

**FINANCIAL SYSTEM DYNAMICS AND FINANCIAL PERFORMANCE OF  
INSURANCE COMPANIES IN KENYA**

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**SEPTEMBER, 2023**

## **DECLARATION**

### **Declaration by Candidate**

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

.....

Signature

Date

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### Declaration by supervisor

I confirm that the work in this research project was done by the candidate under my supervision

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## **DEDICATION**

This research work is dedicated to my wife Leah, my children; Lisa, Myles and Eli with gratitude.

## **ACKNOWLEDGEMENTS**

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## OPERATIONAL DEFINITION OF TERMS

**Financial Performance:** Is a measure of a company's output as assessed against its intended output which includes overall profitability. Financial performance was measured by Return on Assets for each insurance Company.

**Financial System Dynamics:** Institutional framework changing aspects that shape financial transactions in terms of market information, technological advancement and product differentiation based on customer oriented goods and how operations are affected by changes in mode of product/service delivery. The construct was indicated by financial technology, market information and new insurance products.

**Financial Technology:** Is technological innovation that supports services to provide user friendly, automated and customer oriented services. Adoption of financial technology was measured by the number of underwriting transactions and policies sold through mobile and internet.

**Market Information** Is information written, oral, electronic or other form relating to insurance markets, including market data, research, analysis, forecasts and commentary that may affect the price, quantity or any other aspect of underwriting transactions. This study used active research and development, feedback channel, use of social media platforms and digital technology as indicators of market information.

**New Insurance Products:** Continuous modifications of insurance products to suit customer needs and introduction of other new products to meet growing market demands. The construct proxies used in this study were the number of new insurance products introduced by a firm in a year or re-

packaging and improvement of insurance products to appeal to more clientele.

## **LIST OF ACRONYMS AND ABBREVIATIONS**

<b>AKI</b>	Association of Kenya Insurers
<b>AMH</b>	Adaptive Market Hypotheses
<b>IRA</b>	Insurance Regulatory Authority
<b>RBT</b>	Resource-Based Theory
<b>ROA</b>	Return on Assets
<b>TAT</b>	Technology Acceptance Theory

## ABSTRACT

Globally, the insurance industry has been faced by multiple challenges that threaten business profitability and survival. Increased competition for example impends the industry attractiveness and lessens profitability. This puts pressure on insurance providers to take the initiative and develop solutions that work well by taking proactive approach to changes that are both predicted and actual in the new market realities. Adapting to the new changes in market must correspond to company's strategic imperatives, whether they are to enhance customer experience or increase operational efficiency and profitability. The purpose of the study was to assess the effect of financial system dynamics on financial performance of insurance companies in Kenya. The study was guided by the following three specific objectives: to establish the influence of financial technology on financial performance of insurance companies in Kenya; to determine the effect of market information on the financial performance of insurance companies in Kenya and to assess the effect of new insurance products on the financial performance of insurance companies in Kenya. The study was conducted through explanatory research design. The study conceptualized a relationship between financial system dynamics and insurance performance through the theoretical lens of Adaptive Market Hypotheses and also guided by technology acceptance model, contingency and resource based as the underpinning theories. The study population comprised of 56 registered insurance companies as per IRA (2021). Since the population was small, a census was considered for this study. Primary data was collected by a semi-structural questionnaire sent through emails and hand delivery as secondary data was gathered for five years from 2017-2021 from Insurance regulatory authority and individual insurance companies and analysed by SPSS-2021 version, data was presented in tables and figures. Correlation results indicated weak association among all the study variables. Regression results revealed that financial technology have a significant effect on financial performance of insurance companies in Kenya. Market information was found to have significant but inverse effect on financial performance ( $p < 0.05$ ); findings indicated a statistically insignificant effect of new insurance products on the financial performance of insurers ( $p > 0.05$ ). Findings of this study are beneficial to managers and scholars by offering direction in the managerial practice, policy and contributing to theoretical discourse.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the Study**

In the emerging markets and Africa in particular, lots of challenges for insurance industry are manifested. Most of challenges are region specific aspects that have affected financial performance of insurers. The most delicate issue in the selling of insurance stands out, and variances in insurance product prices cause confusion to clients leading to avoidance of purchasing insurance (Liebenberg, & Sommer, 2008). These factors have resulted to diminishing profitability in the insurance industry especially in the emerging economies. Shrinking profits have hindered the insurers from meeting shareholder obligations leading to exit from the market and acquisitions. Still, the insurance sector has consistently reported losses that constrain their short term and long term survival.

The insurance sector has experienced numerous changes since its inception, both revolutionary and evolutionary in nature, which have resulted in key turning points in the way insurance activities have been carried out, with the core aim of improving profitability (Berger & DeYoung, 2016; Artikis Mutenga, & Staikouras, 2018). There are a number of forces which make an insurance system extremely complicated and can have a long-term adverse impact on returns (Bloom & Van Reenen, 2010). In pursuit to offer an organized protection of property values and human lives, insurance system has ventured many avenues to survive market dynamics while protecting businesses and households from risks and uncertainties (Angima, 2017; Che & Liebenberg, 2017). Globally, the insurance industry has been faced by multiple challenges that threaten business profitability and survival (Harrisvg & Emilio, 2016).

Increased competition for example impends the industry attractiveness and lessens the profitability of the sector players. It puts pressure on insurance providers to take the initiative and develop solutions that work well by taking the proactive approach to changes that are both predicted and actual in the new market realities. Adapting to the new changes in market must correspond to company's strategic imperatives, whether they are to enhance customer experience or increase operational efficiency and profitability. In every situation, insurers must reevaluate their strategies and operational models (Agbenyo, 2020).

According to Association of Kenya Insurers (2019), across the globe, consumers have been well immersed in the digital world especially post covid-19 and are now habituated to highly refined online experiences. Insurance firms are at a loss due to clients' rising demands for personalized communications and exceptional experiences hence need to respond to this new reality and adapt into the shifting markets (Agbenyo, 2020). Online sales are becoming more commonplace as products and services to customers need to be made more autonomous. Shifts in the market have a cost and therefore a return is expected which means, for insurers to move forward digitally at the lowest cost there is a need for balancing act so as to retain the existing clients and still reach new ones (Liebenberg & Lin, 2019). From the view point of Arkadiy (2020), insurers must ensure that right products are offered to the correct client, at the right time, using the preferred channel. The insurers can only achieve this through aligning themselves to proper and timely market information to make informed decisions and personalized solutions that meet customers varied needs. Insurers can therefore rely on market information to develop products, and improve business operations and more so reinvent their business (Bergen, & Humph, 2017).

With the changing world, customer behaviour and preference for online transactions, has also become a major modifier of insurance consumption (Arkadiy, 2020). Regular growth in insurance premiums is also cited as a challenge for insurance industry that struggle to maintain progressive and effectiveness policies either due to disconnect in customer expectations or lack of authentic data to inform their business undertakings that address changing market needs (Damanpour & Aravind, 2019).

The Kenyan insurance sector is governed by Insurance Act Cap 487 of the Laws of Kenya and regulated by the Insurance Regulatory Authority (IRA). As per (IRA, 2021), fifty-six insurance companies are registered to undertake life, non-life and composite insurance business in Kenya. The industry is among the key financial sectors in the country and it offers a pivotal role in business and economic progress. Insurance enables continuance of business after occurrence of risks insured against by preventing loss of capital.

In the past, insurance has been distributed through a range of marketing channels such as direct marketing of products to consumers by mail, telemarketing or sales representatives. This notwithstanding, the Kenyan insurance industry has continually encountered challenges which include low penetration, low profitability and competition among others. The industry gross earned premium has been relatively constant over the past 5 years. However, profit before tax was on a decreasing trend from 2016 to 2018 as profits after tax dropped by 61.56% but increased significantly in 2019 then significantly dropped with over 68% in 2020.

While Kenya is comparatively doing better in the insurance industry compared to the East Africa region, the industry is not spared of challenges of the new market realities that have resulted to shrinkage in profitability and low premium growth among others.

Avoidance of insurance services is clearly spelt out as the service provider has only succeeded to penetrate three percent of the population. Despite a large untapped market, the industry has not aligned itself with the new market trends so as to reach out to the large uninsured group. This notwithstanding, the industry continues to compete for the small percentage of already insured clientele. New modifications on how to sell insurance to the right customer at proper time and through the right channel need to be embraced to help the industry to realize steady premium growth (Angima, 2017). Insurance companies who venture into new insurance products and processes that are not informed by market information will be doing so at their own peril.

### **1.1.1 Financial System Dynamics**

Theoretically, financial system dynamics is defined as the shifts or changes on the way market orders are processed largely driven by digitized business operations (Jonah, 2016). According to Bijlsma and Zwart (2013) a financial system dynamics encompass changes in the global, regional, or firm-specific institutions and practices used to facilitate the transactions. Financial system dynamics has the opportunity to introduce more new and globally advanced management approaches, efficient and diverse funds, and financial technology that revitalize global financial system (Chernadchuk, Sukhonos & Shkolnyk, 2017). On the contrary, these dynamics may enhance the risk that a nation's economy faces and the susceptibility of its financial system to outside pressure stemming from global markets (Deren, 2019). But it might also accelerate economic expansion and worsen systemic financial crises in terms of frequency and intensity to local financial service industry.

There is a growing literature on the role of financial markets in the growth process. Yet, little is known about the role of market dynamism frictions, especially when the market structure of the economy is taken into account. Research work by Akoigit, Alp and Peters (2014) postulated that financial market dynamism frictions hamper the expansion of the range of activities of incumbent firms. Technological advancement, declining sales, global movements in the labor and capital markets, variations in the availability of information, and variations in supply and demand are frequently the causes of financial market dynamisms (Harris & Emilio, 2016; Bergen, & Humph, 2017). Financial system dynamics in this study was conceptualized as the institutional framework changing aspects that shape financial transactions and was operationalized through three components; financial technology, market information and new insurance products.

According to OECD (2015), financial technology comprises original items and processes that have undergone significant modification or have been created entirely from scratch. Because of obsolescence of skills, financial technological growth is considered a major factor in bringing about system change, products, and permanent changes in revenues (Wilson, 2014). Financial technology changes can be sparked by dynamics in resource availability due to war or natural disaster such as covid-19 pandemic which has pushed businesses to adapt online and cashless transactions amid existing constraints.

Financial technology adoption is therefore viewed as the act or process of using new idea, or more effective processes or new application of better resolutions that can meet new requirements (Kropp & Zolin, 2017). Organizations that embrace financial technology can easily generate, develop, and adapt to new practice or operational

ideas either as an anticipatory act to control the market, or as a response to the market that can completely change the nature of an organization (Dodgson, Gann, & Salter, 2011).

Aligning with the right financial technological innovation is believed to stimulate growth, improve organizational performance and assure survival of the organization. Many factors at play can either permit or block insurers from grabbing the advantages of financial technology such as, strategy, size, customer and supplier relations, technical capabilities, innovative costs and support (Mbizi, Hove, Thondhlana, & Kakava, 2013). However, financial technology innovation is an economic development moving force. It is a way in which organizations are able to compete in a rapid changing market place (Lilly & Juma, 2014).

Due to the increased global competition, insurers are compelled to find innovative, adaptable, creative, and inventive ways to thrive. This offers a basis for insurers to adopt financial technologies so as to meet delivery schedules, among other business practices with an aim of improving superiority of life and building better, stronger organizational systems. Adoption of technology in business enterprises increase interest, avail resources and accelerate effort (Ndemo, 2015). Financial Technology adoption in particular is vital in developing financial service settings (Doherty & Schlesinger, 2017).

Following prior studies, financial technology was conceptualized in this study as the technological innovation that supports services to provide user friendly, automated and customer oriented services as measured by the underwriting transactions and policies sold through mobile and internet.

Agbenyo (2020) advances market information as that which concern finance market shifts and growth particularly among emerging economies. Agbenyo (2020) further stresses the criticality of organizational receptive to fresh perspectives and well-informed answers to allow actualization of decision-making through skills, ideas, and knowledge combination in different ways. From the analysis of four African countries- Botswana, Ghana, Nigeria, and Zambia- they were found to lack valid information of market structures while most sectors lacked a well managed database system. However, the process of finance sector shift in these countries following familiar standard trends from prior literature or based on widely utilized models of structure change were lacking and the market information remained largely an undressed issue.

On the other hand, Ogbne (2018) revealed organized market information channels were found to play a small role in Brazil and Botswana's recent growth performance, although it did play a significant part in getting them into the middle-income category. Based on the empirical studies, market information adopted could not be directly linked to financial wellbeing of the institutions.

Based on prior study by Melville, Kraemer and Gurbaxani (2019), this study operationalized market information as the written, oral, electronic or other form of information relating to insurance markets, including market data, research, analysis, forecasts and commentary that may affect the price, quantity or any other aspect of underwriting transactions. This study used active research and development, feedback channel, use of social media platforms and digital technology as indicators of market information.

Introduction of New Product is viewed as the process of idealizing a concept to being available to potential consumer for use or production (Clark, & Pressel, 2019). The New Product introduction involves various steps such ensuring that all teams are communicating throughout the process and that all set policies and standards are adhered to. Developing new products provides a means to increase market share, improve sales, venture new markets, and increase revenue streams (Muird, & Kinnie, 2016). Meanwhile redesigning existing products enables costs to be cut, margins to be increased and ultimately more profits to be made. As note by Malik (2017), through adaptation to new business models, a firm can differentiate its products and appeal to a wider range of customers hence increase sales and market share growth. Customer needs keep evolving and this has obliged firms to find ways to deal with the emerging needs and at the same to remain relevantly competitive.

Insurance industry is one of the sectors largely affected by fluctuations in the business environment forcing insurance firms to adapt to market changes to improve their performance (Kozak, 2011). Performance of organizations largely lies on the capability to design products that satisfy customers; however, this cannot be achieved without aligning products with the changing market (Nobert, 2014). It's also paramount for insurance firms to offer new or modify the existing insurance products which are largely enhanced through a well-established and up-to-date market information database among others. While broadly product consumption changes point to intense shift in how an industry, country, or market operates, typically brought on by major economic developments, and population dynamisms, the drive in products system reflects on how businesses are aligning to market expectations to avail products and services to consumers.

