organized in two basic structures, namely, direct delegation structure and mutual fund/investment company structure. Direct delegation obtains where asset owners do not manage their own wealth but instead, they employ an asset manager. The asset owner is the principal, who delegates portfolio management responsibility to the fund manager, who is the agent. Under direct delegation investment management arrangement, individuals as well as institutional investors make contracts directly with a management and advisory firm for its services. These services may include standard banking services such as savings accounts, advising clients on how to structure their own portfolios and actual management of the client portfolios (Reilly & Brown, 2009).

Stracca (2006) posits that in most industrialized countries a substantial part of financial wealth is managed through financial intermediaries. This implies the existence of an agency contract between the investor (the principal) and a portfolio manager (the agent). Stracca (2006) concludes that delegated portfolio management is one of the most important agency relationships intervening in the economy, with a possible impact on financial markets and economic development at a macro level.

Blake, Timmermann, Tonks and Wermers (2010) posit that there are two main models that are used in decentralized investment management. These are the use of a single external manager running balanced portfolios and the use of multiple competing managers. Single manager delegation obtains where one professional manager is hired to manage a balanced portfolio comprising of debt, equities and cash. This arrangement constitutes a transfer of the entire investment decision making to a fund manager. Multi manager delegation is the use of multiple generalist or specialist managers to oversee a portfolio.

Investment management delegation structures can also be distinguished into mutual funds and segregated funds also known as Separately Managed Accounts (SMAs) depending on how client funds are handled (Peterson, Iachini & Lam, 2011). Investment management delegation using the mutual fund structure involves the pooling together

(comingling) of investment capital from several clients and managing the funds as a single portfolio of securities. The several investors are issued with new shares representing their proportionate ownership of the mutually held securities portfolio or the fund (Reilly & Brown, 2009). The two arrangements differ in terms of the ownership of the underlying securities in the portfolio. In a mutual fund structure, the securities are owned by the fund which is managed as a single portfolio and its shares are in turn held by the investors. In SMAs, the investor owns the underlying securities in his or her own account and accounts are managed on a client-by-client basis (Peterson, Iachini & Lam, 2011).

Clark and Monk (2012) observe that as a result 2007-2009 global financial crises, institutional investors were strategically reviewing their investment management structures with a tendency towards by-passing the traditional investment intermediaries and developing in-house teams of investment professionals. According to Gallagher, Gapes and Warren (2016) in-house investment management structure can be organized in a variety of ways or governance frameworks. Gallagher, Gapes and Warren (2016) proceed to isolate four main ways of implementing this IMS. These include dedicated internal manager, hybrid internal and external manager, co-investment and partnerships. Gallagher, Gapes and Warren (2016) explain that under the hybrid model, the in-house management team is responsible for a slice of the assets within a multi-manager structure. Co-investment and partnerships leverage on external professional capabilities without ceding the investment decision making authority.

Choice of Investment Management Structure by Institutional Investors

The choice of the investment management structure to adopt is the beginning point in the institutional investment management journey. In a quest to understand how large institutional investors organize their investment management activities, MacIntosh and Scheibelhut (2012) undertook a benchmarking study of 19 large pension funds from the G20 countries. The study found that internal management was directly linked to larger

fund sizes, lower operational costs, and higher returns; there was also a lack of diversity in boards of management as well as higher risk management concerns.

According to Clark & Monk (2012), across the world, institutional investors put several factors into consideration when choosing their investment management structures. Based on case study analyses of twenty (20) large funds from four (4) continents, Clark and Monk (2012) discovered that in-house investment management offered better and direct access to alternative asset class markets compared to third party investment vehicles; the principal-agent problems in investment management were avoided and agency costs minimized; there was great learning and discovery experience; the investor was likely to maximize the net-of-fee investment returns and it proved to be a more sustainable approach to investing because the investor could tailor a portfolio to meet own needs.

Gordon, Sharpe and Bailey (2001) argue that, in practice, it is common for investors to divide their funds among two or more managers which delivers a host of benefits. It allows access to managers with different skill sets and investment styles which increases the diversity of investment professionalism and knowledge and the impact of erroneous decisions or bets is reduced by diversifying among managers. Gordon, Sharpe and Bailey (2001) however caution that the excessive use of split funding as an investment strategy without regard to skill specialization as it is equivalent to investing in an index fund at a significantly higher cost.

Mutual fund investment structure became a popular delegation structure in the US in the 1990's as a result of growing public awareness, easier access and diversity of fund offerings (Schonfeld & Kerwin, 1993). Gruber (1996) asserts that investors find actively managed mutual funds as investment vehicles appealing because the funds offer customer services such as record keeping and the ability to move money around among funds, low transaction costs, diversification and professional management that offers expert security selection.

Peterson, Iachini and Lam (2011) explain that in US, delegation also takes the form of Separately Managed Account (SMA) where each client's funds are managed separately under a specific mandate. Based on studies in US market, Peterson, Iachini and Lam (2011) explain that the SMA arrangement offers increased transparency as the investors can see the securities held in their portfolios; the investor can impose specific investment restrictions on the portfolio; there is easier tax management and the investor does not suffer any direct tax consequences caused by redemptions by other investors as is often the case in mutual funds.

Goyal and Wahal (2008) posit that returns remain a major consideration for most investors. In the US, Goyal and Wahal (2008) study of pension fund behavior covering the period from 1994 to 2003 found return chasing behavior by plan sponsors when choosing investment managers for delegated investment management.

Retirement plans investment practices have been found to be greatly influenced by their governance policies. Useem and Mitchell (2000) study of US public and local authorities' retirement schemes reported that governance policies impacted investment decision and strategies. Coronado, Engen and Knight (2003) comparative study of the effects of governance structures of public and private pension schemes in US also found that public schemes were prone to some political interference that sometimes led to a return sacrifice. The study confirmed that the governance structure of an institutional investor can have significant influence on the achievement of investment objectives.

From the Australian superannuation market, Gallagher, Gapes and Warren (2016) observed a number of appealing benefits of a hybrid (in-house and delegated) structure. Firstly, the coexistence of internal and external capabilities creates competitive tension and maintains discipline around the in-house team. Secondly, it confers flexibility in that internal and external capabilities can be rebalanced or reconfigured as needed. However, the hybrid model requires a choice to be made on the degree of independence of the in-house team vis-a-vis integration with the external capability. Gallagher, Gapes and Warren (2016) also found a number of antecedents for in-house investment management

among them net returns, portfolio size, need for customization of portfolios and avoidance of agency problems.

Blake, Timmermann, Tonks and Wermers (2010) study of the UK pension market found that pension funds pursued higher returns in their choice of investment managers. They also found size effects where funds looked for alpha diversification by using multiple specialist managers as fund sizes grew larger. The Chinese investment management market remains tightly controlled by the government with limited choices for investors (Deloitte, 2019).

Njuguna (2011) study of pension governance in Kenya reports that regulations, leadership and membership age distribution have an impact on governance of schemes. Based on a review of the practices around the world, it is clear that institutional investors choose their investment management structures with diverse objectives and are therefore guided by different factors.

The Insurance Industry in Kenya

Macharia (2009) explains that insurance operations started in Kenya in 1950's mostly as branch offices of companies based in Britain and India. Since then, the sector has seen great expansion and formalization, including the establishment of the regulator to oversee the sector. As at 31st December 2018, the sector consisted of fifty eight (58) companies. There were nine (9) composite insurers underwriting both general and life business, twenty eight (28) companies were underwriting only general insurance business, sixteen (16) companies were in life assurance business only, three (3) companies were composite reinsurers while two companies were general reinsurers (IRA, 2019).

According to IRA (2019), the industry registered KES 216 billion in Gross Premium Income (GPI) in 2018, a 3.5% growth from the previous year. The industry had a combined total asset base of KES 635 billion compared to KES 591 billion in December

2017. Like elsewhere in the world (Croce & Gatti, 2014; IMF, 2011) insurance companies in Kenya control a sizeable pool of long term funds although not as significant as in the developed countries. At KES 524 billion in 2018, the insurance sector financial securities investment portfolio is over 5% of Kenya's GDP making it a significant contributor to financial markets development and the economy as a whole. The evolution of the sector portfolio asset allocation up to 31st December 2018 is presented in Appendix I.

Auma (2013) dwells on investment portfolio management by insurance companies and concludes that there is a direct relationship between investment portfolio holdings and financial performance. Gonga and Sasaka (2017) investigates the determinants of financial performance among insurers in Nairobi County and finds that these firms had liquid investments which would be sold to settle claims in the event that underwriting income was not adequate to cover claims.

Njuguna and Arunga (2013) study of the risk management behavior of micro insurance providers concludes that there are significant risks facing micro insurers such as diseconomies of scale, low penetration rates, limited distribution channels, correlation risks and rigid regulatory framework. These firms were using technology to lower costs, stringent claims analysis to manage losses, as well as offering flexible payment terms to increase uptake and increase the penetration levels. Ochola (2017) investigated the performance improvement of the insurance industry and found an overall decline in efficiency from 2011 to 2017 which is attributed to net premiums, investment income and reserve funds. The study also found positive relationship between efficiency and net claims, profit after tax and total assets.

On investment management, it is noteworthy that according to Auma (2013), the insurance industry in Kenya is regulated both from an operational and investment view point. The investment regulation is specifically on asset allocation and the choice of investment management structures is not controlled (M'Ariba, 2018). As a consequence, insurance companies are free to choose the IMS that best suits their needs. Findings

from a desktop analysis by M'Ariba (2018) reported that 8 out of 10 large well known insurance companies adopted a delegation approach in the management of their investment portfolios.

1.2 Statement of the Problem

Insurance companies are large institutional investors in the financial markets all over the world (Schich, 2009) and intermediated 33% of global assets under management in 2009 (IMF, 2011). Given the large proportion of intermediated assets, insurance companies' investment management activities have serious implications on global economies and welfare of people in terms of social security and economic stability. The investment management structure chosen by an insurance company provides the framework it applies for the division of assets amongst different managers and investment approaches (Hodgson et al., 2000). As a consequence, these IMS choices are critical decisions because they determine the safety, returns and overall governance of the intermediated assets.

Insurance companies have many alternative structures to choose from, ranging from in-house management to complex multi manager structures (Hodgson et al., 2000). However, despite the critical intermediation role that insurance companies play and the recognized importance of suitable investment management structures, there is a lack of consensus on the best structures and the antecedents of IMS choices. This confounding outcome is based on theoretical, conceptual, empirical and contextual aspects of the literature.

To start with, there is a rich yet divergent theoretical body of knowledge that is relevant to the investment management structure choice decision. Decision theory proponents argue that decision makers should make different choices based on their different perspectives, priorities, or value judgments (Longford, 2016). Agency theory (Clark & Monk, 2012; Blake et al., 2013; Shah, 2014) asserts that the choice of IMS should be guided by the perceived agency relationships and conflicts, monitoring costs as well as

the price charged by the agents. The transaction cost theory (Williamson, 1981) augments the cost argument by proposing that IMS choices should be based on costs of alternative approaches. The modern portfolio theory (Markowitz, 1991) supports the application of mean variance approach in investment decisions by considering both risks and returns.

Conceptually, investors such as insurance companies are perceived to be rational decision makers under uncertainty (OECD, 2010). The decision on the IMS to apply comprises a choice of what to and what not to do in order to achieve a satisfactory outcome (Tang, 2006). Insurance companies are also faced with a business duality problem where firms have both underwriting and investment operations which means that there are more variables to be considered in their portfolio management decision making processes compared to the other institutional investors (Ashraf & Kumari, 2016). The business category of an insurance company may also influence the choice of IMS as alluded by Gründl, Dong & Gal (2016) because of differences between general and life insurance in terms of claims patterns, investment horizons and hence liquidity needs.

Empirically, various studies have reported different reasons for investor choices. MacIntosh and Scheibelhut (2012) found high prevalence (49%) of internal asset management among 19 large pension schemes from G20 countries as a result of need to cut costs and increase net returns. Clark and Monk (2012) analysis of case studies of the largest institutional investors among pension funds and sovereign wealth funds from four continents around the world reported that after the 2008 global financial crisis, institutional investors were moving to in-house investment management models driven by the need to cut the cost of management and increase net returns.

Blake et al. (2013) investigation of the investment behavior of pension funds in UK found that they prefer delegation IMS in order to derive benefits from diversification of skills and returns (alpha) as well as desire to reap benefits of their large asset base. In US, Binsbergen, Brandt and Koijen (2008) study of the institutional investment

delegation problem with a centralized Chief Investment Officer (CIO) and delegated management found that the investor uncertainty regarding delegated manager's risk appetite could lead to significant utility losses hence the preference for in-house management.

Gallagher, Gapes and Warren (2016) surveys of the Australian Superannuation industry identify the antecedents of hybridization (mixed use of in-house and delegation approaches) as better alignment of portfolios asset allocation to investor objectives, pursuit of higher net returns, economies of scale due to large asset bases, avoidance of external managers' capacity constraints and avoidance of agency risk.

Lastly, in the insurance industry context, few of the available empirical studies address the uniqueness of insurance companies. Arena (2008) observes that despite being similarly large institutional investors, insurance companies differ from pension funds, mutual funds and all the other institutional investors. Arena (2008) further argues that insurance companies' investment behavior is not clearly understood as indicated by the absence of enough empirical and comparative works covering the insurance sector when compared to other sectors like banking and the stock markets. In Kenya, research on insurance companies' investment behavior is almost completely absent leaving a research gap that needs to be filled.

In conclusion, the bulk of the investment management research in the area of investment management structures focuses on Australia, US and Europe. Investment management research geographical scope has ignored emerging markets and particularly African markets. This study therefore seeks to contribute to the knowledge gap by investigating Kenyan insurance companies' investment behavior with specific emphasis on antecedents of investment management structure choice.

1.3 Objectives of the Study

This study aims to address the following objectives:

1.3.1 General Objective:

To explore antecedents of choice of investment management structures of insurance companies in Kenya.

1.3.2 Specific Objectives:

The following are the specific objectives of the study:

i. To determine the effect of investment efficiency on the choice of investment management structures of insurance companies in Kenya.
ii. To ascertain the effect of corporate governance on the choice of investment management structures of insurance companies in Kenya.
iii. To establish the effect of firm size on the choice of investment management structures of insurance companies in Kenya.
iv. To evaluate the effect of market dynamics on the choice of investment management structures of insurance companies in Kenya.
v. To find out the moderating effect of business category on the choice of investment management structures of insurance companies in Kenya.

1.4 Research Hypotheses

H_{01}: Investment efficiency does not significantly affect the choice of investment management structures of insurance companies in Kenya.

H_{02}: Corporate governance does not significantly affect the choice of investment management structures of insurance companies in Kenya.

H_{03}: Firm size does not significantly affect the choice of investment management structures of insurance companies in Kenya.

H_{04}: Market dynamics does not significantly affect the choice of investment management structures of insurance companies in Kenya.

H_{05}: Business category has no significant moderating effect on the choice of investment management structures of insurance companies in Kenya.

1.5 Significance of the Study

This study has important implications to a variety of players and sectors of the economy. This section deals with the expected impact areas which include the following:

Insurance Companies' Management

Insurance companies have different investment management approaches. As competitors, companies find it useful to benchmark their practices in various facets of their operations. As Bursztyn, Ederer, Ferman and Yucht (2014) explain, peer effects have a considerable impact on choices. This study provides the knowledge and information about prevalence and factors behind the adoption of different investment management structures based on which companies could learn and evaluate their positions within the industry.

Professional Investment Managers

Insurance companies controlled over 50% of OECD countries' GDP in investment funds in 2009 (IMF, 2011). In Kenya insurance companies portfolios account for about 5% of the country's GDP (IRA, 2019). These are significant amounts which are available to be outsourced to professional investment managers, under delegation models. The investment management industry is also very competitive and each manager aims to acquire a reasonable market share. These managers stand to benefit from an analysis

such as this, where the factors that influence the choice of investment management approaches are analyzed and differentiated. Investment managers may therefore streamline and tailor their services to be of relevance to insurance companies based on the findings of this study.

Insurance Regulatory Authority

The insurance industry is a closely regulated industry world over. Regulation is often fraught with numerous challenges because insurance companies are large scale financial intermediaries (Thimann, 2014). Regulation is on both operational and investment perspectives. Insurance regulators pay keen interest to how their licensees undertake their investment management activities. As such, they could benefit from this analysis by gaining an in depth understanding of the factors that insurance companies consider when choosing their IMS.

Government Policy Makers

Insurance – growth nexus issues have been investigated by few researchers (Arena, 2008; Chen, Lee & Lee, 2011) who all argue that policy makers need to better understand the relationship and impact networks through which the insurance sector influences growth and how those networks can be enhanced. Accordingly, this study could enhance the understanding of the financial markets participation impact route and possibly offer insights into enhancement measures that policy makers need to consider.

Academia

The insurance sector is an under researched area of finance (Arena, 2008). On the other hand, investment management is a rich area of academic research as evidenced by numerous works in the area. Arena (2008) notes the absence of enough empirical and comparative works covering the insurance sector when compared to banking sector and the stock markets. Arena (2008) observes that this may be as a result of the rather arcane reputation of the insurance sector in economic circles.

This study contributes to the volume of academic research by adding to the available empirical works in the insurance sector. In terms of significance to financial economics, the study is expected to bring insurance sector research into greater focus particularly the investment behavior and investment governance aspects of their investment activities.

Theoretically, the research applies a number of established theories to build the basis of the study. In essence, it contributes additional applications of these theories in academic studies. The application of agency theory and transaction cost theory offers new illustrations to future researchers on how these two theories can be applied in financial economics and investment governance research. The use of regret theory and modern portfolio theory also offers academicians with examples where these theories can be relied upon to buttress finance studies.

Conceptually, this study has been structured on a relational basis where the identified independent variables are used to explain the dependent variable. Without implying causality, the study is conceptualized as a framework to explain the importance decision makers attach to the theoretical and empirical antecedents of choice.

Methodologically, the study uses a descriptive approach with both primary and secondary data. It demonstrates how both primary and secondary data can be combined in order to deepen the understanding of a study phenomenon. The analytical methods applied include parametric and non-parametric methods and binary logistical regression modelling. The use of these methods offers financial economists guidance on how to deploy financial econometrics in their research.

Finally, contextually, investment management is a relatively young profession in Kenya with the formalization of the relevant regulatory framework having been completed in 2015. Academic participation in the profession is likely to be enhanced following this research. Future studies by academicians interested in growing investment management and insurance sector research could borrow from the theoretical, conceptual and methodological approaches applied in this study.

1.6 Scope of the Study

The research employed a theoretical framework created by a combination of three main theories. Agency theory, transaction cost theory and regret theory were the main theories from economics and behavioral finance that were used to back up the study. This theoretical scope was adopted because the study phenomenon was behavioral in nature and involved choices about transactional interaction of principals and agents with the attendant consequences.

The conceptual scope of the study was limited to an empirical investigation of the decision making behavior of insurance firms in their investment management activities. The primary objective of the study was to explore the antecedents of the choice of investment management structures by insurance companies in Kenya. The conceptual framework was limited to five systematically categorized factors that theory and empirical studies elsewhere have found to influence the investment management structure choice decision. This conceptual scope limitation was adopted to keep the study concise and focused.

In terms of the methodology applied in the study, the research was structured as a descriptive study using a binary logistical regression model. A binary regression approach is limited to only two categorical choices. This limitation in the regression analysis was necessary because structure choices were simplified to avoid blurring of results. It also helped to keep the data collection exercise simple.

The research geographical scope was restricted to Kenya such that companies' subsidiaries in other countries were ignored. The restricted geographical scope was adopted due to financial constraints that would make it difficult to undertake a cross country study. Several respondents had operations within East Africa but those operations were ignored in the study.

Contextually, the research was focused on insurance companies as institutional investors. This contextual scope was chosen in order to draw sector specific conclusions which can then be applied as a comparison to the behavior of other institutional investors. The research also focused on the management of financial assets since they form the bulk of the intermediated assets of insurance companies.

The time scope for this study was two years. Data was collected over a span of 6 months while analysis, interpretation and preparation of final research reports was allocated 18 months. The investigation of the research phenomena was at a point in time being the data collection reference date of 31st December 2017. Insurance companies in Kenya make annual returns as at 31st December each year hence the choice of the reference date.

1.7 Limitations of the Study

This research faced a number of theoretical, conceptual, analytical and contextual limitations. Theoretical reliance on agency theory, transaction cost theory and regret theory limits the study because some other well-known theories in finance such as the Capital Asset Pricing Model and the Arbitrage Pricing Model were ignored. This theoretical scope limitation was dictated by the fact that the study was more oriented towards behavioral finance as opposed to the establishment of value. Insurance theories were also limited in application since the study was more concerned with the behavior of firms. Future research may seek to validate the findings of this study using alternative theories such as multifactor arbitrage pricing theories.

The conceptualization of the study used four main antecedents of firm decisions and one moderator variable. Theory and practice have numerous suggestions of potential antecedents in the choice of IMS. This means that some potential influencers of the choice decision such as regulation, taxation regime etc. were ignored. This conceptual limitation was necessary in order to structure a study that is concise and practical to navigate and interpret. This limitation leaves room for extension of this research to

include the effect of regulation, taxation regimes and possibly allow for more IMS choices.

The study adopted a descriptive methodology using a binary logistic regression model. The use of a binary logistic regression model meant that a more robust approach such as a multinomial logistic regression model approach was ruled out. This limitation was important because to apply a more complex regression model would require more detailed data. The potential for spurious output was also a real threat that needed to be addressed by applying a less complex approach. It would be interesting to see future research in this topic allowing for multiple categories of structures using multinomial logistical regression methods.

The study had some statistical limitations in terms of the population of study and hence the sampling methods used. The research universe for the study comprised of forty six (46) insurance and reinsurance companies operating in Kenya in 2017. The research universe was limited such that a sample could not be easily drawn. As such, survey methods were applied in the study. The research was also limited by the availability of data through regulatory filings for some of the firms which would be considered as part of the research universe. Therefore, it excluded the two supranational reinsurance companies with operations namely, ZEP Re and Africa Re which are not under the regulatory ambit of IRA.

The time limitation of this study was twofold. First, the study investigated the study phenomena at a point in time. The data was collected and referenced as at 31st December 2017. This being a cross sectional study required a reference time and the chosen date was guided by the financial year end commonly adopted within the insurance industry in Kenya. Secondly, completion of the research was constrained to two years. This was considered important in order to maintain recency of the data collected so that interpretations and recommendations drawn therefrom remain relevant.

Looking at the context of the study, the spot light was on insurance companies' financial assets portfolios. The study phenomenon could have as well been studied using any of the other institutional investors who are similar to insurance companies such as pension funds and mutual funds. The research ignores investment in real assets which form part of insurance companies' portfolios. This limitation leaves room for future research to replicate this study in the mutual fund or pension fund space as well as include investments in real asset such a land and buildings.

Finally, the emergence of COVID-19 presented hitherto unforeseen and unexpected limitations. The time scope was put under pressure due to slow progress in completing the research, documentation and completion of the thesis. Public health restrictions on meetings and imposition of lock downs, made it difficult to interact with the data analysts and research supervisors. This exogenous limitation presents an extraordinary circumstance whose effect on recency and validity of conclusions may require investigation in future. Despite these limitations the research progressed to conclusion albeit later than initially planned.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Investment portfolio management occupies an important position in financial economics because of its practical relevance to both corporate entities and individuals. This study is concerned with insurance companies' investment management behavior. Specifically, the antecedents of choice of investment management structures by insurance companies in Kenya are investigated. Insurance companies not only offer risk management services but are important financial intermediation agents. Therefore, an understanding of their investment management behavior is important from both a micro and macro perspective. This chapter addresses the theoretical background of the study, the proposed conceptual framework, empirical literature review and critique and finally a discussion of the research gaps.

2.2 Theoretical Framework

This section provides the theoretical background of the study. It proposes the applicable theoretical basis for the study and develops an analytical conceptual framework.

Decision Theory

Buchanan and O'Connell (2006) contend that the history of decision making dates back to the 1600s. According to the Internet Encyclopedia of Philosophy (IEP), decision theory may be traced back to René Descartes who is often credited with being the "Father of Modern Philosophy". Early development of decision theory was driven by mathematicians like Blaise Pascal, Daniel Bernoulli and Carl Friedrich Gauss among others (Buchanan & O'Connell, 2006).

Decision theory is an interdisciplinary field of study to understand decision making. It draws from mathematics, statistics, economics, psychology, management, and other fields in order to understand, improve, and predict the outcomes of decisions under particular conditions (Tang, 2006). According to Tang (2006) a decision involves making a choice of what to do and not to do, to produce a satisfactory outcome. It is a commitment to action, an irreversible allocation of resources. To decide is to choose from sets of alternatives. Decision theory is concerned with rationality in choice. A decision problem can be expressed as a list of alternatives and a list of possible events with the corresponding consequences (OECD, 2010).

Gilboa (2010) explains that the goal and purpose of decision theory may be viewed as a descriptive field aiming to help understand economic phenomena, in the service of normative economics. Tang (2006) identifies three schools of thought in decision theory: the normative, the descriptive and the prescriptive. The normative school is concerned with how people should decide with logical consistency. The descriptive school is concerned with why people decide the way they do while the prescriptive school tries to help people make better decisions or prepare people to decide.

This research applies the descriptive (positive) decision theory school of thought in order to understand why decision makers (insurance companies) decide (choose) the investment management structures that they use. Longford (2016) posits that decision makers sometimes choose different options in identical settings because they have different perspectives, priorities, or value judgments. This theory provides the overarching basis upon which the study is built. Recommendations from the study are buttressed in the prescriptive school of thought.

The application of this theory as the foundation of the study, while considered appropriate, has a number of limitations. Decision theory allows manipulation of decision choice alternatives in the form of mathematical equations and formulae. The study had a binary choice alternative without any form of rank ordering or algebraic

expressions. The constraints faced by decision makers were also not considered in the study, somewhat limiting the exploitation of the full potential of the theory.

Agency Theory

Mitnick (2013) explains that the agency theory can be traced to Stephen Ross and Barry Mitnick working independently but roughly concurrently in the early 1970s. Ross developed the economic theory of agency, and Mitnick the institutional theory of agency but the underlying theoretical concepts are similar. Subsequently, numerous works have been developed on agency theory straddling all areas of social sciences.

Shah (2014) explains that the basic premise of the principal - agent theory is that there is a principal who delegates a task to the agent, who performs the task on the principal's behalf. Whenever the interests of the two entities are misaligned, the principal - agent problem is observed. This misalignment of interests emanates from two distinct sources: the principal's inability to monitor the agent and the agent's possession of a superior information set. Shah (2014) further argues that it is recognized that the contracting parties could change their behavior after the contract has been entered into.

Golec (1992) characterizes the investor-investment manager relationship as one in which the investor (principal) hires an investment manager (agent) to offer investment management services. The services contracted for include information search, portfolio construction, trading and portfolio maintenance, all of which are unobservable in the portfolio return (output).

Clark and Monk (2012) explain that in institutional investment management, broken agency arises as a result of misalignment of interests due to inappropriate distribution of risks and expected returns between the investor (principal) and the investment manager (agent). The consequences of broken agency according to Clark and Monk (2012) include distortion of portfolio construction (asset allocation) and inappropriate

performance measurement and benchmarking. The broken agency problem is a major consideration by investors when choosing their investment management arrangements.

Investment management delegation necessarily creates a chain of principals and agents. Hodgson et al. (2000) illustrates that for most funds, there are many principal - agent relationships. The providers of funds delegate management to a fiduciary who in turn appoints a professional investment manager to invest the assets. Therefore, the first principal is the provider of funds, and the fiduciary (trustee/executive) is the agent. The fiduciary, acting as new principal then acquires the professional services of an investment manager who is the agent. The beneficiaries of the investment funds may be the same as the providers of the funds or not.

Agency theory supports a number of conceptual aspects of this study. First, on the explanatory variables, the theory explains the corporate governance measures used. Shleifer and Vishny (1986) conceptualization of large shareholder monitoring over management is based on agency theory. Similarly, board control and avoidance of agency costs are drawn directly from the theory. On the dependent variables, the theory explains the choice between in-house and delegated investment management structures. Delegation involves the engagement of an agent to perform a task on behalf of the principal. In-sourcing is motivated by avoidance of agency problems. On the whole, agency theory offers strong explanatory power in the conceptualization of this study.

Despite the obvious strengths of agency theory as a theoretical basis for this study, there may be some limitations in its application. The theory does not fully explain the behavior of the principals beyond their agency cost concerns. Explicit cost and implicit costs incurred by principals in terms of fees paid, opportunity costs and monitoring costs are given a lot of prominence in the theory. However, the theory does not explain why the principals (insurance companies) keep changing their agents (delegated managers) based on their past performance. Rationality of the principals in their choice of agents may also not be addressed. It also does not address the constraints faced by the

principals when choosing to delegate and as they set performance objectives for their agents.

Transaction Cost Theory

The transaction cost theory has been applied to economic analysis since the 1930s (Madhok, 2002). Ronald Coase in his article on the nature of the firm in 1937, sought to explain why economic activity was organized within firms and strongly alluded to the minimization of costs encountered when using the market exchange. Coase (1937) brought out the reasons why firms organize production internally as opposed to using the market mechanism. However, the greatest credit for the development of the transaction cost theory goes to Williamson (1981) whose objective was to make the theory more predictive by approaching the firm as a governance structure and by identifying the particular transaction characteristics that play an important role in comparative institutional assessment.

