EFFECT OF COOPETITION ON GROWTH OF INSURANCE FIRMS IN KENYA

Lilian Wangui Nguyo.
College of Human Resource Development, Jomo Kenyatta University of Agriculture and Technology, Kenya.
Dr. Enos Anene (PhD).
College of Human Resource Development, Jomo Kenyatta University of Agriculture and Technology, Kenya.

International Academic Journal of Innovation, Leadership and Entrepreneurship

(IAJILE) | ISSN 2518-2382

Received: 25th February 2024

Published: 1st March 2024

Full Length Research

Available Online at: https://iajournals.org/articles/iajile_v2_i4_52_105.pdf

Citation: Nguyo, L. W., Anene, E. (2024). Effect of coopetition on growth of insurance firms in Kenya. *International Academic Journal of Innovation, Leadership and Entrepreneurship, 2*(4), 52-105.

ABSTRACT

The insurance firms in Kenya have for a long time struggled with growth because of the low and yet declining insurance penetration rate. The sector has been characterized by cutthroat competition through price under cutting, leading to underwriting losses. Insurance firms continually struggle with claims settlement causing increased insurance apathy in the country, hence the poor penetration rates. These firms therefore need to explore other avenues from which their growth can be optimized. One of the strategies being employed by firms in more developed economies is co-opetition, which is a hybrid behavior of collaboration and competition within an industry or sector. The general objective of this study was to assess the effect of co-opetition on growth of insurance firms in Kenya. Specifically, the study sought to establish the effect of information sharing on the growth of insurance firms in Kenya, determine the effect of collaboration on research and development on the growth of insurance firms in Kenya, establish the effect of co-insurance on the growth of insurance firms in Kenya and examine the effect of cooperative pricing on the growth of insurance firms in Kenya. This research was based on the resource-based view theory, game theory, transaction cost theory and the social exchange theory to explain the relationship between the study variables. The study made use of both primary and secondary data. The primary data was collected using a structured questionnaire. An exploratory research design was adopted. The target population included all the 57 insurance firms operating in Kenya as of December 2022. A census was conducted on all the 57 insurance firms. The unit of observation were the heads of the finance, operations and business development departments in each of the 57 insurance companies giving a total of 171 respondents. Collected data was analyzed descriptively by use of means and standard deviation and inferentially by use of correlation and regression analyses using SPSS version 27. Data was presented in form of frequency tables. The regression analysis revealed significant relationships between the independent variables and the growth of insurance firms in Kenya. Information sharing (Beta = 0.238, $p < 0.05$), collaboration on R&D (Beta = 0.425, $p < 0.05$), co-insurance (Beta = 0.231, $p < 0.05$), and cooperative pricing (Beta = 0.695, $p < 0.05$) all exhibited positive and statistically significant effects on firm growth. The study concludes that a strategic emphasis on cooperative practices, including robust information sharing, collaborative R&D, co-insurance arrangements, and cooperative pricing, positively influences the growth trajectories of insurance firms in the Kenyan market. The study recommends the need to foster a culture of openness for information sharing, promoting industry-wide collaboration on research and development initiatives, exploring innovative co-insurance models, and advocating for fair and transparent cooperative pricing strategies. Further research could explore the impact of regulatory frameworks on the effectiveness of co-opetition strategies in the insurance sector, investigating how compliance requirements shape collaborative practices.

INTRODUCTION

Background of the Study

Growth of insurance industry is important to the economy as insurance firms play a critical role in promoting economic stability by providing protection against financial losses caused by unexpected events such as natural disasters, accidents, or illnesses (Simon, Osunsan & Byamukama, 2022). When insurance firms perform well and are financially stable, they are better able to meet their claims obligations and help to mitigate the economic impact of the occurrence of such events resulting to a claim. Further the insurance industry employs thousands of people across the economy, from underwriters and claims adjusters to sales and marketing staff. When insurance firms perform well, they are more likely to expand their operations and create new jobs, which can have positive ripple effects throughout the economy (Eladly, 2022).

The growth of insurance firms globally has been subject to various economic and market factors that have affected their revenue growth and profitability over time. Low interest rates have made it challenging for insurance firms to earn sufficient investment income, which has had a negative impact on their growth (Sugiharto, 2022). The insurance industry has also become more competitive globally, with new players emerging and incumbents increasingly using technology, putting pressure on insurance firms to differentiate their offerings and improve their operational efficiency. Regulatory changes aimed at improving consumer protection and promoting market stability have also increased compliance costs for insurance firms and impacted their growth (Kirwa, 2022). Natural disasters and other catastrophic events can also have a significant impact on the growth of insurance firms globally, with claims payouts following such events leading to a decline in profitability and a decrease in market confidence (Nurudeen, David & Samson, 2022).

The covid-19 pandemic has also had a significant impact on the insurance industry. Insurers have faced increased claims for business interruption, travel, and event cancellations, among other things, which has led to higher costs and reduced profitability in some cases. However, the pandemic has also created new opportunities for insurance companies, particularly in areas such as health, cyber, and pandemic-related coverage. As businesses and individuals have become more aware of the risks they face, they have increasingly turned to insurance to help manage those risks (Simon ***et al***., 2022).

One of the strategies being employed by firms across the world is co-opetition which is a hybrid behavior of collaboration and competition that occurs at various levels; within an organization, among organizations, or on a network scale (Della-Corte & Sciarelli, 2012; Chim-Miki & Batista-Canino, 2018). Co-opetition is becoming a common practice in various industries (Amankwah-Amoah,2020), and catake many forms, such as sharing information on fraud or working together to develop new products or services. Research has shown that this type of collaboration can lead to several benefits for insurance firms (Butler, & Nichols, 2022). By sharing information and resources, companies can reduce costs and increase efficiency.

Additionally, working together on research and development projects can lead to increased innovation, which can help companies stay competitive in the market (Roumboutsos, Sys & Vanelslander, 2022). Furthermore, co-opetition can also lead to the creation of new markets, and the expansion of existing ones. (Li, ***et al.,*** 2023). The insurance industry has adopted this strategy in various ways. For instance, insurance companies are collaborating with each other to share data and information on risk assessment or fraud detection, while also competing for customers. In some cases, insurance companies are even forming alliances or partnerships with each other to offer bundled or complementary insurance products, which can provide added value to customers and increase their market share (Kumar, Connell & Bhattacharyya,2021).

Co-opetition can have a positive effect on the growth of insurance companies, as it allows them to leverage the strengths of their competitors to their advantage. By collaborating with each other, insurers can reduce costs, improve efficiency, and expand their reach, which can lead to increased revenue and profitability (Abdin ***et al.,*** 2022). At the same time, co-opetition can also help insurance companies to differentiate themselves from their competitors by offering unique and innovative products and services. This can help them to stand out in a crowded market and attract new customers. Kumar, Connell, and Bhattacharyya (2021) hold that co-opetition is an effective strategy for insurance companies to stay competitive and grow in an increasingly complex and dynamic marketplace. However, it requires careful planning, coordination, and trust between competitors, as well as a clear understanding of their respective roles and objectives. It is also important for companies to balance the benefits of co-opetition with the need to maintain a competitive edge in the market.

Global Perspective of Co-opetition and Growth of Insurance Industry

Co-opetition is becoming a widely practiced strategy in developed economies. Many insurance companies in developed economies have formed alliances or partnerships with each other to increase their market share and expand their reach. For example, some insurers have collaborated to offer bundled insurance products or joint marketing campaigns, while others have formed consortia to share data on fraud detection or risk assessment. However, in some cases, regulatory barriers or competitive pressures may make it difficult for insurers to engage in co-opetition. For example, antitrust laws in some countries may limit the ability of insurers to collaborate with each other, while intense competition in certain markets may make it difficult to find mutually beneficial partnerships (Mirzabeiki, He, & Sarpong, 2021).
In terms of growth, the insurance industry in developed economies has generally been growing at a slower rate compared to emerging markets (Li ***et al***., 2022). This is partly because insurance markets in developed economies are more mature and have higher penetration rates, which means that there is less room for growth. Moreover, the covid-19 pandemic has had a significant impact on the insurance industry in developed economies, as it has led to increased claims and reduced profitability for some insurers. At the same time, the pandemic has also created new opportunities for insurers to offer products and services related to health, cyber, and pandemic-related risks (Haque ***et al.,*** 2021).

Co-opetition has been a feature of the UK insurance industry for some time. Insurance companies in the UK have formed alliances and partnerships with each other to share data on risk assessment, collaborate on claims handling, and jointly market products (Gu, Madio, & Reggiani,2022). These arrangements have helped insurers to reduce costs, increase efficiency, and provide added value to their customers. However, the UK insurance industry has also faced challenges in recent years that have affected its growth prospects. Regulatory changes, such as the introduction of the Insurance Distribution Directive (IDD) and the Senior Managers and Certification Regime (SMCR), have increased compliance costs for insurers and created operational challenges. Moreover, the UK insurance industry has been impacted by the covid-19 pandemic, which has led to increased claims and reduced profitability for some insurers. As per Farooq, Nasir, Bilal, and Quddoos (2021), the pandemic has also highlighted the need for insurers to adapt to changing customer needs and preferences, such as the growing demand for digital insurance products and services.

In Malaysia, insurance companies have formed alliances and partnerships with each other to share data, collaborate on product development, and jointly market products. These arrangements have helped insurers to reduce costs, improve efficiency, and provide added value to their customers (Lim, Lee & Har,2021). However, competition remains fierce in the Malaysian insurance market. With the liberalization of the industry, foreign insurers have been allowed to enter the market and compete with local players. This has led to increased competition, particularly in the non-life insurance segment. In terms of growth, the Malaysian insurance industry has been expanding steadily in recent years. The life insurance segment has been the main driver of growth, with increasing demand for retirement and health insurance products. The non-life insurance segment has also shown moderate growth, driven by increasing awareness of the need for protection against natural disasters and other risks (Lee, Fan, Annuar &Nazrul, 2019).

Regional Perspective of Co-opetition and Growth of Insurance Industry

Co-opetition, or collaboration between insurance companies, has been emerging in some African countries. Insurers in some markets have formed alliances or partnerships to share data on fraud detection, collaborate on product development, and jointly market products. These arrangements have helped insurers to reduce costs, improve efficiency, and provide added value to their customers. However, in many African countries, regulatory barriers, lack of infrastructure, and competitive pressures have made it difficult for insurers to engage in co-opetition. For example, the lack of reliable data and infrastructure in some countries makes it challenging to assess and manage risks, while the limited availability of insurance talent can make it difficult to find mutually beneficial partnerships (Adegbite & Oke, 2019).

In terms of growth, the insurance industry in African economies has shown significant potential due to the low penetration rates in many markets. According to some estimates, the African insurance market is expected to grow at a faster rate than more developed regions. Factors such as a growing middle class, increasing awareness of the need for insurance, and the development of new distribution channels, such as mobile platforms, are expected to drive growth in the

industry. However, the covid-19 pandemic has had a significant impact on the African insurance industry, particularly in countries where health systems and social protection programs are weak. The pandemic has highlighted the need for insurers to innovate and develop new products and services to address emerging risks (Nejad,2022).

In Nigeria, the insurance industry has seen increased competition in recent years, with the entry of new players and the emergence of alternative distribution channels such as digital platforms. This has led to increased price competition and pressure on profit margins. Co-opetition, or collaboration between insurance companies, has been emerging in Nigeria's insurance industry. Insurers have formed alliances or partnerships to share data on fraud detection, collaborate on product development, and jointly market products. These arrangements have helped insurers to reduce costs, improve efficiency, and provide added value to their customers. The Nigerian government has taken steps to support the growth of the insurance industry, such as increasing the minimum capital requirements for insurers to improve solvency and stability in the sector (Matsui, 2019).

In Egypt, the state of co-opetition and growth of the insurance industry is influenced by a combination of collaboration and competition, as well as various internal and external factors. The Egyptian insurance industry has however shown strong growth potential due to the low insurance penetration rate in the country. The industry has been expanding steadily in recent years, with the life insurance segment showing particular growth. However, the non-life insurance segment is also expected to grow as the Egyptian economy continues to recover and demand for property and casualty insurance products increases. The Egyptian government has also taken steps to support the growth of the insurance industry, such as introducing new regulations to improve the solvency and stability of insurers and encourage the development of new products and services (Younis & Nawar,2020).

Local Perspective of Co-opetition and Growth of Insurance Industry

In Kenya, the insurance sector is a key player in promoting economic growth and development. In the last two decades, the sector has grown tremendously and has become among the leading contributors of the GDP in the country. Today, the sector is internationally recognized as one of the leading industries regarding potential growth earning and attractiveness (AKI, 2021). Currently, there are 57 insurance firms in Kenya controlled and regulated by Insurance regulatory authority (IRA, 2021). Out of this, 6 insurance firms are listed at the Nairobi Securities Exchange (CMA, 2022).

According to the Insurance Regulatory Authority(IRA)'s Second Quarter 2022 Industry report, the insurance recorded a 13.2% growth in gross premiums to Kshs 163.1 bn in the first half of 2022, from Kshs 144.0 bn for a similar period in 2022. Notably, the general insurance business contributed 56.7% of the industry's premium income compared to 43.3% contribution by long term insurance business. During the period, the long term business premiums grew by 20.5% while the general business premiums grew by 8.2% in the first Half of 2022. Of significance to note is that motor insurance and medical insurance classes of insurance accounted for 62.5%

of the gross. As for long-term insurance business, the major contributors to gross premiums were deposit administration and life assurance classes accounting for 60.7%.

Insurance firms in Kenya have formed alliances or partnerships to share data on fraud detection, Claims Experience for various schemes and Suspected Money laundering Activites. There has also been collaboration on product development, and join marketing of products. These arrangements have helped insurers to reduce costs, improve efficiency, and provide added value to their customers. Additionally, insurers in Kenya have also been collaborating to develop new insurance products and services, particularly around micro insurance. Micro insurance products are designed to provide affordable insurance coverage to low-income individuals and families, and collaboration among insurers can help to reduce costs and expand access to these products (AKI, 2021).

The Concept of Co-Opetition

Coopetition is a business strategy where competing companies collaborate with each other to achieve mutual benefits. The term "coopetition" is a combination of the words "cooperation" and "competition." In this approach, companies simultaneously engage in both cooperative and competitive activities in order to achieve their individual goals as well as shared objectives (Mirzabeiki, He, & Sarpong,2021). In a co-opetition relationship, companies may cooperate with each other in areas such as research and development, marketing, and distribution, while still competing with each other in areas such as product design and pricing. The goal of this approach is to create a win-win situation where each company benefits from the collaboration, while still maintaining their competitive edge (Haque *et al*., 2021).

