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INFLUENCE OF INNOVATION ORIENTATION ON ORGANIZATIONAL PERFORMANCE OF SUPPLIERS IN THE TELECOMMUNICATION INDUSTRY IN KENYA

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MBA/121251/19

A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION OF STRATHMORE UNIVERSITY

STRATHMORE UNIVERSITY BUSINESS SCHOOL

SEPTEMBER, 2022

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

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ABSTRACT

To realize superior organizational performance under the highly regulated, highly competitive and dynamic business environment, firms operating within highly competitive and challenging environment need to improve their internal resources, be innovation oriented and remain strategic to ensure their survival. The telecommunication suppliers in Kenya are facing various challenges including stiff competition among themselves, low barriers to entry, corruption, poor corporate governance structure and the need for continuous training of personnel to cope with the highly changing technologies. In the face of these challenges, telecommunication suppliers need to adopt innovations that guarantee them improved performance. The innovation orientation adopted by the suppliers in this industry is therefore vital in ensuring development of new technologies, improved operations and ensuring timely delivery of services. This study sought to analyze the influence of innovation orientation on the organizational performance of suppliers working in the telecommunication industry in Kenya. This study was guided by positivism research philosophy. This study adopted both descriptive and explanatory research designs. The population of this study comprised of 688 telecommunication suppliers registered with Communication Authority of Kenya. The study was based on sample size of 322 companies/suppliers in the telecommunication industry in Kenya. This study used probability sampling technique, specifically, simple random sampling technique to select the companies that were included in the sample. Primary data was collected using a questionnaire. The study used multiple linear regression modeling data analysis techniques. Model summary results established that innovation intention, innovation infrastructure and intention to sustain innovation explain 61.3% of performance of the suppliers in the telecommunication industry in Kenya. Regression coefficient of innovation intention and performance of the suppliers in the telecommunication industry has the greatest positive and significant relationship (β=.319, p=0.000<0.05) followed by coefficient of the intention to sustain innovation has the greatest positive and significant influence on performance of the suppliers in the telecommunication industry (β=.271, p=0.000<0.05) and coefficient of innovation infrastructure has positive and significant influence on performance of the suppliers in the telecommunication industry (β=.265, p=0.000<0.05). Competitive strategy has partial significant meditation effect on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya. The study recommends the need in the telecommunication suppliers to support product and service innovation through research and development. There is need to facilitate cooperation in innovative activities among different stakeholder including firm management, employees, entrepreneurs, public sector, private sector, government, platform operators and academia. There is need for the management of supply firms in the telecommunication industry to seek the commitment of employees and innovators in incorporating new innovations in the organization through reward and recognition for innovative ideas.

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VT OMNES VNVM SINT

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LIST OF ABBREVIATIONS/ACRONYMS

CAK Communication Authority of Kenya

CAPI Computer-Assisted Personal Interviews

COVID 19 coronavirus disease 2019

CS Competitive Strategy

IS Intention to Sustain

GDP Gross domestic product

ICC intra-class correlation coefficient.

IF innovation infrastructure

IPO Initial Public Offering

KMO Kaiser-Meyer-Olkin

NACOSTI National Commission for Science, Technology and Innovation

OCSSCO Oromia Credit and Saving Share Company

OMIs organizational and marketing innovations

OP organizational performance

ROA return on asset

ROCE return on capital employed

ROI return on investment

SMS small- and medium-sized enterprises

VC venture capital

DEFINITION OF KEY TERMS

Competitive Strategy refers to the process of developing competitive advantage and earning above-average returns for stakeholders. It consists of the business approaches and initiatives undertaken by a company to attract customers and to deliver superior value to them through fulfilling their expectations as well as to strengthen its market position (McGee & Sammut-Bonnici, 2015).

Innovation Infrastructure refers to all of the networks that companies and startups need to innovate (Kolodynskyi, Drakokhrust, & Bashynska, 2018). They are tools that evoke, create, optimize and accelerate innovation process in an organization. The elements of innovation infrastructure include; innovation methodology, collaboration, enablers and obstacles in the organizational culture, and work place design (Morris, 2009).

Innovation Intention refers to the degree to which an organization has established a mechanism to develop and sustain innovation using their business model (Dobni, 2010). Hamel (2006) also defines innovation intention as the willingness to introduce new ideas, processes, products or procedures to the relevant unit of adoption.

Innovation Orientation refers to the proclivity or the tendency of an organization to adopt and embrace innovation to deliver outstanding performance (Pscheidt-gieseler, Maria, Toaldo, & Martins, 2018). The success of innovation orientation adopted by an organization is influenced by the innovation intention within the organization, innovation infrastructure created by the organization and the desire to implement and sustain the innovation within the organization (Dobni & Klassen, 2015; Beynon, Jones, & Pickernell, 2020).

Innovation refers to a process that combines science, technology, economics and management, as it is to achieve novelty and extends from the emergence of the idea to its commercialization in the form of production, exchange, consumption (Twiss, 1989). According to Khan and Naeem (2018), innovation is the effort of producing, improving and advancing business processes as well as goods and services that are more valuable to the customer at a more efficient cost and with better profitability.

Organizational Performance refers to the ability to implement measures that helps in effectively meeting its strategic objectives (Obeidat, 2016). According to Walker *et al.*, (2004) the performance of a firm can be measured by use of financial and non-financial goals.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Survival in today's dynamic environment requires organizations to have superior performance compared to competitors (Obeidat, 2016). In a highly competitive business environment, organizations need to continually improve their products and services, be innovative and strategic in order to meet the ever-increasing customer expectations as well as realize their own growth (Khan & Naeem, 2018). Organizations strive to improve performance by developing and implementing effective business strategies that exploit opportunities in the marketplace while capitalizing on available resources and capabilities (Prifti & Alimehmeti, 2017). In order to achieve these goals, organizations refocus their strategic orientation in order to properly monitor its activities for better business performance (Al-Shourah, 2021). Organizations that possess high innovation orientations engage in value creation strategies such as market segmentation, developing new products/services for new markets, and product or service customization (Dobni, 2010).

To survive in the dynamic environment, firms are also encouraged to ensure alignment of different sets of organizational capabilities in order to pursue continuous innovation for sustainable success (Ionescu & Ionescu, 2015). Innovation helps organizations find solutions to problems, create new capabilities, and improve business performance by allowing organizations and the managers to gather specific resources, recognize opportunities for providing valued products and services, and to convey those products and services for higher profit (Hermundsdottir & Aspelund, 2021). According to Khan and Naeem (2018), innovation is the effort of producing, improving and advancing business processes as well as goods and services that are more valuable to the customer at a more efficient cost and with better profitability.

Innovation is the best way to go in the twenty first century as it enables businesses to be competitive and is the engine that has made organizations sustainable by fueling growth and driving success (Obeidat, 2016). This has made many organizations to adopt innovation as an integral part of their corporate strategy (Schaeffer, 2015). In order to survive in a volatile business environment with changing technology and quickly evolving global market which results to shortened product life cycle, firms need to enhance their innovation orientation

(Datta, 2018; Nguyen-thi & Mothe, 2014; Oliva *et al.*, 2019). A firm's strategy can substantially dictate its product and services offerings, provide high level of innovation and offer flexible internal processes that provide managers with a proper business model which helps in improving performance (Al-Ansaari, Bederr, & Chen, 2015).

1.1.1 Innovation Orientation

Innovation orientation is the tendency of an organization to adopt and embrace innovation to deliver outstanding performance (Pscheidt-gieseler, *et al.*, 2018). It is the sum total of all innovation programs within an organization (Obeidat, 2016). Fidel et al., (2018) defines innovation orientation as a corporate culture that actively encourages it members to embrace innovation and use it to create, experiment and contribute to the development of new ideas at the workplace (Fidel, Schlesinger, & Emilo, 2018). Innovation orientation of an organization has a powerful influence on its performance and profitability (Zhang, Khan, Lee & Salik, 2019). It is the guiding principle in strategy formulation and implementation with the aim of increasing a firm's innovativeness and it therefore involves all the internal variables in an organization (Pscheidt-gieseler *et al.*, 2018). The management within an organization should enhance the innovative ability of the tangible and intangible resources for growth and profitability (Dobni & Klassen, 2015).

Limited organizational design, lack of leadership for innovation and lack of infrastructure for innovation affect many organizations thereby impairing their growth (Dobni & Klassen, 2015). The success of innovation orientation adopted by an organization is influenced by the innovation intention within the organization, innovation infrastructure created by the organization and the intention to sustain the innovation within the organization (Dobni & Klassen, 2015; Beynon, Jones, & Pickernell, 2020). The study therefore sought to use the innovation intention, innovation infrastructure and intention to sustain innovation as latent variables for innovation orientation.

The innovation intention is the degree to which an organization has established a mechanism to develop and sustain innovation through a well formulated business model (Beynon, Jones, & Pickernell, 2020). Kolzow (2014) operationalized innovation intention as the willingness to introduce new ideas, processes, products or procedures to the relevant unit of adoption. Innovation infrastructure are tools that evoke, create, optimize and accelerate innovation process in an organization. Beynon Jones and Pickernell (2020) operationalized innovation

intention as having increased research and development (R&D), staff training, importing/exporting and marketing and advertising. Innovation intention in this study was operationalized using willingness to introduce new ideas, new processes, new products and new procedures.

The elements of innovation infrastructure include; innovation methodology, collaboration, enablers and obstacles in the organizational culture, and work place design (Johnsson, 2017). Kazakhstan. Johnsson (2017) identified four critical elements for an effective innovation infrastructure namely; Innovation methodology, collaboration, enablers of innovation and workplace design. Innovation methodology refers to the innovation process right for idea generation to implementation. According to Ajayi and Morton (2015) innovation infrastructure can be explained in terms of innovation enablers which they identified as; continuous learning culture, employee training and development, effective workplace communication and employee empowerment and participation. In this study, innovation infrastructure was measured using innovation methodology, collaboration, enablers of innovation and work place design

The intention to sustain innovation is the process of gaining targeted employees' commitment to incorporate new innovations within the organization and to enhance sustainability of the innovations (Zhang, et al., 2019). The key elements of intention to sustain innovation include; a tolerance for risk and failure, making sure recognition and rewards are consistent, instilling a sense of ownership, reducing bureaucracy, open communication and establishing a clear sense of direction (Garud, Gehman & Kumaraswamy, 2011). Various studies have adopted the use of the above measures of intention to sustain innovation. Examples of these studies include, Kapepa and van Vuuren (2019) and Tian and Wang (2014) who operationalized intention to sustain innovation in terms of tolerance for failure and risk-taking. Nigusie and Getachew (2019) measured it in terms of extrinsic and intrinsic rewards while Santoso (2020) and Werner and Schell (2019) measured it in terms of psychological ownership. In the context of this study, intention to sustain innovation was operationalized as the tolerance for risk and failure, recognition and rewards, sense of ownership, reduced bureaucracy, open communication and clear sense of direction.

1.1.2 Competitive Strategy

Competitive strategy is the process of developing competitive advantage and earning above-average returns for stakeholders. Competitive advantage is achieved through the strategic management of resources, capabilities, and core competences, as well as the firm's responsive-ness to opportunities and threats in the external environment (McGee & Sammut-Bonnici, 2015). According to Bayraktar, et al. (2017) competitive strategies such as cost-leadership and differentiation can mediate between innovations, which, in turn, increase firm performance. Managers implement cost-leadership and differentiation strategies to take part in competitive market conditions. Tutar, Nart and Bingöl (2015) conceptualized competitive strategy as proactive market orientation, proactive entrepreneurial orientation and technology orientation. Competitive advantage measures include ability to produce a product or service at cost effective level, differentiated quality and focus to the customer demands. According to Porter (1993), some common indicators used to measure the competitive advantage include: the uniqueness of the product, products quality, and competitive prices. This study measured competitive strategy as cost-leadership and differentiation strategies.

The telecommunication industry around the world is faced with fierce competition among service providers (Wimalasiri, 2018), as each tries to gain a competitive edge in the market. To deal with competition firms keep looking for resources and capabilities not owned or controlled by themselves to deliver competitive advantage (Pihlajamaa, Kaipia, Aminoff, & Tanskanen, 2019). This has made the telecommunication service providers to onboard the services of suppliers who provide services, resources and capabilities that the main service provider is lacking (Susan, 2017). However, past studies by (Ndesaulwa & Kikula, 2016; Bolorian & Faezeh, 2014) focused at the mediating effect of firm competitive strategies on general firm performance without narrowing to telecommunication firms presenting possible differences in study findings due to firm's contextual factors. This study sought to investigate the influence of innovation orientation on the organizational performance of suppliers working in the telecommunication industry in Kenya.

1.1.3 Competitive advantage, Innovation Orientation and Organizational Performance

In today's highly competitive business environment, innovation capability within these organizational capabilities is essential for achieving a sustainable competitive advantage (Zehir, et al., 2015). Innovation is the key to competitive advantage in a highly turbulent environment. The ability to innovate has direct consequences for the ability to compete at the individual, firm, regional and national level (Setyawati, *et al.,* 2017). The values created by innovations are often manifested in new ways of doing things or new products and processes that contribute to wealth. Innovation orientation redefines the operating environment in order to enhance performance and gain competitive advantage.

The organizational performance of a firm operating in a highly competitive business environment is linked to the innovation orientation that its managers adopt to deliver sustainable value creation (Dobni & Klassen, 2015). Organizational performance of a firm relates to its ability to implement measures that helps in effectively meeting its strategic objectives (Obeidat, 2016). Improving performance is essential for the success of organizations and many of them will therefore invest substantial efforts to achieve improved performance (Tseng & Lee, 2012). Different definitions of organizational performance have been provided by scholars according to different perspectives presented by each of their studies (Avci, Madanoglu, & Okumus, 2011). According to Obeidat, (2016) the performance of an organization is a reflection of how well it takes advantage of both the tangible and intangible resources within it to achieve its objectives. Avci *et al.,* (2011) posits that the organizational performance is the measure of the actual results and output of an organization compared to what results the organization intended.

Organizational performance is a multidimensional concept and as such is a measure of achievement of objectives as proposed by different stakeholders within an organization (Hairout, 2020). According to Mashovic (2018) the performance of a firm can be measured by use of financial and non-financial goals with financial goals being considered as the most appropriate measure by many scholars. However, there are business owners who are motivated to start businesses for non-financial goals and personal factors as opposed to financial objectives (Avci et al., 2011; Al-Henzab, et al., 2018). These non-financial goals could lead to alternative measures of performance, particularly in the small business sector. In some organizations the non-financial measures of performance are important as they relate to the long term objectives of the companies including customer satisfaction and loyalty,

market share, new product development and product quality (Obeidat, 2016). Kafetzopoulos & Psomas, (2012) argues that besides the financial measures, operational performance (non-financial measures) of a firm is an important measure of organizational performance.

Financial measure of organizational performance on the other hand uses statistical data to analyze growth, profits, turnover, return on capital employed (ROCE), return on asset (ROA) and return on investment (ROI) (Simpson, Padmore, & Newman, 2012). Simpson et al., (2012) posits that it is difficult to separate success from performance because success needs to be measured through performance or meeting of some critical success factors in performance. Omri et al., (2015) argued that it is through innovation that the human, social and financial capitals are harnessed together to deliver improved performance in a business and firms with greater access to these capitals are likely to realize competitive advantage (Omri, Frikha, & Bouraoui, 2015). In order for organizations to remain competitive and to grow they must have an orientation towards innovation (Dobni & Klassen, 2015).

Operational performance is defined as a performance relating to an organization's internal operations including its productivity, product quality and customer satisfaction (Saleh, Sweis, Izzat, & Saleh, 2017). It is a measure of its product's intrinsic and extrinsic quality dimensions such as performance, durability, reliability, perceived quality and conformance to specifications (Kafetzopoulos & Psomas, 2012). The operational performance of an organization is measured as a composite of several dimensions of performance reflecting the internal capabilities of a firm including process quality, product quality, efficiency in inventory management, effectiveness of business systems such as workplace communication as well as employees' empowerment and effectiveness of the firm's operations (Kafetzopoulos & Psomas, 2012). The study used the above measures of performance in an organization as proposed by Kafetzopoulos and Psomas (2012).

Innovation orientation is a critical ingredient of competitive strategy (Hernández-Perlines, Moreno-García, & Yañez-Araque, 2016). The uniqueness of the competitive strategies adopted by a firm helps it to attain competitive advantage as these strategies may act as a mediating factors between innovation and organizational performance (Sagwa, 2016). This competitive strategies include cost leadership, differentiation and focus strategies (Sagwa, 2016). As Michael porter five forces theory shows, competition in an industry generally depends on five basic forces (Bolorian & Faezeh, 2014). These forces are the bargaining power of customers, the bargaining power of suppliers, the threat of newcomers, the threat of

substitute to the products offered by a firm and the intensity of the competitors. Innovation orientation enables firms to acquire immense strength to any of these forces hence determining its performance in any industry (Bolorian & Faezeh, 2014).

Several studies focused only on the impact of innovation orientation on organizational performance (Pscheidt-gieseler et al., 2018; Dobni & Klassen, 2015; Beynon, Jones, & Pickernell, 2020). However, the findings are contardictory. For instance, Pscheidt-gieseler et al., (2018) and Beynon, Jones, and Pickernell, (2020) found out that innovation orientation has a positive and significant impact organizational performance. However, Dobni and Klassen (2015) found an insignificant impact of innovation orientation on organizational performance. According to Dobni (2010), Theodosiou, and Katsikea (2012) and Kafchehi, Hasani and Gholami (2016), the impact of innovation orientation on organizational performance is mediated by other firms' competitive strategies. This is an indication of conflicting research findings that warrant further study analysis. Furthermore, most of the studies focused on the impact of innovation orientation on organizational performance without specifying the kind of firm sectors. Innovation orientation capabilities may differ from sector to sector resulting to differences due to contextual elements of the firms. This study focused at the impact of innovation orientation on organizational performance in the context of telecommunication firms.

While several studies have looked at the influence of innovation orientation on performance, some of these studies have found that this relationship is not linear (Dobni, 2011; Prajogo, McDermott, & McDermott, 2013) and other factors come into play such as competitive strategy. Firms which have positioned themselves in such a way that they have a competitive advantage over their counterparts often perform better than those whose competitive strategy is weak even though they may be innovation oriented (Issau, Acquah, Gnankob & Hamidu, 2021). Competitive strategy therefore comes into play to harness the effect of innovation orientation on performance. Furthermore, even the relationship between competitive strategy and innovation is also controversial. While some studies indicate that firm's strategies influences innovation (Bayraktar, *et al.*, 2017; Bayraktar, et al, 2017), others show the opposite (Kariuki, 2017; Doğan, 2016; Kiveu, 2017). There is therefore need for a study to show the mediating effect of competitive strategy on the relationship between innovation and organizational performance.

Whereas several empirical studies have measured the effect of innovation orientation on organizational performance, the available literature does not provide a convincing analysis of this significant fact (Bartolacci, Castellano, & Cerqueti, 2013). Ndesaulwa and Kikula, (2016), argued that innovation has a positive benefits and results to improvement in organizational performance but such an assertion may not be entirely true since performance may be affected by other factors nor related to innovation. According to Bartolacci et al., (2013), innovation has negative effect on organizational performance. Some studies have also shown that there exists no link at all between innovation and firm's performance (Kafetzopoulos & Psomas, 2012). Success in certain innovation orientations should therefore be identified as necessary but not sufficient enough for organizational performance (Ndesaulwa & Kikula, 2016). The analytical and empirical studies that examine the relationship between innovation orientation adopted by a firm and the various aspects of performance have therefore not been conclusive (Kafetzopoulos & Psomas, 2012). On the other hand, most studies on innovation and its effect on performance are mainly concentrated in Far East, Middle East and Western countries with little empirical evidence noticeable in Africa (Ndesaulwa & Kikula, 2016). Additionally, these studies did not investigate the mediating effect of competitive strategy on the relationship between innovation orientation and organizational performance (Bolorian & Faezeh, 2014).

1.1.4 Overview of the Telecommunication Sector

The telecommunication industry is one of the most competitive, highly globalized and technologically innovative sectors of the world economy (Odhiambo, 2015). It is an industry with fierce competition as firms struggle to gain a competitive edge over their competitors in the market. This competition has led to reduced pricing and reduced margins for telecom firms and suppliers in the industry (Wimalasiri, 2018). In Europe and the U.S for example, competition led to telecommunications firms steadily consolidating into a shrinking pool of providers, thereby creating an oligopolistic industry (Odhiambo, 2015). In order to improve performance, gain competitive advantages and realize profits, telecommunication firms around the world have had to leverage on core competencies which includes new product development, reduced lead time, improved efficiencies, improved inventory management and improved supply chain management.

Many firms attain this by combining their resources with the resources of external partners such as suppliers who bring on board valuable resources and capabilities (Pihlajamaa et al., 2019). Evaluation and on boarding of suppliers to the telecommunication industry is done through the supply chain and procurement departments in these firms (Susan, 2017). During the evaluation process the supply chain department uses a criterion that considers quality, price, technical capability and timely delivery of services and often create a high level of redundancy among suppliers as a result of competition for limited opportunities available (Susan, 2017).