Williamson (1981) explained that economic approaches to the study of the organization generally focus on efficiency. This is accomplished by making the transaction as opposed to the goods and services the basic unit of analysis and by assessing governance structures in terms of their capacities to economize on transaction costs. Firms and markets are the leading alternative governance structures. Williamson (1981) identified three main levels of transaction cost approach analysis. The overall structure of the organization, the operating parts of the organization including which activities should be performed within the firm, which outside it and why, and finally the organization of human assets.

Following Williamson's work, the transaction cost theory has shifted away from Coase's initial and more general treatment to a concern with issues of appropriation, ownership, alignment of incentives, and self-interest (Madhok, 2002). Transaction cost theory sees firms and markets as two alternative ways of coordination. The firm being characterized by coordination through authority relations and the market being characterized by

coordination through the price mechanism (Madhok, 2002). The transaction cost theory explains why firms choose to in-source or outsource their activities.

In investment management, asset owners face a choice to either manage assets internally or delegate management to outside players. Both options have implications on efficiency and cost considerations. Investment efficiency as measured by investment returns and cost of management is best contextualized on the basis of transaction cost economics. The choice between delegation and internal management is also viewed from the perspective of transaction cost theory, particularly the second level proposed by Williamson (1981).

The transaction cost theory addresses a small part of the conceptual framework of the study. The cost of investment management as an antecedent of the choice of IMS while important as an element, forms a small part of the entire analysis. There are several other antecedents of the choice decision such as corporate governance and peer influences which cannot be explained under transaction cost economics. The theory is therefore complementary rather than holistic in its support of this work.

Regret Theory

Regret theory was developed by Loomes and Sugden (1982) as an alternative theory of rational choice under uncertainty. The main proposition of regret theory is that decision makers experience both regret and rejoicing. Regret is the negative emotion that is experienced when one realizes that their current situation would have been better had they acted differently. Self-blame is the key ingredient in regret (Gilbert, Morewedge, Risen & Wilson, 2004). Diecidue and Somasundaram (2017) explain that regret theory is based on the intuition that a decision maker choosing between two actions is concerned not only about the outcome he receives but also about the outcome he would have received had he chosen differently. When the outcome of the chosen prospect is less desirable than that of the foregone prospect, the decision maker experiences the negative emotion of regret.

In decision making, people tend to take measures aimed at reducing the amount of regret after a decision is made. Hodgson et al. (2000) illustrate that in manager selection exercises, regret would occur when an investment manager is hired and then performs poorly or when a poorly performing manager is fired, and then proceeds to do spectacularly well.

Regret theory is applied in this study to explain a number of conceptual elements. The choice between in-house and delegated management present alternatives that could lead to regret after the decision is made. Market dynamics as measured by peer watching and herding behavior in asset allocation is based on need to avoid regret. Firms desire to achieve returns that are comparable to peers so as to avoid regret. The application of regret theory in this study faces some limitations because it lacks guidance on certain aspects of the study like investment efficiency and the effect of firm size on decisions.

Modern Portfolio Theory

The Modern Portfolio Theory (MPT) or the mean variance optimization analysis dates back to 1952 when Harry Markowitz seminal work was published (Fabozzi, Gupta & Markowitz, 2002). Fabozzi, Gupta and Markowitz (2002) further explain that the theory was ground breaking in many ways and provided the foundation upon which modern portfolio management stands. The MPT presents a basic framework to construct and select portfolios based on the expected performance of the investments and the risk appetite of the investor. MPT is a normative theory that prescribes how portfolio selection should be done. Markowitz (1991) explains that the foundation of MPT is rational decision making under uncertainty. Risk and return relationships are what matter to an investor and are uncertain hence probabilistic.

Most securities available for investment present uncertainty in terms of the expected outcomes and are therefore risky. Each investor is faced with the problem of deciding which particular risky assets to acquire. The combination of risky assets that an investor chooses to own is called a portfolio. This decision problem is referred to as the portfolio

selection problem because it is akin to selecting an optimal portfolio from a set of possible portfolios (Gordon, Sharpe & Bailey, 2001). An investor chooses combinations of assets that minimize risk at the highest possible return. In MPT terminology, investors choose portfolio that are not dominated or lie on the efficient frontier.

Fabozzi, Gupta and Markowitz (2002) identify the main areas of application of MPT as asset allocation, portfolio management and portfolio construction. MPT cannot therefore be ignored in the portfolio management process of any investor. In deciding the asset allocation, an investor must consider the risk and return of the portfolio components. The ability to estimate the risk and return is dependent on finance skills possessed by the human resource base of an investor and computer resources available.

This theory provides a basis on which a number of concepts in this study are understood. Returns on a portfolio are direct consequence of the asset allocation as demonstrated by Brinson, Hood and Beebower (1991). At the same time, the asset allocation is guided by MPT and its implementation is dependent on the choice of investment management structure (Hodgson et al., 2000). Human resource base is a direct consequence of the need to create capabilities needed for competitive application of MPT in portfolio management.

The MPT cannot be ignored in any research that deals with investment decisions. This study is investment related but does not deal with portfolio construction issues where the MPT possesses immense explanatory power. That being the case, the theory is limited in application in the investment governance decisions of the investors where this research seeks to gain an understanding.

2.3 Conceptual Framework

Jabareen (2009) defines a conceptual framework as a network of interlinked concepts that together provide a comprehensive understanding of a phenomenon or phenomena. It

is a construct in which every concept plays an integral role that provides an interpretive approach to understand social reality.

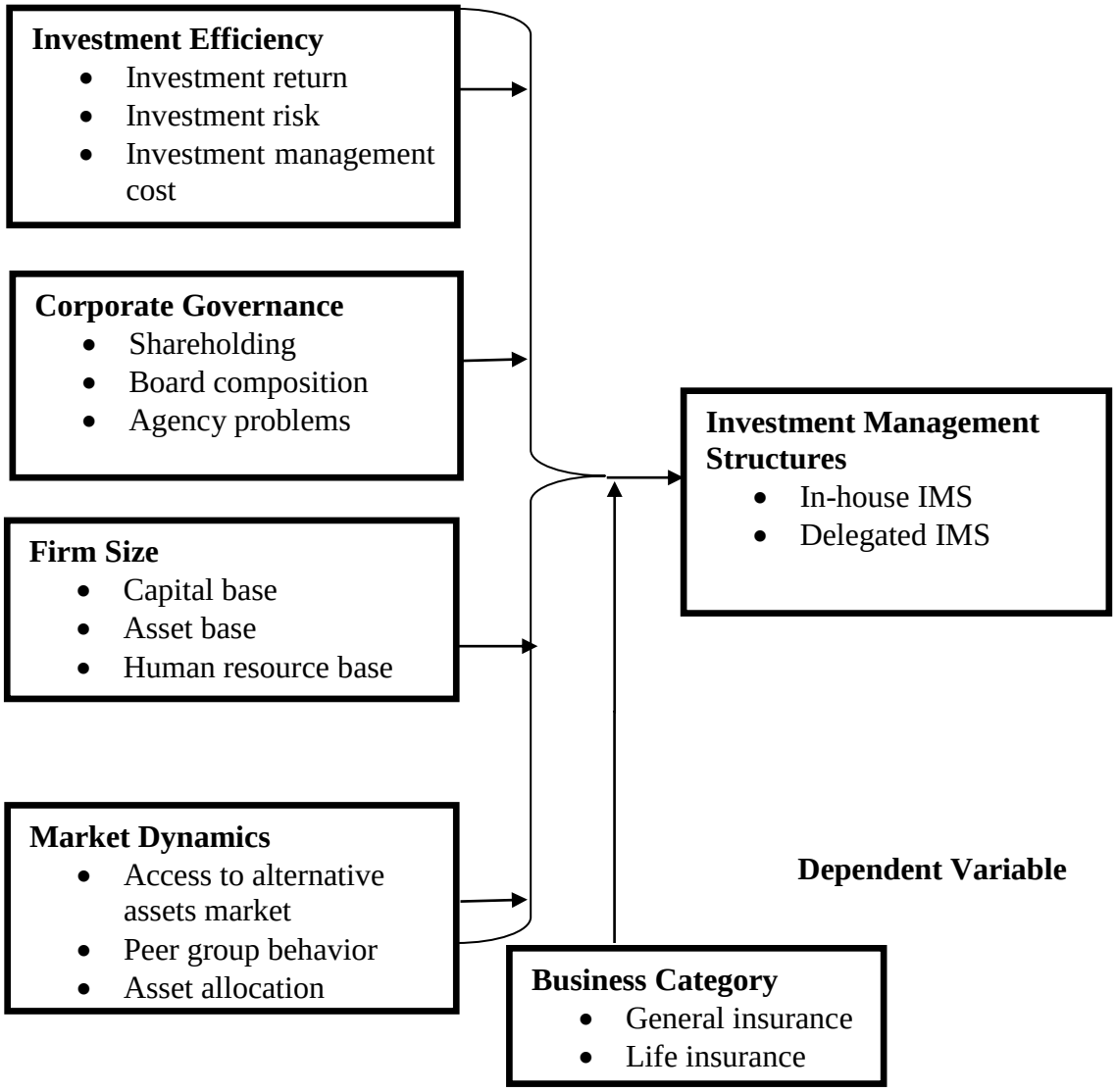

Figure 2.1: Conceptual Framework.

As depicted in Figure 2.1, the central aim of this study is to test the significance of four broad antecedents of investment management structure choice and one moderating variable. Based on a detailed review of theoretical and empirical literature, some of the main antecedents of the choice of investment management structures by institutional investors were identified as investment efficiency, corporate governance, firm size and market dynamics. In the insurance industry, which is the focus of this study, business category might influence many firm level decisions and is therefore built into the analysis as a moderating variable.

Emphasis was placed on the management of financial securities although findings regarding other asset classes were considered in developing recommendations. Since different companies could be using different investment management structures, the importance of the decision antecedents for each structure were analyzed. Decision antecedents are the independent variables while the investment management structure choice is the dependent variable or outcome. The investigation was carried out at a point in time.

Investment Efficiency

Hodgson et al. (2000) argue that investment efficiency is a function of risk, return and total cost of investment management. Hodgson et al. (2000) further note that the construction of investment management structures for most institutional investors is deeply rooted in financial factors and considerations. Therefore, the best investment management structures, must satisfy various criteria. These include having capacity for practical deployment, be appropriately diversified, cost-effective and capable of meeting the investors' performance expectations. Drawing upon Hodgson et al. (2000) this research identifies three main investment efficiency indicators that are considered by investors: investment return, investment risk and investment management cost.

According to Clark and Urwin (2007) increasing attention is paid to the performance of institutional funds because of the crucial role they play in underwriting the welfare of

many citizens of developed and developing countries. Investors have certain investment goals that are articulated in their statement of investment policy (Bodie, Kane, Marcus & Mohanty, 2009). These objectives are mostly an expression of the investors risk appetite and return expectations. The return objectives may be expressed in general terms or in absolute terms such as to achieve a return of 10% over a rolling three year period (Reilly & Brown, 2009). Gallagher, Gapes and Warren (2016) observed that the main consideration in choosing an investment management structure for a majority of investors was net returns. In this study, returns are considered a primary objective that investors pursue, hence a probable antecedent in the choice of IMS. Return was measured using the accounting rate of return on assets.

Strong (2009) asserts that the primary goal of portfolio construction is risk reduction through diversification which is achieved by selecting securities whose returns are not correlated or are negatively correlated. Once the portfolio has been set up, it is subjected to regular review and revision both in terms of asset performance and risk. The risk management function in portfolio construction is undertaken through risk budgeting. Urwin, Breban, Hodgson and Hunt (2001) explain that risk budgeting is the assessment of the amount of risk to be employed, and where it is applied. *Ceteris paribus*, higher returns come with higher risk. Therefore, the financial objectives of the investor must consider what balance of risk and return is desirable, taking into account all stakeholders' interests. This is expressed in terms of the investor's attitude to risk or risk preference ranging from risk loving through risk neutral to risk averse.

Investment risk preference refers to the attitude people hold towards risks, which is a key factor in studies on investors' decision making behavior (Wen, He & Chen, 2014). According to economic theory, risk preferences can be characterized by a single parameter spanning from risk proclivity (risk acceptance or risk loving), risk neutrality to risk averseness (Schildberg-Hörisch, 2018). Finance theory assumes that investors are rational return seekers who are risk averse. However, behavioral finance research shows that investors' decision-making behavior in real life does not always comply with the assumption of rationality. Investor behaviors have been observed to be limited by

cognitive biases and external environment, leading to varying risk preferences based on different situations (Wen, He & Chen, 2014).

Gallagher, Gapes and Warren (2016) report that risk management concerns feature prominently in the choice of investment management structures. Apart from the investment risk as measured by the standard deviation on the portfolio, operational and reputation risks were noted to be a big concern for funds seeking to manage all or part of their assets in-house. Based on findings by Gallagher, Gapes and Warren (2016), this study sought to investigate how the investment risk reduction interests of decision makers influence the choice of their investment management structures.

Hodgson et al. (2000) explains that those charged with the fiduciary responsibility of managing investment funds as custodians will want to minimize expenses and other outgoings, subject to achieving their other investment objectives. The most visible cost borne by funds is the investment management fee. Institutional investors will therefore be keen to select investment management structures that provide the required services at the least or reasonable price. The direct investment management fees are normally charged as a proportion of the fund size. It is common practice to have a sliding fee scale so that a lower rate of fees is charged for large fund sizes which means that while larger funds pay more fees in absolute terms, the cost to AuM percentage declines with size. In essence, the cost of investment management is directly linked to the fund size. In certain instances, performance based fees are also levied but these will not vary with the size of AuM (Hodgson et al., 2000).

There are, of course, other costs that are incurred in the investment management process (Hodgson et al., 2000). These include trading costs, transition costs, consultant's fees and the opportunity cost of management time. Trading costs are unavoidable costs that should not influence the investment management structure. Transition costs and consultant's fees are avoidable but may be insignificant when evaluated from a total fund perspective. Costs such as management time are implicit and difficult to measure and allocate. This research considered only the explicit investment management fees as

the relevant cost that may impact an investor's choice of the investment management arrangement.

Corporate Governance

Corporate governance is the system by which companies are directed and controlled (Cadbury, 1992). Spitzeck and Hansen (2010) view corporate governance from a wider perspective involving corporate decision making beyond the board of directors to include stakeholders such as employees and customers. Spitzeck and Hansen (2010) further argue that the objective of corporate governance has been traditionally conceptualized based on the agency theory as the maximization of shareholder value. While corporate governance is concerned mostly with how organizations are directed and controlled, this study is interested in isolating the effect that corporate governance arrangements have on decisions regarding the investment management structure. The main corporate governance aspects considered in this research were nature of shareholding, board composition and agency problems.

Shleifer and Vishny (1986) argued that the management of a firm needs constant monitoring through persuasion and guidance. In some instances, the management has to be replaced for the overall well-being of the organization. This monitoring role is played by the large shareholder. Shleifer and Vishny (1986), identified four categories of large shareholders: families represented on boards of directors; pension and profit-sharing plans; financial firms such as banks, insurance companies, or investment funds and firms and family holding companies without board seats.

Due to their size, large shareholders are able to influence the corporate governance direction in a company. In line with the categories in Shleifer and Vishny (1986), the main large shareholders in the Kenyan insurance sector are large multinational financial services groups, families and family holding companies and institutional investors like pension funds, investment companies and private equity funds. Shareholder control from multinational groups manifests in terms of deployment of international operational

practices and group norms. Families reign their influence by taking strategic board positions to oversee management while institutional investors will often monitor management through professional and analyst pressure. This study considered the large shareholders prevalent in the Kenyan insurance sector in order to determine their effect on IMS choices that their firms made.

Minichilli, Zattoni, Nielsen and Huse (2011) argue that boards are expected to perform control and advisory or service tasks. According to Forbes and Milliken (1999) control task refers to the board's legal duty to monitor management on behalf of the firm's shareholders and to carry out this duty with sufficient loyalty and care. On the other hand, the advisory task refers to the board's potential to provide advice and counsel to the CEO and other top managers and to participate actively in the formulation of strategy. In such cases, boards serve as a strategic consultant to top managers, rather than exercising independent control (Carpenter & Westphal, 2001).

Minichilli, Zattoni, Nielsen and Huse (2011) posit that board members should scrutinize top executives' behaviors and actively monitor firm performance to satisfy both shareholders' and stakeholders' expectations. Boards of directors play significant monitoring roles with regards to firm performance (Wang, Jeng & Peng, 2007). The effectiveness of a board of directors in executing its control and advisory roles is partly dependent on its composition in terms of size, diversity and balance (AICD, 2016). This research sought to find out the extent which board composition influences the selection of investment management structures by insurance companies in Kenya. Board diversity was measured by gender and skills set.

The principal agent model has been used to describe a wide array of specific situations of economic exchange (Golec, 1992). Some examples of these relationships and interactions in finance include shareholder-manager, issuer-investment banker and investor-investment advisor. The principal agent relationships are often fraught by conflicts of interest that breed principal agent problems or broken agency. Shah (2014) expounds that for the principal agent problem to exist, there must be two ingredients:

conflicting incentives and private information. If there was no conflicting incentives, then the principal would leave the agent to execute the delegated duty without worry. On the other hand, if there was no private information, then the principal would reward the agent on realization of such information.

Shah (2014) argues that the presence of principal agent problems necessarily compounds the agency costs. In additional to the agent's professional fees, the principal incurs some monitoring costs such as auditors and consultant fees. The fiduciary in an investment management arrangement, being an agent of the asset owners, may wish to avoid the costs and risks associated with delegating the acquired investment management authority. This avoidance of agency problems is likely to influence the investment management structure choice where fiduciaries choose to manage assets internally. In this study, agency problem was evaluated by prevalence of agency relations in business activities and reported agency failures.

Firm Size

Kumar, Rajan and Zingales (2001) assert that the concept of firm size can be viewed through a variety of lenses following three main categories of theories namely, technological, organization and critical resources. Following these different approaches, Kumar, Rajan, and Zingales (2001) explain that firm size is dependent on market size and structure, industry capital intensity and country institutional development. Theoretical and empirical literature in portfolio management dwells on three main firm size factors which are adopted in this research. These include capital base, asset base and human resource base.

Kielholz (2000) posits that the insurance company's product is basically a promise and to keep the promise the company must demonstrate to the customers and the regulators that it has sufficient financial resources. These financial resources constitute the firm's capital base and are provided by investors as equity and debt capital. Like most other financial services providers, insurance companies are heavily regulated on capital

requirements. According to Afande and Maina (2015), minimum capital requirements are put in place to ensure financial institutions have sufficient capacity to undertake their intermediation functions. The larger a financial institution's capital base, the greater its capability to undertake business expansion and allocate resources to compete more effectively in a liberalized environment.

The IRA has prescribed the capital adequacy levels needed to conduct different lines of insurance business. These requirements are two-fold: absolute shilling values and risk based derivations. For a firm to conduct short term insurance business, an absolute capital base of KES six hundred (600) million is required while for long term business a capital base of KES four hundred (400) million has been prescribed. Short term reinsurance business has a minimum capital requirement of KES one (1) billion whereas long term reinsurance business requires KES five hundred (500) million. These minimum capital requirements must be met by 30th June 2018 (GoK, 2015).

Risk based capital requirements are determined by the authority based on the risks underwritten and investments of a particular firm. The law further requires that the minimum capital be invested in government securities, bank deposits and cash or cash equivalents (GoK, 2015). Apart from the legally prescribed capital base requirements, firms find it important to deploy higher capital levels depending on their business needs. The capital base of a company is therefore a big determinant of the size of its investment operations and the investment management structure. In this study capital base was measured by the level of share capital invested in the business.

MacIntosh and Scheibelhut (2012) found that internal management is directly related to fund or portfolio size. Gallagher, Gapes and Warren (2016) refers to scale benefits as the advantages gained by a fund because of its large asset base. These benefits include lower management expense ratio, additional returns and creation of capacity. Gallagher, Gapes and Warren (2016) argue that with a larger asset base, funds enjoy a lower management expense ratio and may also gain a negotiating advantage. As fund sizes increase in delegated management, chances for negotiation of lower fees exist. Additional returns

are realized through access to unique opportunities such as alternative assets due to large fund sizes. Small fund sizes also have their implications. Investors with small portfolios may choose to invest through pooled funds as they enjoy the benefits of diversification and professional management at a reasonable cost.

Gallagher, Gapes and Warren (2016) explain that with large asset portfolio sizes, an investor can deploy appropriate governance and risk management structures to their advantage. According to Schonfeld and Kerwin (1993), asset pooling in mutual funds achieves several economies of scale benefits. A large pool of assets can be efficiently managed and costs spread out over a large number of shareholders in the funds. Large fund sizes make better utilization of available investment skills and other administrative capabilities. The ability to attract best of breed managers allows easy access to professional management and ensures that the skills deployed in the management of the fund are of the highest level of expertise which can deliver superior returns to the investors. The study measured asset portfolio size as the actual assets under management as reported in IRA returns.

Hodgson et al. (2000) argue that investment management organizations desire an asset base of sufficient size to finance their fixed costs and to support a sufficiently sized investment team. Investment management is a highly skilled and specialized area of finance. As such, building requisite teams with all necessary capacities can be very expensive. MacIntosh and Scheibelhut (2012) found a direct positive relationship between the number of full time investment executives and assets under management. Clark and Monk (2012) explains that in-house investment management provides a great learning and discovery experience that boosts the organizational capabilities. The internal teams acquire new knowledge about their business. In-sourcing gives opportunity for internal teams to develop their capacity to deal with organization challenges. This self-discovery is a useful element in expanding capabilities. Cambridge Associates (2016) argue that the inability to attract and retain professional investments managers which poses continuity risks is a leading reason why investors seek to outsource their investment management activities. The number of full time investment

professionals employed by a firm in relation to the total workforce was used to measure the human resource base.

Market Dynamics

A market is a group of buyers and sellers of a particular good or service (Mankiw, 2008). Mankiw (2008) further explains that the behavior of the buyers and sellers determine market outcomes. Market dynamics are the factors that influence the competitive structure of a market. The behavior of market participants is influenced and also influences the behavior of others. This study focuses on effect of three market dynamics indicators on the choice of investment management structure namely, access to alternative assets market, peer group behavior (peer effects), and asset allocation.

Clark and Monk (2012) argue that certain investment markets and products such as alternative assets are easier to access under certain investment management structures such as internal management. Market access denotes the ease of getting certain goods or services from particular markets. Some markets experience direct and indirect barriers that hinder users from accessing them. These barriers could exist as a result of the nature of the good or service, user classifications or the market organization. Urwin, Breban, Hodgson and Hunt (2001) posit that the role of alternative assets is to provide returns above equities and /or risks below equities. The three principal asset classes that provide this mix of attributes are private equity, hedge funds and real estate. The proportion of assets invested in alternative asset classes is related to the investment management structure.

Gallagher, Gapes and Warren (2016) explain that under the co-investment and partnership models of in-house asset management, small and medium sized portfolios are able to access and directly invest in large-ticket unlisted assets such as property or infrastructure by “piggy backing” on external management input. This enhanced market access from external input is also an overriding factor for investors who choose to delegate their portfolio management activities. External management allows both small

and large funds enjoy benefits of enhanced markets access by using investment management with broad geographical and asset class reach or exposure. The asset allocation to alternative assets was used to measure the market access aspect of this research.

Bursztyn, Ederer, Ferman, and Yucht (2014) explain that peer effects have been studied and analyzed across fields in economics. People's choices often look like the choices made by those around them: they try to "keep up with the Joneses". There are two reasons why a peer's action of choosing a course of action like buying a particular asset would affect one's own choice. First, there may be inference that choices made by others (asset, product or service) are of higher quality. This is referred to as social learning. Second, one's utility from making a choice (possessing an asset, product or service) may depend directly on the same choice being made by another individual. This is referred to as social utility. The choice of investment management structure is similar to choosing to invest in an asset or to buy a product.

Hodgson et al. (2000) argue that investment fiduciaries' decisions are under the constant scrutiny and external validation by among others, the sponsors, beneficiaries, regulators and the wider public. These fiduciaries therefore take decisions that minimize regret and can be brand driven as well as peer group influenced. Cambridge associates (2016) explain peer group risk is a consideration investors are taking into account when choosing to delegate. An investor operating in a competitive investment environment must be cognizant of peer group behavior and take appropriate decisions. Peer influence was measured in terms of how investors feel compelled to take an action similar to their peers in the market.

Sharpe (1992) defines asset allocation as the distribution of an investment portfolio among a number of major asset classes. It involves the division of the investment choices into broad categories and choosing exposure that the portfolio should take in any one category. Croce and Yermo (2013) observed that institutional investors were primarily seen as good sources of long-term capital and their investment portfolios were

built around the two main asset classes (bonds and equities) with a long term investment horizon dictated by their long term nature of their liabilities. The asset allocation of global insurance funds' portfolios are heavily skewed to marketable securities particularly bonds issued by governments with a small exposure to corporate bonds (Impavido & Tower, 2009). The ability to construct a tailor made portfolio demonstrates the asset allocation flexibility offered by internal management when compared to delegated management. Hodgson et al. (2000) argues that investment management structure choices have to be consistent with the asset allocation decision. The asset allocation decision was expressed in terms of the actual debt, equity, alternatives and cash mix as reported in firm records.

Insurance Business Category

According to Insurance Information Institute, III (2010), generally, insurance business is conducted in two broad categories: general insurance and life insurance. General insurance refers to property and liability insurance. It is also known as non-life insurance or short term insurance. General insurance covers risks such as fire, marine, motor, aviation, accident, health and miscellaneous classes (III, 2010). General insurance comprises the payment of a premium for protection against specific risks for a specified period of time, usually one year. The insured risk may or may not occur. If it occurs a specified sum is payable in compensation for the ensuing loss. The premium vests in the insurer in the event that the insured risk does not happen. General insurance companies invest their premium income to earn an investment income to assist in the payment of any claims that may arise out of the insured risk.

On the other hand, life insurance is the protection against the death of a policyholder in the form of a payment to a beneficiary (III, 2010). It is a long term insurance cover. It consists of four main types of policies: ordinary life insurance, term life, variable life and whole life insurance covers. Ordinary life insurance a life insurance policy that remains in force for the policyholder's lifetime. Term life insurance is a form of life insurance that covers the insured person for a certain period of time, the "term" that is

specified in the policy. It pays a benefit to a designated beneficiary only when the insured dies within that specified period but premiums increase with age. Variable life insurance is a policy that combines protection against premature death with a savings account that can be invested in stocks, bonds and money market mutual funds at the policyholder's discretion. Whole life insurance is the oldest kind of cash value life insurance that combines protection against premature death with a savings account. Premiums are fixed and guaranteed and remain level throughout the policy's lifetime (III, 2010).

The two business categories differ in a number of ways. Gründl, Dong and Gal (2016) explore the key differences between life and non-life insurance business. First, life insurance contracts are relatively longer-term compared to non-life insurance policies which are usually for a term of one year or less. Secondly, there is greater uncertainty about the timing and volume of non-life insurance claim payments compared life insurance because the latter mainly insures one event – death, the risk of which for any individual is often based on a standard mortality table. Third, the difficulty of predicting perils has led non-life business to being considered riskier than life insurance. Fourth, the potential losses from non-life insurance are more difficult to predict than for life insurance. These differences in the nature of business mean that life and non-life insurers have different operating strategies.

The differences advanced in Gründl, Dong, and Gal (2016) have implications on the companies' investment strategies. Since general insurance claims patterns are unpredictable and large, non-life insurers tend to maintain substantial liquidity, since claims may arise from the day the policy is underwritten. General insurers therefore require more liquidity to service those claims as and when they arise and must invest in short term assets. Life insurance claims, while also partly unpredictable, come in a longer time horizon relative to the receipt of premiums. Claims towards life insurers are generally better estimated enabling life insurers to invest in less liquid assets, such as long-term assets, and to follow a "buy and hold" strategy (Gründl, Dong & Gal, 2016).

An insurance company may offer one or both types of insurance categories. Where a company offers both types of insurance and such a company is referred to as a composite insurer. Current market trends require the two business lines to be offered by separate companies (Njugi, 2013). The Insurance Act, Cap. 487 (GoK, 2015) requires that companies operate the two business categories under separate entities. These differences and other unique business aspects may be a consideration in the choice of the investment management structures of companies operating the different types of business. In this study, a company was categorized as either general or life insurance based on the dominant business segment as measured by the gross premium income.

Investment Management Structures

Hodgson et al. (2000) explain that investment management structures are many and diverse depending on an investor style, philosophy and strategies. The structures range from in-house management teams to complex multi manager structures with many alternative approaches to their implementation. New investment challenges are constantly pushing practitioners and theorists to develop new arrangements and investment management structure options. This study deals with choices between in-house management and delegated management.

In-house Investment Management Structure

There is no universally accepted definition of in-house management. However, Clark and Monk (2012) posit that in-house investment management structure or "in-sourcing" obtains where an investor takes charge of the investment decision making process through a committee of internal executives. Clark and Monk (2012) further argue that after the 2007-9 global financial crisis, institutional investors were reviewing their investment management structures with a tendency towards by-passing the traditional investment intermediaries and developing in-house teams of investment professionals.

Gallagher, Gapes and Warren (2016) isolate four main ways of implementing this investment management structure. At one extreme lies the option of a dedicated internal structure whereby an asset class or whole portfolio is managed entirely in-house. At the other extreme, there exists a hybrid external/internal model where the in-house management team is responsible for a slice of the assets within a multi-manager structure. In between are other options such as co-investment where an external manager selects and sources the assets, but the fund takes an additional slice which it owns directly after performing own due diligence. Partnerships are where responsibility for asset selection and management is effectively shared by the partners, perhaps under a Special Purpose Vehicle (SPV) or Joint Venture (JV) with its own staff. In this study, a firm that manages more than half of its investment assets using any or a combination of the four ways of insourcing is considered to have chosen the in-house investment management structure.