Co-opetition has received considerable attention from scholars in recent years. Ciravegna and Albrecht (2016) examined the impact of coopetition on the performance of small and medium-sized enterprises (SMEs) in cluster contexts. The findings suggest that coopetition can lead to improved performance for SMEs in clusters, particularly for those firms with higher levels of trust. Steffens Schrader (2016) analyzed data from German firms and found that firms that engage in co-opetition are more innovative and have higher financial performance than those that do not.

Kim and Seo (2018) conducted a meta-analysis of prior empirical studies on coopetition and firm performance. The findings indicate that coopetition has a positive effect on firm performance, particularly in the areas of innovation, market performance, and financial performance. Cantor and Thursby (2016) examined the impact of coopetition on innovation performance over time. The findings suggest that firms that engage in coopetition experience higher levels of innovation performance in the short-term, but the effect may diminish over time.

Demirezen and Ozdemir (2019) examined the impact of coopetition on firm performance and found that resource interdependence and relative dependence are important factors that moderate the relationship between coopetition and firm performance. Specifically, the positive

impact of coopetition on firm performance is greater for firms with high levels of resource interdependence and low levels of relative dependence. Markiewicz (2021) conducted a systematic literature review of prior studies on coopetition and environmental sustainability. The findings suggest that coopetition can facilitate the achievement of environmental sustainability goals through the sharing of resources, knowledge, and expertise between firms. However, the success of coopetition for environmental sustainability may depend on several factors, including the level of trust and collaboration among partners, the nature of the environmental issue, and the regulatory environment in which the firms operate.

Statement of the Problem

The Kenyan insurance companies are underperforming as demonstrated by a decrease in overall rate of insurance penetration from 2.68% in 2017 to 2.43% in 2018, to 2.34% in 2019 to 2.17% in 2020 with a slight improvement to 2.24% in 2021 despite the economic recovery that saw an improved business environment (IRA, 2021). According to the Kenya Listed Insurance H1'2022 Report by Cytonn, the low penetration rate, which is below the global average of 7.0% (Statista, 2023), is attributable to the fact that insurance uptake is still seen as a luxury and mostly taken when it is necessary or a regulatory requirement. To further exacerbate the matter, a report on the overview of the Kenyan insurance industry by KPMG South Africa highlights that like many countries in Africa, Kenya is faced with high volumes of fraud and corruption and the insurance industry is not any different. It is estimated that 25% of claims costs of insurers in Kenya are a result of fraudulent claims. Additionally, there has been stiff competition within the insurance sector which has occasioned price undercutting, which has resulted in reduced revenue, mergers of insurance firms, down-sizing, and even collapse of some of these firms (Kimani & Mburu, 2016). Some of the Insurance Companies that have collapsed in the past include Lakestar Insurance, United Insurance, Blue Shield Insurance, Access Insurance Company, Stallion Insurance Company Ltd, Concord Insurance, and Kenya National Assurance Company (KNAC) which collapsed before 2021 and even more recently, Resolution Insurance Company that collapsed in 2022 and Invesco Assurance Company that has recently been put under liquidation in 2023.

These inherent challenges faced by insurance firms in Kenya lead to even further predicaments such as, more stringent measures imposed by IRA such as Increased Capital Adequacy Requirements, Revocation of Provisional Licenses for Insurance Agents, Mistrust from Consumers, ignorance by the public on the benefits of Insurance and the General economic situation characterized by Increasing levels of inflation on basic commodities. It is therefore paramount for the Insurance Firms in Kenya to find a way to overcome these challenges, beat the odds and turn around this sorry state and grow. Co-opetition is expected to provide a solution to overcoming some of these challenges and help the insurance companies optimize their growth.

There was therefore a need to establish if this concept of coopetition contributes to the growth of insurance industry in Kenya. Several studies have been done on co-opetition. Kirui, Chepkuto and Tanui (2015) examined the possibility of competing firms, specifically in the Kenyan financial and telecommunication sectors, finding mutual ground to create win-win

situations, exemplified by the collaboration between Safaricom, and banks. The findings revealed that such co-opetition, is viable, as evidenced by the banks leveraging Safaricom's success in mobile money transfer service. Demirezen and Ozdemir (2019) examined the impact of coopetition on firm performance and found that resource interdependence and relative dependence are important factors that moderate the relationship between coopetition and firm performance. Markiewicz (2021) conducted a systematic literature review of prior studies on coopetition and environmental sustainability and suggested that coopetition can facilitate the achievement of environmental sustainability goals. These studies provide useful information but they focused on other contexts and therefore their findings cannot be used to generalize the insurance industry. This study therefore intended to fill the existing contextual and knowledge gaps.

Objectives of the Study

General Objective

The general aim of this research was to assess the effect of co-opetition on the growth of insurance firms in Kenya.

Specific Objectives

1. Establish the effect of information sharing on the growth of insurance firms in Kenya.
2. Determine the effect of collaboration on research and development on the growth of insurance firms in Kenya
3. Establish the effect of co-insurance on the growth of insurance firms in Kenya.
4. Examine the effect of cooperative pricing on the growth of insurance firms in Kenya.

Theoretical Review

This study used the resource-based view theory, game theory, transaction cost theory and the social exchange theory.

Resource Based View Theory

This theory was pioneered by Penrose (1959) whose work anticipated the modern approach to strategy in general, and the (RBV) in particular but later proposed by Wernerfelt (1984) and later developed and refined by Barney (1991). The resource-based view (RBV) theory postulates that a firm's unique resources and capabilities are the primary sources of sustained competitive advantage. According to this theory, a firm's resources can be classified into two categories: tangible and intangible. Tangible resources are those that are physical in nature and can be easily quantified, such as financial resources, physical assets, and technological resources. Intangible resources, on the other hand, are those that are difficult to quantify and are rooted in the firm's culture, knowledge, and human capital, such as reputation, brand equity, and employee expertise.

The RBV theory suggests that a firm's resources can create a competitive advantage if they are valuable, rare, inimitable, and non-substitutable (VRIN). Resources that meet these criteria are referred to as strategic resources, as they can provide a firm with a sustained competitive

advantage over its rivals. Furthermore, the RBV theory argues that a firm's resources must be aligned with its strategy and the demands of the external environment in order to create value and generate a sustained competitive advantage (Wernerfelt,1984).

RBV helps the firm to identify and evaluate its strategic resources in comparison to its competitor and is relevant to understanding the relationship between co-opetition and growth of the insurance industry in Kenya by offering superior performance within the sector if the competing insurance firms can collaborate to access and leverage complementary resources and capabilities, which can lead to healthier competition and subsequent growth of the individual firms and the sector at large. Insurance firms can collaborate on shared resources and capabilities such as distribution channels, technology platforms, and underwriting expertise. By pooling their resources and capabilities, insurers can reduce costs, improve operational efficiency, and offer more competitive products and services.
Critics have argued that the RBV theory is difficult to test empirically, as it relies heavily on qualitative assessments of a firm's resources and capabilities (Kraaijenbrink ***et al.,*** 2010). This has led some scholars to question the validity of the VRIN criteria and the RBV theory's ability to explain sustained competitive advantage. While the RBV theory provides a framework for identifying strategic resources, it may not provide sufficient guidance for how to develop and leverage those resources. This has led some scholars to argue that the RBV theory lacks prescriptive guidance for firms looking to build sustained competitive advantage (Chatzoglou ***et al***., 2018).

Game Theory

Game theory was developed by mathematicians John von Neumann and Oskar Morgenstern in 1944. Game theory is a mathematical framework used to study the strategic interactions between rational decision-makers. The theory postulates that in any given situation, there are multiple decision-makers who have different objectives, and their actions and decisions can have an impact on each other's outcomes. Game theory can be applied to various fields, including economics, political science, and biology, to analyze the behavior of individuals, firms, or governments in strategic situations where their choices depend on the choices of others. The theory uses mathematical models to analyze the potential outcomes of different strategic choices, and it provides insights into the potential benefits and challenges of different strategies. In the context of co-opetition in the insurance industry, game theory can be used to analyze the strategic interactions between insurers, to examine the outcomes of different scenarios, and to gain insights into the potential benefits and challenges of co-opetition (Corte, Sciarelli, 2012).

Game theory is relevant in analyzing the relationship between co-opetition and growth of the insurance industry in Kenya because it allows us to model the strategic interactions between insurers in a competitive market. In a competitive market, insurers must make strategic decisions regarding their pricing, product offerings, and distribution channels in order to gain a competitive advantage. Game theory provides a mathematical framework to model and analyze the strategic interactions between insurers. By using game theory, we can analyze the

potential outcomes of different strategic choices made by insurers and gain insights into the benefits and challenges of co-opetition in the insurance industry in Kenya.

Game theory is not without critics. For instance, (Miki & Canino, 2018) argue that game theory models are based on simplifying assumptions that do not always hold in the real world. For example, game theory models often assume that all players have perfect information and act rationally, which is not always the case in the real world. Further, game theory models are limited in scope and often cannot capture the complexity of real-world situations. For example, game theory models may not consider the impact of social norms, cultural factors, or emotions on decision-making. In addition, game theory models often focus on competition rather than cooperation, which can limit the applicability of game theory to real-world situations where cooperation is necessary (Naveed ***et al***., 2021).

Transaction Cost Theory

Transaction cost theory was developed by economist Ronald Coase in his 1937 paper "The Nature of the Firm". Coase was awarded the Nobel Memorial Prize in Economic Sciences in 1991 for his work on transaction cost theory. The theory postulates that the existence and boundaries of firms are determined by transaction costs. Transaction costs are the costs of making a transaction, which include the costs of searching for information, negotiating contracts, and monitoring and enforcing agreements. According to transaction cost theory, firms exist because they can reduce transaction costs compared to the costs of making the same transactions in the market. By bringing transactions in-house, firms can reduce the need for costly negotiations and contracting, as well as reduce the risk of opportunistic behavior by external parties. In essence, transaction cost theory explains the economic rationale for why firms exist, and why they make certain choices about the boundaries of their activities (Simon ***et al***., 2022).

Transaction cost theory can be relevant in understanding the relationship between co-opetition and growth of the insurance industry in Kenya, particularly in the context of strategic alliances and partnerships between firms. Transaction cost theory suggests that firms will choose to form alliances or partnerships when the transaction costs of doing so are lower than the costs of performing the same activities internally or through market transactions. In the insurance industry, firms may choose to enter into co-opetitive relationships with other firms to access resources, expertise, and distribution channels that they may not have on their own. Transaction cost theory also suggests that the decision to enter into a co-opetitive relationship will depend on the relative bargaining power of the firms involved. If one firm has more bargaining power than the other, it may be able to negotiate more favorable terms for the alliance or partnership, reducing its transaction costs and increasing its potential for growth.

Critics argue that transaction cost theory overlooks the role of power and politics in determining the boundaries of firms. Firms may expand or contract their boundaries based on factors such as their bargaining power, access to resources, and political influence, which are not fully captured by transaction cost analysis (Cuypers, Hennart, Silverman & Ertug, 2021).

Transaction cost theory has also been criticized for being too narrow in its scope, as it only focuses on the internal governance of firms and ignores other factors that may influence the boundaries of firms, such as technological change, industry dynamics, and social norms. Critics also argue that it can be difficult to accurately measure transaction costs, as they are often subjective and difficult to quantify. This can make it challenging to apply transaction cost theory in practice and to compare the costs and benefits of different organizational forms (Ghoshal & Moran, 1996).

Social Exchange Theory

Social exchange theory was first developed by George Homans in the 1950s. Homans was a sociologist who focused on the behavior of individuals and how they interacted with each other. The theory postulates that social behavior is the result of an exchange process. People weigh the costs and benefits of every social interaction and choose to engage in behaviors that are likely to result in the greatest rewards at the lowest cost. Rewards can include things like approval, love, and support, while costs can include things like time, effort, and money. Social exchange theory also suggests that individuals seek to maximize their rewards while minimizing their costs. This can lead to the development of social norms and rules, which help to regulate the exchange process and ensure that individuals receive fair treatment. In this way, social exchange theory helps to explain how social relationships develop and evolve over time (Meira & Hancer, 2021).

Social exchange theory can provide a useful framework for understanding the relationship between co-opetition and growth in the insurance industry in Kenya, and can inform strategies for promoting cooperation and managing competition in the industry. According to social exchange theory, firms engage in cooperative and competitive behaviors based on a calculation of rewards and costs. In the case of co-opetition, firms may weigh the benefits of cooperation, such as increased market power and the ability to jointly tackle industry challenges, against the costs of competition, such as decreased market share and the risk of losing customers. The theory suggests that co-opetition can lead to greater growth in the insurance industry if the rewards of cooperation outweigh the costs of competition. For example, firms may work together to develop new products or services that address customer needs, resulting in increased demand and revenue for the industry as a whole.

Critics argue that social exchange theory focuses too narrowly on individual behavior and ignores broader societal and cultural factors that can impact social relationships (Chang, 2021). The theory also tends to overlook the role of emotions in social interactions, such as how people may prioritize emotional connections over material rewards. Further, social exchange theory assumes that individuals are always rational and make calculated decisions about social interactions. Critics argue that this is not always the case, and people may behave impulsively or irrationally in certain situations (Cropanzano ***et al.,*** 2017).

