

FIRM TECHNOLOGY AND COMPETITIVE ADVANTAGE OF INSURANCE COMPANIES IN KENYA

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**FIRM TECHNOLOGY AND COMPETITIVE ADVANTAGE OF
INSURANCE COMPANIES IN KENYA**

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**¹
A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF
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1 CHAPTER ONE: INTRODUCTION

1.1 Background of the study.

Utilization of Firm Technology in business operations plays a significant role, due to high business competitive pressures, changing economic conditions, a firm ²⁸ ability to effectively innovate, adopt and manage its technological resources could mean the difference between success and survival (Altman, 2009). Business processes are continually being automated to improve efficiency and enhancing the quality of services or products produced. Lannelongue & Alfaro-Tanco (2013) argue that the integration of technology in business processes is an aspect that promotes gaining of competitive merits. Technology is very vital to all organizations in the 21st century that intend to remain competitive. Thus, Technology has been intertwined within organizations in an inextricable manner and when utilized well can create a long-term competitive advantage (Jorfi, Nor, & Najjar, 2011). Ergun (2005) recognizes technological innovations as critical enablers for any firm performance by creating value an undeniably unpredictable and quickly evolving environment.

1 This study was based on two theories, Resource-Based Theory (RBT), and Technology Acceptance Theory. RBT suggests that an organization has necessary pool of resources and capabilities that determines its performance, if all firms in that industry had the same capabilities and competencies, they would attain the same value and therefore negative competitive advantage gained (Barney & Clark, 2007). The basis of this theory is that successful firms find their competitive advantage by developing distinctive, unique capabilities and competencies. Technology Acceptance Theory argues that firms that adopt, embrace and make use of technological innovative ideas are likely to attain sustainable competitive advantage in their industry. Advancement in technology capabilities and competency are the main keys in

enhancing execution among numerous firms and are reflected by expanded productivity and overall industry development.

In Kenya the Insurance industry has had considerable burgeon in the previous five years, more people are embracing insurance services mainly insurance policy in medical, transport, and education. Insurance Regulatory Authority (IRA) of Kenya, governor and regulates the insurance sector in Kenya. But, still, it has a low penetration of 2.43 percent of gross domestic product the lowest in the last 15 years due to an increase in income-sensitive population whose disposable incomes have decreased due to harsh economic times and also the capping of bank loan interest rate, which continues to have a spiral effect on insurance companies because a slowdown in lending has affected investments in projects and assets that are insurable. The growth of a youthful population that is tech-savvy which accounts for 70% of the population (KNBS report 2018). According to the Regulatory Authority (2019), there was an 18 percent cumulative decline in profitability in 2018, proof of the tough economic conditions for the Kenya insurance industry. Therefore, insurance firms have to adapt to the harsh economy to stay competitive especially with the launch of bancassurance. The study proposes to research on how the insurance sector can utilize firm technology and the digital revolution to boost growth and penetration, with the aim of improving performance and gaining competitive advantage.

1.1.1 Firm Technology

Firms are social entities that are goal-oriented, intentional structured activity systems with identifiable boundaries (Bedeian, 1980). A firm is a commercial enterprise, an organization that deals with trading products and/or services to potential customers to make a profit. Firms operating in a tumultuous business environment face a lot of competition from other firms within the same industry.

Firm technology has two elements, the physical element which constituents' equipment's, techniques, and products as well as data elements that constituent knowledge and skills in operations, administration, production, quality control, and functional areas (Kumar et. al, 2001). The motivation to utilize technology to create a competitive advantage is motivated by the demand for attaining low-cost production of quality products or services, offering differentiated goods or services, targeting a niche market segment that is profitable and enhancing inventive processes of the organization.

1.1.2 Competitive Advantage.

Parnell & Wright (2007) states that competitive advantage is a product or service that a firm customers merit more compared to similar offerings by firm`s competitors. Competitive advantages in most cases are temporary as competitors continually attempt to find ways to duplicate the competitive advantage (Thompson and Strickland, 2007). To be ahead of competition firms are forced to continually innovate and develop new unique technologies, and optimally utilize them to explore external opportunities. Porter (1998) He defines competitive advantage in three dimensions of cost, differentiation, and focus, he suggests that cost advantage is attained when a firm is able to lower its production cost compared to others in the industry, or differentiation advantage is achieved when a firm can offer benefits that exceed those of competitor's products. The firm creates competitive merit by offering superior benefits to its consumers more than the competitors' products and at a reduced cost compared to competitors. It helps firms develop a superior value for its products and service consumers and in return make huge bunce.

Competitive advantage is evaluated through use of indicators such as innovations, market share, profitability, operations efficiency. Innovation is a new idea, process, or device that is perceived

to be path-breaking and adds value (Rogers, 1995). A company share market is the total market sales percentage that is earned by an organization at any given time period. Profitability, in this case, refers to a firm's ability to earn profits, while operations efficiency is the ability of a firm to serve its customers to their satisfaction at minimum costs (Barney, 2002).

1.1.3 Insurance Companies in Kenya.

Insurance is providing protection against a possible financial loss. An insurance company provides insurance cover as a reimbursement caused by death, illness, and damages to property, and losses in trade for premium payments. Most popular forms of policies include health, automobile, life, home, property, and liability. When a loss occurs, the claims investigator determines if your policy will cover it. Insurances companies are managed by the IRA. Its main functions include; controlling supervising, developing and regulating the insurance business through formulating as well as setting standards of conduct for insurance and reinsurance business, providing licenses to all personnel involved with an insurance business, and protects insurance policyholders' interest. The current insurance sector is made up of 48 insurance companies, 9262 Insurance Brokers, 131 Investigators, 28 insurance loss adjuster, 30 insurance surveyors, 31 medical Insurance providers, 9 Risk managers and 16 Reinsurance Companies (AKI report June 2019). The key performance indicators are measured through financial and operational activities which include: the new policies per agent, insurance underwriting cycle time, cost per application and cost per claim.

The insurance companies are currently adopting technology used in almost every aspect of their activity, in order to increase efficiency, they have switched from paper documents to technology systems that cover the basic scope of insurers' work, which is product creation, risk assessment, sales, product/policy maintenance, and claims handling. Nowadays, insurers use technology to

further improve customer satisfaction or to reduce costs. They need to do it, in order to stay competitive. Robotic Process Automation allows automating part of simple back-office work so the employees can focus on more complex tasks. Technology applications for calculating the various ratios needed to configure premiums. They are using apps to be more easily accessible to both customers and agents. Artificial Intelligence can be used in many fields, for example, claims automation or fraud detection. Insurers can also use voice chat-bots to improve call center efficiency or a text chat-bot which can serve as an additional communication or sales channel.

1.2 Research Problem

Firms need to develop and utilize apt technologies that would help them overcome pressures forced by the change in both external and internal business context (Oliver, 1991). A study by Breznik (2012) found that an organization that develops and adopts an apt mix of technologies has the ability in overcoming business environment challenges, and deliver unique services and goods that are complicated to reproduce and, thus gaining CA. Technology becomes a tool for a competitive advantage when strategically valuable and complicated for competitors to imitate.