Delegated Investment Management Structure

According to Leung (2015), delegated investment management exists where the investor uses an external manager to make investment decisions and implement them. Leung (2015) elaborates that delegated investment management may take two forms: centralized or decentralized. An investor can decide to use a single manager to execute her investment management strategy. This constitutes centralization. Alternatively, different managers can be retained to oversee different asset class strategies. This constitutes decentralization.

Investment management delegation structures may also be distinguished in terms of how client funds are handled (Peterson, Iachini & Lam, 2011). In this case, we have two alternative arrangements: mutual funds and segregated funds also known as Separately Managed Accounts (SMAs). The two arrangements are similar in that both products are managed by professional money managers. They are however different in terms of the ownership of the underlying securities in the portfolio. In a mutual fund structure, the securities are owned by the fund which is managed as a single portfolio and its shares

are in turn held by the investors. In SMAs, the investor owns the underlying securities in his or her own account and accounts are managed on a client-by-client basis (Peterson, Iachini & Lam, 2011). In this study, a firm using any form of delegation to manage more than half of its assets was considered to be using the delegated investment management structure.

2.4 Empirical Literature Review

This section reviews previous relevant research that offers insights in the area of investment management structures and the factors antecedent in the choice of those structures. The research is drawn from all parts of the world and is categorized into studies on investment management structures, studies on antecedents of the two main structure options in this study and other studies related to insurance and investment.

Studies on Investment Management Structures

Clark and Monk (2012) undertook an investigation of in-house asset management by investors from different parts of the world. The study was structured as a case study analysis using twenty (20) large funds from four (4) continents. The objective of the study was to develop principles and policies for in-house investment management. The methodology adopted was qualitative in-depth case study analysis. The study found out that investors were moving their assets in- house in reaction to the effects of the 2007 – 9 global financial crisis. It concluded that the key success factors for in-house management were people, processes, systems and capabilities.

MacIntosh and Scheibelhut (2012) conducted a unique pension fund benchmarking survey incorporating 19 large pension funds from the G20 countries. The survey sought to find out the organizational structures that those funds were using. The other objective of the benchmarking survey was to allow funds to learn from their peers on how they were implementing their respective governance structures. The study adopted a mixed methods approach with analyses done using both qualitative and quantitative data. The

study found that internal management was gaining traction among pension funds surveyed leading to expanded organization structures. Funds were also building internal professional capacity to handle their expanded asset bases.

Blake et al. (2013) studied delegated investment management by pension funds in UK covering the period from 1984 to 2004. The study objective was to find out whether pension fund sponsors had rationally moved to delegated investment management structure. The study applied a quantitative descriptive analysis methodology using a unique data set provided by BNY Mellon Asset Servicing comprising of 2,385 U.K. pension funds. The study concluded that the shift to delegated management was in tandem with the ability of sponsors to manage risks and the need to diversify skills and alpha.

Clark and Urwin (2008) studied the issue of governance of pension funds with the objective of prescribing best practice governance structures. The study adopted a mixed methods approach using data from Watson Wyatt Global Pension Asset Study of 2007 and case studies. From the study, Clark and Urwin (2008) constructed principles and practices of good governance. These were summarized into twelve (12) findings about global best practices for pension funds management. These findings were also extended into the realm of sovereign wealth funds (SWFs) and other institutional investors. The authors observed that the key challenge of governance is adaptation of operations to function in global markets while maintaining internal consistency and best practices.

Useem and Mitchell (2000) conducted two national surveys of the US state and local public retirement schemes in 1992 and 1993. The studies sought to find out whether the pension governance policies had any effect on how retirement schemes contracted for external asset management among other investment decisions. The studies used a quantitative descriptive methodology relying on a multivariate regression model. The studies found that the ways that public pensions are governed have a direct bearing on how they invest their assets and their financial performance.

Coronado, Engen and Knight (2003) examined the relative effectiveness public and other government retirement funds in comparison with private pension funds. Based on a sample of public plans in the US for the period 1968 to 1996, the study sought to find out whether government managed funds deliver returns that are similar to private pension schemes and mutual funds. The investigation adopted a quantitative descriptive methodology. The investigation found that after controlling for differences in asset allocation, certain types of political interference led to a sacrifice of returns on plan assets. The study confirms that the governance structure of an institutional investor can have significant influence on the achievement of investment objectives.

M'Ariba (2018) investigated the investment management structures of institutional investors in Kenya. The study objective was to find out the investment management structures that institutional investors in the Kenyan capital markets were using. The study used a descriptive methodology relying on key informant telephone interviews and desktop document analysis. M'Ariba (2018) found that the three main categories of institutional investors who were active in the Kenyan capital markets namely, unit trusts, pension funds and insurance companies predominantly used on delegated investment management structures.

Studies on Antecedents on in-house Investment Management Structure

Clark and Monk (2012) investigation of in-house asset management by investors from different parts of the world was a broad study that also had an objective of finding out the reasons why investors decided to manage their assets in-house. The study was structured as a case study analysis using twenty (20) large funds from four (4) continents.

Clark and Monk (2012) discovered that there were many and diverse reasons that investors cited for choosing internal management. In-house investment management offered better and direct access to alternative asset class markets compared to third party investment vehicles; the principal-agent problems in investment management are

avoided and agency costs minimized; there is great learning and discovery experience that boosts the organizational capabilities; the investor is likely to maximize the net-of-fee investment returns and it is a more sustainable approach to investing because the investor can tailor the portfolio asset allocation to meet own needs.

Gallagher, Gapes and Warren (2016) undertook a study of the Australian superannuation market to determine the antecedents of the decision to bring their assets under in-house management. The objective of the study was to create an understanding to enable the formulation of a framework that asset owners can use for making and implementing any decision to manage investments in-house. The study adopted a qualitative and descriptive methodology relying on in person in-depth interviews of 20 senior executives representing 13 main funds and 7 fund advisers.

Gallagher, Gapes and Warren (2016) found that the main consideration for a majority of participants was net returns. Economies of scale was the other important consideration because as assets under management grew, the tendency of funds to want to move assets in-house increased. The need to achieve greater alignment of fund objectives though better tailoring and avoidance of agency risk also tended to drive funds in-house. Concerns reported by the survey about in-house management included implementation capacity and risk management.

MacIntosh and Scheibelhut (2012) pension fund benchmarking survey incorporating 19 leading pension funds from the G20 countries addressed the effect of internal management on fund performance, costs and compensation arrangements. The main findings were that in-house management led to higher full time investment staff being engaged but ended up lowering total cost of management; funds with more internal management had better net returns (after cost returns); use of internal management was directly positively related to fund size.

Studies on Antecedents of Delegated Investment Management Structure

Blake et al. (2013) study of delegated investment management by pension funds in UK covering the period from 1984 to 2004 sought to find out the rationale for funds move towards decentralized management. The study applied a quantitative descriptive analysis using a unique data set provided by BNY Mellon Asset Servicing comprising of 2,385 U.K. pension funds. The study found out that the key antecedents of delegation were the benefits from diversification of skills and returns (alpha) as well as desire to reap benefits of their large asset base.

Goyal and Wahal (2008) investigated the hiring and firing of investment managers by retirement plan sponsors in a delegated management structure in the US. The objective of the investigation was to find out why investors hired or fired their delegated manager. The study adopted a quantitative descriptive approach. Based on a sample of 3,400 plan sponsors in the US between 1994 and 2003, the study found that plan sponsors hired investment managers after large positive excess returns implying a return chasing behavior by plan sponsors but this did not deliver positive excess returns after the choice. The study also found that investment managers were fired due to poor investment returns. This study demonstrates that pursuit of higher investment returns is a major reason for delegation.

Binsbergen, Brandt and Koijen (2008) studied the problem of institutional investment decision with a centralized CIO and multiple delegated managers. The objective of the study was to find out how investors cope with the misalignment of objectives and the uncertainties regarding the external manager's risk appetite. The study applied the mean variance optimization approach to solve the management problem under different constraints. The study found that in a delegated set up, there are significant utility losses due to misalignment of objectives and risk appetites between the CIO and the managers.

Peterson, Iachini and Lam (2011) investigated the characteristics and performance of separately managed accounts as a major form of delegated investment management. The

investigation involved a quantitative analysis of 6,750 domestic equity strategies offered by 1,810 investment firms in separately managed accounts over the 1991-2009 period in the US. The study found evidence that access to external manager skill was a major factor influencing delegation choices and that managers who were more active had better returns.

Bateman and thorp (2007) studied the Australian (private pension) superannuation funds industry in order to understand how they selected their managers and the resultant asset allocations. In the Australian not-for-profit superannuation market, selection of investment managers is handled by fund trustees and their consultants. Individual pension fund members indirectly allocate funds to the investment managers through an entry-level choice from among multi-manager diversified and specialist asset allocation options. This unique feature of the Australian market brings about questions over the efficacy of the additional layer of decentralization decisions. The study adopted a descriptive design using about two hundred (200) schemes and their delegation patterns. The study found that funds whose boards of trustees employ a very large number of investment managers generate higher risk-adjusted returns compared to other funds. It also found that funds that employ more than thirteen (13) managers may actually perform worse that those using a single manager.

Glinbatt, Titman and Wermers (1995) studied mutual fund behavior as another form of delegated management in order to find out their investment strategies, portfolio performance, and evidence of herding. The methodology adopted for the study was a descriptive quantitative approach. Using a sample of 155 US mutual funds over the 1975-1984 period, the study found that 77 percent of the mutual funds were momentum investors, and realized significantly better performance than other funds. There was relatively weak evidence of herding.

Bollen (2007) examined the investor behavior in socially responsible (SR) equity mutual funds in US. The objective of the study was to find out if socially responsible mutual funds were more attractive to investors than conventional funds based on funds inflows.

Using a comparative sample of conventional and SR equity funds in the US from 1980 to 2002, the study investigated the monthly volatility of fund flows into the two fund types. The study found strong evidence that there was lower monthly fund flow volatility in SR funds compared to conventional funds.

Keswani and Stolin (2008) studied the issue of smart money investing in mutual funds. The objective of the research was to find evidence of smart money flows in to the UK mutual funds. The study adopted a quantitative methodology. The study used UK data that was differentiated into institutional and individual investors. The study established the prevalence of smart money effect in the UK and also reconfirmed the same for the US.

Bu and Lacey (2008) investigated the relationship between mutual fund performance and flows into and out of the funds. The objective of the investigation was to find out the effect of stellar performance on fund inflows. A descriptive quantitative approach was used. Using a sample of all US equity mutual funds available to the public each quarter from 1998 to 2005, the study found that while fund performance attracts new cash inflows, there is no evidence of the smart money effect.

Studies Related To Insurance and Investment

Gonga and Sasaka (2017) investigated the determinants of financial performance of insurance companies operating in Nairobi County in Kenya. The objective of the study was to find out the factors influencing the financial performance of insurance companies. The study adopted a descriptive research methodology. Using a sample of CFOs and Corporate Affairs managers of 55 firms, the study found that the companies held liquid investments which would be sold to cover claims in periods when underwriting income was not enough to cover claims. The firms relied on cash flow from operations for their liquidity management.

Auma (2013) investigated the relationship between insurance companies' portfolio holdings and financial performance in Kenya. The study had the objective of finding out how investment portfolio management affected the financial performance of insurance companies. The study applied a descriptive methodology using a census approach. The study found a strong positive relationship between investment portfolio holdings and profitability.

Njuguna (2011) studied the determinants of governance of pension plans in Kenya. The objective of the study was to find out how pension regulations, pension plan design, membership age, number of members in the pension plan and plan leadership affected pension governance. Based on a descriptive research design the study used a sample of 362 pension plans. The study found that pension governance is influenced by pension regulations, leadership, and membership age. The pension plan design and number of members did not have a significant influence on how the pension plans were governed. This study is a major work that sheds light on governance of pensions in Kenya.

Njuguna and Arunga (2013) investigated the risk management behavior of micro insurance providers in Kenya. Applying a descriptive mixed methods approach, a purposive sample of 8 companies that offer micro insurance products was investigated. The study identified the risks facing micro-insurance providers as diseconomies of scale, low penetration rates, limited distribution channels, correlation risks and rigid regulatory framework. Measures employed by firms in that segment of the market to manage risk included using technology in distribution to lower costs, close scrutiny of claims to manage losses, use of risk measurement models to price products, as well as offering flexible payment terms to increase uptake and increase the penetration levels.

Njuguna (2014) examined the business concentration and competition of annuities providers in Kenya. The study objective was to analyze the structure and behavior of firms in acquiring and retaining business focusing on 2009 to 2011 financial years. The investigation adopted a descriptive methodology. Using a sample of 8 firms that offer annuities in Kenya the study found out that there was very high concentration as

evidenced by high concentration ratios. Market power in the annuity segment of the insurance industry was entrenched by regulation, the long term nature of the products, collusion between pension administrators and the firms, lack of close substitutes to annuities and absence of differentiation. This entrenched market power led to low returns for the annuitants, low bargaining power and diseconomies of scale among other negative effects on the consumers.

Ochola (2017) investigated the efficiency of insurers in Kenya for the period 2011 to 2014. The objective of the study was to find out the level of operating efficiency among insurance companies. The study adopted data envelopment analysis (DEA) methodology. The study found that the number of firms attaining the efficiency frontier declined from 55% to 36% over the study period. It was also observed that there was a positive relationship between overall efficiency and net incurred claims, total assets and profit after tax. Total expenses, shareholder funds and reserves, net earned premium and investment income were negatively related to efficiency.

2.5 Critique of the Empirical Literature

This section provides a critique of the existing literature cited in section 2.4. It looks at the positive aspects of the research, the methodologies adopted and their limitations as well as the lessons learnt from the studies.

Studies on In-house Investment Management Structure

Clark and Monk (2012) investigation of in-house asset management by investors from different parts of the world offers significant knowledge contribution regarding the prevalence, principles and policies for implementation of in-house investment management. While the study was wide in scope covering 4 continents, it did not cover medium to small funds and only addressed the large funds which would be normally found in the developed countries. The study also focused on pension funds and excluded other institutional investors such as mutual funds and insurance companies. The key

contribution of the study was the articulation of the key success factors of in-house management. It would be interesting to see what results would come out of a similar study covering another type of institutional investor such as insurance companies.

Some of the limitations of the study include the use of case study methodology which may present limitations in terms of the depth of the analysis undertaken as well as the potential for future replication. Despite the limitations noted, this study provides first hand evidence on the application of in-house investment model by pension funds and offers useful insights that other institutional investors could learn from.

MacIntosh and Scheibelhut (2012) survey of 19 large pension funds from the developed countries covers the organizational arrangements of pension funds particularly those using in-house IMS. The mixed methods approach used in the study demonstrates the strength of combining qualitative and quantitative data in finance. The study reported greater use of in-house capabilities but the findings are from a narrow sample which may not be representative. These findings would need further interrogation, analysis and extension to other countries in the developing world. The study backs up the debate on investment management structures focusing on in-sourcing versus outsourcing particularly in Australia and parts of Europe.

Gallagher, Gapes and Warren (2016) study of the Australian superannuation market contributes to the understanding of in-house management by revealing some important aspects of that management structure. These aspects include an understanding of the reasons behind funds' decision to move in-house and how they implemented in-house management. The scope of the study was geographically limited to Australia making its findings country specific. Australia has a unique retirement benefits structure further limiting cross country comparisons. The use of a qualitative approach in a financial economics study offers credence to the strength of that methodology in research. The findings from the study, despite being country specific offers a solid contribution on the implementation of in-house investment management structure.

Studies on Antecedents on Delegated Investment Management Structure

Blake et al. (2013) studied delegated investment management by pension funds in UK covering the period from 1984 to 2004. The research covering a 20 year period provided an in-depth quantitative review of some of the main concerns of investors applying delegated management approaches. The study however relied on a unique and proprietary data set making it difficult for the research to be extended to current periods by other researchers who may not have access to the unique data. On the whole, Blake et al. (2013) gives additional evidence on return chasing behavior of institutional investors. The study left a knowledge gap regarding the investment behavior of insurance companies which are similar to pensions on the basis of their contractual deposit receipts, investment horizons and asset sizes.

The research by Goyal and Wahal (2008) on the hiring and firing of investment managers by retirement plan sponsors in a delegated management structure provides insights into manager selection in a delegated framework. The study used a rich data set of 3,400 plan sponsors over a 10 year period making it a very comprehensive study. The study also applied conventional methods in quantitative analysis making it easy to follow. The findings from this research confirmed the importance of careful analysis of different aspects of the external manager's capabilities before firing or hiring them instead of relying solely on the manager's historical performance.

Binsbergen, Brandt and Koijen (2008) study of institutional investment decision making with centralized CIO and multiple delegated managers contributes to the optimization problem in investment management from a stand point of optimal investment management structures. The study used mathematical approaches to model what would be considered a best approach in a delegated set up. This study made significant recommendations including the option of taking assets back in-house in order to avoid the utility losses emanating from misalignment of risk appetites between the principal and the agent.

Peterson, Iachini and Lam (2011) investigated the characteristics and performance of separately managed accounts based on a large sample of US domestic equity portfolios. This study contributes richly and uniquely to financial economics because while separately managed accounts are a common choice in delegation, it has not been widely studied. At the same time, it is important to note that this study would have a much greater impact if the separately managed accounts had also been categorized by the nature of the investor such as insurance companies, pension plans and sovereign wealth funds. The study used a very wide sample thereby ensuring representativeness. The application of Fama-McBeth regressions in performance measurement of the different strategies adds to the understanding of how this method works in practice.

Bateman and thorp (2007) study of the manager choice decision by trustees in the Australian (private pension) superannuation industry contributes strong evidence that manager choice and use of multiple managers can have positive effects on returns. The unique structure of the private pension arrangements in Australia limits the application of findings from that study but it is still a worthy contribution to the Australian market dynamics.

Glinbatt, Titman and Wermers (1995) study of mutual fund delegation approach made major contributions to the understanding of mutual funds investment behavior in the US. Since mutual funds are a preferred model of delegation particularly amongst retail investors, the findings from that study are of great significance to that category of investors. The main limitation of the study is that it uses a relatively small sample of 155 mutual funds over a 10 year period which could affect the representativeness of the findings.

Other Studies Related to this Research

Clark and Urwin (2008) study of governance of pension funds succeeds very well in prescribing a set of principles and practices for good governance. The study is limited to pension funds but its prescriptions could be applied to other similar entities. The case

study methodology used offers practical lessons on the strength of this approach in future research. The study contributes knowledge on how pension governance may affect the investment outcomes of pension schemes.

Useem and Mitchell (2000) surveys of the US state and local public retirement schemes contributes to the knowledge on the value of good governance structures for retirement systems. The study is set in US but findings made could be relevant to other parts of the world. The methodology adopted demonstrates the application of multivariate regression techniques in research. Similar surveys in US and elsewhere in the world would greatly enrich the understanding of the evolution of pension governance practices.

Coronado, Engen and Knight (2003) also confirmed the importance of good governance systems for retirement plans. The study was limited in scope to the US. The study added to the understanding of the effect of political interference in public retirement systems. The study contributions could be improved if it was repeated after every regime change in the state and local governments.

Keswani and Stolin (2008) investigated institutional investor behavior in relation to their investments in mutual funds. The findings from that study gave evidence on prevalence of smart money effects both in the UK and US. On the other hand, Bu and Lacey (2008) disputed existence of smart money effect in the US based on a sample of US equity funds. These contradictory findings would require collaborative research to cure. At the same time, there is a lack of follow up research on smart money effects in other parts of the world. Other studies on mutual fund investing such as Bollen (2007) explored socially responsible investing. Socially responsible investing is gaining momentum both in practice and in the theoretical investment literature.

M'Ariba (2018) investigation of institutional investment management structures in Kenya was a commendable effort to open new fronts in capital markets research. It contributed some initial knowledge on how institutional investors managed their portfolios. However, the study lacks the rigor and depth in addressing each investor

category decision making processes. The study also adopts a qualitative methodology based on a small sample that left a lot of aspects unexplored.

Gonga and Sasaka (2017) undertook an investigation of the determinants of financial performance of insurance companies in Kenya. The study while contributing to knowledge does not objectively address the key study subject being the firm but rather goes for qualitative views from the management of the firms. Auma (2013) analysis of the relationship between portfolio holdings and profitability falls short of getting to the real antecedents of profitability. While the study found a positive correlation between investment holdings and profitability, the investment portfolio contribution in form of investment returns is not considered whatsoever.

Njuguna (2011) makes a great contribution to pension investment management by analyzing pension governance in Kenya. The work was ground breaking but focused on a sector that is heavily regulated from an investment management perspective. As a consequence, extending the conclusions of Njuguna (2011) into less regulated entities like insurance companies becomes difficult.

Njuguna and Arunga (2013) studied the risk management behavior among firms offering micro insurance products in Kenya. That study was relevant but used a very small sample of only 8 companies. The evidence from that study may not be extrapolated to the whole industry. Njuguna (2014) also studied annuity providers but again uses a very small sample that make the findings representativeness low.

2.6 Research Gaps

The paper by Hodgson et al. (2000) was a significant step in initiating interest in the study of how investors manage their funds. An institutional investor's choice of the framework to guide its investment management activities constitutes a major management decision. As institutional investors, insurance companies intermediate a

huge amount of assets (IMF, 2011; Schish, 2009). However, it is not clear how they make decisions regarding their investment management structures.

Decision theory suggests that decision makers should make decisions with logical consistency (Tang, 2006). Agency theory argues that avoidance of agency problems and minimization of agency costs should drive decisions on the investment management structure to apply (Shah, 2014). Transaction cost theory emphasizes the role of cost in the decision to insource or outsource (William, 1981). This theoretical set of prescriptions is indicative of the array of factors that decision makers (insurance companies) should consider as they choose their investment management schemes.

On the other hand, based on regret theory, Hodgson, et al. (2000) states that hedging of bets is the best approach to minimize self-blame. Core finance theory represented by the modern portfolio theory (Markowitz, 1991) advocate for a balance between risks and return emanating from an investment decision. A detailed review of the theoretical literature therefore demonstrates a lack of consensus on the factors antecedent to an insurance company's decision on the investment management structure to use. This presents a theoretical gap that this study could address because there is a dilemma as to which factors a decision maker should consider as they choose their investment management structures.

To further understand the theoretical gap, a review of the available empirical literature was undertaken in order to unravel the practice and factors that have been found to be important to decision makers. On the prevalence of different investment management structures, MacIntosh and Scheibelhut (2012) found that in-house management was more common in application among pension funds in G20 countries, an outcome that was supported by Clark & Monk (2012) based on evidence from four continents. The question regarding which investment management structures are more prevalent in Kenya and more so among insurance companies, remains unanswered.

Regarding the reasons why insurance companies choose the investment management structures they use, empirical evidence from around the world is limited but informative. Clark and Monk (2012) found that minimization of agency costs, higher investment returns, customized asset allocation and better access to alternative investment markets favour in-house management. Gallagher, Gapes and Warren (2016) found that higher investment returns, investment risk reduction, benefits of economies of scale and avoidance of agency problems were top priorities for investors who took their assets in-house. These findings are not homogenous and emanate from the developed countries.

Delegation investment management approaches were chosen by pension funds because they offered access to more expertise hence higher excess returns in addition to delivering cost benefits of large asset bases (Blake et al., 2013). Binsbergen, Brandt and Koijen (2008) found that differences in risk appetite between an investor and their delegated managers can lead to significant utility losses making risk reduction a major priority for investors who outsource their investment activities. Many other studies (Goyal & Wahal, 2008; Peterson, Iachini & Lam, 2011; Bateman & Thorp, 2007) found that returns, risk reduction and asset allocation concerns led investors to delegate. In the Kenyan context, few studies have been done to discover the drivers of the IMS choices. The cited studies indicate the presence of an empirical gap on antecedents of IMS choices.

Out of the twenty four firms licensed by CMA as fund managers in Kenya nine are directly controlled by an insurance company group (CMA, 2021). This contextual observation means that there is a strong linkage between investment management and the insurance industry in Kenya. The investment funds directly controlled by the insurance industry constitutes over 5% of the country's GDP which is a large part of the investable assets in the Kenyan capital markets (IRA, 2019). It is therefore important to understand how insurance companies manage their funds given their interlinkage with fund management and their large asset base. In order to address the cited knowledge gaps, this study seeks to address the investment management behavior of the insurance industry.

2.7 Summary

This section summarizes the theoretical, conceptual and empirical literature provided in this chapter. The chapter created a theoretical background for the study before developing a conceptual framework that is backed up by empirical literature linked to the study variables.

Investment management structures are many and varied ranging from simple in-house arrangements to complex multi manager structures (Hodgson et al., 2000). Decision theory, agency theory and transaction cost theory are the main theories applied to support factors antecedent to the choice of investment management structures. Regret theory allows the inclusion of peer influence in insurance companies' decision making. This study cannot be complete without buttressing on core finance theories hence the inclusion of modern portfolio theory to support the risk return trade off in all investment decisions.

The conceptual frameworks sets out four main variables namely investment efficiency, corporate governance, firm size and market dynamics as the predictors of IMS choice. In-house IMS and delegation IMS are the two dependent variables. This conceptual framework is modified by the inclusion of business category as a moderator variable in recognition of the potential influence of life and general insurance peculiarities in investment decisions.

A review of relevant empirical research offers both a guide and a comparison for this research. The available research straddles the main areas of this study. Research on investment management structures covers prevalence and principles and practices for implementation of different structures. Studies on antecedents of in-house management show that principal agent problems, cost reduction, asset allocation and firm size are important factors that investors consider in their IMS choice decisions. Investigation of delegation models shows that factors favouring this model include increased investment returns, lower costs due to large asset bases and risk reduction.

In conclusion, this chapter developed the theoretical basis of the study in order to come up with a workable conceptual framework. That framework is given relevance by empirical research around the world. This chapter serves as the backbone of the rest of the thesis.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research methodology that was applied in the study. It provides the approach followed in the analysis of the antecedents of choice of investment management structures among insurance companies in Kenya. The chapter details the research philosophy and design, target population, pre-testing of the questionnaire, data collection instruments and procedures and finally data analysis techniques. The chapter lays out the main approaches that were followed in undertaking the research from data collection, analysis and interpretation of results.

3.2 Research Philosophy

This research adopted a positivist research philosophy. A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analyzed and used (Chen & Hirschheim, 2004). Positivism takes the view that reality exists objectively and independently from human experiences and therefore the research phenomena is stable and can be studied without interference. It is concerned with the hypothetic-deductive testing of theories (Chen & Hirschheim, 2004). Under a positivist philosophy, data collection and analysis is considered to be objective and that the researcher is independent from the study.

This research philosophy was selected because investment management involves complex and unique decisions that are influenced by circumstances of the specific entity, the operating environment as well as individuals taking part in the decision process. To understand these complexities, the research aimed to unearth the objective reality driving the observed IMS choices. The application of the positivist research philosophy allowed the researcher to probe the research phenomenon in an unbiased manner. Investment Management Structure choices and the reasons behind those choices were

observed and evaluated in an objective and neutral way in order to arrive at unbiased conclusions.

3.3 Research Design

The study employed a descriptive research design. Mugenda and Mugenda (2003) explain that a research design is a framework that guides the collection and analysis of the data. It is a detailed plan of how the research study is conducted according to the data required in order to investigate the research questions in an economical manner. According to De Vaus (2001), it constitutes the overall strategy chosen to integrate the different components of the study in a coherent and logical way to effectively address the research problem. It constitutes the plan for the collection, measurement, and analysis of data. A good research design should enable the researcher to conduct the inquiry in an economical way and derive unambiguous results (De Vaus, 2001).

Nassaji (2015) explains that descriptive research is used to describe a phenomenon and its characteristics in its naturally occurring form without any manipulation. Data for this kind of research may be collected both qualitatively and quantitatively but is analyzed quantitatively. Both primary and secondary quantitative data were used in this study. According to Lans and van der Voordt (2002), descriptive research is considered to be a factual registration without a quest to justify reality. It does not support the development of theory but is objective and neutral.

This research design was considered suitable for this study because the investment management structure choices that firms have chosen are already in place and the reasons behind those choices are known to the respondents. Furthermore, descriptive research is mostly concerned with explaining the outcome rather than the process. Descriptive research design augurs well with positivist research philosophy owing to its objectivity. Kothari (2004) justifies the use of descriptive research designs by arguing that these methods allow the making of inferences based on observation of a phenomenon in a neutral way. This study sought to explain the investment practices of

insurance companies. As such, descriptive techniques were considered appropriate for the exploration of the study phenomenon.

3.4 Target Population

Target population refers to all the elements that meet the criterion specified in a particular research (Alvi, 2016). The target population for this study consisted of all the composite, life and general insurance and reinsurance companies licensed to offer services in Kenya by the Insurance Regulatory Authority (IRA). There were a total of forty six (46) companies licensed to undertake insurance and reinsurance business in Kenya as at 31st December 2017 (IRA, 2018). This target population is presented in appendix II. In order to isolate the business category moderating effects on IMS choices, the population was categorized based on firms' principal business lines as shown in Table 3.1.

Table 3.1: Study Population

Business Category	Number
Composite Insurance Companies	20
General Insurance Companies	17
Life Assurance Companies	6
Composite Reinsurance Companies	3
Total	46

Note. Adapted from Insurance Regulatory Authority, Annual Statistics, 2017

3.5 Complete Enumeration Survey

In this study, the target population comprised of 46 insurance and reinsurance firms. The unit of observation was the firm which meant that the study faced a small population. A complete enumeration survey or census was therefore carried out. All the 46 firms were included in the investigation. According to Mugenda and Mugenda (2003), a complete enumeration survey is appropriate where the population is small with heterogeneous elements as was the case in this study. It also allows the collection of more complete

information about all the elements of a population using a questionnaire. The results gained from such a study are also likely to be more reliable.