Conceptual Framework

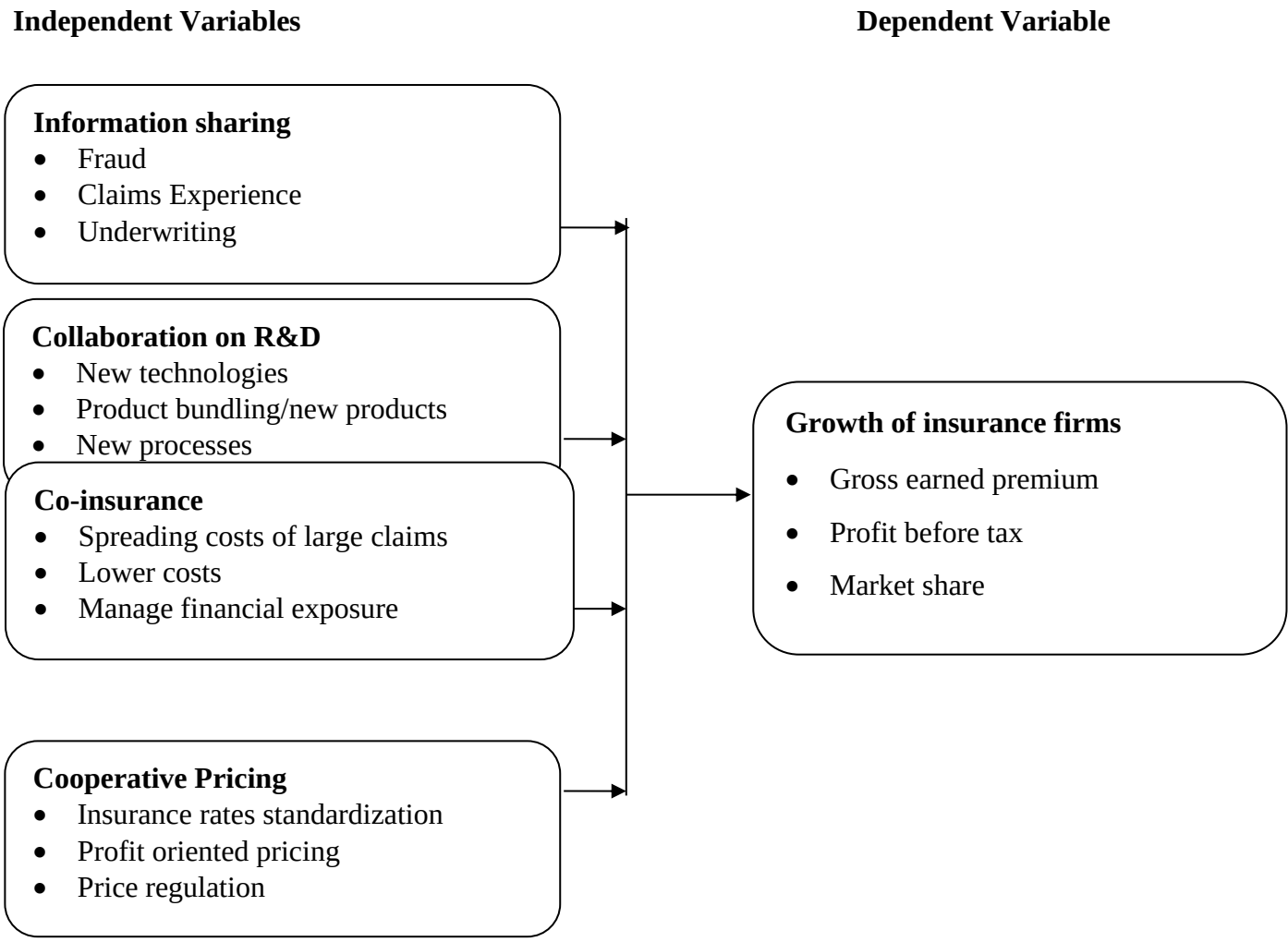

Figure 1: Conceptual Framework

Information Sharing

Information sharing in the context of co-opetition in the insurance industry refers to the exchange of information between competing insurance companies for the purpose of achieving shared goals or improving industry outcomes. This can include sharing data on market trends, customer needs and preferences, claims experience, and risk management practices (Talja & Hansen, 2016).

In the context of co-opetition, information sharing can help insurance companies identify areas of collaboration and potential synergies, leading to improved industry performance and growth. For example, sharing data on customer needs and preferences can help insurers develop new products or services that better meet customer needs, while sharing risk management practices can help reduce industry-wide losses and improve profitability (Wakolbinger, Fabian & Kettinger, 2018). Information sharing can also help to level the playing field among competing insurance companies, particularly in smaller or less developed markets where one or a few dominant players may have access to more information than others. By sharing information, smaller firms can improve their competitiveness and achieve greater market power, leading to a more balanced and dynamic industry landscape (Latunreng & Nasirin, 2019).

However, information sharing also involves risks, particularly with regard to the protection of proprietary or sensitive data. Insurance companies must be mindful of the potential risks of sharing sensitive information, such as the potential for antitrust concerns or the possibility that confidential information may be leaked to competitors (Myšková, & Kuběnka, 2019). This study conceptualizes information sharing in terms of fraud, claims and underwriting.

Collaboration on Research and Development

Collaboration in research and development (R&D) in the insurance industry refers to the joint efforts of competing firms to conduct research and develop new products, services, or technologies for the industry as a whole. By working together, firms can pool resources, expertise, and knowledge to achieve shared goals and address industry-wide challenges. R&D collaboration can take many forms. For example, firms may collaborate on developing new risk management tools, improving claims processing systems, or developing innovative insurance products to better meet customer needs. Such collaborations can help to improve the overall competitiveness of the industry and provide better value to customers (Pousttchi & Gleiss, 2019).

R&D collaborations can also help to reduce costs and risks associated with innovation. For example, by sharing the cost of developing new technologies or sharing the risk associated with new products or services, firms can achieve economies of scale and reduce their overall R&D investment. This can help to make innovation more accessible to smaller firms or firms with limited resources, leading to a more competitive and dynamic industry landscape (Miles, 2017).

However, R&D collaborations in the context of co-opetition also involve risks. For example, there may be concerns over the protection of proprietary information, the possibility of unequal sharing of costs and benefits, or the potential for one firm to gain a competitive advantage over others as a result of the collaboration (Broekel, 2015). The current study focuses on new technologies, product development and new processes.

Co-insurance

Co-insurance refers to the sharing of insurance risk between two or more insurance companies. This can occur when a policyholder seeks coverage from more than one insurer, and each insurer agrees to share the risk by issuing a policy for a portion of the coverage amount. Co-insurance can provide several benefits for both insurers and policyholders. For insurers, co-insurance can help to reduce risk exposure and diversify their portfolio, as they are sharing the risk with another insurer. It can also allow insurers to take on larger and more complex risks that they may not be able to underwrite on their own (Areias & Carvalho, 2021).

For policyholders, co-insurance can help to reduce premiums, as insurers may offer lower rates for co-insured policies. It can also help to ensure that policyholders are adequately covered, even if one insurer is unable to provide full coverage for a particular risk. Co-insurance can also provide opportunities for collaboration between competing insurers. For example, insurers may work together to underwrite co-insured policies, share data on claims experience, or collaborate on developing new insurance products that incorporate co-insurance. By working together, insurers can improve industry outcomes and promote overall industry growth (Sur & Chauhan, 2021).

However, co-insurance can also involve risks, particularly with regard to the equitable sharing of risk and the potential for disputes between insurers over claims payments or other issues. Insurers must carefully manage co-insured policies to ensure that all parties are treated fairly and that the policyholder's needs are adequately met (Scott & Fendrick, 2021). The current study focuses on spreading costs of large claims, lowering acquisition costs, and managing financial exposure.

Cooperative Pricing

In the insurance industry, cooperative pricing refers to a pricing strategy where insurance companies collaborate to collectively set prices for insurance products or policies. It involves insurers coming together to establish pricing guidelines, frameworks, or agreements that aim to ensure a fair and competitive pricing environment for all industry participants (Dhar &

Samet, 2020). Cooperative pricing in the insurance industry typically occurs in situations where insurers face similar risks, operate in the same market segment, or share common challenges. By collaborating on pricing, insurers can avoid harmful price competition, achieve more stable and sustainable premiums, and maintain profitability in the long run (Prat & van Damme, 2021).

Insurance companies may establish cooperative pricing mechanisms through industry associations, working groups, or other platforms where they can discuss pricing strategies and share market insights. This collaboration may involve sharing actuarial data, claims experience, and risk analysis to inform pricing decisions and establish common benchmarks or guidelines (Dionne & Fombaron, 2021). Cooperative pricing in the insurance industry can have several benefits. It helps insurers avoid undercutting each other on prices, which can lead to inadequate premiums that do not cover the risks adequately. By setting pricing collectively, insurers can better align premiums with the level of risk, ensuring a fair and sustainable pricing structure. Cooperative pricing can also enhance industry stability, foster cooperation among insurers, and contribute to a healthier and more competitive insurance market (Doherty & Schlesinger, 2020).

However, it is important to note that cooperative pricing in the insurance industry must comply with applicable regulations and antitrust laws. Insurers must ensure that their cooperative pricing practices do not violate competition laws or restrict fair market competition. Compliance with legal and regulatory requirements is essential to ensure the ethical and lawful implementation of cooperative pricing practices (Vaughan & Vaughan, 2021). The current study focuses on insurance rates standardization, profit oriented pricing, price regulation.

Growth of Insurance Firms

The growth of the insurance firms refers to the expansion of the firms in the insurance sector over time. It can be measured in terms of several key metrics, such as premiums written, number of policies sold, market share, and profitability. As individuals and businesses become more aware of the importance of insurance in managing risk, they may seek out more insurance coverage, leading to increased demand for insurance products and services (Zheng, Liu, & Dickinson, 2018).
Insurance companies can introduce new and innovative insurance products to meet the evolving needs of their customers, such as cyber insurance, climate insurance, or pandemic insurance. Insurance companies can also enter new geographic markets or customer segments to reach a wider audience and increase their market share. Further, insurance companies can merge or acquire other firms to consolidate their position in the market and gain access to new customers or markets (Suryanto, Dimasqy, Ronaldo, Ekananda, Dinata, & Tumbelaka, 2020).

The growth of the insurance firms is important as it can lead to increased economic activity, job creation, and improved risk management for individuals and businesses. The current study operationalizes growth of the insurance industry in regards to gross written premium, number of insurance policies and market share.

Empirical Review of Literature

Information Sharing

Information sharing has been studied extensively in the context of inter-firm relationships and its impact on firm growth. Matsui (2019) examined the relationship between inter-firm information sharing and firm performance in different regions. The study is anchored on the relational view theory, which suggests that inter-organizational relationships are an important source of competitive advantage for firms. The study employs a cross-sectional research design. The population of the study is comprised of firms in North America, Europe, and Asia. The sample size consists of 421 firms from these regions. The study uses a purposive sampling strategy, which means that the firms were selected based on certain criteria, such as their size and industry. The data was collected through a survey questionnaire. The questionnaire included questions on information sharing, buyer-supplier relationships, and firm performance. The study uses structural equation modeling (SEM) to analyze the data. The study results indicated that information sharing, and buyer-supplier relationships have a positive impact on firm performance in all three regions. Specifically, the results showed that information sharing has a significant positive effect on buyer-supplier relationships, which in turn has a significant positive effect on firm performance. The strength of these relationships, however, varied across regions.

Iqbal, Shah and Noori (2020) investigated the impact of inter-firm information sharing on supply chain performance in the context of the Canadian manufacturing sector. The study was anchored on the resource-based view (RBV) and relational view theories. The study employed a case study research design. The population of the study was not explicitly stated, as it focuses on a single case study. The data was collected through interviews with key stakeholders in the organization and a review of relevant documents and reports. The study made use of a qualitative data analysis technique to analyze the data. Specifically, the researchers used a thematic analysis approach to identify key themes and patterns in the data. The study findings indicated that inter-firm collaborations and supply chain coordination are important for improving a firm's performance. Specifically, the study identified several key elements of successful collaboration and coordination, including a shared vision and goals, clear communication channels, trust and commitment among partners, and effective management of information and resources.

Li and Yi Zou (2020) examined the impact of information sharing on innovation performance in the context of the Chinese manufacturing industry. The study was anchored on the knowledge-based view and social exchange theory. The study employed a survey research design. The population of the study is Chinese manufacturing firms. The sample size of the study is 306 firms. The study used a stratified sampling strategy to select the sample of firms. Specifically, the sample was drawn from three different industries in the Chinese manufacturing sector (machinery, electronics, and automobile) and different regions in China. The data was collected through a structured questionnaire that was administered to the top

management team of each participating firm. The study used a structural equation modeling technique to analyze the data. Specifically, the researchers used a two-stage approach to analyze the data, first assessing the measurement model and then examining the structural model. The findings suggested that information sharing has a positive impact on innovation performance, particularly in terms of product innovation and process innovation.

Childerhouse, and Waring (2021) conducted a literature review of the risks and opportunities associated with information sharing in supply chains. The study does not have a specific theoretical framework. The study instead used a systematic literature network analysis approach to analyze the literature on information sharing in supply chains and identify the risks and opportunities associated with it. The study employed a systematic literature review research design, which means that it reviews and synthesizes existing literature on information sharing in supply chains. The population of the study was the literature on information sharing in supply chains. There was no, primary data collected and therefore no sampling technique was applied. The literature reviewed implied that the key risks associated with information sharing in supply chains include loss of competitive advantage, opportunistic behavior, and information security breaches. The key opportunities associated with information sharing in supply chains include improved coordination, increased trust, and better performance.

Collaboration on Research and Development

Colombelli and Gallegati (2020) focused on the impact of R&D collaboration networks on firm growth. In this study, the authors used a panel data set of 2,425 Italian manufacturing firms over the period 2005-2013. They anchored their study on the knowledge spillover theory of entrepreneurship, which suggests that entrepreneurs can benefit from collaboration with others through the sharing of knowledge, information, and resources. The research design of the study was a panel regression analysis. The sample size of the study was 2,425 Italian manufacturing firms, and the authors used a purposive sampling strategy to select firms with available data on R&D and collaboration networks. The data was collected from a database, which provided financial and ownership information on Italian firms. The authors used various statistical techniques to analyze their data, including panel regression analysis and instrumental variable estimation. Their results showed that R&D collaboration networks had a positive and significant impact on firm growth, and that this effect was stronger for firms that were smaller in size and younger in age.

Egbetokun, Jegede and Owolabi (2020) conducted a study on collaborative R&D and firm growth in Africa: Empirical evidence from Nigeria. In this study, the authors used a survey data set of 255 Nigerian firms to investigate the impact of collaborative R&D on firm growth. They anchored their study on the resource-based view of the firm. The research design of the study was causal, and the authors used a composite measure of collaborative R&D that included the number of research partners, the nature of the research collaboration, and the duration of the research collaboration. The sample size of the study was 255 Nigerian firms, and the authors used a purposive sampling strategy to select firms that were engaged in R&D activities. The data was collected through a survey questionnaire that was administered to the top executives

of the firms. The authors used various statistical techniques to analyze their data, including multiple regression analysis and the mediation analysis. Their results implied that collaborative R&D had a positive and significant impact on firm growth, and that this effect was partially mediated by the firm's absorptive capacity.

Ndubuisi, Moturi and Mboya (2020) used survey data of 400 Kenyan firms to investigate the impact of collaborative R&D on firm performance. They anchored their study on the resource-based view and the knowledge-based view of the firm, which suggest that collaboration on R&D can help firms access new knowledge and technology and thereby gain a competitive advantage. The research design of the study was a cross-sectional survey, and the authors used a composite measure of collaborative R&D that included the number of research partners, the nature of the research collaboration, and the duration of the research collaboration. They also controlled for various firm-level characteristics, such as age, size, and industry sector. The sample size of the study was 400 Kenyan firms, and the authors used a stratified random sampling strategy to select firms from different regions and industries in Kenya. The data were collected through a structured questionnaire that was administered to the top executives of the firms. The authors used various statistical techniques to analyze their data, including descriptive statistics, correlation analysis, and multiple regression analysis. Their results showed that collaborative R&D had a positive and significant impact on firm performance, and that this effect was moderated by the firm's absorptive capacity and its level of innovation.