The insurance industry has experienced evolution in its market, technology, economic and legal changes that have pushed the players towards a new way of thinking and doing business. The business rivalry among the insurance companies is very intense as they are forty-eight licensed companies competing for the few customers who can afford to purchase insurance policy due to the prevailing harsh financial-economic time in the country and this has pushed some companies to undercut as a strategy to woo customers and increase the uptake of its products, but the vice has resulted to twelve insurers incurring underwriting losses last year (IRA report 2019). According to IRA (2019) study, it ranks premium rate undercutting possess the highest peril to the insurance sector followed by claims settlement, delays in premium collection, limited

qualified staff such as actuaries and fraud investigators. The emergence of the millennial customer base, according to KNBS, 2018 population report indicates 70% of the population is under 35 years. Millennials have grown up in a digital environment, they prefer using technology more than any other market segment, the industry remains one of the most paper-intensive sectors in our economy and therefore the need to invest in technology or otherwise a large potential market may go untapped. The millennia need personalized tech-savvy based insurance products and services, therefore, the traditional insurance process is no longer useful to this generation, thus insurance companies must invest in technology to serve this generation and create a competitive position. But, not all insurance firms see the value in embracing such technological innovations push them in a precarious position where they will lose competitive advantage, are subject to losses or even edged out of the market (Pride, 2003). This begs the question of whether the development and adoption of firm technology have a direct effect on advancement, as well as gradual evolution of insurance companies' competitive advantage in a country.

Several scholars have carried out extensive studies both globally and locally on the Insurance industry. However, the majority of these studies focused on different contexts. Beatrice (2013), a study on low penetration of Insurance, and strategies that insurance firms in Kenya can use to alleviate penetration. The study focused on establishing what causes the uptake to be low and the problems encountered by insurance companies in selling their products. However, it had a research gap since it did not investigate the relation between firm technology and competitive advantage of Insurance companies. Weill (2012), studied the role and value of IT Infrastructure on Insurance Companies' performance in Massachusetts. He surveyed 30 insurance companies and concluded that there exist a positive value and role of high investment in IT infrastructure

and performance. This study was not conducted in a Kenyan perspective rendering a geographical gap which the current study attempts to address. Ramesh (2010) studied the impact of IT in service delivery in the Indian insurance industry and found that firm technological resources were positively associated with service delivery hence better customer experience. However, this study focused on service delivery and customer experience rather than on the desire to create a firm competitive advantage which is what the current study concentrates on.

In Kenya, a study on the competitive advantage in the service industry (Wachira, 2014), concludes that an integrated approach of competitive advantage where both positioning framework and valuable resources are used as complementary is beneficial but the study did not cover the insurance sector. Kantor (2010) studied the application of technological resources in enhancing competitive advantage among commercial banks in Kenya and established positive correlation exists between technological resources and banks economic progress in attaining competitive advantage. It was conducted based on a banking industry context rather than in an insurance context. All these studies were based on a different context, other than the link between firm technology and competitive advantage of insurance companies. Based on the previous studies carried out both locally and globally, it is evident that there is little that has been done in this area. It's against this background that the study seeks to bridge this inherent knowledge gap by endeavoring to answer this question: what is the relationship between firm technology and competitive advantage of insurance companies in Kenya.

1.3 Research Objective

The study objective was to determine the relationship between Firm Technology and Competitive Advantage of Insurance Companies in Kenya.

1.4 Value of the Study

This study will enrich the body of knowledge on the importance of firm technology in creating a firm competitive edge against its competitors. Scholars, teachers, and researchers in this study area will find this study useful. It will work as a springboard in future studies in a similar area and other related areas. This study will add more to the debate that firm technology truly can help a firm attain competitive merit against its competitors.

This study will benefit the government, in understanding some of the environmental challenges faced by insurance companies and help develop policy or regulatory frameworks that promote the use of firm technology. IR will benefit as they will be able to develop policies that will promote the adaptation of insurance technology. Potential investors in the industry will also find the study valuable because it will offer an insight into how various insurance companies have employed firm technology to have a CA over their competitors.

The study findings will be beneficial to Insurance Companies, as well as investors in insurance business as a whole as they will be in a better position to comprehend on the need to invest in firm technology and the appropriate technology that need to be used by their insurance companies in managing service quality to customers thus attracting and retaining customers, as well as the top-level managers, as they will understand the value of implementing and adopting firm technology for the survival of the company. This study will assist top management in knowing insurance technologies and innovations available and how well the technologies can be harnessed and managed to ensure the competitiveness of the company. The development partners who have invested in the insurance business as brokers will have a better understanding of how technology utilization can boost and create a competitive advantage.

1 **CHAPTER TWO: LITERATURE REVIEW.**

2.1 Introduction

This chapter is structured based on the research objective and different studies by other researchers on a similar subject. Field studies were based on the foundation of firm technology, and its relationship in generating a firm's competitive advantage.

2.2 Theoretical Foundation.

Scholars have developed various theories aimed at explaining the connection between firm technology and competitive advantage. Based on dyad theories which are; Resource-Based Theory, and Technology Acceptance Theory. The propositions of the theories and relevance to the study are also presented.

2.2.1 Resource-Based Theory

It explains for an organization to attain a competitive position ought to have superior capabilities and resources that help differentiate it from other firms in the same industry, (Wernerfelt, 1984), and these resources can be technology capabilities, as the world becomes more digitalized. Resources are the assets that are valuable to a company in creating cost or differentiation advantage and it's difficult for competitors to easily acquire the same. Some of the competitive advantages that a firm can gain include brand popularity, lower underwriting cost, specialized insurance products, corporate reputation and, superior database management and data processing capabilities among others.

Barouney (1991) argues that in order for a firm to have the possibilities of creating a competitive merit, a company's resources ought to have four unique elements; should be valuable in exploiting opportunities and neutralizing threats in a firm's business environment;

being sparse among competitors as well as few strategically identical substitutes for this resource. Resources are the source or supply from which benefit is produced and technology is an important factor that changes substances into resources as well as activating the resources to achieve a certain objective and is through technological inventions, ideas, knowledge, and discoveries that lead to the creation of competitive position, therefore, the theory was relevant to the study as it describes the relationship on how firm resources ensure company creates competitive advantage.

2.2.2 Technology Acceptance Theory

The usefulness and ease of utilizing that technology are beliefs that influence someone's attitude towards actual usage of the technology (Porter & Donthu, 2006). In the Davis study, he recognizes that a perceived convenience and helpfulness would be the motivating factor towards adapting and using that technology. Adopting the new technology is always a subject of key factors mainly the compatibility, relative advantage over other existing ways of doing things, observatory and trial nature (Rogers, 1995).

The perception held by management on the perceived utilization of technology in gaining competitive advancement over other industry competitors and will only integrate technology adoption if it's perceived to be beneficial. The adoption of the new technology is based on key factors mainly the compatibility, relative advantage over the existing technology, innovations, observatory and train nature (Rogers, 1995). the expectations by majority of customers over the efficient and effective delivery of services by technologies and management need in gaining a competitive advantage over other industry competitors lays in as factorials towards the intake of the technologies the theory helps in accounting needs that may force the integration of

technology or those factors that hinder the adoption of technology in companies (Hanshim, 2015).

The theory was beneficial in analyzing factors surrounding the adoption and rejection of different technologies in a firm. These factors comprise the firm structure, business context climate both external and internal environment and culture of the organization (Zailani et al, 2014). This theory provides a framework of why some firm technologies are accepted and adopted while others are rejected, a firm technology may be resisted if the target individual to adopt the new changes are not ready and willing to use the technology (sevcik, 2014) it also helps in tracking the flow of technology innovations, and the rate and reasons why are developed and adopted by an organization as a means of creating competitive advantage

2.3 Types of Firm Technology

Firm technologies are fundamentally changing how companies operate and serve their customers. The key driver of ² technological disruption in the current insurance era is the ability to fulfill customers' needs through developing ² a user experience that is designed to be frictionless, instantaneous and mobile. According to Wachira (2014) firm technology helps firms improve their pricing, create operational efficiencies and become more customer-centric. Some of the Firm technologies that insurance companies can make use of in creating competitive advantage includes; Blockchain, Internet of Things, Artificial intelligence, Automation, Client Self-Service, Big Data Analytics, Cloud Computing, and Automation.