3.6 Data Collection Instruments

This section deals with the data that was collected for the study. The study design required the collection of both primary and secondary data. The data collection methods and instruments are described in the subsequent subsections.

Primary Data

The study had a number of variables that required the collection of primary data. These were the investment management structures used by the respondent firms, the reasons for the choice of those structures and supporting quantitative data. The respondent firms were investigated through their Chief Finance Officers (CFO) or the Chief Investment Officers (CIO). The CFO or CIO is, in most cases, the executive in charge of investment management and is expected to be a central player in the investment management and oversight process and therefore knowledgeable of the firm's choices, policies and processes.

The primary data collected was quantitative in nature. These data were collected directly from the firms using the research questionnaire presented in Appendix IV. The study objectives detailed in section 1.3.2 and the conceptual framework under section 2.3 required the collection of data on investment management structure as the dependent variable. The data on the independent variables covers investment efficiency, corporate governance, market dynamics and firm size.

The survey questionnaire obtained the respondent firm's basic information before proceeding into the main contents of the research. The preliminary part of the questionnaire sought general information about the respondent. In that section bio data and financial information of the respondents were collected. These data included the

business category and ownership type, volume of business transacted annually and size of the investment portfolio.

Part A of the instrument addressed the general research objective i.e. to explore the investment management structure used by the respondent. This is the dependent variable in the research. The investment management structures were categorized into two broad alternatives namely in-house management and delegated management. Respondents were required to make a choice of the structure they were using and in the case of a hybrid arrangement, to choose the structure that was being used for more than half of the total assets. Following up on the responses obtained in Part A, additional information was sought, with a sub section dedicated to each choice. Sub section A1 dealt with in-house IMS while sub section A2 addressed delegated management. The additional information sought in these sub sections was the duration the structure had been in use and the methods used to implement the investment management structure.

Part B - E of the questionnaire were designed to collect data on the four independent variables. Respondents were asked to indicate their level of agreement with statements regarding the importance of indicators that were used to measure each of the variables. The responses were ranked on a five point Likert scale where 1 represented strong disagreement and 5 represented strong agreement. Some additional questions were posed in each section to increase the depth of the responses obtained. These parts were to be completed by all the respondents.

Part B covered the first independent variable namely investment efficiency. It sought information on the level of agreement with statements regarding the importance of investment efficiency indicators namely investment returns, investment risk and investment management cost reduction in the choice of the firm's investment management structure. Part C addressed corporate governance as the second independent variable. This variable was indicated by the firm's shareholding, board composition and principal agent problems. Respondents were required to indicate their level of agreement on the importance attached to the three corporate governance

indicators. Part D dealt with market dynamics represented by three indicators: better access to alternative assets market, industry peer behavior and asset allocation. Part E dealt with firm size as measured by capital base, asset base and human resource base.

Part F sought responses on business category as the moderating variable. Only two choice options were provided. Respondents were required to choose the one that represented the firm's core business segment. In the case of composite insurance companies, respondents were required to select the business category that delivered more than half of gross premium written in the prior year.

Secondary Data

Secondary data was collected from the regulatory authority, IRA, using a secondary data collection sheet presented in Appendix V. The data was obtained from quarterly returns submitted by insurance firms. The Insurance Act, Cap. 487 (GoK, 2015) requires all licensed insurance companies to submit data to IRA about their operations and financial performance on a quarterly and annual basis. The following key data was collected for all the forty six (46) firms for 2016 and 2017 for comparison purposes: gross premium income, investment portfolio size, total assets, investment income, and investment management expenses. Asset allocations were computed from the investment portfolio data.

3.7 Data Collection Procedures

This section covers the methods and procedures that were followed in the data collection exercise. Since both primary and secondary data were collected in the study, the approaches adopted in each data collection activity are explained.

Primary Data Collection Procedures

Data was obtained directly from the firms using the research questionnaire in appendix IV. An introduction letter presented in appendix III and authority to undertake research

set out in appendix VI were delivered to the respondent firms alongside the questionnaire to be completed and picked up later. Authority to conduct research had been obtained from the National Council for Science and Technology (NACOST). The approval to undertake research was received from NACOST via their online portal and was valid for one year.

The main research instrument that was used for primary data collection was a self-administered structured questionnaire. The questionnaire was developed based on the principles set out in Burns et al. (2008). Item generation was based on in depth literature reviews. Great focus was put on the specificity of objectives and question stems kept simple. Structured (closed) question formats were used. The closed ended questions were structured to allow binary (yes/no), nominal and ordinal (Likert scale type) responses. The questionnaire used simple language for ease of understanding since it was applied through self-administration.

Drop off/pick up (DOPU) survey methodology was adopted where the questionnaires were dropped off or e-mailed to the respondents to be completed at their convenience and picked up by the researcher or e-mailed back. Self-administered survey was chosen over person - administered survey because of the many advantages it presents. Hair, Wolfinbarger, Ortinau and Bush (2010) argue that this technique of data collection has several advantages over other techniques. First, it is the least costly data acquisition method and hence suitable for use by academic researchers with little or no funding. Secondly, it is considered more convenient to the respondents because they have total control of how fast, when and where the survey is completed. Thirdly, the method controls for interviewer bias and interpretive bias by removing any interviewer body language, facial expressions and voice tone influences on the respondents.

DOPU self-administered survey method also suffers some shortcomings. It lacks flexibility because the kind of data obtained is restricted to the specific questions initially put in the survey and there is no chance for mining additional in depth data or insights from the respondents. Non-response rates and response errors can also be high

because of lack of comprehension of the specific questions or skipping sections of the survey (Hair, Wolfinbarger, Ortinau & Bush, 2010). These shortcomings were addressed by designing the questionnaire in a language and presentation format that made comprehension easier. Non responsiveness was addressed through follow up calls.

Secondary Data Collection Procedures

Secondary data was collected by the researcher personally from the IRA website and offices. The secondary data collection sheet presented in Appendix V was populated with statistics available on the IRA official website and other official publications. IRA publications such as the annual statistics and the annual report were relied upon to accumulate data on gross premiums, total assets and investment portfolio size and management expenses for 2017. Asset allocations were computed by the researcher.

3.8 Pre-testing of the Research Questionnaire

This section addresses the nature and steps that were followed in pre-testing of the research instrument in order to gauge its validity, reliability and practicability for use in the main research study. Any deficiencies detected, were corrected to improve the instrument.

Pre testing of the Research Instrument

Hu (2014) explains that a pre-test is a step in survey research where the survey questions and questionnaires are tested on a section of the target population or other similar or related elements from outside of the target population. The purpose of pre-testing is to gauge the reliability and validity of the survey instruments prior to its final distribution. Pretesting is crucial to improve data collection because according to Perneger, Courvoisier, Hudelson and Gayet-Ageron (2014) it allows verification whether the target audience understands the questions and proposed response options as intended by the researcher and if they are able to answer meaningfully.

Pre testing was carried out on two firms which were not part of the target population. The two firms were the two supranational composite reinsurance companies with offices in Kenya but not regulated by IRA. The choice of the two firms was motivated by the fact that while they conduct similar business as the firms in the target population, they are not regulated by IRA. The selection of firms in the same industry but not being part of the research investigation was important as it did not diminish the target population.

Validity Testing

Validity refers to the degree to which a measurement actually measures what it purports or is required to measure (Bolarinwa, 2015). Bolarinwa (2015) further explains that internal validity deals with accuracy of measure quantification while external validity addresses accuracy of representation of the population by the sample. The questionnaire set out in Appendix IV was subjected to two forms of validity testing. First, a thorough review by the researcher and reexamination by the research supervisors who are all experts in finance. Secondly, a field test was undertaken on two firms that were in similar business as those targeted for the study. The pilot study focused on the length and clarity of the instrument.

Reliability Testing

Reliability is the degree to which the results obtained by a measurement and procedure can be replicated (Bolarinwa, 2015). The research questionnaire was subjected to reliability tests using the Cronbach's alpha test. The Cronbach's alpha measures the internal consistency of a scale or test. In other words, it measures the extent to which the items within a test are interrelated. Based on a scale of 0-1, the higher the alpha, the greater the consistency and is a good indicator of the standard error of measurement (Tavakol & Dennick, 2011). Cronbach's alpha is a general form of the Kunder-Richardson (K – R) 20 formula. A Cronbach's alpha value of 0.7 and above is generally considered acceptable.

3.9 Data Processing and Analysis

This section covers the approaches, methods and tools used in the analysis of data. Quantitative data analysis techniques were employed because the research is designed as a descriptive study. The dependent variable was categorical and nominal. The independent variables on the other hand were categorical and ordinal. The study relied on descriptive statistics, correlation analysis and econometric analysis using a binary logistic regression model. The quantitative analytical methods that were used are described in detail in the following sub sections.

Data Analysis

Primary data was collected through a self-administered questionnaire as explained in section 3.6. Some quantitative data were ordinal based on a five (5) point Likert scale while the rest were nominal or continuous. Data analysis was undertaken using parametric methods, descriptive statistics and correlation analysis. According to Allen and Seaman (2007), parametric methods can be used to categorize and characterize data on the assumptions of normality. The parametric methods that were used to analyze the ordinal data include means and standard deviation.

Quantitative Data Analysis

The penultimate objective of this study was to discover the extent of influence of the independent variables on the dependent variables. To achieve that objective, quantitative data testing and analysis was undertaken stepwise as described in the following sub sections.

Normality Tests

There are many normality tests that are available with different levels of suitability and usage (Mishra et al., 2019). This study used the Kernel density estimate, skewness and kurtosis measures and the Shapiro-Wilk (S-W) test of normality. While the binary

logistic regression model does not make any normality assumptions about the distribution of observed variables, it was important that a distribution specification (normality) test be undertaken in order to support the use of parametric methods in data analysis (Mishra et al., 2019).

The Kernel density function was chosen because it overcomes the data binning challenge of the traditional histogram by producing a smooth empirical distribution of the data based on their actual locations (Weglarczyk, 2018). According to Mishra et al. (2019), the Shapiro Wilk test is most appropriate when dealing with small samples as was the case in this study. The S-W test computes the W statistic for a sample. A high W statistic from a sample confirms normality of the underlying distribution (Loy, Follet & Hofmann, 2015). Kurtosis and skewness measures were applied to characterize the peakedness of the data relative to a normal distribution because of their relative ease of application and understandability.

Multicollinearity Tests

The research model assumes that there is no correlation among the independent variables i.e. there is no multicollinearity (Midi, Sarkar & Rana, 2010). To ensure that the model specification was appropriate, Variance Inflation Factors (VIFs) were used to test for multicollinearity. High VIFs reflect an increase in the variances of estimated regression coefficients due to collinearity among predictor variables. Multicollinearity breeds hypothesis testing problems because despite resultant high R^2 the relationships are often spurious hence a need to detect and refine the model specification to eliminate related variables (Murray et al., 2012). The VIF method was selected for application in this study because of its reliability to detect high levels of collinearity.

Outlier Tests

According to Sarkar, Midi & Rana (2011) in a binary logistic regression model, detection of outliers and influential cases is a very important aspect of the modelling

exercise. This is because such cases can have serious distortion on the validity of inferences made from the model. In this study, detection of outliers and influential cases was undertaken to ensure inferences from the model were not distorted. Outlier testing can be done through a number of approaches including standardized residual plots such as box plots and derived diagnostic statistics like change in the Pearson's Chi Square statistic and change in parameter estimates (Sarkar, Midi & Rana, 2011). This study relied on box plots to detect outliers because of their advantage of easy visual application.

Model Specification Tests

In order to successfully run the proposed model it was important to conduct specification tests to establish whether the model was correctly specified. The model specification was tested using the Hosmer-Lemeshow test for goodness of fit. Hosmer and Lemeshow (1980) proposed that the data be grouped into cases based on the logistic regression model predicted values. The recommendation is to form ten groups with predicted values arranged from the lowest to the highest before being separated into equal groups. The H-L test was chosen for this analysis as it easy to apply and interpret using standard statistical software.

Descriptive Data Analysis

Descriptive analysis involves description of data in terms of frequency, mean, median and standard deviation (Mugenda & Mugenda, 2003). Measurement of these descriptors depends on whether the variables are qualitative or quantitative. Qualitative variables are categorical, characterized and attributable while quantitative variables are measurable continuous and numerical (Hussain, 2012). This study had a binary nominal dependent variable and ordinal explanatory variables. Therefore, the descriptors that were used comprised of a combination of parametric and non-parametric methods. These include the mean and standard deviation for parametric tests and frequency, tabulations and chi square statistics for the non- parametric tests.

Regression Analysis

This study applied a binary nominal dependent variable and four ordinal explanatory variables as well as one binary moderating variable. McDonald (2014) explains that in such a case, the binary logistic regression model is the appropriate econometric model to use. The model that was developed for the study sought to estimate the odds of an outcome given the descriptors. The maximum likelihood estimation method was used to estimate the best fit. The econometric models used in the analysis were as follows:

Original Model:

$$Logit\,[\pi(IMS)] = \beta_0 + \beta_1 IE + \beta_2 CG + \beta_3 FS + \beta_4 MD + \varepsilon$$

Where;

Π (IMS) = the probability of a firm choosing an investment management structure.

IE = the investment efficiency factors

CG = the corporate governance factors

FS = the firm size factors

MD = the market dynamics

β_0 = the intercept representing the "baseline" event rate.

β_1 = the odds ratio for investment efficiency effect

β_2 = the odds ratio (coefficient) for the corporate governance effect

β_3 = the odds ratio for firm size effect

β_4 = the odds ratio coefficient for market dynamics

ε_0 = the error term

The main model was developed to include the dependent variable and the four independent variables and excluded the moderator variable. Therefore, to capture the effect of the moderator variable a second expanded model was used.

The Model incorporating the moderator variable was as follows:

$$Logit\,[\pi(IMS)] = \beta_0 + \beta_1 IE + \beta_2 CG + \beta_3 FS + \beta_4 MD + \beta_5 BC + \varepsilon$$

Where;

Π (IMS) = the probability of a firm choosing an investment management structure.

IE = the investment efficiency factors

CG = the corporate governance factors

FS = the firm size factors

MD = the market dynamics

BC = the business category

β_0 = the intercept representing the "baseline" event rate.

β_1 = the odds ratio for investment efficiency effect

β_2 = the odds ratio (coefficient) for the corporate governance effect

β_3 = the odds ratio for firm size effect

β_4 = the odds ratio coefficient for market dynamics

β_5 = the odds ratio for business category

ε_0 = the error term

A binary logistic regression model was used to determine the probability of a firm choosing in-house or delegated IMS due to considerations that are either investment efficiency, corporate governance, firm size or market dynamics. Business category was built into the model as a moderating factor in the choice of investment management structure. Each of the predictor variables had sub categories to allow for the measurement of different aspects.

The variables that were utilized in this analysis are based on extant literature and are largely clustered or categorised into groups. To operationalize and measure them, they were broken down into their indicator elements that are easier to observe and measure. These measurement variables are as presented in table 3.2.

Table 3.2: Measurement of Variables

Variable Definition	Indicators	Measurement
Investment Efficiency	-Investment return -Investment risk -Investment Management cost	-Level of agreement on a scale of 1 to 5, where 5 is strongly agree with investment efficiency indicator statements and 1 is strongly disagree.
Corporate Governance	-Shareholding -Board Composition -Principal agent problems	Level of agreement on a scale of 1 to 5, where 5 is strongly agree with corporate governance indicator statement and 1 is strongly disagree.
Firm Size	-Capital base -Asset base -Human resource base	Level of agreement on a scale of 1 to 5, where 5 is strongly agree with firm size indicator statement and 1 is strongly disagree.
Market Dynamics	-Access to alternative assets market - Peer group behavior - Asset allocation	Level of agreement on a scale of 1 to 5, where 5 is strongly agree with market dynamics indicator statement and 1 is strongly disagree.
Business Category	-Life insurance -General Insurance	Dominant share of gross written premiums (more than 50%)
Investment Management Structure	-In-house IMS -Delegated IMS	More than 50% of total assets

Note: Author's formulation

Hypothesis Testing

The null hypotheses presented in section 1.4 were tested using the criteria presented in Table 3.3. There are three main methods that are used in hypothesis testing in a binary logistic regression model. These are the likelihood ratio test (LR) for the overall model data, the Wald test statistic (W-Statistic) and the score test for the estimated coefficients

(Bewick, Cheek & Ball, 2005). This study relied on the Wald statistic following the criteria listed in table 3.3.

Table 3.3: Hypothesis Testing

Hypothesis		Hypothesis test	Decision rule
$\mathbf{H_{01}}$	Investment efficiency does not significantly influence the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_0: \chi^2 = 0$ $H_1: \chi^2 \neq 0$	Reject H_{01} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)
$\mathbf{H_{02}}$	Corporate governance does not significantly influence the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_0: \chi^2 = 0$ $H_1: \chi^2 \neq 0$	Reject H_{02} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)
$\mathbf{H_{03}}$	Firm size does not significantly influence the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_0: \chi^2 = 0$ $H_1: \chi^2 \neq 0$	Reject H_{03} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)
$\mathbf{H_{04}}$	Market dynamics is not a significant antecedent of the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_0: \chi^2 = 0$ $H_1: \chi^2 \neq 0$	Reject H_{04} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)
$\mathbf{H_{05}}$	Business category has no moderating effect on the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_0: \chi^2 = 0$ $H_1: \chi^2 \neq 0$	Reject H_{05} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)

Note: Author's formulation

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter covers the findings from the research. It begins with a presentation of the pilot study results followed by the response rates and characterization of the respondents. Thereafter, descriptive statistics, tests of model assumptions and specification are presented and discussed. The results from the quantitative model including the hypothesis testing outputs are presented and discussed before closing the chapter with a brief summary of the findings.

4.2 Pre-Testing Results

This section presents the results from the pretesting of the questionnaire that was carried out to establish the feasibility of the research and assess the validity and the reliability of the research instrument. The pre-testing was useful as a basis for making adjustments and amendments to the questionnaire to ensure it is of acceptable length, guarantee clarity of questions and measurements used. The pre-testing comprised the assessment of the validity and reliability of the measurement tool developed for the study. All the five operational variables in the study, namely, investment efficiency, firm size, corporate governance, market dynamics and business category were subjected to testing.

Validity Test Results

As set out in sub section 3.8.2, two main constructs of validity were tested: internal and external validity. Bolanirwa (2015) defines internal validity as the extent to which a measurement obtained from the research accurately quantifies what it is designed to measure. It is an attempt to test how well the operational variable accurately measures the actual study variable. On the other hand, external validity refers to the extent to

which measurements obtained from the study sample describe the reference population from which the sample was drawn (Bolanirwa, 2015).

In this study validity testing was undertaken using a two stage procedure. First, a panel comprising of two industry experts, the researcher and the research supervisors was engaged to review the questionnaire and give an expert rating as to whether the items in the questionnaire were valid measures of the concepts being measured on the face of it. The panel of experts made recommendations on improvements to the questionnaire. Specifically, recommendations were made to expand Part B – E of the questionnaire by adding some corroborative questions to improve quantification in order to add weight to the responses given to the Likert scale questions.

Thereafter, the research tool was subjected to a field test where it was administered to two firms operating in Kenya but which are not under the regulatory control of IRA. The use of these firms allowed for non-interference with the target population but were considered appropriate because they conduct reinsurance business in Kenya which is similar to some of the members of the target population. The research instrument was administered to the Chief Investment Officers of the two firms who were required to not only respond to the questionnaire but also give their views on the length of instrument and clarity of the questions as well as the overall feasibility of the study. This is in line with the recommendation by Creswell and Miller (2000) that an account by individuals who are independent to the study may help to establish validity.

The administration of the research instrument was done using a face to face interview approach. This approach was different from the Drop Off and Pick Up (DOPU) method adopted in the final study but was adopted to allow the researcher to gauge the respondents thought process and level of difficulty of questions. It also allowed for observations to be made with regard to the length of time taken to complete the questionnaire. On average, it took the respondents 20 mins to complete the questionnaire.

Reviews by the test respondents indicated that the questionnaire was of reasonable length and therefore appropriate for the study. However, the pilot respondents felt that questions seeking financial information of the respondent firms were inappropriate because such information could be obtained from public sources and specifically the regulator's database. While this was a valid observation, it was decided to retain the questions and use secondary data to corroborate the primary data provided. Improvements were made to the research instrument based on these findings. The study was also confirmed as feasible and had the right target population.

Reliability Test Results

The research instrument was also subjected to reliability testing. Reliability testing aims to establish the extent to which a test or research tool produces the same results in repeated trials (Bolanirwa, 2015). The questionnaire was subjected to internal consistency reliability testing in order to assess how the items in the questionnaire were testing the same thing. Internal consistency reliability index was preferred because it can be estimated after only one field test thereby avoiding the problem of multiple testing over time.

Reliability testing of the internal consistency of the research instrument was undertaken using the Cronbach's alpha statistic. There were 47 standardized units of observation covering investment efficiency, firm size, corporate governance, market dynamics and business category. The output from STATA showed that the instrument was internally consistent and therefore reliable as shown in Table 4.1.

Table 4.1: Reliability Statistics

	Cronbach's Alpha	Cronbach's Alpha on standardized items	N Items
Investment Efficiency	0.815	0.767	6
Corporate Governance	0.537	0.878	9
Firm Size	0.867	0.743	7
Market Dynamics	0.636	0.848	9
Business Category	0.892	0.792	2
Overall	0.786	0.811	47

The unadjusted Cronbach's alpha was 0.786 while the adjusted alpha based on the standardized items was 0.811. The relatively high alpha statistics confirmed that the research instrument was adequately reliable for the study because they were above 0.7 that is generally accepted. To reinforce the conclusion on instrument reliability, a sensitivity analysis was undertaken to establish the effect of omitting some variables. The results of the sensitivity analysis are presented in Appendix IX.

4.3 Response Rate

This section summarizes the overall responsiveness of the target population in the study. It also presents a breakdown of the response rates per category of respondents.

Overall Response Rate

Response rate refers to the percentage of individuals who responded to a survey that was administered to them (Saldiver, 2012). This study targeted insurance and reinsurance companies licensed by the IRA to undertake general, life and reinsurance underwriting business in Kenya in the year 2017. There were a total of 46 licensed companies and therefore that formed the target population. The drop off pick up (DOPU) method was used to deliver a total of 46 questionnaires to be completed using the self-administration method. Some target respondents preferred an e mail delivery of the questionnaire and this was done. Out of the 46 questionnaires, a total of 38 questionnaires were returned

representing a response rate of 83%. Table 4.2 depicts the summary response rates statistics.

Table 4.2: Response Rates

	Number	Percentage
Questionnaires received	38	83%
Unreturned questionnaires	8	17%
Questionnaires sent	46	100%

When using survey methods, the response rate is considered one of the most important criterion for assessing the quality of the study. However, there are no clear rules, fixed formulae or boundaries of what is acceptable and not acceptable (Mellahi & Harris, 2016). Indeed, according to Mellahi and Harris (2016) review of the available literature, there is no consensus on what is an acceptable response rate. That notwithstanding, Mugenda (2008) advises that a response rate of 50% is adequate for analysis; a rate of 60% is good and a response rate of 70% and over is excellent. The response rate of 83% for this study was therefore considered adequate for analysis.

Response Rates per Category of Respondents

The study had three main categories of respondents. These were general insurance companies, life assurance companies and reinsurance companies. Out of the target population of 46 firms, thirty one (31) companies were classified as general insurance companies, twelve (12) as life assurance companies and three (3) as reinsurance companies. Table 4.3 shows the response rate per category of respondents.

Table 4.3: Response Rates per Category of Respondents

	Questionnaires sent	Questionnaires received	Response Rate
General insurance companies	31	26	84%
Life assurance companies	12	10	83%
Reinsurance companies	3	2	67%
Industry	46	38	83%

An analysis of the response trends shows that 26 general insurance companies returned their questionnaires out of the 31 general insurance companies targeted in the study representing a response rate of 84%. In the life insurance category, 10 companies out of the 12 companies targeted for the study returned their questionnaires implying a response rate of 83%. Of the 3 reinsurance companies in the study, two returned their questionnaires to give a 67% response rate. Overall, the response rate stood at 83%.

4.4 Characteristics of the Respondent Insurance Companies

Demographic data was collected on two broad dimensions of the insurance firms participating in the study. These dimensions were ownership and business category which were considered to be the main differentiating attributes across firms. The results of the demographic analysis of the responses received are presented in table 4.4.

Table 4.4: Respondent Firm Characteristics

Main Attribute	Classification	Occurrences	Percentage
	Public listed	7	18%
	Public non-listed	2	5%
Ownership Category	Privately owned	27	71%
	Foreign owned	9	24%
	State owned	1	3%
	Life	10	26%
Business Segment	General	26	69%

As shown in table 4.4, private entities were the majority of the respondents with twenty seven firms representing 71% of the respondents stating that they were private companies. Other respondents were, nine foreign multinational corporations representing 24% of the respondents, seven publicly listed companies and two public non-listed companies comprising 18% and 5% of the respondents respectively and one state owned enterprise. Characterization based on business category revealed that the majority of the respondents were general insurance companies taking 69% of the total respondents. Life companies took a share of 26% while reinsurance companies represented 5% of the respondents.

4.5 Descriptive Analysis of the Study Variables

This section describes the study variables based on the primary data that was obtained from the respondents. The study had six main broad variables of observation namely, investment management structure, investment efficiency, corporate governance, firm size, market dynamics and business category. In order to understand the variables, it was important to undertake a thorough descriptive analysis. The study adopted frequency, mean and standard deviation to describe the variables.

Investment Management Structure

The study sought to explore the investment management structures that firms employed in the management of their investment portfolios. While there are many different structures mentioned in the literature, this study focused only on two main methods that are commonly employed by firms to organize their investment activities, namely in-house management or delegation. Respondents were asked to indicate the investment management approach that they were using with a binary choice of either in-house or delegated structure. Table 4.5 shows the results of the investment management structure choices among the respondents.

Table 4.5: Investment Management Structures of Insurance Companies

IMS	Business Category	Occurrences	Percentage	Cumulative
In-house	Life	4	11%	11%
	General	20	53%	63%
	Reinsurance	1	3%	66%
Delegated	Life	6	16%	16%
	General	6	16%	32%
	Reinsurance	1	3%	34%

The results in table 4.5 show that twenty five (25) firms or 66% of respondent firms used in-house investment management approach while thirteen (13) firms or 34% of the firms used the delegation approach. The firms that employed in-house approach were spread out across the business categories as follows: Twenty (20) firms representing 80% of respondents were general insurers, four (4) firms or 16% were life companies while one (1) firm (4%) was a general reinsurance company. Of the firms that were delegating their investment management, general and life business categories had six (6) firms each while one (1) was a reinsurance company.

The results on prevalence of the two main investment management structures in the study show that internal management is more prevalent that delegated management among insurance companies in Kenya. These results are in line with the findings in both Clark & Monk (2012) and MacIntosh and Scheibelhut (2012) that in-house management was gaining traction among pension funds globally. This suggests that insurance companies' behavior in choosing their IMSs is similar to that observed among pension funds.

Investment Efficiency and IMS Choice

The research had an objective of finding out the effect of investment efficiency on firm's choices of investment management structure. Investment efficiency was operationalized using three measures, namely, investment returns, investment risk and investment

management cost. Respondents were asked to indicate their level of agreement with statements posed to them on the effect of each of the three factors on their choice of IMS based on a five point Likert scale ranging from Strongly Agree (SA), Agree (A), Not Sure (NS), Disagree (DA), and Strongly Disagree (SD). Additionally, they were required to indicate their investment return targets, investment risk preferences and their investment management costs. The results are presented in Table 4.6 and discussed.

Table 4.6: Investment Efficiency Measurement Results

	Level of agreement						
Operational measure	**Strongly Agree (SA)**	**Agree (A)**	**Not Sure (NS)**	**Disagree (DA)**	**Strongly Disagree (SD)**	**Mean**	**Std. Dev.**
The pursuit of high investment returns was a major driver of the firm's choice of IMS	11%	47%	13%	24%	5%	3.34	1.12
Investment risk reduction considerations determined the firm's choice of IMS	16%	29%	11%	3%	42%	2.74	1.62
Cost reduction initiatives motivated the firm's choice of IMS	13%	34%	32%	21%	0%	3.39	0.97

a) Investment Returns

On the assertion that the pursuit of higher investment returns was a major driver of investment management structure choice, 11% of respondents strongly agreed, 47% agreed, 13% were not sure, 24% disagreed and 5% strongly disagreed. The average

response was 3.34 with a standard deviation of 1.12 indicating above average importance was placed on investment return in the IMS choice decision. The respondents were also requested to provide their annual return targets which were analyzed. The results are presented in table 4.7.

Table 4.7: Investment Return Target

Annual Return Target	Frequency	Percentage	Cumulative
0% - 4.99%	8	21%	21%
5.00% - 7.99%	9	24%	45%
8.00% - 9.99%	7	18%	63%
10.00% - 15%	13	34%	97%
Above 15%	1	3%	100%

As shown in table 4.7, 21% of the respondents had an annual return target that was below 5%, 24% had an annual target of between 5% and 8%, 18% had a target of 8% – 10%, 34% targeted 10% -15% while only 3% had a target of more than 15%. Cumulatively 63% of the respondents had investment return targets that were below 10%.