Lin, Huang and Chen (2021) conducted a study on the impact of R&D collaborations on firm growth: Evidence from the biotechnology industry. This study was anchored on the resource-based view (RBV) theory which was used to examine the relationship between R&D collaborations and firm growth in the biotechnology industry. The research design was quantitative and cross-sectional, with a sample size of 149 Taiwanese biotechnology firms. The sampling strategy was purposive, and data were collected through a survey instrument. Data were analyzed using multiple regression analysis, and the results show that R&D collaborations have a positive impact on firm growth, as measured by sales growth and employment growth.

These studies highlight the importance of collaboration on R&D for achieving various performance outcomes across different industries and contexts. The findings suggest that collaboration can have a positive impact on firm growth, particularly in terms of innovation performance, productivity, and R&D investment. The success of R&D collaboration initiatives may depend on several factors, including the nature of the collaboration, the level of technological capability of the firms involved, and the type of collaboration partners.

Co-insurance

Karademir and Soyyilmaz (2021) investigated the relationship between co-insurance and firm performance of Turkish firms. The study was anchored on agency theory, which suggests that the behavior of individuals and organizations can be influenced by the incentives and goals set by their principals. The researchers argued that co-insurance can incentivize firms to engage in more risk-taking activities, which may affect their financial performance. The research

methodology used in this study was a quantitative approach, and data was collected from a sample of 120 firms listed on the Istanbul Stock Exchange between 2010 and 2019. The sampling technique used was purposive sampling, where firms that met certain criteria were selected. The data was collected using secondary sources, such as financial statements and annual reports, and analyzed using multiple regression analysis. The empirical results showed that co-insurance has a positive and statistically significant relationship with firm performance in terms of return on assets and return on equity. These findings suggested that co-insurance can incentivize firms to engage in riskier activities, which can lead to higher financial performance.

Another study by Gupta and Dev (2021) was aimed at establishing the impact of co-insurance on the financial performance of Indian firms. The study was anchored on the agency theory, which suggests that the ownership structure of a firm can influence its financial performance. The research design used in the study was cross-sectional and the data was collected through a survey questionnaire. The population of the study consisted of Indian firms listed on the National Stock Exchange and the Bombay Stock Exchange. The sample size was 231 firms, selected using the purposive sampling technique. The data collection instrument used was a structured questionnaire, and the data was analyzed using descriptive statistics and regression analysis. The study implied that co-insurance positively affects the financial performance of Indian firms. The findings further suggested that co-insurance can help to mitigate the risk of financial losses due to unforeseen events, thereby improving the financial performance of firms. The study also found that firm size, age, and leverage have a significant effect on financial performance.

Kim and Seo (2021) aimed to investigate the relationship between co-insurance and the growth of firms in South Korea. The researchers anchored their study on the agency theory. The research design used in this study was a cross-sectional design. The population consisted of all non-financial firms listed on the Korean Stock Exchange from 2005 to 2019. A total of 13,771 observations were included in the sample, after excluding firms with missing data. The sampling strategy used was purposive sampling, as only firms that met the inclusion criteria were included in the sample. The data collection instrument used was secondary data obtained from the Korea Corporate Governance Service and the Korea Stock Exchange. The study used multiple regression analysis for data analysis, with the dependent variable being firm growth and the independent variable being co-insurance. The results of the study showed that co-insurance has a positive effect on firm growth, suggesting that co-insurance can be used as a risk management tool to increase firm growth in South Korea. The study also found that the effect of co-insurance on firm growth was greater for smaller firms compared to larger firms, indicating that co-insurance may be more important for smaller firms that have limited resources to manage risk.

Tesfaye ***et al.*** (2021) focused on the effect of co-insurance on the growth of micro and small enterprises in Ethiopia. This study was anchored on the agency theory, which suggests that insurance can be used to mitigate risks and align incentives between the insurer and the insured. The research methodology of this study involved a cross-sectional survey design. The

population of interest was micro and small enterprises (MSEs) in Ethiopia that had taken out insurance policies with one of the top three insurance companies in the country. A stratified random sampling technique was used to select 700 MSEs from four regions in Ethiopia. Data was collected using a structured questionnaire and analyzed using descriptive statistics, Pearson correlation, and regression analysis. The results of the study indicated that co-insurance has a positive and significant effect on the growth of MSEs. Specifically, the study found that co-insurance has a significant positive effect on sales growth, employee growth, and asset growth of MSEs. The study also found that the level of education of the business owner and the number of years the business has been in operation positively moderate the relationship between co-insurance and MSEs growth.

Cooperative Pricing

Doherty and Schlesinger (2020) conducted an empirical study in the United States to examine the determinants of price and costs in the property-liability insurance industry. The study was based on industrial organization theory. They used data from industry sources and applied econometric analysis to investigate the impact of cooperative pricing practices. The study utilized a descriptive cross-sectional survey research design and relied on primary data collected with the aid of questionnaires. The study found that cooperative pricing practices, such as joint rate-making and advisory organizations, can lead to higher premiums for policyholders and lower costs for insurers. This suggests that cooperative pricing arrangements may contribute to a more stable and profitable insurance market. However, the study did not delve into the specific mechanisms or dynamics of cooperative pricing, and it focused more on the pricing outcomes rather than the direct impact on firm growth.

Dionne and Fombaron (2021) conducted a theoretical study in Canada to explore the optimal size of insurance companies under cooperative insurance arrangements. They utilized information theory and industrial organization theory to develop a theoretical model and conducted simulations to assess the impact of cooperative pricing. The findings indicated that cooperative pricing can lead to larger insurance companies. This is because cooperative pricing arrangements facilitate cost efficiencies and risk sharing among insurers. The study highlighted the potential benefits of cooperative pricing in terms of achieving economies of scale and enhancing risk management capabilities. However, it is important to note that the study was theoretical in nature and did not directly measure the actual growth or performance of insurance firms in practice.

Vaughan and Vaughan (2021) conducted an empirical study in the United States to examine cooperative pricing arrangements in the property-liability insurance industry. The research design used in the study was a descriptive survey design. The population of the study was 54 insurance companies in North Carolina. The sample size was 42 insurance companies, which were selected through purposive sampling technique. The data collection instrument used was a structured questionnaire, and the data collected were analyzed using both descriptive and inferential statistics. The study found that cooperative pricing arrangements can lead to higher premiums for policyholders and may reduce price competition among insurers. This suggests

that cooperative pricing practices can affect market dynamics and consumer outcomes in the insurance industry. The study shed light on the potential consequences of cooperative pricing and highlighted the need for a balance between cooperative arrangements and market competition to ensure fair pricing for policyholders.

Chiappori and Salanié (2022) conducted a study in France to test for asymmetric information in insurance markets and explore the role of cooperative pricing in mitigating adverse selection. The authors anchored their study on the resource-based view theory. The research design employed in this study is a panel data analysis, and the sample consists of 72 life insurance companies in France from 2011 to 2021. The data collection instrument used was secondary data from the published annual reports of the insurance companies. The authors used the random-effects model to estimate the relationship. Through theoretical modeling and econometric analysis, the study examined how cooperative pricing practices can address information asymmetry issues. The findings suggested that cooperative pricing can serve as a mechanism to overcome adverse selection problems in insurance markets. By setting prices collectively and sharing information, insurers can mitigate the effects of information asymmetry and improve market efficiency. The study highlighted the potential benefits of cooperative pricing in addressing market failures related to asymmetric information.

RESEARCH METHODOLOGY

Research Design

An exploratory research design was adopted for this study. Adopting an exploratory research design was justified in assessing the effect of co-opetition on the growth of insurance firms in Kenya as this approach allows for an in-depth understanding of the complex and dynamic nature of co-opetition, where insurance firms both cooperate and compete. In the Kenyan context, where co-opetition is relatively unexplored, especially among insurance firms, an exploratory design was ideal for generating insights into the ways companies are navigating cooperative and competitive environments, the nature of their collaborative interactions, and the subsequent impacts on growth. This design is flexible and adaptive, enabling the researcher to explore various aspects of co-opetition and to uncover underlying patterns, mechanisms, and potential causal relationships, thereby providing a comprehensive foundation for subsequent research, theory development, and practical implications in the domain of insurance in Kenya.

Population of the study

The focus population of this research was the 57 insurance firms in Kenya as at 31st December 2022 (IRA ,2022). The heads of departments in each insurance firm served as the unit of observation.

Sampling Frame

A sampling frame is the list of the sampling units from which those to be contacted for inclusion in the sample is obtained. According to Yin (2017) sampling frame is the actual set of units from which a sample has been drawn. Heads of departments from the 57 licensed insurance companies in Kenya (IRA, 2022) comprised the study's sampling frame.

Sample and Sampling Technique

The selection structure of the study comprised the heads of departments in each of the 57 insurance firms in Kenya. The study adopted a purposive sampling method where Heads of the finance, operations and business development departments in each of the 57 insurance companies were the unit of observation and were therefore invited to take part in the survey. The purposive sampling method was adopted under the assumption that the heads of these departments have access to accurate information on the various aspects captured in the survey questionnaire, thus increasing the likelihood of obtaining highly accurate answers with a minimal marginal error. The respondents were reached via a google form sent to their emails to collect their responses. The researcher picked 3 heads of departments from each insurance firm giving a total of 171 respondents.

Data Collection Instruments

Both primary and secondary data was collected to ensure the study objectives were fully met. The primary data was obtained using a structured questionnaire. A structured questionnaire was chosen because the study adopted a quantitative approach, which is similar to numerical data. The questionnaire comprised five-point likert-type scales ranging from one (the lowest point) to five (the highest point). The questionnaire was divided into three sections where section A covered the demographic characteristics of the respondents; section B covered co-opetition while section C covered growth of insurance firms. Secondary data was sourced from the annual published financial records of the 57 insurance firms in Kenya for the period between 2018 – 2022.

Reliability of Research Instruments

The Cronbach alpha analysis helped to assess the reliability of the research instruments by demonstrating the internal accuracy of the data collection instrument. Cronbach's Alpha is a metric of reliability that displays a true 'base' score. Even if the questions are interchanged with similar ones, Cronbach's Alpha is important to a scholar in ensuring accuracy and reliability of the questionnaire (Khan, 2018). Reliability of 0.7 range is generally considered acceptable and over 0.8 is excellent. This thresh-hold was applied to the study.

Validity of Research Instruments

Construct validity was applied in measuring whether the true theoretical meaning of an idea or concept was reflected in the operational definition of variables. Construct validity in this study was achieved by clearly defining the constructs related to co-opetition and growth of insurance firms and by using reliable and valid measurement scales to operationalize them. Average factor loading, as well as Bartlett's test were also used. Utilizing a comprehensive literature review to inform the development of constructs and employing appropriate statistical methods to test the relationships between them also enhanced construct validity. Further, the questionnaire measurement items were guided by the study variable sub-constructs. This ensured that content validity was attained. The guidance of opinion of expert also confirmed content validity. This entailed having study supervisors, who scrutinized the questionnaire and offered competent opinions to ensure that all study variables were captured. They also double-checked the research and ensured that the theoretical dimensions were presented in the same way they were envisioned.

Data Analysis and Presentation

Data was evaluated using descriptive statistical methods such as the mean, which is a measure of central tendency, and the standard deviation, which is a measure of dispersion. This aided in describing the variables of the study. Correlation and regression analysis were used to assess the strength and direction of relationship among the study variables and this answered the research questions of the study.

Model Specification

The following model was adopted.

$$\mathbf{Y=\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$$

Where:

Y = Growth of insurance firms

β_0 = Constant term

β_i = Beta coefficient of variable i measuring change Y to change in i

X_1 = Information sharing

X_2 = Collaboration on R&D

X_3 = Co-insurance

X_4 = Cooperative Pricing

ε =Error term

Both descriptive and inferential statistics results were presented in tables and figures which were accompanied by pertinent interpretations and discussions.

RESEARCH FINDINGS AND DISCUSSIONS

Pilot Study Results

All the variables were found to have Cronbach alpha values greater than 0.7. This suggested that all the variables were reliable and hence there is no need to change the measures and indicators in the questions. The questionnaire was also valid as indicated by Average factor loading, as well as Bartlett's test. Diagnostic testing also revealed that the assumptions of

regression analysis have not been violated. This implies that the questionnaire met all the requirements.

Response Rate

The researcher issued 171 questionnaires to Heads of the finance, operations and business development departments in each of the 57 insurance companies that were the subject of the study. 136 of the 171 administered questionnaires were completed, filled out, and returned representing a 79.5% response rate. As per Cooper and Schindler (2020), a study that has achieved a response rate of 70% should be considered excellent for data analysis and inference. The study's findings are displayed in Table 1 below.

Table 1: Response Rate

Response Rate	Frequency	Percentage
Returned	136	79.5
Unreturned	35	20.5
Total	**171**	**100**

From Table 1, it was deduced that the study achieved a 79.5% response rate. This implied that the data that was collected for the study was good for analysis, interpretation and inference.

Demographic Information

The study aimed at understanding the general features of the organizations that were being surveyed. The demographic characteristics considered in this study were number of years the firm has been in existence, respondent's number of years with the insurance firm, and number of employees in the firm.

Number of Years the Firm has been in Existence

The demographic results presented in Table 2 provide insights into the distribution of insurance firms in Kenya based on the number of years they have been in existence.

Table 2: Number of Years the Firm has been in Existence

Years	Frequency	Percentage
Below 5 years	14	10.3%
5-10 years	19	14.0%
11-15 years	5	3.7%
16-20 years	6	4.4%
Above 20 years	92	44.8%
Total	**136**	**100%**

The majority of the firms have been in operation for more than 20 years, constituting 44.8% of the total respondents. This suggests a notable presence of well-established insurance companies in the market, indicating a mature industry with a significant history and experience. On the other hand, the data reveals a substantial proportion of firms that are relatively new to the industry, with 10.3% operating for less than 5 years and 14.0% falling within the 5-10 years' category. The presence of these relatively younger firms may suggest a dynamic and evolving market with new entrants seeking to establish themselves. This diversity in the duration of

existence among insurance firms underscores the need for a nuanced understanding of the industry, considering the distinct challenges and opportunities that may be associated with both established and newer players.

The implication of these findings is that the research needs to consider the varying contexts and challenges faced by companies at different stages of their existence. Established firms may bring historical insights and experience, while newer entrants may contribute innovative perspectives. Additionally, it highlights the importance of tailoring strategies and recommendations to cater to the diverse needs of firms based on their years of existence. For instance, collaboration initiatives may need to consider how to leverage the strengths of both long-standing and newer companies to foster mutual growth in the dynamic insurance landscape of Kenya.

Years with the Firm

Table 3 provides insights into the distribution of respondents based on the number of years they have been associated with their respective insurance firms.