In Kenya the mobile telecommunication industry is highly developed and offers services in Voice and SMS, data, mobile money services, digital services, e-health services, cyber security, fiber-optic, undersea cable, internet of things, mobile Apps as well as other services that are specific to sector needs such as farming applications (Operators et al., 2017). The data from the Communication Authority of Kenya (CAK, 2019) shows that the mobile penetration in Kenya was at 53.2 million as at September 2019, with the 2G and 3G network covering 96% and 93% of the population respectively. The mobile money subscription stood at 31.2 million with transaction value being 1.7 trillion Kenya shillings (www.ca.go.ke).

The Kenyan government has identified the telecommunication industry as a major contributor to the economy in terms of GDP and employment opportunities in the country (Kariuki, 2014) and as an important pillar in the government's vision 2030 development strategy (Mudogo, 2019). The service providers in the industry includes Safaricom Limited, Airtel Kenya Limited, Telkom Kenya Limited, Finserve Africa, Mobile Pay, iWay Africa, Jamii Telecom among others. According to Communication Authority of Kenya (www.ca.go.ke), the sector grew tremendously in 2019 supported mainly by the digital economy, high internet penetration and mobile telephony services with access to internet pushing the data subscription to over 47 million customers.

The suppliers or contactors in the Kenyan telecommunication industry are significant to the sector as they are the main drivers behind the service delivery in the sector (Susan, 2017). Supplier selection in the Kenyan mobile telecommunication industry is highly competitive and based on regular evaluation of the technical as well as commercial capabilities possessed by the suppliers intending to offer services to the main service providers. The procedure involves the evaluation of all the suppliers expressing interest to supply goods or services to the main firm with the aim of monitoring how well they are able to perform in order to help

the main company meet its strategic objectives (Susan, 2017). The supplier to be selected has to show the ability and capability to offer quality services, timely delivery, technical knowhow, competitiveness in pricing, financial capacity to support the projects, flexibility and innovation (Schramm & Morais, 2012).

The suppliers are considered valuable and a source of innovative advantage to the main service provider (Pihlajamaa et al., 2019). However, their bargaining power is limited due to stiff competition, low barriers to entry, reduced prices, and low margins and over supply of firms seeking to do business with the main service providers in the Kenyan telecommunication industry (Omae et al., 2013). Thus, the suppliers' innovation capabilities allow the main service provider to develop novel ideas, technologies, processes, products and services that improves its overall performance and it is therefore in the buyers' best interest that a supplier invests in new technologies, innovation and improved operations (Pihlajamaa et al., 2019). The orientation towards innovation is therefore crucial for improving the chances of a supplier in Kenyan telecommunication industry to be selected by the main service provider in the face of high competition and might be important in delivering improved performance for the supplier (Mudogo, 2019).

1.2 Statement of the Problem

The Kenyan telecommunication industry is rapidly changing and has become highly competitive and challenging to suppliers as they struggle to gain an edge over their competitors, improve performance and realize competitive advantage (Mudogo, 2019). To realize superior organizational performance under the highly regulated, highly competitive and dynamic business environment, firms operating within such an environment need to improve their internal resources, be innovation oriented and remain strategic to ensure their survival (Kanyuga, 2019).

The suppliers in the telecommunication industry in Kenya are facing various challenges including stiff competition among themselves, low barriers to entry, corruption, poor corporate governance structure and the need for continuous training of personnel to cope with the highly changing technologies (Gacheru & Onyango, 2015). The high number of firms willing to offer supplier services to the main telecommunication firms results in high price cuts, reduced business volumes, staff redundancy, failure to honor credit obligations by suppliers and even the risks of closure of business (Aluda, 2015). In the face of these

challenges, telecommunication suppliers need to adopt innovations that guarantee them improved performance (Mugo & Macharia, 2020).

Extant literature on innovation orientation and organization performance shows mixed results. For instance, Ndesaulwa & Kikula (2016) found that innovation has positive benefits and results to improvement in organizational performance while Bartolacci, Castellano, & Cerqueti (2010) found that innovation orientation negatively affects organizational performance. Others show that there exists no link at all between innovation and firm's performance (Al-Ansaari et al., 2015; Mugo & Macharia, 2020). Moreover, different studies have adopted different definitions of performance since a number of concepts are used to define performance. Most studies on innovation and its effect on performance are mainly concentrated in Far East, Middle East and Western countries with little empirical evidence noticeable in Africa (Ndesaulwa & Kikula, 2016). These countries have high level of access to technologies than in Kenya making the business environment contextually different (Mtengwa & Malleo, 2018). A small firm in these developed countries may be equated to a big firm in a developing country such as Kenya (Ndesaulwa & Kikula, 2016). On the other hand, the organizational performance is a multidimensional and multifaceted concept defined and measured differently by different stakeholders within an organization (Mugo & Macharia, 2021). Some stakeholders believe financial measures of performance are better than non-financial measures while others believe the non-financial measures are better.

Additionally, these studies did not investigate the mediating effect competitive strategy on the relationship between innovation orientation and organizational performance (Hajar, et al. 2022) even as research shows that innovation orientation is a critical ingredient of competitive strategy (Hernández-Perlines, Moreno-García, & Yañez-Araque, 2016) and that the competitive strategies adopted by a firm may act as a mediating factor between innovation and organizational performance (Sagwa, 2016). Moreover, there is little empirical evidence on the influence of innovation orientation on performance of telecommunication industry suppliers (Kanyuga, 2019). This study therefore sought to fill this knowledge gap by investigating the influence of innovation orientation on the performance of suppliers working in the telecommunication industry in Kenya. The study defines a supplier as an entity that supplies either goods and/or services to the main organization. This entity is part of the primary organization's business supply chain and is allowed to tender for business and receive contracts for the supply of the goods or services (Schramm & Morais, 2012).

1.3 Research Objectives

The overall objective of this study was to analyze the influence of innovation orientation on the organizational performance of suppliers working in the telecommunication industry in Kenya.

The study was guided by the following specific objectives:

i. To establish the level of innovation orientation of suppliers in the telecommunication industry in Kenya.

ii. To determine the influence of innovation intention on organizational performance of suppliers in the telecommunication industry in Kenya.

iii. To determine the influence of innovation infrastructure on organizational performance of suppliers in the telecommunication industry in Kenya.

iv. To determine how intention to sustain innovation affect organizational performance of suppliers in the telecommunication industry in Kenya.

v. To analyse the influence of the mediating effect of competitive strategy on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya.

1.4 Research Questions

In order to address the above objectives, the study sought to answer the following research questions: -

i. What is the level of innovation orientation of suppliers in the telecommunication industry in Kenya?

ii. What is the influence of innovation intention on organizational performance of suppliers in the telecommunication industry in Kenya?

iii. What is the influence of innovation infrastructure on organizational performance of suppliers in the telecommunication industry in Kenya?

iv. How does intention to sustain innovation affect organizational performance of suppliers in the telecommunication industry in Kenya?

v. What is the influence of the mediating effect of competitive strategy on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya?

1.5 Research Hypotheses

The study tested the following null hypotheses:

i. Innovation intention has no significant influence on organizational performance of the suppliers in the telecommunication industry in Kenya

ii. Innovation infrastructure has no significant influence on organizational performance of the suppliers in the telecommunication industry in Kenya

iii. The intention to sustain innovation has no significant effect on organizational performance of suppliers in the telecommunication industry in Kenya

iv. Competitive strategy has no significant mediating effect on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya

1.6 Scope of the study

The scope of this study was limited to 688 telecommunication suppliers registered with the Communication Authority of Kenya (CAK) in the year 2021. According to CAK these suppliers were grouped as Telecommunication contractors (Communication Authority of Kenya, 2021). The study was conducted in the years 2021-2022. The study focused on the effect of innovation orientation on organization performance. The specific components of innovation orientation that were analyzed in this study included innovation intention innovation infrastructure and the intention to sustain innovation. Competitive strategy was the mediator variable. The data was collected using a questionnaire and analyzed through descriptive and inferential statistics.

1.7 Significance of the study

The findings of this study will be significant to a number of stakeholders. The suppliers working in the telecommunication industry in Kenya will be able know how their innovation orientation can influence their performance. The telecommunication firms also when dealing with the main Telecom firms in the industry, evaluate how innovation orientation components and competitive strategy can influence their financial and operational performance for growth.

The research findings will also be significant to policy makers who include the government and industry regulators such as the Communication Authority of Kenya (CAK) who may gain knowledge on the influence of innovation orientation on the performance of businesses in the telecommunication industry and therefore formulate innovative policies to cushion and support suppliers operating in the industry.

Scholarly the research results increase the body of knowledge of academia. The results of this study will also provide a reference point for future studies on the relationship between innovation orientation and performance of telecommunication industry.

VT OMNES VNVM SINT

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides literature from other scholars who have undertaken research closely related to the theme and objectives of this study. The chapter presents a number of theories that have been developed and relate to the area of study. The empirical review indicates previous studies on the research subject and is critical in analysis and synthesis of the main themes related to the research questions presented in this chapter. The research gaps are also discussed indicating areas in the study that have not been researched. Towards the end of this chapter the conceptual framework which is a visual illustration of the independent and the dependent variables adopted for this study, the concepts of interest and the presumed relationships between them are discussed. Finally, the operationalization of the study variables was presented at the end of the chapter.

2.2 Theoretical Literature Review

This section discusses the three theories on which this study is anchored. The primary theory is diffusion theory while the secondary theories were disruptive, innovation complex theory and Growth of the Firm Theory. The theories are presented in the subsequent section.

2.2.1 Diffusion of Innovation Theory

The diffusion of innovation theory was developed by Rogers (1962) to explain how over time an idea or product gains momentum and diffuses (or spreads) through a specific population or social system. This theory posits that people as part of a social system, adopt a new idea, behavior, or product. According to Rogers (1962) the key to adoption is that the person must perceive the idea, behavior, or product as new or innovative. Few conceptual and empirical theories have been done in relation to diffusion of innovations (Dearing, 2009 & Cox, 2018). Diffusion scholars have found that the decision to adopt a new idea occurs in five progressive stages: knowledge and awareness, ability to persuade, authority to implement and sustaining innovation (Sally & Joan, 2017).

The theory defines five categories of adopters that is; the innovators who are ready to take risk and are interested in new ideas and need very little to appeal them to the innovation; The early adopters who are always ready for a change and only need a how to manual to adopt the

innovation; early majority who need assurance that the innovation works before adopting it; late majority who are skeptical of change and only adopt an innovation after it has been tried by the majority and ; finally the laggards who are very skeptical to change and require statistics on the effectiveness of the innovation and pressure from the adopters. It is therefore important to understand the characteristics of the population who need adopt an innovation (Sahin, 2006).

A number of scholars have adopted diffusion of innovation theory to anchor their research. Njogu (2014) used the theory to explain the relationship between innovation and the financial performance of small and medium enterprises in Nairobi County, Kenya. Mulei (2015) also used the theory in analyzing the impact of innovations on financial performance of small and medium enterprises in Starehe Constituency, Nairobi County. Another study by Muchoki (2013) to determine the effect of product innovation on the financial performance of mobile telephony firms in Kenya was also anchored on the theory. This theory offers valuable insights into the process of social change. The main qualities that ensures successful innovation strategy include; peer-to-peer conversations and understanding needs for new ideas (Jwaifell & Gasaymeh, 2013).

The diffusion of innovation theory helps comprehend the benefits of innovation and challenges associated with it. Through the theory, the decision to adopt an innovation is based on its perceived advantages, how compatible it is to existing systems and processes, how complex it is, the ease of trying it out and if the results of adopting the innovation are easily visible. The theory was therefore useful in this study to address the variable intention to sustain innovation depending on the category of the adopters in the telecommunication industry.

2.2.2 Disruptive Innovation Theory

Different kinds of innovation have different competitive effects and produce different kinds of performance (Markides, 2006). There are two types of disruptive innovation: Business-model innovation and Radical (new-to-the-world) product innovation. Chesbrough (2010) defines business-model innovation as process of articulating the value proposition, identifying a market segment, defining structure of the value, identifying potential complementors and formulating competitive strategies in an organization. An innovative business model can either create a new market or allow a company to create and exploit new

opportunities in existing markets. Most researchers are focusing on technological development and overlook business model yet it has to be incorporated during the integration of technological innovation (Dorleta, Jaione, & Ignacio, 2018).

Radical innovation is the process of disrupting an existing technological trajectory (Story, Hart, & O'Malley, 2009). Radical innovation theory considers the magnitude of change and differentiates between incremental or continuous innovation (when changes imply progress within a technological trajectory) and radical or discontinuous innovation (when changes give rise to a new technological trajectory) (Gloria, Carmen, & Antonio, 2013). There are two dimensions that underlie most of radical product innovation, technology and market (Colombo, Franzoni, & Veugelers, 2015). Radical innovation provides substantially new technology and greater customer benefit relative to existing products (Xu, 2015). Salomo, Talke, & Strecker (2008) showed that at the firm level, the more radical the product innovation, the higher the firm performance achieved. This is because Radical Product Innovation (RPI) provides superior solutions to customer needs and product advantages, which lead to commercial success and to the improvement of the competitive position of the company (Tiberius, Schwarzer, & Roig-Dobón, 2021)

Therefore, disruptive innovation involves products, services or approaches that transforms existing markets or create new ones. The main objective of disruptive theory is to bring lower performing products or services to the market by the introduction of other benefits (Gemici & Alpkan, 2015). Dan & Chieh (2008) identified four perspective of a successful innovation that is: Internal perspectives (Leadership, Organizational structure, Organizational culture, New Product Development Process, Employees, Spin-off or Ambidextrous Organization, New Growth Engine); External Perspective (Context and Environment); Marketing Perspective (Customer-Orientation under Disruptive Changes); Technology Perspective (Technological Road-mapping for Disruptive innovation).

The disruptive innovation theory has been used by a number of researchers in their studies. Moriro (2018) used the theory to find the relationship between disruptive innovation and competitive advantage of large telecommunication firms in Nairobi County, Kenya. Wangila (2018) also adopted the theory to anchor the study on the influence of innovation practices on the public sector performance in Nairobi City County Government-Kenya. However, though various studies have been done over the years, there is a knowledge gap on how innovation affects organizational performance. The theory therefore informed the study by showing how

the various aspects of competitive strategy as a result of disruptive innovations in the market will mediate the relationship between innovation orientation and organizational performance.

2.2.3 Innovation Complexity Theory

The basic premise of complexity theory is that there is a hidden order to the behavior (and evolution) of complex systems. In business and finance, complexity theory places its focus on the ways a factory or company resemble an ecosystem or market. Proponents of complexity theory believe specific traits are shared by most complex systems. These systems are a combination of many independent actors behaving as a single unit (Dunn, & Lucas, 1999). Sherman and Schultz (1998) asserted that business today is faster and nonlinear (effects are not proportional to their causes), and that "experts" cannot predict which products or companies will succeed. Sherman and Schultz (1998) further asserted that competitive advantage is fleeting, and that change can rapidly turn assets into dead weight.

The innovation complexity theory gives a link between innovation and competitive strategy. The complexity theory provides a concept that describes an organization as a complex, vibrant and an unstable system that has several internal and external elements that interact with each other and with the environment (Anning-dorson, 2017). Innovation therefore grow out of interaction between technology, knowledge and people. Innovation complexity is the degree to which an innovation is difficult to understand, use, adopt and sustain within an organization as it is non-linear, evolutionary and dynamic with uncertain outcomes (Poutanen, Soliman, & Ståhle, 2016). Scholars have used the innovation complexity theory to argue that with uncertainty in innovation outcomes, the competitive strategies adopted by a firm may mediate the effect of innovation on its performance (Anning-dorson, 2017). Gachanja, Nga'ng'a and Kiganane (2020) adopted the theory to determine influence of organization learning on innovation output in manufacturing firms in Kenya. The innovation complexity may also affect the desire to sustain innovation within a firm due to difficulties in predicting the innovation orientation outcomes. The innovation complexity theory shows that it is difficult to ascertain the mediating effect of the competitive strategies on the relationship between innovation orientation and organizational performance. This study is therefore important to ascertain and address this knowledge gap.

2.3.4 Growth of the Firm Theory

This theory was fronted by Penrose (1959) who offered durable principles governing the growth of firms and the rate at which firms can grow efficiently and be profitable. Penrose (1959) provides a theory of effective management of firm's resources, productive opportunities, and diversification strategy. Specifically, Stam (2010) provides an explanatory logic to unravel causal links among resources, capabilities, and firm performance. Penrose (1959) provides at least three key arguments concerning linkages among firm's resources, productive opportunities, and profitable firm growth. Lee (2010) first maintains that firms can create economic value not due to mere possession of resources, but due to effective and innovative management of resources.

Buckley and Casson (2010) also provide causal connections among the age of profitable open doors and assets for innovation and development. The experience and knowledge of administrators amongst themselves and diverse assets in the organization impacts their picture of the special profitable open doors available for their firms. Administrators work as an impetus in the change of association's assets into firm abilities and new item applications. Penrose, and Penrose (2009) clarify the enablers of firm development. The accessibility of top administrative and specialized ability fills in as the bottleneck for a company's development rate in a specific timeframe. Kor, et al. (2016) not just explains how enablers lead to firm growth, yet in addition contends that obliviousness of these constraining elements brings about wasteful aspects and loss of upper hand.

Growth of the Firm Theory is useful in anchoring this study. The way resources are utilized determines help understand the performance of supply firms to the telecommunication firms in Kenya. Growth of the Firm Theory attempts to link availability of resources and performance of telecommunication firms. Thus effective use of resources has an impact on growth of a firm. This anchors the dependent element which is performance of suppliers working in the telecommunication industry.

2.3 Empirical Literature Review

This section reviews the previous studies on the research topic and takes a critical analysis and synthesis of the main themes related to the research questions. The research discussed

here therefore reflects studies that have been conducted to link the studies' independent variables with the dependent variable.

2.3.1 Level of Innovation Orientation in organizations

An innovation orientation describes how innovative an organization is and the results suggest that such an orientation provides a context for the implementation of proactive growth-based strategies. Organizations that possess high innovation orientations engage in value creation strategies such as market segmentation, developing new products/services for new markets, and product or service customization. Those organizations possessing low innovation orientations generally practice less aggressive and internally focused strategies, de-emphasizing such things as customer service, brand reputation, and co-operation based strategies such as joint ventures and alliances (Dobni, 2010). Research has shown that innovation orientation significantly contributes to the organizational capabilities that positively impact the organizational performance (Pscheidt-gieseler et al., 2018). However innovation efforts within organizations have to be significant enough and identifiable to make employees think and act differently, ultimately influencing the whole organizational culture in placing high value on innovation (Dobni & Klassen, 2015). The authors noted that many organizations lack a well-articulated innovation orientation outlining how they would address organizational inertia in meeting innovation targets (Dobni & Klassen, 2015).

In a study to determine the state of innovation among construction companies in Malaysia, Lai and Kamal (2017) classified the characteristics of the innovation orientations as desire to innovate and benefits of innovation. A survey questionnaire was mailed to 1,230 construction companies in Malaysia. Descriptive analysis was used to examine the respondents' profiles, and factor analysis was used to classify the innovation orientation characteristics. A paired samples t-test was used to determine the state of innovation among the construction companies. The study established that innovation creation reflects a pioneer's efforts and involves being a market explorer that tolerates risk and is research and development (R&D)-oriented, whereas innovation adoption involves being a creative imitator, a market follower and a safe player. Construction companies in Malaysia are innovation adoption–oriented. Kamal (2017) clarified innovation based on type of innovation and infrastructure where the innovations are anchored.

Ulusoy, GÁźnday and Alpkan (2015) investigated the determinants of innovativeness based on empirical data gathered from 184 manufacturing firms located in the Northern Marmara region in Turkey. A questionnaire consisting of 311 individual questions was developed. The questionnaire was completed by the upper managers of manufacturing companies. A multivariate data analysis was conducted. The analysis revealed that among all possible determinants considered, the highest impact on innovativeness was intellectual capital. This determinant was followed by organizational milieu that consisted of the organizational structure and culture components.

Dobni and Klassen (2015) used a mixed methods research approach, to report the qualitative findings of Fortune 1000 (F1000) organizations concerning their efforts to implement innovation agendas. Over 1100 business leaders were surveyed, which proves to be one of the largest surveys of innovation to date amongst the F1000. Findings identified six common challenges to introducing, executing and sustaining innovation. These barriers revolve around resistance to change, organizational process, leadership, funding and resources, the external environment, and customer adoption. Finally, there were a cluster of activities that had worked well to support successful implementation of an innovation orientation in organizations. Important activities such as leadership for innovation, knowledge management, organizational structures and processes, and aligned performance management were identified by leaders as noteworthy to successful innovation. However, the study did not identify the level of innovation orientation in organizations. As per the empirical review, it is hypothesized that innovation infrastructure has no significant influence on organizational performance of the suppliers in the telecommunication industry.

