

Understanding Firm Competitiveness in Non-Life Insurance Companies: Does Information Technology Flexibility Matter?

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Abstract: In the national economic setting, the insurance sub-sector has been considered as a fundamental economic cog in the financial services sector essentially in relation to management of risk and consequently is credited with stimulating, energizing, and sustaining economic activities in the alternative sectors of the economy. The risk pooling and indemnification properties of insurance firms facilitate provision of credit and commercial transactions by mitigating losses and management of non-diversifiable risk. Statistical evidence from Insurance Regulatory Authority indicates that the penetration rate for non-life insurance companies are characterized by decreasing growth. In addition, even as the statistics on customer complaints are increasing over time, the proportion of resolved complaints has registered a drop for non-life insurance companies and an increase for life-insurance companies. The characteristics complaints registered entail declined claims, delayed settlement of claims, erroneous deductions of premiums, inadequate compensation and offers that are not satisfactory. This study therefore investigated the effect information technology flexibility flexibility on firm competitiveness amongst non-life insurance companies in Nairobi City County, Kenya. Dynamic capabilities theory and resource based view formed the theoretical basis of the study. Explanatory research design informed the research methodology of the study. A sample of one hundred and forty four management employees was selected through simple random sampling from the head offices of non-life insurance companies. Field observations were gathered using a structured questionnaire. The research instrument was assessed for validity and reliability before it was used for collecting the required data. Descriptive analysis facilitated understanding of the attributes of the observed sample in terms of frequency count, mean and standard deviation. Inferential analysis was performed using simple linear regression analysis and aided in drawing conclusions. Figures and tables were used for presentation of results. The analyses of observations confirmed that firm competitiveness is affected by information technology flexibility. There is a need for the head of information communication and technology division to enact policy guidelines for fostering capacity of information technology platform to connect multiple applications for diverse decisional needs, and capacity of information technology platform to integrate multiple data sources.

Keywords: Information Technology, Information Technology Flexibility and Firm Competitiveness

1. INTRODUCTION

Success and sustainability of firms' endeavours is a dominant research concern amongst contemporary practitioners and scholars in the field of management (Orlov, Dumanska, Ponomaryova & Kobets, 2020). A substantive body of literature has advanced the case for corporate resources, firm capabilities, strategic flexibility, and strategic options as fundamental ingredients for firm's competitiveness in all economic sectors the world over (Basu, 2011; Ocharo & Kinyua 2021). The attention that has been generated around the concept of competitiveness of firms in the service sector and its determinants is instrumental for effectively harnessing the potential of the sector as well as promoting its contribution to national economies globally (Dou, Wu, Sun, & Wang, 2021).

The dynamism of business environment as typified by technological advancement, shortened product life cycles, and globalization have placed immense pressure on organizations to reconfigure their assortment and stock of resources and integral capabilities, and to develop strategic options with potential to foster and maintain optimal level of competitiveness for survival and growth (Kiraka, Kobia & Katwalo 2013; Mensah & Acquah, 2015). The dynamic nature of the environment of financial services sector requires that insurance companies leverage on strategic flexibility in order to

effectively align their value chain activities and generate customer value necessary for firm competitiveness and success (Gachanja, 2018; Kitur & Kinyua, 2020; Gachanja, Kinyua & Muchemi, 2021). Strategic flexibility guarantees the capacity and ability of an entity to maintain the much needed fit among the value creation and delivery practices, and the changes in the variety of conditions in its environment.

In contemporary times, provision of services in knowledge intensive organizations as insurance companies is largely a function technology. As reported by Organisation for Economic Co-operation and Development (OECD), insurance offerings supported by such technologies as blockchain, internet of things, omnichannel marketing, and machine learning are driving the pace of change and realization of innovative products as telemetry-based products such as wearable technology in health and life insurance and Global Positioning System trackers in motor vehicle insurance at the global landscape (OECD, 2017). In accordance to the Association of Kenya Insurance (AKI), the world real Gross Domestic Product (GDP) attained an accelerated increase of 5.9 percent in 2021 relative to the 3.6 percent contraction witnessed in 2020 (AKI, 2021). This is a testimony to the industry's resilience to shake of the otherwise unpleasant and negative effects of the global COVID-19 pandemic. Hitherto the advent of the global pandemic, the insurance industry was still grappling with challenges, such as shifting regulatory environment, solvency risks, and heightening competition (Lee, Cheng, Nassir & Razak, 2018).

The environmental dynamism that characterises the insurance industry can only be effectively managed by leveraging on adaptive firm attributes as strategic flexibility that embodies resilience, elasticity, agility and versatility (Evans, 1991; AKI, 2021). Competitiveness of firms in the insurance industry is an important phenomenon as it leads it mitigates risk and uncertainty, facilitating efficient allocation of resources, enhancing product innovation (Abel & Marire, 2021). The Kenya Financial Sector Regulators (KFSR) acknowledges that the disruptions of supply-chain occasioned by the Russo-Ukrainian war and the ensuing sanctions foisted on Russia, have catapulted global food, crises, soaring of energy and commodity prices, thus heightening inflationary pressures at the global, regional and national landscapes (KFSR, 2021). The attendant aftermath of elevated energy and commodity prices has had unfavourable implication of eroding assets quality in the banking sector, decreasing the return on assets in the insurance and pension sub-sectors, and triggering uncertainties in the labour markets as well as others sectors of the economy.

A report by the Insurance Regulatory Authority (IRA) indicated that the overall level of world insurance premium in 2021 was responsible for 7.0 percent of the world GDP underscoring the central role played by the insurance sub-sector in supporting efforts initiated towards realizing the agenda for sustainable development at the global level (IRA, 2021). Notably, the world insurance market which collectively accounts for 57.3 percent of the world premium is dominated by three countries including the United State of America (USA), China and Japan which accounts for 40.3 percent, 10.4 percent and 6.6 percent of world insurance premium income respectively (IRA, 2020). Relative to the world total insurance premium of USD 6,860,598 million, Africa only accounts for a paltry 1.1 percent that translates to USD 75,466.578 million with South Africa singularly staking a claim of 69 percent of the premium as Kenya accounts for 3.2 percent (AKI, 2021; IRA 2021).

At the national level, the insurance industry has had immense contribution to the economy through anchoring provision of financial security, stimulating and mobilising savings, and promoting both direct and indirect trade and investments at individual, group, family, and community levels (KFSR, 2021; IRA 2021). As has been observed, Nairobi City County accounts for the largest proportion in insurance premium in Kenya as has been demonstrated by the 83.9 percent and 79.6 percent for 2020 and 2021 respectively relative to the other Counties (IRA, 2021). The industry annual growth in premium income has averaged at 8.2 percent the last couple of years since 2017. The insurance sub-sector of the financial services sector face such challenges as low consumer confidence associated with inflationary pressure, diminishing purchasing power of consumers, perceived low insurance pay-out relative to premium, increase in unresolved claims, delay in claims settlement among others (AKI, 2021).