Table 3: Years with the Firm

Years	Frequency	Percentage
Less than 1 year	18	13.2%
1-3 years	42	30.9%
4-7 years	36	26.5%
8 years and above	40	29.4%
Total	**136**	**100**

The data reveals that a significant proportion of respondents have relatively shorter tenures with their firms, with 13.2% having been with their current company for less than 1 year and 30.9% falling within the 1-3 years' category. This suggests a considerable level of turnover or mobility among professionals in the insurance industry within the specified time frames. Conversely, there is a notable representation of individuals with longer tenures, as 26.5% have been with their firms for 4-7 years, and 29.4% have a tenure of 8 years and above. The presence of individuals with more extended periods of association with their firms indicates a level of stability and continuity within certain segments of the workforce. These individuals may possess deep institutional knowledge, contributing to the organizational memory and potential impact on decision-making processes.

The implication of these findings is that the study on the effect of co-opetition on the growth of insurance firms should be mindful of the varying degrees of organizational loyalty and experience among the respondents. Individuals with shorter tenures may bring fresh perspectives and possibly different levels of commitment, while those with longer tenures may have a deeper understanding of the company's culture, processes, and historical context. Strategies for fostering co-opetition and collaboration should take into account the diversity in the duration of association with the firm, recognizing the potential benefits of both new insights and institutional knowledge in driving growth initiatives within the insurance sector in Kenya.

Number of Employees in the Firm

Table 4 provides an overview of the distribution of insurance firms in Kenya based on the number of employees they have. The data shows that a substantial portion of the firms surveyed are relatively small, with 22.8% having less than 50 employees. Additionally, 29.4% fall within the 51-100 employee's category, indicating a significant presence of mid-sized firms. These smaller and mid-sized firms collectively make up a substantial portion of the insurance sector in Kenya. Furthermore, the distribution shows that 20.6% of the firms have 101-200 employees, 15.4% have 201-500 employees, and 11.8% have a workforce of above 500 employees. This diversity in the size of insurance companies highlights the heterogeneous nature of the industry, with a mix of small, medium, and larger enterprises coexisting in the market.

Table 4: Employees in the Firm

Number of employees	Frequency	Percent
Less than 50 employees	31	22.8%
51-100 employees	40	29.4%
101-200 employees	28	20.6%
201-500 employees	21	15.4%
Above 500 employees	16	11.8%
Total	**136**	**100**

The implication of these findings for the study is that strategies and recommendations need to be tailored to accommodate the different operational scales within the industry. Smaller firms may face unique challenges such as resource constraints, while larger firms may have greater organizational complexity. Co-opetition initiatives should be designed to be flexible enough to address the specific needs and capacities of firms of varying sizes. For instance, collaborative efforts may need to consider mechanisms that allow for effective participation and contribution from both smaller and larger firms to ensure a balanced and inclusive approach to fostering growth in the Kenyan insurance sector.

Descriptive Statistics

Descriptive statistics allowed the researcher to analyze and interpret the mean and standard deviation of the data, providing a clear understanding of the distribution and patterns within the dataset. They also provided a foundation for further inferential statistical analyses and decision-making in the research process.

Information Sharing

The descriptive statistics presented in Table 5 provide insights into the information-sharing practices of insurance firms in Kenya, shedding light on their collaboration efforts in combating fraud, sharing procedural information, and developing new strategies and products. The overall

mean score of 2.97 suggests a moderate level of endorsement for information-sharing practices among the surveyed firms.

Table 5: Descriptive Statistics for Information Sharing

Statements	N	Mean	Std. Dev
This insurance firm shares information about fraudulent activity with its competitors	136	3.24	1.16
This firm collaborates with competitors to combat fraud in the industry.	136	3.76	1.04
The insurance firm I work for shares information about claims processing procedures with its competitors	136	2.70	1.17
This firm shares information about its underwriting guidelines with its competitors	136	2.45	1.13
The firm collaborates with its competitors to develop new underwriting strategies	136	3.07	1.15
This insurance firm collaborates with its competitors to develop new products or services	136	2.57	0.98
Overall mean Score	**136**	2.97	0.79

The highest mean score of 3.76 is associated with the statement "This firm collaborates with competitors to combat fraud in the industry." This indicates a relatively strong inclination among the respondents toward collaborative efforts in addressing fraudulent activities. The standard deviation of 1.04 suggests a moderate level of variability in responses, indicating diversity in perspectives on fraud collaboration within the industry.

On the other hand, the lowest mean scores are observed in statements related to sharing underwriting guidelines and developing new products or services, with mean scores of 2.45 and 2.57, respectively. These scores suggest a lower level of endorsement for information-sharing practices in these specific areas. The relatively higher standard deviations (1.13 and 0.98, respectively) indicate greater variability in responses, reflecting diverse perspectives among the surveyed firms regarding the extent to which they engage in collaborative efforts for underwriting guidelines and product development.

Relating these findings to the studies by Matsui (2019) and Iqbal, Shah, and Noori (2020), the emphasis on information sharing in the context of combating fraud aligns with Matsui's findings regarding the positive impact of information sharing on firm performance. The moderate mean scores in Table 5 suggest that, while there is a willingness to collaborate on fraud prevention, there may be room for improvement in terms of broader information-sharing practices, such as underwriting guidelines and product development.

In the context of Iqbal, Shah, and Noori's study, which focuses on the impact of inter-firm information sharing on supply chain performance, the findings from Table 5 suggest that there might be variations in the extent to which insurance firms in Kenya engage in collaborative efforts related to underwriting strategies and product development. The lower mean scores and higher standard deviations for these statements indicate a potential need for enhancing collaborative practices in these specific areas within the Kenyan insurance sector.

Collaboration on R&D

Table 6 provides descriptive statistics offering insights into the collaboration practices of insurance firms in Kenya concerning research and development (R&D) activities. The overall mean score of 2.78 suggests a moderate level of endorsement for collaboration on R&D among the surveyed firms. Examining individual statements reveals nuanced perspectives within the industry.

Table 6: Descriptive Statistics for Collaboration on R&D

Statements	N	Mean	Std. Dev
This firm collaborates with its competitors on research and development of new technologies in the insurance industry	136	2.90	1.17
Our firm engages in joint research and development activities with its competitors to improve existing technologies	136	2.90	1.21
This firm shares knowledge and expertise with its competitors to develop new processes in the insurance industry	136	2.84	1.26
The insurance firm collaborates with its competitors to improve processes	136	2.97	1.18
The firm shares resources with its competitors to support joint research and development projects	136	2.57	1.08
This firm shares its research findings with competitors	136	2.48	1.06
Overall Mean Score	**136**	2.78	0.96

The first two statements, indicating collaboration on new technologies and improving existing technologies, both garnered mean scores of 2.90, suggesting a moderate inclination towards such collaborative efforts. However, the higher standard deviations of 1.17 and 1.21 indicate diversity in opinions on the extent of engagement in these areas. The third statement, addressing the sharing of knowledge and expertise for developing new processes, received a mean score of 2.84, reflecting a moderate level of agreement. The higher standard deviation of 1.26 suggests varied perspectives on the extent of knowledge and expertise sharing.

In contrast, the fourth statement, affirming collaboration to improve processes, obtained a mean score of 2.97, indicating a relatively higher inclination towards such collaborative initiatives. Nevertheless, the standard deviation of 1.18 suggests some variability in responses. The fifth statement, concerning the sharing of resources for joint research and development projects, garnered a mean score of 2.57, indicating a moderate level of agreement. The standard deviation of 1.08 suggests diversity in opinions regarding the extent of resource sharing. The last statement, addressing the sharing of research findings with competitors, received the lowest mean score of 2.48, indicating a somewhat lower inclination towards such sharing. The standard deviation of 1.06 implies variability in opinions about the extent to which research outcomes are shared.

Relating these findings to empirical studies, particularly Colombelli and Gallegati (2020) and Egbetokun, Jegede, and Owolabi (2020), the overall mean score of 2.78 suggests that while there is some inclination towards collaboration on R&D among insurance firms in Kenya, there may be opportunities for enhancing and promoting these collaborative efforts. Colombelli and Gallegati's study, emphasizing the positive impact of R&D collaboration networks on firm growth, aligns with the moderate inclination towards R&D collaboration indicated in Table 6.

The findings suggest that insurance firms in Kenya have room for improvement in fostering collaborative R&D practices, aligning with the broader literature emphasizing the positive impact of R&D collaboration on firm growth.

Co-Insurance

Table 7 provides a comprehensive view of co-insurance practices among insurance firms in Kenya, revealing a moderate to high level of endorsement for such strategies. The overall mean score of 3.64 suggests a substantial inclination towards co-insurance practices, indicating a general consensus among respondents. The highest mean score of 4.10 is associated with the statement indicating the use of co-insurance to spread the costs of large claims among multiple insurers. This underscores a strong inclination among the surveyed firms to utilize co-insurance as a mechanism for managing and distributing financial burdens associated with substantial insurance claims.

Table 7: Descriptive Statistics for Co-insurance

Statements	N	Mean	Std. Dev
This firm uses co-insurance to spread the costs of large claims among multiple insurers	136	4.10	0.89
Our insurance firm collaborates with its competitors to lower acquisition costs	136	3.46	0.96
The firm uses co-insurance to manage its financial exposure to risks	136	3.98	0.80
This firm shares risks with its competitors to manage its financial exposure	136	3.93	0.82
This firm collaborates with its competitors to develop products that are designed to spread risks and reduce costs	136	3.13	1.15
This firm collaborates with its competitors to develop and market co-insurance products	136	3.24	1.05
Overall Mean Score	**136**	**3.64**	**0.67**

Similarly, statements indicating collaboration to lower acquisition costs and managing financial exposure to risks received mean scores of 3.46 and 3.98, respectively. These scores reflect a moderate to high level of agreement among respondents on the benefits of co-insurance in these areas. The inclination towards sharing risks with competitors for financial exposure management is evident in the mean score of 3.93, highlighting a robust consensus on the effectiveness of this practice. In contrast, statements related to collaboration for developing risk-reducing products and co-insurance product development and marketing received lower mean scores of 3.13 and 3.24, respectively. These scores indicate a moderate level of agreement

but also suggest some diversity in perspectives on the extent of collaboration in these specific areas.

Relating these findings to existing studies, particularly Karademir and Soyyilmaz (2021) and Gupta and Dev (2021), the overall mean score of 3.64 aligns with the positive relationships between co-insurance and financial performance found in these studies. The strong inclination towards co-insurance practices in Kenya resonates with the notion that such strategies can incentivize firms to engage in riskier activities, potentially leading to higher financial performance.

In essence, the findings from Table 7 underscore the significance of co-insurance practices among insurance firms in Kenya. The strong endorsement of co-insurance aligns with the broader literature emphasizing its positive impact on financial performance. This suggests that co-insurance is viewed as a valuable strategy for managing risks, spreading costs, and enhancing financial resilience within the dynamic context of the Kenyan insurance sector.

Cooperative Pricing

Table 8 reveals insightful perspectives on cooperative pricing practices within the landscape of insurance firms in Kenya. The overall mean score of 3.96 indicates a robust endorsement for cooperative pricing initiatives, reflecting a consensus among respondents on the efficacy of such practices.

Table 8: Descriptive Statistics for Cooperative Pricing

Statements	N	Mean	Std. Dev
Cooperative pricing practices in the industry contribute to price stability and reduce harmful price competition	136	3.90	1.08
Collaborative pricing arrangements among competitors lead to fairer pricing for customers.	136	3.59	1.05
Cooperative pricing initiatives enhance industry cooperation and foster a more sustainable market environment.	136	4.00	0.93
Participating in cooperative pricing arrangements allows firms to better align their prices with the true costs and risks associated with their products or services.	136	4.04	0.71
Cooperative pricing practices can lead to improved profitability and long-term growth for firms in the industry.	136	4.21	0.79
Cooperative pricing arrangements promote a balance between competition and collaboration, benefiting both companies and customers in the market.	136	4.03	0.72
Overall Mean Score	**136**	**3.96**	**0.67**

The first statement, with a mean score of 3.90, suggests a strong inclination towards the belief that cooperative pricing contributes to price stability and reduces harmful price competition. While the standard deviation indicates some diversity in opinions, there is an overarching consensus on the positive impact of cooperative pricing in achieving these objectives.

Similarly, the statement indicating that collaborative pricing arrangements lead to fairer pricing for customers received a mean score of 3.59. This suggests a moderate to high level of agreement, though there is some variability in perceptions regarding the extent to which cooperative pricing contributes to fairness for customers.

A notable endorsement is reflected in the mean score of 4.00 for the statement asserting that cooperative pricing initiatives enhance industry cooperation and foster a more sustainable market environment. The lower standard deviation indicates a higher level of consensus, emphasizing a shared belief in the positive contributions of cooperative pricing to industry dynamics. The statement emphasizing that participating in cooperative pricing arrangements allows firms to align their prices with the true costs and risks associated with their products or services received a high mean score of 4.04. The low standard deviation suggests a strong consensus among respondents, highlighting a shared belief in the effectiveness of cooperative pricing for aligning prices with true costs and risks.

The statement with the highest mean score of 4.21 indicates a strong consensus that cooperative pricing practices can lead to improved profitability and long-term growth for firms in the industry. While there is some variability in opinions, the overall sentiment emphasizes the perceived positive impact of cooperative pricing on financial outcomes. The final statement, with a mean score of 4.03, indicates a robust consensus on the belief that cooperative pricing arrangements promote a balance between competition and collaboration, benefiting both companies and customers in the market. The standard deviation suggests a higher level of consensus on this aspect.

Relating these findings to previous studies, particularly Doherty and Schlesinger (2020) and Dionne and Fombaron (2021), the overall mean score of 3.96 aligns with the positive perceptions of cooperative pricing practices among insurance firms in Kenya. The strong endorsement resonates with the potential benefits highlighted in these studies, suggesting that cooperative pricing is perceived as a valuable strategy for fostering industry cooperation, sustainability, and improved financial performance in the Kenyan context.

In summary, the findings from Table 8 underscore a substantial consensus among insurance firms in Kenya regarding the positive impact of cooperative pricing practices. The perceived benefits encompass areas such as price stability, fairness for customers, industry cooperation, alignment with costs and risks, improved profitability, and a balance between competition and collaboration. This collective sentiment emphasizes the significance of cooperative pricing as a strategic approach within the Kenyan insurance sector.

Growth of Insurance Firms

Table 9 provides a comprehensive view of the perceived growth indicators among insurance firms in Kenya, offering valuable insights into their expansion and development over time. The overall mean score of 3.86 indicates a noteworthy endorsement of statements related to growth, reflecting a shared perception among respondents.