2.3.2 Innovation Intention and Organizational Performance

Innovation intention is the degree to which an organization has established a mechanism to develop and sustain innovation using their business model. Organization vision, goals and objectives plays a critical role in determining the degree of innovation intention (Dobni, 2010). Hamel (2006) also defines innovation intention as the willingness to introduce new ideas, processes, products or procedures to the relevant unit of adoption. Although talking about new ideas does not guarantee implementation, it is a necessary and essential element in

the overall innovation process (Albrecht & Hall, 1991). Interpersonal communication process is quite important when discussing innovation context in an organization.

Hsiu-Fen (2006) conducted a study on how organizational support impacts on organizational intention to share knowledge. The senior executives in Taiwan were used as respondents hence the study was biased and there was no inclusivity of employees at all levels yet they play a major role in organization performance. This study also did not determine how employees' intention to share knowledge affects organizational performance.

Beynon Jones and Pickernell (2020) investigated the link between SME strategies and intention to undertake future innovation, using Federation of Small Businesses data. The analysis employed the novel N-State Classification and Ranking Belief Simplex (NCaRBS) technique, investigating relationships between changes in SME strategies, including staffing levels, importing/exporting and client base, and future (including uncertain) innovation intentions in the United Kingdom. According to the findings staffing levels, number of premises and branches and online presence have unambiguous relationships with innovation intention. Increasing R&D, staff training, importing/exporting and marketing and advertising are also associated with positive innovation intention but also reduced uncertainty over innovation intention. The study was however conducted on general small and medium-size enterprises (SMEs) based in the United Kingdom which is much more developed than Kenya thereby creating a contextual difference from this study that sought to study the telecommunication suppliers based in Kenya which is a developing country.

Using construal level theory, Arts, Frambach and Bijmolt (2011) developed expectations on the influence of innovation characteristics across the intention and behavior stages of the adoption process. Using meta-analysis, the study derived generalizations on drivers of intentions and actual innovation adoption behavior. The results showed important differences across both stages. Consumers showed higher levels of adoption intention for innovations that are more complex, better match their needs, and involve lower uncertainty.

Rojas-Córdova, Heredia-Rojas and Ramírez-Correa (2020) used the decision tree classification technique, to analyze a sample of Chilean companies on the perceived barriers to innovation intention. The sample was divided into large enterprises (LEs) and small and medium enterprises (SMEs). In the group of large companies, the barriers that most impact the intention to innovate are innovation cost, lack of demand innovations, and lack of

qualified personnel. Alternatively, in the group of small-medium companies, the barriers that most impact the intention to innovate are lack of own funds, lack of demand innovations, and lack of information about technology. Based on the reviewed studies, the following null hypothesis was tested; innovation intention has no significant influence on organizational performance of the suppliers in the telecommunication industry.

2.3.3 Innovation Infrastructure and Organizational Performance

Innovation infrastructure defines the major subsystems and constituent elements of innovation and considers their functional purpose (Beynon Jones & Pickernell, 2020). Innovation infrastructure is tools that evoke, create, optimize and accelerate innovation process in an organization. Effective functioning of innovation infrastructure requires the balanced formation and development of all its constituent subsystems for optimal effect on organization performance.

Kniazevych, Kyrylenko and Golovkova (2018) conducted a study on strategy of innovation development in Ukraine with the aim of formulating a specific infrastructure that will increase acceptability of business environment innovation in the public service. The authors stated that a self-sufficient and well-functioning innovation infrastructure is necessary in order to harmonize innovation systems and also to maintain an organizational or country's economy. This study concluded that despite the internal and external factors on establishment and development of innovation infrastructure, with certain organizational efforts, innovation infrastructure can efficiently develop and carry out its functions. However, this study did not examine the contribution of innovation infrastructure on organizational performance. The study therefore failed to link innovation infrastructure and organizational performance. This study will address the gap by assessing how the identified innovation infrastructure affect organizational performance and hence provide the conclusion regarding the research hypothesis.

In a study conducted among small firms in Kazakhstan, Smirnova (2014) investigated why innovation infrastructure does not automatically boost the performance of an organization. The study found that despite the efforts by legislature to shape innovation infrastructure, the country’s economy still falls short of the expectations. The study identified elements of innovation infrastructure and how they interact. The study also attempted to measure the effectiveness of innovation infrastructure in influencing performance and found that

innovation infrastructure is not effective at improving organization performance in Kazakhstan. Morris (2009) identified four critical elements for an effective innovation infrastructure namely; Innovation methodology, collaboration, enablers of innovation and workplace design. Innovation methodology refers to the innovation process right for idea generation to implementation. The study's hypothesized model showed that innovation infrastructure does not positively affect performance. This study hence sought to investigate if this is true for the telecommunication industry in Kenya.

Gor, Mummassabba, and Muturi (2015) sought to establish the internal enablers of innovation capabilities and their effects on the organizational performance in the retail industry in Kenya. Regression analysis and correlations were conducted to determine the relationship between the dependent variable and the independent variables of the study. The study established that clear strategies; innovative culture; learning environment and exploitation of internal resource base are some of the enablers of innovation capabilities that influence innovation at Nakumatt Holdings Limited. The study further established a positive relationship between the enablers of innovation capabilities and performance of the organization. Favorable environment for learning contributed the most to the positive organizational performance. This was followed by exploitation of internal resources; clear strategies and innovative culture. The results in the study confirmed that innovation infrastructure positively affect organizational performance hence it is important to investigate this hypothesis among companies in the telecommunication industry.

Johnsson (2016) conducted a study on innovation enablers and their importance for innovation teams among small and medium-sized enterprises (SMEs) in Sweden. Qualitative data was collected from five innovation teams in two phases. Two innovation teams in two small- and medium-sized enterprises (SMEs) were studied in the first phase to clarify the situation for innovation teams before innovation work is begun. In the second phase, which built on the first one, three innovation teams in a large industrial company were studied as they conducted three separate innovation projects. Twenty innovation enablers were identified which included; awareness, capabilities, climate, collaboration, culture, dedication, economy, education, empowerment, entrepreneurship, human resource, incentives, knowledge, knowledge management, management, mindset, need, process, strategy and time. Although the study identified the twenty enablers of innovation it failed to assess how they affect organizational performance hence the need to conduct this study.

Ajayi and Morton (2015) explored the enablers of organizational and marketing innovations in SMEs from south-western Nigeria. A qualitative methodology was adopted for this study. Semi-structured, in-depth exploratory interviews were conducted. Prior to the interviews, a series of themes were generated based on the descriptions of OMIs by the academic and the innovation policy makers. The target population comprised enterprises with a staff headcount of between 10 and 300. The interviews were transcribed and content analysis performed to identify any emerging themes. The organizational innovation enablers that were identified included; continuous learning culture, employee training and development, effective workplace communication and employee empowerment and participation. The marketing innovation enablers were; customer relationship management, referral marketing and customer partnering. The study however did not go further to assessing if these enablers affect the organizational performance. This necessitates the need to undertake the present study. Based on the reviewed studies, the following null hypothesis was tested; innovation infrastructure does not affect organizational performance of suppliers in the telecommunication industry.

2.3.4 Intention to sustain innovation and Organizational Performance

Innovation implementation is the process of gaining targeted employees' commitment to incorporate new innovations in the organization (Klein & Sorra, 1996). Most researchers who have done study on innovation mainly focus on the adoption phase (Drury & Farhoomand, 1999). However, the process can only be considered as successful if innovation is accepted and implemented by the organizational members and if the idea is perceived to have a positive impact on organizational performance (Bhattacherjee, 1998). As stated by Holahana, et. al. (2004), very few studies have attempted to examine the factors that help to successfully implement an innovation. Kim and Chung (2017) noted that organizational gain on innovation largely depends on correct decision. The innovation success cannot be obtained unless the employees consistently adopt and implement those innovations. Though there is plenty of research on innovation implementation, largely missing are integrative models that can determine the impacts of innovation implementation on organizational performance (Klein & Sorra, 1996). The key elements of intention to sustain innovation include; a tolerance for risk and failure, making sure recognition and rewards are consistent, instilling a sense of ownership, reducing bureaucracy, open communication and establishing a clear sense of direction (Garud, Gehman & Kumaraswamy, 2017).

Kapepa and van Vuuren (2019) assessed the importance of tolerance for failure and risk-taking among insurance firms in hyperinflationary Zimbabwe. Using a survey sample of insurance companies in Zimbabwe, a quantitative approach was adopted. Questionnaires were used to extract data from participants to establish the nature and extent of risk-taking, and in particular tolerance for failure during this period. A measure was developed to gauge the extent of tolerance of failure from the perspective of employees in the insurance industry in Zimbabwe. The benefit of tolerance of failure or the lack thereof was measured on the dimension of profitability and growth. Results revealed that tolerance of failure is a necessary entrepreneurial virtue that encourages knowledge acquisition by both experimental and experiential learning – a risk element that also spurs entrepreneurial innovation and ultimately encourages both profitability and growth of the business entity, if well managed. The study concluded that firms that tolerate failure are more likely to be entrepreneurially innovative and perform better than those that are risk-averse and do not tolerate failure. The study however failed to assess other aspects of intention to sustain innovation as will be discussed in this study.

Based on a sample of venture capital (VC)-backed IPO firms, Tian and Wang (2014) examined whether tolerance for failure spurs corporate innovation. The study developed a novel measure of VC investors' failure tolerance by examining their willingness to continue investing in underperforming ventures. The study established that IPO firms backed by more failure-tolerant VC investors are significantly more innovative and VC failure tolerance is particularly important for ventures that are subject to high failure risk. The study also found that both capital constraints and career concerns can negatively distort a VC firm's failure tolerance. Less experienced VC firms are more exposed to these distortions, making them less failure tolerant than are more established VC firms. However, the study related tolerance for failure with corporate innovation but failed to incorporate the aspect of performance in the organization. Hence this study sought to address this gap as it assesses how such aspects as tolerance for failure affects organizational performance.

Zhou, Zhang and Montoro-Sanchez (2009) sought to examine the impact that extrinsic and intrinsic rewards approaches had on innovative behavior practices of employees who worked in Chinese business enterprises. Researchers surveyed employees who worked in several Chinese cities. The study found that tangible extrinsic rewards are necessary conditions to encourage employee's innovative behaviors; however, the over amount of extrinsic rewards

could depress this behavior by eroding their self-motivation. The study concluded that series of intrinsic reward approaches have a more stable effect on promoting innovative behavior and that extrinsic and intrinsic rewards have an interference interaction effect on innovative behavior.

Nigusie and Getachew (2019) sought to investigate the effect of reward system on employee creativity in Oromia Credit and Saving Share Company (OCSSCO) case of Bale zone branches. Simple random sampling techniques was used to select a sample of 158 respondents from target population of 260. Data was collected using open & close ended questionnaire. The general objective of this study was effect of reward system on employee creativity in Oromia Credit and Saving Share Company case of Bale Zone Branches and in order to answer the research questions, the researcher used a software SPSS 21 version for data operation and analysis. The results of Pearson correlation showed there was a significant and positive relationship between extrinsic reward, Intrinsic reward & employee creativity. Moreover, the result of regression analysis indicated almost 76.3% of employee creativity was explained by extrinsic & intrinsic rewards. Similarly, the result indicated intrinsic reward was a more contributing factor to employee creativity than extrinsic reward. However, although the study found reward as an important factor in creativity it did not evaluate how this may affect organizational performance hence the need to address the gap which was the aim of this study.

Santoso (2020) sought to analyze the effect of psychological ownership on innovation and growth opportunities in Indonesia. Different measuring items for both dependent and independent variables were added in the questionnaire and employees from different business firms were selected as a sample of interest. Descriptive analysis, correlation analysis and regression analysis were performed and results showed that there was a significant relationship among range of psychological factors, innovation, and business growth opportunities. If the employees feel a high degree of ownership in the company, it has a positive influence on firm for being potentially innovative. The study did not also assess the effect on performance which is the ultimate purpose of any organization.

Using data obtained from 942 German firms Rau, Werner and Schell (2019) showed that psychological ownership can influence the relationship between generation in ownership and innovation output. The study established that over the generations, innovation output decreases, being significantly lower in the third and later generation than in the founder

generation. However, if the third and later generation owner-managers have high levels of psychological ownership, innovation output is as high as in the founder and second generation. Innovation in the third generation and beyond seems more feasible when not only legal ownership, but also psychological ownership, is passed down to the succeeding generation. Based on the reviewed studies, the following null hypothesis was tested that intention to sustain innovation does not affect organizational performance of suppliers in the telecommunication industry.

2.3.5 Innovation Orientation, Competitive Strategy and Organizational Performance

Hitt and Hoskisson (1990) argued that the ability of firms to develop a new idea is at the heart of competitive strategies. To achieve this, an organization has to sustain competitive advantage which is defined by Drew (1997) as constantly upgrading facilities and activities through innovation. Some researchers attempt to identify the environmental and structural correlates that facilitate innovation whereas others look at the outcomes of innovations and competitiveness of an organization (Gopalakrishnan, 2000). Most organizations strive to improve performance by incorporating competitive strategies that exploit market opportunities as they capitalize the available resources and capabilities. Strategies can be used to solve problems, create new capabilities and improve performance (Trainor, 2012). Theodosiou, Kehagias, & Katsikea (2012) noted that there is a need to pursue complementary strategic orientation in order to maintain competitive advantage in an organization.

To have sustainable success, organizations need to align different potentials and resources that can boost innovation (Masa'deh & Shannak, 2012). Challenges in relation to knowledge, technologies, fusion and shorter innovation cycles (Matthias & Andrea, 2012) and (Obeidat, Al-Suradi, Masa'deh, & Tarhini, 2016) have triggered the need to research on how competitive advantage can mediate innovation with organization performance. Incremental and radical innovation greatly determines organization dynamic capabilities which influence competitive advantage. Therefore, increasing efficiency of incremental and radical innovation is a major concern (Lee, 2011). Using a sample of Canadian organizations Dobni (2010) examined the relationships between an organization's innovation orientation and the types of competitive strategies they pursue. Results suggested that innovation orientation provides a context for the implementation of proactive growth-based strategies. Organizations that possess high innovation orientations engage in value creation strategies such as market segmentation, developing new products/services for new markets, and product or service

customization. Those organizations possessing low innovation orientations generally practice less aggressive and internally focused strategies, de-emphasizing such things as customer service, brand reputation, and co-operation based strategies such as joint ventures and alliances. However, the study failed to model the hypothesis where competitive strategy is the moderating variable. Hence the need to assess how competitive strategy affects the relationship of innovation orientation and organizational performance.

Kafchehi, Hasani and Gholami (2016) sought to investigate the relationship between innovation orientation and strategic typology in firms. The statistical population included high executive managers of firms who have been acting in 4 industries of banking, food, insurance, and pharmacy, and have been the five pioneering firms in these industries. To test the hypothesis, the mean test analysis, the Goodness-of-Fit Test, Chi-square test, and cross-tables were used and tested by SPSS 18 software. The results showed that there is a significant relationship between the firm's orientation toward innovation and competitive strategy; the more firm's orientation toward innovation, the firms use more prospector strategy, and their strategies have a more aggressive state. However, the study failed to go further and assess if competitive strategy affects the relationship of innovation with organizational performance which is the aim of this study.

Tutar, Nart and Bingöl (2015) assessed the relationship among the dimensions of strategic orientations, innovation capabilities and market performance. The research in this study was conducted by employing a quantitative technique. The population of the study consisted of all the Turkish SMEs engaging in production and sale activities of furniture. The data was collected through a survey that tests strategic orientations, innovation types and market performance for SMEs in ASEM. The findings suggested that proactive market orientation, proactive entrepreneurial orientation and technology orientation are positively related in innovation capabilities. In addition, innovation capabilities play a key role between strategic orientation and market performance. The study adopted the market performance as the aspect of performance while there are other concepts that are used to define performance.

Bayraktar, et al. (2017) analyzed the relationships between competitive strategies, innovation, and firm performance within the context of Turkish manufacturing companies. The data were collected from top management of the firms via Computer Assistant Telephone Interviewing method. One hundred and forty manufacturing firms operating in various sectors including textile, automotive supply, computer and electronics provided the basis for this empirical

research. In order to test the model, structural equation modelling was employed using partial least squares. The results showed that competitive strategies such as cost-leadership and differentiation can lead to innovation, which, in turn, increase firm performance. However, the study was conducted among Turkish manufacturing companies. As per the empirical review, it is hypothesized that competitive strategy has no significant mediating effect on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry.

2.4 Research Gap

There exist contextual and conceptual gaps in the studies that focus on the influence of innovation orientation on the level of performance experienced by the firms. Most of the studies on the influence of innovation orientation on performance in firms have been done in Western, Middle and Far East countries where access to technology is high making the business environment contextually different (Mtengwa & Malleo, 2018) from the Kenyan market. A small firm in a developed country may be equated to a big firm in a developing country such as Kenya.

In a study on whether innovation lead to success in performance, Lin and Chen (2007) indicated that SMEs analyzed had a capital of 2.5 million dollars and about 200 full time employees (Lin & Chen, 2007), while in developing countries' context this might be a large firm as the definition of SMEs vary from one context to another (Small, 2016). Empirical literature also shows that innovation orientation has been investigated on telecommunication firms in Kenya but this investigation has mainly focused on the service providers Mathenge (2013) and Kariuki (2014) and not on the suppliers in the industry therefore the context also may be different.

Furthermore, innovation orientation adopted by a firm may not always lead to improved performance (Phan, 2019). According to Mtengwa & Malleo (2018) literature shows that some innovation orientation aspects lead to better performance in some firms and poor performance in others. This therefore necessitates a study to establish the innovation orientation of the suppliers working in the telecommunication industry in Kenya. Table 2.1 is the summary of the research gap identified and that need to be addressed.

Table 2.1: Summary of research gaps

Author	Title	Finding	Research gaps	Focus of current study
Kamal (2017)	State of innovation among construction companies in Malaysia	Innovation creation reflects a pioneer's efforts and involves being a market explorer that tolerates risk	Most of the research on innovation orientation and its influence on performance has been carried out in Western, Far East and Middle East	There is need to undertake similar research in Kenya.
Dobni and Klassen (2015)	Advancing an innovation orientation in organizations: Insights from North American business leaders	Barriers revolve around resistance to change, organizational process, leadership, funding and resources, the external environment, and customer adoption	However, the study did not indicate how these intentions to sustain innovation impacted on the overall organizational performance	As per the empirical review, it is hypothesized that innovation infrastructure has no significant influence on organizational performance of the suppliers in the telecommunicatio n industry.
Hsiu-Fen (2006)	Organizational support impacts on organizational	There was no inclusivity of employees at all levels yet they play a major role	This study also did not determine how employees' intention	Focuses impact of employees' intention to share

	intention to share knowledge	in organization performance	to share knowledge affects organizational performance.	knowledge affects organizational performance.
Beynon et al. (2020)	Link between SME strategies and intention to undertake future innovation, using Federation of Small Businesses data	Increasing R&D, staff training, importing/exporting and marketing and advertising are also associated with positive innovation intention but also reduced uncertainty over innovation intention	The study was however conducted on general small and medium-size enterprises (SMEs) based in the United Kingdom which is much more developed than Kenya thereby creating a contextual difference	Focuses Kenyan situation
Kniazevych, et al (2018)	Strategy of innovation development and acceptability of business environment innovation in the public service in Ukraine	innovation infrastructure can efficiently develop and carry out its functions	However, this study did not examine the contribution of innovation infrastructure on organizational performance	This study will address the gap by assessing how the identified innovation infrastructure affect organizational performance
Kapepa and van Vuuren (2019)	Importance of tolerance for failure and risk-taking among insurance firms in	tolerance of failure is a necessary entrepreneurial virtue that encourages knowledge acquisition	The study however failed to assess other aspects of intention to sustain innovation as will be discussed	Discusses other aspects of intention to sustain innovation

	hyperinflationary Zimbabwe		in this study	
Smirnova (2014)	Innovation infrastructure and performance of an organization in Kazakhstan	Innovation infrastructure in influencing performance and found that innovation	The study's hypothesized model showed that innovation infrastructure does not positively affect performance.	This study hence sought to investigate if this is true for the telecommunicatio n industry in Kenya.
Ajayi and Morton (2015)	Organizational and marketing innovations in SMEs from south-western Nigeria	organizational innovation enablers that were identified included; continuous learning culture, employee training and development, effective workplace communication and employee empowerment and participation	The study however did not go further to assessing if these enablers affect the organizational performance	This necessitates the need to undertake the present study.

VT OMNES VNVM SINT

2.5 Conceptual Framework

The conceptual framework is the visual illustration of the variables or concepts of interest and the presumed relationships between them. Adom, *et al.* (2018), observes that a conceptual framework is a representation of what a researcher believes best explains the natural progression of the phenomenon under study. The conceptual framework is linked with the concepts, important theories and empirical research used in promoting and passing across the knowledge envisioned by the researcher. It is a framework that describes the main concepts or variables in a study (Adom, Hussein, & Joe, 2018).