1.1. Firm Competitiveness

Firm competitiveness is considered as a multifaceted concept which draws from the theoretical standpoint and postulates of resource based view of the firm (Wernerfelt, 1984) and is further emphasized in Michael Porter's seminal work (Porter, 1998). Accordingly, Porter associates firm competitiveness with industry specific factors that confer the firm with the ability to mitigate or neutralize threats and leverage on opportunities that are presented by the external environment. On the contrary, the resource based view (RBV) has an internal focus arguing that firm competitiveness is primarily generated by firm specific factors or resources that have such characteristics as valuable, rarity, inimitable and that the firm is organised to exploit such resources to mitigate or neutralize threats and leverage on opportunities in the external environment (Barney & Herstely, 2008). In essence the later perspective traces firm competitiveness to organizational capabilities and resources that serve as the foundation of firm strength and sustainable distinctive competences.

Firm competitiveness can be viewed as the underlying capacity to design, produce and deliver products of superior customer appear relative to those offered by the competition in the market place (Ambastha & Momaya, 2004). In accordance with Vulkovic (2013), firm's competitiveness is fairly manifested in firm behaviour as they seek to achieve results that are relatively better; this is particularly attained through possession of more resources which are relatively superior, launching superior products or competitively priced products and thus more attractive to customers, and realising high market share. In the perspective of Barney (2001a) the resources that are possessed and controlled by a firm underpin its competitiveness in the market place. Firm competitiveness involves both assets and processes that convert assets into outcomes that are of value to customers. Notably, process driven firm competitiveness is a product of complex interaction embedded in the functional practices of a firm and thus making it difficult to imitate (Rumelt, 1991; Madhani, 2010).

The existing relevant body of literature manifests various indicators of on firm competitiveness (Kiveu, 2017; Dresch, Collatto & Lacerda, 2018; Doncheva 2020; Ocharo & Kinyua, 2021). In the views of Dresch (2018), a competitive firm is the one that has the ability to generate profit and has significant market share. Ocharo and Kinyua (2021), based the measurement of firm competitiveness in Small Medium Enterprises on price advantage, profitability, quality of products and product differentiation. Profitability, market share and customer share have likewise been used as measures of firm competitiveness among manufacturing small medium enterprises. While contending that no singular criterion can satisfactorily aid in measurement of firm competitiveness, Doncheva (2020) considered customer value proposition, market share, efficiency, profitability and productivity as suitable criteria for measuring firm level competitiveness.

The review of literature by Ambastha and Momaya (2004) identified a wider scope of indicators of firm competitiveness comprising the broad variants of non-financial and financial measures. Specifically, the measure recommended in this framework includes market share, productivity, customer satisfaction, profitability, new product development and product range. Given the centrality of firm processes in the value generation and delivery system within the insurance industry, efficiency, market share, customer focus and profitability were used to measure firm competitiveness among non-life insurance companies in Kenya.

1.2. Information Technology Flexibility

The concept of strategic flexibility is an offshoot of strategic decision making that essentially conceive and consider alternative strategic options informed by the changes in business environment and thus providing the foresight and impetus for the needed capacity to effectively adapt and respond (Evans, 1991; Sharfman & Dean, 1997; Combe (2012). A firm can exhibit strategic flexibility by discerning and responding to changes, sensing and exploiting opportunities, and generating new opportunities through deployment of resources and enacting appropriate competitive actions (Herhausen, Morgan, Brozović & Volberda, 2021). It entails resource flexibility which guides exploitation of firm's assets and coordination flexibility which facilitates efficient and effective deployment of firm's resources by exploring options of aligning and enhancing customer value in uncertain environment (Li, Su & Liu, 2009).

The construct of strategic flexibility is founded on the readiness and ability of an enterprise to either change or adapt to business circumstances that are dynamic (Roberts & Stockport 2014; Srouf, Baird & Schoch, 2016). Strategic flexibility entail possession and exploitation of capabilities that provide for timely adaptation and response to environment changes with potential implications on firm competitiveness and performance (MacKinnon, Grant & Cray, 2008). Strategic flexibility nurture an environment that is safe for experiment, learning from mistakes and facilitates innovation (Luthar, Cicchetti & Becker, 2000).

As has been demonstrated by review of relevant conceptual literature, strategic flexibility encompasses a variety of complementary dimensions. In accordance with Setijono (2010), operational flexibility, production flexibility, marketing flexibility, product related flexibility, financial flexibility, learning flexibility, information system flexibility, control flexibility, human resource flexibility, and functional flexibility constitutes key dimensions of strategic flexibility. Abu-Nahel, Alagha, Shobaki, Abu-Naser & Talla (2020) unpacked strategic flexibility into information technology flexibility, proactive flexibility, human resource flexibility and response flexibility.

Taher and Said (2018) characterized strategic flexibility as comprising of interactive flexibility and proactive flexibility. Accordingly strategic flexibility has also been construed as consisting market flexibility, production flexibility, competitive flexibility, human resource flexibility, operations related flexibility, information technology flexibility, financial flexibility, and supply chain flexibility (Abbott & Banerji, 2003; MacKinnon et al., 2008). Similarly, market flexibility, competitive flexibility, and production related flexibility have as well been adopted as dimensions of strategic flexibility (AlHalaseh & Ayoub, 2021). In the current study, the research opted for dimensions that are biased towards the financial services sectors including operational flexibility, human resource flexibility, market flexibility and information technology flexibility were chosen to depict strategic flexibility.

Creative and innovative undertakings in firms are contingent on the knowledge embedded in the human resource, extent of skills, attitude and level of commitment (Hamzeh, Ayman, Ata & Tasneem, 2020). Human resource flexibility is an imperative of organizational value chain activities that energizes the workforce and bolsters integration of work related activities which eventually makes the working environment more manageable (Aldaiem & Abu-Helaleh, 2022; Agu, 2022). The way in which enterprises configure and constantly reconfigure its most strategic asset embodied in the knowledge, abilities, skills, experience, and behavior in the face of complexity and dynamism in the business environment play a central role in shaping the level and timeliness of fit and enhances the competitive posture of a firm (Kumari & Pradhan, 2014; Tuan, 2016).