Table 9: Growth of Insurance Firms

Statements	N	Mean	Std. Dev
The gross written premium in this firm has been on the rise over the years	136	4.01	0.86
The number of insurance policies in this firm has been be on the rise over the years	136	3.97	0.85

This insurance firm has been increasing its market share over the years	136	3.85	0.92
The firm has expanded its product offerings over the years	136	3.94	0.86
Customer retention rates have been on the rise	136	3.56	0.96
The number of employees have been on the rise	136	3.76	0.93
This insurance firm has expanded its geographic reach over the years	136	3.74	1.01
The insurance firm has improved its reputation and brand recognition over the years	136	4.05	0.75
Overall Mean Score	**136**	**3.86**	**0.68**

"The gross written premium in this firm has been on the rise over the years" received a high mean score of 4.01, indicating a strong consensus that the gross written premium has been increasing. This suggests a collective belief in the firm's financial growth over time, with a relatively high level of agreement among respondents. Similarly, "The number of insurance policies in this firm has been on the rise over the years" obtained a mean score of 3.97, highlighting a substantial agreement that the firm has experienced growth in the number of insurance policies. This underscores a shared perception of increased business in terms of policy sales.

The statement "This insurance firm has been increasing its market share over the years" received a mean score of 3.85, indicating a moderate to high level of agreement on the firm's perceived growth in market share. Despite some variability in opinions, there is a consensus that the firm has been expanding its market presence. "The firm has expanded its product offerings over the years" garnered a mean score of 3.94, suggesting a moderate to high level of agreement that the firm has been diversifying its product portfolio. This reflects a shared belief in the strategic expansion of the firm's offerings to meet evolving market demands.

"Customer retention rates have been on the rise" received a mean score of 3.56, indicating a moderate level of agreement regarding the perceived growth in customer retention rates. While opinions may vary, there is acknowledgment of positive trends in retaining customers over time. "The number of employees has been on the rise" obtained a mean score of 3.76, suggesting a moderate to high level of agreement on the firm's perceived growth in the number of employees. This implies a shared perception of the firm's efforts in expanding its workforce.

"This insurance firm has expanded its geographic reach over the years" received a mean score of 3.74, indicating a moderate to high level of agreement on the firm's perceived expansion in geographic reach. Despite some variability in opinions, there is a consensus that the firm has extended its market presence geographically. "The insurance firm has improved its reputation and brand recognition over the years" garnered the highest mean score of 4.05, indicating a strong consensus on the perceived growth in reputation and brand recognition. This underscores a shared belief in the firm's success in enhancing its brand image and standing in the market.

The growth indicators in Table 9 align with the broader conceptualization of insurance firms' expansion and development. The emphasis on increasing premiums, policies, market share,

and product offerings resonates with the idea that firms can achieve growth by responding to evolving customer needs and market dynamics (Zheng, Liu, & Dickinson, 2018). The literature suggests that insurance companies can enhance their growth by introducing innovative products, entering new markets, and pursuing mergers or acquisitions (Suryanto, Dimasqy, Ronaldo, Ekananda, Dinata, & Tumbelaka, 2020). The findings from Table 9, particularly the high mean scores for statements related to premium growth, policy growth, market share expansion, and product diversification, align with these growth strategies outlined in the literature.

In summary, the overall mean score of 3.86 in Table 9 indicates a positive perception of growth among insurance firms in Kenya. The findings resonate with the literature, suggesting that the firms are actively pursuing strategies such as premium and policy growth, market share expansion, product diversification, employee growth, and geographic expansion to foster overall growth and enhance their reputation and brand recognition in the market.

This section also presents the descriptive statistics on secondary data collected on the growth of insurance firms' indicators adopted by the study. These were computed from annual reports of the insurance firms for the period between 2018 and 2022. They included gross written premium, profit before tax and market share. All the indicators were measured in percentages. The results are as shown in Table 10

Table 10: Gross Written Premium, Profit Before Tax and Market Share

	N	Minimum	Maximum	Mean	Std. Deviation
Gross written premium	233	.000000000	28384667.0	4043660.9399	4433984.940
Profit before tax	234	-4011605.0	4213789.0	159648.714	590536.863
Market share	234	.000000000	.2458192	.0328233	.0382224
Valid N (listwise)	233				

Table 10 shows the descriptive statistics for the study variables applied. For gross written premium, the table indicates that there were 233 observations, with a minimum value of .000000000, a maximum value of 28,384,667.0, a mean (average) of 4,043,660.9399, and a standard deviation of 4,433,984.940. The mean value suggests the average gross written premium over the specified period, while the standard deviation provides a measure of the variability or dispersion of these premiums across the sample. The range from the minimum to the maximum value gives an idea of the spread of the data.

For profit before tax, there are 234 observations. The minimum profit before tax is -4,011,605.0, the maximum is 4,213,789.0, the mean is 159,648.714, and the standard deviation is 590,536.863. Similar to the Gross Written Premium, these statistics provide insights into the central tendency, variability, and range of profit before tax for the insurance firms during the specified period.

Lastly, examining market share, there are 234 observations. The minimum market share is .000000000, the maximum is .2458192, the mean is .0328233, and the standard deviation is

.0382224. These statistics offer an understanding of the average market share, its variability, and the range of market shares among the insurance firms.

Diagnostic Tests

The study conducted various tests and these tests included test for normality, linearity, test for Multicollinearity, test for autocorrelation, and heteroscedasticity test.

Normality Test

Regression analysis require normality test to be conducted to establish whether data is normally distributed. When data is not normally distributed it may distort the results of any further analysis. Preliminary analysis to assess if the data fits a normal distribution was performed. To assess the normality of the distribution of scores, Kolmogorov-Smirnov test was used. The normality test results are illustrated in Table 11.

Table 11:* Kolmogorov–Smirnov Test *for Normality

Variable	Kolmogorov-Smirnov[a]		
	Statistic	**Df**	**Sig.**
Information sharing	0.881	136	0.194
Collaboration on R&D	0.874	136	0.191
Co-insurance	0.892	136	0.201
Cooperative pricing	0.923	136	0.220
Growth of insurance firms	0.874	136	0.194

From the finding in Table 11, the significant results indicated that (>0.05) are obtained for a score it implies the data fits a normal distribution. The data in Table 11 highlighted the results of the Kolmogorov-Smirnov test. The normality test results in the table above indicate that the data in relation to each variable is normally distributed as the significance value in all cases is greater than 0.05. This implies the data is suitable for analysis using correlation and regression analysis.

Linearity Test

The linearity results of the relationship between the dependent and independent variables are presented in Table 12.

Table 12: Tests of Linearity

Growth of insurance firms			Sig.
Information sharing* Growth of insurance firms	Between Groups	(Combined)	0.001
		Linearity	0.000
		Deviation from Linearity	0.517
Collaboration on R&D * Growth of insurance firms	Between Groups	(Combined)	0.000
		Linearity	0.000
		Deviation from Linearity	0.089
Co-insurance* Growth of insurance firms	Between Groups	(Combined)	0.000
		Linearity	0.000
		Deviation from Linearity	0.61

	Between Groups	(Combined)	0.000
		Linearity	0.000
Cooperative pricing* Growth of insurance firms		Deviation from Linearity	0.67

Based on the Anova results in Table 12, value sig deviation from linearity is 0.517> 0.05 for information sharing variable against growth of insurance firms. The results imply that there is linear relationship between information sharing variable and growth of insurance firms. There was a linear relationship between collaboration on R&D variable against growth of insurance firms since sig value deviation from linearity is 0.089> 0.05. Also, co-insurance and growth of insurance firms attracted deviation from linearity of 0.61> 0.05 implying presence of linearity relationship. There was a linear relationship between cooperative pricing against growth of insurance firms since sig value deviation from linearity is 0.67> 0.05.

The linearity test indicates the relationship between dependent and independent variables. For linear regression to be conducted, the relationship between the independent and dependent variables needs to be linear. The linearity test results indicate that the data set was exhibiting linear pattern hence linear regression modeling could be conducted.

Test for Multicollinearity

Multicollinearity exists when two or more of the predictors in a regression model are moderately or highly correlated thereby limiting the research conclusions to be drawn. Multicollinearity inflates the standard errors and confidence intervals leading to unstable estimates of the coefficients for individual predictors. Multicollinearity was assessed in this study using the Variance Inflation Factor (VIF) as shown in Table 13.

Table 13: Variance Inflation Factor

Variable	VIF	1/VIF
Information sharing	1.704	0.587
Collaboration on R&D	1.279	0.782
Co-insurance	1.869	0.535
Cooperative pricing	1.664	0.601
Mean	1.629	

Results were presented in Table 13. A variance inflation factor test was conducted to test for multicollinearity of the predictors and a value less than 10 is acceptable. Information sharing had V.I.F value of 1.704 which is less than 10 implying there is no Multicollinearity. Under collaboration on R&D a V.I.F value of 1.279 means that there is no Multicollinearity in since VIF is less than 10. The results indicated that co-insurance had a V.I.F value of 1.869 implying there is no Multicollinearity in co-insurance since VIF is less than 10. Finally, cooperative pricing had a V.I.F value of 1.664 implying no Multicollinearity since VIF is less than 10.

Autocorrelation Test

To establish whether or not the residuals are serially correlated over time, Durbin-Watson test for autocorrelation was conducted. The null hypothesis is that no first order serial or auto correlation exists when the p-value is less than 2.0.

Table 14: Autocorrelation Results

odel	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.965[a]	.931	.928	.226045	2.286

a. Predictors: (Constant), Cooperative pricing, Collaboration on R&D, Co-insurance, Information sharing

b. Dependent Variable: Growth

From Table 14 the null hypothesis of no serial correlation was not rejected given that the Durbin-Watson value was 2.286). a value of 2 to less than 2.5 indicates no significant autocorrelation and is considered the ideal range.

Heteroscedasticity Test

Heteroscedasticity refers to circumstance in which the variability of a variable is unequal across the range of values of a second variable that predicts it. In this case, the variability of the dependent variable widens or narrows as the independent variable increases thus the inverse is Homoscedastic within cross-sectional units. However, its variance may differ across units: a condition known as group wise Heteroscedasticity.

Table 15: Heteroscedasticity Results

Test Statistic	**P-Value**
7.94	0.0611
H_o : Constant Variance	

The Breuch-Pagan test tests for the variability of the model residuals. The null hypothesis was that data has constant variance while the alternative hypothesis was that data has non-constant variance. The results in Table 15 indicate that the null hypothesis of Homoscedastic error terms is not rejected as supported by a p-value of 0.0611 which is greater than 0.05 implying there is no Heteroscedasticity. This test suggests that the data is homoscedastic.

Inferential Statistics

This section presents the findings for both correlation and regression analysis.

Correlation Analysis

Table 16 presents the correlation between the independent variables (information sharing, communication, co-insurance, cooperative pricing) and the dependent variable, growth of insurance firms. The Pearson Correlation values indicate the strength and direction of the linear relationship between these variables, while the significance level (Sig. 2-tailed) provides information on the statistical significance of these correlations.

There is a strong positive correlation ($r = 0.711$, $p < 0.05$) between information sharing and the growth of insurance firms. This implies that as information sharing among insurance firms' increases, there is a tendency for the firms to experience higher levels of growth. This aligns with Matsui's (2019) study, which highlighted the positive impact of inter-firm information sharing on firm performance. The correlation suggests that the exchange of information among insurance firms in Kenya may contribute significantly to their overall growth.

The correlation between collaboration on R&D and growth is also positively significant ($r = 0.559$, $p < 0.05$). This indicates that as insurance firms engage in collaborative research and development activities, there is a tendency for them to experience higher levels of growth. This finding resonates with the empirical studies by Colombelli and Gallegati (2020) and Egbetokun, Jegede, and Owolabi (2020), both of which emphasized the positive impact of collaborative R&D efforts on firm growth.

There is a very strong positive correlation ($r = 0.916$, $p < 0.05$) between co-insurance and the growth of insurance firms. This implies that as insurance firms engage in co-insurance practices, there is a substantial positive impact on their growth. This aligns with the study by Karademir and Soyyilmaz (2021), which found a positive and significant relationship between co-insurance and firm performance, particularly in terms of return on assets and return on equity.

The correlation between cooperative pricing and growth is highly positive and significant ($r = 0.945$, $p < 0.05$). This suggests that as insurance firms adopt cooperative pricing practices, there is a robust positive impact on their growth. This finding resonates with the research by Doherty and Schlesinger (2020), which explored the impact of cooperative pricing practices in the property-liability insurance industry. The positive correlation suggests that cooperative pricing arrangements contribute significantly to the growth of insurance firms in Kenya.

Table 16: Correlation Results

		Growth	Information sharing	Collaboration on R&D	Co-insurance	Cooperative pricing
Growth	Pearson Correlation	1				
	Sig. (2-tailed)					
Information sharing	Pearson Correlation	.711**	1			
	Sig. (2-tailed)	.000				
Collaboration on R&D	Pearson Correlation	.559**	.900**	1		
	Sig. (2-tailed)	.000	.000			
Co-insurance	Pearson Correlation	.916**	.731**	.622**	1	
	Sig. (2-tailed)	.000	.000	.000		
Cooperative pricing	Pearson Correlation	.945**	.742**	.661**	.919**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).
b. Listwise N=136

Regression Analysis

The regression analysis aimed to determine the effect of the independent variables on the dependent variable (Growth of insurance firms). The model summary, ANOVA, and coefficients tables present the analysis' findings. The model summary explains how much variation in the dependent variable is due to the independent variables fitted in the model. The ANOVA table checks if the model fit is statistically significant in predicting the dependent variable and the coefficient table quantifies the magnitude of the association between the variables. The findings of the study are shown in the tables below.

Table 17 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.965[a]	.931	.928	.226045	2.286

a. Predictors: (Constant), Cooperative pricing, Collaboration on R&D, Co-insurance, Information sharing

b. Dependent Variable: Growth

Table 17 provides a snapshot of the strength and predictive capability of the regression model. The R value of 0.965 in regression analysis indicates a very strong positive correlation between the independent variables Cooperative pricings, Collaboration on R&D, Information sharing, Co-insurance) and the dependent variable, growth of insurance firms. Higher R-squared values indicate that the model explains a larger proportion of the variability in the data value. Therefore, the R Square value of 0.931, indicates that approximately 93.1% of the variability in the growth of insurance firms can be explained by the four predictor variables included in the model.

Table 18 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89.699	4	22.425	438.870	.000[b]
	Residual	6.694	131	.051		
	Total	96.392	135			

a. Dependent Variable: Growth
b. Predictors: (Constant), Cooperative pricing, Collaboration on R&D, Co-insurance, Information sharing

Table 18 tests the hypothesis that the regression model predicts the dependent variable (growth of insurance firms) significantly better than a model with no predictors. The F-statistic, a measure of how much the model improves the prediction of the outcome over a model with no predictors, is 438.870. The extremely small significance value (Sig.) of .000, which is below the conventional significance level (0.05), strongly suggests that the regression model fits the data better than the intercept-only model. In simple terms, the predictors in the regression model contribute significantly to explaining the variability in the growth of insurance firms, and the model is statistically significant.