The conceptual framework for this study is represented in the figure 2.1. The innovation orientation components i.e. innovation intention, innovation infrastructure and intention to

sustain innovation are conceptualized as independent variables while organizational performance is conceptualized as a dependent variable. Also, competitive strategies have been used as a mediator between the innovation orientation and organizational performance. An independent variable produces change in another variable. The variable which changes as a result of a change in the independent variable is called the dependent variable (Catterall, 2000). The researcher observes that faced with declining business, the suppliers in the telecommunication industry need to be innovatively oriented in a way that ensures improvement in their organizational performance.

Independent Variables **Mediator Variable** **Dependent Variable**

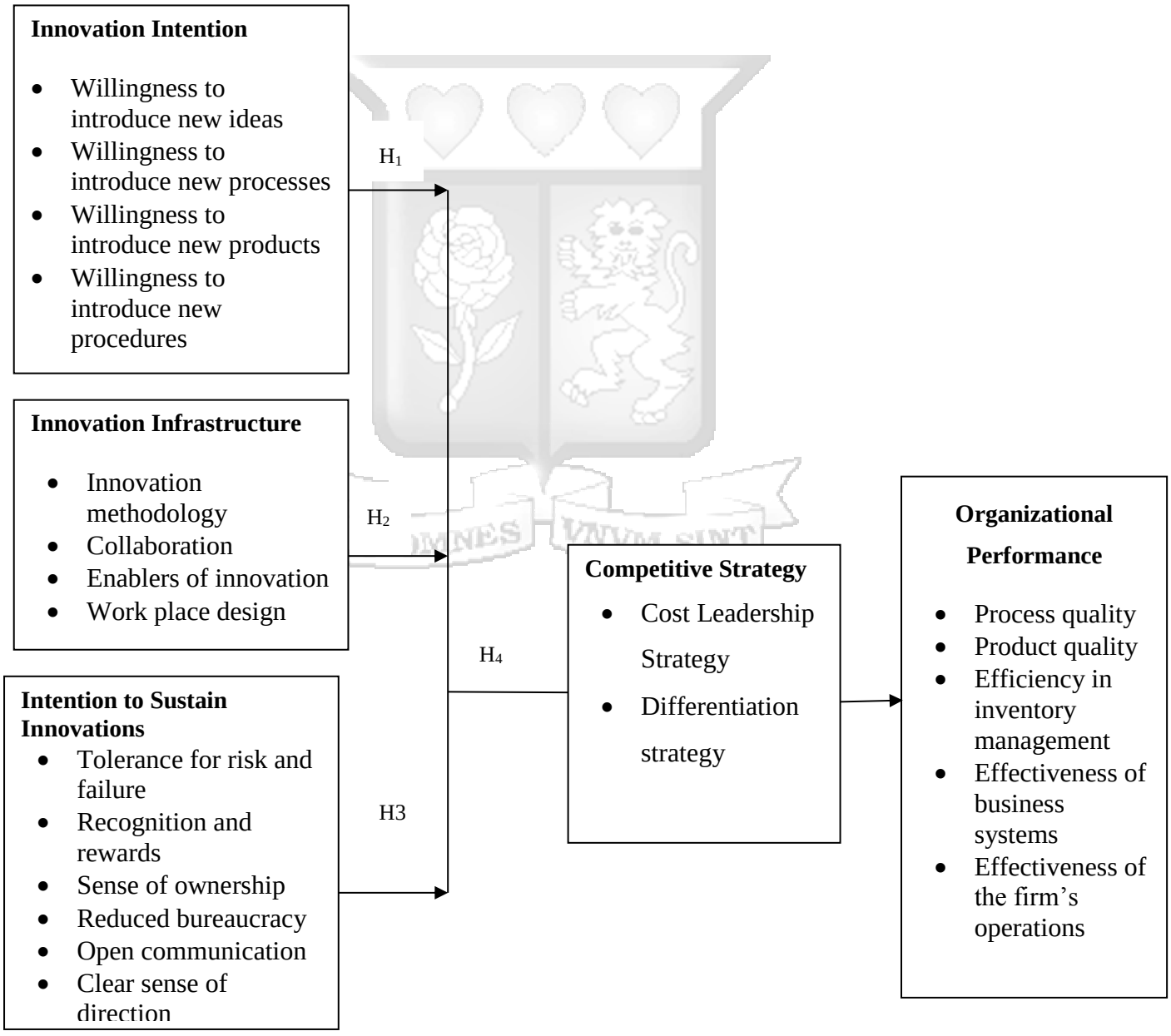

Figure 2.1: Conceptual framework

From the conceptual framework the researcher expects a relationship to exist between the variables innovation intention, innovation infrastructure, intention to sustain innovation and organizational (operational) performance. Further the researcher expects that competitive strategy mediated the relationship between the independent variables and the dependent variable.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter highlights the research methodology the researcher adopted for this study. It shows the research design, the population and sampling method, the data collection process, and finally the data analysis methods. The chapter also dwelled on the quality, validity, reliability and objectivity of the research as well as the ethical considerations adopted by the researcher.

3.2 Research Philosophy

Sekaran and Bougie (2013) defines research philosophy as a belief about how to gather, analyze and apply data about a given phenomenon under study. Research philosophies consist of positivism, interpretivism, pragmatism, realism and constructivism (Creswell, 2014). Positivism is a philosophical system in which an observable social reality is used to provide law-like generalizations (Bajpai, 2011) while constructionism looks at the world as having been created internally using constructs, or internal models (Ackermann et al., 2009).

Realism focuses on describing what we visualize and encounter, with regard to the fundamental forms of actuality/reality that create the observable events (Reed, 2005) and pragmatism argues that ideas and notions are just pertinent where they reinforce action (Kelemen & Rumens, 2008). This study was guided by positivism research philosophy as the study is scientific in nature, and it attempted to explain how innovation orientation affects organizational performance. Positivism philosophy argues that knowledge is objective and free from biases resulting from a researcher's values and beliefs (Ryan, 2018). Positivism values objectivity by proving or disapproving hypothesis and it emanates from foundationalism and empiricism philosophies (Ryan, 2018). Foundationalists believe that hypotheses should be proven through value-free, controlled experiments or observations and results into an indisputable fact through science. Empiricists argue that knowledge is considered to be true when a hypothesis has been proven by subjecting something to repeated tests and producing the same results in each time (Bryman 2008).

3.3 Research Design

Trochim (2006) defines research design a blueprint that guide the study. Research design comprises of descriptive, exploratory and explanatory research designs. This study adopted both descriptive and explanatory research designs. According to Rahi, (2017) descriptive research is aimed at obtaining information on the current state of a phenomenon and therefore provides an accurate profile of events, situations or people. Descriptive research design was used to provide a narrative of key aspects of innovation orientation and organization performance of suppliers in the telecommunication industry in Kenya. Explanatory research design focuses on finding out the extent and the nature of cause-and-effect relationships prevailing between two or more variables (Zikmund, Babin, Carr & Griffin, 2013). This study used explanatory research design to estimate the effect of innovation orientation (innovation intention, innovation infrastructure and intention to sustain innovation on organizational performance of suppliers in the telecommunication industry in Kenya.

3.4 Population of the Study

According to Saunders *et al.* (2019), a population is the full set of cases or elements to be studied. The population of this study comprised 688 telecommunication suppliers registered with Communication Authority of Kenya (CAK, 2021) in the year 2021 and based in Kenya. The unit of observation was supplier officer from each of the telecommunication suppliers. Table 3.1 shows the target population based on sizes as per CAK classification.

Table 3.1: Target Population

Strata of suppliers to the telecommunication firms by size	Number of suppliers
Large sized suppliers	19
Medium sized suppliers	203
Small sized suppliers	446
Total	**688**

Source CAK 2021

According to CAK these suppliers are grouped as telecommunication contractors (Communication Authority of Kenya, 2021). The rationale for using the telecommunication companies is that telecommunication companies are key drivers of innovations that aim at enhancing organizational performance. Moreover, the telecommunication companies operate

in dynamic business environment that require continuous innovation to remain competitive. The respondents were supplier officers from the telecommunication supply firms.

3.5 Sample Design and Technique

Sample design provides a framework to be utilized to choose the sample for the research based on the required sample size (Creswell, 2014). The sample design comprises of the following: sample frame, sampling technique and sample size.

3.5.1 Sampling Frame

Sampling frame is a comprehensive list of the population of study (Oladipo, 2015). The sampling frame of this study comprised of the 688 telecommunication suppliers registered with CAK in the year 2021 and based in Kenya (Communication Authority of Kenya, 2021).

3.5.2 Sampling Technique

Lewis and Thornhill (2012) define sampling technique as a method of selecting a sample to represent the population of the study. Sampling techniques can broadly be categorized as probability and non-probability sampling techniques. For probability sampling technique, all elements in a population have equal chance of been selected while for the non-probability sampling technique, elements do not have equal chance of been selected. Table 3.2 shows the sample size of the study.

Table 3.2: Sample size

Strata of suppliers to the telecommunication firms by size	**Number of suppliers**	**Sample size**
Large size	19	11
Medium size	203	98
Small sized	446	213
Total	**688**	**322**

Source Author

This study used stratified random sampling technique to select the companies to be included in the sample based on the county they operate in. Proportionate stratified random sampling was specifically used where the researcher ensured proportionality to select 11 large sized suppliers, 98 medium sized suppliers and 213 small sized suppliers. Simple random sampling

was then used to select specific companies from each stratum. Stratified random sampling ensured that the elements selected are a good representation of the entire population of the suppliers in the telecommunication industry in Kenya in each county.

3.5.3 Sample Size- this needs to come first before sampling technique.

Sample size is defined as the number of participants or observations to be included in a sample (Cooper & Schindler, 2010). There are several ways of calculating the sample size and among them is Yamane (1967) formula that is simple to use and precise given the population size. The Yamane (1967) formula is specified as follows:

$$n = \frac{N}{1+N(e)^2} \quad \text{.....3.1}$$

Where:

n is the sample size, N is the population size, 688, e is the margin error, 5%. Thus:

$$n = \frac{688}{1+688(.05)^2} =$$

253.....3.2

An additional 10% of the population (69) was added to allow for non-response and also for piloting. The sample size for this study was therefore the 322 companies/suppliers in the telecommunication industry in Kenya that include 11 large sized suppliers, 98 medium sized suppliers and 213 small sized suppliers.

3.6 Data Collection Methods

The study used primary data that were collected using a structured questionnaire. Saunders et al., (2012) argue that the use of questionnaires is very popular and cheaper, especially in collecting cross-sectional data. The questionnaires presented to the respondents were structured and had closed-ended questions with 5-point Likert scale responses options. Structured questionnaires are simple to administer and relatively inexpensive to analyze as opposed to unstructured questionnaire (Saunders et al., 2012). The researcher developed a questionnaire that comprised of six sections namely; general information, organizational performance, competitive strategy, innovation intention, innovation infrastructure, and intention to sustain innovation. The researcher administered the questionnaire through Google forms. Email addresses of the firms were requested from the management prior actual data collection. The data collection took two weeks.

3.7 Data Collection Procedures

To collect data using a structured questionnaire, the researcher recruited three qualified and experienced research assistants. The research assistants were trained on techniques of collecting data via Google forms by the researcher. Google forms are preferred due to existing policy guidelines of combating COVID 19 pandemic. The researcher requested contacts of the telecommunication supplier firms from the communication authority of Kenya (CAK) 2021 database.

3.8 Pilot Study

Pilot study was conducted in Nairobi County focusing on suppliers to telecommunication firms. A 10% of the sample size was used for pilot study. Thus, 25 suppliers to the telecommunication firms participated in the study. The 25 suppliers to the telecommunication firms were excluded in the final study. After the pilot tests, the questionnaire was improved for clarity.

3.8.1 Data Quality: Reliability and Validity Tests

According to Saunders et al., (2019), research quality is an important aspect of any research design. The research quality determines how the evidence and conclusion made will stand up to the closest scrutiny. To ensure that the research instrument meet the minimum threshold of data quality, the study tested for validity, reliability and practicability of the questionnaire. Saunders et al., (2012) defines validity as the extent to which an instrument/questionnaire measures what it purports to measure. Validity comprises of content, construct and criterion validity. This study tested for content, criterion and construct validity by requesting experts and professors in the field of organizational performance and innovation to review the questionnaire and give their comments on whether the research instrument captures what it is supposed to capture.

Reliability is a measure of consistency and the ability to replicate an earlier research design by achieving the same findings in a repeat study (Blumberg, Cooper & Schindler, 2011). To guarantee reliability the study ensured a reduction of measurement errors during data collection by use of error elimination factors during sampling and analysis. Additionally, Cronbach's alpha was used to measures the average of measurable items and its correlation. Cronbach's alpha was computed and if the value of Cronbach alpha is greater or equal to 0.70, the instrument was considered as reliable otherwise it was unreliable (Taber, 2018).

Reliability study ensured the practicality of the questionnaire is achieved by developing a tool that is economical to use, simple and easy understand. The reliability test results are shown in Table 3.3.

Table 3.3: Reliability test results

Variable	Number of items	Cronbach's Alpha
Organizational performance	7	0.902
Innovation intention	7	0.793
Innovation infrastructure	7	0.877
Intention to sustain innovation	7	0.723
Competitive strategy	7	0.922

Table 3.3 shows that reliability test output was above the lower limit of acceptability of 0.7. The alpha coefficient organizational performance was 0.902, innovation intention was 0.793, innovation infrastructure was 0.877, intention to sustain innovation was 0.723 and competitive strategy was 0.922. The Cronbach alpha coefficients were more than 0.7 and so the instrument was suitable to be used to collect data.

3.9 Data Analysis

The study used both descriptive and inferential data analysis techniques in order to test the hypotheses. Descriptive analysis made use of numbers and graphs to organize and summarize data. The graphs include frequency tables, graph and charts to present demographic information of the respondents while the numbers involved getting mean and standard deviation. The inferential analysis consisted of correlation analysis and regression analysis.

The study tested for correlation analysis in order to assess the relationship between variables (Greene, 2012). Using Pearson correlation coefficient, the study tested the strength of relationship between given variables. Pearson correlation values ranges between -1 and 1 with values close to one indicating a perfect relationship and values close to zero indicating no relationship between variables. The study conducted correlation analysis between dependent variable organizational performance, and the independent variables, innovation intention, innovation infrastructure and intention to sustain innovation and the mediating variable competitive strategy. The first objective (innovation orientation) was analyzed through descriptive statistics such as percentages mean frequency and standard deviation in order to assess the level of suppliers' innovation orientation while the other objectives were analyzed using the correlation and regression analysis to assess their relationship.

The moderating effect of firm's competitive strategy was tested using the four-step approach by Baron and Kenny (1986) to test for mediation effect of competitive strategy on the relationship between innovation orientation and organizational performance. The four steps are outlined as follows:

In step one, the study tested for the effect of innovation orientation (innovation intention, innovation infrastructure and intention to sustain innovation) on organizational performance without including the mediator as specified in equation 3.1.

$$OP_i = \beta_0 + \beta_1 II_i + \beta_2 IF_i + \beta_3 SI_i + \varepsilon_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.3)$$

Where, OP denotes organizational performance, II denotes innovation intention, IF denotes innovation infrastructure and SI denotes intention to sustain innovation, $\beta's$ are the parameters estimated, ε are the error term and i denotes the supplier.

In step two; the study tested for the effect of innovation orientation (innovation intention, innovation infrastructure and intention to sustain innovation) on the mediator, competitive strategy, as specified in equation 3.2.

$$CS_i = \beta_0 + \beta_1 II_i + \beta_2 IF_i + \beta_3 SI_i + \varepsilon_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.4)$$

Where; CS denotes competitive strategy, II denotes innovation intention, IF denotes innovation infrastructure and SI denotes intention to sustain innovation, $\beta's$ are the parameters to be estimated, ε are the error term and i denotes the supplier.

In step three; the study tested for the effect of the mediator, competitive strategy on organizational performance as specified in equation 3.3.

$$OP_i = \beta_0 + \beta_1 CS_i + \varepsilon_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.5)$$

Where; OP denotes organizational performance and CS denotes competitive strategy, $\beta's$ are the parameters to be estimated, ε are the error term and i denotes the supplier.

In step four; the study tested for the effect of innovation orientation (innovation intention, innovation infrastructure and intention to sustain innovation) on organizational performance including the mediator as specified in equation 3.4.

$$OP_i = \beta_0 + \beta_1 II_i + \beta_{21} IF_i + \beta_3 SI_i + \beta_{43} CS_i + \varepsilon_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.6)$$

Where; OP denotes organizational performance, II denotes innovation intention, IF denotes innovation infrastructure, SI denotes intention to sustain innovation, CS denotes competitive

strategy, $\beta's$ are the parameters to be estimated, ε are the error term and i denotes the supplier.

According to Baron and Kenny (1986), steps 1-3 establish whether there are zero-order relationships among the variables. In step four, there would be some form of mediation if the effect of mediator, competitive strategy is significant even after controlling for innovation orientation. If innovation orientation is no longer significant when the mediator, competitive strategy, is controlled, the finding would imply that there is full mediation and if innovation orientation and the mediator, competitive strategy, are both significant predictors of organizational performance then there is partial mediation. To ensure that the coefficients of the independent variables and mediator are correct, the study conducted various diagnostic tests to ascertain whether the underlying assumptions of classical linear regression model are violated. The diagnostic tests that were tested include normality, multicollinearity, heteroscedasticity and model misspecification (Greene, 2012).

3.9.1 Normality Test

Normality test was tested by employing Kolmogorov Smirnov test. Kolmogorov Smirnov is appropriate when the number of observation is more than 100 (Razali & Wah, 2011). The null hypothesis that states that data is normal is not rejected if the Kolmogorov Smirnov significant values are larger than 0.05 (Park, 2015).

Table 3.4: Tests of Normality

Variable	Kolmogorov Smirnov		
	Statistic	**df**	**Sig.**
Innovation intention	.701	237	.285
Innovation infrastructure	.585	237	.165
Intention to sustain innovation	.923	237	.729
Competitive strategy	.846	237	.504

The data in Table 3.4 shows the results of the Kolmogorov Smirnov test. The Kolmogorov Smirnov test results indicate that the data in relation to each variable is normally distributed as the significance value in all cases is greater than 0.05. This implies the data is suitable for analysis using correlation and regression analysis.

3.9.3 Test for Multicollinearity

Multicollinearity entails a state whereby there exists a high level of association between dependent and independent variables. Large standard errors affect the accuracy of the null hypothesis thus a researcher either accepts or rejects it. Presence or absence of multicollinearity was checked by employing Variance Inflation Factor (VIF) where VIF ≥ 5 denotes presence of multi-collinearity (Field, 2013).

Table 3.5: Multicollinearity Results

Variables	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Innovation intention	.416	2.402
Innovation infrastructure	.431	2.322
Intention to sustain innovation	.405	2.470
Competitive strategy	.410	2.440

The results of the tests of multicollinearity are presented in Table 3.5. Collinearity statistics indicated a Variance Inflation Factor (VIF) <5 for all the variables thus an indication that the variables were not highly correlated, hence no existence of multicollinearity. The VIF for innovation intention was 2.402<5, innovation infrastructure 2.322<5, intention to sustain innovation 2.470<5, competitive strategy 2.440<5. This is an indication of the suitability of the variables for multiple regression analysis.

3.9.4 Heteroscedasticity

Heteroscedasticity, was checked using Breusch-Pagan/Godfrey method. Running a regression model without accounting for heteroscedasticity may lead to biased parameter estimates. To test for heteroscedasticity, it was necessary to make a hypothesis in respect to the error variance and test the error variances to confirm or reject the hypothesis. For the purposes of applying the Breusch-Pagan/Cook-Weisberg test, a null hypothesis (H_0) of this was formulated that the error variance is not heteroscedastic while the alternative hypothesis (H_a) was that the error variance is heteroscedastic. Table 3.6 shows the results obtained when the Breusch-Pagan test.

Table 3.6: Heteroscedasticity Test

H_o: Constant variance
chi2(1) = 0.020
Prob > chi2 = 0.461

Null hypothesis; error variance is homoscedastic. The results in Table 3.6 indicate that the p value is greater than 0.05 (0.461) and so the null hypothesis set up for this test is supported. It was found that the variables under this study did not suffer from heteroscedasticity and so the required regression analysis for this study could be carried out without the results being distorted. Rejecting null hypothesis means that error variance is heteroscedastic and this phenomenon may call for the prediction of feasible generalized least squares model.

3.10 Operationalization of Study Variables

Table 3.7 presents the definition and measurement of the study variables. The variables; the dependent variable, organizational performance, the independent variables, innovation orientation (innovation intention, innovation infrastructure, and intention to sustain innovation) and the mediator variable, competitive strategy.