Information technology flexibility has become an important criteria when making determining the strategic options to be pursued in an enterprise in line with the adopted strategic direction adopted as well as in guiding enactment of alterations contingent upon the changes in business environment (Ahmed & Al-Sabti, 2015; Abu-Nahel, 2020). Information technology flexibility signifies institutional ability to gather and avail information that is required with the scope of quality, quantity and timeliness, leading to efficient and effective decision making. This dimension of strategic flexibility may be viewed as the extent to which modification on the information system can successfully be effected and the capacity to maintain its functionality and performance in the context of environment complexity and dynamism (Schober & Gebauer, 2011; Peng, 2021). Technical flexibility, data flexibility and integration flexibility are critical aspects of information technology flexibility that a firm can leverage in its value creation and delivery initiatives (Anwar, Masrek, & Sani, 2018; Abu-Nahel, 2020; Peng, 2021).

2. STATEMENT OF THE PROBLEM

The insurance sub-sector has been considered as a fundamental economic cog in the financial services sector essentially in relation to management of risk and consequently is credited with stimulating, energizing, and sustaining economic activities in the alternative sectors of the economy (AKI, 2021; IRA, 2021). Ndalu (2016) affirms that the risk pooling and indemnification properties of insurance firms facilitate provision of credit and commercial transactions by mitigating losses and management of non-diversifiable risk. Comparative statistics reported obtained from Association of Kenya Insurers

(AKI) reveals that the non-life insurance has dominated the insurance industry gross written premiums at 60 percent in 2017, 59 percent in 2018, 58 percent in 2019, 56 percent in 2020, and 54 percent in 2021 (AKI, 2021).

There are mixed changes in penetration rate in the insurance sub-sector in Kenya in the period between 2017 and 2021. Further, there is a characteristic growth trend for penetration rate from 1.02 percent to 1.33 percent for life insurance, 1.54 percent to 1.59 percent for non-life insurance, and 2.56 percent to 2.92 percent for the entire insurance sub-sector for the years 2017 and 2021 respectively. However, the behavior for successive years demonstrate a relatively higher decline for non-life insurance companies from the year 2017 through to the year 2020. Further scrutiny of the statistics reveals that with 2017 serving as the base year, the growth in penetration rate for non-life insurance is the least at 103.25 percent, way below the industry level and largely characterized by a dip. It is apparent from the statistics that the non-life insurance sub-sector is losing its market dominance in terms of Gross Written Premiums despite its wider market product scope. In essence, the industry is characterized by a decreasing growth in non-life Gross Written Premium which signifies that non-life insurance as a critical player in the insurance industry has a relatively poor showing in term of penetration rate.

IRA (2022) noted that there were 1870 complaints in 2022 out of which 1514 and 536 related to non-life and life insurance services respectively. Amongst the complaints registered, 597 comprising 24.92 percent were resolved for non-life whereas 130 constituting 37.72 percent of were resolved for life insurance. Whereas the proportion of complaints for non-life was 75 percent in 2020, there was an attendant raise in this proportion in 2021 to 89.1 percent (IRA, 2021). In addition, the percentage of the complaints for non-life services that were resolved dropped from 65 percent to 24.92 percent in 2020 and 2022 respectively (IRA, 2020; IRA, 2022). Generally, the complaints typically registered entail declined claims, delayed settlement of claims, erroneous deductions of premiums, inadequate compensation and unsatisfactory offers.

Empirical literature present adequate evidence that strategic flexibility is an input factor for firm competitiveness and firm performance (Saeid, Khalil & Najjar, 2011; Anwar, Masrek & Sani, 2018; Abu-Nahel *et al.*, 2020). The empirical work of Saeid, *et al.*, (2011) examined the link between information technology flexibility, information technology business strategic alignment, and information technology capability. The study isolated information technology connectivity, modularity and compatibility as crucial aspects of information technology flexibility. However, the inquiry did not clarify whether information technology flexibility and information technology business alignment had direct relationship. The focus of the current study was the direct effect of information technology flexibility on firm competitiveness. Anwar, Masrek and Sani (2018) reviewed existing research literature and identified technical and human component as crucial aspects information technology flexibility. It was further noted that the indicators for information technology flexibility was context specific and thus varied across different organizations and industries. Evidence from the reviewed studies showed that information technology flexibility preceded such firm outcomes as business alignment, strategy implementation, strategy control, customer satisfaction, competitive advantage, firm competitiveness and firm performance. The current study sought to provide field evidence for firm competitiveness as an outcome of information technology flexibility.

3. LITERATURE REVIEW

3.1. Dynamic Capabilities Theory

Dynamic capabilities theory evolved as a result of the inability of the resource-based view to explicate the phenomenon of effective functioning of a firm in an environment that is characterised by constant changes (Eisenhardt & Martin, 2000). Primarily, the dynamic capabilities theory address emphasizes the need for sensing, seizing and creating opportunities for new value-creating strategic options by means of making careful alterations to existing ordinary capabilities. Dynamic capabilities literature contends that for environment that are not static, management should have a inclination towards capabilities that are fundamentally concerned with change and learning (Winter, 2003).

The theoretical lens of dynamic capabilities was collectively propounded by Teece, Pisano and Shuen in a seminar work that sought to respond to the momentous concerns regarding how an enterprise can sustain competitive success in a dynamic business environment (Teece, Pisano & Shuen, 1997; Teece, 2007). The theoretical propositions of dynamic capabilities transcend the idea that sustainable competitive advantage draws from possession of capabilities and resources that are valuable, rare, inimitable and non-substitutable (VRIN) in nature (Abbas, Abdel & Siddig, 2018). In the views of Teece (2007), dynamic capabilities entail the capacity of an enterprise to integrate its bundle of resources, build new resources, and modify the configuration of internal and external competences to manage rapidly changing circumstances of enterprise environment.

Notably, the concept of strategic flexibility is founded on the readiness and ability of an enterprise to either change or adapt to business circumstances that are dynamic (Srour, Baird & Schoch, 2016). As a dynamic capability, strategic flexibility entails possession and exploitation of capabilities that provide for timely adaptation and response to environment changes with potential implications on firm competitiveness and performance (MacKinnon, Grant & Cray, 2008). Unlike ordinary capabilities, strategic flexibility nurtures an environment that is safe for experiment, learning from mistakes and facilitates innovation (Luthar, Cicchetti & Becker, 2000) and is thus an imperative for conceiving, creating and delivering valued exchanges with diverse stakeholders in an environment characterized by different levels of change.

Strategic flexibility as characterized by the ability of an enterprise to discern new opportunities and favourably respond (Pérez-Pérez, López-Fernández & Obeso, 2019) making it instrumental for firm competitiveness in a market with changing environmental circumstances. The theoretical principles of dynamic capabilities have been widely applied in research work involving diverse contexts (Motum & Kinyua, 2020; Ong'esa & Kinyua, 2020; Kinyua, Muchemi & Kiiru, 2021) for informing capabilities that support the evolutionary behaviour of organizations in dynamic and complex environments. Dynamic capabilities theory was used to inform information technology flexibility and firm competitiveness as key research variables in this study.