The conceptualization of introduction of new products is based on the indicators that were advanced by Topuz and Isik, (2019); Harris and Emilio (2016); Bergen, and Humph, 2017). Past studies have measured new or improved products by the ability of institutions to engage in flexible business models that would present or surpass what the evolving market expects and the effectiveness of organizations in improving and venturing into new products. A study by Topuz and Isik, (2019) assessed adaptation to product demand changes through reliance on customer feedback and expectation that stir continuous improvement. Continuous modifications of insurance products to suit customer needs and introduction of other new products to meet growing market demands were the construct proxies used in this study which included the number of new insurance products introduced by a firm in a year or re-packaging and improvement of insurance products to appeal to more clientele.

### **1.1.2 Financial Performance**

According to Cooperman et al. (2012) financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. Organizational performance is the end outcome of an effort that includes actions in a variety of areas, including marketing, production, economics, and human resources. According to Bassegy and Tapeng (2016), financial performance refers to an organization's overall efforts to meet its objectives, including its survival and meeting employee and customer desires and striving to improve sales growth and profitability. According to Melville, Kraemer and Gurbaxani, (2019), opinions regarding the values offered and received by customers play a role in how well a business performs.

Performance can be defined as a company's capacity to produce activities and results that are deemed acceptable. Though, conceptualization of performance diverge from

researcher focus, still, its measure remain varied (Didin, & Mochamad, 2018). There are various ratios that can be used to gauge an organization's financial stability. The importance of Gross income, Net income, Debt, and asset book value present a robust picture of the financial condition of an organization (Poongavanam, Mohammed & Rengamani, 2017). Performance is a measure of a firm's actual results as assessed against its projected output and is thus related to its overall health over a given time period. Financially, firm performance is habitually denoted as an organizational ability to convert assets to returns (Pasanen, 2013).

Simerly and Li (2000) claim that measuring business performance has presented both academics and practitioners with significant difficulties. Because performance is a multidimensional construct, it's possible that no single index may fully capture how performance relates to the constructs of interest. (Chakrabarti, Singh, & Mahmood, 2007). By concentrating on the four drivers of value-financial, customer, learning & growth, and ultimately internal business processes, Kaplan and Norton (1996) offer a framework for converting vision and strategy into shareholder value. Studies in finance have however contended that, the most accurate indicator of a company's success is its financial performance statistic.

Khrawish (2011) state that there are multitude measures used to assess insurance performance but literature has demonstrated that return on assets is the most probable measure since most insurance companies are privately held and they lack market equity values (Elango & Pope, 2014; Liebenberg & Sommer, 2018). Other measures used in literature are loss ratio, cost-to-income ratio, claims ratio, efficiency ratio, premium growth rates and return on capital (Volkov & Smith, 2015). There exists no basic consensus on the suitability of financial measures. Measures are therefore

validated by availability of data or what the researcher wants to measure (Che & Liebenberg, 2017). The present study uses return on assets that will be observed for a five-year period 2017-2021 as an indicator of financial performance because the measure also controls for differences in company's financial design.

A challenge for the insurance sector is maintaining contact with its clients which call for the need of companies to invest in digitized business processes. The insurance industry in Kenya has not been spared of the global crises that have left many organizations in financial distress. The sector has recorded declining consumption (with penetration ration remaining below 3%) of insurance products that deepened further during the Covid-19 pandemic (IRA, 2020). This notwithstanding, the industry is positioning its products to match customer expectations although the mode of delivery of online products to reach customers is still confined to those that can access internet transactions while the rest rely on the traditional mode. The Kenyan insurance financial performance has been poor with profit before tax either on a decreasing trend or stagnating with profits after tax drop of between 61.56%-68% being recorded in 2018-2020. This is a pointer to a sector where sustainability of profits is not guaranteed despite heavy investment in assets.

Reports on ROA indicated a declining trend of 2.69%, 1.36%, 1.80%, 1.74% and 1.22% in 2017, 2018, 2019, 2020 and 2021 respectively hence face constraints to meet obligations to the shareholders and business failure. The long-term insurers' asset base grew by 13.0% to KES 638.23 billion and largely being funded through shareholders' equity, hence shareholders expect high ROA on their investment. Total general insurance business of 2019 indicated a decline of 1.7% translating to an underwriting

loss of Kes 1.26 billion and incurred claims incurred loss ratio was 67.9% therefore affecting ROA adversely.

### **1.1.3 Insurance Companies in Kenya**

Insurance companies in Kenya are governed by Insurance Act Cap 487 of the Laws of Kenya and regulated by the Insurance Regulatory Authority (IRA). There were 56 insurance companies and five reinsurers operational in Kenya as at December, 2022. 33 of these companies transcribe general insurance business, 18 were in life insurance business while 5 comprised both life and non-life businesses. As a result of IRA establishment in 2006 through the Insurance Amendment Act, several changes in the insurance sector have been witnessed.

Kenyan insurance industry has continued to record a decline in profits and some firms report losses that threaten their survival. Profits after tax had a drop of 61.56%, translated to Ksh3.54 billion down from Ksh9.21billion recorded in 2019. The industry also faces cash flow challenges and are constrained to meet shareholder obligations due to declining ROA recorded in the industry.

### **1.2 Statement of the Problem**

According to a recent publication by Association of Kenya Insurers (2021), the insurance sector profits have remained low with some insurance firms reporting losses hence unable to offer commensurate ROA to investors. Premium growth in Kenyan insurance sector has remained low with about 3% of the population consuming the insurance products hence translating to low sales and low ROA (AKI, 2020). The business volume generated by the Kenya Insurance Industry has consistently remained low with some insurance companies either opting for mergers and acquisitions to improve ROA invested in. In the last five years (2016-2021), the Kenyan insurance

industry profit before tax was on a decreasing trend with profits after tax drop of about 61.56% being recorded in 2018-2020 which had adverse effects on ROA.

According to report by IRA (2021), insurance sector has reported declining ROA of 2.69% in 2017, 1.36% in 2018, and 1.80%, 1.74% and 1.22% in 2019, 2020 and 2021 respectively hence face constraints to meet obligations to the shareholders. Despite declining profits, the insurance industry invests heavily in assets. The long-term insurers' asset base grew by 13.0% to KES 638.23 billion and largely funded through shareholders' equity, hence the concern for declining ROA. In 2018, the insurance industry performance slowed to register a 3% growth as compared to 6.5% in 2017 that resulted to reduction of ROA from 2.69% to 1.36%. In the last 5 years, the lowest ROA (1.22%) was recorded in 2021. Although small increase in ROA was recorded in 2019, still, total general insurance business indicated a decline of 1.7% translating to an underwriting loss of Kes 1.26 billion and incurred loss ratio of 67.9%. In the forth quarter of 2022, general insurance business underwriters reported underwriting loss of KES 3.71 billion from a loss of KES 6.34 billion reported in forth quarter of 2021 hence affecting profits adversely. Thus, the industry is unable to generate sufficient returns to recover the high investment on assets which result to low ROA.

It is therefore important to assess the practical challenges facing the sector as far as growth in premiums and returns are concerned which are critical improving ROA and for overall progress of this important sector. Several studies have previously been done in this area. A report by AKI (2019) highlighted that low product range and lack of innovation, low market awareness and perceived low rate of return for life insurance policies as major hindrances to performance of insurance industry. The report also highlighted cumbersome claim processing procedures, lack of trust in the

insurance industry and expensive premiums as being responsible for consistent poor performance of insurance operators in Kenya that adversely affect ROA.

Conceptually, most of the study carried in the financial service sector have not specifically explored into financial institution changes and financial performance. Although empirical research has attempted to explicate the connection between product innovation and performance, the findings are inconsistent and no agreement has yet been reached (Danneels, 2017). Most studies have singly concentrated on innovation or products as opposed to the wider financial institution dynamics. Studies by Salim and Sulaiman (2011); Damanpour and Aravind (2019) and Ombaka (2014) focused on product innovation, innovation practices and firm resources against performance of insurance companies respectively. As evidenced by the low insurance penetration rate, which is still only 3.5%, the insurance companies need to devise better ways to upturn performance. The majority of the research under examination was conducted in businesses in developed nations including the United States, India and Jordan. These results might not be relevant to businesses operating in Kenya.

Financial technology and new or improved products and performance have not been investigated together and the outcome of remain fragmented with no consensus emerging yet. Eginga (2020) focused on emerging markets customers demand and use of electronic media influence on long run objectives of insurance company industry. The study relied on primary data a surveyed and companies in general insurance only. Current study linked financial technologies and financial performance in the Kenyan context and utilize both primary and secondary data. Jones and Bartlett (2019) analyzed how market information would enrich service delivery in insurance sector

through a document analysis study and focused on feedback channels while this study focused on more variables and gather primary and secondary data for the analysis.

A study by Rafaela and Ortt (2018) assessed how technology adoption impacted on performance of both private and public sectors and analyzed primary data gathered by interview guide and questionnaires, however, evidence from multi-sectors cannot be generalized since private and public sectors have distinct operational features. This study therefore sought to investigate the effect of financial technology, market information and new or insurance improved products on the financial performance in the insurance industry, Kenyan context through an empirical investigation.

### **1.3 Research Objective**

The study was guided by the following general objective and three specific objectives.

#### **1.3.1 General Objective**

The purpose of the study was to investigate the effect of financial system dynamics on financial performance of insurance companies in Kenya.

#### **1.3.2 Specific Objectives**

The study is guided by three specific objectives;

- i. To determine the effect of financial technology on financial performance of insurance companies in Kenya.
- ii. To examine the effect of market information on financial performance of insurance companies in Kenya.
- iii. To assess the effect of new insurance products on financial performance of insurance companies in Kenya.

## **1.4 Research Hypotheses**

The study tested the following null hypothesis;

**H0<sub>1</sub>:** There is no significant effect of financial technology on financial performance of insurance companies in Kenya.

**H0<sub>2</sub>:** There is no significant effect of market information on financial performance of insurance companies in Kenya.

**H0<sub>3</sub>:** There is no significant effect of new insurance products on financial performance of insurance companies in Kenya.

## **1.5 Significance of the Study**

The findings of this study contribute to the theory constructing the field of finance and lengthen the theoretical knowledge frontier in financial market changes and financial performance associations. Although intriguing to academics in terms of potential future research, the conclusions from prior studies on the relationship between financial performance and market changes are inconsistent. The study expands the predictive insights of adaptive markets hypothesis in explain financial market dynamics and its interconnectedness with performance.

The policymakers such as IRA and AKI in the insurance industry gain insights from findings of this study by appreciating the contribution in understanding of constraints that affect the insurance industry's financial performance and device policies that bring the sector to profitability.

The managers of insurance companies can use information from the study findings to guide on the factors that hinder or heighten performance given the role as economic progress drivers. The insurance industry practitioners would also consider the findings

useful in ascertaining better financial technology to improve performance and support operations.

### **1.6 Scope of the Study**

The conceptual scope of the study is the financial performance which is the dependent variable and financial system dynamics which is the independent variable. The financial performance was assessed by ROA while financial system dynamics was measured by three attributes; financial technology, market information and introduction of new or improving the existing insurance products. This study focused on the 56 Insurance companies that are licensed by insurance regulatory authority (IRA) to carry insurance business in Kenya. This study was confined to the people at managerial level who are better placed to provide the required information. The study period was five year covering 2017-2021. The study period was considered appropriate enough to monitor the industry performance and also covers pre Covid-19 and during Covid-19 periods to allow monitor the performance trend. Data was sought from published reports for the insurance companies to analyse financial performance.

### **1.7 Limitation of the Study**

Seeking audience with company managers and other respondents was difficult. In order to address the above challenge, audience was sought through prior arrangement and booking appointment with insurance firm managers to address time constraint. Again suspicions of the respondents when availing the data because of the nature of the insurance companies ownership structure for fear to risk their job could arise. Therefore, to address this, the researcher explained study purpose to the respondents through various authorizations to carry out the study, such as university clearance

letter, clearance from the department, research permit and assuring respondents of confidentiality issues in order to convince them to participate in the research.

### **1.8 Organization of the Study**

This research project is as follows: Chapter one of the study entails the background, the statement of the problem and the objectives of the study. Further the chapter addresses the general objectives, specific objectives and the research questions. Chapter one also provides significance of the study, scope, and the study limitations. Chapter two details the literature review in reflection to the study variables and their theoretical and empirical relationships and the conceptual framework. Chapter three discusses the methodology adopted in this study that includes research design, research philosophy, operationalization and variable measurement, target population, data collection and data analysis. Chapter four details data analysis and presentation while chapter five discussed findings, conclusions and recommendation and directions for future research.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

In this chapter literature was reviewed in accordance to the following study themes; the concepts of financial technology and financial performance, market information and financial performance and new or improved products and financial performance. The theoretical framework that reviewed theories that guide the study as well as the empirical review are discussed in this chapter. The chapter also discusses the summary of literature reviewed and the conceptual framework that depicts the relationship of study variables.

### **2.2 Theoretical Review**

This section presents a review of theories that explains the projected linkage of financial market changes; financial technology, market information and new or improved insurance products and performance. They include; Adaptive Market Hypothesis, Technology Acceptance Model, Contingency and Resource Based theories.

#### **2.2.1 Adaptive markets hypothesis**

Adaptive Market Hypothesis (AMH) was formalized by Lo (2004) based on tenets of efficient market hypothesis (EMH) and behavioral finance theory (BFT), despite appearing to be mutually incompatible, perfect rationality and constrained rationality continue to shed light on how financial markets function, albeit at different sizes and over distinct time horizons. BFT offers a short-term local interpretation of market functioning while the EMH provides a long-term, aggregate account of financial markets. By integrating evolutionary concepts like competition and natural selection to financial interactions, the Adaptive Markets Hypothesis (AMH) proposes a novel

method for the analysis of financial events. According to authors like Malkiel (2003) and Lo, Harry, and Jiang (2008), any ambiguity regarding the efficiency of the market is reduced over the long term because, over larger time horizons, any price inequalities is addressed when anomalies tend to offset one another. The The theory substitutes the notion of satisfaction, a suboptimal outcome, with the notion of resource optimization from neoclassical theory.