2.3.1 Blockchain Technology

Blockchain enables decentralized storage of data of any kind. It's a security method by which data is secured against other data in the system and due to the huge real-time data processing in

various insurance processes, there is a need for an ²⁷ easy and secure transfer of data across the firm. So the technology is a good solution to it, an insurance company is able to utilize its feature ³ of secure data management across multiple interfaces and stakeholders, without loss of integrity and this helps them in saving operational costs, fraud management, and reliable data availability.

2.3.2 Internet of Things Technology

It's a term referring to all of the world's connected devices e.g. personal home computer, mobile phone, connected car, smartwatch. This technology makes use of other technologies like wireless technology, sensor technology, QR technology and this helps every existing device can connect with other devices, objects, and databases around them. In the insurance industry, it will help in protecting investments, catching problems before they do damage, verifying claims and ensuring policy restrictions are followed. IoT can be utilized in motor vehicle tracking in auto insurance, biometrics used in health insurance to track a person's health by wearing heart rate sensors, pedometers and more sophisticated devices, and offer appropriate insurance cover based on gathered data.

2.3.3 Artificial Intelligence and Machine Learning

AI is creation of an intelligent machine that work, adjust to new inputs, learn from experience, and perform human-like tasks. It's supportive technology in the insurance industry, promotes better customer relationship management, augmenting and automating ² claims management process, thereby increasing the speed at which claims are processed, and enhancing the client experience. Virtual assistants and Machine learning enables insurers' information systems to rapidly adapt to new information, without the need for re-programming and can be utilized in

underwriting shaping, products pricing, and making insurance purchase be easy and pleasant, eliminating human error and offering better serve to customers.

2.3.4 Advanced Big Data Analytics

¹⁰ The insurance industry relies on one thing, its data. Premiums and payouts are calculated based on an immense number of data points. Premiums of insurance can become highly personalized with the advent of technology-enabled new data sources like the ³ internet of things, mobile-enabled insurtech apps and wearable. ³ Drone and imaging technology increasingly enable insurers to get the high-resolution images for remote and accurate property estimation and analysis thus allowing more complex analysis without increasing overhead. More complex and accurate valuation analysis, since they can take in more data unlike claims adjuster, and actuaries when making a risk determination. Advanced analytics helps in dynamically segmenting users and their needs, identify exceptions, adjust policy prices which in turn helpful in optimizing new business strategies to identify new opportunities for business growth.

2.3.5 Cloud Computing

⁸ It's the practice of utilizing a network of remote servers hosted on the internet to store, manage and process data, rather than a local server or a personal computer (Chris, 2017). The insurance companies can embrace it ² in order to continuously improve the customer experience, it's important for insurers to be able to make quick front changes based on the client's needs. Overall, the ² cloud provides a more modernized technology stack, and may ultimately reduce operational costs.

2.3.6 Automation

Automation is the technology by which processes are performed with minimal human assistance by utilization of electronics and computer-controlled devices to manage control of processes, which helps in boosting efficiency and reliability as well as reducing operational costs (Jane Brake, 2010). Office Automation and Robotic Process Automation allows automating part of simple back-office work so the employees can focus on more complex tasks. It helps in managing clients' self-service, the need by clients to be able to update their information anytime without waiting for a human employee or visiting insurance company, hence time-saving, management of document through the use of smart management and ORC. Significant documents such as policies, repair bills can be scanned and automatically sent to the correct customer's account thus reducing paperwork.

2.4 Firm Technology and Competitive Advantage

Firm technology a valuable resource as it helps a firm implement strategy that helps in lowering prices of products and services, by reducing the value of business processes and operations, creating new features that help differentiate a firms existing products and/or services (Barney, 1991). Firms have to be more creative as they can no longer differentiate themselves based on products or services and prices according to the age-old practice and the use of the technological resource as a strategic competitive weapon is the new differentiation tool (Bob and Harris, 2011).

Kantor (2010) suggests in his study on the application technology resources in enhancing ¹ competitive advantage among commercial banks in Kenya. It revealed that technology resource is a key factor in the economic progress of any commercial bank as well as in developing competitive advantage in different market segments. Technology integration in the company

system would result in improved performance of a firm and a source of creating competition merits pushed by the demand to attain a lower operations expenses, create product or service differentiation, focusing on a target market niche, and promote efficiency and effectiveness.

A study by Ramesh (2010) on the review of IT impact on the delivery of service on the insurance industry in India. This study was studied at both aggregate and detailed level so as to establish exacted to which IT affects firm performance. The study concludes that an organization that uses technology enjoys innovation, new business opportunities, growth, speed, agility, high-quality products or services, improves efficiency and effective customer service. These characteristics would improve competitiveness as well as enhancing facilitation with other industries within the same value chain.

Nicholas Kibwott (2003) in his study ²⁵ on the relationship between Information Technology (IT) and Competitive Advantage in Oils and Fats Manufacturers in Kenya, the findings revealed that development of IT enhances good governance, accelerate quick processing of information, and has positive performance effect on the company as well as positive association between information technology and profitability. Technology innovation helps in revamping the bases of rivalry in a particular sector and that firm technology is major source of competitive advantage creation in a firm and organizations can utilize technological resources to gain a beneficial state by intentional upsetting the competitive environment, impelling redefinition on present business and changing the rules of the game (Hart & Sanders, 2015).

According to Ross et al (2012), study on influence of Technology and Firm Performance of chosen Motor Companies in Southwest of Nigeria, he found out that firms gain a competitive advantage from their technology capabilities, specifically is gaining value from technological resources by developing and utilizing three resource portfolio: strong technological business

partnership, highly trained and skilled technical human personnel, and transformable technology infrastructure. Weill (2012), assessed the function and benefit of IT Infrastructure on Insurance Companies in Massachusetts, the findings revealed high investment in technology has direct impact on soaring firm success in the insurance sector, and also he founded that technology investment had a strong efficacious effect on firm success.

Firm technology effect on Hotel Performance using Resources-Based Theory in Australia was examined by Mata et al, (2005) and the role of firm technology as a resource, plays in this functions: firm management, tracking customers complains, simplifying operations processes, lowering operating costs and creating differentiation in service delivery was improved by firm technology and contributed to a sustained competitive advantage. The findings conclude that technology provides benefits such as it influences the actions taken by decision-makers, helps in discovering new opportunities and overcoming or minimizing threats, exploiting a firm's strengths and competitors vulnerabilities to its advantages, providing early warning signals and boosting quality customer relationship management.

Commercial Banks in Kenya were studied by Wambui, (2012) and how firm technology influences their performance. Efficiency ratio was used as a measure of technology use, computed by comparing the current profits to the firm's income. The study revealed that greater use of technology promoted high-efficiency levels in income generation, thus more profitability through analyzing the banks operating profit to income ratio to ascertain technology effects on profits, and also technology alone would not lead to sustainable performance advantage. Firms also created performance merits by exploiting technological resources to take advantage of impalpable, symbiotic business, and human resources such as the flexible millennial tech-savvy culture.

Binuyo & Arebeshola (2014), the study assesses the effect of firm technology on the performance of South Africa, Commercial Banks, by empirically studying direct association between firm technology capability, competency, and performance. The findings suggested firms with higher firm technology potential and competency tended to outclass those with lower firm technology proficiency a variation of profit and cost-based performance measures. Firms that utilize technology as a weapon for competitive superiority enables them to codify, execute and control strategies related to organizational levels and operations, be more creative, accelerates new product development and service delivery and attains the first-mover advantage, investment and adoption of various firm technology and innovations increased return on capital employed as well as return on assets. Firm technology is strategically utilized as a means of creating competitive merits by firms in a rapid and continuously changing business internal and external environment (Narayanan, 2001).