3.2. Resource Based View

The theoretical perspective of resource based view (RBV) originated from the scholarly work of Edith Penrose on the broader concept of firm competitiveness supported by firm specific factors (Penrose, 1959). This framework of theory attracted the attention of other great scholars in the field of management who have made valuable contributions in explicating its principles and assumptions (Wernerfelt, 1984; Barney, 1986; Barney, 1991; Hamel & Prahalad, 1996; Peteraf & Barney, 2003). The fundamental principle of RBV traces differences in firms' competitiveness to the heterogeneity in resource endowment for firms operating within the same industry or sub-sector (Barney & Hesterly, 2008). Accordingly, resources are considered as firm's assets that are of tangible and intangible nature which are used in the conception and implementation of strategic options in a context.

The RBV is founded on two basic assumptions concerning the resources and capabilities that are held and controlled by a firm (Madhani, 2010). The assumption of resource heterogeneity holds that firms in an industry have different endowments of intangible and tangible resources. The assumption of resource immobility posits that the resource held in different firms are difficult to develop and/or transfer across the industry (Helfat & Peteraf, 2003; Barney, 2007). These assumptions underlie the ability of the firm to configure, exploit, coordinate and manage its assets for building competitive advantage and actualizing relatively better performance than its rivals (Halawi, Aronson & McCarthy, 2005; Kinyua, 2015). In accordance with Grunert and Hildebrandt (2004), competitive advantage draws from deployment of firm assets that are immobile and non-elastic in nature.

Across various industries, corporate success in a competitive environment characterized by changing business circumstances is contingent upon development and implementation of strategies that set the firm apart from the rivals (Kinyua, Muathe & Kilika, 2015). However, the strategic options for value creation and delivery should be conceived in such a manner to provide for adjustment to facilitate a continuous fit with the changing circumstances of the firm (Kamandi, Kinyua & Muchemi, 2021). RBV posits that identification and acquisition of crucial resources to foster a firm's capacity to

create and perpetuate a competitive advantage and enhances performance (Sund, Bogers, Villarroel & Foss, 2016). It is further noted that resources with characteristics of valuability, rarity, inimitability and non-substitutability accord a firm with ability to differentiate itself from the rivals and thus shapes its competitive outfit (Madhani, 2010; Dess, Lumkin, Eisner, Lumpkin & McNamara, 2012). The postulates of RBV underpinned firm competitiveness as an output variable.

3.3. Information Technology Flexibility and Firm Competitiveness

Anwar, Masrek and Sani (2018) reviewed existing research literature and identified technical and human component as crucial aspects information technology flexibility. Connectivity, compatibility, scalability, integration, continuity and modularity were observed as distinguishing features of the technical component of information technology flexibility. Similarly, management competence, business knowledge and technical skills as salient features of the human component of information technology flexibility. It was further noted that the indicators for information technology flexibility was context specific and thus varied across different organizations and industries. Evidence from the reviewed studies showed that information technology flexibility preceded such firm outcomes as business alignment, strategy implementation, strategy control, customer satisfaction, competitive advantage, firm competitiveness and firm performance. The current study sought to provide field evidence for firm competitiveness as an outcome of information technology flexibility.

Abu-Nahel et al. (2020) surveyed the role of flexibility of information in improving the quality of services among non-profit hospitals in Gaza Strip. Field data was obtained from 434 subjects where a response rate of 80.97 percent was attained. The study used correlation analysis which indicated that information flexibility and quality of services had positive linear relationship. The current study extended the statistical analysis for investigating the effect of information technology flexibility on firm competitiveness using multiple linear regression analysis in non-life insurance companies.

Han, Wang and Naim (2017) undertook an empirical study on information technology flexibility for supply chain management. In this study, information technology flexibility encompassed transactional, operational and strategic information technology flexibilities. It was observed that whereas flexible information technology support sustainable growth in an increasingly dynamic business environment, inflexible information technology could have unfavorable firm outcomes as systemic resistance to beneficial change initiatives. Observations were drawn from management employees at functional level, middle level and senior level of management in the context of supply chain practitioners in United Kingdom. The study found out that firm performance is directly affected by information technology flexibility. The implications of the study could not be applied in the non-life insurance sub-sector in Kenya due to the differences arising from the industry and country specific nature of business conditions.

Saeid, Khalil and Najjar (2011) surveyed the link between information technology flexibility, information technology business strategic alignment, and information technology capability. The study isolated information technology connectivity, modularity and compatibility as crucial aspects of information technology flexibility. Information technology capability was identified as an important conveyor factor for the effect of information technology flexibility on information technology business alignment. However, it was also clear that information technology flexibility and information technology business alignment had direct relationship. The focus of the current study was the direct effect of information technology flexibility on firm competitiveness among non-life insurance companies in Nairobi City County, Kenya.

3.4. Conceptual Framework

The researcher has carried out a careful review of literature on information technology flexibility and firm competitiveness aided the development of the conceptual diagram in figure 1.

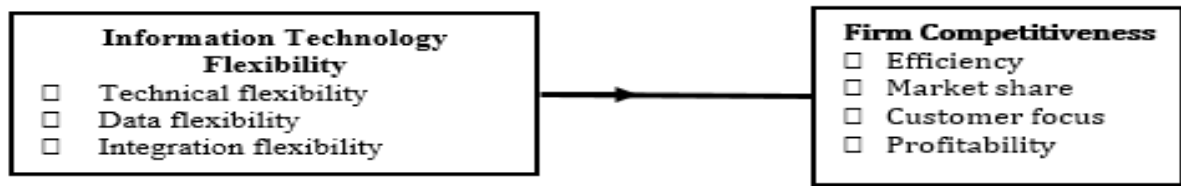


Figure1. Conceptual Framework

Source: Author (2023)

Research Hypotheses

The research hypotheses of this study were;

H₀: Information technology flexibility has no significant effect on firm competitiveness in non-life insurance companies in Nairobi City County, Kenya

H₁: Information technology flexibility has a significant effect on firm competitiveness in non-life insurance companies in Nairobi City County, Kenya

4. RESEARCH METHODOLOGY

4.1. Research Design

A research design outline the overall strategy which enables a researcher to integrate to the various aspects of an empirical inquiry in a logical way thereby facilitating gathering, analysis and presentation of findings (Payne & Grey, 2014; Stefan & Michael, 2021). Explanatory research design was chosen for to aid in data collection and management, and to help the researcher to accurately respond to the questions regarding the effect of information technology flexibility on firm competitiveness. The use of explanatory research design enabled the investigator to explain why and how firm competitiveness is affected by information technology flexibility, and further aid in predicting its future occurrences as contended by Edmonds and Kennedy (2016).