Any change in market conditions brought about by technology advancement, market information and introduction of new products may subsequently lead to a shift in conditions. Lo (2004) compared financial markets to system of market participant of different size and form focusing on profits. In accordance with this concept, changes in the composition and quantity of current participants are driven by the availability of profits. As portrayed by Verheyden et al. (2013), the evolutionarily based view of the financial market is consistent with the evolution in efficiency degree over time. Markets effectively process information over the long term, up until a factor that disturbs the equilibrium. The investors ought to adjust to the prevailing market conditions till restoration of a new equilibrium, and in doing so, they occasionally act in ways that, based on prior market conditions, appear to be illogical. Investors become sensible in light of the new market circumstances once equilibrium has been restored, and information is processed effectively.

In the framework of AMH, financial markets level of efficiency fluctuates throughout time in response to changes in the functional, structural, or institutional market features rather than being either absolutely efficient or inefficient. However, there are several conceptual flaws and gaps in this theory (Verheyden et al., 2013). Even though the AMH does not completely explain how financial systems work, it does

offer a more adaptable framework that allow the use of more deviating methods explaining financial system dynamics. As accentuated by Segaland Segal (2008), indiscretions in financial system shifts caused by superficial irrational investors' behavior can be explicated by market information effects.

### **2.2.2 Contingency Theory**

Contingency theory advanced by Lawrence and Lorsh (1967) asserts that because diverse consumer groups have varied needs that are exclusive to them, there is no one ideal approach to manage all companies and that, businesses must thus offer customized goods and services that can positively impact on performance. It's in the argument of Contingency theory that design of the organization and its sub-systems must fit between themselves to enable decision making in regard to introduction or improvement of products and the methods of sourcing for relevant data to aid in organizational processes. The uniqueness of an organization to offer services in tandem with market needs also upsets how an organization stations itself to search for data that informs its activities and ultimate improvement of returns and profitability.

As a guiding theory, it gives explanation on how contingent factors sway function and design of organizations (Zsolt, 2012). Its underlying premise is that no single structure can be applied to all companies and produce universal effectiveness. Alignment to market changes requires a fit between data driven processes, technology and ways to improve or offer new products which are subjected to uniqueness of a given organization so as to enhance performance.

Contingency theory suggests that an appropriate match must be made between organizational factors and the market environment. The outcome of loss of control of the environment is indicated by poor performance. When the leadership is unable to

deal with the environment, the blame is fixed on environmental uncertainty or high competition (Lim et al., 2016). This connection between perceived market uncertainty and performance is typically explained based on ideas from contingency theory (Miller, 2011). Contingency theory assumes that the prevailing market environment poses certain information on processes, resources, or legitimate demands on the organization. These demand forces, in turn, are either met or unmet through the strength of organizational capacity which ultimately lead to different levels of organizational effectiveness. The challenge for the management is to balance orientations on task, teams and how to allocate resources for implementation while wholly addressing industry market influences for the purpose of organizational performance. Organizations may therefore transform in a competitive market by using the appropriate approaches contingent to requirements in the prevailing competitive market conditions (Indermun & Karodia, 2018).

The major pitfall in contingent theory is the fact that it downplays the significant impact that situational elements have on determining an individual's effectiveness organizations (Mullins, 1999). The situational theories are a result of this constraint as projected by (Yetton, 2004) where emphasis was shifted away from the one most effective approach to cause context-sensitive problems. The theory also fails to indicate unequivocally how best to select a fit between the contingent factors.

Organizational outcomes are the result of a match between adaptation of financial technology, embrace of data driven processes and efforts to introduce new and improved products to meet market demands which yields higher organizational performance. Whatever works in one insurance company may not essentially function

in another company thus industry is hypothesized to explore and rejoin to their situations so as to attain their anticipated goals.

### **2.2.3 Technological Acceptance Model**

The proponent of technology acceptance theory was Davis in 1986. The theory explains acceptance of technology at organizational level. The theory is premised on Ajzen-Fishbein theory of reasoned actions, which explains that attitude and subjective form of users are the main influencers of their behaviors (Priyanka & Kumar, 2013). Baker (2012) explains that the apparent usefulness and ease of use are the two factors that influences technology acceptance. The two constructs determine the benefits that accrue to the user on using the technology. From the viewpoint of Venkatesh and Davis (2000), the extent to which a given technology will improve performance is known as perceived utility, the adopting organization whereas PEOU construct is derived from Bandura's Self-Efficacy theory (1982) and is defined as the judgment of how well an adopter believes adopting target technology would be free of effort. These factors determine users' attitude towards new or improved technology. Attitude determines behavior which in turn influences acceptance and actual usage.

Researchers have considered TAM as robust, powerful and parsimonious theory that explains users' adoption of new technologies. It has been applied and validated in many empirical studies and proven statistically reliable. However, the theory has been criticized for not reflecting the variety of user's environment and constraints in fast changing markets (Kathreen & Yalden, 2017). Priyanka and Kumar (2013) observed that technology acceptance model is ease to use because it considers only two variables. However, its simplicity has been its biggest weakness.

This theory has implication for this study. One of the factors suggested by the theory that influences acceptance is the perceived usefulness. Financial technology adoption will be useful to an insurer if it improves its efficiency and financial performance. It is a key determinant of whether an insurance company will accept or reject a change in market arrangements. Customers and insurance' staff would readily adopt an innovation if it is easy to understand and use. Insurers would invest in training of personnel and users on the new financial technology. The initial cost of investment would adversely impact the financial performance. However, when the innovation is diffused, efficiency is enhanced leading to improvement of performance. The theory assumes that adoption of financial technology may have positive or negative relationship with performance depending on the users.

#### **2.2.4 Resource Based Theory**

The foundations of the Resource-Based Theory (RBT) can be traced in Penrose's fundamental work from 1959, which was a firm growth theory, and Wernerfelt's follow-up work from 1984, which was a performance theory. The resource-based strategy emphasizes the connection between assets, long-term competitive advantage, and higher financial results. Resources-based perspective theory views a corporation as a collection of resources, both real and intangible, and projects resources as anything beneficial that an entity utilizes to carry out its performance plans.

The theory contends that better performance results from resource deployment (Kraaijenbrink et al., 2010). According to the notion, a firm's own and distinctive heterogeneous resources-rather than market and sector-specific factors- are what drive growth. It creates a solid framework that, when viewed in terms of resources, supports an entity's existence and makes connections to products and market operations.

According to the hypothesis, having more resources encourages a company to grow into other lucrative industries that also require resources.

Under some statuses that RBT conscripts, an entity's endowed resources become a key factor in sustaining high returns in due course. These include obstacles to entry into the market, positioning resources as a barrier, and charging reduced service costs while optimizing profits (Alhassan & Tetteh, 2017). This reasoning also applies to the distribution and spreading of fixed expenses, skills, and technologies among numerous company lines. Additionally, the idea contended that resources spur economic expansion if a better or novel application for currently idle resources can be found, demonstrating how resource utilization leads to improved financial performance (Greene et al., 2015). Several research has already sought to elucidate the outstanding impact of resources on financial performance. Proponents of RBT argue over time, resource availability and deployment techniques increased productivity and produced greater financial results (Mehra, 2006).

According to Barney and Peteraf (2003), RBT is a reliable theory of superior firm performance. If the premise of resource immobility and heterogeneity is accurate, the theory explains why certain businesses are able to utilize their resources to gain a genuine competitive advantage over their rivals. Tang and Liou (2010) claim that a firm's corporate entity is made up of all of its resources, and that firms with better resources may produce output more effectively than those with limited resources.

Therefore, RBT guided on prediction of financial technology, data driven processes and new products linkage to the financial performance concept. Also included in the theory is how to manage resources over time and how the market interacts with product mix actions to improve financial success. Resources used by insurers include

both physical and intangible assets, as well as owned, controlled, immovable, and special resources like personnel, data, marketing, and finances. Utilizing the potential synergies resulting from the operations, support, and competences of the insurer could result in a long-lasting competitive advantage and, consequently, superior financial performance.

This theory however seems more attractive and logically appealing to the concept of financial performance in the context of the insurance industry is still underdeveloped. Based on the justifications for conducting this study, it is anticipated that the study's findings will help to validate and recommend RBT in the context of the emerging market, and specifically the case of the Kenyan insurance industry. Based on these arguments, because the availability of resources stimulates research, the theory predicts favorable association with the study factors. Guided by RBT, the insurers can venture into financial technology, source for data to inform decisions and venture into new products or modify the existing ones in a changing market using shared resources, which in turn enhances insurance financial performance.

## **2.3 Empirical Review**

This section reviewed literature with regard to study objectives. Literature is reviewed on the effect of financial technology on financial performance; market information and financial performance; and new or improved products and financial performance and the knowledge gaps identified. This section also entails a summary of literature and a conceptual framework that depicts the study variable relationships.

### **2.3.1 Financial Technology and Financial Performance**

Rafaela and Ortt (2018) sought to investigate how technology adoption impacted on performance of both private and public sectors through primary data gathered by

interview guide and questionnaires. Findings of Rafaela and Ortt (2018) on statistical analysis of the public and private sectors indicate that technology adoption impacts on performance positively. The weight of the evidence points to the use of technology as improving performance, despite the fact that it is expensive, dangerous, and its success is not assured. It supports ideas advanced by resource dependency and contingency theories that organizations are adaptable systems that introduce change to operate efficiently (Kropp & Zolin, 2015). Despite the lack of large sample empirical studies on the connection between organizational performance and technology adoption, evidence from multi-sectors cannot be generalized since private and public sectors have distinct operational features. Comparing private and public sector brings methodology gaps because of inconsistency of data. This study also focuses on insurance context. Performance was measured by opinions from managers and directors while this study utilized financial measures that provide more factual quantitative indicators of performance.

Advances in financial technology, in some parts of the world, has allowed for speedier monitoring and procession of several activities at much lower costs, has made financial services provision more flexible, while repackaging and introduction of new products has improved profitability and encouraged rivalry amongst banking organizations (Berger and DeYoung, 2016; and Artikis *et al.*, 2018). Thus, financial technology is a function of financial market activity, in whereby new combinations occur to shape organizational goals.

Eginga (2020) examined emerging markets customers demand and use of electronic media influence on long run objectives of insurance company industry. The study relied on primary data a surveyed a population of 30 insurance companies in general

insurance business. Findings by Eginga (2020) indicated that the absence of circumstances like economic and political pressures, insurance businesses with creative teamwork and qualified human capital perform better. Early investments in frontier technologies, components, and distribution methods were found to create a complete cost advantage over competitors since first-time customers show high loyalty to innovative businesses by making subsequent purchases. The study however failed to entrench more innovation into insurers operations and strategies and focused on operational perspective. Current study linked financial technologies and financial performance in the Kenyan context.

Study by Omar (2018) examined effects of cyber security on development of digital channels by property-liability insurers in Malaysia. Study adopted a cross sectional design on all property–liability firms registered and were operative for 10 years. Study findings projected a while promoting digital channels, there is an increasing necessity to modify or innovate security approaches to prevent fraud. Additionally, they advanced the customization of products that shield clients from risk of cyber-crime. Findings further revealed that adopting a digital strategy can transform businesses through an innovation that underpins the firm’s business model across key focus areas. The study however focused on cyber security as the frontier for digital development. The current study main focus is financial system changes and how they influence financial performance. The study also explored broad context of both long term and general insurers in Kenya.

From the findings of Pfeffer and Salancik (2003) to achieve a financially viable technology in every dimension, firms must start to do things differently. Whereas some alterations at the cutting edge of progression are experienced globally, they

would also emerge to be adapted to the Kenyan market which can be approached through financial technology keeping up with mobile insurance and maximizing the use of digital channels to improve client interaction.

Through a variety of activities that address industry settings both directly and indirectly with regard to innovation, the ultimate aim of Siras (2016) was to examine how innovation technology is converted into more actual new business activities in the British insurance markets. Data was gathered through document analysis for 10 years. The findings showed that insurers needed to modify their market strategy, digitalize systems, and restructure their business operational models so as to be more customers centric. It was determined that finding ways to enhance data analytics across the board was important, to guarantee a customer-centric approach and improve operational activities like underwriting and claims administration. Building digitally connected distribution models was found to be of particular importance as remote work and virtual operations became the standard across the sector, ensuring a smooth client experience. Current study broadly looked at the financial system dynamics and their effects on financial performance, thus conceptual gaps. The study was carried out in a developed financial market that could have different operational features from an emerging market like Kenya, hence contextual gaps.

Oyeyinka and Lal (2004) evaluated the effect of financial technology and advancement in the insurance sector impacted on competitiveness. According to findings by Oyeyinka and Lal (2004), it is evident that new technology has been and continues to be essential for the growth of all economic sectors, both in terms of increasing productivity and resource utilization effectiveness. Financial technology also aids in enhancing the use of rapid, and comprehensive decision-making at the

policy level, information flow, and entire planning. Findings however did not provide conclusions on whether financial technology continues to be demanded by the competitive need in a global environment. In addition, embracing of financial technology by organizations positively adds towards augmenting competitiveness within business setting (Republic of Kenya, 2004). The study focused on financial technology and competitiveness whereas this study focused on broader financial system dynamics and its influence of performance.