Table 19 Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.143	.174		6.559	.000
	Information sharing	.238	.046	.317	5.185	.000
	Collaboration on R&D	.425	.065	.353	6.580	.000
	Co-insurance	.231	.058	.240	3.963	.000
	Cooperative pricing	.695	.059	.723	11.842	.000
a. Dependent Variable: Growth						

From the Table 4:21 the following model has been developed;
Y = 1.143+ 0.238X1 + 0.425X2 + 0.231X3+ 0.695X4
Where:
Y = growth of insurance firms
X1 = information sharing
X2 = collaboration on R&D
X3 = co-insurance
X4 = cooperative pricing

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary of Findings

The general objective of this study was to assess the effect of co-opetition on growth of insurance firms in Kenya. It particularly explored the impacts of decision-making, collaboration on R&D, co-insurance, and cooperative pricing on the growth of insurance firms in Kenya. This research was based on the resource-based view theory, game theory, transaction cost theory and the social exchange theory to explain the relationship between the study variables. An exploratory research design was adopted. The target population included all the 57 insurance firms operating in Kenya as of December 2022. A census was conducted on all the 57 insurance firms. The unit of observation were the heads of the finance, operations and business development departments in each of the 57 insurance companies giving a total of 171 respondents. The collection of primary data was facilitated through structured questionnaires, with the subsequent analysis employing both descriptive and inferential statistical techniques.

Discussion of the Findings

This sub-section discusses the findings from the analyzed data linking them with the literature reviewed as described in the preceding section.

Information Sharing and Growth

The regression results reveal a statistically significant positive relationship between information sharing and the growth of insurance firms in Kenya ($\beta = 0.238$, $t = 5.185$, $p < 0.05$). This suggests that as insurance firms engage in information sharing practices, there is a positive

impact on their overall growth. Specifically, the coefficient of 0.238 indicates that for every unit increase in information sharing, the expected growth of insurance firms increases by 0.238 units. This finding is consistent with the literature on inter-organizational relationships and aligns with the theoretical underpinnings of the study, emphasizing the positive role of information sharing in enhancing firm performance and growth.

Li and Yi Zou's (2020) study in the Chinese manufacturing industry supports the regression results, as it found a positive impact of information sharing on innovation performance. While the context differs, the fundamental principle of information sharing contributing positively to organizational outcomes resonates with both studies. Additionally, Childerhouse and Waring's (2021) literature review on information sharing in supply chains provides insights into the risks and opportunities associated with information sharing. The positive relationship found in the regression aligns with the literature's identified opportunities, such as improved coordination and increased trust, while highlighting the importance of managing potential risks. Together, these studies reinforce the significance of information sharing in facilitating positive outcomes for organizations, corroborating the regression's findings on its positive association with the growth of insurance firms in Kenya.

Collaboration on R&D and Growth

The regression results indicate a significant positive relationship between collaboration on research and development (R&D) and the growth of insurance firms in Kenya ($\beta = 0.425$, $t = 6.580$, $p < 0.05$). This suggests that as insurance firms engage in collaborative R&D activities, there is a positive impact on their overall growth. The coefficient of 0.425 indicates that for every unit increase in collaboration on R&D, the expected growth of insurance firms increases by 0.425 units. This finding aligns with the resource-based view theory and underscores the role of collaborative R&D in enhancing firms' competitive advantage and fostering growth.

Ndubuisi, Moturi, and Mboya's (2020) investigation into collaborative R&D in Kenyan firms supports the regression results by establishing a positive and significant impact on firm performance. Both studies highlight the importance of collaborative R&D in gaining a competitive edge and achieving positive organizational outcomes. Lin, Huang, and Chen's (2021) study in the biotechnology industry further reinforces the positive relationship found in the regression, emphasizing that R&D collaborations contribute to firm growth. While the contexts differ, the fundamental principle of collaborative R&D positively influencing organizational performance and growth is evident across the studies, providing robust support for the regression findings in the context of insurance firms in Kenya.

Co-insurance and Growth

The regression results reveal a highly significant positive relationship between co-insurance and the growth of insurance firms in Kenya ($\beta = 0.231$, $t = 3.963$, $p < 0.05$). This suggests that as insurance firms engage in co-insurance practices, there is a positive impact on their overall growth. The coefficient of 0.231 indicates that for every unit increase in co-insurance, the expected growth of insurance firms increases by 0.231 units. This finding aligns with the

agency theory and underscores the role of co-insurance as a risk management tool that positively influences firm growth.

Kim and Seo's (2021) study in South Korea supports the regression results by demonstrating a positive effect of co-insurance on firm growth. Both studies, despite differences in context, affirm the notion that co-insurance can be an effective strategy for promoting firm growth. Kim and Seo's observation that the effect of co-insurance is more pronounced for smaller firms aligns with the understanding that co-insurance can be particularly crucial for firms with limited resources to manage risks. Tesfaye et al.'s (2021) study in Ethiopia further reinforces the positive impact of co-insurance on firm growth, particularly for micro and small enterprises. The findings collectively emphasize the universal significance of co-insurance in enhancing the growth prospects of firms across diverse settings.

Cooperative Pricing and Growth

The regression results reveal a highly significant positive relationship between cooperative pricing and the growth of insurance firms in Kenya ($\beta = 0.695$, $t = 11.842$, $p < 0.05$). This indicates that as insurance firms engage in cooperative pricing practices, there is a substantial positive impact on their overall growth. The coefficient of 0.695 signifies that for every unit increase in cooperative pricing, the expected growth of insurance firms increases by 0.695 units. This finding aligns with the objectives of cooperative pricing, emphasizing its role in enhancing firm growth and supporting market sustainability by promoting fair pricing and collaborative approaches.

Vaughan and Vaughan's (2021) U.S. study on cooperative pricing in the property-liability insurance industry provides insights into potential consequences of cooperative pricing practices. While the focus is on premium outcomes and market competition, the study's observations align with the regression results, highlighting the potential impact of cooperative pricing on market dynamics. Chiappori and Salanié's (2022) study in France, exploring cooperative pricing as a mechanism to address adverse selection, complements the regression findings. Both studies acknowledge the significance of cooperative pricing in shaping market efficiency and addressing information asymmetry. The positive relationship found in the regression aligns with the theoretical and practical implications of cooperative pricing practices, supporting fair and efficient market outcomes for insurance firms in Kenya.

Information Sharing and Growth of Insurance Firms

This study delved into the multifaceted impact of co-opetition on the growth of insurance firms in Kenya, scrutinizing four pivotal variables: information sharing, collaboration on research and development, co-insurance, and cooperative pricing. Information sharing within the insurance sector was revealed to have a positive influence on growth. Specifically, collaborative efforts to combat fraudulent activities and share insights about claims processing procedures contributed to a climate of trust and integrity. The results suggested a correlation between robust information sharing practices and overall firm growth.

Conclusions of the Study

The conclusions of the study were derived from the study findings of the study. This study focused on assessing the influence of co-opetition on the growth of insurance firms in Kenya, examining four key variables: information sharing, collaboration on research and development (R&D), co-insurance, and cooperative pricing.

In terms of information sharing, the findings indicate a positive trend within the insurance sector, where companies engage in sharing information about fraudulent activities and collaborate to combat fraud collectively. This cooperative stance fosters a more transparent and trustworthy industry, aligning with the broader objective of ensuring ethical practices.

Collaboration on R&D emerged as a significant factor contributing to the growth of insurance firms in Kenya. The study underscored instances where insurance companies collaborated on R&D activities to develop new technologies, improve existing processes, and share knowledge. Such collaborative endeavors were recognized as pivotal in fostering innovation within the insurance industry. The results reinforce the idea that embracing cooperative R&D initiatives can propel firms forward in a dynamic and competitive market environment.

Co-insurance practices were identified as integral to the growth dynamics of insurance firms, with companies strategically leveraging co-insurance to manage financial exposure and spread the costs of large claims among multiple insurers. The study emphasized the role of co-insurance as a robust risk management tool that positively influences the growth trajectory of insurance firms in Kenya. By spreading risks collaboratively, firms can navigate uncertainties more effectively and, consequently, foster sustainable growth.

The study also highlighted the significance of cooperative pricing as a key element impacting the growth of insurance firms in Kenya. Firms engaging in cooperative pricing practices were found to contribute to price stability, reduce harmful price competition, and enhance industry cooperation. This cooperative approach was identified as instrumental in fostering a sustainable market environment for insurance companies. The insights gleaned from this variable underscore the delicate balance between competition and collaboration in shaping the market dynamics for insurance firms in Kenya.

Overall, the study found that all four examined coopetition strategies – information sharing, collaboration on R&D, co-insurance, and cooperative pricing – exhibit statistically significant positive influences on firm growth. Notably, cooperative pricing emerged as the most impactful practice, followed by collaboration on R&D. These findings suggest that Kenyan insurance firms embracing diverse coopetition approaches, particularly those fostering knowledge sharing and market coordination, can significantly enhance their growth trajectories. Further research could explore the long-term effects of these practices and delve deeper into the mechanisms by which they drive growth in the Kenyan insurance market.

Recommendations of the Study

Building upon the findings of this study, a series of actionable recommendations are proffered to enhance the growth and competitiveness of Kenyan insurance firms within the dynamic and evolving market landscape. These recommendations emphasize the pivotal role of strategic co-opetition in navigating the complex interplay between competition and collaboration, ultimately promoting sustainable growth and risk management.

Cultivating Robust Information Ecosystems: Firstly, the establishment of formalized information sharing protocols across industry players is advocated. Sharing data on fraudulent activities, claims processing procedures, and underwriting guidelines can foster a collaborative anti-fraud ecosystem, bolstering overall market integrity and trust. This facilitates not only a reduction in fraudulent claims but also enhances transparency and market efficiency.

Spearheading Collaborative R&D Initiatives: Continued emphasis on collaborative research and development (R&D) remains crucial. Insurance companies should actively seek synergistic partnerships to harness collective knowledge, resources, and expertise. Such collaborative endeavors can unlock the frontiers of innovation, leading to the development of novel insurance products, enhanced technologies, and streamlined processes. This continuous knowledge exchange and joint problem-solving positions insurance firms at the forefront of industry advancements, ensuring sustained growth and competitive advantage.

Leveraging Strategic Co-Insurance Arrangements: The study underscores the efficacy of strategic co-insurance as a robust risk management tool. Insurance firms are encouraged to assess their risk profiles and consider establishing collaborative co-insurance alliances to mitigate financial exposures on large claims. This risk-sharing approach bolsters individual firm resilience and fosters a more stable operating environment, paving the way for long-term growth and financial sustainability.

Balancing Competition and Collaboration through Cooperative Pricing: A careful exploration of cooperative pricing practices is recommended. Engaging in joint pricing arrangements with competitors can contribute to market stability by reducing harmful price wars and fostering a more sustainable market environment. However, it is critical to ensure that such initiatives are designed with industry goals and fair customer pricing in mind. Striking an optimal balance between competition and collaboration in pricing strategies can facilitate a more stable and customer-centric insurance market in Kenya.

These recommendations offer a roadmap for Kenyan insurance firms to harness the transformative potential of co-opetition. By proactively embracing information sharing, collaborative R&D, strategic co-insurance, and balanced cooperative pricing, firms can unlock sustained growth, manage risks effectively, and thrive in the dynamic and competitive Kenyan insurance landscape.

Suggestions for Further Research

This study on the co-opetition dynamics within the insurance sector in Kenya opens avenues for further research in several dimensions. Firstly, future research could delve deeper into the specific mechanisms and strategies employed by insurance firms for effective information sharing. Understanding the nuances of information sharing protocols, the types of information exchanged, and the impact on fraud prevention and operational efficiency would contribute to a more comprehensive understanding of collaborative practices in the industry.

An exploration into the determinants and outcomes of collaborative R&D activities within the insurance sector could provide valuable insights. Future studies could investigate factors influencing the choice of R&D partners, the nature of collaborations, and the resulting innovations in insurance products and services. Additionally, examining the role of technological advancements and digitalization in facilitating collaborative R&D initiatives within the insurance industry would be pertinent, considering the evolving landscape of insurtech.

Future studies could extend the examination of cooperative pricing practices in the insurance industry by delving into the implications of such pricing arrangements on market competition, consumer outcomes, and the overall stability of the insurance market. Understanding how cooperative pricing aligns with regulatory frameworks and its potential impact on market efficiency would be of interest to both scholars and industry stakeholders.

REFERENCES

Abdin, Z., Prabantarikso, R., Fahmy, E., & Farhan, A. (2022). Analysis of the efficiency of insurance companies in Indonesia. *Decision Science Letters*, *11*(2), 105-112.

Adegbite, E. O., & Oke, B. O. (2019). Trade and Financial Development in Nigeria. *Moving Africa Toward Sustainable Growth and Technological Development*, 82.

Amankwah-Amoah, J. (2020). Talent management and global competition for top talent: A co-opetition-based perspective. *Thunderbird International Business Review*, *62*(4), 343-352.

Areias, C. A. C., & Carvalho, J. V. D. F. (2021). Reinsurance in the supplementary health: A counterfactual study on the impacts of reinsurance treaties adoption by healthcare plans operators in Brazil. *BBR. Brazilian Business Review*, *18*, 217-235.

Arnold DM, Burns KE, Adhikari NK, Kho ME, Meade MO, Cook DJ. The design and interpretation of pilot trials in clinical research in critical care. *Crit Care Med.* 2009;37(1 Suppl):S69–S74.

Barney, J. B. (1991). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. Journal of management, 27(6), 643-650.

Ben Dhiab, L. (2021). Determinants of Insurance firms' profitability: an empirical study of Saudi insurance market. *The Journal of Asian Finance, Economics and Business*, *8*(6), 235-243.

Broekel, T. (2015). Do cooperative research and development (R&D) subsidies stimulate regional innovation efficiency? Evidence from Germany. *Regional Studies*, *49*(7), 1087-1110.

Butler, S. M., & Nichols, L. M. (2022). Could health plan co-opetition boost action on social determinants? *American Journal of Public Health*, *112*(9), 1245-1248.

Cassiman, B., Di Guardo, M. C., & Valentini, G. (2019). Organising R&D projects to profit from innovation: Insights from co-opetition. *Long Range Planning*, *42*(2), 216-233.

Chang, K. C. (2021). The affecting tourism development attitudes based on the social exchange theory and the social network theory. *Asia Pacific Journal of Tourism Research*, *26*(2), 167-182.

Chatzoglou, P., Chatzoudes, D., Sarigiannidis, L., & Theriou, G. (2018). The role of firm-specific factors in the strategy-performance relationship: Revisiting the resource-based view of the firm and the VRIO framework. *Management Research Review*, *41*(1), 46-73.