4.2. Target Population

The study was conducted among twenty eight (28) non-life insurance companies which essentially constituted the unit of analysis and informed the target population. Comparative statistics revealed that non-life insurance companies have dominated the insurance industry gross written premiums at 60 percent in 2017, 59 percent in 2018, 58 percent in 2019, 56 percent in 2020, and 54 percent in 2021 (AKI, 2021). However, there exist substantial contextual evidence that non-life insurance has been losing its penetration rate to the life-insurance. This insurance sub-sector also has also been experiencing comparatively higher proportion of complaints with the compliant resolution rate also decreasing over time. Management staff operating at the head offices of the target non-life insurance companies generated the unit of observation particularly because of the strategic implications of the phenomena at the core of this study. Specifically, senior managers of the functional areas at the headquarters who are directly answerable to the managing director provided the required data for the current study. The information on target population is shown in Table 1.

Table1. Distribution of Target Population

Functional Area	Population Size
Operations	28
Sales & Marketing	28
Product Development	28
Strategy & Investor Relations	28
Finance	28
Human Resources	28
Information Technology	28
Customer Experience	28
Total	224

Source: AKI (2021)

There are various functional areas encompassing operations, sales and marketing, product development, strategy and investor relations, finance human resource, information technology and customer experience that operate in an integrated manner within the non-life insurance companies. This functional areas are headed by management staff that work closely with the managing director in providing the required strategic leadership for non-life insurance companies. The heads of the functional area serve as sources of valuable information when making decisions, policies and interventions that informs the nature and magnitude of adaptation to the changing circumstances in the sub-sector. The population size therefore comprised of 224 functional heads in non-life insurance companies.

4.3. Sampling Process

A sample survey was conducted so as to gather all relevant information regarding information technology flexibility and firm competitiveness. Towards this end, determination of the sample size was made using Taro Yamane (1967) formula as follows;

$$\frac{n}{N} = \frac{N}{1 + N e^2}$$

Where; n = Size of the sample

N = Size of the population

e = Precision level

At a level of precision (e) of 5 percent and with a population size of 224 subject the size of the sample for the study was thus determined as;

$$n = \frac{224}{1 + 224 \times 0.05^2}$$

n = 144

In order to gather a representative sample of 144 subjects, simple random sampling was instrumental for selection a fairly representative non-life insurance companies from the total of twenty eight companies in the target sub-sector. The factor for facilitating selection of the representative companies to be observed in the study was be established thus:

$$\begin{aligned} \text{Sample Selection Factor (p)} &= n/N \\ &= 144/224 \\ &= 18 \text{ Non-Life Insurance Companies} \end{aligned}$$

These eighteen (18) companies were randomly selected from the twenty eight (28) making up the population of the study, where all heads of functional areas in the random sample were observed. In accordance with Kothari (2004), simple random sampling guarantees fair representation of a population of study particularly when the population of study is fairly uniform in the characteristics of interest.

4.4. Data Collection Instrument

Observations from the selected sample were obtained using a structured questionnaire. The use of structured aided in collecting quantitative information from the closed ended questions that informed responses to the research questions. The research instrument was organized into two sections for gathering general responses concerning the participants and specific responses tailored towards the objectives of the inquiry. General information focused on a few key biographical attributes of research participants whereas the specific information sought to avail data on information technology flexibility and firm competitiveness.

4.5. Pilot Testing

A pilot study involving approximately 10 percent of the 144 cases constituting the sample size was undertaken to aid in evaluation of the validity and reliability of the tool for gathering the observations. Therefore, fifteen subjects drawn from management staff that reports to the heads of the functional areas in the non-life insurance companies were contacted for the pilot study. The management staff that took part in the pilot study were precluded from the final study. The main objective of a pilot study was not to respond to the specific research questions in the study, but rather to safeguard the researchers from launching the final inquiry without adequate knowledge of the suitability of the data collection instrument (Polit& Beck, 2017).

4.5.1. Validity of the Research Instrument

Validity of questionnaire is concerned with the assessment and determination of the extent to which a measuring instrument accurately assesses that which it is designed to measure (Wilson, 2014). In accordance with Moses and Yamat (2021), it is imperative to assess and confirm that a research instrument has face, content, construct and criterion validity before making use of such an instrument. Assessment of face validity can be successfully undertaken by consulting and seeking expert evaluation of in the relevant field of study (Polit& Beck, 2017). In this regards, the views of the supervisor together with those of other faculty members in the business administration department were sought. In addition, content, construct and criterion validity was ensured by undertaking a thorough and careful review of theoretical and empirical literature on information technology flexibility and firm competitiveness. Such a review of literature confirms that items of the measurement instrument are an impartial representation of the relevant domain of the construct, precisely test the intended construct and predicts the theoretical representation of the construct (Bölenius, Brulin, Grankvist, Lindkvist & Söderberg, 2012; Taherdoost, 2016). The review also favorably and adequately addresses concerns of coverage of domains of the constructs or concepts of interest.

4.5.2. Test of Reliability

Reliability of a research tool is indicative of the level to which the test items produces results that are consistent over time (Wong &Yamat, 2020). In the views of Drost (2011), reliability essentially signifies the degree to which test scores are replicated whenever identical test is administer either at different times or on different subjects across time. The observations drawn from the preliminary study yielded the tabulated values of Cronbach alpha coefficient.

Table2. Reliability Statistics

Research Construct	Number of Test Items	Cronbach Alpha coefficients	Decision
Information Technology Flexibility	7	0.793	Acceptable Value
Firm Competitiveness	11	0.848	Acceptable Value
Overall Score	18	0.827	Acceptable Value

Source: Data in the Pilot Study (2023)

The test items for firm competitiveness had the highest level of internal consistency at Cronbach Alpha of 0.848. On the other extreme, information technology flexibility revealed a comparatively lower level of internal consistency at Cronbach Alpha of 0.793. The avarage Cronbach alpha coefficients were determined as 0.827 for the entire research instrument. As asserted by Field (2014), Cronbach Alpha coefficient is a good statistic for evaluating the reliability of a questionnaire and further recommends the use 0.70 as lower benchmark for making determination as to whether a data collection tool is reliable or not.

In the case of research variables chosen for this enquiry, the determined values of Cronbach Alpha coefficient were comparatively higher than the benchmark of 0.70 prescribed by field. This outcome which is confirmed by the overall score 0.827, has the implications that the set of test items signifying diverse research constructs have acceptable levels of internal consistency. The criterion adopted for decision making in this study has been applied in various researches in the field of strategic management (Mugambi & Kinyua, 2020; Gatuyu & Kinyua, 2020).