### **2.3.2 Market Information and Financial Performance**

Rangarajan (2019) examined market signals on development of competitive strategy in Indian insurance sector using primary data for five-year study period. The study findings revealed that recognizing and being accurate when interpreting market signals is crucial, particularly when developing a competitive strategy, and interpreting signals from competitor activity is a crucial addition to competitor analysis. To effectively analyze signals, one must first create a baseline competitor analysis; assumptions about the market, existing capabilities and strategies. Competitors frequently offer commentary on market conditions, including projections of demand, prices, capacity in the future, and the relevance of external changes presumably adopted by firms charting own course toward better performance. The insurance sector is often characterized by ambiguous undertakings concerning size of the prospective market, the amount of money and time needed to tackle technology issues, and the distribution methods and target market segments that are being prioritized.

As supported by findings of Teomp et al. (2017) when companies succeed in implementing novel marketing strategies for their goods, they enhance market demand

across industries, increase product distinctiveness, and drive down a company's unit costs. The study focus was market signals. Conceptually, this study will focus on financial market changes measured by three attributes and financial performance. The current study was carried out in a Kenyan context that has different operational features from Indian insurance markets. This study incorporated both primary and secondary data to overcome common method bias.

Through a reliable management information system that timely reports and tracks its actions, insurance companies need to promptly identify the activities of their clients. Firms hence need a client follow-up to transfer any relevant message to customers in a appropriate manner. From findings of Ledgerwood (2019), follow-up procedures encompass regular visit to the client to deliberate customer issues and deciding on correct actions and instituting suitable communication channels for clientele. Availability of data enables consolidation of strategies that involve paring the services offered or the market being served through divestment, pruning, retrenchment and harvesting. To improve customer experiences through products, enhanced information, and service delivery, engagement with underserved customers must be elevated to a new level. Sector growth into underserved markets aids in readjusting the competitive environment from adverse dynamic that depends on stealing clients and customers from rivals.

Jones and Bartlett (2019) studied market information would enrich service delivery in insurance sector. Findings by Jones and Bartlett (2019) emphasized that investment in market information can lead to reinterpretation and distribution of prevailing research to offer a more insurance directed insurance oriented input, augment and update research conducted as a collective public good. Findings underscored the importance

of embracing fresh field iterative techniques to improve communication products and using the same techniques for customer experience research. Engaging insurance companies over information delivery methods, formats, and content can be far fetching and can upturn performance. The study concentrated on feedback channels whilst this study focused on the entire process that is informed by customers and business/market environment data processes and examine its effect on financial performance using primary and secondary data.

Study by Asemokah (2019) focused on importance of market context in appreciating the insurance sector, it's development, and directions. The study findings indicated that there is no sole precise development path. Findings further revealed importance of considering the industry structural and macroeconomic conditions as a whole and the stage of development of the financial system. The analysis data examined a cross-country comparative that are useful and informative but not definite. To ascertain the analytical framework for the evaluation, the study looked at a variety of data sets. That notwithstanding, innovation cannot fully explain the complexity of the factors that determine survival on its own and productivity hence the need to incorporate more variables that may influence performance effects.

### **2.3.3 New Products and Financial Performance**

A study by Ayyagari et al. (2019) examined core service levels and their effect on customer expectations as per industry standards. According to their study findings, the core package levels that address standards of industry and customer expectations is always visibly outlined. The findings further revealed that optimization of use of possessions against demands of customers and proactive focus based on new products and services development can bring mixed sentiments. In reflection to service

delivery, an enterprise must remain centered around client service. An understanding of the entities basic processes and functions and how they interact as well as relating them to what the customer expects is among the most challenging issues in the non-manufacturing industry (Rafaela, & Ortt, 2018). From the perspective of globalization, it is evidenced by numerous researches that have demonstrated the link between business and bettering insurers' operational effectiveness e.g. (Capar & Kotabe, 2013) and Hunter (2018). However, globalization has limitations in that some markets are expensive to enter, businesses are complicated, and more product customization is required.

Insurance firms may improve their client experiences in a variety of ways (Stone, 2019). These services are sometimes viewed as a bonus when purchasing a company's products (Burns, 2017). Customers have the propensity to feel more favorably about a specific brand of insurance with which they have previously had favorable dealings before, during, and after the sale has been concluded, according to Hunter (2018). Customers now want services on time that is adaptable, and accessible. At the product level, the trend of insurance and other financial services converging is also evident. Alternative risk transfer methods have become more common as a result of the insurance and reinsurance markets' capacity being restricted as a result of the probability and severity of adverse occurrences' growing (Njegomir, 2016). In addition, opposing events for the development of substitute products result to increase of capital requirements.

Development of new products or modification of the existing ones has demonstrated no material flaws other than relatively high structure costs and capital outlays. For instance, Emzel et al. (2021) contend that the four components of the marketing mix

(product, place, promotion and distribution) are probable to have an impact on how customers perceive the company and thus their consumption patterns. Mannu and Reece (2019) also revealed that Customers judge a product's value based on its benefits, bound to be heavily influenced by the product's functionality such as quality, features, packaging and warranties. Offering new products or improving the existing ones alongside other variables was analyzed in this study to examine their effect on financial performance in the insurance industry context in Kenya.

Customers that use insurance services are unlikely to change their business relationships as a result of a sales push (Rangsan & Titida, 2011). The ability to learn about consumer preferences with regard to product offers would therefore be of interest to a marketer. For example, schemes preferred by the consumers in regard to kinds of services, media desired to learn, timeliness in whether to receive incentive instantly or at a later date. These are the elements that customers think about while selecting a brand. Similar to this, marketing managers in the sector take these marketing methods into account when creating new items and awareness creation.

#### **2.4 Summary of Empirical Literature and Research Gaps**

Studies reviewed indicated conceptual research gaps stemming from adoption of a single variable among the independent variables. In relation to financial technology, most studies took the route of innovation and evaluated its effects on performance. The knowledge gap in this regard is number of cashless transactions through mobile and number of transactions through internet. Studies on market information were varied as some concentrated on customer based information while other looked at broader perspective of market. While performance can best be measured quantitatively, some of studies reviewed measured performance with opinions captured by interviews

guides or questionnaires. It's therefore imperative to use both quantitative methods of performance measure to get broader insight of the financial institution markets as in this study.

While this study focuses on insurance industry context of a developing economy, Kenya, prior literature was carried out in different industry contexts such as banking, public sector and manufacturing among others. Some studies reviewed were also done in developed economy hence their findings could not be generalized to emerging economies that exhibit difference market features. Studies done in insurance industry either focused on property-liability only thus presenting contextual research gaps. This study did a census on both general and life insurance companies.

**Table 2.1: Summary of Research Gaps**

<b>Author (Year)</b>	<b>Focus and Methodology</b>	<b>Key Findings</b>	<b>Research gaps</b>
Eginga (2020)	Emerging markets customers demand and use of electronic media influence on long run objectives of insurance company industry Relied on primary data a surveyed a population of 30 insurance companies in general insurance	Early investments in novel technologies, components, and distribution methods were found to create a complete cost competitive advantage since first-time customers show high loyalty to innovative businesses by making subsequent purchases.	Focused on electronic media only, current study linked broad financial technologies and financial performance in the Kenyan context.
Jones and Bartlett (2019)	Market information would enrich service delivery in insurance sector.	Findings emphasized that investment in market information	Study focused on feedback channels while this study focused on the entire

	Document analysis study	can lead to distribution of updated research and its interpretations to offer a more insurance-focused input from the insurance industry to improve and update research done for the greater good	process that is informed by customers and business/ market information and examine its effect on financial performance using primary and secondary data
Asemokah (2019)	Importance of market context in understanding the insurance sector i ts development, and directions.  The analysis data examined a cross-country comparative	The study findings indicated that there is no single correct path to development Findings further revealed importance of considering the industr ystructural and develop mental phase of the fina ncial system and the overall macroeconomic conditions.	Study was conducted on developed market that has different Current study incorporated more sub variables to test effects of financial market dynamisms on financial performance
Ayyagari et al. (2019)	Examined core service levels and their effect on customer expectations as per industry standard across industries  Relied on secondary data	Always clearly outlined are the fundamental service levels that satisfy customer requirements and industry standards.  The results revealed that proactive consumer focus and resource optimization against customer demand can result in conflicting findings while developing new	Conceptual and contextual gaps –focus is insurance sector in Kenya  Present study utilized both primary and secondary data

		products and services.	
Rafaela and Ortt (2018)	Technology adoption impacted on performance of both private and public sectors  Primary data gathered by interview guide and questionnaires	Technology adoption influences performance positively.	Evidence from multi-sectors cannot be generalized since private and public sectors have distinct operational features  This study focused on insurance context. Performance was measured by opinions from managers and directors while this study utilized financial measures that provide more factual quantitative indicators of performance

**Source:** Researcher, 2022

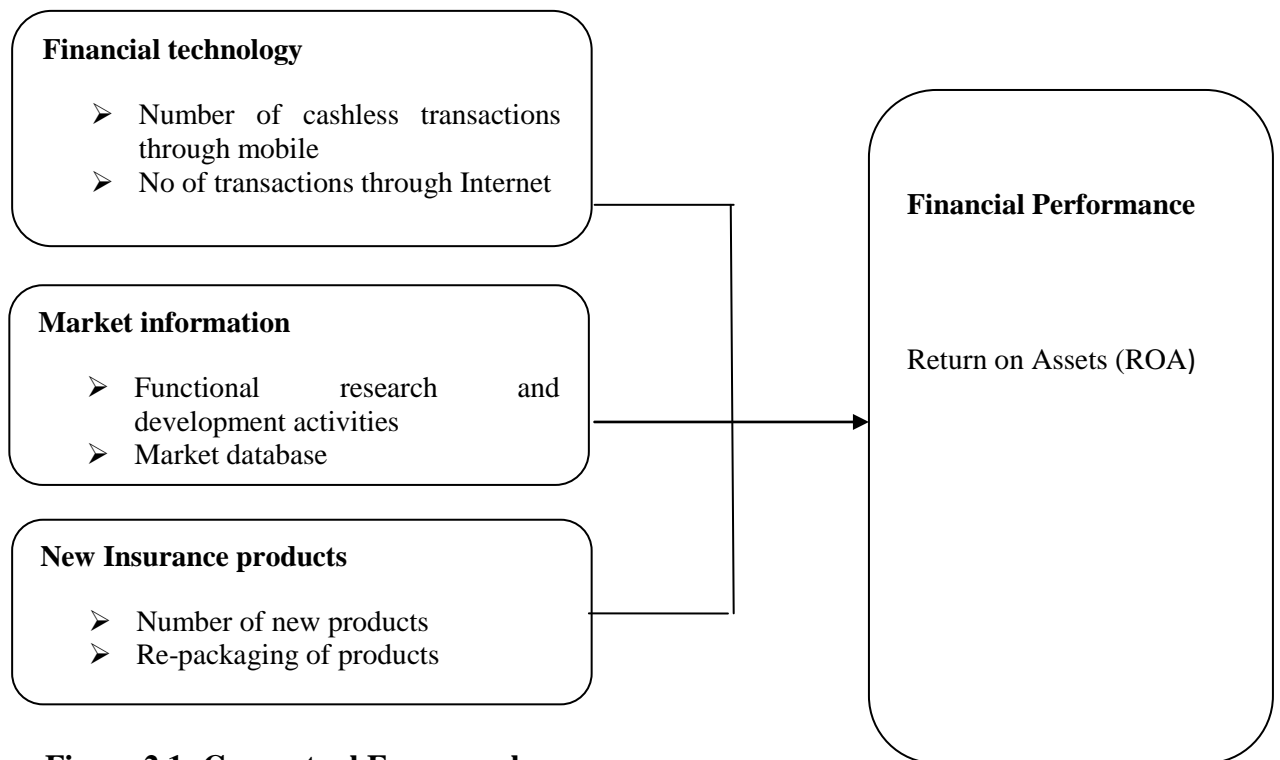
## 2.5 Conceptual Framework

Figure 2.1 depicts a conceptual model that indicates effects among financial technology, market information, new insurance products on performance of insurance companies.

## Dependent Variables

## Independent Variable

### Financial System dynamics



**Figure 2.1: Conceptual Framework**

Source: Author, 2022

A possible link between financial technologies and firm performance was represented by the model represented in Figure 2.1. Market information has a positive direct influence on performance. The information available to a firm enables firms to conceive and implement activities that increase firms' effectiveness. The model indicates that new or improved insurance products introduced in a market can enhance sales and translates to better performance.

## **CHAPTER THREE: METHODOLOGY**

### **3.1 Introduction**

This chapter outlines the study's methodology adopted including the research strategy, target population and discusses how variables were Operationalized and Measured. Empirical model, data collection instruments, reliability tests and validity tests, data collection procedure were detailed in this chapter. lastly, data analysis and presentation, diagnostic tests and ethical consideration were discussed. As a consequence, the study was carried out using a methodical, objective approach to acquire data in order to achieve the study objectives.

### **3.2 Research Design**

Research design is the general strategy chosen by a researcher to include several aspects of a study into a logical and coherent a strategy to ensuring that the research problem is effectively addressed. The research design used for the study was explanatory research design. Explanatory research is a research technique that explores why something occurs when limited information is available. This method helps the researcher to increase the understanding of a given phenomenon, situation, or population and ascertain how or why a particular phenomenon occurs, and forecast occurrences in the future. This design involves observation and measurement of the characteristics of the various entities under study as they were and then describe them in a scientific manner (Mugenda & Mugenda, 2003). The researcher then draws conclusions based on the results of the study to answer the questions of the study. The approach is a productive way to gather data needed to describe viewpoints and ideas of insurance companies on the financial performance in Kenya.

### 3.3 Empirical Model

The study adopted a multiple linear regression model to test the effect of independent variables and the dependent variable are as below. The model was found apt for this study because it allows testing of the strength of the relationship between an outcome (the dependent variable) and several predictor variables as well as the importance of each of the predictors to the relationship

$$FP = \alpha + \beta_1 FT + \beta_2 MI + \beta_3 NIP + \varepsilon_1 \dots \dots \dots (3.1)$$

Where;

$\alpha$  Intercept/ constant

$\beta_1, \beta_2$  &  $\beta_3$  are regression coefficients

$\varepsilon_1$  is the Error term

FP= Financial Performance

FT = Financial Technology

MI – Market Information

NIP =New Insurance Products

**Model Source:** Author, 2022

### 3.4 Operationalization and Measurement of Variables

This sub-section entails operationalization of the study variables (independent and dependent). The operationalization is based on how the variables have been used in the current study. The criteria of variable measurement adopted in the study were also indicated.