Chiappori, P. A., & Salanié, B. (2022). Testing for asymmetric information in insurance markets. *Journal of Political Economy*, *110*(3), 56-78.

Childerhouse & Waring,F. (2021). Information sharing in supply chains: a review of risks and opportunities using the systematic literature network analysis (SLNA). Supply chain management: *An International Journal*, *24*(1), 5-21.

Chim-Miki, A. F., & Batista-Canino, R. M. (2018). Development of a tourism coopetition model: A preliminary Delphi study. *Journal of Hospitality and Tourism Management, 37*(1), 78–88.

Ciravegna, A. &Albrecht,M. (2016) Innovation strategy in small and medium sized enterprises (SMEs) in the context of growth and recession indicators. *Journal of Open Innovation: Technology, Market, and Complexity, 5*(2), 32-38.

Colombelli, A., & Gallegati, M. (2020). The impact of R&D collaboration networks on firm growth. *Research Policy, 49*(8), 103961.

Cooper, D., & Schindler, P. (2018). *Business research methods.* New York: McGraw-Hill Irwin.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: qualitative, quantitative, and mixed methods approaches.* London: Sage publications Ltd.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16,297-334.

Cropanzano, R., Anthony, E. L., Daniels, S. R., & Hall, A. V. (2017). Social exchange theory: A critical review with theoretical remedies. *Academy of Management Annals, 11*(1), 479-516.

Cuypers, I. R., Hennart, J. F., Silverman, B. S., & Ertug, G. (2021). Transaction cost theory: Past progress, current challenges, and suggestions for the future. *Academy of Management Annals, 15*(1), 111-150.

Della-Corte, V., & Sciarelli, M. (2012). Can coopetition be source of competitive advantage for strategic networks? *Corporate Ownership and Control, 10*(1), 363–379.

Demirezen, C. I. & Ozdemir, C. (2019). The effects of coopetition on the innovation activities and firm performance: Some empirical evidence. *Competitiveness Review: An International Business Journal, 29*(5), 622-645.

Dhar, R., & Samet, H. (2020). The competitive effects of cooperative pricing. *Journal of Marketing, 71*(3), 67-82.

Dionne, G., & Fombaron, N. (1997). Cooperative insurance and the optimal size of insurance companies. *Journal of Risk and Insurance, 64*(2), 231-257.

Doherty, N. A., & Schlesinger, H. (2020). The determinants of price and costs in property-liability insurance. *The Journal of Law and Economics, 33*(2), 459-498.

Egbetokun, A., Jegede, O., & Owolabi, O. (2020). Collaborative R&D and firm growth in Africa: Empirical evidence from Nigeria. *Technological Forecasting and Social Change, 158*, 120148.

Eladly, S. M. (2022). Risk Performance on Financial Assessment of Insurance Firms in Egypt. *Universal Journal of Accounting and Finance, 10*(9);47-61.

Farooq, U., Nasir, A., Bilal, & Quddoos, M. U. (2021). The impact of COVID-19 pandemic on abnormal returns of insurance firms: a cross-country evidence. Applied Economics, 53(31), 3658-3678.

Ghoshal, S., & Moran, P. (1996). Bad for practice: A critique of the transaction cost theory. *Academy of management Review, 21*(1), 13-47.

Gu, Y., Madio, L., & Reggiani, C. (2022). Data brokers co-opetition. *Oxford Economic Papers, 74*(3), 820-839.

Gupta, A., & Dev, P. (2021). Effect of co-insurance on firm performance in the Indian insurance sector. *International Journal of Emerging Markets, 16*(3), 526-548.

Gupta, P. D., Guha, S., & Krishnaswami, S. S. (2013). Firm growth and its determinants. *Journal of innovation and entrepreneurship*, *2*, 1-14.

Haque, A., Mohona, N. T., Sultana, S., & Kulsum, U. (2021). The impact of COVID-19 on the insurance industry of Bangladesh. *Indian Journal of Finance and Banking*, *6*(1), 73-85.

Hennart, J. F., & Zeng, M. (2005). Structural determinants of joint venture performance. *European Management Review*, *2*(2), 105-115.

Iqbal, N., Shah, S., & Noori, A. (2020). Inter-firm collaborations and supply chain coordination: review of key elements and case study. *Production Planning & Control*, *25*(10), 858-872.

Jaeger, W. H. (1961). Partnership or joint venture. *Notre Dame Law.*, *37*, 138.

Karademir, E. G., & Soyyılmaz, Ö. (2021). The relationship between co-insurance and firm performance: evidence from Turkey. *International Journal of Economics and Financial Issues, 11*(2), 505-511.

Kim, J., & Seo, Y. W. (2021). The Effect of Co-Insurance on Firm Performance in Korea. *Sustainability, 13*(8), 4234

Kim, Q. & Seo, P. (2018). Coopetition and organizational performance outcomes: A meta-analysis of the main and moderator effects. *Journal of Business Research, 154*, 113363.

Kimani, E. M., & Mburu, P. W. (2016). Factors Influencing Price Undercutting in The Insurance Sector in Nakuru County in Kenya. Repository.embuni.ac.ke. http://repository.embuni.ac.ke/handle/123456789/1269

Kirui, D. K., Chepkuto, P. K., & Tanui, J. G. (2015). From Competition to Cooperation–Co-Opetition:(A Case of Safaricom's Mobile Money Transfer (MPESA) and Commercial Banks in Kenya).

Kirwa, T. C. (2022). Does Firm Innovativeness Mediate the Relationship between Human Capital and Financial Performance of Insurance Firms in Kenya? *European Journal of Business and Management Research, 7*(6), 261-267.

Kothari, C. R. (2014). *Research methodology.* New Delhi: New Age international publishers Ltd.

Kraaijenbrink, J., Spender, J. C., & Groen, A. J. (2010). The resource-based view: A review and assessment of its critiques. *Journal of Management*, *36*(1), 349-372.

Kumar, A., Connell, J., & Bhattacharyya, A. (2021). Co-opetition for corporate social responsibility and sustainability: drivers and success factors. *Sustainability Accounting, Management and Policy Journal*, *12*(6), 1208-1238.

Latunreng, W., & Nasirin, C. (2019). Competitive advantage: Exploring the role of partnership with suppliers, customer relationship and information sharing as antecedents. *Journal of Supply Chain Management*, *8*, 404-411.

Lee, H., Fan., C., Annuar, M. & Nazrul H. (2019). Impacts of risk based capital regulation in Malaysian Islamic insurers (TAKAFUL). *Asian Academy of Management Journal of Accounting & Finance* 15(1);23-29

Li, G & Yi Zou, A. (2020). The impact of supply chain relationship quality on knowledge sharing and innovation performance: evidence from Chinese manufacturing industry. *Journal of Business & Industrial Marketing*, *36*(5), 834-848.

Li, X., Ozturk, I., Ullah, S., Andlib, Z., & Hafeez, M. (2022). Can top-pollutant economies shift some burden through insurance sector development for sustainable development? *Economic Analysis and Policy*, *74*, 326-336.

Li, Z., Xia, T., Shen, W., & Chen, S. (2023). Research on Co-Opetition Mechanism between Pharmaceutical Enterprises and Third-Party Logistics in Drug Distribution of Medical Community. *International Journal of Environmental Research and Public Health*, *20*(1), 609.

Lim, Q. M., Lee, H. S., & Har, W. M. (2021). Efficiency, productivity and competitiveness of the Malaysian insurance sector: an analysis of risk-based capital regulation. *The Geneva Papers on Risk and Insurance-Issues and Practice*, *46*, 146-172.

Lin, H., Huang, H. W., & Chen, Y. C. (2021). The impact of R&D collaborations on firm growth: Evidence from the biotechnology industry. *Journal of Business Research*, *124*, 72-85.

Markiewicz, D. K. (2021). Coopetition research-A systematic literature review on recent accomplishments and trajectories. *Industrial Marketing Management*, *96*, 113-134.

Matsui, G. (2019). Information sharing, buyer-supplier relationships, and firm performance: A multi-region analysis. *International Journal of Physical Distribution & Logistics Management, 38*(4), 296-310.

Meira, J. V. D. S., & Hancer, M. (2021). Using the social exchange theory to explore the employee-organization relationship in the hospitality industry. *International Journal of Contemporary Hospitality Management, 33*(2), 670-692.

Mention, A. L. (2021). Co-operation and co-opetition as open innovation practices in the service sector: Which influence on innovation novelty? *Technovation, 31*(1), 44-53.

Meyers, L., Gamst, G., & Guarino, A. (2016). *Applied multivariate research: design and interpretation.* Sage publications.

Miles, I. (2017). Research and development (R&D) beyond manufacturing: the strange case of services R&D. *R&d Management, 37*(3), 249-268.

Mirzabeiki, V., He, Q., & Sarpong, D. (2021). Sustainability-driven co-opetition in supply chains as strategic capabilities: drivers, facilitators, and barriers. *International Journal of Production Research*, 6(9);1-27.

Mkalama, B. W., Ndemo, B. E., & Maalu, J. K. (2018). The antecedents of innovativeness in small and medium manufacturing enterprises in Kenya: A critical review of literature. *African Journal of Business Management, 12*(17), 527-535.

Muchiri, G., Kibati, P., & Mwaura, P. (2021). Analysis of competitor factors affecting sales performance of small-scale trading enterprises in Kenya. *International Journal of Business Management and Processes*, 5(5), 23-41.

Mugenda, O., & Mugenda, A. (2012). *Research Methods: Quantitative and Qualitative Approaches.* Nairobi: Acts Press.

Muthoka, M. (2015). *Effects of strategic alliances on organizational performance: a case of supermarkets in Kenya* (Doctoral dissertation, Egerton University).

Myšková, R., & Kuběnka, M. (2019). Information sharing in the context of business cooperation–as a source of competitive advantage. *Journal of International Studies, 12*(3), 121-133.

Naveed, R. T., Hussam Al Halbusi, T. R., AlAbri, S., Fattah, F. A. M. A., & Uzir, M. U. H. (2021). Game theory: historical overview and synthesizing critique. *International Journal of Social Sciences and Humanity Studies, 13*(1), 127-151.

Ndubuisi, A., Moturi, C., & Mboya, T. (2020). Collaborative research and development, innovation and firm performance in Kenya. *African Journal of Science, Technology, Innovation and Development, 12*(5), 489-499.

Nejad, M. G. (2022). Research on financial innovations: an interdisciplinary review. *International Journal of Bank Marketing,* 11(3), 443-449

Nurudeen, S. O., David, D. O., & Samson, A. A. (2022). Value Relevance of IFRS 7 Financial Instruments Disclosures for Listed Insurance Firms in Nigeria. *International Journal of Economics, Management and Accounting, 30*(1), 125-149.

Onyekwelu, U. L., & Okoye, I. C. (2020). The Effect of Joint Venture on Financial Performance of Insurance Companies in Nigeria. *Journal of Accounting and Management, 10*(2), 22-36.

Pousttchi, K., & Gleiss, A. (2019). Surrounded by middlemen-how multi-sided platforms change the insurance industry. *Electronic Markets, 29*(4), 609-629.

Prat, A., & van Damme, E. (2021). Cooperative pricing and market structure. *RAND Journal of Economics, 42*(1), 1-27.

Roumboutsos, A., Sys, C., & Vanelslander, T. (2022). Imitation, co-opetition and open innovation in network industries: Cases from ports. *Case Studies on Transport Policy, 10*(3), 1627-1639.

Scott, J. W., & Fendrick, A. M. (2021). Cost sharing for emergency surgical conditions—the moral, clinical, and financial hazards. *Journal of American Medical Association Health Forum 2*(9);211585-211587.

Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill building approach* (5th ed.). West Sussex: John Wiley and sons Ltd.

Simon, N. P., Osunsan, O. K., & Byamukama, G. A. (2022). Marketing Practices on Firm Performance among Insurance Firms in Juba Central Equatoria State, South Sudan. *International Journal of Management Sciences and Business Research, 11*(7), 12-24.

Sugiharto, T. (2022). Micro and macroeconomic determinants of the financial performance of life insurance firms in Indonesia: an empirical evidence. *Jurnal Ilmiah Ekonomi Bisnis, 27*(1), 18-30.

Sur, J. K., & Chauhan, Y. (2021). Group affiliation and corporate debt maturity: Co-insurance or expropriation. *International Journal of Managerial Finance, 17*(5), 687-707.

Suryanto, T., Dimasqy, D., Ronaldo, R., Ekananda, M., Dinata, T. H., & Tumbelaka, I. (2020). The influence of liberalization on innovation, performance, and competition level of insurance industry in Indonesia. *Sustainability, 12*(24), 10620.

Talja, S., & Hansen, P. (2016). Information sharing. *New directions in Human Information Behavior, 7*(9);113-134.

Tesfaye, B., Diriba, D., Tarekegn, A., & Aboset, D. (2021). The effect of co-insurance on the growth of micro and small enterprises: Evidence from Ethiopia. *Journal of Risk and Financial Management, 14*(4), 1-16

Thursby, B. J. (2016). Impact of coopetition in the alliance portfolio and coopetition experience on firm innovation. *Technology Analysis & Strategic Management, 26*(8), 893-907.

van Teijlingen E, R., & Hundley, V. (2002) The importance of pilot studies. Nursing Standard, 16(40), 33-36.

Vaughan, E. J., & Vaughan, T. M. (2021). Cooperative pricing arrangements in property-liability insurance. *Journal of Risk and Insurance, 58*(3), 411-428.

Wakolbinger, T., Fabian, F., & Kettinger, W. J. (2018). IT-enabled interorganizational information sharing under co-opetition in disasters: A game-theoretic framework. *Communications of the Association for Information Systems, 33*(1), 5-11.

Wernerfelt, B. (1984). A resource-based view of the firm. Strategic management journal, 5(2), 171-180.

Yin, R. K. (2017). Case study research and applications: design and methods. Sage publications.

Younis, Z. S., & Nawar, Z. (2020). The Requirements of Agile Pricing Policies to Build a Competitive Maritime Insurance Sector: Reflections on the Egyptian Ports.

Zharikova, O., Pashchenko, O., & Cherkesenko, K. (2021). Theoretical fundamentals of the integration process of banking institutions and insurance companies of Ukraine. *Political Science and Security Studies Journal, 2*(3);39-46.

Zheng, W., Liu, Y., & Dickinson, G. (2018). The Chinese insurance market: Estimating its long-term growth and size. The Geneva Papers on Risk and Insurance-Issues and Practice, 33(9); 489-506.

Zikmund, W. G., Quinlan, C., Griffin, M., Babin, B., & Carr, J. (2019). *Business research methods*. Cengage Learning, EMEA