Kotung (2018), influence of information technology in developing sustainable competitive advantage at the department of civil registration in Kenya study, by establishing the relationships between technological innovations and firms performance. The results revealed that civil registration department had been motivated to adopt IT as a tool for attaining competitive advantage due to beneficial attributes which included; elimination of lots of paperwork which was erroneous and tedious, development of differentiated technological-based products or services to the customer, and improved firm efficiency in service delivery. The study showed how technology can be exploited in providing the prerequisite capabilities needed in fulfilling a particular segment's needs in enhancing firms' competitiveness and efficiency through influencing better interaction and communication with clients, facilitating lower cost and enhancing performance and growth.

Equity Bank Kenya Limited, the study by Ng'ang'a (2014), investigated on how the bank is striving to achieve competitive merits through technology in Kenya, through determining the competitive strategies adopted by the bank and effectiveness of ICT as a competitive strategy. The findings deduces ICT adoption helped in market, system and customer share expansion, thus facilitated the growth strategy for the bank, increasing its products or services portfolio and expanding its main business through market focus development and penetration of new differentiated low cost products, improving relationships with customers, as it helped in providing more effective and efficient marketing of banks products/services focusing on specific market segment as well as customized products and online customer relationship management services.

7

2.5 Summary of Empirical Review and Research Gaps

The literature review of the study itemized that diverse researchers have made several attempts in describing the influence of firm technology in creating CA in various industries but all lacked a precise study on the association between CA and firm technology of Insurance Companies in Kenya. Several studies both globally and locally that have been done with regard to firm technology and competitive advantage.

Kotung, (2018), Influence of information technology in developing sustainable competitive advantage at the department of civil registration in Kenya study. The findings disclosed a positive relation between IT, and sustainable CA that promoted firm competitiveness through enhancing efficiency by promoting better interaction and communication with clients. The study failed to explicitly show how firm technology can be used to lower the cost of operations and promote differentiation in service and product delivery which is a key focus of the current study.

Furthermore, it focused on developing a sustainable CA in the Civil Registration department in Kenya, which has a different operating environment.

Binuyo & Arebeshola (2014), study on effect of firm technology on South Africa, Commercial Banks performance found out that there was a direct relation between firm technology capability, competency, and performance. Firms with a higher firm technology capability and competency tended to outperform those with lower firm technology potential, another study was also conducted in Kenya on its commercial banks by Wambui, (2012) on how technology influences bank performance. The study found out that a greater use of technology promoted high-efficiency level in income generation, thus more profitability and Kantor (2010) Application technology resources in enhancing competitive merits among commercial banks study showed that technology resource is a key factor in the economic progress of any commercial bank as well as in creating a competitive advantage in different market segments. Ng`ang` a (2014), study on how Equity bank Kenya Limited is striving to achieve competitive merits through technology revealed that ICT adoption helped in focusing on a certain market segment, differentiated system, and customer share expansion, facilitating the growth strategy for the bank, at lower operational costs. However, the studies were based on the banking industry in South Africa and Kenya thus little can be borrowed with regards to Insurance Companies.

The insurance industry in India was studied by Ramesh (2010) and how IT affects the delivery of services. He concludes that a firm that uses IT enjoys innovations, speed, quality and growth in service delivery. But the study failed to explicitly show how IT can be utilized in creating competitive advantage and improving service delivery, a key focus of this study. However, it focused on India, which has a different operating environment in the current study which focuses on Kenya. Nicholas Kibwott (2003), the association between IT and Competitive advantage in

Oils and Fats Manufacturers in Kenya study, the findings revealed that development of IT enhances good governance, accelerates quick processing of information, and has a positive performance influence and its profitability. However it failed to specifically reveal how firm technology can be utilized in creating a competitive advantage as it focused on information technology only which is among many components that form firm technology. The study also focused on manufacturing companies and thus different context from that of insurance companies

1 CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the methodology that was employed in the study towards providing answers to the research objective. The methodology focused on research design, target population data collection instruments, data analysis and presentation methods or techniques used are also explained.

3.2 Research Design

This study adopted a descriptive research design. Descriptive research is a scientific method that entails observing and reporting the behavior of a subject without influencing it (Mugenda & Mugenda, 2003). It was appropriate for the study in establishing the association between firm technology and competitive advantage of insurance companies as it entails determining the frequency or the relationship between variables and the state of affairs as there currently exists without manipulating them.

According to Sigmund (2003), the main aim of descriptive research is to provide characteristics of a population or phenomenon where accuracy is especially of great significance in the research.

It discovers answers to who, what, when, where and sometime attempts to capture attitudes or patterns of past behavior (Cooper and Schneider, 2003). George (2004) noted that descriptive research design collects detailed information from either a group of respondents or subsets, analysis, patterns are drawn out and a juxtaposition made for the purpose of elucidating and supporting decision making.

1 3.3 Population of the Study

Population is a group of individuals/firms under research that shares common characteristics such as professional, demography, age among others which a researcher intends to make certain inferences after exhaustive quantification and analysis of such characteristics and homogeneous (Creswell, 2009). The group can a large group, standard size or a small group sample and is meant to help gather primary data for the study by giving responses on a structured questionnaire. The study population constituted ²⁰ all the Insurance Companies in Kenya. There are currently a total of forty-eight (48) licensed Companies in Kenya as of 15th February 2019 (IRA, 2019). These organizations provide insurance services to their clients.

7 3.4 Data Collection

The study collected primary data as a source of information using structured questionnaire which was administrated through the use of mail as well as drop and pick later method. Questionnaires were suitable as they are deemed to be of great value in time-saving, suitability and privacy (Mugenda & Mugenda, 2003). Operations Manager or their representatives from the insurance firms gave primary data by answering the questionnaire. The ¹ questionnaire was organized into three sections. Section A, General information about insurance company, and respondents, Section B, firm technology, and Section C, competitive advantage. The questionnaire that was used for this research is provided in Appendix 1

3.5 Data Analysis

Data analysis entails sorting , editing, coding, entry, processing of data and eventually interpreting the outcomes (Creswell, 2009). Before processing responses, completed questionnaires were keenly studied to make certain that all the facts are stated, there are completeness and consistency. Descriptive statistics were utilized in data analysis because it made it possible to show the count of individual scores in the population for a specific variable. The sample mean and standard deviations calculations were used in analyzing data, as well as tables in presenting findings. The regression equation was given by:

$$Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon$$

Where;

α =constant

Y_i = Competitive advantage

X_1 = Underwriting

X_2 = Customer service

X_3 =Research & development

X_4 = Auditing

X_5 =Investment

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$, = regression of co-efficient of the model that define explain the value by which Y is changed for every change in the predictor variables.

ϵ = the stochastic error term

CHAPTER FOUR: DATA ANALYSIS, RESULTS, AND DISCUSSION.

4.1 Introduction

This chapter contains analyzed data obtained from the questionnaires, results presentation, and analyzed data discussion. Response rate results and general information about respondents and company were first presented, then descriptive statistics and finally the presentation of discussed results.

4.2 Response Rate

A total of forty-eight (48) questionnaires were used in collecting primary data, and thirty-five (35) were filled and returned. Representing a 73% response rate, and according to Magutu (2014), a 50% response rate or more is appropriate. Based on this affirmation, the response rate of 73% was considered sufficient in forming conclusions and generalization of the study population.