**Table 3.1: Operationalization and Measurement of variables**

Variable	Type	Operationalization	Measurement	Scale
Financial technology	Independent	The generation, development, and adaptation of new practice or operational ideas by a firm either as an anticipatory act to control the market	The number of transactions made via mobile and internet in a year	Interval
Market information	Independent	Access to or generation of information on market operations	Presence of functional research and development activities, market information and customer database	Interval
New insurance products	Independent	Ability of an insurance company to venture into products not previously in the market or improving the existing products	The number of new insurance products introduced by a firm in a year or re-packaging of products to appeal to more clientele.	Interval
Financial performance	Dependent	Ability of a company to convert assets profitably	ROA: Earnings/Total Assets	Ratio

**Source: Researcher, 2022**

### 3.5 Target Population

Target population is considered to be the collection of elements on which are of concern to the investigator for the reason of making inferences (Creswell & Clarke, 2007). Neuman (2006) further defines target population as the bigger set of observations, whereas the sample is the smaller set, depending on which group the researcher is trying to generalize or learn about. The target population of this study was fifty-six insurance companies registered and operating in Kenya as per Appendix III (IRA, 2021). No sampling was done as the study undertook a census of the entire

population of 56 companies which is considered small population and there was no time constrain.

### **3.6 Data Collection Instruments**

Primary and secondary data was used for this analysis to attain the specified objectives. Primary data are those that were gathered especially for study endeavours (Cooper and Schindler, 2003). The questionnaire that was utilized in this study is included in Appendix I. It helped with data collection and documentation. The use of questionnaires is encouraged by their benefits, which include their ability to identify and explain the variability in various phenomena, the ease with which they may be delivered by email, and the fact that they provide written confirmation of the research findings.

There were two sections to the questionnaire. The first section requested background data about the business. While the second and following sections focused on the three research objectives, this allowed understanding the nature of the insurance company. Secondary data was collected to support primary data collected to capture financial performance as per data collection form in Appendix II. The secondary data set which is longitudinal was collected for a five-year period and average was computed for all the companies to allow match and analysis with the cross-sectional data collected by questionnaires.

### **3.7 Validity Tests**

Validity of the instruments is a fundamental element of skilful research. Validity of a research instrument refers to the point at which an instrument essentially captures what it infers to measure (Nachmias and Nachmias, 1996). Instrument validity level of acceptance mostly depends on logic and investigator's level of experience (Mugenda

and Mugenda, 2003). In the current study, validity was achieved by posing questions in the simplest way possible that the respondents were expected to understand without difficulty.

Experience, judgment and building up sufficient supporting evidence is a possible way to establishing good construct validity (Creswell & Clarke, 2007). Expert opinion of the university supervisors will be sought to help in achieving qualitative validity of instruments. Data gathered was checked to ensure that the questions are answered, omissions and logical inconsistencies identified and eliminated. A pilot test was also conducted on the research instrument. Data collected from pilot was deliberated with supervisors to warrant that the study objectives are sufficiently addressed.

### **3.8 Reliability Tests**

The degree to which a measurement tool can produce a consistent result each time it is used in a situation that is comparable is referred to as its reliability (Kothari, 2005). Cronach's alpha, a measure of data gathering dependability, was applied. The internal consistency metric known as Cronach's alpha measures how closely connected a set of items are to one another. A projection of Cronbach's alpha rule of the thumb is that, the closer the alpha is to 1, the higher the reliability since high alpha values are frequently used as proof that the items measure a latent construct (Kothari, 2005). All the three scales were reasonably reliable with a Cronbach's alpha reliability coefficient above 0.7 which is the more preferable value. The financial technology scale reported Cronbach alpha coefficient of 0.753, market information scale reported Cronbach alpha coefficient of 0.947, and new products Cronbach alpha coefficient was reported as 0.828 all indicating good internal consistency.

### **3.9 Data Collection Procedure**

Data collection commenced once the proposal was approved. Upon approval of the research proposal by the University, a clearance and authorization to conduct research will be granted by school of post graduate and Issue of research permit by NACOSTI in 2022, the data collection commenced. The questionnaires were either emailed or hand-delivered to the respondents. Follow-up was made through the phone calls to the companies that would strictly not fill up a printed questionnaire. For the companies that were willing to fill a printed questionnaire, hand delivery was done and follow up was done to ensure completion of data collection exercise.

The investigator provided direction to the contracted research assistants to assist with data gathering. The researcher held training sessions with research assistants to improve their familiarity with the instrument. The researcher also reviewed research ethics with the research assistants to enable the sharing of critical data sourcing skills, specially the correct way to approach participants, and establish rapport with the respondents.

### **3.10 Data Analysis and Presentation**

Both qualitative and quantitative data collection techniques were utilized. The quantitative analysis was carried out using the Statistical Package for Social Sciences which was used to edit and code the completed questionnaires, enter the data, clean it, and then analyze it. Data collection and analysis was also done using Microsoft Excel. Descriptive data analysis was conducted to provide mean, minimum, maximum and standard deviation. Correlation analysis was done to reveal the direction and strength of relationships of study variables. Simple and multiple regression analysis was conducted to produce inferential statistics. Each company had longitudinal data

collected for five years for performance. Prior literature followed similar methods while presenting and analysing data (Murithi et al., 2023, Ombaka, 2014)

To convert time series data, the average for the five years was computed and compared to cross-sectional data set on financial dynamics (financial technology, market information and new products). The properties of the location, distribution, and shape of a collection of data were shown using descriptive statistics. Measures of central tendency and dispersion measures were the two basic descriptive statistics that could be utilized for the investigation. Inferential statistics used included correlation and linear regression tests. Data was presented using both tables and figures.

### **3.11. Diagnostic Tests**

The standard linear regression model is based on a number of assumptions among them is linearity of relationships, multivariate normality of data sets, and total absence or little multicollinearity. This study carried out diagnostic tests for multicollinearity and normality.

#### **3.11.1 Multicollinearity Test**

When independent variables lack independence from each other, there exists an element of multicollinearity. This means, one independent variable can be linearly estimated based on another with some reasonable degree of exactness. Multicollinearity was assessed using VIF (Tolerance – inverse of VIF). Tests analysis indicated that financial technology ( $\beta = 0.169$ ) had a moderate impact on the dependent variable while market information ( $\beta = 0.331$ ) had high impact while new products ( $\beta = 0.010$ ) showed a small impact on the dependent variable (ROA). The VIF (Tolerance) tests (financial technology =1.057; market information =1.018; new

products =1.039) indicated absence of multicollinearity among the study variables since the independent variables met the Tolerance threshold of  $> 0.1$  (or  $VIF < 10$ ).

### **3.11.2 Tests of Normality**

In linear regression analysis, the variables are expected to exhibit an assumption of normality or are multivariate normal. McBurney and White (2009) noted that the assumption of normality needs to be checked before carrying out any parametric test, because validity depends on it. Normality test was intended to ascertain whether data was distributed normally. Normality of the data set for the variables was checked by Shapiro-Wilk (1965) test, which is a more robust test of normality. Outcomes of Shapiro-Wilk tests guide the analysis on if the distribution was normal or not. This test establishes the extent of normality of the data by detecting the existence of skewness or kurtosis or both. Shapiro-Wilk statistic ranges from zero to one with figures higher than 0.05 indicating that the test is not significant. If the test is not significant, the sample distribution is possibly normal. Tests for financial technology, market information and ROA indicated  $p > 0.05$ , hence data was not different from normal. New products construct did not report extreme departures hence the normality was assumed.

### **3.12 Ethical Considerations**

The researcher sought approval of relevant authorities such as the Kenyatta University authority to collect data and also acquired permission to carry on research from National Commission for Science and Technology. The researcher asked each respondent for their informed consent. They were informed that participation is entirely optional. Participants ensured that personal information and opinions were accorded utmost confidentiality. Research assistants were requested to avoid capturing

names of research participants and any other personal identifiers to guarantee confidentiality.

## CHAPTER FOUR: RESEARCH FINDINGS

### 4.1 Introduction

This chapter presents the results of field data such as response rate, reliability and validity tests, background information of respondents. The chapter also addresses diagnostic tests, descriptive statistics, correlation analysis, and results of regression analysis as well as discussion of findings.

### 4.2 Response Rate

The study had a population of total of 56 respondents. Questionnaires were administered to each of these respondents. This study carried out a census of a population of 56 insurance companies licensed by Insurance Regulatory Authority. The response rates were as summarized in Table 4.1 below.

**Table 4.1: Response Rate**

<b>Respondent</b>	<b>Frequency</b>	<b>Percentage</b>
Total issued questionnaires	56	100
Returned questionnaires	47	83.92
Valid questionnaires	43	76.78

**Source:** Survey Data (2023)

From the results in able 4.1, out of fifty-six questionnaires issued, forty-seven (47) questionnaires were returned, reporting a return rate of 83.92 percent. However, three of the returned questionnaires were not fully filled, while another questionnaire was not filled at all and thus could not be used in the final analysis. The response rate was therefore computed based on the fifty-two (43) duly filled questionnaires as a percentage of the study population. This response rate, totalling to 76.78%, was presumed adequate for analysis and comparable to past studies such as Magutu (2014)

and Angima (2014). According to Babbie (2004), return rates of more than 50% are acceptable for analysis, 60% is considered good, 70% is very good, and more than 80% is exceptional. Based on these assumptions, the study's response rate of 76.78 percent is sufficient to analyse the data.

### 4.3 Validity Test

A pilot study conducted ensured that the questionnaire was effectively structured to aid in collection of the relevant data. The questionnaire was pretested with three respondents at managerial level from one insurance company. To establish the face and content validity of the instrument, pilot study respondents were requested to help evaluate clarity of the questions set to enhance the comprehensiveness of the content. Based on the feedback, few items of the preliminary draft of the questionnaire were restructured to enhance comprehension.

### 4.4 Reliability Tests

Test of reliability was carried out on the research instrument using Cronbach alpha. A protrusion of Cronbach's alpha rule is that, the closer the alpha is to 1, the higher the reliability (Kothari, 2004). Table 4.2 indicates the reliability statistics for financial technology, market information and new products.

**Table 4.2: Reliability Tests**

Scale	Cronbach's Alpha ( $\alpha$ )	Number of Items
Financial technology	.753	7
Market information	.947	7
New products	.828	7

**Source:** Survey Data (2023)

Table 4.2 indicates the reliability statistics for financial technology, market information and new products. All the three scales were reasonably reliable with a Cronbach's alpha reliability coefficient above 0.7 which is the more preferable value, although values below 0.7 could have different meanings. The financial technology scale reported Cronbach alpha coefficient of 0.753, market information Cronbach alpha coefficient of 0.947, new products 0.828 all indicating good internal consistency.

#### **4.5 Background Information**

The research sought background information in terms of respondent's age, gender level of education or training achieved. The study also sought background information in relation to the insurance company primary customer base.

##### **4.5.1 Age and Gender**

The gender and age of respondents was as shown in Table 4.3 and figure 4.1 below.

**Table 4.3: Age and Gender**

<b>Age</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Below 30 years	1	1	2
30-40 years	7	3	10
40-50 years	16	3	19
Above 50 years	7	5	12
<b>Total</b>	<b>31</b>	<b>12</b>	<b>43</b>

**Source:** Survey Data (2023)

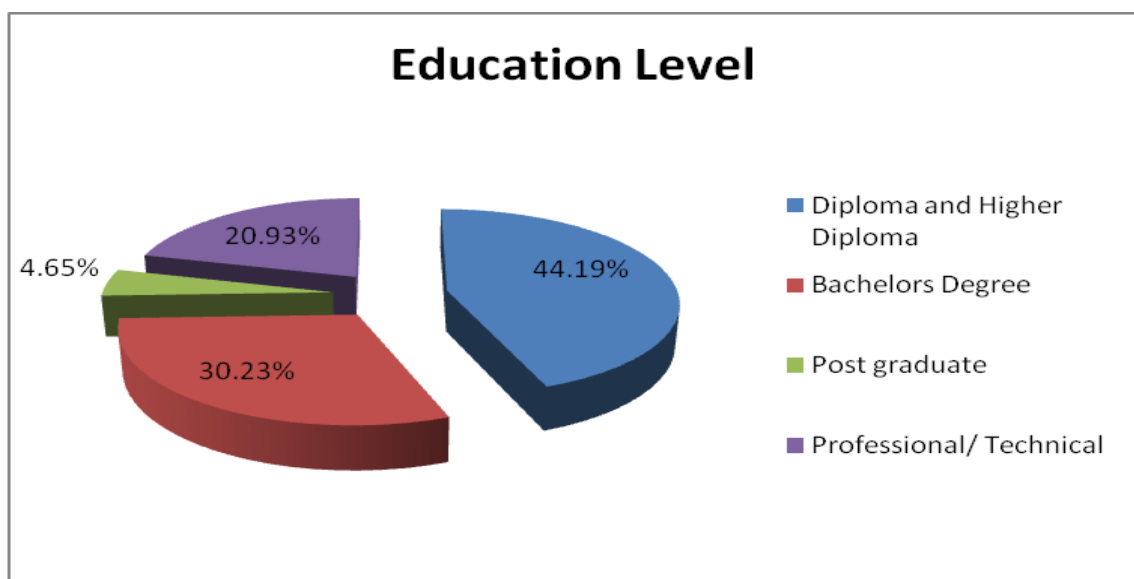
From the results presented in table 4.3 above, 31 of those in insurance industry management were male while female in managerial positions stood at 12. This was an indication that male managers had dominance in the industry but still female gender is rising to management positions. Surprisingly, only two of the 43 managers were

below 30 years of age, where 10 managers were aged between 30-40 years. Majority of respondents were age between 40-50 years while a big proportion of 12 was aged above 50 years. These findings indicate that managerial positions were commensurate with age for the two genders such that as more mature employees were likely to occupy the managerial positions in insurance companies.