4.6. Data Collection Procedure

Kenyatta University issued a research authorization letter introducing the researcher to the National Commission for Science, Technology and Innovation. This letter of research authorisation together with the copy of research proposal was used for processing the research permit. Upon being issued with the research permit, the researcher sought consent from the research participants through the human resource division of non-life insurance companies. The print copy of the researcher's letter of introduction and the copies of the questionnaire were administered using drop-and pick later method. A reliable point of contact and communication was established to facilitate the administration, follow up and collection of the questionnaires from the target management staff in the functional areas of non-life insurance companies.

4.7. Data Analysis and Presentation

Upon receiving the dully filled questionnaires from the field, the research conducted a careful inspection, consistency check, coding and entry of information in preparation for data analysis. Descriptive features of the observation made were analyses at the level of general information to reveal critical attributes of the research participants and for identifying the measures of central tendency and deviation in relation to information technology flexibility and firm competitiveness. Sample mean and sample standard deviation were used to aid in understanding the descriptive aspects of the observations gathered.

Further, the gathered data were subjected to simple linear regression to facilitate making of inferences, conclusions and recommendations. Firm competitiveness was regressed on operational flexibility, marketing flexibility, human resource flexibility and information technology flexibility as shown in equation (i).

$$\text{Firm Competitiveness} = \beta_0 + \beta_1 \text{Information Technology Flexibility} + \varepsilon \quad (i)$$

Inferences drawing from this analysis were determined at ninety five percent level of confidences which translated to five percent level of significance. Results of the statistical analysis were presented accordingly using figures and suitable tabulation.

5. RESEARCH FINDINGS AND DISCUSSION

5.1. Response Rate

The investigator issued 144 print copies of the data collection tool to the sampled heads of functional areas in the 18 non-life insurance companies involved in the empirical enquiry. At the end of the agreed period, 96 appropriately completed questionnaires were received back as illustrated in figure 2.

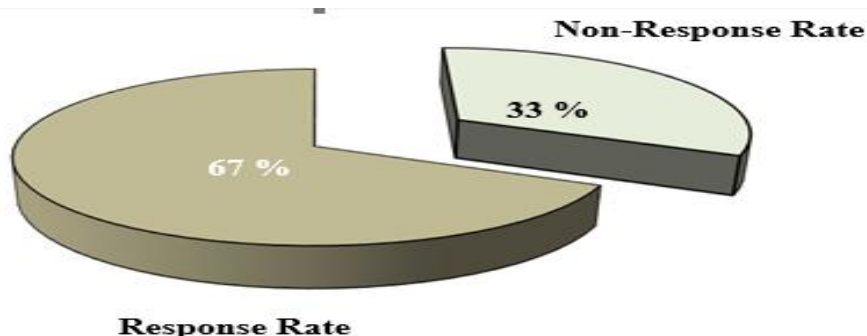


Figure2. Analysis of Response

Source: Survey Data (2023)

The valid questionnaires formed a proportion of 67 percent of the total number that had been administered. This meant that the rate for non-participation in this survey amounted to 33 percent. This level of participation fairly exceeded the typical average response rate for field survey that in accordance with Lindeman (2018) averages at 57 percent. It also exceeded the 60 percent recommended by Fincham (2008) for conducting statistical analysis in a sample survey with the object of generalizing findings to target population.

5.2. Characteristics of the Participants

Demographic Information

The investigator made observations regarding participant’s gender, educational attainment, position occupied in the firm, and the length of service in the position held. These key characteristics were analysed as shown in Table 3.

Table3. Descriptive Statistics for Characteristics of Research Participants

Characteristic	Categories	Frequency Count	Percentage Frequency
Gender	Male	55	57
	Female	41	43
	Total	96	100
Educational Attainment	Postgraduate Level	32	33
	Undergraduate Level	53	55
	Diploma Level	4	4
	Others	7	8
	Total	98	100
Organizational Position	Customer Experience	14	15
	Sales & Marketing	8	8
	Strategy & Investment Relations	12	13
	Operations	9	9
	Information Technology	13	14
	Human Resource	16	17
	Products Development	10	10
	Finance	14	15
	Total	96	100
Duration of Service	At most 5 years	18	19
	5 - 10 years	38	40
	10 - 15 years	32	33
	Above 15 years	8	8
	Total	96	100

Source: Survey Observations (2023)

The proportion of male participants was 57 percent slightly exceeding that of female participants at 43 percent. This distribution of participants by gender was a fair reflection of the behaviour of the study population in non-life insurance companies. The disparity in proportions among the male and female participant was sufficiently negligible to have any meaningful biased implications in the responses drawn from the research subjects. The observations made regarding the research questions were therefore suitable for inferring population parameters.

It was apparent that a majority of the participants had attained the first degree level of education at 55 percent. In the same perspective, the minority of the participants in the survey at 4 percent had achieved a diploma level of education. Within this range, those who had attained postgraduate level of education translated to 33 percent. Similarly, there was a proportion of 8 percent that had attained education awards of professional nature such as certified public accountant, executive certificate of proficiency, certified professional secretary among others. The insights deriving from analysis on educational attainment demonstrated that all participants had the necessary level of knowledge to internalize the research questions in relations to contextual practices and activities, and thus would be in a position to provide informed responses that were pertinent to the investigation.

In terms of the functional areas sought, the distribution of participants varied between 17 percent for heads of human resources division to 8 percent for heads of sales and marketing division. In this range, heads of customer experience division and finance division attained the same proportion of 15 percent. The rest of the functional areas had a representation that was spread in such a way that information technology had 14 percent, strategy an investment relations had 13 percent, products development had 10 percent, and operations had 9 percent. This confirms that all the key functional areas that were involved in setting the strategic direction in non-life insurance companies participated

in the enquiry. Similarly, the spread of participants was within a narrow range which demonstrated a fair representation of all the functional areas which implied that relevant responses were drawn regarding the phenomena of information technology flexibility and firm competitiveness.

The largest proportion of 40 percent comprised of functional heads who had served in their positions for a period of between 5 and 10 years. On the converse, the least proportion of 8 percent reflected the functional heads who had served in their positions for a period exceeding 15 years. The functional heads who had served for a period of between 10 and 15 years translated to a proportion of 33 percent whereas, those who had served for a period of s at most 5 years had a proportion of 19 percent. On average, the functional heads that participated in the enquiry had served in their positions for approximately 9 years which signified that they had the wealth of information and experience that was needed for responding objectively and appropriately to the research questions.

5.3. Descriptive Analysis for Information Technology Flexibility

Informational technology flexibility is construed as the institutional ability to gather and avail information that is required with the scope of quality, quantity and timeliness, leading to efficient and effective decision making. The precise measures used in this study include technical, data and integration flexibility. The set of observation gathered on aspects signifying information technology flexibility were analyzed in tabular form and concisely discussed.