4.3 General Information

To gather respondents and the insurance companies under study general information, matters such as firm's name, respondent duration working for the company, ownership of the company, years in operation and the number of insurance business classes offered by the company were addressed in the first section of the questionnaire. It was aimed at providing a better

comprehension of the respondents and the insurance companies under study. This section provides general information assemblage from the field, examined and interpreted in line with this study objective.

4.3.1 Company name

The study sought to determine company name used for the study and are listed in Appendix 2.

4.3.2 Duration worked with the firm

The years that the respondent had worked in the firm understudy was also investigated. Table 4.1 presents the results. It indicates that 34.3% had worked for the firm between 4-8 yrs.' followed by those who had worked 9-10 yrs.' at 31.4%, less than 3 years at 17.1% and above 11 years at 17.1%.

The results show collectively, over 82.9% have worked for the firm for over four years, therefore, they were in a better position in understanding the firm technology being utilized by the company, thus they were relevant to the study.

Table 4.1: Duration of Service

No of Yrs	Frequency	(%)
< 3 yrs.	6	17.1
4 – 8 yrs.	12	34.3
9 – 10 yrs.	11	31.4
Above 11 yrs.	6	17.1
Total	35	100.0

Source: Research Data (2019)

4.3.3 Ownership of Insurance Companies.

The ownership structure of the firms was either local or foreign-owned and both foreign local owned. Table 4.2 points out that 23 insurance companies are locally owned while 10 were foreign-owned and 2 firms were foreign/local owned. This showed that the insurance industry was conducive for local investors and therefore competition in the sector was high and therefore the study determined the extent to which they have adopted firm technology for the purpose of gaining competitive advantage.

Table 4.2: Firm Ownership

Firm ownership	Frequency	(%)
Local	23.0	65.7
Foreign	10.0	28.6
Both	2.0	5.7
Total	35.0	100.0

Source: Research Data, (2019)

4.3.4 Period in Operation

Data on years in operation was important to this study in order to comprehend stability, company growth, and the whole insurance industry. A longer period means more experience the more the chance a company has more advanced technological resources used in its business processes.

Table 4.3: Firm Period in Operation

Variables	Frequency	(%)
Below 5 yrs.	4	11.4
6-9yrs.	9	25.7
10-14 yrs.	12	34.3
15-19 yrs.	6	17.1

Over 20 yrs.	4	11.4
Total	35	100.0

Source: Research Data, (2019)

The results in Table 4.3, specify 88.5% have being in the insurance business for a duration exceeding 6 yrs while just 11.4% have been in the market for less than five years and 14.3% have been in operation for over 20 years, therefore, implying that most of the participants had the requisite experience in the insurance sector to make a meaningful contribution to the study. Based on these findings most companies had vast knowledge and understand the insurance market well thus high competition is expected and the need to attain a competitive edge exists and this study determines how they have adopted firm technology and its influence on performance.

4.3.5 Authorized Insurance Business Classes

The number of authorized insurance business classes offered by a company may determine the company`s ability to diversify to gain market power over competitors by having a wide market coverage and penetration level. The current question focused on the number of insurance classes a firm is authorized to offer.

Table 4.4: Number of Insurance Business Classes

Insurance Business Class	Frequency	(%)
Below 5	6	17.1
5 – 9	7	20
10 – 14	10	28.6
15 – 19	5	14.3
Above 20	7	20

Source: Research Data, (2019)

According to table 4.4, majority of them were authorized to offer more than 15 different insurance business classes. Those operating between 10- 14 classes account for 28.6% of the entire sub-sector. It's significant to note that the combined total of those insurance firms offering between 5 and 19 insurance business classes is 62.9%. These results could be explained by the fact that most insurance companies had diversified their insurance business into different classes as a method of reaching more clients and the ease of doing business by firm technology utilization.

4.4 The impact of firm technology in enhancing competitive advantage.

This section addresses the research objective establishing the extent insurance companies use various firm technologies to gain competitive advantage. Section 4.4.1 sought information on the types of firm technologies used by insurance companies in Kenya while section 4.4.2 sought information on the extent of firm technology utilization in Operations areas in the firm and 4.4.3 sought information on the drivers for firm technology use by firms for competitive merits, and the benefits accrued from utilization of firm technology by a firm. The data collected in sections 4.4.2, 4.4.3, and 4.4.4 respectively was mapped on a five-point Likert scale with 1-signified No extent, 2-signified Low extent, 3-signified Moderate extent, 4-signified Great extent and 5-signified Very great extent. Data were later analyzed using the computation of mean and standard deviations. The mean represents average response while standard deviation indicated a variation from the average response.

4.4.1 Types of Firm Technologies

In order to establish the extent firm technology utilization promotes CA in insurance companies, the researcher sought information on the different types of emerging firm technologies being utilized by insurance firms in Kenya.

Table 4.5: Firm Technologies in the Insurance Industry

Types of Firm Technology	Frequency	(%)
Internet of Things Technology (ToT)	2	5.7
Artificial Intelligence technology	2	5.7
Blockchain	2	5.7
Advanced Big Data Analytics Technology	7	20.0
Cloud Computing	8	22.9
Office Automation	14	40

18

Source: Research Data, (2019)

Results on Table 4.5, indicates the most preferred firm technology is office automation it entails offering insurance services/products via the use of ICT medium at 40.0%, followed by cloud computing at 22.9% while artificial intelligence at 5.7% and advanced big data analytics at 20.0%. This result shows that the insurance industry has embraced and adopted technologies in offering its services thus enhancing efficiencies and effectiveness in business processes.

4.4.2 Extent of Firm Technology utilization on Operations Areas.

The study sought out the extent to which Firm Technology has been adopted and applied to different business operations by a firm. Analyzed findings are presented by Table 4.6.

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Table 4.6: Extent of Firm Technology utilization in Operation Areas.

Operation Areas	1	2	3	4	5	Mean	Standard Deviation
Underwriting	7	9	6	8	5	2.9	1.38
Customer service	8	7	8	5	7	2.9	1.45

Research and Development	10	3	7	7	8	3.0	1.6
Auditing	9	6	7	6	7	2.9	1.49
Investment	8	8	6	5	8	2.9	1.50

4
Source: Research Data, (2019)

Data in table 4.6 indicates there was the use of firm technology in different areas of operations in the firm. Respondents agreed on the utilization of Firm Technology for Competitive advantage in underwriting had a 2.9 mean, and 1.38 standard deviation, while customer service, 2.9 mean and 1.45 standard deviation, therefore from the mean we can conclude that its use at a low extent for competitive advantage, while research and development with a 3.0 mean and 1.6 standard deviation we can say that there was moderate extent use of firm technology in R&D to decide and provide market-driven products.

4.4.3 Drivers for the utilization of firm technology for competitive advantage.

This section was used in determining drivers of firm technology utilization by firms in their competitive strategies in gaining a competitive edge in the market.

Table 4.7: Drivers of Firm Technology utilization for Competitive Advantage.

Competitive Strategies	Mean	Standard Deviation
Focusing on a niche market segment.	3.89	1.56
Delivering differentiated insurance products/ services from that of its competitors.	3.64	0.95
Developing new products/ services for the current market demand	3.50	0.78
Expanding regionally/globally	2.74	1.16

Create and nurture valuable relationships with customers	4.50	0.46
Initiate and nurture valuable relationships with insurance agents	3.49	0.97
Differentiated its products/services according to new market needs.	4.51	0.39
Building valuable relationships with insurance brokers.	3.41	0.68
Holding a database of client information.	4.22	1.80
Decision-making process support.	3.24	0.98
Support in automating processes or operations.	3.55	0.73
In supporting alliances or mergers (bancassurance).	2.41	1.19

4
Source: Research Data, (2019)

Data in Table 4.7, show that 2.41 was the lowest mean and 4.50 as the highest mean thus showing a great variability of firm technology use in enhancing different competitive strategies. The highest mean score of 4.51 is for developing and offering of differentiated products or services according to the market needs and has a low variability of 0.39 meaning majority of the insurance firms are using firm technology to a very great extent for this purpose, due to the fact that there is stiff competition in the insurance sector for the limited client base that can afford normal insurance products/ services, therefore, insurance firms are forced to offer differentiated products based on client needs and ability to afford. Other strategies that most companies rated highly were building and maintaining valuable relationships with customers at 4.50 and holding a database of client information. Building strategic relationships with clients make them loyal and satisfied with the company service/products and reduce the threat posed by competitors, new entrants in the industry or substitute products.