To corroborate these results, a secondary data analysis of actual annual accounting investment returns of respondents was undertaken. It showed that on average, firms adopting delegated investment management structures had better investment returns at 9% per annum compared to the firm's managing their assets in-house which obtained an investment return of 7% in 2017.

These results contradict MacIntosh and Scheibelhut (2012) study of large pension funds that found that internal management was associated with higher investment returns. Contextually, this outcome may be explained by the fact that in Kenya, most of the qualified investment professionals are retained by investment management firms and therefore insurance companies that delegate enjoy the benefits of the expertise offered by the professional firms hence achieve higher investment returns. Firms managing their

assets in-house not only lack the necessary skills but may not have the analytical tools and software that professional firms have invested in.

b) Investment Risk Reduction

Regarding the argument that investment risk reduction was a consideration in the choice of investment management structures, 16% of the respondents strongly agreed, 29% agreed, 11% were not sure, 3% disagreed and 42% strongly disagreed. The mean response was 2.74 with a standard deviation of 1.62 indicating that risk considerations had moderate to low importance in these decisions. Respondents were also required to indicate their risk preferences with a choice of three options namely, risk loving, risk neutral and risk averse. Respondents had risk preferences that differed significantly as shown in table 4.8.

Table 4.8: Respondents Risk Preferences

Target	Frequency	Percentage	Cumulative
Risk Loving	12	32%	32%
Risk Neutral	15	39%	71%
Risk Averse	11	29%	100%

Twelve firms representing 32% of respondents indicated that they held a risk loving preference, 39% were risk neutral while 29% were risk averse. There was a lack of consensus on the role of risk reduction in the choice of investment management structures which could be explained by the wide variation in firm's risk preferences.

Risk is an often difficult concept to measure, particularly to the unsophisticated investor employing basic tools of analysis (Wen, He & Chen, 2014). As a result, the risk preferences reported by the respondents may not reflect the true risk experiences of the investor. The largely even distribution of risk preferences demonstrated this lack of clarity. In fact, insurance companies as risk underwriters are expected to be risk averse. Their investment approaches should therefore reflect a tendency to minimize risk

exposure on their investment portfolios given that their core business is risk underwriting.

c) Investment Management Costs

Respondents were generally agreeable to the contention that cost reduction initiatives determined their investment management structures. 13% of the respondents strongly agreed, 34% agreed, 32% were not sure, 21% disagreed and no respondent strongly disagreed. The mean response score was 3.39 with a standard deviation of 0.97 indicating that a high level of importance was attached to this factor in the choice of IMS. No respondent strongly disagreed that cost cutting influenced their choice of investment management structure. Respondents also provided their investment management costs as a percent of their fund values. The results are presented in table 4.9.

Table 4.9: Investment Management Cost

Annual cost as a percent of assets	Frequency	Percentage	Cumulative
0 - 0.49%	34	89%	89%
0.50% - 0.99%	0	0%	89%
1.0% - 1.49%	3	8%	97%
1.5% - 1.99%	0	0%	97%
Above 2.0%	1	3%	100%

Analysis of the respondents cost of investment management indicated a high concentration with 89% of the respondents reporting a cost that was below 0.5% of their asset values. Only 4 firms reported an investment management cost that was above 1.0%. A number of studies have linked internal management to lower costs of portfolio management (MacIntosh & Scheibelhut, 2012; Gallagher, Gapes & Warren, 2016). The findings from this study, do not reflect any difference in the cost of investment management between firms using delegation and those using internal management.

These findings may be attributed to the lack of adequate and separate disclosure of investment management expenses in the firms' financial statements. Most insurance companies report total management expenses with a separate line disclosure of insurance commissions which is considered the main business acquisition cost. The cost of investment management is relatively low compared to other costs and is therefore not independently disclosed.

From the foregoing results, the influence of investment efficiency on respondent's investment management structure choices was revealed from two perspectives: the need to achieve higher returns and the desire to achieve lower investment management costs. It can therefore be concluded that investment efficiency was an antecedent of investment management structure choices of insurance companies in the study.

Corporate Governance and IMS Choice

This study sought to find out the effect of corporate governance on the firm's choice of investment management structures. Corporate governance was measured in terms of shareholding, board composition and agency problems. Respondents were asked to indicate their level of agreement to statements on the effect of the three corporate governance aspects on their IMS choices on a five point Likert scale ranging from Strongly Agree (SA), Agree (A), Not Sure (NS), Disagree (DA), and Strongly Disagree (SD). The results of the responses are presented in Table 4.10. Additionally, respondents were requested to provide information on the nature of the majority shareholder, board composition and agency services and problems.

Table 4.10: Corporate Governance Measurement Results

	Level of agreement						
Operational measure	**Strongly Agree (SA)**	**Agree (A)**	**Not Sure (NS)**	**Disagree (DA)**	**Strongly Disagree (SD)**	**Mean**	**Std. Dev.**
The nature of the firm's shareholding dictated the choice of IMS	24%	26%	18%	8%	24%	3.18	1.50
The composition of the firm's board determined the choice of IMS	3%	13%	45%	16%	24%	2.55	1.08
Principle agent problems affected the choice of IMS	8%	47%	21%	11%	13%	3.26	1.18

a) Shareholding

Respondents were required to assess their agreement with the proposition that the nature of the firm's shareholding dictated the choice of investment management structure. Nine firms or 24% of respondents strongly agreed, 26% agreed, 18% were not sure whereas 8% disagreed and 24% strongly disagreed respectively. The average response was 3.18 with a standard deviation of 1.50 implying that firms experienced above average dictations from their shareholders on their choice of investment management structure. This could be linked to the nature of their majority shareholders.

An analysis of the respondent's shareholding reflected many types of majority shareholders. Local individuals controlled 21% of the firms, local holding companies had control of 39% of firms, 11% of the respondents were family owned while multinational corporations and the government had majority ownership of 21% and 3% of the respondents respectively. Religious organizations, classified as others had control

of 5% of the respondents. The results of the respondent's shareholding are presented in table 4.11.

Table 4.11: Nature of Majority Shareholder

Majority Shareholder	Frequency	Percentage	Cumulative
Local individuals	8	21%	21%
Local holding company	15	39%	60%
Family business	4	11%	71%
Foreign MNC	8	21%	92%
Government	1	3%	95%
Other	2	5%	100%

Shleifer and Vishny (1986) argue that the large shareholder of a company has control and monitoring function over management of the firm. Coronado, Engen and Knight (2003) reported that political interference in publicly controlled schemes had implications on governance and overall decision making with consequences on financial performance of these schemes. Therefore, many business decisions are influenced by the wishes of the large shareholder.

The findings in this study are in line with the postulations of Shleifer and Vishny (1986) and Coronado, Engen and Knight (2003) especially given the nature of the large shareholders who were mainly, families, multinational corporations and government. These shareholder types are known to have certain standard practices of operation that are imposed on the companies they invest in for control and monitoring purposes.

b) Board Composition

Respondents were asked to evaluate their level of agreement with the assertion that the board composition determined the choice of IMS. Only 3% of the respondents strongly agreed, 13% agreed, 45% were not sure while 16% and 24% disagreed and strongly disagreed respectively. The mean response ranking of 2.55 and a standard deviation of 1.08 suggests that board composition had a moderate role to play in the choice of IMS. Information was obtained on the composition of the respondent's board of directors in

terms of size of the board, gender and skills set. The respondents had an average board size of eight (8) members with an average of one (1) female director. Table 4.12 shows the distribution of board membership by gender and skill set.

Table 4.12: Board Composition by Gender and Skills Set

	Gender	
	Male	**Female**
	Mean	**Mean**
Strategic management	5	2
Insurance operations	2	1
Investment management	3	1
Human resource management	1	2
Finance	3	1

According to AICD (2016) the effectiveness of a board in its control and advisory roles hinges on its skills and diversity. As shown in table 4.12, boards of respondent firms were quite diversified in terms of skills, with members possessing skills in strategy, insurance and investments management. However, the gender diversity was low. This could indicate respondent firm's boards had a significant voice into how their companies' investment portfolios were managed due to their level of skills and knowledge in investment management.

c) Agency Problems

Respondents were required to indicate their level of agreement with the contention that agency problems affected their choice of IMS. 8% of the respondents strongly agreed, 47% agreed, 21% were not sure, 11% disagreed while 13% strongly disagreed. The responses were skewed towards agreement with a mean ranking of 3.26 and a standard deviation of 1.18. This implies that insurance companies were concerned about the agency problems they experienced in their various outsourced services. The respondent's data on the nature of outsourced service usage was analyzed to gather more

insights into the nature of agency services used and the problems encountered. The results are presented in 4.12.

Table 4.13: Agency Relationships

Outsourced service	Frequency	Percentage
Insurance operations	2	5%
Investment management	13	34%
Human resource management	7	18%
Finance	0	0%
Legal services	20	53%

On the usage of agents, 53% of respondents reported that they outsourced their legal services, 34% outsourced investment management, 18% human resource management and 5% insurance operations. No firm indicated that it outsourced finance functions. A further analysis of the agency problems encountered in the outsourced services was undertaken. The results are as shown in table 4.14.

Table 4.14: Agency Problems

Nature of problem	Frequency	Percentage
Fees and costs	6	33%
Poor performance	3	17%
Communication and reporting	8	44%
Monitoring of agents	6	33%

It was found that 47% of the respondents had encountered some agency problem with their service providers. Of the respondents who encountered some problem, 44% reported having experienced communication and reporting problems, 33% had fees/costs related problems, 17% suffered from poor service delivery while 33% experienced agent monitoring problems.

Principal agent problems are often experienced in outsourced service arrangements (Shah, 2014). Clark & Monk (2012) argue that these agency problems emanate from inability of the principal to monitor the agent and information asymmetry. Shah (2014)

argues that agency problems tend to magnify agency costs. Apart from the explicit costs paid to the agent in form of direct fees, in the presence of principal agent problems, the entire delegation arrangement become more expensive. These agency problems may lead firms towards in-house management in a bid to manage total costs of investment management.

In summary, results from this study indicate that corporate governance had an effect on the choice of management structures that insurance companies used. The influence was in the form of shareholder dictations and the need to avoid agency problems.

Firm Size and IMS Choice

This research aimed to find the influence of firm size on the choice of investment management structures that firms used. Firm size was measured by capital base, asset base and human resource base. Respondents were asked to indicate their level of agreement to various propositions about firm size on a five point Likert scale ranging from Strongly Agree (SA), Agree (A), Not Sure (NS), Disagree (DA), and Strongly Disagree (SD). The responses are presented in Table 4.15. They were later requested to provide numerical statistics on the three size measures which were also corroborated from secondary data.

Table 4.15: Firm Size Measurement Results

Level of agreement							
Operational measure	**Strongly Agree (SA)**	**Agree (A)**	**Not Sure (NS)**	**Disagree (DA)**	**Strongly Disagree (SD)**	**Mean**	**Std. Dev.**
The firm's capital base determined the choice of IMS	16%	42%	3%	5%	34%	3.00	1.60
The firm's asset base affected the choice of IMS	26%	37%	16%	16%	5%	3.63	1.20
The firm's HR base was considered in choice of IMS	13%	16%	3%	32%	36%	2.37	1.46

a) Capital Base

As shown in table 4.15, the level of agreement to the statement that the capital base determines the choice of IMS was distributed as follows: 16% strongly agreed, 42% agreed, 3% were not sure, 5% disagreed and 34% strongly disagreed with the argument. The responses were skewed towards agreement that capital base determines the IMS with a mean ranking of 3.00 with a standard deviation of 1.6.

The firm's capital levels were obtained and analyzed for a deeper appreciation of the effect of capital base on IMS choices. The distribution showed that 42% of the respondents had a share capital that was below KShs. 500 million, 8% had a level ranging between KShs. 501 and 600 million, 11% had between KShs. 601 and 800 million, 16% had KShs. 801 to 1,000 million while 24% had over KShs. 1,000 million. All the respondent firms were within the regulatory capital stipulations. These results are presented in table 4.16.

Table 4.16: Capital Base of Respondents

Share Capital (KES)	Frequency	Percentage	Cumulative
<500 Million	16	42%	42%
501 - 600 Million	3	8%	50%
601-800 Million	4	11%	61%
801-1000 Million	6	16%	76%
1000+ Million	9	24%	100%

Share capital is regulatory imposition within the insurance industry. However, firms may choose to hold higher capital levels as a marketing and reputation enhancement practice. Afande and Maina (2015) argue that apart from the need to meet the regulatory requirements, the capital level held by an insurance company determines its ability to expand and grow its intermediation activities. Based on the available data, the capitalization of the insurance industry in Kenya is not strong. Indeed, as shown in table 4.16, 50% of the respondents had a capital base below the minimum requirements with only six months left to the legal deadline. This disregard for minimum capital requirements in the industry may explain the significant percentage of respondents that disagree that capital is an important antecedent of IMS choice.

b) Asset Base

Respondents were asked whether they agreed that their asset bases determined their IMS choice. The responses were as follows: 26% strongly agreed, 37% agreed, 16% were not sure, 16% disagreed and 5% strongly disagreed. The reported findings suggest that asset portfolio size greatly affected the selection of insurance companies IMS as shown by the concentration of responses (63%) in strong to very strong agreement and a mean score of 3.63 with a standard deviation of 1.2. Data on asset portfolio sizes were analyzed and the distribution is as shown in table 4.17.

Table 4.17: Investment Portfolio Size

Portfolio value (KShs)	Frequency	Percentage	Cumulative
< 1 Billion	4	11%	11%
1-2.9 Billion	13	34%	45%
3-4.9 Billion	5	13%	58%
5-7 Billion	2	5%	63%
+7 Billion	14	37%	100%

As shown in table 4.17, most respondents had relatively large investment asset portfolios. 11% of the firms had portfolios worth less than KShs. 1.0 billion, 34% had portfolios ranging between KShs. 1.0 billion and KShs. 2.9 billion, 18% had portfolios of between KShs. 3.0 billion and KShs. 7.0 billion, while 37% of the respondents had portfolios worth more than KShs. 7.0 billion. The average investment portfolio size of the respondent firms was KShs. 12.7 billion.

Gallagher, Gapes and Warren (2016) argue that large portfolios affect firm's choices of IMS. Insurance firms receive premiums and invest them as they await payment of claims. Through their investment activities and given their claims experience, over time they accumulate huge investment asset portfolios. With an average portfolios size of KShs. 12.7 billion, the insurance portfolios are large and rhyme with the responses that agree that it is an important factor influencing the choice of IMS.

c) Human Resource Base

Respondents were required to rank their agreement with the contention that HR base was considered in the choice of IMS. 13% indicated strong agreement, 16% agreed, 3% were not sure, 32% disagreed and 36% strongly disagreed. The responses were skewed towards lack of consideration of HR base in IMS choices with a mean response of 2.37 and a standard deviation of 1.46 which is below the mid-point. Reliable data on the human resource base was not available across firms especially due to the fact that most insurance companies employ many insurance agents with a very high turnover rate. However, the number of full time investment professionals in employment was obtained

and the distribution is shown in table 4.18. The average number of investment professionals employed by the respondents was 2.0.

Table 4.18: Number of Investment Professionals Employed

Number of staff	Frequency	Percentage	Cumulative
0	6	16%	16%
1	9	24%	39%
2- 5	20	53%	92%
6- 10	3	8%	100%
More than 10	0	0%	100%

As shown in table 4.18, 16% of firms did not employ any investment professionals, 24% employed only one investment professional, 53% had between 2 and 5 professionals, 8% had 6 to 10 professionals while no firm employed more than 10 professionals. These results indicate that, on average, firms in the industry had only two investment professionals working for them. This demonstrates a significant lack of professional investment capacity resident in the insurance companies. Fabozzi, Gupta and Markowitz (2002) reiterate that finance skills and computer capacity are key success factors in investment management. The low number of investment professionals in the insurance industry therefore suggests that there is little consideration of human resource competencies when choosing investment management structures.

In summary, it was found that the size of a firm in terms of capital base, asset base were important antecedents of IMS choice. Human resource capacity did not come out as a strong factor influencing those choices. On the whole, it can be concluded that firm size is an importance antecedent factor in IMS choices.

Market Dynamics and IMS Choice

The study sought to find out the significance of market dynamics on firm's IMS choices. Respondents were asked to indicate their agreement to a set of statements on the role that access to alternative asset class markets, peer behavior and asset allocation played in

their choice of their investment structures. The responses were on a five point Likert scale ranging from Strongly Agree (SA), Agree (A), Not Sure (NS), Disagree (DA), and Strongly Disagree (SD). The responses are shown in table 4.19. They also provided numerical statistics on participation in alternative asset class markets, industry associations and asset allocation to add weight to their views.

Table 4.19: Market Dynamics Measurement Results

	Level of agreement						
Operational measure	**Strongly Agree (SA)**	**Agree (A)**	**Not Sure (NS)**	**Disagree (DA)**	**Strongly Disagree (SD)**	**Mean**	**Std. Dev.**
Better access to alternative assets market affected the choice of IMS	16%	16%	8%	26%	34%	2.53	1.50
Behavior of industry peers was observed to determine the choice of IMS	8%	26%	24%	34%	8%	2.92	1.12
The asset allocation of the firm dictated the choice of IMS	34%	37%	13%	3%	13%	3.76	1.32

a) **Better Access to Alternative Assets Markets**

Respondents indicated their agreement to the statement that the need for better access to alternative assets markets determined their choice of IMS as follows: 16% strongly agreed, 16% agreed, 8% were not sure, 26% disagreed and 34% strongly disagreed. The mean response was 2.53 with a standard deviation of 1.5, pointing to a medium to low level of importance of this factor. Data on investment in alternative assets indicated that nearly all (90% of respondents) had invested in real estate as the main alternative asset, 40% of firms had invested in private equity, 20% in offshore assets and 10% in

partnerships. No firm had invested in commodities and currencies. Table 4.20 shows the respondents access to different alternative asset classes.

Table 4.20: Access to Alternative Asset Classes

Asset Class	Firms accessing	Percentage
Real Estate	25	90%
Private Equity	12	40%
Partnerships	3	10%
Commodities and Currencies	0	0%
Offshore	5	20%

Urwin, Breban, Hodgson and Hunt (2001) explain that value addition in portfolio management requires inclusion of alternative assets in portfolios. Firms are constantly looking for alternative assets which when added to portfolios offer higher returns and portfolio protection. Gallagher, Gapes & Warren (2016) also argue that certain structures allow better access to alternative assets. Based on available data 90% of respondents invested in real estate as an alternative asset. In Kenya, access to real estate market is unrestricted and is accessible even to the unsophisticated investors. This may explain the low level of importance attached to alternative markets access in this study.

b) Behavior of Industry Peers

Respondent's ranking of their agreement to the assertion that they observed their peer's behavior as they made their IMS choice was as follows: 8% strongly agreed, 26% agreed, 24% were not sure, while 34% and 8% disagreed and strongly disagreed respectively. The mean response score was 2.92 with a standard deviation of 1.12 showing a mixed outcome with roughly equal responses on either side of the spectrum.

Firms get to know of peer actions through interactions of their managers in industry and professional associations. Information on membership of senior management in these associations was analyzed to gauge the level of peer interactions. Responses show that directors and senior management of 95% of the firms were members of both AKI and

IIK, 70% had membership in ICPAK, 29% in ICIFA, 18% in CFA institute and 13% in Institute of Directors. This distribution shows that there was a high level of interaction with industry peers. Table 4.21 depicts the respondent's membership to different industry and professional associations.

Table 4.21: Membership to Industry and Professional Associations

Association	Frequency	Percentage
Association of Kenya Insurers (AKI)	36	95%
Insurance Institute of Kenya (IIK)	36	95%
ICPAK (Accountants)	22	70%
Institute of Directors	5	13%
ICIFA (Financial Analysts)	9	29%
CFA Institute	7	18%

According to Bursztyn, Ederer, Ferman, and Yucht (2014) choices made by people often look like choices made by those around them. While 66% of the respondents tended to disagree that they were influenced by peers, the level of industry interactions is very high to rule out such effects. Sometimes, peer influence may be a difficult fact to accept due to the sovereignty of self and this appears to be the case in these results.

c) Asset Allocation

Respondents were asked to indicate their agreement to the proposition that asset allocation dictated the choice of IMS. 34% strongly agreed, 37% agreed, 13% were not sure, 3% disagreed and 13% strongly disagreed. The mean response was 3.76 with a standard deviation of 1.32 indicating that asset allocation was an important consideration when making IMS choices. Data on firm's asset allocation was collected and analyzed as shown in table 4.22. Respondents had an average allocation of 58% in debt securities, 30% in alternative assets of which the bulk was real estate, 6% in equity, 4% in cash and 2% in other operating assets.

Table 4.22: Respondents' Asset Allocation in 2017

Asset Class	Mean Allocation
Debt	58%
Equity	6%
Alternative Assets	30%
Cash	4%
Others	2%

The importance of the asset allocation decision cannot be overemphasized. It is a well-known fact the asset allocation determines the performance of an investment portfolio (Brinson, Singer & Beebower, 1991). Respondents indicated strong agreement that asset allocation dictated their IMS choices. The asset allocation of the respondents was skewed towards debt securities which could be easily managed under a passive strategy with minimal skill input.

On the whole, respondents agreed that market dynamics do influence the choice of IMS as shown by the importance attached to asset allocation and peer influences. Access to alternatives was not considered important on the basis that only real estate was a significant asset to most respondents.

Business Category

The target population was not homogenous. There was differentiation on a number of aspects but primarily the nature of business undertaken by an underwriter. While the binary choice question was posed to respondents, secondary data was relied upon to determine the placement of the respondents into the two categories. Categorization of firms was based on the gross premium written in 2017. The results are presented in table 4.23.

Table 4.23: Business Category Measurement Results

Category	Frequency	Percentage	Cumulative
General Insurance	26	68%	68%
Life Assurance	10	27%	95%
Reinsurance	2	5%	100%
Total	**38**		

As indicated in table 4.23, 68% of respondents were in the general insurance business, 27% were life insurance companies while 5% were reinsurers. Composite insurers were categorized based on the segment that generated the largest proportion of premiums, primarily more than 50% of gross premiums written.

4.6 Binary Logistic Regression Model Diagnostic Test Results

This section provides the assumptions and tests required to be met before successful application of the binary logistic regression model and the model specification test results.

The Assumptions of the Binary Logistic Regression Model

The use of a binary logistic regression model requires certain assumptions to be met. Midi, Sarkar and Rana (2010) enumerate them as follows: First, the model assumes that the dependent variable has a dichotomous outcome such as 1 or 0. This assumption was met because the dependent variable in the study was a binary choice between in-house and delegated approaches. Secondly, there is an assumption that there is no multicollinearity. Multicollinearity is statistical phenomenon in which predictor variables in a logistic regression model are highly correlated. Model testing was done to confirm the adherence to this assumption. Third, the model assumes that there is a linear relationship between the log odds of the dependent variable and the predictor variables. This does not mean that there is a requirement of linearity between the independent and the predictor variables. Fourth, the model requires that there are no outliers or influential factors in the predictor variables. Testing of this assumption was undertaken. Fifth, the

model assumes observation independence which means that observations should not come from repeated measurements.

These assumptions must be satisfied to ensure that the model results and interpretations are valid. While no assumption of normality of observations is made, it is important to undertake normality tests in order to understand the distribution of the data. The tests carried out to verify the model assumptions are explained in the following subsections.

Normality Test Results

This study applied a number of statistical methods to test the distributional properties of the underlying data. The Kernel Density Estimate was fitted to show how the data was distributed relative to a normal distribution. The Shapiro Wilk test and skewness - kurtosis tests were applied to confirm the distribution depicted by the Kernel Density Estimate. All the tests confirmed that the data was approximately normally distributed. Figure 4.1 shows the estimated data distribution relative to a normal curve using the Kernel density estimate.

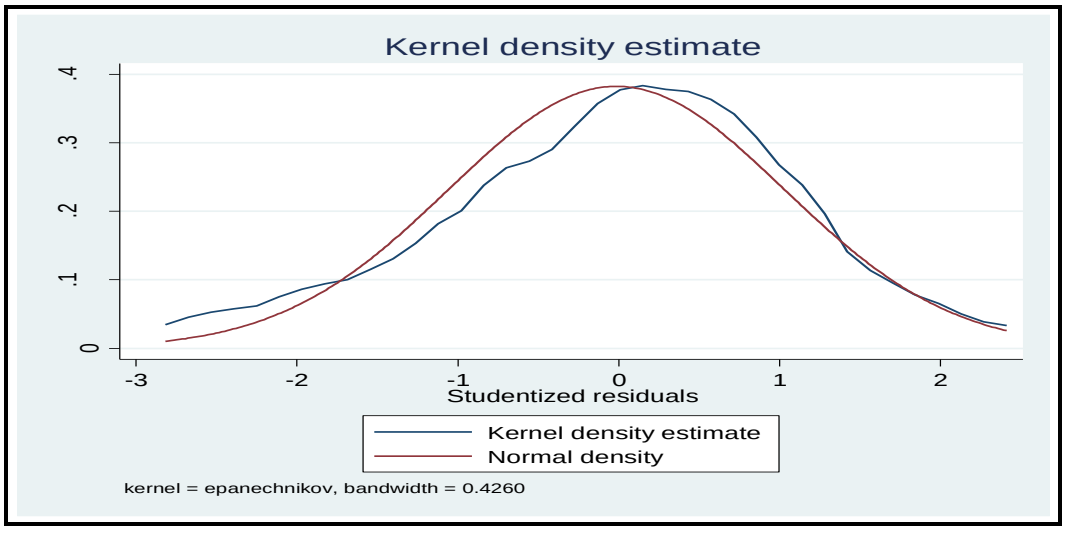

Figure 4.1: Normal plot of residuals.

The Shapiro Wilk test was also conducted and the results are shown in table 4.24. The significant value of the S-W statistic was 0.707 indicating that the data is normally distributed. (If the **Sig.** value of the Shapiro-Wilk Test is greater than 0.05, the data is normal)

Table 4.24: Shapiro Wilk Test of Normality

Variable	Observations	W	V	Z	Prob>Z
Residues	38	0.9797	0.771	-0.544	0.70692

The Skewness Kurtosis test of normality was also conducted and the results are shown in table 4.25.

Table 4.25: Skewness/Kurtosis tests for Normality

Variable	Observations	Pr (Skewness)	Pr (Kurtosis)	Joint Adj Chi^2	Joint Prob>Chi^2
IMS	38	0.71000	0.0000	24.83	0.0000
EF	38	0.74290	0.0000	33.61	0.0000
CG	38	0.41410	0.23530	2.22	0.32930
FS	38	0.48590	0.0000	21.28	0.0000
MD	38	0.67430	0.01760	5.54	0.0000

As shown in Table 4.25 the investment management structure, investment efficiency and market dynamics have moderately positively skewed distribution since their skewness is more than 0.5 but less than 1.0. Corporate governance and firm size are approximately normally distributed or symmetrical since their skewness values are less than 0.5. On kurtosis, investment management structure, investment efficiency and firm size are mesokurtic in that they have an excess kurtosis measure of exactly zero. On the other hand, corporate governance and market dynamics have a leptokurtic distribution because they have an excess kurtosis greater than zero. All in all, it can be concluded that the sample data from across the study variables is approximately normally distributed.

Multicollinearity Test Results

The binary logistic regression model applied in this study requires that the predictor variables be independent and that there is no strong correlation amongst them. Variance Inflation Factors (VIF) method was used to test for multicollinearity. The results are presented in Table 4.27.

Table 4.26: Variance Inflation Factors

Variable	VIF	1/VIF
EF	3.64	0.27486
CG	1.71	0.58451
FS	4.42	0.22627
MD	1.94	0.51431

As shown in Table 4.26, the VIFs for all the predictor variables were relatively low with the highest being 4.42 for firm size. These low VIFs confirmed that there was no multicollinearity amongst the predictor variables. According to the multicollinearity rule of 10, VIFs above 10 indicate high levels of multicollinearity which requires correction through elimination of one or more variables, using ridge regression to analyze the data or combining two or more predictor variables into a single index before the model can be run (O'brien, 2007).

Outlier Test Results

Regression modelling assumes that all observations in the study are equally reliable and should have an equal role in determining the regression equation and conclusions therefrom (Nurunnabi, Rahmatullah & Nasser, 2010). However, in the presence of outliers, influential cases and leverage points, this assumption breaks down necessitating some regression diagnostic tests and correction to avoid the knowledge discovery pitfalls brought about by these cases. There are several methods available for outlier testing. This study adopted box plots method of outlier testing. Box plots are a powerful yet user friendly outlier detection mechanism because they rely on visual examination of

responses to detect outliers (Nurunnabi, Rahmatullah & Nasser, 2010). As shown in the combined box plots in Figure 4.2, there was only one outlier detected under the delegated IMS for the investment efficiency factors.