Table 3.7: Operationalization and Measurement of Study Variables

Variable Name	Measurement indicators	Supporting Literature
Organizational performance	Organizational performance (Operational) was measured using process quality, product quality, efficiency in inventory management, effectiveness of the business systems such as workplace communication and effectiveness of the firm's operations.	Simpson, Padmore, & Newman (2012), Dobni & Klassen, (2015).

Variable Name	Measurement indicators	Supporting Literature
Innovation Intention	Innovation intention was measured using; willingness to introduce new ideas, willingness to introduce new processes, willingness to introduce new products and willingness to introduce new procedures	Hsiu-Fen (2006), Dobni (2010), Hamel (2006). Beynon, Jones and Pickernell (2020). Arts, Frambach and Bijmolt (2011). Rojas-Córdova, Heredia-Rojas & Ramírez-Correa (2020).
Innovation Infrastructure	Innovation infrastructure was measured using; innovation methodology, collaboration, enablers of innovation and workplace design	Morris (2009), Smirnova (2014).
Intention to sustain innovation	Intention to sustain innovation was measured using; tolerance for risk and failure, recognition and rewards, sense of ownership, reduced bureaucracy, open communication and a clear sense of direction	Klein & Sorra, (1996), Kim & Chung (2017).
Competitive Strategy	Competitive strategy was measured using cost leadership strategy and differentiation strategy.	Bolorian & Faezeh, (2014), Gopalakrishnan, (2000).

3.11 Ethical Considerations

The researcher observed ethical concerns in handling of research participants, responsibility in data collection and analysis, maintaining integrity, respect and accountability to the respondents and responsibility in reporting the research findings. The researcher sought consent from respondents prior to data collection and guarantee confidentiality of the respondents' identity. Confidentiality of the respondents was observed by protecting personal identifiable information by use of secure databases and password protected records. The researcher issued commitment letters to respondents to guarantee anonymity and confidentiality. Anonymity was also observed by removal of respondent identifier such as job title, gender, age and instead the use anonymous numbers. The researcher informed the respondents about of the objectives of the research before their participation in data collection to avoid exerting any pressure on them. The researcher strived to avoid conflict of interest and sought to be as objective as possible in data collection and analysis.

Objectivity was ensured during data collection, analysis and reporting. The researcher observed integrity and intellectual honesty during data collection, measurement, analysis and reporting on research findings. The researcher also observed transparency in reporting to avoid potential conflict of interest, observe mutual respect and responsibility in dealing with third party enumerators or other research teams by accurately representing the contribution to research proposals and reports. The research study sought approval from Strathmore University Ethics committee before commencement of data collection. The researcher was also applied for research license from The National Commission for Science, Technology and Innovation (NACOSTI) as stipulated by the Science, Technology and Innovation Act, 2013.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The chapter outlines the response rate, demographic and descriptive results. Correlation was performed to determine the association and relationship between the independent and dependent variables while multiple regressions was also undertaken to determine the relationship between study variables. The variables of the study were innovation intention, innovation infrastructure and intention to sustain innovation as the independent variables, competitive strategy as the mediating variable and organization performance of the suppliers in the telecommunication industry in Kenya as the dependent variable.

4.2 Response Rate

A total of 297 questionnaires were administered to the respondents and a total of 237 questionnaires were duly filled and returned. Table 4.1 shows the response rate results.

Table 4.1: Response Rate

Response	Frequency	Percent
Returned	237	73.6%
Unreturned	62	26.4%
Total	**297**	**100%**

Out of the 297 questionnaires administered, 237 were properly filled and returned representing 73.6 percent response rate hence satisfactory enough for a viable study. Bailey (2000) noted that a response rate of 50% is satisfactory while 70% and above response rate is excellent. Thus, response rate of 73.6% is very good for the study. The higher response rate is attributed to early notification of participants, and observation of research ethics including seeking consent and maintaining confidentiality of data collected and anonymity participants.

4.3 Demographic information of respondents

This section consists of demographic information of respondents that include gender, age, level of education and position. Table 4.2 shows the results for demographic information of the respondents.

Table 4.2: Demographic information of respondents

Demographic information	Category	Percent
Gender of respondents	Male	57
	Female	43
Respondents' level of education	Diploma	22
	Undergraduate	59
	Postgraduate	19
Number of years working in this firm	Less than 2 years	2.1
	2 to 5 years	13.9
	6-10 years	41.4
	11-15 years	19.4
	11-15 years	17.7
	More than 20 years	5.5

The gender of the participants was explored. Table 4.2 indicates that majority 57% of the respondents in the supply sector telecommunication industry in Kenya were males while 43% were females. The results imply that there are more male employees working in the supply sector of the telecommunication industry in Kenya compared to women. Males tend to be attracted most to telecom related careers as compared to females. The results concur with Naqvi, et al. (2012) studying the impact of gender diversity on organizational performance in telecom sector of Pakistan and established that male dominate the telecommunication sector compared to females.

The study sought to determine respondent's level of education in the telecommunication industry in Kenya. Level of education is important in organizational performance. Most of the respondents had undergraduate degrees. Some of the respondents had diploma and postgraduate degree certifications. The telecommunication industry is technical field that require in-depth learning and educational research to grasp some of its concept. Education

attainment may help in the acquisition of managerial skills, technical skills and soft skills require for enhancing organizational performance. Further, the study explored the number of years the respondents have been working in the Kenya's telecommunication industry. The number of years an employee has been working may denote their experience and commitment in the industry. Results showed that most of the respondents had worked for 6-10 years. Year of experience may determine the level of skills and work abilities acquired over time and how it influences organizational performance. The skills may include managerial skills and customer relations skills which are very important in the performance of the telecommunication firms.

4.4 Descriptive Statistics

This section presents the descriptive results for the variables of the study that innovation orientation of suppliers, innovation intention, innovation infrastructure, intention to sustain innovation, competitive strategy and organization performance of the suppliers in the telecommunication industry in Kenya. Results output are in form of percentages, means and standard deviations.

4.4.1 Innovation Orientation

The first objective of the study was to establish the level of innovation orientation of suppliers in the telecommunication industry in Kenya. The study sought to present the descriptive results regarding the innovation orientation. Descriptive results are shown in Table 4.3.

Table 4.3: Level of innovation orientation of suppliers in the telecommunication industry

Variable	Mean	Standard Deviation
Innovation infrastructure	3.8	1.2
Innovation intention	3.6	1.3
Intention to sustain innovation	3.6	1.3
Overall mean/SD	**3.7**	**1.3**

Based on the results, majority of the participants agreed that innovation infrastructure influence organization performance of suppliers in the telecommunication industry, with mean response of 3.8 and standard deviation is 1.2. Also, intention to sustain innovation as a

construct of innovation orientation influence organization performance of suppliers in the telecommunication industry, with mean response of 3.6 and standard deviation is 1.3. Majority of respondent agreed that innovation intention influence organization performance of suppliers in the telecommunication industry, with mean response of 3.6 and standard deviation is 1.3.

4.4.2 Descriptive results on Innovation intention

The second objective was to determine the influence of innovation intention on organizational performance of suppliers in the telecommunication industry. The study sought to present the descriptive results regarding the innovation intention. Descriptive results are shown in Table 4.4.

Table 4.4: Innovation intention

Innovation intention	Mean	SD
Innovation objective have been defined in our organization	3.8	1.2
We are always willing to introduce new ideas	3.8	1.2
Leaders in our firm are always communicating about change through innovations	3.7	1.3
Our team is always willing to introduce new products	3.7	1.2
We are always ready for new procedures for doing things in our company	3.7	1.3
Our organization's vision is connected to innovation	3.6	1.3
One of our organizations goal is to be innovative	3.6	1.3
We are always ready to implement innovations as they come	3.6	1.3
We have open doors for new processes in our company	3.6	1.2
Overall mean/SD	**3.7**	**1.3**

Majority of the participants also agreed that innovation objective have been defined in our organization with mean response of 3.8 and standard deviation is 1.2. Further, respondents agreed that leaders in our firm are always communicating about change through innovations with mean response of 3.7 and standard deviation is 1.3. The respondents agreed that organization's team is always willing to introduce new products with mean response of 3.7 and standard deviation is 1.2. The respondents agreed that the organization is always ready for new procedures for doing things in our company with mean score for place is 3.7 and standard deviation is 1.3.

Majority of the participants were also in agreement that the organizations goal is to be innovative with mean response of 3.6 and standard deviation is 1.3. Majority of respondent

agreed that the organization's vision is connected to innovation, with mean response of 3.6 and standard deviation is 1.3. Majority of the participants agreed that the organization is always ready to implement innovations as they come with mean response of 3.6 and standard deviation is 1.3. Regarding the statement that the organization is always willing to introduce new ideas agreed with mean response of 3.8 and standard deviation is 1.2. On the statement that the organization has open doors for new processes in our company, majority of the respondents agreed with mean response of 3.6 and standard deviation is 1.2. Based on the results, majority of the participants also agreed that innovation infrastructure influence organization performance of suppliers in the telecommunication industry, with aggregate mean response of 3.8 and standard deviation is 1.2.

4.4.3 Innovation infrastructure

Third objective sought to determine the influence of innovation infrastructure on organizational performance of suppliers in the telecommunication industry. The responses by respondents regarding innovation infrastructure. The results are shown in table 4.5.

Table 4.5: Innovation infrastructure

Innovation infrastructure	Mean	SD
We regularly harness our innovation capabilities to fit the present sills	3.8	1.0
The workplace design in our firm help optimize the use of innovation	3.8	1.3
We usually put effort to make awareness regarding innovation in our company	3.7	1.3
Our leaders create the conditions for innovation by amplifying its enablers	3.7	1.1
We usually bring together people with different ideas views and experiences in implementing innovation	3.6	1.2
We achieve effective innovation implementation by dampening resistance to change	3.5	1.4
Overall mean/SD	**3.6**	**1.3**

The results showed that majority of the respondents agreed that the organization regularly harness our innovation capabilities to fit the present sills as indicated by mean response of 3.8 and standard deviation is 1.0. Results also showed that majority of the respondents agreed that the workplace design in the firms help optimize the use of innovation with mean response of 3.8 and standard deviation is 1.3. Majority of respondent agreed that the organization usually put effort to make awareness regarding innovation in our company, with mean response of 3.7 and standard deviation is 1.3.

Further, respondents agreed that organization leaders create the conditions for innovation by amplifying its enablers with mean response of 3.7 and standard deviation is 1.1. The results also showed that majority of the respondents agreed that the telecommunication firms usually bring together people with different ideas views and experiences in implementing innovation with mean response of 3.6 and standard deviation is 1.1. Majority of the participants were in agreement that organizations achieve effective innovation implementation by dampening resistance to change as shown by average response of 3.5 and standard deviation is 1.4. based on the aggregate mean response and standard deviation, majority of the respondents agreed that the intention to sustain innovation as a construct of innovation orientation influence organization performance of suppliers in the telecommunication industry, with mean response of 3.6 and standard deviation is 1.3.

4.4.4 Intention to sustain innovation

Forth objective sought to determine how intention to sustain innovation affect organizational performance of suppliers in the telecommunication industry in Kenya .This section presents the responses regarding the intention to sustain innovation. Descriptive results are shown in Table 4.6.

Table 4.6: Intention to sustain innovation

Intention to sustain innovation	Mean	SD
We encourage risk taking in our organization	3.8	1.0
In our organization employees are open to propose innovations adoption	3.7	1.3
In our firm bureaucracy is discouraged and decision making inclusive	3.7	1.2
There is clarity in our organization regarding innovation adoption	3.6	1.3
Recognition and rewards are used to encourage innovation in our firm	3.5	1.4
In our organization we tolerate failure	2.3	1.2
Overall mean/SD	**3.5**	**1.4**

The results showed that majority of the respondents agreed that the telecommunication firms encourage risk taking in our organization with mean response of 3.8 and standard deviation is 1.0. Further, respondents agreed that in the telecommunication organizations, employees are open to propose innovations adoption with mean response of 3.7 and standard deviation is 1.3. The study also established that majority of the respondents agreed that there is clarity in our organization regarding innovation adoption with mean response of 3.6 and standard deviation is 1.3. Results also showed that majority of the respondents were agreeing that in the organization firm bureaucracy is discouraged and decision making inclusive with mean

response of 3.7 and standard deviation is 1.2. The results also showed that majority of the respondents agreed that recognition and rewards are used to encourage innovation in our firm with mean response of 3.5 and standard deviation is 1.4. Table 4.5 also indicates the telecommunication firms did not tolerate failure, with mean score of 2.3 and standard deviation is 1.2. The aggregate mean response was 3.5 and standard deviation is 1.3. implying that majority of respondent agreed that innovation intention influence organization performance of suppliers in the telecommunication industry.

4.4.5 Competitive strategy

The fifth objective was to analyse the influence of the mediating effect of competitive strategy on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya. In this section, the study presented the responses regarding competitive strategy. Descriptive results are shown in Table 4.7.

Table 4.7: Competitive strategy

Competitive strategy	Mean	SD
We usually target a specific niche customers who are willing to pay for the uniqueness in our products	3.8	1.2
In our firm we offer products at the lowest price in the market in order to be competitive	3.7	1.3
We provide our customers with low cost products that are similar to product by our competitors who sell at high prices	3.7	1.3
We usually make and supply products that are of very high durability and that perform to maximum efficiency and uniqueness	3.6	1.3
We offer products customized to each niche customers tastes and requirements	3.6	1.2
Our market highly values the products we offer that are unique compared to our competitors	3.5	1.4
Overall mean/SD	**3.5**	**1.4**

The results showed that majority of the respondents agreed that the telecommunication firms usually target a specific niche customer base who are willing to pay for the uniqueness in our products with mean response of 3.8 and standard deviation is 1.2. Majority of the respondents agreed that telecommunication firms offer products at the lowest price in the market in order to be competitive, with mean response of 3.7 and standard deviation is 1.3. The study also established that majority of the respondents agreed that the telecommunication firms provide

the customers with low cost products that are similar to product by our competitors who sell at high prices with mean response of 3.7 and standard deviation is 1.3.

Further, respondents agreed that the telecommunication firms usually make and supply products that are of very high durability and that perform to maximum efficiency and uniqueness with mean response of 3.6 and standard deviation is 1.3. Majority of the telecommunication firms indicated that they offer products customized to each niche customers tastes and requirements with mean response of 3.6 and standard deviation are 1.2. The results also showed that majority of the respondents agreed that the market highly values the products the telecommunication firms offer that are unique compared to our competitors with mean response of 3.5 and standard deviation is 1.4. The aggregate mean response was 3.5 and standard deviation is 1.4 implying that majority of respondent agreed that competitive strategy mediate the link between innovation orientation and organization performance of suppliers in the telecommunication industry.

4.4.6 Organization performance of the suppliers in the telecommunication industry in Kenya

In this section, the study presented the responses regarding organization performance. Descriptive results are shown in Table 4.8.

Table 4.8: Organization performance of the suppliers in the telecommunication industry in Kenya

Organization performance of the suppliers in the telecommunication industry in Kenya	Mean	SD
We have achieved effectiveness in our business systems such as workplace communication, employees empowerment and participation in our organization	3.9	1.0
We have attained a high level of efficiency in the management of raw materials components and finished products	3.8	1.1
In our organization there is excellence of interrelated tasks procedures and steps in achieving the organizations mission	3.7	1.3
We have achieved a very high level of effectiveness in the way we operate	3.7	1.3
Our firm's productivity has consistently been increasing with a high margin	3.6	1.3
Our product quality has been increasing consistently	3.5	1.4
Overall mean/SD	**3.7**	**1.2**

The results showed that the respondents agreed that the telecommunication firms have achieved effectiveness in our business systems such as workplace communication, employees' empowerment and participation in our organization with mean response of 3.9 and standard deviation is 1.0. The results also showed that majority of the respondents agreed that the telecommunication firms have attained a high level of efficiency in the management of raw materials components and finished products with mean response of 3.8 and standard deviation is 1.1. Majority of the respondents agreed that in the telecommunication firms there is excellence of interrelated tasks procedures and steps in achieving the organizations mission, with mean response of 3.7 and standard deviation is 1.3.

The study also established that majority of the respondents agreed that the telecommunication firms have achieved a very high level of effectiveness in the way we operate with mean response of 3.7 and standard deviation is 1.3. Majority of the telecommunication firms indicated that firm's productivity has consistently been increasing with a high margin with mean response of 3.6 and standard deviation are 1.2. The results also showed that majority of the respondents agreed that the product quality has been increasing consistently with mean response of 3.5 and standard deviation is 1.4. The aggregate mean response was 3.7 and standard deviation of 1.2 implying that majority of the participants were agreeing that organization performance of the suppliers in the telecommunication industry in Kenya.

4.5 Pearson Correlation Analysis

Pearson Correlation coefficient (r) was employed to investigate if there exist significant association between innovation Intention and performance of the suppliers in the telecommunication industry in Kenya, innovation Infrastructure and performance of the suppliers in the telecommunication industry in Kenya, intention to sustain innovation and performance of the suppliers in the telecommunication industry in Kenya and competitive Strategy and performance of the suppliers in the telecommunication industry in Kenya. Coefficient (r) ranges between ±1. Where r= +0.7 and implies very strong association; r=+0.5 to below 0.7 is a strong association; r=0.3-0.49 is a moderate association while r=0.29 and below indicates a weak association. Where r=0 it indicates that there is no association. Table 4.9 shows the correlation output results.

Table 4.9: Pearson Correlation Coefficients Matrix

		organizational performance	Innovation Intention	Innovation Infrastructure	Intention to sustain innovation	Competitive Strategy
organization performance	Pearson Correlation	1.000				
	Sig. (2-tailed)					
Innovation Intention	Pearson Correlation	.730**	1.000			
	Sig. (2-tailed)	0.000				
Innovation Infrastructure	Pearson Correlation	.713**	.481**	1.000		
	Sig. (2-tailed)	0.000	0.000			
Intention to sustain innovation	Pearson Correlation	.702**	.352**	.427**	1.000	
	Sig. (2-tailed)	0.000	0.000	0.000		
Competitive Strategy	Pearson Correlation	.671**	.135**	.501**	.570**	1.000
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	

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

Correlation results showed that there was a strong and significant positive association between innovation Intention and performance of the suppliers in the telecommunication industry in Kenya (r=.730, p=0.000). The results imply that innovation Intention and performance of the suppliers in the telecommunication industry in Kenya move in the same direction; an indication that as innovation Intention increases, performance of the suppliers in the telecommunication industry also increases and vice versa.

The results also revealed that that there was a strong and significant positive association between innovation infrastructure and performance of the suppliers in the telecommunication industry in Kenya (r=.713, p=0.000). The results imply that innovation infrastructure and performance of the suppliers in the telecommunication industry in Kenya move in the same

direction; indicating that as innovation infrastructure increase, performance of the suppliers in the telecommunication industry also increases and vice versa.

Further, the results indicated that there was a strong and significant positive association between intention to sustain innovation and performance of the suppliers in the telecommunication industry in Kenya (r=.702, p=0.000). The results imply that intention to sustain innovation and performance of the suppliers in the telecommunication industry in Kenya move in the same direction; an indication that as intention to sustain innovation increases, performance of the suppliers in the telecommunication industry also increases and vice versa.

Finally, the correlation results indicated that there was a strong and significant positive association between competitive strategy and performance of the suppliers in the telecommunication industry in Kenya (r=.671, p=0.000). The results imply that competitive strategy and performance of the suppliers in the telecommunication industry in Kenya move in the same direction; an indication that as competitive strategy increases, performance of the suppliers in the telecommunication industry also increases and vice versa.

4.6 Multiple regression model

Multiple regression model was estimated to determine the effect of innovation intention, innovation infrastructure and intention to sustain innovation on performance of the suppliers in the telecommunication industry in Kenya and competitive Strategy. The hypotheses of the study were tested based on the results of the multiple regression model. The hypotheses were tested using the calculated p values. The acceptance/rejection criterion is that, if the p value is greater than 0.05, the researcher fails to reject the H_o but if it's less than 0.05, the H_o is rejected. The results presented in Table 4.10 indicate the fitness of model used of the regression model in explaining the study phenomena.

Table 4.10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.783[a]	.613	.608	.47904

a. Predictors: (Constant), Intention to sustain innovation, Innovation Infrastructure, Innovation Intention

From the results on Table 4.10, innovation intention, innovation infrastructure and intention to sustain innovation are found to be satisfactory variables in explaining performance of the

suppliers in the telecommunication industry in Kenya. This fact is supported by coefficient of determination also known as the R square of .613. This implies that innovation intention, innovation infrastructure and intention to sustain innovation explain 61.3% of the variations in the performance of the suppliers in the telecommunication industry in Kenya. Table 4.11 gives the results of the analysis of variance (ANOVA).