It also show that firms opt to utilize firm technology on niche market focusing with 3.64 mean and in delivering unique products / services compared to those of its competitors at 3.89 , however ,although a few of them don't depend much on firm technology for focusing on a niche market, due to the high cost and complexity in undertaking a market research which is capital and labor-intensive, for this reasons many firms might not be in favor of using them, hence the high variability of 1.56 amongst these firms.

According to Table 4.7, use of firm technology in building valuable relationships with insurance agents and brokers, supporting decision making process and business processes automation, as well as developing new insurance packages based on market demand, all scored within the moderate extent of 3 to 3.50, meaning that firms are not able to utilize firm technology in these strategies significantly but still firm technologies are being used in supporting these strategies. Competitive strategies such as supporting mergers or alliances and expansion both regionally or globally fell below the moderate scale of 3, at 2.41 and 2.74 mean score respectively. This could be due to the fact that firms are not ready to invest in firm technologies or may not see how to realize these strategies with the use of firm technologies.

4.4.4 Results attained due to firm technology use.

This section addresses the results achieved by firms through the use of firm technology on their business processes or operations. The data were analyzed using standard deviation, mean and regression analysis. Mean indicates average response on a particular operation area while the standard deviation indicated the variation from the average response. These results, if attained, play an important task in realizing a company`s competitive goals. ²³ Table 4.8, presents the results.

Table 4.8: Impacts of Firm Technology use for Competitive Advantage

Scale	Statements	Variables
1	Firm technology utilization has enabled our company to simplify complex underwriting as well as claims process, reduced paperwork, and improved integrity, less fraud, and forgery.	7
2	The use of firm technology in customer relationship management has promoted a better client relationship, ability to cross-sell based on client wants, as well as improved efficiency and fast in serving clients	6
3	The use of firm technology has enabled our company to undertake market research, and develop policies according to market needs thus enhancing an increase in our market share with a wide range of market-driven insurance policies offered.	11
4	The use of firm technology has made complex insurance auditing possible, fast and more accurate premium rate estimation thus reducing the likelihood of errors which may be costly to the firm profitability and survival.	6
5	The use of firm technology has promoted an easy and free flow of investments information both within and outside the company creating close ties between insurers and investor, thus making informed investment decisions to maximize their portfolio yields	5

4

Source: Research Data, (2019).

4.4.5 Relationship of Firm Technology and Competitive Advantage

In this section, we established the association of Firm Technology and Competitive Advantage from collected data. Competitive advantage mean was calculated and mean of the impact of firm technology utilization for competitive advantage was also calculated so as to establish the association between Firm Technology use, and Competitive Advantage of insurance companies in Kenya. Data collected was analyzed using Regression.

Table 4.9: Descriptive Statistics on the impact of Firm Technology use

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Underwriting	35	1.00	5.00	2.8571	1.37505
Customer service	35	1.00	5.00	2.8857	1.45059
Research & Development	35	1.00	5.00	3.0000	1.55299
Auditing	35	1.00	5.00	2.8857	1.49059
Investment	35	1.00	5.00	2.9143	1.50238
Valid N (list wise)	35				

Source: Research Data, (2019)

The mean for underwriting was 2.8571 with a standard deviation of 1.37505, while for customer service, research and development were calculated at 2.8857 and 3.0000 mean and SD at 1.45059 and 1.55299 respectively. Auditing with 2.8857 mean and 1.49059 SD. Finally, mean index for investment recorded as 2.9143 with an SD of 1.50238.

Table 4.10: Descriptive Statistics for Competitive Advantage

Variable	N	Minimum	Maximum	Mean	Std.Deviation
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Competitive Advantage	35	1.00	5.00	2.8857	1.32335
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Source: Research Data, (2019)

The mean index for Competitive Advantage was 2.8857 and SD of 1.32335.

4.4.6 Correlation Analysis

Correlation analysis was conducted on the variables so as to determine any underlying relationship amongst them. Using SPSS software, the correlation results are presented below;

Correlations Analysis							
		Competitive Advantage	Underwriting	Customer Service	Research & Development	Auditing	Investment
Competitive Advantage	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	35					
Underwriting	Pearson Correlation	.185	1				
	Sig. (2-tailed)	.288					
	N	35	35				
Customer Service	Pearson Correlation	-.038	.051	1			
	Sig. (2-tailed)	.830	.773				
	N	35	35	35			
Research & Development	Pearson Correlation	.043	-.096	-.065	1		
	Sig. (2-tailed)	.807	.582	.709			
	N	35	35	35	35		
Auditing	Pearson Correlation	.157	-.023	.048	-.165	1	
	Sig. (2-tailed)	.367	.898	.783	.343		
	N	35	35	35	35	35	
Investment	Pearson Correlation	-.168	-.134	-.180	-.303	-.175	1

	Sig. (2-tailed)	.335	.442	.301	.077	.314	
13	N	35	35	35	35	35	35

Table 4.11: Correlation Analysis of the Study Variables

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

Source: Research Data, (2019)

The tabulated data shows, when underwriting was correlated against itself, it gave a positive relationship of $r = 1$ and similar results were obtained on customer service, auditing, investment, research, and development. The results showed that when underwriting is correlated against customer service gave a positive outcome and the correlation coefficients of $r = 0.051$ and when customer service is correlated against auditing it gave a positive result and the correlation coefficients of $r = 0.048$, therefore it means there existed a constructive relationship between them. Also, the tabulated results showed the association that existed when competitive advantage is correlated against them, and the findings show auditing, underwriting, research, and development had a positive result when correlated against competitive advantage as follows $r = 0.157$, $r = 0.185$ and $r = 0.043$ respectively. Generally it was concluded that they do exist a certain positive influence of firm technology to a firm gain competitive advantage.

4.4.6 Regression of Coefficients

Regression was done to substantiate the association between competitive advantage impacts and the extent of use of Firm technology in different operational areas within the firm. Competitive advantage was the dependent variable, while independent variable consisted impact of Firm Technology utilization in the different operation areas in the firm. Using SPSS Software, the following regression coefficients were obtained and tabled below. The regression equation was given by:

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$$Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon$$

Where;

α = constant

Y_i = Competitive advantage

X_1 = Underwriting

X_2 = Customer service

X_3 = Research & development

X_4 = Auditing

X_5 = Investment

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$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$, = regression of co-efficient of the model that explain the value by which Y is changed for every change in the predictor variables.