#### 4.5.2 Level of Education or Training

The respondents were asked to indicate the highest level of education attained or relevant training. The responses to the question were as presented in Figure 4.2 below.

Based on the results presented by figure 4.2 below, 44.19 percent of respondents had a college education equivalent to diploma or higher diploma, bachelor degree holders stood at 30.23 percent, those attained postgraduate education, were 4.65 percent while those holding professional or technical course were 20.93 percent. This implied that those who occupied managerial positions in most insurance companies were educated and thus had good knowledge on steering financial performance of the industry.



**Figure 4.1: Education Level**

**Source:** Survey Data (2023)

## 4.6 Descriptive Statistics

Financial system dynamics was measured by three attributes; financial technology, market information and new products. To present the results of the quantitative data, descriptive statistics included Mean (M) and Standard Deviation (SD). The outcomes are shown in tables 4.4-4.6 below.

### 4.6.1 Financial Technology

Seven (7) items were used to measure the level of financial technology. Respondents were requested to rate Items on a five point Likert-type scale ranging from 1-“Strongly Disagree” to 5-“Strongly Agree”. Descriptive statistics on financial technology were as presented in Table 4.4.

**Table 4.4: Financial Technology**

Statement	N	Mean	Std. Dev
Most of our cashless transactions are done through: Mobile and Internet	43	4.10	0.772
All receipt of premium are through mobile banking	43	3.63	0.884
We discourage customers from paying for services in cash	43	3.92	0.940
We bill our customers electronically	43	3.95	0.908
We make payment for supplies using other means than cash	43	3.80	1.000
Cashless system provides clients the convenience of services	43	4.02	0.824
Client claims arising from human errors has decreased significantly with digital transactions	43	3.57	1.030
Mean Score		3.86	0.908

**Source:** Survey Data (2023)

Table 4.4 above shows how respondents rated various items of the financial technology scale. When respondents were asked whether they cashless transactions

are done through: Mobile and Internet most respondents agreed (Mean=4.10, SD=0.772). Similarly, when respondents were asked if all receipt of premium are done through mobile banking, the mean score was high (Mean=3.63, SD=0.884). When asked if the company discourage customers from paying for services in cash, the response was (Mean=3.92, SD=0.940).

The response on whether customers are billed electronically was high (Mean=3.95, SD=0.908). Other items were also rated high by the respondents and they include; we make payment for supplies using other means than cash (Mean=3.80, SD=1.00); cashless system provides clients the convenience of services (Mean=4.02, SD=0.830) as well as if client claims arising from human errors has decreased significantly with digital transactions (Mean=3.57, SD=1.03). On the basis of this study results, most respondents scored high on financial technology.

#### **4.6.2 Market Information**

Seven (7) statements/questions were used to measure access of market information of by insurers in Kenya. Respondents were requested to rate Items on a five point Likert-type scale ranging from 1 “Strongly Agree” to 5 “Strongly Disagree”. Descriptive statistics on market information were as presented in Table 4.5.

**Table 4.5: Market Information**

Statement	N	Mean	Std. Dev
Our organization has an active R&D department	43	2.98	0.97
We frequently carry out research to inform our direction	43	2.95	0.99
Our organization has an active customer complaints and feedback channel	43	3.04	0.86
Our organization has adopted use of social media platforms to reach out to clients	43	3.07	0.85
Our organization is in tandem with the changes in the industry	43	3.80	0.76
Cashless system provides clients the convenience of services	43	2.94	0.99
Quality of services has improved greatly with incorporation of customer feedback	43	2.87	1.01
Mean Score		2.99	0.92

**Source:** Survey Data (2023)

Results presented in table 4.5 above show that when respondents were asked whether the company has an active R&D department most respondents agreed (Mean=2.98, SD=0.97). The question on whether the company was frequently engaged in conducting research to inform our direction got response of (Mean=2.95, SD=0.99). When asked if the company has an active customer complaints and feedback channel, the response was (Mean=3.04, SD=0.86). The response on whether the organization has adopted use of social media platforms to reach out to clients was high (Mean=3.07, SD=0.85).

The response on if customers are served in a timely manner aided by digital technologies, responses stood at (Mean=3.80, SD=0.76); The item on if the company is in tandem with the changes in the industry got responses as (Mean=2.94, SD=0.99)

while the questionnaire item on whether quality of services has improved greatly with incorporation of customer feedback was responded to as (Mean=2.87, SD=1.01). On the basis of this study results, respondents rated various items of the market information scale and the results show that companies were moderately in tandem with financial market information.

#### 4.6.3 New Insurance Products

Introduction of new products or repackaging of the existing products by insurance companies was measured by Seven (7) statements/questions. Respondents were requested to rate Items on a five point Likert-type scale ranging from 1 “Strongly Agree” to 5 “Strongly Disagree”. Descriptive statistics on new insurance products were as presented in Table 4.6.

**Table 4.6: New Insurance Products**

<b>Statement</b>	<b>N</b>	<b>Mean</b>	<b>Std. Dev</b>
Our organization is keen to offer insurance policies that appeal to clients	43	2.87	1.13
We repackage products to serve old and potential customers	43	3.11	0.94
We have always offered the same class of insurance policies to the market	43	3.04	0.96
There is continuous improvement of products of offer	43	3.00	0.97
Our clientele has increased based on varied products	43	3.16	0.90
We create awareness on products we offer	43	3.24	0.85
Our products are distinct from those offered by competitors	43	2.94	1.11
<b>Mean Score</b>		<b>3.05</b>	<b>0.86</b>

**Source:** Survey Data (2023)

From the results indicated in Table 4.6 above, when respondents were asked whether the company is keen to offer insurance policies that appeal to clients most respondents agreed (Mean=2.87, SD=1.13). The question on whether the company frequently repackages products to serve old and potential customers got response of (Mean=3.11, SD=0.94). When asked if the company always offer the same class of insurance policies to the market, the response was (Mean=3.04, SD=0.96). The response on whether there is continuous improvement of products of offer (Mean=3.00, SD=0.97).

The response on if the clientele base has increased based on varied products, responses stood at (Mean=3.16, SD=0.90); The item on if the company create awareness on products on offer got responses as (Mean=3.24, SD=0.85) while the questionnaire item on whether our products are distinct from those offered by competitors was responded to as (Mean=2.94, SD=1.11). On the basis of this study results, respondents rated various items of new insurance products scale and the results show that companies were moderately in agreement on new insurance products being offered to consumers of insurance products.

#### **4.7 Diagnostic Tests**

Diagnostic tests conducted on the data included multicollinearity and normality tests.

The results of the tests are as indicated in Tables 4.7 –4.8.

##### **4.7.1 Multicollinearity Tests**

Multicollinearity is present when independent variables are found to be highly correlated. The multicollinearity presence in the data was assessed by VIF (Tolerance) tests. Results of the statistics were presented in Table 4.7 below.

**Table 4.7: Results of Multicollinearity Tests**

Variable	Coefficients	Collinearity Statistics	
		VIF	Tolerance (1/VIF)
Financial Technology	0.169	1.057	0.946
Market Information	0.331	1.018	0.982
New products	0.010	1.039	0.963

**Source:** Survey Data (2023)

In the multicollinearity tests analysis, there were moderate statistically significant beta coefficients. When the independent variables were predicted, it was found that financial technology ( $\beta = 0.169$ ) had a moderate impact on the dependent variable while market information ( $\beta = 0.331$ ) had high impact while new products ( $\beta = 0.010$ ) showed a small impact on the dependent variable (ROA). The results in Table 4.6 above showed that the VIF (Tolerance) test indicated absence of multicollinearity among the study variables since the independent variables met the Tolerance threshold of  $> 0.1$  (or  $VIF < 10$ ).

#### 4.7.2 Tests for Normality

To establish study data normality, the Shapiro-Wilk and Kolmogorov-Smirnov<sup>a</sup> tests were conducted. The Shapiro-Wilk (1965) test is a common test for normality which was initially restricted for data sizes below 50 but commonly used in literature (Razali & Wah, 2011). The results of the analysis for Shapiro-Wilk are presented in Table 4.8 below.

**Table 4.8: Tests for Normality Results**

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	Df	Shapiro-Wilk Statistic	P.
Financial Technology	43	0.928	0.344
Market Information	43	0.949	0.206
New products	43	0.905	0.001
ROA	43	0.951	0.083

---

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

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**Source:** Survey Data (2023)

From Table 4.8, financial technology, market information and ROA had  $p > 0.05$ , hence data was not different from normal. New products construct did not report extreme departures hence the normality was assumed. Normality assumes that the distribution of the mean is normal. The interpretation of Shapiro-Wilk test for normality is that, if p-value is above 0.05, it indicates that data are closer to or same as normal (Razali & Wah, 2011).

#### **4.8 Correlation Analysis**

In assessing the associations between the study variables, Pearson correlation method was applied. This provided the direction of relationship between the study variables.

The correlation test outcomes are contained in Table 4.9 below.

**Table 4.9: Financial System Dynamics and Financial Performance**

Scale		1	2	3	4
Financial Performance	Pearson Correlation	1.000	-0.107*	0.147*	0.132
Financial Technology	Pearson Correlation		1.000	0.103	.078
Market Information	Pearson Correlation			1.000	0.262**
New Insurance Products	Pearson Correlation				1.000

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

**Source:** Survey Data (2023)

As shown in table 4.9 above, results indicate a weak association between financial performance (ROA), financial technology, market information and new insurance products. There is negative and weak correlation between financial performance (ROA) and financial technology which is statistically significant ( $r=-0.107$ ,  $p$  value $<0.05$ ) a significant and positive relationship between financial performance and market information and positive association between financial performance and new insurance products. The relationship between financial technology and market information is weak and not statistically significant ( $r=0.103$ ,  $p>0.05$ ). There is positive correlation between market information and new insurance products which is statistically significant ( $r = 0.262$ ,  $p<value$ ). The implication of weak correlation coefficient value may signal an unsubstantial relationship among all the study variables; however, if there are other evidential bases proving the strength of the fitness existing among the targeted variables, the correlation can be supported.

## 4.9 Multiple Regression Analysis

The research employed regression analysis to assess the connection between the dependent variable, ROA, an indicator of financial performance and the independent variables; financial technology, market information and new insurance products.

### 4.9.1 Model Summary

The model summary table presented how strong the connection between the model and the dependent variable was. R is the multiple correlation coefficients which reveals the linear correlation between the observed values and model-predicted values of the dependent variable as shown in Table 4.10.

**Table 4.10: Model summary**

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
<b>1</b>	<b>.283</b>	<b>.080</b>	<b>.071</b>	<b>1.0665</b>

a. *Predictors: (Constant), financial technology, market information and new insurance products*

**Source:** Survey Data (2023)

The adjusted R square from the model summary presented in Table 4.10 is 7.1 % which implies that that the various financial system dynamics (financial technology, market information and new insurance products) contributes to the financial performance of insurance companies in Kenya by 7.1% whereas 92.9% of financial performance can be explained by other aspects other than the variables explored in this research study. As postulated by Awino (2011) performance of a firm can be constructively influenced by multiple elements and that the financial system dynamics of the insurance firms among others have an impact on its financial performance.

### 4.9.2 Analysis of Variance

Analysis of Variance (ANOVA) for this study provides information on regression analysis model and creates a foundation for testing its importance. The analysis was as presented in Table 4.11 below.

**Table 4.11: Analysis of Variance**

<b>Model</b>	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	7.815	3	2.605	3.290	0.048
Residual	191.278	39	4.904		
Total	199.093	42			

a. Dependent Variable: Financial Performance.

b. Predictors: (*Constant*), *financial technology*, *market information* and *new insurance products*

**Source:** Survey Data (2023)

According to the ANOVA results, the model's p value was 0.048 which is less than the alpha of 0.05 hence proved overall goodness of fit and could be utilized in the future to predict improvement in the organization's financial performance. With a statistically significant f- value of 3.290, it proves that the multiple correlations or the R squared value from the model summary is equal to zero. The results depict that the financial system dynamics were good predictor of financial performance of insurance companies in Kenya.

### 4.9.3 Coefficients

Regression coefficients represented an average deviation in the dependent variable for each unit of deviation in the independent variable whilst holding other factors within the model constant. The results were as presented in table 4.12 below.

**Table 4.12: Coefficients**

Model	Unstandardized Coefficients		t	Sig
	B	Std. Error		
(Constant)	-.165	.471	-0.350	.046
Financial Technology	-.181	.120	-1.508	.032
Market Information	.186	.085	2.177	.030
New Insurance products	.026	.075	.352	.725

**Source:** Survey Data (2023)

The results shown in Table 4.12 indicate that financial technology has a negative and statistically significant relationship ( $\beta = -0.181$ ,  $t = -1.508$ ,  $p < .05$ ) with financial performance. Market information is a predictor of financial performance ( $\beta = 0.186$ ,  $t = 2.177$ ,  $p < .05$ ) and the linkage is positive. New insurance products however is not a significant predictor of financial performance of insurance companies ( $p > 0.05$ ).

The regression model was presented as follows;

$$FP = -0.165 - 0.181FT + 0.186MI + 0.026NIP$$

#### **4.10 Financial System Dynamics and Financial Performance**

Based in table 4.10, findings on the effects of financial technology, market information and new insurance products on financial performance indicated that adjusted R square from the model summary is 7.1 % which implies that the three constructs influence the financial performance of insurance companies in Kenya by 7.1%. According to the Anova results, the overall model's p value was 0.048, indicating that the model was statistically significant and could be utilized to predict improvement in the insurance company's financial performance. With a statistically significant f- value of 3.290, it proves that the multiple correlations from the model

summary is equal to zero. The results depict that the three constructs were statistically significant in predicting the financial performance of insurance companies in Kenya. The findings of individual predictor variable are as discussed in 4.7.1-4.7.3.