Table4. *Information Technology Flexibility*

Statement	Frequency	Mean	Std Dev
The information technology has provision for adjustment to evolving company’s circumstances	96	3.82	1.04
The information technology promotes the ability to respond to the demands from the diverse stakeholders	96	4.26	0.83
The information technology infrastructure facilitate seamless exchange of data in real time	96	4.31	0.84
Provision of services to diverse stakeholders are seamlessly facilitated by the information technology	96	4.18	0.61
The information technology infrastructure has the capacity to handle variations in data requirements	96	4.07	0.95
The information technology platform has capacity to connect multiple applications for diverse decisional needs of the company	96	3.79	1.19
The information technology platform has capacity to connect multiple data sources	96	3.88	1.07
Information Technology Flexibility	96	4.04	0.95

Source: *Survey Observations (2023)*

Measurements drawn on the activities that manifested critical aspects of information technology flexibility revealed a pattern of variation amongst responses that was well within the range noted for the other dimensions of strategic flexibility. Apparently, evaluation by the research participants had an overall tendency towards a mean of 4 which depicted a large extent of agreement that these measurable aspects are instrumental in development of customer value. Activities that were relatively rated highest included information technology infrastructure facilitate seamless exchange of data in real time, information technology promotes the ability to respond to the demands from the diverse stakeholders, and provision of services to diverse stakeholders are seamlessly facilitated by information technology. Notably, there was appreciable clustering of responses around these test items which was a pointer that the participants’ evaluation of the level of these defining activities of information technology flexibility in non-life insurance companies was substantially the same.

Nonetheless, there are a couple of test items that registered comparatively low scores of mean and also manifested relatively wider variations in participants’ responses. These behaviour was evident for such test items as information technology platform has capacity to connect multiple applications for diverse decisional needs of the company, information technology has provision for adjustment to evolving company’s circumstances, and the other on information technology platform has capacity to connect multiple data sources. The three test items had a rating of 3.79, 3.82 and 3.88 for mean, and

1.19, 1.04 and 1.07 for standard deviation respectively. The notable wide disparity in responses underscored the need for fostering, institutionalizing and operationalizing these measurable aspects of information technology flexibility among non-life insurance companies.

Notably, information technology flexibility has become an important criteria when making determining the strategic options to be pursued in an enterprise in line with the adopted strategic direction adopted as well as in guiding enactment of alterations contingent upon the changes in business environment (Ahmed & Al-Sabti, 2015; Abu-Nahel, 2020). Information technology flexibility signifies institutional ability to gather and avail information that is required with the scope of quality, quantity and timeliness, leading to efficient and effective decision making. This dimension of strategic flexibility may be viewed as the extent to which modification on the information system can successfully be effected and the capacity to maintain its functionality and performance in the context of environment complexity and dynamism (Schober&Gebauer, 2011; Peng, 2021). Technical flexibility, data flexibility and integration flexibility are critical aspects of information technology flexibility that a firm can leverage in its value creation and delivery initiatives (Anwar, Masrek, & Sani, 2018; Abu-Nahel, 2020; Peng, 2021).

5.4. Descriptive Statistics for Firm Competitiveness

The competitiveness of a firm is manifested in generation of outcomes that are valued by customers, and has been construed as encompassing efficiency, market share, customer focus and profitability. The observation gathered on activities manifesting firm competitiveness were analyzed in tabular form.

Table5. *Firm Competitiveness*

Statement	Frequency	Mean	Std Dev
There is prompt provision of services to stakeholders	96	4.11	0.38
Prompt response to stakeholders queries is highly valued in the company	96	4.47	0.32
Service features mirror the suggestions of customers	96	4.30	0.46
Management track resolution to customer complaints	96	3.94	1.06
Resources are committed to track movement of customer in the market	96	3.65	0.94
Customers’ convenience is regarded highly in the company	96	4.06	0.35
Service to customers is considered as an imperative for value delivery	96	4.38	0.58
The company staff has substantial knowledge about the company’s product	96	4.62	0.39
The company staff value listening to customers	96	4.27	0.41
Financial control of the company is cost effective	96	4.01	0.86
Cost behaviour is carefully tracked in the company	96	3.95	1.02
Marketing Flexibility	96	4.16	0.62

Source: *Survey Observations (2023)*

The general behavior of the scores associated with aspects observed for the output variable indicated that participants’ evaluation gravitated towards large extent of agreement concerning the significance of these activities and their manifestation in non-life insurance companies. As has been demonstrated by the standard deviation of 0.62, the scoring by participants was clustered within a close range to the average score of 4.16. The closeness of responses was critical to assessing the level of agreement amongst participants regarding the presence of these outcomes that signified the level of firm competitiveness. However, besides low average scores characterizing the aspects that resources are committed to track movement of customer in the market, management track resolution to customer complaints, and cost behaviour is carefully tracked in the company all of which were rated at below 4.00, it could be seen that these outcomes attracted relatively widely dispersed responses with standard deviation exceeding 0.94 and attaining a high of 1.06 against the rest whose typical level was below 0.50. This typical wide dispersion of responses underpinned the need for fostering those measurable outcomes of firm competitiveness among non-life insurance companies.

Nonetheless, a majority of aspects of outcomes measured attained high mean scores of above 4.20 and had characteristic low scores of standard deviation. This behaviour was clearly evident for such outcomes as the company staff has substantial knowledge about the company’s product, prompt response to stakeholders’ queries is highly valued, service to customers is considered as an imperative for value delivery and service features mirror the suggestion of customers with average scores of 4.62, 4.47, 4.38 and 4.30, and standard deviations of 0.39, 0.32, 0.58 and 0.46 respectively. This was indicative of the fact that such valued measurable aspects of firm competitiveness were manifested in magnitudes that could be observed by the research participants in more or less the same way.

Firm competitiveness can be viewed as the underlying capacity to design, produce and deliver products of superior customer appear relative to those offered by the competition in the market place (Ambastha & Momaya, 2004). In accordance with Vulkovic (2013), firm's competitiveness is fairly manifested in firm behaviour as they seek to achieve results that are relatively better; this is particularly attained through possession of more resources which are relatively superior, launching superior products or competitively priced products and thus more attractive to customers, and realising high market share. In the perspective of Barney (2001a) the resources that are possessed and controlled by a firm underpin its competitiveness in the market place. Firm competitiveness involves both assets and processes that convert assets into outcomes that are of value to customers. Notably, process driven firm competitiveness is a product of complex interaction embedded in the functional practices of a firm and thus making it difficult to imitate (Rumelt, 1991; Madhani, 2010).

5.5. Linear Regression Analyzes

At this stage of the analyses, firm competitiveness was regressed on human resource flexibility, operational flexibility, marketing flexibility and information technology flexibility. The resulting statistical output was tabulated and reasonably interpreted.