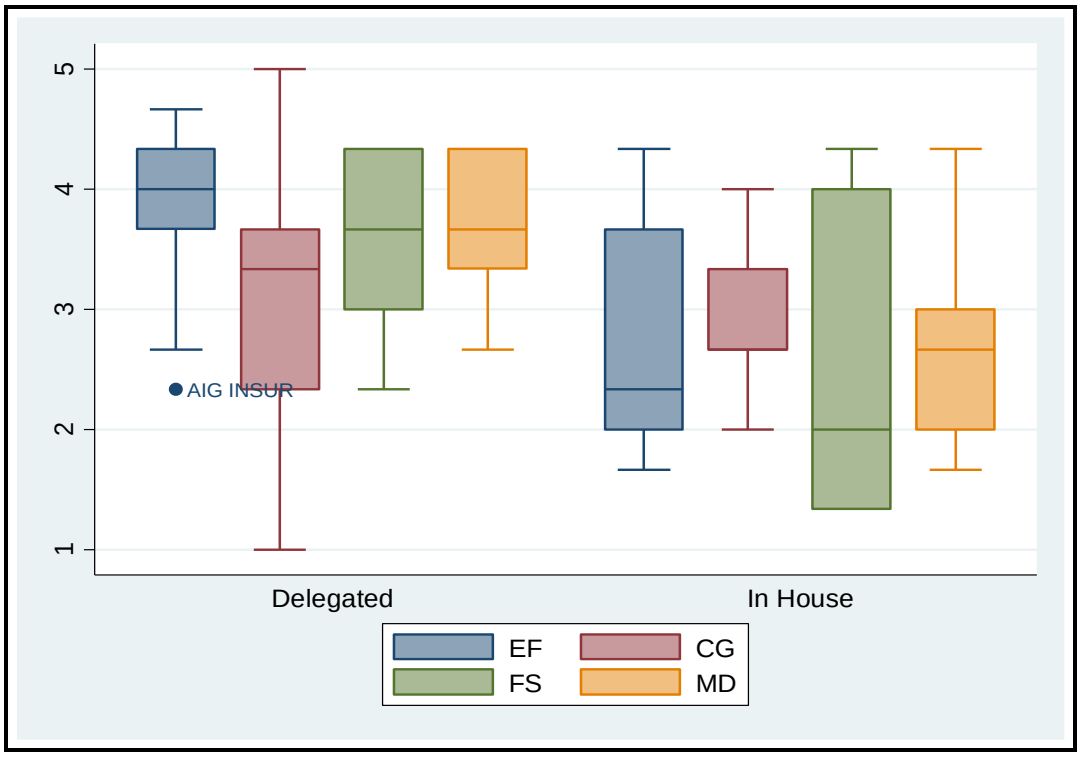

Figure 4.2: Combined Box Plot

a) Investment Efficiency

Figure 4.3 shows the box plot for the investment efficiency factors. The plot shows that the AIG Insurance Company was an outlying response. Being a single case, it was ignored because it was considered unlikely to affect the overall interpretation of the results.

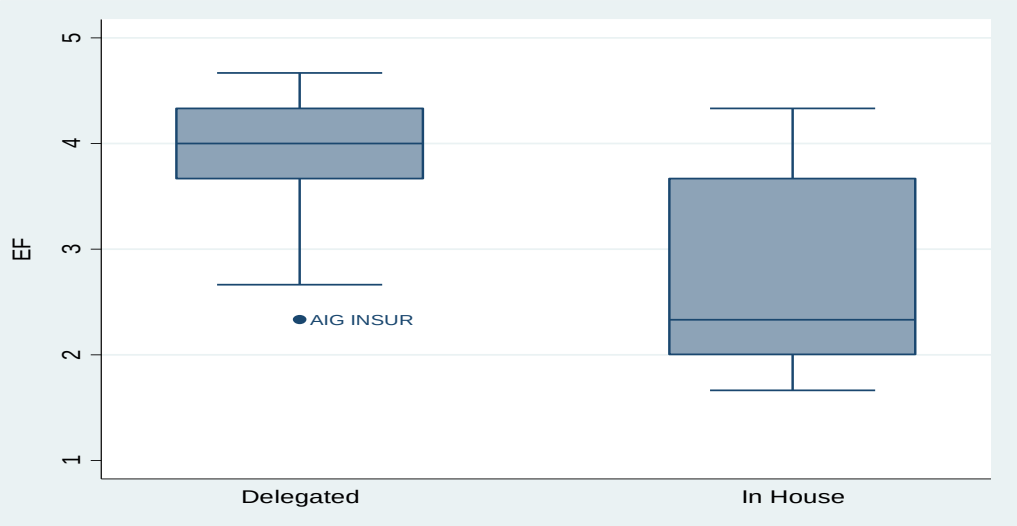

Figure 4.3: Investment Efficiency Box Plot

b) Corporate Governance

The box plot for corporate governance factors shows no outliers for both the delegation approach and in-house management. Figure 4.3 demonstrates the distribution of responses.

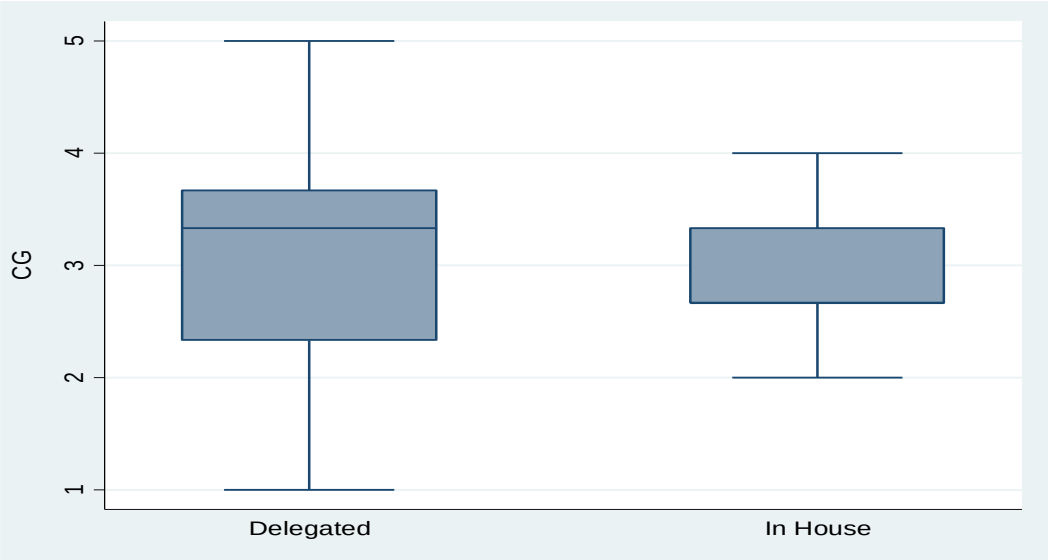

Figure 4.4: Corporate Governance Box Plot

c) Firm Size

Responses for firm size show no outliers as shown in figure 4.4. The delegation structure had more concentrated responses compared to in-house structure.

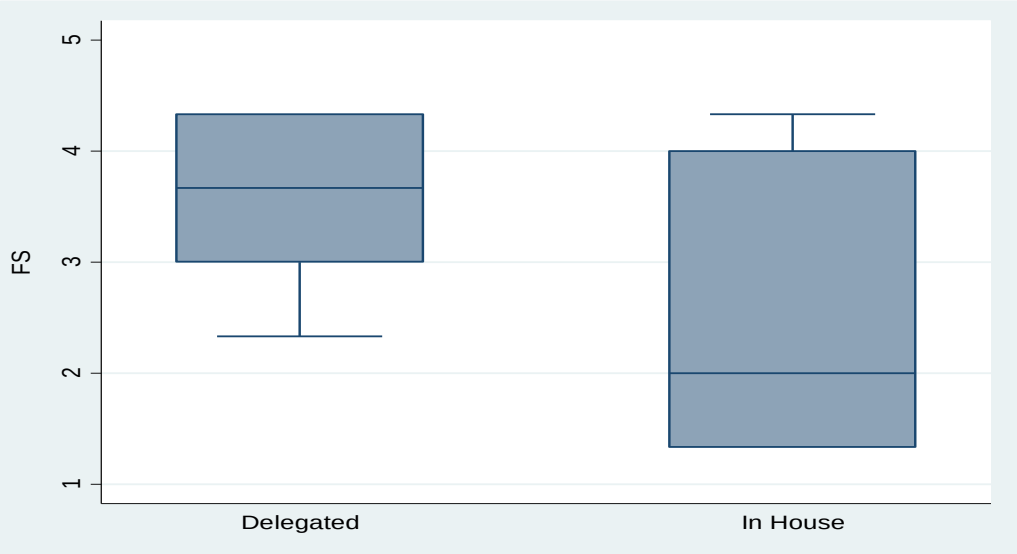

Figure 4.5: Firm Size Box Plot

d) Market Dynamics

Responses for market dynamics were evenly distributed albeit notably different between the two investment management structures. Delegation structure had responses that were clustered to upper end of the scale while in-house structure were clustered towards the low end of the scale. This is illustrated in figure 4.6.

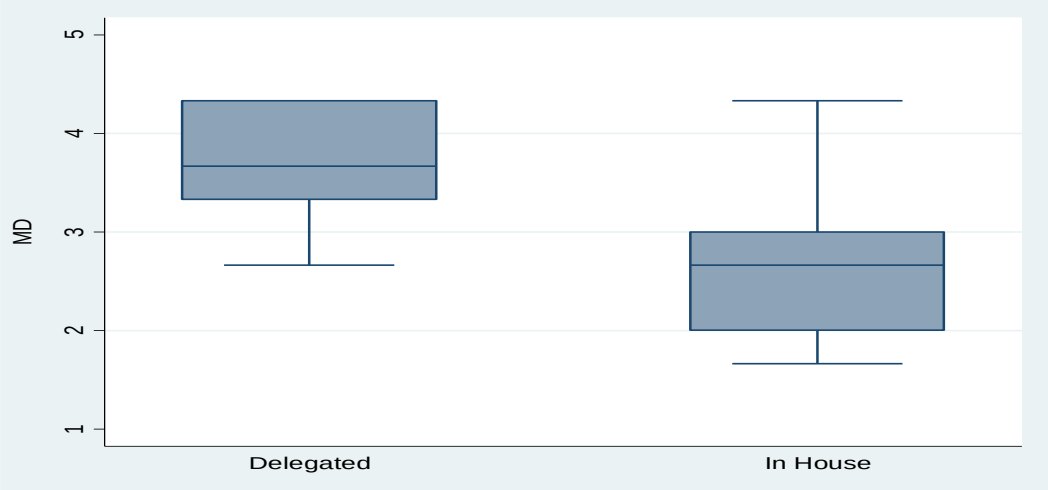

Figure 4.6: Market Dynamics Box Plot

Binary Logistic Regression Model Specification Test Results

This study employed the Hosmer - Lemeshow approach to confirm the model specification validity or what is generally referred to as goodness of fit. The objective was to test the null hypothesis that the model was not correctly specified. The goodness of fit statistics were computed. Classification statistics were generated for the estimation sample using STATA to test the null hypothesis.

Table 4.27 shows the classification statistics from the model data. The overall rate of correct specification of the model was 78.95%, with 61.54% of the delegated group correctly classified and 88.00% of the in-house group correctly classified. Classification favours the in-house group which is larger. Based on the classification statistics, we reject the null hypothesis that the model is not correctly specified and therefore conclude that the model is correctly specified because we are 78.95% sure of the correct specification.

Table 4.27: Classification Statistics

	True		
Classified	**D**	**~D**	**Total**
+	22	5	27
-	3	8	11
Total	25	13	38

Classified + if predicted Pr(D) >= .5
True D defined as IN ! = 0

Sensitivity	Pr(+| D)	88.00%
Specificity	Pr(-|~D)	61.54%
Positive predictive value	Pr(D| +)	81.48%
Negative predictive value	Pr(~D| -)	72.73%
False + rate for true ~D	Pr(+|~D)	38.46%
False - rate for true D	Pr(-| D)	12.00%
False + rate for classified +	Pr(~D| +)	18.52%
False - rate for classified -	Pr(D| -)	27.27%
Correctly classified		78.95%

Hosmer – Lemeshow goodness of fit statistic was also computed to further confirm the model suitability. As shown in the output presented in table 4.28, the model is correctly specified as indicated by the prob> Chi^2 of 0.1616 which is larger than 0.05 at 8 degrees of freedom.

Table 4.28: Goodness-of-fit Test

Item	**Value**
Number of observation	38
Number of groups	10
Hosmer-Lemeshow Chi^2 (8 df)	11.77
Prob > Chi^2	0.1616

4.7 Quantitative Results

This section presents and discusses the quantitative results from the analysis of the data. It begins with correlation results before presenting the outputs from the binary logistic regression model. The effect of all the study variables is presented and discussed.

Results of Correlation Analysis

In order understand how each of the four main explanatory variables influenced the dependent variable, a correlation analysis was undertaken. Multicollinearity can be a serious problem in a binary logistic regression model (Midi, Sarkar & Rana, 2010). As such, it is always important to undertake a multicollinearity test as part of the model diagnostic procedures. This was done and results presented in section 4.6.3 ruled out this pitfall. That notwithstanding correlation analysis is a useful tool that can be relied upon to draw inferences about the nature of data used in a study as well as the predictions made using such data.

Correlation analysis was applied in order to comprehensively understand how the independent variables were interrelated as well as how they were related to the dependent variable. Furthermore, the findings from a correlation analysis are useful in evaluating the prediction power of the model. Midi, Sarkar and Rana (2010) argue that correlations higher than 0.9 in a logistic regression model may make the individual coefficient unstable and may require elimination. Otherwise, correlations lower than 0.9 may be present among the predictor variables without necessarily impacting the model estimates.

The Pearson's correlation coefficient was employed in the correlation analysis. This was considered appropriate because the applicable data was normally distributed (Schober, Boer & Schwarte, 2018). While the correlation coefficients do not indicate causality, they are useful in describing the existence of association. The coefficient ranges from -1 to + 1 with a higher value indicating higher level of association.

Results of Correlation among the Explanatory Variables

Table 4.29 shows the correlations of the independent variables with each other.

Table 4.29: Explanatory Variables Correlation Matrix

		Investment Efficiency	Corporate Governance	Firm Size	Market Dynamics
Investment Efficiency	Pearson's correlation	1.000			
	Sig. (2 tailed)				
	N	38			
Corporate Governance	Pearson's correlation	0.473**	1.000		
	Sig. (2 tailed)	0.003			
	N	38	38		
Firm Size	Pearson's correlation	0.830**	0.630**	1.000	
	Sig. (2 tailed)	0.000	0.000		
	N	38	38	38	
Market Dynamics	Pearson's correlation	0.676**	0.304	0.639**	1.000
	Sig. (2 tailed)	0.000	0.064	0.000	
	N	38	38	38	38

**Significant at 0.01 level (2 tailed)

As depicted in table 4.29, investment efficiency had a positive correlation coefficient with firm size ($R = 0.83$, $p<0.05$). The correlation coefficient was statistically significant at the 5% and 1% levels of significance. We can therefore conclude that as firm size is positively related to investment efficiency. The two predictor variables were quite strongly related but still within a tolerable level for a logistic regression.

Investment efficiency had a moderately positive correlation coefficient with market dynamics ($R = 0.676$, $p < 0.05$). The correlation coefficient was statistically significant at the 5% and 1% levels of significance. We concluded that investment efficiency is positively related to market dynamics.

There was a weak positive correlation coefficient between investment efficiency and corporate governance ($R = 0.473$, $p < 0.05$). The correlation coefficient was statistically significant at both the 5% level of significance and 1% level. We can conclude that investment efficiency is positively related to corporate governance arrangements.

Corporate governance had a moderately positive correlation coefficient with firm size ($R = 0.630$, $p < 0.05$). The correlation coefficient was statistically significant at both the 5% level of significance and at the 1% level. We can therefore conclude that corporate governance is positively related to firm size.

The correlation coefficient between corporate governance and market dynamics was weakly positive ($R = 0.304$, $p > 0.05$). The correlation coefficient was not statistically significant at the 5% level of significance. We cannot conclude that there exists a correlation between corporate governance and market dynamics.

There was a moderate positive correlation coefficient between firm size and market dynamics ($R = 0.639$, $p < 0.05$). The correlation coefficient was statistically significant at both 5% and 1% levels of significance. These results allow the conclusion that as firm size is positively related to market dynamics.

Discussion of the Results

A number of important observations and interpretations can be made from the correlation results set out in table 4.29. There was a strong positive association between investment efficiency and firm size ($R = 0.83$, $p < 0.05$). These results show there is a close association between the two explanatory variables. Investment efficiency may increase as firm size increases and also as firm size increases there may be an increase in investment efficiency.

From an investment efficiency stand point, the pursuit of higher returns and lower cost of investment management go hand in hand with larger asset portfolio sizes that allow firms to reap the benefits of economies of scale. This is in line with observations by

Hodgson et al. (2000) that larger portfolio sizes allow an investor to benefit from higher net of cost returns. Risk reduction as an investment efficiency indicator automatically kicks in with large sizes because risk budgets become bigger as explained by Urwin, Breban, Hodgson and Hunt (2001).

It can also be argued that larger capital bases allow for increased premiums written. According to GoK (2015), a firm is required to hold a capital of at least 20% of net written premium in the preceding year. As the capital base and premiums written increase, firm's investment asset portfolios also increase organically delivering higher returns and also permitting greater diversification to lower risk. These results agree with the conclusions of Gallagher, Gapes and Warren (2016) that as portfolio sizes increase, investors tend to be more conscious of their net returns (after cost return) as well as the risk exposures they face.

Investment efficiency had a positive correlation with market dynamics ($R = 0.676$, $p<0.05$). These results may be explained by the fact that firms in the same industry tend to be conscious of their competitors' actions. The peer comparisons make firms take similar decisions when it comes to their portfolio return targets, risks as well as costs incurred in portfolio management. Additionally and as postulated by Gallagher, Gapes and Warren (2016) firms' flexibility in tailoring their asset allocation through access to alternative assets influences their overall investment returns. Access to alternative assets is closely related to peer behavior because of potential benefits of co-investment and piggy backing. The correlation between investment efficiency and market dynamics may also be explained by the benefits to risk adjusted net returns arising from synchronized investment activities (herding) due to small and nascent markets prevalent in Kenya.

Firm size was positively correlated with market dynamics ($R = 0.639$, $p<0.05$). With larger capital bases and investment asset portfolios, firms are more likely to be vigilant to competitive actions and try to "keep up with Jones's" in a competitive market environment. Larger firm sizes therefore make firms more amenable to peer group influences. Larger firm size also creates flexibility within firms so that they can have

asset allocations that are tailored to include greater proportions of alternative assets. These finding agree with Clark and Monk (2012) that firms access to alternative assets is influenced by portfolio sizes. These firms also tend to attract and retain professional staff which boosts their capabilities.

Corporate governance was positively but moderately correlated with firm size ($R = 0.630$, $p<0.05$). Corporate governance indicators namely, board size, nature majority shareholder and agency costs are closely related to the size of the firm. A contextual analysis of the reality within the Kenyan insurance industry shows that in many instances, as firms grow larger in size, the desire for greater and diligent oversight necessitates the expansion of the board as well as inclusion of diverse skills. From the firms that were surveyed, it was evident that most of the large firms (in terms of capital base) were controlled by one large shareholder such as a global multinational or the government. Larger firm sizes may also influence the nature of agency relationships that the firm enters into.

There was positive but weak correlation between investment efficiency and corporate governance ($R = 0.473$, $p<0.05$). This outcome may be explained by the fact that the three investment efficiency indicators are key decisions that may be influenced by corporate governance arrangements in place. For instance, where large multinationals are the majority shareholder, global practices and strategic plan targets are imposed on subsidiaries in terms of returns, risk appetite and cost management requirements.

The correlation coefficient between corporate governance and market dynamics was positive but weak and not statistically significant ($R = 0.304$, $p > 0.05$). We therefore could not conclude that corporate governance was correlated with market dynamics. This may be explained by the fact that decisions about the nature of a firm's shareholding, board composition and agency relationships were internal affairs for most firms. As such market dynamics did not have any influence on those decisions.

Results of Correlation between the Dependent and Independent Variables

The association between the independent and the dependent variables may be a good starting point in empirical data analysis. In this study, the dependent variable was a binary outcome. It was therefore important to explore the relationship between each of the binary outcomes and the dependent variables. Table 4.30 displays the relationship between the in-house investment management approach and the dependent variables.

Table 4.30: Correlation Matrix between In-house IMS and the Explanatory Variables

		In-house IMS
Investment Efficiency	Pearson's correlation	-0.658**
	Sig. (2 tailed)	0.003
	N	25
Corporate Governance	Pearson's correlation	-0.1923
	Sig. (2 tailed)	0.558
	N	25
Firm Size	Pearson's correlation	-0.2581
	Sig. (2 tailed)	0.027
	N	25
Market Dynamics	Pearson's correlation	-0.5842
	Sig. (2 tailed)	0.000
	N	25

**Significant at 0.01 level (2 tailed) .

Table 4.30 shows that in-house investment management structure had a moderately high but negative correlation coefficient with investment efficiency ($R = -0.6538$, $p < 0.05$). The correlation coefficient was significant both at the 5% and 1% levels of significance. We therefore concluded that investment efficiency was negatively correlated to in-house investment management structure.

Corporate governance had a weak negative correlation coefficient with in-house management ($R = -0.1923$, $p > 0.05$). The correlation coefficient was not statistically

significant at the 5% level of significance. We therefore could not conclude that there was any association between corporate governance and in-house investment management structure.

Firm size had a negative correlation coefficient with in-house investment management structure ($R = -0.2581$, $p < 0.05$). The correlation coefficient was statistically significant at the 5% level of significance. We therefore concluded that firm size was negatively correlated with in-house investment management structure.

Market dynamics had a negative but moderate correlation coefficient with in-house investment structure ($R = -0.5842$, $p < 0.05$). The correlation coefficient was statistically significant at 5% level of significance. It was therefore concluded that market dynamics was negatively correlated with in-house investment management structure.

An analysis of the correlation of the independent variables and the second binary choice was also undertaken. The results are presented in Table 4.31.

Table 4.31: Correlation Matrix between Delegation IMS and the Explanatory Variables

		Delegation IMS
Investment Efficiency	Pearson's correlation	0.0145
	Sig. (2 tailed)	0.053
	N	13
Corporate Governance	Pearson's correlation	0.1132
	Sig. (2 tailed)	0.055
	N	13
Firm Size	Pearson's correlation	-0.2741
	Sig. (2 tailed)	0.077
	N	13
Market Dynamics	Pearson's correlation	0.0368
	Sig. (2 tailed)	0.056
	N	13

**Significant at 0.01 level (2 tailed)

Investment efficiency had a weak positive correlation coefficient with delegation investment management structure but the correlation coefficient was not statistically significant ($R = 0.0145$, $p > 0.05$). We therefore could not conclude that investment efficiency was correlated with delegation investment management structure.

There was a weak positive correlation coefficient between corporate governance and delegation investment management structure ($R = 0.1132$, $p > 0.05$). The correlation coefficient was not statistically significant at 5% level of significance which means that we could conclude that corporate governance was associated with delegation investment management structure.

Firm size had a negative correlation coefficient with delegated investment management structure ($R = -0.2741$, $p < 0.05$). The correlation coefficient was not statistically significant at 5% level of significance. We could not conclude that firm size was correlated with delegation investment management structure.

Market dynamics had a positive but weak correlation coefficient with delegated investment management structure ($R = 0.0368$, $p > 0.05$). The correlation coefficient was not statistically significant at the 5% level of significance. This means that we could not conclude that market dynamics indicators were correlated with delegation investment management structure.

Discussion of the Results

Investment efficiency had a negative correlation with in-house investment management structure ($R = -0.6538$, $p < 0.05$). Investment efficiency was operationalized by pursuit of higher investment returns, investment risk reduction and reduction of investment management costs. The negative association between investment efficiency indicators and in-house investment management could be explained by the fact that as firms become increasingly concerned about investment efficiency, they are likely to move away from managing assets internally and seeking external expertise. This means that

most firms recognize that they are internally challenged in professional investment and therefore are likely to enjoy better investment efficiency outcomes by adopting a delegation approach. These findings concur with Clark and Monk (2012) that investors seek external expertise and capacity in order to improve their net returns.

Corporate governance had a weak negative correlation coefficient with in-house investment management ($R = -0.1923$, $p > 0.05$). The correlation coefficient was not statistically significant at the 5% level of significance. We could not therefore conclude the existence of an association between corporate governance and in-house investment management structure. This could be interpreted to mean that corporate governance arrangements do not influence firms towards managing their assets internally.

Firm size had a negative correlation with in-house investment management structure ($R = -0.2581$, $p < 0.05$). Firm size was measured by the capital base, asset base and human resource base. The negative correlation may be explained by the observation that as the capital base and asset base increase, firms tend to move away from in-house management and look for external expertise to help drive their investment activities. These results agree with Gallagher, Gapes and Warren (2016) argument that with a larger size, funds enjoy a lower management expense ratio and may also gain due to the opportunity for negotiation of lower fees in a delegated management structure.

Market dynamics was negatively correlated with in-house management ($R = -0.5842$, $p < 0.05$). Market dynamics indicators were peer influence, access to alternative asset classes and asset allocation. These results can be interpreted to mean that market dynamics influence firms away from managing their asset internally. This means that market influences favour delegated investment management structures. This supports the assertion by Cambridge associates (2016) that peer group risk is a consideration investors are taking into account when choosing to delegate.

Turning to the correlation between the independent variables and the delegation investment management structure, it was found that there were generally weak

correlations between delegated investment management structure and the four explanatory variables. The correlation coefficients for all the four independent variables were not statistically significant at the 5% level of significance. We therefore could not conclude that investment efficiency, corporate governance, firm size and market dynamics were correlated with delegated investment management.

Results of the Binary Logistic Regression Analysis

This section presents the results of the binary logistic regression analysis. As detailed in subsection 3.9.2.6, a binary logistic regression model was found to be the most suitable model for the study. Two models were applied in the analysis. The original model evaluated the influence of the independent variables on the dependent variable. The second model included the moderating variable in the analysis.

Results of the Original Model

The binary logistic regression model was run in STATA to identify the odds of a firm choosing a particular IMS over the alternative. The model formulated for the study in section 3.9.2.6 was relied upon. The model was as follows:

$$Logit\,[\pi(IMS)] = \beta_0 + \beta_1 IE + \beta_2 CG + \beta_3 FS + \beta_4 MD + \varepsilon$$

Where;

Π (IMS) = the probability of a firm choosing an investment management structure.

IE = the investment efficiency factors

CG = the corporate governance factors

FS = the firm size factors

MD	=	the market dynamics
β_0	=	the intercept representing the "baseline" event rate.
β_1	=	the odds ratio for investment efficiency effect
β_2	=	the odds ratio (coefficient) for the corporate governance effect
β_3	=	the odds ratio for firm size effect
β_4	=	the odds ratio for market dynamics
ε_0	=	the error term

The binary outcomes were in-house management as the default management approach and delegation as the alternative option. In-house management was coded as 0, otherwise 1 for delegated approach. The results of the regression models are set out in table 4.32.

Table 4.32: Results of the Original Logistic Regression Model

Logistic Regression.				**Number of obs = 38**		
Log Likelihood = -16.1955				LR $chi^2(4)$ = 16.43 Prob > Chi^2 = 0.0025 Pseudo R^2 = 0.3366		
A1 |	**Odds Ratio**	**Std. Err.**	**z**	**P>|z|**	**[95% Conf. Int.]**	
Investment Efficiency	1.1243	3.1392	1.130	0.026	0.4360	22.3885
Corporate Governance	1.2285	0.6605	0.100	0.017	0.2303	3.7437
Firm Size	1.4824	0.4678	0.750	0.045	0.0721	3.2278
Market Dynamics	1.0500	4.8923	2.230	0.026	0.9240	9.5168

The results from the original model indicated that all the four predictor variables were significant in explaining investment management structure choice. The overall model is evaluated on the basis of the Likelihood Ratio test. The results of the Likelihood Ratio (LR) test show that the LR (4) = 16.43. The Likelihood Ratio coefficient was significant at the 5% level of significance because $p > Chi^2 = 0.0025$. This means that investment efficiency, firm size, corporate governance and market dynamics are all statistically significant factors that influence the investment management structure choice among insurance companies in Kenya.

Further, the pseudo $R^2 = 0.3366$ shows that the model explains over 33% of the total variability and is therefore a fairly well fitted model using the maximum likelihood estimation method. Unlike the Ordinary Least Squares Regression approach, the Pseudo R^2 can be interpreted as an indication of explanatory power of the variables in the model only when it is compared with an alternative model, which was not the case in this study. The R^2 statistics do not measure the goodness of fit of the model but indicate how useful the explanatory variables are in predicting the response variable and can be referred to as measures of effect size (Bewick, Cheek & Ball, 2005).

Having established that all the predictor variables were statistically significant antecedent factor in the investment management structure choice, the next step was to determine the extent and direction of its effect on firm choices. This is given by the odds ratio. The odds ratios for each of the predictor variables were generated as shown in the table 4.32. All the predictor variables had positive and statistically significant ($p < 0.05$) odds ratios.

Investment efficiency had an odds ratio of 1.1243 which was statistically significant at the 5% level of significance ($P>|z| = 0.026$) meaning that based on investment efficiency considerations, a firm was 12.43% more likely to choose delegation over in-house management. Therefore, we concluded that investment efficiency was a positive antecedent of delegation investment management structure.

Corporate governance had a positive odds ratio of 1.2285 which was statistically significant at the 5% level of significance (P>|z| = 0.017). This means that corporate governance effects increased the chances of a firm choosing delegation over in-house management by 22.85%. Therefore, we conclude that corporate governance was a positive antecedent of delegation investment management structure.

Firm size had an odds ratio of 1.4824 (P>|z| = 0.045). The odds ratio was statistically significant at 5% level of significance. This means that larger firm sizes increases the odds of a firm choosing delegation approach over in-house management by 48.24%. We concluded that firm size was a positive antecedent of delegation investment management structure.

Market dynamics had an odds ratio of 1.050 which was statistically significant at 5% level of significance (P>|z| = 0.026). This means that a firm was 5% more likely to adopt delegation over in-house management when considering market dynamics factors. Market dynamics was a positive antecedent of delegation investment management structure.