#### **4.10.1 Financial Technology and Financial Performance**

The first objective sought to determine the effect of financial technology on financial performance of insurance companies in Kenya. Stemming from the first objective, the first null hypothesis was tested which stated;

*H<sub>01</sub>: There is no significant effect of financial technology on financial performance of insurance companies in Kenya.*

Based on results in Table 4.12, findings suggested that when the coefficient of this model was kept constant, financial performance of insurance companies would be -0.165 at the intercept. A significant change in financial technology brought about adverse changes in financial performance of the company by 0.181 and still the relationship was statistically significant having a ( $p < .05$ ) which was less than the critical p value 0.05. Based on these findings, the first null hypothesis was rejected and it was held that financial technology does have a significant effect on financial performance of insurance companies in Kenya.

Study findings are congruent with technology acceptance theory suggestion that technology influences acceptance is the perceived usefulness and stresses that financial technology adoption is a factor that improves efficiency and financial performance of insurers. Findings are also in line with tenets of resource based theory and contingency theory that supports ideas that organizations are a collection of resources (tangible and intangible) and are adaptable systems that introduce change to operate efficiently.

The study findings resonate those of Rafaela and Ortt (2018) whose weight of the evidence pointed to the use of technology as improving performance, despite the fact that it is expensive, dangerous, and its success is not assured. Also, in concurrence to these findings, Silas (2016) also found that insurers needed to modify their market strategy, digitalize systems, and restructure their business operational models so as to be more customers centric. The finding further demonstrated that to enhance data analytics across the board was important, to guarantee a customer-centric approach and improve operational activities like underwriting and claims administration.

Aligning organizations to financial technology therefore allows building of digitally connected distribution models that are particularly of importance as remote work and virtual operations become the standard across the sector, ensuring a smooth client experience, especially post-Covid 19. Oyeyinka and Lal (2004), findings indicated that new technology has been and continues to be essential for the growth of all economic sectors, both in terms of increasing productivity and resource utilization effectiveness.

#### **4.10.2 Market Information and Financial Performance**

The second objective sought to determine the effect of market information on financial performance of insurance companies in Kenya. Stemming from the first objective, the first null hypothesis was tested which stated;

*H<sub>0</sub>: There is no significant effect of market information on financial performance of insurance companies in Kenya.*

As shown in table 4.12, an increase in investing in access to market information brings about increase in financial performance of the insurance companies by 0.186 and the relationship is statistically significant with p value of 0.030; which is less than

critical p value of 0.05. Based on these findings, the second null hypothesis was rejected and it was held that market information does have a significant effect on financial performance of insurance companies in Kenya.

Findings are aligned to predictions of contingency theory that gives explanation on how contingent factors sway function and design of organizations. Its underlying premise is that no single structure can be applied to all companies to produce universal effectiveness. The study findings echo those of Teomp et al. (2017) who revealed that recognizing and being accurate when interpreting market signals is crucial, particularly when developing a competitive strategy, and interpreting signals from competitor activity is a crucial addition to competitor analysis. However, findings of Ledgerwood (2019), put emphasize on follow-up procedures that encompasses regular visit to the client to deliberate customer issues and deciding on correct actions and instituting suitable communication channels for clientele for market information to yield any meaningful impact.

The study findings also congruent with evident by Jones and Bartlett (2019) who emphasized that investment in market information leads to reinterpretation and distribution of prevailing research to offer a more insurance directed insurance oriented input, augment and update research conducted as collective public good. Findings underscored the importance of embracing regular field iterative techniques to improve communication of products and using the same techniques for customer experience research.

#### **4.10.3 New Insurance Products and Financial Performance**

The third objective sought to determine the effect of new insurance products on financial performance of insurance companies in Kenya. Stemming from the third objective, the study tested third null hypothesis that stated;

*H0<sub>3</sub>: The effect of new insurance products on financial performance of insurance companies in Kenya is not significant.*

Findings indicated in table 4.12 showed that a weak positive statistical effect was established between the new insurance products and the financial performance of insurers with its p value of 0.725. An increment in new insurance products brings about changes in the performance of the organization by 0.026. Based on these findings, the third null hypothesis was confirmed and it was held that new insurance products does not have an significant effect on financial performance of insurance companies in Kenya. This notwithstanding, opposing events for development of substitute products results to increase of capital requirements.

Development of new products or modification of the existing ones demonstrate no material flaws other than relatively high structure costs and capital outlays. For example, schemes preferred by the insurance consumers in regard to kinds of services, media desired to learn, timeliness in whether to receive incentive instantly or at a later date. Therefore, marketing managers in the sector ought to take marketing methods into account when creating new items and awareness creation to minimize costs.

The study findings are against the predictions of resource based theory that project organizational resources as a source of competitiveness. Introducing of new or repackaging of new insurance products calls for extra cost or resource commitments. However, RBT stresses that organizations that reap from assets/resources if they align

their resources according to organizational priority. This can be further explained by sentiments of Mannu and Reece (2019) who revealed that customers judge a product's value based on its benefits, bound to be heavily influenced by the it's functionality such as quality, features, packaging and warranties. Still customers that use insurance services are unlikely to change their business relationships as a result of sales push hence; the ability to learn about consumer preferences with regard to product offers shifts the burden to the marketer.

A study by Ayyagari et al. (2019) found that optimization of use of possessions against demands of customers and proactive focus based on new products and services development can bring mixed sentiments. Hunter (2018) also revealed that globalization has limitations in that some markets are expensive to enter, businesses are complicated, and more product customization is required. For instance, Emzel et al. (2021) contend that the four components of the marketing mix (product, place, promotion and distribution) are probable to have an impact on how customers perceive the company and thus their consumption patterns.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION**

### **5.1 Introduction**

The summary of the findings was highlighted in the chapter. The chapter also included conclusions and recommendations based on the study findings and suggestions for further research.

### **5.2 Summary**

The study was guided by exploratory research design and the target population was the insurance companies registered in Kenya analyzed as per the three specific objectives. The summary of the study is guided by the outcome of the various analysis techniques used. The descriptive analyses indicated that all indicators of financial system dynamics (financial technology, market information and new insurance products) had minimal fluctuations and they were moderately dispersed around the mean. The inferential analysis of the investigation was based on correlation analysis and regression analysis. All the assumptions of regression analyses were met which implies that the research data used was adequate to allow for estimation.

In view of the regression analysis of the first objective, the study outcome indicated that financial technology is significant in predicting the financial performance of insurance companies in Kenya, although the association was negative. Adoption of financial technology if well utilized can lead to enhancement of performance. The findings support the prepositions of RBT, TAM and contingency theories that explain the inter-connectedness of the independent variable to enhance performance.

With respect to the regression analyzes, the second objective on market information as established in this study is a key determinant of financial performance of insurance

companies in Kenya and the effect is positive. This implies that investment in market information and research calls for a great deal of capital investment which can impact on returns and assets of a firm. This is consistent with the prior literature and prepositions of Contingency and resource based Theories. Higher capital investment may stagnate returns in the short-term but reap benefits in the long term hence impacting on financial performance.

The regression results for the third objective on new insurance products and financial performance indicated that the effect was not significant and therefore new insurance products are not significant predictor of financial performance of insurance companies in Kenya, although the linkage was positive. Efficiency of management in the utilization of organizational resources translate to introduction of new or repackaged improved insurance products can be guided by multiple factors. Of importance is to consistently balance the customer needs, market demands and organizational capacity to achieve desired goals. Despite the insignificant effect, insurance companies cannot afford to sit back and continue to offer obsolete products to the dynamic market. They must devise ways to appeal to the ever changing customer demands.

### **5.3 Conclusions**

Derived from the research results of the first objective that sought to determine the effect of financial technology on financial performance of insurance companies in Kenya, findings indicated that financial technology contributes significantly to financial performance of the insurance companies yet the relationship was adverse. the researcher drew a conclusion that in as much as the financial technology is an important tool for improving financial performance, there are various other factors such as economic and political pressures security threats and restructuring of

operational business models that make it not so effective in its roles hence having a minimal influence on the financial performance of insurance companies in Kenya.

The financial technology contributes significantly to financial performance of the insurance companies yet the relationship was adverse. This might be attributed to the fact that financial technology adoption requires a lot of capital investment and it has not been fully adopted in the insurance industry that has not succeeded to penetrate the market with only less than 3% of the Kenyan insurance willing to consume insurance products.

Conclusion was also made on findings of the second objective that sought to determine the effect of market information on financial performance of insurance companies in Kenya. Evidence by the positive and statistically significant effect of market information on financial performance, it can be attributed to the fact that firm invests a great deal of resources in research and development which consume assets in the short term but are beneficial in the future. Market information plays a significant role in the insurance sector financial performance of insurance companies in Kenya. Having an active R&D department that conducts regular market surveys can for example be beneficial although not all research can directly contribute to enhancement of performance, but can be for public good despite the proportion of resources directed to it. That notwithstanding, market information is paramount for all organizations especially in this digital era.

Findings of the third objective that sought to assess the effect of new insurance products on financial performance of insurance companies in Kenya established that new insurance product had a positive effect with financial performance of insurance companies in Kenya. The effect was however not significant. It is through the

introduction of new products or repackaging the existing products that the insurance companies can appeal to the diverse clientele who dictate the survival or failure of the firms. In as much as the new insurance call for resource commitment, the management must strike a balance between its ability to offer appealing products or seek synergy with other insurance companies to consolidate resources and minimize costs. Finally, it was also noted that the introduction of new insurance products is critical for the insurance industry to grab the large untapped insurance market.

#### **5.4 Implications**

This study contributes to finance theory and broadens the existing knowledge of financial market dynamics and particularly it's interconnectedness with the firm performance of the insurance industry. The predictive insights of the theories has been expanded or criticized in this study. While past research has focused on aspect of innovation or technology and performance, this study has contributed to knowledge by incorporating more variables in the study to increase the predictive insights of the model and provided context specific knowledge.

Based on conclusions of first objective that indicated that financial technology has significant effect on financial performance, it is recommended that insurance companies should conduct a sensitization on its mode of delivery particularly financial technologies available and how the customers can access them with ease. In order for them to gain an understanding and appreciate the financial technology and essence of having the financial technology and its benefits should start with the internal stakeholders. Companies should therefore put into place strong team well versed with ICT that support other employees and operations to enable the company perform effectively and extend the financial technology to consumers and other stakeholders.

Conclusions of the second study objective indicated that market information does have a significant effect on financial performance of insurance companies. Based on the conclusions, it is recommended that investors in the insurance companies should continuously invest in research and development to get a grip of current market information so as to arrive at informed decisions. The research and development (R&D) personnel need to hold joint meetings with top level executives to ensure that their findings and recommendations are implemented and finally, training for related staff like the marketers, brand ambassadors and among others on the various strategies and priorities available including the existence and role of marketing committee should be done.

The management of the insurance companies could utilize the findings made through this study to make suitable options regarding the financial system dynamics attributes that impact on financial performance. It is apparent from the study conclusions that the importance of the financial system dynamics in its enhancement of financial performance in the insurance sector in Kenya through improved service delivery. Through the research findings, the insurance company's management can gain insights on the importance of aligning with market information so as to be in a position to grab opportunities when they come or position themselves to respond to possible threats.

The policy setters such as the IRA, AKI and the legislators in enacting laws and regulations may use the research findings when developing insurance industry standards and operational requirements to aid the industry in tapping to the large uninsured market and enhance service delivery.

## **5.5 Suggestions for Further Research**

Furthermore, because the study context was insurance companies in Kenya, it is suggested that other studies can be conducted to focus on a different industry contexts and locations.

Measure used for performance was ROA. Result for the new insurance products indicated statistically insignificant effect on performance. These results were against the theoretical expectations and therefore it can be recommended that a replica study to be done guided by different financial performance metrics such as loss ratio or claims ratio measures.

Given that the R squared was not 1.00, it emerges that there are other elements that influence financial performance that the study did not explore. More studies should consequently be focused on other aspects that influence financial performance, such as insurance industry ethics, reputation or capital requirements.

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## APPENDICES

### APPENDIX I: SURVEY QUESTIONNAIRE

My name is Martin Mugambi and am pursuing a Master degree in business administration at Kenyatta University. I am carrying a study named *financial system dynamics and performance of insurance companies in Kenya*. Kindly assist in filling the correct information in the spaces provided in the questionnaire. The information sought is for the academic study purpose only and will be treated with utmost confidentiality.

#### SECTION A:

This questionnaire seeks to collect data on the aspects of the study and it will only be used for the study purpose. Kindly respond to all questions honestly and to the best of your knowledge

- i. Name \_\_\_\_\_ of \_\_\_\_\_ company  
(optional).....  
.....
- ii. Indicate the highest level of education or training attained  
Professional/Technical ( ) Diploma ( ) Bachelor's Degree ( ) Post graduate ( )  
other
- iii. Who is your primary customer base? (Tick one)
  - a). Individuals
  - b). Government institutions
  - c). Corporate entities
  - d). SMEs
  - e). Others (specify).....

**SECTION B:**

This section is concerned with assessing the contribution of financial technology, market information and introduction of new or improvement of existing insurance products to enhance customer service delivery in insurance companies.