Table6. *Summary of Estimated Model*

Model	R	R Squared	Adjusted ¹ R Squared	Std. ¹ Error of ¹ the Estimate	¹ Durbin-Watson
1	.682 ^a	.465	.427	.31082	2.108

Source: *Survey Observations (2023)*

The quantitative model determined in this regression analysis had a coefficient of 0.682 for the bivariate relationship between information technology flexibility and firm competitiveness. This value that depicted the product moment correlation insinuated that there was a strong positive linear relationship between constructs of information technology flexibility and firm competitiveness. This was precisely confirmed by the value of 0.465 determined for R square for the predicted model. Observably, information technology flexibility is therefore associated with causing a proportion of 42.7 percent of firm competitiveness in non-life insurance companies. In the same analysis, the F-statistics provided the basis for determination of the goodness of fit of the predicted model.

Table8. *F-Statistics*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.559	4	2.167	11.061	.000 ^b
	Residual	28.797	91	.178		
	Total	36.356	95			
a.Regressand: Firm Competitiveness						
b.Regressors: (Constant), Information Technology Flexibility						

Source: *Survey Observations (2023)*

The manifested value of F-statistics was 11.061 and it’s computed probability (p-value) was 0.0001. These statistical outputs provided a clear confirmation that the model that was estimated is suitable for forecasting firm competitiveness using information technology flexibility. Precisely, the predicted model provided a good fit for the observed data.

Table 7. Beta Coefficients

	Unstandardized ¹ Coefficients		Standardized ¹ Coefficients	t	Sig. ¹
	β	Std. Error	Beta		
(Constant)	.499	.286		1.875	.042
Information Technology Flexibility	.468	.079	.439	4.970	.000

a. Regressand: Firm Competitiveness

b. Regressors: (Constant), Information Technology Flexibility

Source: Survey Observations (2023)

The parametric values that were estimated in the regression analysis generated the statistical equation thus presented.

$$\text{Firm Competitiveness} = 1.875 + 0.468 \text{Information Technology Flexibility} \quad (\text{ii})$$

It is clearly evident that information technology flexibility is held at a constant value of zero, the estimated model would reduce to a an equation of the form thus given;

$$Y = 1.875; \quad (\text{for } X_i = 0)$$

Where: Y = Firm Competitiveness

Y-intercept (β_0) = 1.875

This implies that the level of firm competitiveness in this circumstances would be identical to 1.875 the value of the y-intercept. This value is statistically significant in the predicted equation given that it's computed probability value of 0.042 does not exceed the benchmark of 0.05.

In terms of information technology flexibility as a predictor variable, the predicted model provides a clear manifestation that the slope determined for the resulting model is 0.468. This illustrates that if information technology flexibility assumes a value of 1, firm competitiveness would take a value of 0.468. This model for firm competitiveness and information technology flexibility has a computed probability value of 0.0001 and is thus statistically significant. Therefore, it has been generalized that firm competitiveness in non-life insurance companies is positively affected by information technology flexibility.

The inferences made on information technology flexibility as an input variable for firm competitiveness is validated by a vast body of extant literature (Han, *et al.*, 2017; Anwar, *et al.*, 2018; Abu-Nahel, *et al.*, 2020). The study by Han, *et al.* (2017) found out that firm performance is directly affected by information technology flexibility in the context of supply chain practitioners in United Kingdom. Evidence generated through literature review by Anwar, *et al.* (2018) showed that information technology flexibility preceded such firm outcomes as business alignment, strategy implementation, strategy control, customer satisfaction, competitive advantage, firm competitiveness and firm performance. The study by Abu-Nahel, *et al.* (2020) used correlation analysis which indicated that information flexibility and quality of services had positive linear relationship among non-profit hospitals in Gaza Strip.

6. CONCLUSION

Information technology flexibility was postulated as a predictor variable and was analyzed into technical flexibility, data flexibility and integration flexibility. Firm competitiveness was postulated as the outcome variable and analyzed into efficiency, market share, customer focus and profitability. The study had its focus on non-life insurance companies which essentially constituted the unit of analysis and informed the target population. Non-life insurance sub-sector is viewed as a fundamental economic cog in the financial services sector essentially in relation to management of risk and consequently is credited with stimulating, energizing, and sustaining economic activities in the alternative sectors of the economy. The risk pooling and indemnification properties of insurance firms facilitate provision of credit and commercial transactions by mitigating losses and management of non-diversifiable risk.

Nonetheless, contextual evidence suggested that non-life insurance sub-sector has been losing its margin of domination to the life insurance sub-sector, and is experiencing decreasing penetration rate as well as increasing proportion of customer's complaints. The characteristics complaints registered entail declined claims, delayed settlement of claims, erroneous deductions of premiums, inadequate compensation and offers that are not satisfactory. Evidently, the level of resolution of customer complaints is comparatively low to that for life insurance sub-sector. Extant literature on information technology flexibility was found to suffer from diverse research gaps and thus could not be used to resolve concerns of firm competitiveness in non-life insurance companies. Informed by the concerns revealed through review of literature, this study investigated the effect of information technology flexibility on firm competitiveness amongst non-life insurance companies in Nairobi City County, Kenya.

Dynamic capabilities theory and resource based view formed the theoretical basis of the study. Explanatory research design informed the research methodology of the study. A sample of one hundred and forty four management employees was selected through simple random sampling from the head offices of non-life insurance companies. Field observations were gathered using a structured questionnaire. The research instrument was assessed for validity and reliability before it was used for collecting the required data. Descriptive analysis facilitated understanding of the attributes of the observed sample in terms of frequency count, mean and standard deviation. Inferential analysis was performed using simple linear regression analysis and aided in drawing conclusions.

Descriptive characteristics manifested existence of the measurable aspects of information technology flexibilities and firm competitiveness in non-life insurance companies. The quantitative relationship for firm competitiveness as outcome variable, and information technology flexibility as input variables was found to be a reliable model for use by management in the context of non-life insurance companies. In essence, it was determined that information technology flexibility is an explanatory variable for firm competitiveness. Therefore, it was inferred that firm competitiveness in non-life insurance companies is positively affected by information technology flexibility.

7. RECOMMENDATIONS OF THE STUDY

The conclusions deriving from this survey have valuable implications to both policy and practice in non-life insurance companies in line with information technology flexibility and firm competitiveness. There is a need for the head of information communication and technology division to enact policy guidelines for fostering capacity of information technology platform to connect multiple applications for diverse decisional needs, provision for adjustment of information technology to evolving circumstances, and capacity of information technology platform to integrate multiple data sources. Practices that foster the institutional ability to gather and avail information that is required with the scope of quality, quantity and timeliness, leading to efficient and effective decision making should be sufficiently embedded in non-life insurance companies.

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