ϵ = the stochastic error term

Utilizing the SPSS Software, the following regression coefficients were obtained and tabulated;

Table 4.12: Coefficients of the Regression Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.371	1.444		1.642	.111
	Underwriting	.174	.175	.181	.991	.330
	Customer service	-.066	.166	-.072	-.395	.696
	Research & Development	.039	.167	.046	.233	.818
	Auditing	.135	.166	.152	.814	.422
	Investment	-.102	.176	-.116	-.581	.566

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a. Dependent Variable: Competitive Advantage

Source: Research Data, (2019)

The above table consist of data that indicates the numerical association between firm technology and competitive advantage. It shows that Underwriting, Auditing, Research, and Development had positive relationship with competitive advantage. Customer Service and Investment had a beta value of -0.066 and -0.102 implying that they had a negative association with a competitive advantage, therefore, Insurance Companies should not expect positive results when the implement them. Overall, the regression equation is as follows:

$$Y_i = 2.371 + 0.174X_1 - 0.066 X_2 + 0.039 X_3 + 0.135X_4 - 0.102X_5 + \epsilon$$

4.4.7 Test of Significance

The test of significance as a statistical tool was utilized in order to indicate if the researcher was right in finding that an association existed between Firm Technology and CA, R square value was important as it showed how well the model explained the competitiveness of Insurance Companies in Kenya.

6

Table 4.12: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.285 ^a	.081	.077	1.37335
a. Predictors: (Constant), Investment, Underwriting, Auditing, Customer Service, Research & Development				

Source: Research Data, (2019)

The results show variables; underwriting, customer service, research and development, auditing, and investment were fittingly explaining firm technology utilization impact in a firm. The inference is statistically supported by the R square of 0.081 of variations in Competitive Advantage, while the other variable not analyzed in this study, and may affect a firm`s competitive advantage accounts for 99.919.

4.4.8 Analysis of Variance

ANOVA is a statistical tool that was utilized in analyzing the differences or variances in the dependent and independent variables and it helped in checking as well as testing the acceptability of the model using F statistics.

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Table 4.13: ANOVA

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.847	5	.969	.514	.03 ^b
	Residual	54.696	29	1.886		
	Total	59.543	34			
a. Dependent Variable: Competitive advantage						
b. Predictors: (Constant), Investment, Underwriting, Auditing, Customer Service, Research & Development						

Source: Research Data, (2019)

Table 4.13, shows the F statistic at 0.514 was significant at 0.03 which is below 0.05, meaning the model used was significant in discussing and establishing a valid explanation of the association that existed between firm technology and competitive advantage and the probability value is lower than significance level 0.05 thus this model overall is a good fit. Therefore investment, underwriting, auditing, customer service, research, and development are good predictors of firm technology use for competitive advantage.

1

4.5 Discussion of the results

The study sought to evaluate the relation between firm technology and CA in insurance companies in Kenya. The predictor variables were; customer service, auditing, investment, underwriting, research, and development. Results indicate that some of the independent variables had an influence on competitive advantage as indicated by most of those that responded. The results are in agreement with those of Binuyo & Arebeshola (2014), impact of firm technology

on South Africa, Commercial Banks performance by empirically studying direct association between firm technology utilization and firm performance. They found out that a firm with a higher firm technology use and competency outperformed those with a lower firm technology capability, and capacity. Correlation results also indicated that auditing, underwriting, research, and development were positively associated with a competitive advantage. The study findings agree with that of Kumar (2016) on the function of firm technology and innovation impact on the delivery of efficient service to clients in the Indian insurance industry, and found out that research and development motivated growth of innovative ways to serve customer better, therefore technology and innovation were positively associated and was statistically significant with firm performance. In addition, Wambui, (2012) focused on how technology influences bank performance in Kenya and found out that a greater use of technology promoted high-efficiency in business processes level in income generation, thus more profitability and a report by IRA(2019) on the benefits accrued by an insurance company from utilization of firm technology. The report findings indicated that a firm that uses firm technology enjoys innovation, proper auditing of risks, new business opportunities, growth, speed, agility, high-quality products, improves efficiency and effective customer service. These characteristics would improve competitiveness as well as enhancing facilitation with other industries within the same value chain.

Regression results indicated that underwriting, auditing research, and development were statistically significant predictors of competitive advantage. The findings were in line with Kantor's (2010) application of firm technology resources in enhancing CA among banks in Nigeria study, and found that firm technology and competitive advantage of a bank have a strong and valuable relationship.

5 **CHAPTER FIVE: SUMMARY, CONCLUSION, AND** **RECOMMENDATIONS**

5.1 Introduction

This chapter presents the concise of the findings, conclusions, and recommendations to this study along with suggestions for further research. Empirical literature shows the utilization of firm technology had a direct effect on firm competitiveness. General studies indicated a steady increase in demand for firm technology use in enhancing efficiencies and effectiveness in business processes and this formed the motivation towards undertaking this research, therefore it was important to factually establish how firm technology utilization has influenced competitive advantage in the insurance sector.

5.2 Summary

Research objective was to substantiate correlation linking firm technology and **1** competitive advantage of insurance companies in Kenya. A descriptive research design was utilized. Targeting Operations Manager from the 48 companies, questionnaires utilized in collecting primary data. Results indicated firm technology had an influence on competitive advantage as indicated by most of those that participated who accepted that use of firm technology encouraged they firms to lower operation cost, offer differentiated insurance products and service as well as focusing on a niche market segment through offering an insurance product or service based on that market need. Automated services have enabled insurance companies to be more effective

and efficient, reducing bulk and erroneous operations which involved vast paperwork. Firm technology leads to enhanced valuable relationships both to employees within the firm and to other stakeholders, customers, brokers, agents, and others.

Regarding the types of firm technologies used by insurance companies, the study revealed that for an insurance firm to remain relevant in its industry and have a competitive edge, it has to have speed in adopting the new emerging technologies. We find that the majority of the firms embrace this with the adoption of office automation, cloud computing, and big data analytics technology, thus abandoning the manual way of doing things in order to be more efficient, secure, and accurate and lower operation costs. It was established that the integration of firm technology support in service delivery by insurance firms promoted customer satisfaction and a competitive edge for an insurance firm. Artificial Intelligence, blockchain and the Internet of Things are the latest technologies, and have already adopted the technologies. From these findings, we can conclude that insurance firms are investing in different firm technologies because they do understand the benefits gained.

Regarding determining the extent of firm technology use by insurance firms in their competitive strategies. Findings show that majority of the insurance firms use firm technology in developing differentiated insurance products that are based on market needs such as micro-duration insurance for travelers or cargo on transit and all transactions are done using a mobile phone, therefore is simple, easier than in the traditional insurance underwriting process and meets client needs and satisfaction. The other results combined had a mean of over 3, which represents the moderate level in their use of firm technology in formulating competitive strategies, this means that firm technology is used to a quite good extent to gain competitive advantage.

In regards to Influence of Firm Technology use for Competitive Advantage. There was a substantial impact achieved because of firm technology use for competitive merits with a level of 4 which signified at a great extent is simplification of complex underwriting process and reduction in paperwork, lower operation cost, offering on-demand insurance cover on a micro-duration and improved the integrity of underwriting process, a prove that insurance firms have greatly benefited from firm technology utilization thus we can say that with all these benefits competitive advantage is also gained. Firm technology has also impacted multitasking making it possible for insurance companies to offer different insurance business classes, although it had the least score of 3.11, which still fell a bit above the moderate extent on the scale. From this, we can conclude that firm technology serves as a catalyst for a firm in gaining competitive advantage in the market.

5.3 Conclusion

From the findings, insurance firms use firm technology to an above moderate extent overall in enhancing competitiveness in the industry. This was concluded based on the high number of insurance firms using firm technologies in their business operations and competitive strategies, and later achieving positive results that can aid them in attaining competitive advantage in the market. Firm technology-enhanced sustainable competitive advantage in areas like service quality by simplifying the traditional complex underwriting process that involved too much paperwork to almost paperless, efficiency in serving clients as technology avenues such as mobile applications, were reliable to use by firm employees and customers whenever required and that technological platforms were simple, secure and fast. The firm technology has also enabled development of insurance products according to market demand, and these strategy have

continued to add value to the firm's competitive edge. Firm technology was positively linked to promoting competitive advantage.