Use the following Key

SD: Strongly Disagree -1; D: Disagree-2; N: Neutral- 3; A: Agree-4; SA: Strongly Agree-5

	STATEMENT	SD	D	N	A	SA
<b>FINANCIAL TECHNOLOGY</b>						
1.	What is the range of number of cashless transactions through Mobile or Internet					
2.	All receipt of premium are through mobile banking					
3.	We discourage customers from paying for services in cash					
4.	We bill our customers electronically					
5.	We make payment for supplies using other means than cash					
6.	Cashless system provides clients the convenience of services					
7.	Client claims arising from human errors has decreased significantly with digital transactions					
<b>MARKET INFORMATION</b>						
8.	Our organization has an active R&D department					
9.	We frequently carry out research to inform our direction					
10.	Our organization has an active customer complaints and feedback channel					

11.	Our organization has adopted use of social media platforms to reach out to clients					
12.	We serve our customers in a timely manner aided by digital technologies					
13.	Our organization is in tandem with the changes in the industry					
14.	Quality of services has improved greatly with incorporation of customer feedback					
<b>NEW INSURANCE PRODUCTS</b>						
15.	Our organization is keen to offer Policies that appeal to clients					
16.	We repackage products to serve old and potential customers					
17.	We have always offered the same class of policies to the market					
18.	There is continuous improvement of products of offer					
19.	Our clientele has increased based on varied products					
20.	We create awareness on products we offer					
21.	Our products are distinct from those offered by competitors					

**Thank you for your participation.**

## APPENDIX II: DATA COLLECTION FORM

.	Year/Item	2017	2018	2019	2020	2021
Fm. 1	Net Income					
Fm. 2	Total Assets					
Fm. 3	Number of cashless transactions					
Fm. 4	Number of transactions via internet					

Source: Author 2022

### APPENDIX III: LIST OF INSURANCE COMPANIES

	COMPANY NAME
1	AAR Insurance Kenya Limited
2	Absa life
3	Africa Merchant Assurance Limited
4	AIG Kenya Insurance Company Limited
5	Allianz
6	APA Insurance Company Limited
7	APA life assurance
8	Britam Insurance Company Limited
9	Britam life
10	Canon Metropolitan General
11	Capex Life Assurance Company Limited
12	CIC General Insurance Company Limited
13	CIC Life Insurance Company Limited
14	Corporate Insurance Company Limited
15	Direct line Assurance Company Limited
16	Fidelity Shield Insurance Company Limited
17	First Assurance Company Limited
18	GA Insurance Company Limited
19	GA life assurance
20	Geminia Insurance Company Limited
21	Heritage Insurance Company Limited
22	ICEA LION General Insurance Company Limited
23	ICEA LION Life Assurance Company Limited
24	Intra Africa Assurance Company Limited
25	Invesco Assurance Company Limited
26	Jubilee Insurance Company Limited
27	Jubilee general
28	Jubilee health
29	Kenindia Assurance Company Limited
30	Kenya Orient Insurance Company Limited

31	Kenya orient life
32	Kenyan Alliance Insurance Company Limited
33	Liberty life
34	Madison Insurance Company Limited
35	Madison general
36	Mayfair Insurance Company Limited
37	Metropolitan cannon
38	Monarch Insurance Company Limited
39	MUA
40	Occidental Insurance Company Limited
41	Old Mutual Life Assurance Company Limited
42	Pacis Insurance Company Limited
43	Pioneer Life Assurance Company Limited
44	Pioneer general insurance
45	Prudential assurance co
46	Resolution
47	Saham assurance
48	Sanlam Life
49	Sanlam general insurance
50	Takaful Insurance of Africa Limited
51	Tausi Assurance Company Limited
52	Trident Insurance Company Limited
54	UAP Insurance Company Limited
55	UAP Life Assurance Company Limited
56	Xplico Insurance Company Limited

**Source:** IRA, 2022

## APPENDIX IV: RESEARCH DATA

COMPANY	YEAR	Income/Profit After Tax	Total Assets
		Sh'000'	Sh'000'
<b>AAR</b>			
	2017	-342,483	3,603,889
	2018	-252,548	3,858,843
	2019	517,230	4,787,268
	2020	234,459	4,995,443
	2021		
<b>AMACO</b>			
	2017	-33,426	4,587,925
	2018	39,599	4,087,857
	2019	-76,217	4,000,262
	2020	-409,020	4,308,789
	2021		
<b>AIG Ins.co</b>			
	2017	416,854	7,086,889
	2018	377,753	8,154,582
	2019	269,721	7,856,933
	2020	189,465	6,715,368
<b>Allianz Ins. Co</b>			
	2017	-127,057	1,257,582
	2018	-135,087	1,652,232
	2019	-48,193	2,257,622
	2020	-300,887	1,887,051
	2021		
<b>APA Ins Ltd</b>			
	2017	638,057	16,279,700
	2018	493,247	15,270,365
	2019	734,820	15,523,407
	2020	459,753	15,279,397
	2021		
<b>APA Life</b>			
	2017	-66,345	4,682,760
	2018	-30,596	5,315,044
	2019	68,865	5,949,868
	2020	54,272	6,778,718
	2021		
<b>ABSA Life</b>			
	2017	35,073	2,802,756
	2018	40,332	3,333,853
	2019	76,883	4,663,220
	2020	133,075	6,026,092
	2021		

Britam General			
	2017	469,608	11,819,360
	2018	-52,033	12,065,331
	2019	-185,400	12,114,973
	2020	363,650	13,884,118
Britam Life			
	2017	272,890	63,176,279
	2018	-394,503	70,815,623
	2019	2,561,924	87,746,623
	2020	-1,876,024	96,062,205
	2021		
Cannon metro Assurance			
	2017	-1,190,119	3,201,097
	2018	81,072	3,154,238
	2019	49,558	3,204,752
	2020	110,490	3,536,460
	2021		
Capex Life			
	2017	-46,507	668,357
	2018	-13,783	805,660
	2019	-48,102	878,928
	2020	343	944,457
	2021		
CIC General			
	2017	398,459	13,116,624
	2018	380,290	12,848,839
	2019	278,110	13,618,345
	2020	15,355	14,268,883
	2021		
CIC Life			
	2017	182,772	10,285,064
	2018	12,437	12,256,221
	2019	118,599	14,579,491
	2020	60,204	16,452,096
	2021		
Corporate Ins.			
	2017	30,141	2,382,324
	2018	-102,984	2,383,851
	2019	-317,512	2,744,866
	2020	-252,142	2,749,390
	2021		
Directline Assurance			
	2017	119,673	6,178,880
	2018	87,052	5,566,869

	2019	-270,698	5,679,784
	2020	-345,705	5,018,843
	2021		
<b>Fidelity Shield</b>			
	2017	18,244	3,690,505
	2018	57,009	3,433,938
	2019	-33,748	3,483,778
	2020	-49,696	3,457,010
	2021		
<b>First Assurance</b>			
	2017	-25,252	6,556,087
	2018	-175,590	6,985,468
	2019	121,114	6,094,789
	2020	28,934	6,109,328
	2021		
<b>GA Insurance</b>			
	2017	757,110	11,455,491
	2018	983,607	12,429,838
	2019	1,118,379	13,655,810
	2020	912,293	15,453,657
	2021		
<b>GA Life</b>			
	2017	55,334	5,989,797
	2018	50,260	7,799,537
	2019	114,208	11,125,089
	2020	150,738	15,056,534
	2021		
<b>Geminia Insurance</b>			
	2017	272,319	6,735,498
	2018	193,131	8,155,777
	2019	281,539	9,119,488
	2020	403,276	9,669,001
	2021		
<b>ICEA Lion General</b>			
	2017	801,847	12,860,725
	2018	442,589	11,996,071
	2019	894,322	13,069,643
	2020	672,887	13,560,594
	2021		
<b>ICEA Lion Life</b>			
	2017	875,438	70,301,946
	2018	-310,998	80,012,897
	2019	2,962,499	93,503,361
	2020	1,581,851	103,561,378
	2021		

<b>Intra-Africa Assurance</b>			
	2017	32,240	1,861,263
	2018	99,667	1,904,071
	2019	59,755	2,083,684
	2020	37,269	2,036,772
	2021		
<b>Invesco Assurance</b>			
	2017	-282,850	4,107,084
	2018	-93,254	3,975,307
	2019	722	4,111,482
	2020	-	-
	2021		
<b>Jubilee General</b>			
	2017	1,457,164	16,672,771
	2018	884,119	16,245,912
	2019	-652,473	8,235,672
	2020	-101,364	6,749,411
	2021		
<b>Jubilee Health</b>			
	2017		
	2018		
	2019	624,421	7,013,849
	2020	881,320	7,878,739
	2021		
<b>Kenidia Assurance</b>			
	2017	528,069	40,724,247
	2018	329,157	46,305,206
	2019	-190,387	51,937,077
	2020	503,431	56,227,747
	2021		
<b>Kenya Orient Insu</b>			
	2017	2,163	3,038,790
	2018	-506,539	2,717,986
	2019	-305,340	2,565,060
	2020	-187,992	3,435,136
	2021		
<b>Kenya Orient Life</b>			
	2017	42,322	734,877
	2018	-12	996,560
	2019	61,872	1,286,340
	2020	92,967	2,195,459
	2021		
<b>KUSSCO Mutual Ass</b>			
	2017		
	2018		

	2019	5,960	799,998
	2020	90,669	1,461,242
	2021		
Liberty Life Assurance			
	2016	201,574	23,463,165
	2017	574,417	24,494,824
	2018	308,469	23,702,935
	2019	320,089	24,581,210
	2020	174,096	24,501,204
	2021		
Madison Life			
	2017	240,924	10,381,682
	2018	-510,680	12,685,710
	2019	-386,273	14,318,383
	2020	-692,035	15,801,805
	2021		
Madison Gen.			
	2017	80,266	4,106,342
	2018	-106,709	4,910,224
	2019	14,367	4,867,189
	2020	32,449	5,008,265
	2021		
Mayfair Ins			
	2017	321,190	5,377,403
	2018	328,538	6,343,434
	2019	332,688	6,831,176
	2020	385,224	7,897,325
	2021		
Metropolitan Cannon Life			
	2017	-183,381	2,733,571
	2018	28,336	2,324,074
	2019	-137,038	2,202,016
	2020	-512	2,139,679
	2021		
Occidental Ins Co			
	2017	93,111	3,769,398
	2018	244,880	3,943,017
	2019	248,118	4,314,754
	2020	-80,963	4,782,633
	2021		
Old Mutual Assurance			
	2017	-230,464	14,461,599
	2018	277,797	13,995,196
	2019	247,065	15,322,667

	2020	-662,878	14,019,672
	2021		
<b>Pacis Insurance Co</b>			
	2017	43,925	2,313,106
	2018	45,357	2,477,439
	2019	-253,163	2,779,664
	2020	130,593	3,033,652
	2021		
<b>MUA/Phoenix (K) Ltd</b>			
	2017	-14,867	1,854,759
	2018	-97,143	1,747,530
	2019	8,374	1,786,287
	2020	-195,759	12,752,198
	2021		
<b>Pioneer Gen. Ins</b>			
	2017	3,143	1,046,355
	2018	-8,657	1,180,787
	2019	21,102	1,405,120
	2020	9,885	1,411,687
	2021		
<b>Pioneer Ass.</b>			
	2017	34,595	5,288,954
	2018	-70,817	7,007,859
	2019	142,489	7,618,773
	2020	-122,257	6,691,328
	2021		
<b>Prudential Life</b>			
	2017	-207,530	1,377,523
	2018	-239,885	1,482,797
	2019	-183,261	1,792,466
	2020	-271,024	1,957,569
	2021		
<b>Resolution Ins</b>			
	2017	-911,836	4,730,271
	2018	-357,885	6,313,052
	2019	-523,133	6,953,972
	2020	67,410	5,725,814
	2021		
<b>Saham Assurance</b>			
	2017	77,526	3,766,901
	2018	95,653	4,037,146
	2019	75,628	3,690,411
	2020	64,108	3,488,739
	2021		
<b>Sanlam General</b>			

	2017	68,700	3,169,019
	2018	115,667	3,528,706
	2019	4,418	3,513,626
	2020	137,789	4,768,861
	2021		
<b>Sanlam Life</b>			
	2017	307,668	24,911,553
	2018	-626,660	24,324,175
	2019	635,564	24,727,051
	2020	498,513	26,301,605
	2021		
<b>Takaful Insu. Africa</b>			
	2017	-188,002	1,867,274
	2018	-100,092	2,104,050
	2019	-4,103	2,440,191
	2020	65,072	1,887,164
	2021		
<b>The Heritage Insu.</b>			
	2016	498,192	7,211,284
	2017	577,247	8,876,808
	2018	380,648	9,200,333
	2019	609,133	9,431,305
	2020	654,574	10,981,519
	2021		
<b>Tausi Assurance</b>			
	2017	248,935	2,574,139
	2018	252,727	2,651,735
	2019	272,618	2,992,699
	2020	328,784	3,127,821
	2021		
<b>The Jubilee Life</b>			
	2017	725,821	63,307,134
	2018	799,581	71,922,004
	2019	1,407,208	83,363,707
	2020	996,398	92,353,816
	2021		
<b>The Kenya Alliance</b>			
	2016	36,415	6,241,844
	2017	425,780	6,843,460
	2018	-228,139	6,738,095
	2019	-42,790	8,389,259
	2020	-639,372	8,015,709
	2021		
<b>The Mornach Insu.</b>			
	2016	3,247	1,925,379

	2017	55,066	2,157,118
	2018	160,575	2,521,477
	2019	85,290	2,792,305
	2020	-34,174	3,268,249
	2021		
Trident Insu			
	2016	-20,656	5,286,000
	2017	-142,281	5,625,883
	2018	-256,866	5,317,552
	2019	-71,604	5,050,206
	2020	22,262	4,822,752
	2021		
UAP Insurance			
	2017	969,215	16,702,154
	2018	171,615	15,640,575
	2019	970,443	15,914,358
	2020	452,820	16,658,572
	2021		
UAP Assurance- Life			
	2017	1,052,701	11,006,057
	2018	175,783	11,264,415
	2019	-42,782	12,721,199
	2020	-484,367	12,815,382
	2021		
Xplico Ins.			
	2017	52,717	2,285,596
	2018	-78,051	2,412,103
	2019	-58,977	2,784,224
	2020	-104,159	3,296,446
	2021		

**Source:** Research data, 2022

**APPENDIX V: RESEARCH PERMIT**

  
**REPUBLIC OF KENYA**  
National Commission for Science, Technology and Innovation

  
**NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION**

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