Discussion of the Results

The results presented in table 4.32 offer significant insights into the study objectives. As set out in section 1.3.2, the first objective of the study was to determine the effect of investment efficiency on the choice of investment management structures among insurance companies in Kenya. The results from the binary logistic regression model confirmed that investment efficiency was an important antecedent in the choice of investment management structures as shown by the model results regarding the statistical significance of the explanatory variables ($chi^2 = 16.43$, $p < 0.05$).

Investment efficiency had an odds ratio of 1.1243 which means that the odds of a firm choosing delegation over in-house management, increased by 12.43% based on investment efficiency. The odds ratio was statistically significant at the 5% level of

significance ($P>|z| < 0.05$) meaning that we can conclude that investment efficiency factors are a positive antecedent of delegation choices by firms in the study.

These findings agree with theory, contextual expectations and empirical findings from previous research. Theoretically, transaction cost economics (William, 1991) support the view that delegation is premised on the need to increase efficiency. This therefore confirms that insurance companies' delegation choices are supported by theoretical proposals that they should delegate to increase investment efficiency through higher returns expected from external expertise and increased diversification of skills.

Contextually, insurance companies in Kenya have limited professional investment management capacity yet they desire to achieve high investment returns. At the same time, the investment management market is nascent and highly concentrated with only a handful of players. Furthermore, there are few investment professionals available in the market with most of them being employed by the big investment management firms. Therefore, an insurance firm wishing to increase its returns must seek this expertise from the professional firms. Additionally, many of the insurance firms that delegate their investment management activities have investment management subsidiaries or are part of group companies that also engage in investment management service provision.

Empirically, these findings agree with Blake et al. (2013) who found out that the main reason why pension funds chose to delegate their portfolios was pursuit of investment efficiency. Pension funds delegated their portfolios in order to increase their returns, diversify skills and lower their costs of investment management. This behavior appears to be replicated by insurance companies in Kenya.

The second objective of the study was to ascertain the effect of corporate governance on the choice of investment management structures. Corporate governance was established to be a statistically significant antecedent of investment management structure choice as shown by the overall model ($chi^2 = 16.43$, $p < 0.05$) that confirmed the validity of all the four predictor variables. Corporate governance factors had an odds ratio of 1.2285 which

means that a one unit increase in corporate governance indicators increases the chances of a firm choosing delegation over in-house management by 22.85%. We conclude that corporate governance had a positive influence over firms towards delegation.

Principal agent relationships are common in most investment management activities (Golec, 1992). Based on agency theory these findings can be interpreted to mean that as shareholder control and boards get more involved in monitoring and overseeing management firms are likely to move to delegating the management of their portfolios. Avoidance of problems between the shareholders and board with management may also lead firms to seek external agency services for a fee but with greater contractual safeguards.

In this study, 71% of the respondent insurance companies were privately owned. This implies that they experience heavy control and patronage of the owners who dictate almost all critical decisions. Most private investors in the Kenyan insurance sector have a strong professional background in insurance operations. As a consequence, these investors may have the inclination to outsource the management of their pool of funds to professional investment management firms. This partly explains the positive odds of firms delegating investment management over internal management.

The respondent firms had average board size of eight members with an average of one female director. The majority of the directors were also professionals in strategic management (an average of five) and insurance operations (an average of 2). The nature of board composition indicates a lack of expertise in finance and investment management further reinforcing the tendency to outsource investment management decisions.

The findings in this study corroborate Peterson, Iachini and Lam (2011) who found out that external manager skill was a major reason for delegation. They also agree with Useem and Mitchell (2000) and Coronado, Engen and Knight (2003) who found out that

the governance structures of an institutional investor have serious effects on the achievement of objectives and determines how the portfolios are managed.

The third objective of the study was to establish the influence of firm size on the choice of investment management structures. From the overall model results ($chi^2 = 16.43$, $p < 0.05$), firm size was a statistically significant antecedent of investment management structure choice. The odds ratio for this variable was 1.4824 implying that with increased firm sizes, the odds of a firm choosing to delegate over in-house management increases by 48.24%. This means that firm size was a positive delegation antecedent factor. This finding is fully intuitive since as firms grow bigger, they attract the attention of external service providers. At the same time, larger firms are likely to choose to concentrate on the core business in a bid to manage their business expansion and therefore opt to delegate non-core activities such as portfolio management.

These findings are supported by the transaction cost theory (Williamson, 1991) in that as firms grow larger, their negotiation power in the market increases. Since the market for investment management services in Kenya is still small, firms with large capital bases and assets are likely to save on costs through delegation.

To put these findings in context, it is noteworthy that only 24% of the respondent firms had a capital level above KShs. 1 billion. This shows that the industry capital levels are generally low reflecting a basic need to meet compliance to regulatory capital levels. The asset base of the companies was relatively low with the average asset base of the respondent firms at KShs. 12.7 billion. This average was pulled up by less than 10% of the firms that had asset bases above KShs. 30 billion. This supports delegation in that the industry portfolios are not large enough to warrant internal management. The professional investment staff in employment of the insurance companies was very low to support internal management.

Empirically, the findings in this study are contradictory with the conclusions made in various studies (Clark & Monk, 2012; MacIntosh & Scheibelhut, 2012; Gallagher,

Gapes & Warren, 2016). However, in comparative terms they are actually in line with those studies. The previous studies focused on the largest institutional investors globally and found that large capital and asset base led firms towards internal management. The results here indicate that firm size is leading firms towards delegating. This appearance of contradiction can be clarified by the fact that in comparative terms, asset and capital base of firms in Kenya are low indicating that the critical mass needed for internal management may not be achieved for most of the firms in the industry.

The fourth objective was to evaluate the significance of market dynamics on the choice of investment management structures. The overall model output ($chi^2 = 16.43$, $p < 0.05$) confirmed that market dynamics was a statistically significant factor influencing the investment management structure decisions of insurance firms in Kenya. Market dynamics had an odds ratio of 1.050 meaning that consideration of market dynamics factors increases the odds of a firm choosing delegation over internal management by 5%. Market dynamics was a positive antecedent of delegated investment management structure but was less influential compared to the other three predictors.

There is a theoretical contradiction of these findings when evaluated based on the postulations of regret theory (Loomes & Sugden, 1982). The avoidance of regret or self-blame makes decision makers watch what other players around them are doing and do the same things. This theoretical contradiction is demonstrated by the observation that firms were drawn towards delegation while in reality in-house management was more prevalent among the respondents. Agreement with the theory would require that market dynamics favoured in-house management which was the model adopted by 66% of the study respondents which is not reflected in these findings.

In the context of the study environment, markets dynamics were weakly positively influential towards delegation. This can be explained by the fact as shown in table 4.2 access to alternative asset was easy and therefore not a major driver of IMS choices. Respondent firm's board members and senior management had access to peers through high level association meetings which offered opportunities to learn the behavior of

peers. However, this peer learning is not reflected in these results. The respondents' asset allocation was heavily skewed to debt (58%) and property investments (30%). The clustering of investments in debt was as a result of the availability of government and corporate debt in the Kenyan investment market space which does not require much expertise to manage.

Empirically, there are few studies that have evaluated the effect of market dynamics on IMS choices. The findings in this study therefore require validation. The expected outcome was that market dynamics would influence firms towards internal management because as reported in Clark & Monk (2012), that structure increases access to alternative assets and is more suited to tailoring of portfolios asset allocation to meet unique firm's objectives. In any case, in-house management was also more prevalent among the respondents.

Results of the Model Incorporating the Moderating Variable

The fifth objective of this study was to find out the moderating effect of business category on the choice of investment management structures of insurance companies in Kenya. In order to analyze whether business category had a moderating effect on the interaction between the predictor variables and the dependent variables, an expanded binary logistic regression model was developed and run. The model was as follows:

$$Logit\,[\pi(IMS)] = \beta_0 + \beta_1 IE + \beta_2 CG + \beta_3 FS + \beta_4 MD + \beta_5 BC + \varepsilon$$

Where;

Π (IMS) = the probability of a firm choosing an IMS

IE = the investment efficiency factors

CG = the corporate governance factors

FS = the firm size factors

MD = the market dynamics

BC = the business category

β_0 = the intercept representing the "baseline" event rate.

β_1 = the odds ratio for investment efficiency effect

β_2 = the odds ratio (coefficient) for the corporate governance effect

β_3 = the odds ratio for firm size effect

β_4 = the odds ratio for market dynamics

β_5 = the odds ratio for business category

ε_0 = the error term

The model was run in STATA to find out how the odds ratio of the original model varied as a result of the inclusion of the moderator variable as well as how the moderator variable independently predicted the odds of an outcome. The results of the revised model are presented in Table 4.33.

Table 4.33: Results of the Logistic Regression Model with Moderating Variable

Logistic Regression.				**Number of obs = 38**		
Log Likelihood = -16.1842				LR $chi^2(5)$ = 16.46 Prob > Chi^2 = 0.0057 Pseudo R^2 = 0.3370		
A1 |	**Odds Ratio**	**Std. Err.**	**z**	**P>|z|**	**[95%**	
Investment Efficiency	1.3186	0.3255	-1.120	0.043	0.0429	2.3604
Corporate Governance	1.0595	0.7596	0.050	0.936	0.2598	4.3190
Firm Size	1.1015	2.0634	0.760	0.049	0.3067	4.3975
Market Dynamics	1.1592	0.1351	-2.170	0.030	0.0302	1.8397
Business Category	0.8563	0.8873	-0.150	0.881	0.1123	6.5262

Business category was built into the model as a categorical variable where general insurance business was dummy coded as 0 and life business coded as 1. The expanded model results indicate that all the five predictor variables were significant factors influencing investment management structure choices. The model had a $chi^2 = 16.46$, $p > chi^2 = 0.0057$. This compares with the original model that had $chi^2 = 16.43$, $p > chi^2 = 0.0025$. The pseudo $R^2 = 0.3370$ compared to pseudo $R^2 = 0.3366$ in the original model. These results indicates that the overall model is still well fitted and the predictor variables explanatory power is maintained.

As the results in Table 4.33 show, business category had an odds ratio of 0.8563 (P>|z| = 0.881). This can be interpreted to mean that business category has the effect of reducing the odds of a life insurance company choosing delegation approach over in-house management by 14.4%. Business category was not a statistically significant factor

predicting the investment management structures of insurance firms in Kenya (P>|z| = 0.881 > 0.05). However, it moderated the odds ratios of the other predictor variables in different ways, and in some cases, changed the level of significance of some variables. The model log likelihood, Pseudo R^2 and LR chi^2 remained largely unchanged.

The odds ratios for each of the predictor variables changed. Three of the four main predictor variables retained their positive and statistically significant ($p < 0.05$) odds ratios but corporate governance odds ratio remained positive but not statistically significant. The moderating variable had a negative odds ratio that was also not statistically significant at the 5% level of significance.

Investment efficiency had a positive odds ratio of 1.3186 representing an increase from 1.1243 in the original model. The odds ratio was statistically significant at the 5% level of significance (P>|z| = 0.043) meaning that based on investment efficiency considerations, a life insurance company was 31.86% more likely to choose delegation compared to the base case likelihood of 12.43%. This means that investment efficiency had a greater positive effect on life insurance firms to delegate the management of their portfolios compared to general insurance companies.

Market dynamics odds ratio increased from 1.0500 to 1.1592 which was statistically significant at 5% level of significance (P>|z| = 0.030) meaning that a life insurance company was 15.92% more likely to adopt delegation compared to the base case likelihood of 5.0%. This implies that life insurance companies are influenced more positively towards delegation by market dynamics compared to general insurance companies.

Firm size odds ratio declined from 1.4824 to 1.1015 which was statistically significant at the 5% level of significance (P>|z| = 0.049). This means that a life insurance company was 10.15% more likely to delegate if it had a large capital and asset base compared to the base case likelihood of 48.24%. This can be interpreted to mean that large life insurance companies are less likely to delegate their investment management activities

compared to general insurance companies as shown in the reduction of the positive influence.

Corporate governance odds ratio declined from 1.2285 which was statistically significant (p >|z| = 0.017) to 1.0595 which was not statistically significant at the 5% level of significance (p >|z| = 0.936). This means that a firm's chances of choosing delegation over in-house management based on corporate governance considerations declined from 22.85% to 5.95% if the firm was a life insurance company compared to a general insurance company. However, in this expanded model, corporate governance was not a significant factor influencing the choice. Since corporate governance was a positive antecedent of delegation in the original model that ignored business category, it is imperative that corporate governance is an critical factor to consider in IMS choice decisions regardless of the business category of the firm.

The moderating variable had an odds ratio of 0.8563 which was not statistically significant at 5% level of significance (p >|z| = 0.881). This means that the odds of a firm choosing delegation over in-house management declined by 14.37% for life companies compared to general insurance companies. However, business category was not a statistically significant factor affecting investment management structure decisions.

Discussion of the Results

Business category was used as a moderating variable because there are significant differences in investment strategies adopted by the two lines of businesses based on their unique nature of claims experiences (Gründl, Dong & Gal, 2016). Whether a firm is primarily in general insurance business or life insurance business has implications on how it manages its investment assets because of the liquidity needs of the two types of businesses. Based on the results presented in section 4.7.3.1, a number of conclusions can be derived from this analysis.

Business category had an odds ratio of 0.8563 (P>|z| = 0.881). The variable was not statistically significant. The odds ratio reflect the fact that life insurance are less likely to delegate their investment management activities when compared to general insurance companies. However, we cannot conclude that business category influences the investment management structure choices.

Business category magnified the influence of investment efficiency on investment management structure choice. The odds ratio for investment efficiency increased by 17.3% from 1.1243 to 1.3186. This magnification of the effect of investment efficiency on investment management structure choice can be interpreted to mean that the chances of a firm delegating its investment management activities is influenced more by investment efficiency if a firm is a life insurance company compared to if the firm is a general insurance company.

Investment efficiency may be a critical factor for life insurance companies because these firms receive periodic premium deposits in consideration for a sum assured at maturity of the policy (III, 2010). Life assurance policies guarantee amounts that are higher than the premiums charged and therefore the insurer must ensure they generate an adequate return on investment to be able to honour the maturity payments. As a result of this pressure to achieve high returns, life assurance firms are more likely to look for expert money managers through delegation.

Investment risk reduction may also be a bigger consideration for life insurers for the simple reason that the death risk underwritten is largely indeterminate. When the primary insurance risk is coupled with investment risks, it means that firms have to develop mechanisms that ensure that they achieve as much risk reduction as possible. One way this is possible is through adopting investment management delegation with clear risk budgeting to guide the external managers. Reduction in the cost of investment management may also play a bigger role in that life insurers are less sensitive to cost management than general insurers due to their longer investment horizons. As a result,

they are more likely to adopt delegation because in long run the investment management costs are compensated with higher returns.

Business category amplified the influence of market dynamics on the investment management structure choice. The odds ratio for market dynamics increased by 10.4% from 1.0500 to 1.1592. This means that the odds of a firm delegating its investment management activities based on market dynamics factors increases if a firm is a life insurance company compared to if it is a general insurance company. This has a number of related interpretations as detailed herein.

The need to achieve greater access to alternative asset classes is of great importance to life companies because these firms have longer investment horizons. Most alternative assets have a long term investment maturity with promise of higher returns than the traditional investment asset classes (Urwin, Breban, Hodgson & Hunt, 2001). Urwin, Breban, Hodgson and Hunt (2001) further explain that alternative assets provide returns above equities and /or risks below equities. They also serve as a powerful hedge against inflation. For these reasons, life insurers put heavy emphasis on access to these alternative assets for diversification and return enhancement benefits. As Gallagher, Gapes and Warren (2016) argue, it is easier to access alternative assets through leveraging on external investment management capabilities.

On peer influence, life insurance companies face significantly higher competition compared to general insurers. This is because life companies declare and make public announcements on the rates of return they are offering particularly for investment linked products. Comparisons among peers may therefore influence firms' actions. This aspect of market dynamics is therefore magnified for life insurers compared to general insurers who generally have less public information sharing. The asset allocations of life insurers are generally more skewed to long term and higher risk assets such as private equities and unquoted equities. To achieve the high returns that these firms desire while keeping risk exposure low means that firms must get the best possible external advice.

Firm size odds ratio shrank when the moderator was introduced into the analysis. The odds ratio for firm size decreased by 34.6% from 1.4824 to 1.1015. This large drop in the odds of a firm delegating compared to in-house management can be interpreted to mean that as firm size increases, life insurance firms are less likely to delegate their portfolios when compared to general insurers. Life insurance companies controlled the largest portfolios in the industry. While more of these firms were adopting delegation, a good proportion of them were also managing assets internally. At the same time, more general insurance companies were managing their assets internally as opposed to delegation.

Life insurers with a large capital base are more likely to manage their assets internally because of the expected benefits of tailoring portfolios. This supports the assertion by Gallagher, Gapes and Warren (2016) that larger capital base confer the benefits of scale that internal management can leverage on. It allows firms to flexibly tailor their portfolios to meet their specific investment objectives. Human resource base suggests that as more human resources are deployed into a life insurance company, then part of those skills are channeled to internal management of portfolios.

Corporate governance positive influence on investment management structure choice was diminished. The odds ratio declined by 16% from 1.2285 to 1.0595. A life insurance company is less likely to delegate its investment management on corporate governance considerations compared to a general insurer. Corporate governance considerations have a reduced effect in decisions on how investment assets are handled. The nature of majority shareholder may not influence decisions in different directions based on the nature of business. Rather, most controlling shareholders adopt standardized models that may not be influenced by the business category. This means that corporate governance is an important factor for both life and general insurers.

On the issue of board composition, the lower effect may be explained by the fact that there was no significant difference between the composition of boards of general insurers and life insurers. The average board size of general insures was 6 members

while it was 7 for life companies. The size variance is mostly due to the larger sizes of the latter compared to the former. These differences do not have any impact on the decisions of the firms as far as investment management structures are concerned. The need to avoid agency is a cross cutting concern that affects both general and life insurers equally. As such, the loss of significance is explained by the fact that both general and life companies would rather not delegate to avoid the attendant agency costs and problems.

Results of the Hypothesis Tests

Results of Hypothesis Tests of the Original Model

This section explains the results of the hypothesis tests that were carried out and the conclusions from those tests. There were four main hypothesis developed in line with the specific objectives of the study. These hypothesis are presented in section 1.4. As set out in section 3.9.2.7 the Wald test statistic (W – Statistic) was used in the hypothesis testing. The test parameters with applicable decision criteria are set out in section 3.9.2.7. The results from are as presented in Table 4.34.

Table 4.34: Results of Hypothesis Testing of the Original Model

	Null Hypothesis	Hypothesis test	Decision rule	W-Statistic (χ^2)	$p > \chi^2$	Decision
H_{01}	Investment efficiency does not significantly influence the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_0: \chi^2 = 0$ $H_1: \chi^2 \neq 0$	Reject H_{01} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)	6.29	0.026	Reject H_{01}
H_{02}	Corporate governance does not significantly affect the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_0: \chi^2 = 0$ $H_1: \chi^2 \neq 0$	Reject H_{02} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)	5.01	0.017	Reject H_{02}
H_{03}	Firm size does not significantly influence the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_0: \chi^2 = 0$ $H_1: \chi^2 \neq 0$	Reject H_{03} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)	5.57	0.045	Reject H_{03}
H_{04}	Market dynamics is not a significant antecedent of the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_0: \chi^2 = 0$ $H_1: \chi^2 \neq 0$	Reject H_{04} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)	4.96	0.026	Reject H_{04}

Note: Author's formulation

In line with the first objective of this study, the first hypothesis postulated that investment efficiency does not significantly influence the choice of investment management structures of insurance companies in Kenya. The W-statistic for this null

hypothesis was 6.29 and p> χ^2 = 0.026. Based on the Wald statistic decision rule, at the 5% level of significance we rejected the null hypothesis because p> χ^2 < 0.05 and concluded the alternative that investment efficiency significantly influences the investment management structure choice of insurance companies in Kenya. This confirmed that investment efficiency was a positive delegation antecedent of investment management structure choice among insurance companies in Kenya.

The second objective of the study was to ascertain the effect of corporate governance on the choice of investment management structures. The relevant null hypothesis was that corporate governance does not significantly affect the choice of investment management structures of insurance companies. The W-statistic for this null hypothesis was 5.01 and p> χ^2 = 0.017. Based on the Wald statistic decision rule, at the 5% level of significance we reject the null hypothesis because p> χ^2 < 0.05 and conclude the alternative that corporate governance significantly affects the investment management structure choice of insurance companies in Kenya. These empirical results confirmed that corporate governance positively affects delegation choices of insurance companies.

The third objective was to establish the influence of firm size on the choice of investment management structures of insurance companies in Kenya. The applicable hypothesis was that firm size does not significantly influence the investment management structures. The resultant W-statistic for this null hypothesis was 5.57 and p > χ^2 = 0.045. Based on the Wald statistic decision rule, at the 5% level of significance we reject the null because p> χ^2 < 0.05 and conclude the alternative that firm size significantly influences the investment management structure choice of insurance companies in Kenya. Firm size was therefore empirically proven to positively influence the investment management structure decisions of insurance companies in Kenya towards delegation.

The fourth objective was to evaluate the significance of market dynamics on the choice of investment management structures of insurance companies in Kenya. The postulated hypothesis was that market dynamics is not a significant antecedent of investment

management structure choice. The W-statistic computed for this null hypothesis was 4.96 and $p> \chi^2 = 0.026$. Based on the Wald statistic decision rule, at the 5% level of significance we reject the null because $p> \chi^2 < 0.05$ and conclude the alternative that market dynamics is a significant antecedent of investment management structure choices of insurance companies in Kenya. Market dynamics was therefore a significant factor that insurance companies put into consideration when making their investment management delegation decisions.

The fifth objective was formulated in order to find out the moderating effect of business category on investment management structure choices. The applicable hypothesis was therefore tested based on the expanded binary logistic regression model that included this variable. The moderating effect of business category on the four predictor variable was needed in order to reach final conclusions. The results of this analysis are presented in section 4.7.3.2.

Results of Hypothesis Tests of the Model Incorporating the Moderating Variable

One of the objectives of the study was to determine the moderating effect of business category in the choice of investment management structures. As shown in section 4.7.3, this variable had some effect on how the predictor variables predicted the dependent variables. To confirm these effects, the hypotheses formulated in section 1.4 were subjected to testing for significance based on an expanded model that included the business category as a moderator. This was done in order to meet the fifth objective of the study which was to find out the moderating effect of business category on the choice of investment management structures of insurance companies in Kenya. The relevant hypothesis tests and results from STATA are presented in Table 4.35.

Table 4.35: Results of Hypothesis Testing of the Moderating Effect of Business Category

	Null Hypothesis	Hypothesis test	Decision rule	W-Statistic (χ^2)	$p > \chi^2$	Decision
H_{01}	Investment efficiency does not significantly influence the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_{01}: \chi^2 = 0$ $H_{A1}: \chi^2 \neq 0$	Reject H_{01} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)	2.25	0.044	Reject H_{01}
H_{02}	Corporate governance does not significantly affect the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_{02}: \chi^2 = 0$ $H_{A2}: \chi^2 \neq 0$	Reject H_{02} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)	0.01	0.936	Fail to reject H_{02}
H_{03}	Firm size does not significantly influence the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_{03}: \chi^2 = 0$ $H_{A3}: \chi^2 \neq 0$	Reject H_{03} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)	1.57	0.049	Reject H_{03}
H_{04}	Market dynamics is not a significant antecedent of the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_{04}: \chi^2 = 0$ $H_{A4}: \chi^2 \neq 0$	RejectH_{04} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)	4.69	0.030	Reject H_{04}
H_{05}	Business category has no moderating effect on the choice of investment management structures of insurance companies in Kenya.	Wald test statistic (Wald test) $H_{05}: \chi^2 = 0$ $H_{A5}: \chi^2 \neq 0$	Reject H_{05} if $p > \chi^2 \leq 0.05$ (otherwise fail to reject)	0.02	0.631	Fail to reject H_{05}

Note: Author's formulation

The moderation effect of business category was analyzed by retesting whether investment efficiency was still a significant factor influencing investment management structure choices when the business category of the insurance firms is considered. This involved testing hypothesis H_{01} under the expanded model. The Wald statistic for this null hypothesis was 2.25 and p> χ^2 = 0.044. Based on the Wald statistic decision rule, at the 5% level of significance we reject the null because p> χ^2 < 0.05 and conclude the alternative that investment efficiency significantly influences the investment management structure choice of life insurance companies in Kenya towards delegation. These results confirmed the findings of the original model that investment efficiency significantly influenced investment management structure decisions.

Corporate governance effect on investment management structure decisions given the business category was retested using the null hypothesis that corporate governance does not significantly affect investment management structure decisions of insurance companies. The resultant Wald statistic for this null hypothesis was 0.01 and p> χ^2 = 0.936. This output differed from the results from the original model in that based on the Wald statistic decision rule, at the 5% level of significance we failed to reject the null hypothesis because p> χ^2 > 0.05. We therefore concluded that when business category is considered, corporate governance does not significantly affect the investment management structure choices of life insurance companies in Kenya. These results refuted the findings in the original model that corporate governance significantly affected investment management structure decisions of insurance companies.

The business category moderated effect of firm size on investment management structure decisions was reconfirmed by testing the null hypothesis that firm size does not significantly influence the investment management structure decisions of insurance companies in Kenya. The Wald statistic output for this null hypothesis was 1.57 and p> χ^2 = 0.049. Based on the Wald statistic decision rule, at the 5% level of significance we reject the null because p> χ^2 < 0.05 and conclude that firm size significantly influences investment management structure choices of insurance companies in Kenya. The results from the original model were reaffirmed and we therefore concluded that firm size was

an important and significant factor influencing investment management structure decisions.

Market dynamics impact on investment management structure decisions given firms' business category was tested using the null hypothesis that market dynamics is not a significant antecedent of investment management structure choice of insurance companies in Kenya. The Wald statistic output for this null hypothesis was 4.69 and p> χ^2 = 0.030. Based on the Wald statistic decision rule, at the 5% level of significance we rejected the null because p> χ^2 < 0.05 and concluded that market dynamics was a significant antecedent of investment management structure choices of insurance companies in Kenya. We therefore concluded that market dynamics were important antecedents of investment management structure decisions.

From the foregoing results, it was evident that indeed business category moderates the effect of the predictor variables on the dependent variables. However, it was important to confirm whether the moderating effect of business category was statistically significant. This was done by testing the null hypothesis that business category has no moderating effect on the investment management structure choices of insurance companies in Kenya. The Wald statistic output for this null hypothesis was 0.02 and p> χ^2 = 0.631. Based on the Wald statistic decision rule, at the 5% level of significance we failed to reject the null because p> χ^2 > 0.05 and concluded that business category does not significantly moderate the investment management structure choices of insurance companies.

4.8 Chapter Summary

This chapter addressed the analytical part of the study. It summarizes the characteristics of the respondents, describes the data distribution tests as well as the model specification tests. Thereafter, descriptive statistics were used to make conclusions on how the predictor variables affected the dependent variable. The binary logistic regression model was run and results tabulated, interpreted and discussed.

The data used in the study was confirmed to be normally distributed with no outliers or multicollinearity effects. It was therefore suitable for input into the logistic regression model. The Hosmer - Lemeshow approach confirmed that the model was correctly specified. Descriptive analysis of the Likert scale data showed that investment efficiency was strongly considered in IMS choices, corporate governance, firm size and market dynamics were of moderate importance.

Correlation analysis showed that the independent variables were positively correlated amongst each other and to varying degrees that did not affect their suitability for use in the study. The binary logistic regression revealed that all the four predictor variables were statistically significant positive influencers of IMS choices in favour of delegation. In the moderated effects model, business category and corporate governance were not significant factors influencing IMS choice. Business category amplified the positive effect investment efficiency and market dynamics on delegation while it diminished the positive effect of firm size.

The main conclusions from this analysis were that investment efficiency, firm size and market dynamics were statistically significant antecedents of IMS with positive effects on delegation choices. Corporate governance was a significant antecedent of investment management structure choice positively influencing delegation when the business category of firms was ignored. Finally, business category was a significant factor moderating the influence of investment efficiency, corporate governance, firm size and market dynamics on investment management structure decisions of insurance companies but was not a significant factor directly influencing those decisions.

CHAPTER FIVE

SUMMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a summary of the research findings, conclusions made from those findings and the recommendations that are proposed from the study. The overall objective of the study was to explore the antecedents of investment management structure choices of insurance companies in Kenya. The empirical findings from the research are summarized, conclusions drawn and proposed recommendations developed.

5.2 Summary of the Findings

This section provides a summary of the findings from the study. It is structured to show the main findings for the general objective and each specific objective of the study.

Investment Management Structures of Insurance Companies in Kenya

The general objective of the study was to explore antecedents of investment management structure choices of insurance companies in Kenya. In essence, the research sought to explore the investment management frameworks that insurance companies were using. Based on a restricted binary choice between in-house management and delegated management, it was found that 66% of the respondent firms used in-house investment management approach. 80% of those respondents were general insurance companies. The conclusion of the study was that in-house investment management was more prevalent than delegated investment management within the Kenyan insurance industry.

The Effect of Investment Efficiency on Choice of Investment Management Structures

The first objective of the study was to determine the effect of investment efficiency on the choice of investment management structures among insurance companies in Kenya. Descriptive analysis of the data showed that investment efficiency was considered in investment management structure choices. Correlation analysis showed that investment efficiency had a negative, statistically significant correlation with in-house IMS.