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5.4 Recommendations

Based on the research findings, firm technology was crucial in creating a competitive edge. Therefore the use of firm technology for competitive advantage must be seen as critical towards firms being able to effectively compete. Insurance companies need to be wary of the key challenge of identifying the correct technology to utilize if they are to benefit from its use for competitive advantage and they should adopt the latest technology, Blockchain, Artificial Intelligence and Internet of Things since they are more advanced in terms of security, efficiency, accurate, interactive, and fast in data analysis.

Lastly, insurance firms should develop mitigating strategies that can be employed to aid in curbing challenges that it may face in adopting firm technologies and identifying the best ways to implement the technologies in order to enhance a positive result towards enhancing competitive advantage and also offer staff training on regular basis involving different aspects of firm technology utilization as change in technology occurs daily, and adopting advertisement of insurance products via emerging technologies such as social media, as the millennial population are tech-savvy thus boosting insurance uptake.

1

5.5 Implication of the study on Policy, theory, and Practice

The findings have implications on insurance stakeholders; managers, brokers, agents, clients, scholars, and policymakers. The insurance industry is currently contributing very little to the country's GDP compared to other service industries such as banks, hotels. However, it has the potential to contribute immensely to the country's economic growth by offering stability to the functioning of businesses and generating long term financial resources for the different industries

projects, mobilizing domestic savings, mitigation of losses promotes trade and commerce activities. The government can develop policies that will offer incentive schemes and tax exemption on technologies used by insurance companies as well as quieten down on premiums in the areas based on the four pillars of economic development by President Uhuru Kenyatta, and vision 2030.

It will enrich the ¹⁴ existing body of knowledge in the field of CA and offer a base that can be utilized by other researchers in formulating hypothesis of other relevant research topics, and benefit management team in the area of formation, implementation, and evaluation of strategy for the competitive advantage of the firm and existing theories in strategic management, thus insurance firms will be able to develop strategies that are based on technology utilization that influences its competitiveness in the industry. The study will be important to insurance companies as it will help them know the benefit accrued from the use of firm technologies thus developing policies that encourage and motivate the use of modern technologies in the firm.

⁵ 5.6 Limitations of the Study

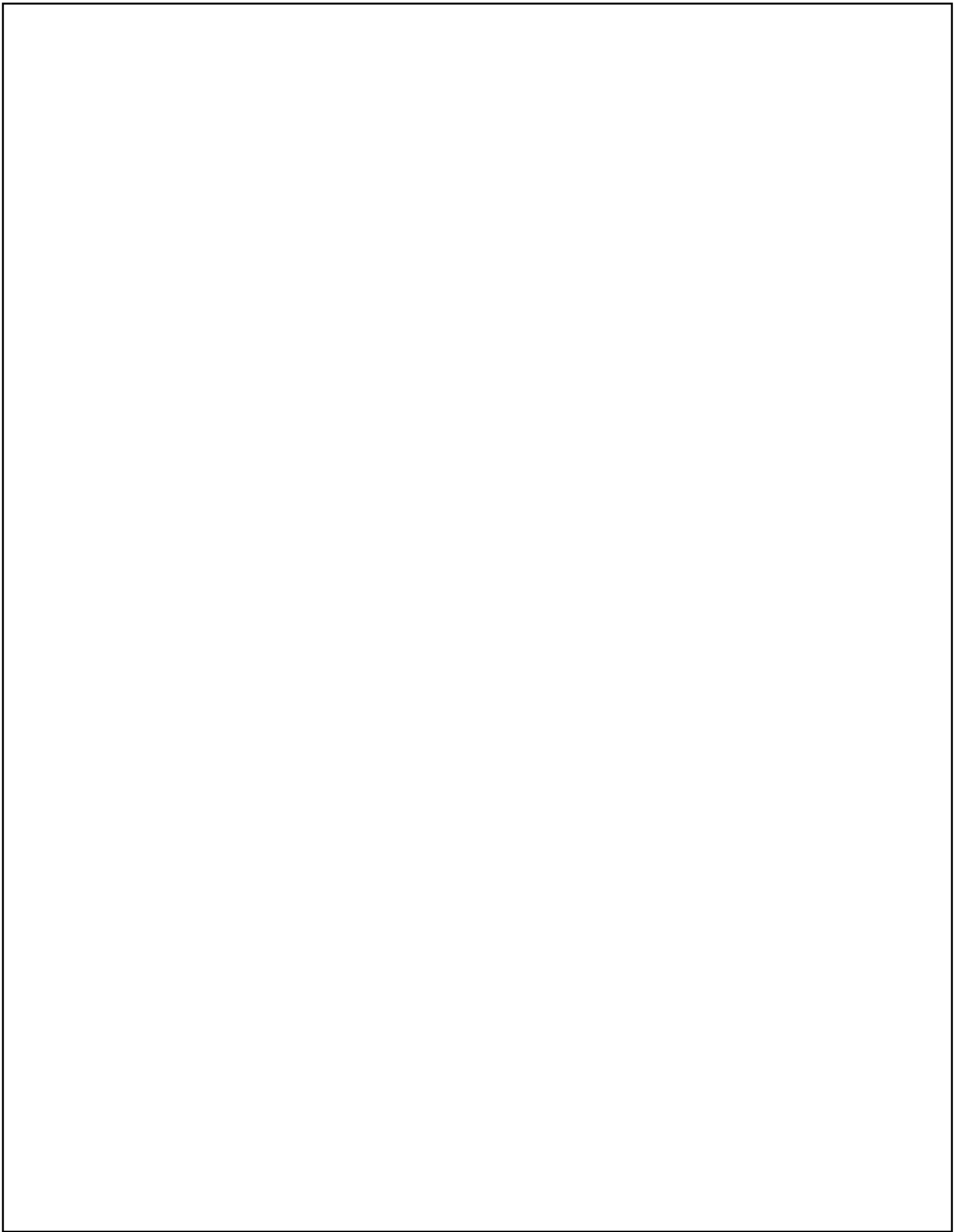
This study was not able to obtain data from all the 48 insurance firms in the population, managing to obtain complete data from only 35 firms, therefore, there is a possibility that some information that could have been brought out by the 13 firms was left out. It was concentrated on insurance firms suppliers of the insurance products and omitted insurance brokers, and agents who are the distributors and would have had some input to the study as well as the customers who would have given insight as to how use of firm technology by insurance firm has impacted them either positively or negatively.

During the data collection, some respondents were difficult to meet, therefore, the questionnaires were left with the receptionists to handover to the respondent and was later collected while filled,

and it was assumed that the questionnaire was filled by the target respondent thus relevant to the study.

5.7 Suggestions for Further Research.

General objective was determining association between firm technology and competitive advantage of insurance companies in Kenya, therefore there still exist opportunities for further research in establishing the forces towards adoption of technology for competitive merits and challenges faced by insurance firms while utilizing technology to attain competitiveness and the study did not include insurance customers and distributors of insurance products, brokers and agents who are directly affected by firm technology, therefore future research needs to consider getting feedback from them with regard to the contribution of firm technology towards their expectation and satisfaction, which will be an indicator of firms performance. Future research can apply the use of interview research techniques as a further method of primary data gathering in addition to the use of the questionnaire method. The study was done on the insurance sector, similar research can be undertaken in the future in other service-oriented firms like commercial banks, and also future studies should focus on how insurance firms, measure and communicate the success of newly adopted firm technologies.



FIRM TECHNOLOGY AND COMPETITIVE ADVANTAGE OF INSURANCE COMPANIES IN KENYA

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