Table 4.11: Analysis of Variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	84.572	3	28.191	122.845	.000[b]
	Residual	53.469	233	.229		
	Total	138.041	236			

a. Dependent Variable: organizational performance

b. Predictors: (Constant), Innovation intention, innovation infrastructure and desire to intention to sustain innovation

The outcomes of the analysis of variance indicate that the model is satisfactory. Further, the outcomes suggest that innovation intention, innovation infrastructure and intention to sustain innovation are satisfactory predictors of the performance of the suppliers in the telecommunication industry in Kenya. This was supported by an F statistic of 122.845 and calculated p value0.000<0.05. The regression of coefficient table is presented in Table 4.12.

Table 4.12: Regression of coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.592	.167		3.538	.000
	Innovation intention	.326	.074	.319	4.411	.000
	Innovation infrastructure	.249	.062	.265	4.025	.000
	Intention to sustain innovation	.276	.071	.271	3.911	.000

a. Dependent Variable: performance of the suppliers in the telecommunication industry in Kenya

The beta coefficients of the regression model predicting performance of the suppliers in the telecommunication industry in Kenya is presented as;

$Y = .592 + .319X_1 + .265X_2 + .271X_3$

Where

Y = Performance of the suppliers in the telecommunication industry in Kenya

X_1 = Innovation intention

X_2= Innovation infrastructure

X_3 = Intention to sustain innovation

The constant was .592 implying the level of performance of the suppliers in the telecommunication industry in Kenya in the absence of innovation intention, innovation infrastructure and intention to sustain innovation. Basing on the regression model, innovation intention (β=.319) had the highest positive effect on performance of the suppliers in the telecommunication industry in Kenya, followed by the intention to sustain innovation (β=.271) and innovation infrastructure (β=.265) on performance of the suppliers in the telecommunication industry.

The results also revealed that coefficient of innovation intention and performance of the suppliers in the telecommunication industry have a positive and significant relationship (β=.319, p=0.000<0.05). The regression of coefficient implies that one unit increase in innovation intention results to .319 units increase in the performance of the suppliers in the telecommunication industry in Kenya. The null hypothesis (H_{01}) of the study was that innovation intention has no significant influence on organizational performance of the suppliers in the telecommunication industry in Kenya. The calculated p-value of the regression model is p=0.000<0.05. Thus, the null hypothesis that innovation intention has no significant influence on organizational performance of the suppliers in the telecommunication industry in Kenya was rejected and conclusion made that innovation intention has significant influence on organizational performance of the suppliers in the telecommunication industry in Kenya. Increased global and regional competitions have led firms to determine to create or sustain competitive edge by engaging in innovation. A fast-changing environment with constant abrupt changes makes it indispensable for firms to build up their capability to innovate. Constant innovation is essential to compete in rapidly developing and growing markets. Businesses should have preparations that can be put into effect as they are always open to innovative activities. In intense competitions, businesses should not be static and they are required to renew themselves in accordance with market conditions.

Among the innovations, product, services and process innovations in the telecommunication industry are of significant importance. With the rapid technological change, modified products, services and process through innovation are required for achieving competitive advantage and subsequent organization performance. Product innovation is mostly induced by demand factor, but supply side could be a significant driver for this type of innovation as well. Upgraded technologies, changing customer tastes, and shortening product life cycles, combined with overall increased global and regional competition, force firms to innovate relentlessly. Process innovation leads to improvements in the methods of production or delivery of products/services. The process could be new or significantly improved compared to the existing version. Thus, innovation is identified as a sustainable channel to facilitate organization performance.

The model established that coefficient of the intention to sustain innovation has positive and significant influence on performance of the suppliers in the telecommunication industry (β=.271, p=0.000<0.05). The regression of coefficient implies that a one unit increase in the intention to sustain innovation results to .271 units increase in the performance of the suppliers in the telecommunication industry in Kenya. The null hypothesis (H_{03}) of the study was that intention to sustain innovation has no significant influence on organizational performance of the suppliers in the telecommunication industry in Kenya. The calculated p-value of the regression model is p=0.000<0.05. Thus, the null hypothesis that intention to sustain innovation has no significant influence on organizational performance of the suppliers in the telecommunication industry in Kenya was rejected and conclusion made that the intention to sustain innovation has significant influence on organizational performance of the suppliers in the telecommunication industry in Kenya. Sustained innovation involves the simultaneous development improvement of product, process, services and market innovations, while also managing mature businesses efficiently. Continuous innovation is the only key success factor to sustain the business in today's demanding, complex and uncertain market condition. Creating the culture of innovation that would allow ideas to grow and flourish, add value, and help the organization achieve its growth targets is very essential.

The success of innovation orientation adopted by an organization is influenced by the innovation intention within the organization, innovation infrastructure created by the organization and the intention to sustain the innovation within the organization. Adoption of innovation culture does not end without having the desire to continue being innovative to

adapt to the ever changing business environment. The intention to sustain innovation is very essential to know the health of the innovation culture, sustain it to the benefits of the organization growth. Actively pursuing innovation requires considerable resources and deliberate focus. It requires innovation leadership, support from the organizational hierarchy, and a culture that values and nurtures creativity.

The results also revealed that coefficient of coefficient of innovation infrastructure has positive and significant influence on performance of the suppliers in the telecommunication industry (β=.265, p=0.000<0.05). The regression of coefficient implies that a one-unit increase in innovation infrastructure results to .265 units increase in the performance of the suppliers in the telecommunication industry in Kenya. The null hypothesis (H_{02}) of the study was that innovation infrastructure has no significant influence on organizational performance of the suppliers in the telecommunication industry in Kenya. The calculated p-value of the regression model is p=0.000<0.05. Thus, the null hypothesis that innovation infrastructure has no significant influence on organizational performance of the suppliers in the telecommunication industry in Kenya was rejected and conclusion made that innovation infrastructure has significant influence on organizational performance of the suppliers in the telecommunication industry in Kenya. Innovation infrastructure defines the major subsystems and constituent elements of innovation and considers their functional purpose. Innovation infrastructure is tools that evoke, create, optimize and accelerate innovation process in an organization. Effective functioning of innovation infrastructure requires the balanced formation and development of all its constituent subsystems for optimal effect on organization performance.

The innovation cycle continuity is supposed to be achieved through innovation infrastructure, capable to rapidly and flexibly implement necessary innovation based on high production technologies. The development innovation infrastructure is considered as a condition to introduce competitive products, the innovation process results, to the market. Innovation infrastructure should facilitate the free exchange of resources between innovation process participants and organization entities.

4.7 Mediating effect of competitive strategy on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya

The fifth objective was to determine the mediating effect of competitive strategy on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya. This was conducted by employing step wise regression method. The method involved four steps.

Step 1

In the first step, innovation intention, innovation infrastructure and intention to sustain innovation were regressed against organization performance of the suppliers in the telecommunication industry. The results are presented in Table 4.13.

Table 4.13: Influence of innovation orientation on the organizational performance of suppliers in the telecommunication industry

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.783[a]	.613	.608	.47904

Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	84.572	3	28.191	122.845	.000[b]
	Residual	53.469	233	.229		
	Total	138.041	236			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.592	.167		3.538	.000
	Innovation Intention	.326	.074	.319	4.411	.000
	Innovation Infrastructure	.249	.062	.265	4.025	.000
	Intention to sustain innovation	.276	.071	.271	3.911	.000

The results in Table 4.13 show that, in step one, the influence of innovation intention, innovation infrastructure and intention to sustain innovation are significant (F=122.845, R^2=.613, p<0.05), implying that 61.3% of change in the organizational performance of suppliers working in the telecommunication industry are attributable to unit change in innovation intention, innovation infrastructure and intention to sustain innovation. The first mediation condition which states that, dependent variable is significantly affected by independent variables in the absence of the mediating variable is thus satisfied.

Step 2

The independent variable is significantly related to the intervening variable (competitive strategy). The second step involved regression of innovation intention, innovation infrastructure and intention to sustain innovation on competitive Strategy (intervening variable). The results are presented in Table 4.14.

Table 4.14: Influence of innovation orientation on competitive strategy of suppliers in the telecommunication industry

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.771[a]	.594	.589	.51224

Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89.614	3	29.871	113.844	.000[b]
	Residual	61.136	233	.262		
	Total	150.750	236			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.427	.179		2.389	.018
	Innovation Intention	.418	.079	.393	5.300	.000
	Innovation Infrastructure	.275	.075	.259	3.643	.000
	Intention to sustain innovation	.183	.066	.186	2.769	.006

a. Dependent Variable: Competitive Strategy

The results in Table 4.14 show that, the influence of innovation intention, innovation infrastructure and intention to sustain innovation on competitive Strategy is positive and statistically significant (F=113.844, R^2=.594, p<0.05), thus satisfying the second condition which states that, the independent variables should be significantly related to the mediator variable, for the process to continue to step 3.

Step 3

Third step was intended to test for the influence of competitive Strategy (mediator) on organization performance of the suppliers in the telecommunication industry in Kenya as shown in Table 4.15.

Table 4.15: Influence of competitive Strategy on organization performance of the suppliers in the telecommunication industry

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.671[a]	.450	.447	.56857

Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	62.072	1	62.072	192.014	.000[b]
	Residual	75.969	235	.323		
	Total	138.041	236			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.383	.174		7.962	.000
	Competitive Strategy	.642	.046	.671	13.857	.000

As shown in the Table 4.15, the influence of competitive Strategy on organization performance of the suppliers in the telecommunication industry was significant (F=192.014, R^2=.450, p<0.05), thus satisfying the third condition that, the mediator variable should be

significantly related to the dependent variable, for the process of testing for mediation to continue to the final step. Competitive Strategy is significantly related to the organization performance of the suppliers in the telecommunication industry. The null hypothesis that competitive strategy has no significant meditation effect on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya was rejected and conclusion made that competitive strategy has partial significant meditation effect on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya. Competitive strategy comprises of all those moves that a firm has and is taking to attract buyers, withstand competitive pressure and improve its market position.

Gaining a competitive strategy means offering a comprehensive formula to make it clear how to compete in a business and how to determine goals and the needed policies to fulfill them. The goal of competitive strategy for a business unit in an industry is to find a position in the industry where the company can best defend itself against industry competitive forces or can influence such forces in its favor. Competitive strategy gives a company an advantage over its rivals in attracting customers and defending against competitive forces. Competitive strategy consequently aims to establish a profitable and sustainable position against the forces that determine industry competition.

4.8 Chapter Summary

The section outlined the introduction of the chapter. The response rate and demographic information were presented. The descriptive results, Pearson correlation analysis and regression analyses were conducted as guided by study objectives. The chapter ended with a summary of the chapter.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The discussion of summary results, conclusions and recommendations are presented in this chapter. The presentation of the summary of major findings, conclusions and recommendations has been conducted according to the study objectives. The variables of the study included the innovation intention, innovation infrastructure and intention to sustain innovation, competitive strategy as the mediating variable and organizational performance of suppliers working in the telecommunication industry in Kenya as the dependent variable.

5.2 Discussion of Findings

The discussion of findings is presented in this sections. Model summary results established that innovation intention, innovation infrastructure and intention to sustain innovation explain 61.3% of performance of the suppliers in the telecommunication industry in Kenya. To realize superior organizational performance under the highly regulated, highly competitive and dynamic business environment, firms operating within highly competitive and challenging environment need to improve their internal resources, be innovation oriented and remain strategic to ensure their survival.

5.2.1 Level of innovation orientation of suppliers in the telecommunication industry

The first objective of the study was to establish the level of innovation orientation of suppliers in the telecommunication industry in Kenya. The study indicated that innovation intention, innovation infrastructure and intention to sustain innovation are essential construct of innovation orientation. An innovation orientation describes how innovative an organization is and the results suggest that such an orientation provides a context for the implementation of proactive growth-based strategies. Organizations that possess high innovation orientations engage in value creation strategies such as market segmentation, developing new products/services for new markets, and product or service customization.

The innovation orientation of an organization has a powerful influence on its performance and profitability. Innovation orientation is a critical ingredient of competitive strategy. The uniqueness of the competitive strategies adopted by a firm helps it to attain competitive advantage as these strategies may act as mediating factors between innovation and

organizational performance. Innovation orientation enables firms to acquire immense strength to any of these forces hence determining its performance in any industry. The results concur with Pscheidt-gieseler et al., (2018) and Beynon, Jones, and Pickernell, (2020) indicated innovation orientation has a positive and significant impact organizational performance, however, Dobni and Klassen (2015) found an insignificant impact of innovation orientation on organizational performance. The success of innovation orientation adopted by an organization is influenced by the innovation intention within the organization, innovation infrastructure created by the organization and the intention to sustain innovation within the organization. Adoption of innovation culture does not end without having the desire to continue being innovative to adapt to the ever changing business environment.

5.2.2 Innovation intention and organizational performance of suppliers in the telecommunication industry in Kenya

The second objective of the study was to determine the influence of innovation intention on organizational performance of suppliers in the telecommunication industry in Kenya. Based on the descriptive results, majority of the respondents were agreeing that organization's vision is connected to innovation, innovation objective is defined in the organization, organizations goal is to be innovative, leaders in the firm are always communicating about change through innovations, the organization is always ready to implement innovations as they come and the organization is always willing to introduce new ideas agreed. It was also agreed that organization's team is always willing to introduce new products, organization has open doors for new processes in the company, and that the organization is always ready for new procedures for doing things in the company. Based on regression results, the coefficient of innovation intention had a positive and significant performance of the suppliers in the telecommunication industry. Thus, the innovation intention is satisfactory in explaining performance of the suppliers in the telecommunication industry.

Increased global and regional competitions have led firms to determine to create or sustain competitive edge by engaging in innovation. A fast-changing environment with constant abrupt changes makes it indispensable for firms to build up their capability to innovate. Constant innovation is essential to compete in rapidly developing and growing markets. Businesses should have preparations that can be put into effect as they are always open to innovative activities. In intense competitions, businesses should not be static and they are required to renew themselves in accordance with market conditions. The results concur with

Hsiu-Fen (2006) who conducted a study on how organizational support impacts on organizational intention to share knowledge in Taiwan and indicated that intention to innovate has positive significant influence on organization performance. The results also concur with Beynon Jones and Pickernell (2020) who investigated the link between SME strategies and intention to undertake future innovation, using Federation of Small Businesses data and found that innovation desire help a firm achieve competitive advantage over peer in the market. Innovation intention is the degree to which an organization has established a mechanism to develop and sustain innovation using their business model. Organization vision, goals and objectives plays a critical role in determining the degree of innovation intention. According to Rojas-Córdova, et al. (2020) the intention to innovate influence the competitive advantage of the organization.

5.2.3 Innovation infrastructure and organizational performance of suppliers in the telecommunication industry in Kenya

The third objective of the study was to determine the influence of innovation infrastructure on organizational performance of suppliers in the telecommunication industry in Kenya. Looking at the descriptive results, majority of respondent agreed that the organization usually put effort to make awareness regarding innovation in the company, the organizations regularly harness their innovation capabilities to fit the present sills, the telecommunication firms usually bring together people with different ideas views and experiences in implementing innovation, the organization leaders are creating the conditions for innovation by amplifying its enablers, the organizations achieve effective innovation implementation by dampening resistance to change and that at the workplace design in the firms help optimize the use of innovation. Model results revealed that the coefficient of innovation infrastructure has positive and significant influence on performance of the suppliers in the telecommunication industry. A functioning and resilient innovation infrastructure is the foundation of every successful organization. Building a resilient innovation infrastructure, promote inclusive and sustainable growth and fostering organization performance.

Innovation infrastructure is tools that evoke, create, optimize and accelerate innovation process in an organization. Effective functioning of innovation infrastructure requires the balanced formation and development of all its constituent subsystems for optimal effect on

organization performance. The results concur with Kniazevych, et al. (2018) who conducted a study on strategy of innovation development in Ukraine and found stated that a self-sufficient and well-functioning innovation infrastructure is necessary in order to harmonize innovation systems and also to maintain an organizational growth. The study also agrees with Smirnova (2014) who investigated why innovation infrastructure does not automatically boost the performance of small firms in Kazakhstan and found that despite the efforts by legislature to shape innovation infrastructure, the country's economy still falls short of the expectations. Also, Johnsson (2016) studying the innovation enablers and their importance for innovation teams among small and medium-sized enterprises (SMEs) in Sweden indicated that innovation infrastructure affect organizational performance hence the need to conduct this study. Johnsson (2017) identified four critical elements for an effective innovation infrastructure namely; Innovation methodology, collaboration, enablers of innovation and workplace design. The elements of innovation infrastructure include; innovation methodology, collaboration, enablers and obstacles in the organizational culture, and work place design. Kazakhstan.

5.2.4 Intention to sustain innovation and organizational performance of suppliers in the telecommunication industry in Kenya

The forth objective was to determine the effect of the intention to sustain innovation on organizational performance of suppliers in the telecommunication industry in Kenya. According to the descriptive results, majority of the respondents agreed that the telecommunication firms did not tolerate failure, the telecommunication firms encourage risk taking in our organization, recognition and rewards are used to encourage innovation in our firm, the telecommunication organizations, employees are open to propose innovations adoption, there is clarity in our organization regarding innovation adoption and that in the organization firm bureaucracy is discouraged and decision making inclusive. Regression model revealed that the coefficient of the intention to sustain innovation has positive and significant influence on performance of the suppliers in the telecommunication industry. Sustained innovation in an organization strives to innovate in all aspects of its business, including management, divisions, operations, customers, and suppliers.

The intention to sustain innovation is very essential to know the health of the innovation culture, sustain it to the benefits of the organization growth. Actively pursuing innovation requires considerable resources and deliberate focus. It requires innovation leadership,

support from the organizational hierarchy, and a culture that values and nurtures creativity. The intention to sustain innovation is the process of gaining targeted employees' commitment to incorporate new innovations within the organization and to enhance sustainability of the innovations. The key elements of intention to sustain innovation include; a tolerance for risk and failure, making sure recognition and rewards are consistent, instilling a sense of ownership, reducing bureaucracy, open communication and establishing a clear sense of direction. The results also agree with Kim and Chung (2017) noted that organizational gain on innovation largely depends on correct decision and that innovation success cannot be obtained unless the employees consistently adopt and implement those innovations. Likewise, the results concur with Kapepa and van Vuuren (2019) who assessed the importance of tolerance for failure and risk-taking among insurance firms in hyperinflationary Zimbabwe continuous desire to innovate spurs entrepreneurial innovation and ultimately encourages both profitability and growth of the business entity, if well managed. In the same line, Santoso (2020) analysing the effect of psychological ownership on innovation and growth opportunities in Indonesia showed that there was a significant relationship between innovation, and business growth opportunities.

5.2.5 Mediating effect of competitive strategy on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya

The fifth objective of the study was to estimate the mediating effect of competitive strategy on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya. The model results showed that competitive strategy has partial significant meditation effect on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya. Competitive strategy comprises of all those moves that a firm has and is taking to attract buyers, withstand competitive pressure and improve its market position.

Gaining a competitive strategy means offering a comprehensive formula to make it clear how to compete in a business and how to determine goals and the needed policies to fulfill them. The goal of competitive strategy for a business unit in an industry is to find a position in the industry where the company can best defend itself against industry competitive forces or can influence such forces in its favor. Competitive strategy gives a company an advantage over

its rivals in attracting customers and defending against competitive forces. Competitive strategy consequently aims to establish a profitable and sustainable position against the forces that determine industry competition. The results agree with Dobni (2010) who examined the relationships between an organization's innovation orientation and the types of competitive strategies Canadian organizations pursue and established that competitive strategies influence firm performance. Likewise, Kafchehi, Hasani and Gholami (2016) investigating the relationship between innovation orientation and strategic typology in firms showed that there is a significant relationship between the firm's orientation toward innovation and competitive strategy. Further, Bayraktar, et al. (2017) analyzing the relationships between competitive strategies, innovation, and firm performance showed that competitive mediated the relationship between innovation orientation and organization performance of manufacturing firms. Competitive advantage is achieved through the strategic management of resources, capabilities, and core competences, as well as the firm's responsive-ness to opportunities and threats in the external environment (McGee & Sammut-Bonnici, 2015). According to Bayraktar, et al. (2017) competitive strategies such as cost-leadership and differentiation can mediate between innovations, which, in turn, increase firm performance. Managers implement cost-leadership and differentiation strategies to take part in competitive market conditions. Tutar, Nart and Bingöl (2015) conceptualized competitive strategy as proactive market orientation, proactive entrepreneurial orientation and technology orientation. This study measured competitive strategy as cost-leadership and differentiation strategies.

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5.3 Conclusions

The study concluded that innovation intention had the greatest influence on performance of the suppliers in the telecommunication industry followed by the intention to sustain innovation and innovation infrastructure. It was established that innovation intention has a positive and significant influence on performance of the suppliers in the telecommunication industry. The study concludes that innovation intention influences performance of the suppliers in the telecommunication industry. Constant innovation is essential to compete in rapidly developing and growing markets. Among the innovations, product, services and process innovations in the telecommunication industry are of significant importance.

The study established that innovation infrastructure has positive and significant influence on performance of the suppliers in the telecommunication industry. The study concludes that innovation infrastructure significantly influences the performance of the suppliers in the telecommunication industry. Building a resilient innovation infrastructure, promote inclusive and sustainable growth and fostering organization performance.