From the binary logistic regression model, investment efficiency had positive and statistically significant odds ratio in favour of delegation. Firms were 12.4% more likely to delegate their investment management activities on investment efficiency considerations. Upon inclusion of business category as a moderating variable, the investment efficiency odds ratio was magnified such that firms were 31.8% more likely to delegate based on investment efficiency antecedents, if they were life insurance companies.

To prove the econometric model outputs, the null hypothesis, that investment efficiency does not significantly influence the choice of investment management structures of insurance companies in Kenya was tested. This hypothesis postulates that investment efficiency is not a significant factor influencing investment management structure choices. The output of the Wald statistic test was statistically significant at the 5% level of significance for both the original model and the moderated effects model. The null hypothesis was therefore rejected and a conclusion made that investment efficiency was a positive and statistically significant factor influencing delegation investment management structure choices among insurance companies in Kenya.

The Effect of Corporate Governance on Choice of Investment Management Structures

The second objective of the study was to ascertain the effect of corporate governance on the investment management structure choices among insurance companies in Kenya. Descriptive analysis of the primary data shows that respondents agreed that corporate governance considerations were important in the IMS choice decision. Correlation analysis showed that corporate governance had a negative and statistically significant correlation with in-house management.

The logistic regression model results showed that corporate governance had positive and statistically significant influence on firms towards delegation. Firms were 22.9% more likely to delegate on corporate governance considerations. When firm's business category was incorporated into the analysis, it was found that corporate governance effect diminished and was no longer a statistically significant influencer of investment management structure choices. Based on corporate governance considerations, the odds of a life insurance firm choosing delegation over in-house management declined to 6.0% and this factor was no longer statistically significant.

The null hypothesis tested to prove the model findings was that corporate governance does not significantly affect the choice of investment management structures of insurance companies in Kenya. The resultant Wald statistic was statistically significant at the 5% level of significance in the original model. Therefore, we rejected the null hypothesis and concluded that corporate governance influenced investment management structure choices in favour of delegation. Upon running the moderated effects model, corporate governance had a Wald statistic that was not statistically significant. We therefore failed to reject the null hypothesis and concluded that corporate governance factors do not affect investment management structure decisions of life insurance companies.

The Effect of Firm Size on Choice Of Investment Management Structures

The third objective of the research was to establish the influence of firm size on the choice of investment management structures of insurance companies in Kenya. Descriptive analysis showed that firm size was considered in the choice of IMS. Correlation analysis showed that firm size was negatively correlated to both in-house management structure and delegated management.

The binary logistic regression model outputs showed that firm size had a positive and statistically significant influence over firms towards delegation. A firm was 48.2% more likely to choose delegation over in-house management based on firm size considerations. This removed the doubts cast on the effect of firm size on investment management structure choices given the negative correlation results with both investment management structures. It was therefore conclusive that firm size was a statistically significant factor positively influencing the IMS choices in favour of delegation. In the second model where the business category was incorporated, firm size effect was diminished but remained statistically significant. The odds of a life insurance company adopting delegation over in-house management decreased to 10.2% from 48.2% based on firm size considerations.

The null hypothesis that was formulated to test the model outcomes was that firm size does not significantly influence the choice of investment management structures of insurance companies in Kenya. This hypothesis suggests that there are other factors other than firm size that drive firm IMS choices. The hypothesis test results gave a Wald statistic that was statistically significant at the 5% level of significance. We therefore rejected the null hypothesis and concluded that firm size was a significant influencer of investment management structure choices of firms. In the moderated effects model, the Wald statistic was statistically significant at the 5% level of significance. We therefore rejected the null hypothesis and concluded that firm size influences life insurance companies towards delegation of their investment portfolios. The final conclusion was that firm size had a positive influence over firms towards delegation.

The Effect of Market Dynamics on Choice Of Investment Management Structures

The fourth objective of the study was to evaluate the significance of market dynamics on investment management structure choices of insurance companies in Kenya. Descriptive analysis of primary data revealed that respondents agreed that they considered different aspects of market dynamics in their investment management structure choice decisions. Market dynamics was negatively correlated to in-house management and positively correlated with delegated management.

The original binary logistic regression model results showed that a firm was 5% more likely to delegate its investment management activities driven by market dynamics. Market dynamics was a statistically significant factor positively influencing firms towards delegation. In the second model incorporating the business category, the effect of this variable was amplified such that a firm was 15.9% more likely to delegate on account of market dynamics if it was a life insurance company. It was therefore evident that market dynamics was a significant factor influencing firms towards delegation and affected the delegation decisions more for life companies.

The hypothesis that was tested to prove the model results was that market dynamics is not a significant antecedent of the choice of investment management structures of insurance companies in Kenya. This hypothesis seeks to disprove the significance of market dynamics as an antecedent factor in investment management structure decisions. The Wald statistic result was statistically significant at the 5% level of significance. We therefore rejected the null hypothesis and concluded that market dynamics was a statistically significant antecedent of investment management structure choices of insurance companies in Kenya. In the moderated effects model, the Wald statistic was significant at the 5% level of significance. We again rejected the null hypothesis thereby concluding that market dynamics influences firms towards delegation. It was therefore concluded that market dynamics was a positive influencing factor on firms towards delegation.

The Moderating Effect of Business Category on Choice of Investment Management Structures

The second binary logistic regression model had the objective of finding out if business category was a significant moderating variable on investment management structure choices of insurance companies in Kenya. The overall finding was that business category was not a statistically significant factor influencing investment management structure choices. It was however, a significant factor moderating the influence of other predictor variables in the investment management structure choices of firms.

The direct effect of business category on investment management structure choices was negative towards delegation. The odds of a life insurance company choosing delegation over in-house management declined by 14.4% compared to general insurance companies. Business category moderated the effect of the four predictor variables on the IMS choices.

Investment efficiency effects were magnified so that a life insurance company was more likely to delegate in pursuit of high investment returns, investment risk reduction and cost cutting when compared to a general insurance company. Corporate governance effect was diminished and a life insurance company was less likely to delegate on account of the nature of majority shareholder, board composition and avoidance of agency problems. This factor was not statistically significant in determining firm choices.

Firm size effect was diminished such that a life insurance company was less likely to delegate compared to a general insurance company as firm sizes increased. This means that life insurers with large capital and asset base were more likely to manage their assets internally. Market dynamics effect was magnified in that a life insurance firm was more likely to adopt delegation over in-house management compared to a general insurance company as a result of peer influences, need to access to alternative assets and their asset allocations.

5.3 Conclusions from the Study

This section sets out the conclusions that were made from the research. They are laid out in the order of the originating research objective.

Investment Management Structures of Insurance Companies in Kenya

This study concluded that in-house investment management structure was more prevalent in practice among insurance companies in Kenya. 66% of the respondents used in-house management. Delegation investment management structure was in use by about one third of the respondents.

Investment Efficiency and Investment Management Structures

This study concluded that investment efficiency influences investment management structure choices of insurance companies in Kenya. Investment efficiency indicators namely higher investment returns, investment risk reduction and investment management cost reduction positively influenced insurance companies towards delegating their investment management activities. When the business category of insurance companies is considered, life insurance companies were more likely to delegate their portfolios compared to general insurance companies in pursuit of investment efficiency.

Corporate Governance and Investment Management Structures

This study concluded that corporate governance influences the investment management structure decisions among insurance companies in Kenya. Corporate governance indicators namely shareholding, board composition and agency problems positively influenced insurance companies towards delegation. When the business category of the insurance company is considered, corporate governance ceased to be a statistically significant factor influencing investment management structure choices of life insurance companies. The negation of corporate governance positive effect in the moderated

model may be interpreted to mean that corporate governance is important in all cases based on the original model findings.

Firm Size and Investment Management Structures

The study concluded that firm size was a significant factor influencing insurance companies' investment management structure decisions. Firm size indicators namely capital base, asset base and human resource base positively influenced insurance companies towards delegation. When the business category of insurance companies is considered, firm size was still a statistically significant factor influencing the IMS choices but the positive effect was less for life insurance companies compared to the base case.

Market Dynamics and Investment Management Structures

The study concluded that market dynamics was a significant factor in determining the investment management structure choice of insurance companies in Kenya. Market dynamics indicators namely need to access alternative assets markets, peer influence and asset allocation positively influenced insurance companies to delegate their portfolios. When the business category is considered, life insurance companies were more likely to delegate their portfolio compared to general insurance companies due to market dynamics influences.

The Moderating Effect of Business Category on Investment Management Structure Choice

This study concluded that business category was not a significant factor influencing the investment management structure choices of insurance companies. It was also concluded that business category was a significant factor moderating the effect of the four independent variables on investment management structure choices of insurance companies in Kenya.

Business category magnified the positive effect of investment efficiency and market dynamics on life insurance companies towards delegation. It reduced the positive effect of firm size towards delegation for life insurance companies. Corporate governance positive effect towards delegation became statistically not significant implying that corporate governance effects are important for both life and general insurers.

5.4 Recommendations From The Study

This section make policy and theoretical recommendations based on findings from this study.

Recommendations for the Insurance Companies

This research was conducted using a positivist research philosophy. This means that there are certain factual discoveries that were made in the course of data collection and analysis. Some of these realities have implications on the insurance companies and some changes could be beneficial to these companies. The recommendations to the insurance companies are as follows:

Insurance companies could improve their investment management structure choices by carefully considering their investment efficiency needs. It was found out that investment efficiency considerations influenced insurance companies towards delegation. In-house investment management was also found to be more prevalent. This means that insurance companies' investment management structure choices are not driven by pursuit of investment efficiency.

Insurance companies should choose investment management structures that are likely to help them realize their investment return goals. It was found that firms that were managing assets in-house were not meeting their return targets. There should be a serious consideration of the investment return goals and choose investment management arrangements that ensure such goals are met.

Large insurance companies could benefit from delegating their investment management activities. This study found that firm size positively influenced insurance companies towards delegation. As firm size increases, insurance companies should consider delegating their investment management in order to reap the benefits of their large sizes.

Insurance companies should consider the actions of peers as they make decisions on their investment management structures. This study found out that there are positive influences of peers, market access and asset allocation towards delegation. Observing peers may add value to the decisions that a firm makes.

Policy Recommendations

There are many findings from this research that offer beneficial proposals to the government and policy makers. This section highlights some of these recommendations.

The Insurance Regulatory Authority should consider tighter regulation of investment management activities of insurance companies. It was found that 66% of insurance companies in the study were managing their assets in-house yet they did not possess adequate professional human resource capacity. To minimize the potential for missed return targets and even loss of assets, it is recommended that the IRA imposes tighter and stricter control on the use of in-house investment management by insurance companies.

The insurance regulator should require companies to separately disclose their investment management costs. During secondary data collection, it was observed many insurance companies do not separately disclose expenses related to their investment activities. This means that firms may incur huge investment management costs which are then processed as operating expenses. This has the potential of leading to negative net investment returns which are not disclosed to the owners of the firms and the regulators.

The regulator should consider issuing practice guidelines to guide investment management and performance measurement. It was observed that there was no

systematic way of reporting investment returns in the industry. Despite possessing some of the largest financial assets portfolios, insurance companies' sophistication both in their investment management and performance measurement lags other similar size investors.

The insurance regulator should review the asset allocation guidelines and limit the exposure to property assets particularly for general insurers whose liquidity needs surpasses return considerations. This is based on the finding that insurance companies had a high exposure to property assets which was the main alternative asset in most company's portfolios.

5.5 Areas for Further Research

This study was conducted within the context of the investment management practices of insurance companies in Kenya. There are many aspects of insurance companies' financial affairs that were left out. This section highlights some of these areas that could be considered in future research.

The asset allocation of insurance companies has been studied and is indeed part of this study. However, the level of analysis and appreciation of this subject remains below par. Studies focusing on the determinants of the asset allocation of insurance companies in Kenya would be greatly value adding.

Capital adequacy is among the latest worries for insurance companies, regulators and policy holders. There is need for research that links capital adequacy to its determinants and more specifically investment management and risk taking behavior of insurance companies.

This study did not consider the effect of regulation on investment management structures of insurance companies because there is no strict regulation in place. Studies to explore the nature and rationale for regulation of insurance investment activities in Kenya would help to add perspective to this subject.

Geographically, this study was conducted in Kenya only. Comparative studies covering other countries in Africa may help to enrich the understanding of insurance investment management behavior from a wider scope.

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APPENDICES

Appendix I: Schedule of Tables

Table 1.1: Distribution of Assets under Management by Institutional Investors

				USD "trillions"			
Institutions	1995	2000	2005	2006	2007	2008	2009
Investment funds	6.3	12.1	18.2	21.5	24.9	20.6	24.0
Insurance Companies	8.0	10.4	16.3	18.1	19.9	18.3	20.0
Autonomous Pension funds	7.2	10.8	14.3	16.5	17.7	13.3	15.9
Other institutional investors	0.5	0.5	0.5	0.6	0.7	0.6	0.7
Institutional Investors (Total)	21.9	33.5	49.0	56.6	62.8	52.5	60.3

				% of GDP			
Institutions	1995	2000	2005	2006	2007	2008	2009
Investment funds	29.8	53.4	60.3	67.8	72.1	56.3	69.2
Insurance Companies	37.7	45.6	53.9	57.1	57.5	50	57.7
Autonomous Pension funds	33.8	47.4	47.3	51.8	51.2	36.3	45.9
other institutional investors	2.5	2.2	1.6	1.9	1.9	1.6	2
Institutional Investors (Total)	103	147.6	162	178.1	181.7	143.3	173.7

Note. Adapted from the Global Financial Stability Report, International Monetary Fund, September 2011.

Table 1.2: Asset Allocation of Insurance Industry Portfolios in Kenya

	Holding in Portfolios			
Asset Class	2015	2016	2017	2018
Government Securities	43%	49%	55%	57%
Corporate Debt & other securities	4%	6%	3%	2%
Equities	13%	10%	11%	9%
Real Estate	20%	19%	18%	18%
Mortgages and other Loans	3%	3%	3%	2%
Cash & Term deposits	17%	13%	10%	11%
	100%	100%	100%	100%

Note. Adapted from Insurance Regulatory Authority, Annual Statistics Reports

Appendix II: Licensed Underwriters

	GENERAL INSURANCE COMPANIES
1	AAR Insurance Kenya Ltd
2	African Merchant Assurance Company
3	AIG Insurance Company
4	ALLIANZ Insurance Company
5	APA Insurance Company
6	BRITAM General Insurance Company
7	Cannon Assurance Company
8	CIC General Insurance Company
9	Corporate Insurance Company
10	Directline Assurance Company
11	Fidelity Shield Insurance Company
12	First Assurance Company
13	GA Insurance Company
14	Geminia Insurance Company
15	Heritage Insurance Company
16	ICEA Lion General Insurance Company
17	Intra Africa Assurance Company
18	Invesco Assurance Company
19	Jubilee Insurance Company
20	Kenindia Assurance Company
21	Kenya Orient Insurance Company
22	Madison Insurance Company
23	Mayfair Insurance Company
24	Occidental Insurance Company
25	Pacis Insurance Company
26	Phoenix of East Africa Insurance Company
27	Pioneer General Insurance Company
28	Resolution Insurance Company
29	Saham Insurance Company
30	Sanlam General Insurance Company
31	Takaful Insurance Company
32	Tausi Assurance Company
33	The Kenyan Alliance Insurance Company
34	The Monarch Insurance Company
35	Trident Insurance Company
36	UAP Insurance Company
37	Xplico Insurance Company
	LIFE ASSURANCE COMPANIES
1	APA Life Assurance Company
2	Barclays Life
3	Britam Life
4	Cannon Assurance Company
5	Capex Life Assurance Company
6	CIC Life Assurance Company
7	Corporate Insurance Company
8	First Assurance Company
9	GA Life Assurance Company
10	Geminia Insurance Company
11	ICEA Lion Life Assurance
12	Jubilee Insurance Company
13	Kenindia Assurance Company
14	Kenya Orient Life Assurance
15	Liberty Life Assurance Company
16	Madison Insurance Company
17	Metropolitan Insurance
18	Old Mutual Life Assurance
19	Pioneer Assurance Company
20	Prudential Life Assurance
21	Saham Assurance
22	Sanlam Life Assurance
23	Takaful Insurance of Africa
24	The Kenyan Alliance Insurance
25	The Monarch Insurance
26	UAP Life Assurance Company
	REINSURANCE COMPANIES
1	Continental Reinsurance
2	East Africa Reinsurance
3	Kenya Reinsurance Corporation

Appendix III: Introduction Letter

Date:
The Chief Finance Officer/Chief Investment Officer
_____Insurance Company Ltd
Nairobi

Dear Sir,

RE: ACADEMIC RESEARCH: M'ARIBA ROGERS KINOTI

I am working towards a Doctor of Philosophy (Finance) degree in the School of Business at the Jomo Kenyatta University of Agriculture and Technology. As part of the requirements for the award of the degree, I am expected to carry out some academic research. My research topic is "Antecedents of choice of investment management structures among insurance companies in Kenya". The study objectives require the person in charge of investment management activities of the respondent to give their views on why they adopted the investment management structure that the company is using. This is to request you to offer support to the study by responding to the attached questionnaire.

Your participation in this survey is purely voluntary but I appeal to you to support this initiative. The findings of this study will be reported on an industry basis and therefore the confidentiality of your responses is assured. The completed questionnaire shall be used for academic purposes only and access restricted to my immediate academic supervisors. The final product of this research shall be available at the JKUAT Library. Extracts of the study findings will also be published in various academic journals for purpose of disseminating knowledge.

If you wish to benefit from the study findings, please get in touch with me for feedback once the work is completed. Should you have any queries regarding this research or questionnaire, please feel free to contact me on 0722299308 or at the Riara University, Mbagathi Way.

Thank you for your support through participating in this study.

Yours Faithfully,

ROGERS KINOTI M'ARIBA

Appendix IV: Research Questionnaire

Research questionnaire in respect of the study titled:

"ANTECEDENTS OF INVESTMENT MANAGEMENT STRUCTURE CHOICE AMONG INSURANCE COMPANIES IN KENYA".

RESPONDENT'S GENERAL INFORMATION

1. Responses relate to: _____

   (Name of firm)

2. Ownership of the company (Tick ✓ from the table below)

Tick	Ownership category
	Public listed company
	Public non-listed company
	Private company
	Foreign owned company
	State owned corporation
	Other (specify) _____

3. Gross Written Premium (KES) in 2016_____2017_____

4. Total value of investment portfolio (KES) at 31st Dec.
   2016_____2017_____
5. Who is directly responsible for the investment management activities of your firm?

Tick	
	Chief Executive Officer
	Chief Investment Officer
	Chief Accountant
	Management Investment Committee
	Board Investment Committee

PART A: CHOICE OF INVESTMENT MANAGEMENT STRUCTURE

Which of the following investment management arrangements does the firm use? (Tick one)

	In-house management (more than 50% of assets managed internally)
	Delegated management (more than 50% of assets delegated to professional fund managers as a separately managed account or in a pooled fund)

BASED ON YOUR RESPONSE ABOVE ANSWER ONLY THE APPLICABLE SUB SECTIONS:

A1: In-house investment management (Tick as appropriate).

a) For how long has the company managed its investments in-house?

0 - 2 years	2 - 5 years	5-7 years	7-10 years	over 10 years

b) Has your firm ever used any other alternative arrangement in the past five years?

	Tick your response
Yes	
No	

c) yes, which of the following alternative arrangements has the firm used in the last five years?

Separately Managed Account (single fund manager)	Separately Managed Account (multiple managers)	Pooled fund (unit trusts)	Hybrid model (combination)

d) Which are the primary methods of internal management that the company uses?

Tick	**Arrangement**
	Stand-alone internal team of professionals managing 100% of the assets
	Hybrid internal and external management
	Co-investment (Piggy backing)
	Partnerships (JVs, SPVs)

A2: Delegated Investment management (Tick as appropriate)

a) For how long has the firm used delegated investment management?

0 - 2 years	2 - 5 years	5-7 years	7-10 years	over 10 years

b) Has your firm ever used any other alternative arrangement in the past five years?

	Tick your response
Yes	
No	

c) If yes, which of the following arrangements has the firm used in the last five years?

Dedicated Internal Management team	Hybrid model (combination)	Co-investment (piggy backing)	Partnerships (JVs and SPVs)

d) Which are the primary methods of delegation that the company uses? (indicate amount and/or proportion of total assets assigned to each)

Tick	**Arrangement**	**Percent of assets**
	Separately Managed Accounts (single manager)	
	Separately Managed Accounts (multiple managers)	

	Mutual funds	

ANTECEDENTS INVESTMENT MANAGEMENT STRUCTURE CHOICE (TO BE COMPLETED BY ALL RESPONDENTS)

Indicate your level of agreement with each of the statements using the following scale: Strongly Agree (SA), Agree (A), Not Sure (NS), Disagree (DA), and Strongly Disagree (SD).

PART B: INVESTMENT EFFICIENCY INDICATORS

a) Level of agreement [**Strongly Agree (SA), Agree (A), Not Sure (NS) Disagree (DA), Strongly Disagree (SD)].**

Investment Efficiency Indicators	SA	A	NS	DA	SD
The pursuit of high investment returns was a major driver of the firm's choice of the investment management structure					
Risk reduction considerations determined the firm's investment management structure					
Cost reduction initiatives motivated the firm's choice of the investment management structure					

a) What is your investment return target/objective on an annual basis? (Tick one)

A	B	C	D	E
0% - 4.99%	5.00% - 7.99%	8.00% - 9.99%	10.00% - 15%	Above 15%

b) What is the annual cost of managing your portfolio as a percentage of the portfolio?

A	B	C	D	E
0 - 0.49%	0.50% - 0.99%	1.0% - 1.49%	1.5% - 1.99%	Above 2.0%

c) How would you characterize the firm's risk preference?

Risk preference	A) Risk Loving	B) Risk Neutral	C) Risk Averse
Tick			

PART C: CORPORATE GOVERNANCE

a) Level of agreement [**Strongly Agree (SA), Agree (A), Not Sure (NS) Disagree (DA), Strongly Disagree (SD)].**

Corporate Governance Indicators	SA	A	NS	DA	SD
The nature of the firm's shareholding dictated the choice of the investment management structure.					
The composition of the firm's board determined the choice of the investment management structure					
Principal agent problems affected the firm's choice of the investment management structure					

a) Who is the majority shareholder of the company (Tick one).

A	B	C	D	E	F
Local individual(s)	Local holding Company	Family business	Foreign MNC	Government	Other (Specify) _____

b) How many members does the firm's board of directors have?

A	B	C	D	E
1-3	4-5	6-7	8-9	Above 9

c) What is the composition of the firm's board of directors in terms of gender and skills set? (Indicate the number of directors with each skill set per gender).

Skill Possessed	Strategic Management	Insurance Operations	Investments Management	Human Resources	Finance	Other (specify)
Male						
Female						

d) In which of the following management areas does the firm use outsourced services? (Tick all the apply)

Insurance Operations	Investment Management	Human Resource	Finance	Legal Services	None

e) Have you ever experienced serious problems with your outsourced agents/service providers?

	Tick your response
Yes	
No	

f) , what types of agency problems has the firm encountered in the past?

Fees and costs	Poor performance	Communication/Reporting	Monitoring the agents	Other (specify)

PART D: FIRM SIZE

a) Level of agreement [**Strongly Agree (SA), Agree (A), Not Sure (NS) Disagree (DA), Strongly Disagree (SD)].**

Firm Size Indicators	SA	A	NS	DA	SD
The firm's capital base determined the choice of the investment management structure					
The firm's asset base was a major reason for the choice of the investment management structure					
The firm's human resource base was a consideration in the choice of the investment management structure					

a) The company's share capital base is:

A	B	C	D	E
Less than KES. 500 million	KES. 500 - 600 million	KES. 600 - 800 million	KES. 800 million to 1.0 billion	More than KES. 1.0 billion

b) The company's total asset portfolio is:

A	B	C	D	E
Less than KES. 1.0 bn	KES. 1.0bn to 2.9bn	KES. 3.0 bn to 4.9bn	KES. 5.0 to 7.0 bn	Above KES. 7.0 bn

c) How many investment professionals does the firm employ?

A	B	C	D	E
None	1	2-5	6-10	More than 10

d) What is the total staff complement in the organization?

A	B	C	D	E
Less than 100	101 - 300	301 - 500	501 - 700	Over 700

PART E: MARKET DYNAMICS

a) Level of agreement [**Strongly Agree (SA), Agree (A), Not Sure (NS) Disagree (DA), Strongly Disagree (SD)].**

Market Dynamics Indicators	SA	A	NS	DA	SD
Better access to alternative assets market determined the choice of the firm's investment management structure					
Behavior of industry peers was observed in order to determine the firm's choice of the investment management structure.					
The asset allocation of the firm's asset portfolio dictated the choice of the investment management structure.					

a) Has the company invested in any alternative asset classes?

	Tick your response
Yes	
No	

b) If yes, tick the applicable asset types below:

Real Estate	Private Equity	Partnerships: PPP, JVs etc.	Commodities and Currencies	Offshore assets	Other (Specify)

c) The proportion of alternative assets in the total portfolio is:

A	B	C	D	E
0% - 0.99%	1.0% - 1.99%	2.00% - 2.99%	3.00% - 3.99%	Above 4.0%

d) Do your firm's CEO/CIO/CFO belong to industry associations, professional bodies or lobby groups where investment management matters are regularly discussed?

	Tick your response
Yes	
No	

e) If yes, which of the following associations do they belong to? (tick all that apply)

ICPAK	ICIFA	AKI	IIK	ICPSK	CFA Institute	Institute of Directors

f) Describe your strategic/policy asset allocation.

Debt	Equity	Cash	Other (Specify)
_____%	_____%	_____%	_____%_____

PART F: BUSINESS CATEGORY

a) What is the firm's business category? Tick as appropriate

	General (more than 50% of Gross Premiums Written)
	Life (more than 50% of Gross Premiums Written)

b) Is the business category above a strategically chosen line or is it a consequence of market activities?

	Tick your response
Strategic choice	

Non-strategic business outcome	

Thank you for your participation

Signature: _____

Date: _____

Appendix V: Secondary Data Collection Form

DATA COLLECTION SHEET IN RESPECT OF THE STUDY TITTLED:

"ANTECEDENTS OF CHOICE OF INVESTMENT MANAGEMENT STRUCTURES AMONG INSURANCE COMPANIES IN KENYA".

GENERAL INFORMATION

Secondary reference document(s) _____

Author/Compiler_____

Data Sheet

SECONDARY QUANTITATIVE DATA										
	Gross Premium Income		**Total Assets**		**Investment Portfolio**		**Investment Income**		**Inv. Mgt expense**	
GENERAL INSURANCE COMPANIES	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
AAR Insurance Kenya Ltd										
African Merchant Assurance Co										
AIG Insurance Co										
ALLIANZ Insurance Co										
Directline Assurance Co										
Fidelity Shield Insurance Co										
Heritage Insurance Co										
Intra Africa Assurance Co										

Invesco Assurance Co										
Mayfair Insurance Co										
Occidental Insurance Co										
Pacis Insurance Co										
Pheonix of East Africa Insurance Co										
Resolution Insurance Co										
Tausi Assurance Co										
Trident Insurance Co										
Xplico Insurance Co										
LIFE ASSURANCE COMPANIES										
Barclays Life										
Capex Life Assurance Co										
Liberty Life Assurance Co										
Metropolitan Insurance										
Old Mutual Life Assurance										
Prudential Life Assurance										
COMPOSITE INSURERS										
APA Insurance/APA Life										
BRITAM General/Life Insurance Co										
Cannon Assurance Co										
CIC General/ Life Insurance Co										
Corporate Insurance Co										
First Assurance Co										
GA Insurance Co										
Geminia Insurance Co										

ICEA Lion Insurance Co										
Jubilee Insurance Co										
Kenindia Assurance Co										
Kenya Orient Insurance Co										
Madison Insurance Co										
Pioneer General Insurance Co										
Saham Insurance Co										
Sanlam General Insurance Co										
Takaful Insurance Co										
The Kenyan Alliance Insurance Co										
The Monarch Insurance Co										
UAP Insurance Co										
COMPOSITE REINSURANCE COMPANIES										
Continental Reinsurance										
East Africa Reinsurance										
Kenya Reinsurance Corp										

Appendix VI: Approval to Conduct Research (NACOST)

Appendix VII: Sensitivity Analysis of Variable Measurements

Investment Efficiency factors

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The need to achieve higher returns influenced choice of the firm's investment management structure	6.13	5.307	.411	.651
Risk reduction and risk preferences influenced the choice of the firm's investment management structure	6.74	2.253	.781	.042
The desire to reduce the cost of investment management influenced choice of the firm's investment management structure	6.08	5.967	.373	.696

Corporate Governance factors

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The nature of the majority shareholder(s) influenced choice of the company's investment management structure.	5.82	3.073	-.018	.333
The board composition influenced or determined the choice of the company's investment management structure	6.45	3.011	.282	.425

The need to avoid principal agent problems influenced choice of investment management structure	5.74	3.983	-.027	.275

Firm Size factors

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The firm’s capital base influenced choice of the company's investment management structure	6.00	4.595	.696	.451
The firm’s portfolio size influenced choice of the company's investment management structure	5.37	6.455	.660	.553
The firm’s human resource capacity/base dictated the choice of the company's investment management structure	6.63	6.942	.367	.857

Market Dynamics factors

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
The need for greater access to alternative assets markets influenced the choice of the firm's investment management structure	6.68	2.654	.302	.273
The behavior of industry peers influenced the choice of the investment management structure.	6.29	4.536	.123	.232
The asset allocation of the firm influenced the choice of the investment management structure	5.45	4.470	.029	.425