Further, the study established that the intention to sustain innovation has positive and significant influence on performance of the suppliers in the telecommunication industry. The study therefore concludes that organization intention to sustain innovation is critical to the improvement of firm products, services and processes required for enhancing the performance of the suppliers in the telecommunication industry.

The model results showed that competitive strategy has partial significant meditation effect on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya. The study therefore concludes that innovation orientation creates a competitive advantage over rivals in the market making the firm operate more efficiently and productively. Competitive strategy comprises of all those moves that a firm has and is taking to attract buyers, withstand competitive pressure and improve its market position.

5.4 Recommendations

It was established that innovation intention influences performance of the suppliers in the telecommunication industry. Innovation intention is the willingness to introduce new ideas, processes, products or procedures to the relevant unit of adoption. The study provides managerial implications to firms and recommends the need for telecommunication suppliers to support product and service innovation through research and development. The management of the supply firms to the telecom industry may need to allocate more resource and manpower for enhanced innovation activities.

Innovation infrastructure significantly influences the performance of the suppliers in the telecommunication industry. Innovation infrastructure plays a key role in introducing and promoting new technologies. There is need for different stakeholders to facilitate cooperation in innovative activities. The key stakeholders include firm management, employees, entrepreneurs, public sector, private sector, government, platform operators and academia. Then, by focusing on these players' interrelated activities, actions and policies that encourage

the use and diffusion of all platforms that facilitate the process of knowledge absorption for the formation of human capital and access to innovation infrastructure.

The intention to sustain innovation influences the performance of the suppliers in the telecommunication industry. The organization intention to sustain innovation is critical to the improvement of firm products, services and processes required for enhancing the performance of the suppliers in the telecommunication industry. There is need for the management of supply firms in the telecommunication industry to seek the commitment of employees and innovators in incorporating new innovations in the organization through reward and recognition for innovative ideas.

Competitive strategy has partial significant meditation effect on the relationship between innovation orientation and organization performance of the suppliers in the telecommunication industry in Kenya. Competitive strategy comprises of all those moves that a firm has and is taking to attract buyers, withstand competitive pressure and improve its market position. There is need for supply firms in the telecommunication industry to pursue on product, service and market innovation strategies with aim of enhancing competitive advantage.

It is recommended that supply firms in the telecommunication industry to focus the improvement of products and services through innovation. The products and services should be specifically tailored to suit market needs. The new product design plays a pivotal role in defining the physical form of the product to satisfy customers' needs.

5.5 Suggestions for further research

Innovation comprises many other elements like process, service and organization innovation. However, due to conceptual scope, the study was limited to innovation intention, innovation infrastructure and intention to sustain innovation. Future studies may focus on the effect of process, service and organization innovation on competitiveness of telecommunication firms. Further studies may also focus on the effect of process, service and organization innovation on competitiveness of firms in other sectors like financial sector.

5.6 Limitations of the Study

Respondents at a public sector are generally suspicious and some may suspect that the study is meant to unearth unethical practices. To circumvent this, the researcher explained the

importance of this study to all respondents well in advance. The study was also being carried out in an abnormal time when the world including Kenya has been hit by the COVID-19 pandemic. As the containment measures such as keeping social distance continue being implemented, it was difficult to have meetings with the respondents hence collecting the data required more favorable methods. The study used Google forms to collect data.

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APPENDICES

APPENDIX 1: INTRODUCTION LETTER

Dear Respondent,

I am student of Strathmore University undertaking a Master's degree in Business Administration. I am conducting a research on the **INFLUENCE OF INNOVATION ORIENTATION ON ORGANIZATIONAL PERFORMANCE OF SUPPLIERS IN THE TELECOMMUNICATION INDUSTRY IN KENYA**. Your organization has been randomly selected for the purposes of data collection in aid of this research. Kindly fill up information contained in this questionnaire. Any information obtained for this purpose will be kept strictly confidential and will only be used for academic purpose.

Your response will be treated with strict confidence and will only be used for the research purposes of this study. Your cooperation will be highly appreciated in this regard.

Yours' faithfully

James Kinyanjui Kimani

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APPENDIX 2: CONSENT LETTER

If you Consent to Participate in the study, please sign below:

I hereby consent to participate in this study. I have been informed of the nature of the study to be carried out. I also understand that my participation in the study is voluntary and I may choose to discontinue my involvement in the study at any stage without any explanation or consequences. I have also been reassured that my personal details and the information will be kept confidential. I confirm that all my concerns about my participation in the study have been adequately addressed by the researcher and the researcher has asked me questions to ascertain my comprehension of the information provided.

…… ……..

Participant Date

I confirm that I have clearly explained to the participant the nature of the study in detail and the participant has decided to participate voluntarily without any coercion or undue pressure.

Researchers Signature……. Date ……

APPENDIX 3: QUESTIONNAIRE

Kindly respond to the following questionnaire that aims to collect data for the research entitled: Influence of Innovation Orientation On Organizational Performance of Suppliers in the Telecommunication Industry in Kenya

Section A: General Information

i) Please indicate your gender
   a) Male ( )
   b) Female ( )

ii) What is your highest level of education?
   a) Primary ( )
   b) Secondary ( )
   c) Diploma ( )
   d) Undergraduate ( )
   e) Postgraduate ( )

iii) How long have you worked in this firm?
   a) Less than 2 years
   b) 2 to 5 years
   c) 6-10 years
   d) 11-15 years
   e) 16-20 years
   f) More than 20 years

Section B: Innovation Intention

Please mark your level of agreement with the following statements regarding innovation intention in your organization using a 1-5 scale where: 1= strongly disagree; 2= disagree; 3= Neutral; 4 = agree; 5= strongly agree

Statement	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Our organization's vision is connected					

to innovation					
Innovation objective have been defined in our organization					
One of our organizations goal is to be innovative					
Leaders in our firm are always communicating about change through innovations					
We are always ready to implement innovations as they come					
We are always willing to introduce new ideas					
Our team is always willing to introduce new products					
We have open doors for new processes in our company					
We are always ready for new procedures for doing things in our company					
Any other (please specify)					

Section C: Innovation Infrastructure

Please mark your level of agreement with the following statements regarding innovation infrastructure in your organization using a 1-5 scale where:

1= strongly disagree; 2= disagree; 3= Neutral; 4 = agree; 5= strongly agree

Twenty innovation enablers were identified which included; awareness, capabilities, climate, collaboration, culture, dedication, economy, education, empowerment, entrepreneurship, human resource, incentives, knowledge, knowledge management, management, mindset, need, process, strategy and time.

Statement	**Strongly**	**Disagree**	**Neutral**	**Agree**	**Strongly**

	Disagree				**Agree**
We usually put effort to make awareness regarding innovation in our company					
We regularly harness our innovation capabilities to fit the present sills					
We usually bring together people with different ideas views and experiences in implementing innovation					
Our leaders create the conditions for innovation by amplifying its enablers					
We achieve effective innovation implementation by dampening resistance to change					
The workplace design in our firm help optimize the use of innovation					
Any other (please specify)					

Section D: Intention to sustain innovation

Please mark your level of agreement with the following statements regarding intention to sustain innovation in your organization using a 1-5 scale where:

1= strongly disagree; 2= disagree; 3= Neutral; 4 = agree; 5= strongly agree

Statement	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
In our organization we tolerate failure					
We encourage risk taking in our organization					

Recognition and rewards are used to encourage innovation in our firm					
In our organization employees are open to propose innovations adoption					
There is clarity in our organization regarding innovation adoption					
In our firm bureaucracy is discouraged and decision making inclusive					
Any other (Please specify)					

Section E: Competitive Strategy

Please mark your level of agreement with the following statements regarding competitive strategy practices in your organization using a 1-5 scale where:

1= strongly disagree; 2= disagree; 3= Neutral; 4 = agree; 5= strongly agree

Statement	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
In our firm we offer products at the lowest price in the market in order to be competitive					
We usually target a specific niche customers who are willing to pay for the uniqueness in our products					
Our market highly values the products we offer that are unique compared to our competitors					
We usually make and supply					

products that are of very high durability and that perform to maximum efficiency and uniqueness					
We provide our customers with low cost products that are similar to product by our competitors who sell at high prices					
We offer products customized to each niche customers tastes and requirements					
Any other (Please specify)					

Section F: Organizational Performance

Please mark your level of agreement with the following statements regarding organizational performance in your organization using a 1-5 scale where:

1= strongly disagree; 2= disagree; 3= Neutral; 4 = agree; 5= strongly agree

Statement	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
In our organization there is excellence of interrelated tasks procedures and steps in achieving the organizations mission					
Our product quality has been increasing consistently					
We have attained a high level of efficiency in the management of raw materials components and finished products					

We have achieved effectiveness in our business systems such as workplace communication, employees empowerment and participation in our organization					
We have achieved a very high level of effectiveness in the way we operate					
Our firm's productivity has consistently been increasing with a high margin					
Any other (please specify)					

Any other comments……

……

…….

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APPENDIX 4: SAMPLING FRAME

1	ABMO LINKS LIMITED	345	MAYFOX DIGITAL MEDIA (MDM) LIMITED
2	ABRACHA QUICK TELEPHONE SERVICES	346	MEDIANT INTERNATIONAL LIMITED
3	ACACIA SATLINK LIMITED	347	MEGAPLUS AFRICA LIMITED
4	ACTIVE ELECTRONS LIMITED	348	MEGATECH SOLUTIONS LIMITED
5	ADRIAN KENYA LIMITED	349	MEGAWATT POWER & TELECOMMUNICATION COMPANY LTD
6	AFRICOM AND DATA SOLUTIONS LIMITED	350	MER KENYA INFRASTRUCTURES LIMITED
7	AFRICOM ENGINEERING SERVICES LIMITED	351	METSEC CABLES LIMITED
8	AFROEGYPT ENGINEERING COMPANY LIMITED	352	MFI TECHNOLOGY SOLUTIONS LIMITED
9	AGC NETWORKS AND CYBER SOLUTIONS LIMITED	353	MICHA ENGINEERING CONSTRUCTION LIMITED
10	AGILE BUSINESS TECHNOLOGIES LIMITED	354	MICROLAN SERVICES LIMITED
11	AGMOND INTERNATIONAL	355	MICROLINE SYSTEMS LIMITED
12	AGROSMART TECHNOLOGIES LIMITED	356	MICRONICS TECHNOLOGIES LIMITED
13	AIRSPAN ENTERPRISES	357	MICROSCAN TECHNOLOGIES LIMITED
14	ALERT TECHNOLOGY LIMITED	358	MILELE LIMITED

15	ALFA TECH CONTRACTORS LIMITED	359	MILIKI DEVELOPMENT COMPANY LIMITED
16	ALMIRIA LTD	360	MILLENIA LIMITED
17	ALTECC NETWORKS LIMITED	361	MILLENIUM SOLUTIONS EAST AFRICA LIMITED
18	ALTECH AFRICA LIMITED	362	MODERN INFORMATION AND COMMUNICATIONS TECHNOLOGY CONSULTANTS
19	ALTERNATIVE COMMUNICATIONS LIMITED	363	MODERN MOBILITY LIMITED
20	AMACEC KENYA LIMITED	364	MOSKO TECHNOLOGIES LIMITED
21	AMFRATECH LIMITED	365	MOTECH ENTERPRISES LIMITED
22	AMIRAN COMMUNICATIONS LIMITED	366	MOVING-UP INVESTMENTS
23	ANGELS NINE ONE ONE VENTURES LIMITED	367	MUGA ELECTRICAL CONTRACTORS LIMITED
24	ANQAD SYSTEMS LIMITED	368	MUHEAD DIGITAL CONSTRUCTION LIMITED
25	ANTS NETWORKS LIMITED	369	MUI WA MUI LIMITED
26	AP SOLUTIONS KENYA LIMITED	370	MULTI CONSTRUCTION LIMITED
27	APPLE WORKS LIMITED	371	MULTIPLE TECHNOLOGIES LTD
28	APPROVAL SERVICES KENYA LIMITED	372	MUSTARD GROUP LIMITED
29	AQUASCOPE SERVICES	373	NAJRAM FRONTIERS LIMITED

	LIMITED		
30	AREVA AFRICA LIMITED	374	NANOSOFT TECHNOLOGIES LIMITED
31	ASCOM NETWORKS LIMITED	375	NAS INTERNATIONAL HOLDINGS LIMITED
32	ASPIRE KENYA LIMITED	376	NASE COMMUNICATIONS COMPANY LIMITED
33	ASSIS CONSTRUCTION COMPANY LIMITED	377	NASHCOM SOLUTIONS LIMITED
34	ATLANCIS TECHNOLOGIES LIMITED	378	NATEC SYSTEMS LIMITED
35	ATOMIKA SUPPLIES	379	NAVCOM LIMITED
36	ATTAIN ENTERPRISES LIMITED	380	NETCUBE TECHNOLOGIES
37	AUA INDUSTRIA LIMITED	381	NETIS EAST AFRICA LIMITED
38	AUDIO VISUAL CONTROL SYSTEMS LIMITED	382	NETLINE TECHNOLOGIES LIMITED
39	AUTOCOMMS LIMITED	383	NETPLATOON VENTURES LIMITED
40	AVATAR ROHRE INTERNATIONAL LIMITED	384	NETPLUS COMMUNICATIONS LIMITED
41	AVERY (EAST AFRICA) LIMITED	385	NEW BRIDGE NETWORKS LIMITED
42	AVIAT NETWORKS (KENYA) LIMITED	386	NEXGEN TECHNOLOGIES LIMITED
43	AVIVA TECHNOLOGIES LIMITED	387	NEXT DECADE COMMUNICATION SYSTEMS
44	AVTECH SYSTEMS LIMITED	388	NEXT TECHNOLOGIES LIMITED

45	AWG SUPPLIES LIMITED	389	NEXTECH NETWORK LIMITED
46	AZZUR INVESTMENTS	390	NEXTTEC SOLUTIONS LTD
47	BAINNE TECHNOLOGIES LIMITED	391	NIMBA TECHNOLOGIES LIMITED
48	BALDWIN ENTERPRISES LIMITED	392	NODAL SYSTEMS LIMITED
49	BARAN TELECOM NETWORKS KENYA LIMITED	393	NOKIA SOLUTIONS AND NETWORK BRANCH OPERATIONS OY
50	BARLIE SERVICES	394	NORTECH SERVICES LIMITED
51	BARNET ENGINEERING LIMITED	395	NOVEL TECHNOLOGIES EAST AFRICA LIMITED
52	BAYCOMS AFRICA LIMITED	396	NUBLY TECHNOLOGIES LIMITED
53	BCK KENYA LIMITED	397	NYANA ENGINEERING COMPANY LIMITED
54	BEEDS TECHNOLOGIES LIMITED	398	OAKNET BUSINESS LIMITED
55	BEELAB MEDIA LIMITED	399	OASIS TECHNICAL AND CONSULTING LIMITED
56	BELL ELECTRICALS LIMITED	400	OCEANIC CONSTRUCTION COMPANY LIMITED
57	BELL INTERNATIONAL KENYA LIMITED	401	ODD-MAC ENGINEERING LIMITED
58	BENICIA INTERNATIONAL LIMITED	402	OLIVE HILLS TECHNOLOGIES LIMITED
59	BENRIS INVESTMENTS LIMITED	403	OMBRA INVESTMENTS COMPANY LIMITED

60	BENS ELECTRONICS SERVICES LIMITED	404	ONAIR MEDIA COMMUNICATIONS
61	BIKINGA ENTERPRISES LIMITED	405	ONELIFE CONSULTANTS LIMITED
62	BIOMETRICS TECHNOLOGY LIMITED	406	ONTECH COMMUNICATIONS (K) LIMITED
63	BISON TECHNOLOGIES (EA) COMPANY LIMITED	407	OPTACE LIMITED
64	BIT COMMUNICATIONS LIMITED	408	OPTIC TECHNOLOGIES KENYA LIMITED
65	BITLINK COMPANY LIMITED	409	OPTICOM (K) LIMITED
66	BLESSNET COMMUNICATIONS LIMITED	410	OPTIFAST VENTURES LIMITED
67	BLITS PROOF GROUP LIMITED	411	OPTIMAX GROUP LIMITED
68	BLUEBERRY COMMUNICATION LIMITED	412	OPTPLAN AFRICA LIMITED
69	BOB MORGAN SERVICES LIMITED	413	OPULENCE BUD LIMITED
70	BRCK LIMITED	414	ORACO SOLUTIONS LIMITED
71	BRENT NETWORKS LIMITED	415	OUTSOURCE TECHNIQUE LIMITED
72	BRINKTECH ENTERPRISES LIMITED	416	OVERSEAS TECHNICAL SUPPORT SERVICES LIMITED
73	BRITE AFRIKA HOLDINGS LIMITED	417	PARJOY SYSTEMS LIMITED
74	BROADBAND	418	PARMUK TECHNOLOGIES LIMITED

	COMMUNICATION NETWORKS LIMITED		
75	BROADCAST GURUS	419	PAVICON (K) LIMITED
76	BROADCAST SOLUTIONS INTERNATIONAL LIMITED	420	PAYTECH LIMITED
77	BRULTO TRADING COMPANY LIMITED	421	PECHANT TELEC LIMITED
78	BUKA ELECTRONICS	422	PENTACOM CONSULTANCY LIMITED
79	BURHANI ENGINEERS LIMITED	423	PERGAMON LIMITED
80	BYCE BROADCAST & TECHNOLOGIES (K) LIMITED	424	PHILAFE ENGINEERING LIMITED
81	CABLES AND ACCESSORIES LIMITED	425	PHYBRIS INVESTMENT LIMITED
82	CALMAPE ENGINEERING LIMITED	426	PHYSCOM ELECTRONIC SERVICES
83	CAMUSAT KENYA LIMITED	427	PIC TELECOMMS LIMITED
84	CANDOR LIMITED	428	PILLAR AUDIO VISUAL SERVICES LIMITED
85	CAPTION DIGITAL TECHNOLOGIES LIMITED	429	PINAKIM AFRICA LIMITED
86	CARLSON TECHNOLOGIES LIMITED	430	PINKERTONS KENYA LIMITED
87	CARREL TECHNOLOGIES LIMITED	431	PJR SERVICES LIMITED
88	CARYNET LIMITED	432	PLAY EQUIPMENT INDUSTRIES LIMITED
89	CASAMOKO CONTRACTORS	433	PLUTON ICT LIMITED

	LIMITED		
90	CBS CABLING LTD	434	POWER GROUP TECHNOLOGIES LIMITED
91	CENTRAL ENGINEERING SERVICES COMPANY LIMITED	435	POWERGEN TECHNOLOGIES LIMITED
92	CENTRIC LIMITED	436	POWERSCAPE LIMITED
93	CENTRIC TECHNOLOGY SOLUTIONS LIMITED	437	POWERTRONIC AUTOMATION & COMMUNICATION TECHNOLOGY LIMITED
94	CENTURION CABLE NETWORKS LIMITED	438	POWERWARE SYSTEMS LIMITED
95	CHAFRA COMMUNICATION SERVICES	439	PRESTIGE MANAGEMENT SOLUTIONS LIMITED
96	CHATICOM LIMITED	440	PRIMALINKS NETWORKS LIMITED
97	CHENLY GENERAL AGENCIES LIMITED	441	PRIME TELECOMS LIMITED
98	CHINA TELCOM (KENYA) LIMITED	442	PROCOM KENYA LIMITED
99	CHIREMA TELECOMMUNICATION (K) LIMITED	443	PROFESSIONAL DIGITAL SYSTEMS LIMITED
100	CIRCUIT BUSINESS SYSTEMS LIMITED	444	PROGRESSIVE FIBRE LIMITED
101	CITRUS TECHNOLOGIES COMPANY LIMITED	445	PROSCENE SYSTEMS LIMITED
102	CITY TELECOMMUNICATION CENTRE LIMITED	446	PUNJANI ELECTRICALS AND INDUSTRIAL HARDWARE LIMITED

103	CLASSIC POINT TECHNOLOGIES LIMITED	447	PUTSIZ (K) LIMIED
104	CLICK N TELL LIMITED	448	QASWAR TECH LIMITED
105	COBRA SECURITY COMPANY LIMITED	449	QUANTUMSEC TECHNOLOGIES LIMITED
106	COMDYNAMICS LIMITED	450	QUAVATEL LIMITED
107	COMMUNICATIONS RELAY SERVICES LIMITED	451	QUEENSWAY CONSTRUCTION & GENERAL SUPPLIES LIMITED
108	COMNET ENTERPRISES LIMITED	452	QUEST GROUP LIMITED
109	COMPEDGE SOLUTIONS LIMITED	453	QUICKSMART SOLUTIONS LIMITED
110	COMPTON LIMITED	454	QUIXTAL NETWORKS LIMITED
111	COMPUTECH LIMITED	455	RADDY FIBER SOLUTION LIMITED
112	COMPUTER REVOLUTION AFRICA LIMITED	456	RADIANT TECHNICAL SERVICES COMPANY LIMITED
113	COMPUTERWAYS LIMITED	457	RADIO FREQUENCY SYSTEMS (EA) LIMITED
114	CONANN COMMUNICATIONS	458	RAKMAN ENGINEERING LIMITED
115	CONTEMPORARY ELECTRICAL ENTREPRISES LIMITED	459	RAMSA LIMITED
116	COOLLINK SERVICE COMPANY	460	RAYEL ENTEPRISES
117	CORAN KENYA LIMITED	461	REAL TIME ADVANCED SYSTEMS LIMITED

118	CORETECH LIMITED	462	REAL TIME ADVISORY LIMITED
119	CORRINGTON COMMUNICATIONS LIMITED	463	REAL WORLD ELECTRONICS SOLUTIONS LIMITED
120	CROVIK TECHNOLOGIES COMPANY LIMITED	464	REFHUB LIMITED
121	CRYPTUM LIMITED	465	RESJOS ENTERPRISES LIMITED
122	CRYSTAL TECHNOLOGIES LIMITED	466	REX NETWORKS LIMITED
123	CRYSTALMARK SYSTEMS LIMITED	467	RINA SYSTEMS LIMITED
124	CUBIC BUSINESS SOLUTIONS LIMITED	468	RIVER ISLAND ELECTRONICS
125	CYNERGY TECHNOLOGIES LIMITED	469	ROBIN & ROBINS CONSTRUCTION LIMITED
126	DACE SOLUTIONS LIMITED	470	ROCKERS LIMITED
127	DALAB CONSTRUCTION LIMITED	471	ROLF FORTRESS COMMUNICATIONS
128	DATA WISE TECHNOLOGIES (E.A) LIMITED	472	ROMAG COMPANY LIMITED
129	DATACORE LIMITED	473	RONESS ENTERPRISES LIMITED
130	DATAPORT SOLUTIONS LIMITED	474	ROSAMU GENERAL SUPPLIES LIMITED
131	DATAWAYS TECHNOLOGIES LIMITED	475	ROTTAL SOLUTIONS COMPANY LIMITED
132	DECHTECH SOLUTIONS LTD	476	ROUTEWAYS INNOVATIVE

			TECHNOLOGIES
133	DECK CONSTRUCTIONS LIMITED	477	ROUTEWAYS INNOVATIVE TECHNOLOGIES LIMITED
134	DECKO LIMITED	478	ROVEL GROUP (K) LIMITED
135	DELTACOM (KENYA)	479	ROYAL AUTOMATION SYSTEMS LIMITED
136	DEMI SYSTEMS (KENYA) LIMITED	480	SABIO NETWORKS LIMITED
137	DEMMY LIMITED	481	SAFE MODE LIMITED
138	DENCA CONTRACTORS LIMITED	482	SAFES AND OFFICE SECURITY SYSTEMS LIMITED
139	DENGRIV LIMITED	483	SAGEMCOM KENYA LIMITED
140	DESTINEE ICT SOLUTIONS CO. LIMITED	484	SAI OFFICE SUPPLIES LIMITED
141	DEVART LIMITED	485	SALIENT CONCEPTS LIMITED
142	DIADEM LIMITED	486	SALTO LIMITED
143	DIAL A GEEK	487	SAMAK BUSINESS SYSTEMS LIMITED
144	DIALESCAS AFRICA LIMITED	488	SAMMNET TECHNOLOGIES LIMITED
145	DIGITAL RADIO LIMITED	489	SAN SYSTEMS TECHNOLOGIES LIMITED
146	DIGNITY TRADERS LIMITED	490	SANE SOLUTIONS LIMITED
147	DIMENSION DATA SOLUTIONS LIMITED	491	SAPASHE GROUP LIMITED
148	DIPLOMATIC SYSTEMS LIMITED	492	SATELLITE OPTIONS AND SOLUTIONS LIMITED

149	DIRECTCORE TECHNOLOGIES LIMITED	493	SAURUS NETWORKS LIMITED
150	DITCO ENGINEERING AND CONSTRUCTION COMPANY LIMITED	494	SCHELINE LOGISTICS LIMITED
151	DIVA ENGINEERING LIMITED	495	SEAB LIMITED
152	DMG HOLDINGS LIMITED	496	SEA-TECH LIMITED
153	DMR SOLUTIONS LIMITED	497	SECULOGIX (E.A) LIMITED
154	DORSET & HAXBY LIMITED	498	SECURE DIGITAL LIMITED
155	DOUBLE-NET TECHNOLOGIES LIMITED	499	SECURE INFO LIMITED
156	DRPTT INTERNATIONAL LIMITED	500	SECURIGHT SYSTEMS AFRICA LIMITED
157	DUNECOM GROUP LIMITED	501	SECURITY SYSTEMS INTERNATIONAL LIMITED
158	DUNTECH TECHNOWLOGY LIMITED	502	SECUWISE SYSTEM LIMITED
159	DYNAMICS-ERA SOLUTIONS	503	SEKOMM SERVICES LIMITED
160	DYNAMO SOLUTIONS LIMITED	504	SERVTEL COMMUNICATIONS LIMITED
161	EAGLE POWER SERVICES LIMITED	505	SESS SOLUTIONS LIMITED
162	EA RLINE BLUE LIMITED	506	SHARVIC EAST AFRICA LIMITED
163	EAST AFRICAN DATA HANDLERS LIMITED	507	SHONITEL LIMITED

164	EAST FIBRE NETWORKS LIMITED	508	SHUJANA LIMITED
165	EASTRA SOLUTIONS LIMITED	509	SHURETECH LIMITED
166	ECHONOVE COMMUNICATION LIMITED	510	SIEDEL TECHNOLOGIES
167	EDGE SYSTEMS LIMITED	511	SIGNAL WORLD TECHNOLOGIES LIMITED
168	EDGETECH DIGTAL SOLUTIONS LIMITED	512	SIG ZAM SMART TECH LIMITED
169	EGYPRO EAST AFRICA LIMITED	513	SILCHIP INTERNATIONAL LIMITED
170	EKETIA ELECTRICALS LIMITED	514	SILVERRAY SERVICES LIMITED
171	ELDAMA TECHNOLOGIES LIMITED	515	SKYFLIER INVESTMENTS
172	ELECTRA RECYCLERS AND SYSTEMS LIMITED	516	SKYPOWER LIMITED
173	ELECTRINET SOLUTIONS LIMITED	517	SMARTSTREAM TECHNOLOGIES LIMITED
174	ELECTRO TECHNOLOGIES LIMITED	518	SMD MARINE KENYA LIMITED
175	ELECTRODATA WAYS LIMITED	519	SOIN SILVER TECHNOLOGIES LIMITED
176	ELECTROSERVE LIMITED	520	SOLCARO VENTURES LIMITED
177	ELECTSEC INTEGRATED SYSTEMS LIMITED	521	SOLVIC SOLUTIONS LIMITED

178	ELITE CONSORTIUM ASSOCIATES LIMITED	522	SOMKEN TECH LIMITED
179	ENLINEA TECHNOLOGIES COMPANY LIMITED	523	SOSUR TECHNOLIGIES LIMITED
180	ENCAPSULATED EAST AFRICA LIMITED	524	SOULCO KENYA LIMITED
181	ERANET LIMITED	525	SPACE ENGINEERING LIMITED
182	ETNS PROJECT SOLUTIONS KENYA LIMITED	526	SPAR COMMUNICATIONS
183	EUNATEL KENYA LIMITED	527	SPARTEC CONSORTIUM- AFRICA (SCA) LIMITED
184	EURONET KENYA LIMITED	528	SPECTRA LINK SOLUTIONS LIMITED
185	EVALIX ENTERPRISES LIMITED	529	SPECTRUM ENGINEERING LIMITED
186	EX-LINE SERVICES LIMITED	530	SPIRIT SYSTEMS LIMITED
187	EXPRESS AUTOMATION LIMITED	531	SPRING-LINE AGENCIES LIMITED
188	EXTRA DIMENSIONS COMPANY LIMITED	532	STANSHA LIMITED
189	EXTREME WIRELESS KENYA COMPANY LIMITED	533	STARHUB ENGINEERING SERVICES LIMITED
190	FALSAN (KENYA) LIMITED	534	STARMAX ELECTRICALS LIMITED
191	FASTCOM NETWORKS LIMITED	535	STARSOLE TECHNICS LIMITED
192	FASTPOINT	536	STEADFAST GROUP LIMITED

	COMMUNICATIONS		
193	FESTONE HOLDINGS LIMITED	537	STEALTH EAST AFRICA LIMITED
194	FGEE TECHNOLOGY LIMITED	538	STEMINAK PREMIER TECHNOLOGIES LIMITED
195	FIBERCOM KENYA LIMITED	539	STESKOM TECHNOLOGIES LIMITED
196	FIBERHOME INTERNATIONAL TECHNOLOGIES (KENYA) CO. LIMITED	540	STREAMLAN SOLUTIONS (E.A) LIMITED
197	FIBERTECH NETWORK LIMITED	541	SUMATRAN TECHNOLOGIES SOLUTIONS COMPANY LIMITED
198	FIBRECOM SOLUTIONS LIMITED	542	SUNRAYS DATA SYSTEMS LIMITED
199	FIBRE-TECH SYSTEMS LIMITED	543	SUPER SERVE TECHNOLOGIES LIMITED
200	FIDELITY TELECOMMUNICATIONS SERVICE LIMITED	544	SUPERCOM TECHNOLOGY SYSTEMS
201	FINATE SECURITY GROUP LIMITED	545	SUPPORT365 LIMITED
202	FINCORP TECHNOLOGIES LIMITED	546	SWIFT TECHNOLOGIES LIMITED
203	FIREFOX (KENYA) LIMITED	547	SYBEX TECHNOLOGY LIMITED
204	FIRESIDE COMMUNICATIONS LIMITED	548	SYMPHONY TECHNOLOGIES LIMITED
205	FIRMBRIDGE NETWORKS LIMITED	549	SYNCHRONISED TECHNOLOGIES EAST AFRICA LIMITED

206	FIRST BASICS TECHNOLOGIES LIMITED	550	SYNCTEL COMPANY LIMITED
207	FIRST SOURCE LIMITED	551	SYNERGIES COMPANY LIMITED
208	FLOTTWEG ELECTRICAL SERVICES LIMITED	552	TALEK AND LIGHT COMPANY LIMITED
209	FLYWHEEL TELECOMMS LIMITED	553	TANA SOLUTIONS LIMITED
210	FOCAL POINT ENTERPRISES	554	TARANTULA TRADING CO. LIMITED
211	FORTEC MEDIX SUPPLIES LIMITED	555	TARITA ELECTRIC COMPANY LIMITED
212	FREIGHT IN TIME LIMITED	556	TECHBIZ LIMITED
213	FUSION COMMUNICATION SYSTEMS LIMITED	557	TECHNICAL SUPPLIES AND SERVICES (K) LIMITED
214	FUTURETECH COMPUTER SOLUTIONS LIMITED	558	TECHNOLOGY ASSOCIATES EAST AFRICA LIMITED
215	GALLAGHER POWER FENCE SYSTEMS LIMITED	559	TECHNOLOGY TWENTY ONE LIMITED
216	GATE MAINTENANCE & ACCESS CONTROL EQUIPMENT LIMITED	560	TECHNOVOZ LIMITED
217	GAUSSIAN SOLUTIONS LIMITED	561	TECHSOURCE POINT LIMITED
218	GEODEV (K) LIMITED	562	TECH-WORLD AFRICA LIMITED
219	GEOID TECHNOLOGIES LIMITED	563	TEKOA TECHNOLOGIES LIMITED

220	GEOLEA ENTERPRISES LIMITED	564	TELCO LIMITED
221	GEONET TECHNOLOGIES LIMITED	565	TELCOPTICS SOLUTIONS LIMITED
222	GEOPATH TECHNOLOGIES LIMITED	566	TELECOMMUNICATIONS TODAY LIMITED
223	GEOPTICS COMMUNICATION SYSTEM LIMITED	567	TELECOVER COMMUNICATION CONSULTANTS AND AGENCIES LIMITED
224	GIBMEC LIMITED	568	TELEDATA TECHNOLOGIES LIMITED
225	GLOBAL ACCESS NETWORKS LIMITED	569	TELEVAST TECHNOLOGY LIMITED
226	GLOBALMARK TECHNOLOGIES LIMITED	570	TELITE COMMUNICATIONS LIMITED
227	GLOBETEK SYSTEMS KENYA LIMITED	571	TELLATECH SOLUTIONS LIMITED
228	GLOSEC SOLUTIONS LIMITED	572	TEMUEL ENGINEERING SERVICE LIMITED
229	GLOSEC SYSTEMS LIMITED	573	TEQSOL ENGINEERING LIMITED
230	GOABOAS ELECTROCOMS COMPANY (GEC) LIMITED	574	TERA TECHNOLOGIES LIMITED
231	GOOD RICH CONSTRUCTION LIMITED	575	TERIKSSON LIMITED
232	GORACEIT TECHNOLOGIES LIMITED	576	TESLA SERVICES LIMITED
233	GRANSOL AFRICA LIMITED	577	TEYBRIDGE LIMITED
234	GRAVITY ELECTRICALS	578	THE COPY CAT LIMITED

	LIMITED		
235	GREEN DOT HOLDING COMPANY LIMITED	579	THE WILLIAMS ENTERPRISES
236	GREYSON GLOBAL SUPPLIES	580	THE YELLOW FIBER AFRICA LIMITED
237	GUZZER TECHNOLOGIES LIMITED	581	THERMO EXPERT CONSTRUCTION COMPANY LIMITED
238	HARDSOFT SYSTEMS LIMITED	582	TIBYAAN ENTERPRISE LIMITED
239	HARNSSEN GROUP LIMITED	583	TILIL TECHNOLOGIES LIMITED
240	HELEQ SERVICES LIMITED	584	TIMSIM NETWORK LIMITED
241	HEXCRAFT LIMITED	585	TINET TELEVENTURES LIMITED
242	HIGHWAY AUDIO VISUAL SOLUTIONS LIMITED	586	TIVELLA TECHNOLOGIES LIMITED
243	HIRANI TELECOMMUNICATION LIMITED	587	TOP CHOICE SURVEILLANCE LIMITED
244	HOMELAND TECHNOLOGIES LIMITED	588	TRACKERS OF AFRICA
245	HOPEN ENTERPRISES LIMITED	589	TRADE MAGNATE LIMITED
246	HORIZON & YOUNG LIMITED	590	TRANS-BUSINESS MACHINES LIMITED
247	HOSPITALITY SYSTEMS CONSULANTS LIMITED	591	TRANSCOM TECHNOLOGIES LIMITED
248	HUADA NETWORK COMPANY LIMITED	592	TRENCHLESS TECHNOLOGIES KENYA LIMITED
249	HUAWEI TECHNOLOGIES (KENYA) COMPANY LIMITED	593	TRENCHMAX SOLUTIONS LIMITED

250	HUDACO TRADING KENYA LIMITED	594	TRIPAC KENYA LIMITED
251	I ENGINEERING KENYA LIMITED	595	TRIPPLE K SMART TECHNOLOGIES LIMITED
252	IBRAHIM DONALD CONSULTANTS LIMITED	596	TROFIX SYSTEMS
253	ICEAND CUBES SOLUTIONS	597	TROPICAL TECHNOLOGY LIMITED
254	ICON TELESEC SERVICES LIMITED	598	TUDDAH COMMUNICATIONS LIMITED
255	ICONET SOLUTIONS LIMITED	599	TUKSTECH ENGINEERING LIMITED
256	I ENGINEERING KENYA LIMITED	600	TUNNELS TECHNOLOGIES LIMITED
257	ILLIYUN INVESTMENT LIMITED	601	TUNYA SYSTEMS LIMITED
258	IMPRESSIONS ADVERTISING LIMITED	602	TURBI ENERGY & LOGISTICS LIMITED
259	INFINITY FIBRE LIMITED	603	TURQUIOSE SOLUTIONS LIMITED
260	INFINITY GS LIMITED	604	UBORA SYSTEMS AND SOLUTIONS LIMITED
261	INFORMED SYSTEMS LIMITED	605	ULTRA POWER SYSTEMS LIMITED
262	INFORPARTS TECHNOLOGIES LIMITED	606	UNICOM LIMITED
263	INFRAENERGY SERVICES LIMITED	607	UNICORE LIMITED
264	IN FRASOLVE LIMITED	608	UNIDATA SYSTEMS LIMITED

265	INOVET SYSTEMS LIMITED	609	UNITEL SERVICES LIMITED
266	INTEGRATED FIRE AND SAFETY SOLUTIONS LIMITED	610	VAITEX TECHNOLOGIES LIMITED
267	INTEGRATED FIRE AND SECURITY SOLUTIONS LIMITED	611	VALLEYPINE HOLDINGS LIMITED
268	INTEGRATED SUPPLIES AND CONSULTANCY LIMITED	612	VALUE CONNECTION SERVICES LIMITED
269	INTELVISION TECHNOLOGIES LIMITED	613	VANQO ROADS AND ENGINEERING LIMITED
270	INTERGRALLE SERVICES LIMITED	614	VAYACOM LIMITED
271	IN TRANET COMMUNICATION SOLUTIONS LIMITED	615	VICTOROCK KENYA LIMITED
272	IPRIVER LIMITED	616	VISIBILITY TECHNOLOGY SERVICES LIMITED
273	ISOLUTIONS ASSOCIATES LIMITED	617	VOACOM NETWORKS LIMITED
274	IZMIR ENTERPRISES LIMITED	618	WAINEER CONSTRUCTION COMPANY LIMITED
275	IZZY GO-DOWNS LIMITED	619	WALLEX AGENCIES
276	JACKNET COMMUNICATIONS LIMITED	620	WASP SYSTEMS (E.A) LIMITED
277	JACREY COMPANY LIMITED	621	WATFORD GLOBAL SERVICES
278	JAGUAR COMMUNICATIONS	622	WEB ENGINEERING LIMITED

279	JANCOM KENYA LIMITED	623	WELLINGTON AFRICA LIMITED
280	JASLEX LIMITED	624	WESNET TECHNOLOGY LIMITED
281	JEKIM TECHNOLOGIES LIMITED	625	WESTWIND NETWORKS LIMITED
282	JENETWORKS VENTURES LIMITED	626	WHITESPACE TECHNOLOGIES LIMITED
283	JERRISON ELECTRICAL AGENCIES	627	WIDEBYTES SOLUTIONS LIMITED
284	JEVISHAH COMPANY LIMITED	628	WILKEN TELECOMMUNICATIONS LIMITED
285	JIGSYS TECHNOLOGIES LIMITED	629	WINGS ENTERPRISE LIMITED
286	JILK CONSTRUCTION COMPANY LIMITED	630	WINSOL COMPANY LIMITED
287	JIRANI LINK ENTERPRISES	631	WODEX TECHNOLOGIES KENYA LIMITED
288	JNNETWOTKS LIMITED	632	WOOF ENTERPRISES LIMITED
289	JOWORLD AGENCIES LIMITED	633	WORLDTECH COMPUTERS LIMITED
290	JOGNET ENGINEERING LIMITED	634	XPLINKS CONSULT LIMITED
291	JOKIBA ENTERPRISE LIMITED	635	XTRANET COMMUNICATIONS LIMITED
292	JOPLINK HOLDINGS LIMITED	636	X-TREME ELECTRONICS LIMITED
293	JOY LINK CONTRACTORS LIMITED	637	YABRA TECHNOLOGIES LTD
294	JUNIPER INTAKES LIMITED	638	ZAMS GROUP LIMITED
295	KARLEK HOLDINGS LIMITED	639	ZEALOUS ELECTRICAL ENGINEERING

			LIMITED
296	KARUNDU ELECTRICS	640	ZENIC VENTURES LIMITED
297	KEEDCO LTD	641	ZENITH OFFICE EXPEDITION SOLUTION (K) LIMITED
298	KEENSELL VENTURES LIMITED	642	ZODIAC LOGISTICS LIMITED
299	KEITH INTERIORS (K) LIMITED	643	ZTE (KENYA) LIMITED
300	KEMI ENGINEERING SERVICES LIMITED	644	AKS EAST AFRICA LIMITED
301	KENSUN ENTERPRISES	645	ALFA SOLUTIONS LIMITED
302	KENYA AIRPORT PARKING SERVICES LIMITED	646	AUDIO VISUAL ENGINEERING KENYA LIMITED
303	KE NYA BUREAU OF INVESTIGATIONS AND SECURITY SERVICES LIMITED	647	AVUITY LIMITED
304	KEYNOTE SYSTEMS LIMITED	648	BIRUS COMMUNICATION SERVICES
305	KIMM TECHNOECONOMICS LIMITED	649	BRIXWELL SOLUTIONS LIMITED
306	KINDE ENGINEERING WORKS LIMITED	650	CALIKEN NETWORKS (E.A) LIMITED
307	KINGKESH COMPANY LIMITED	651	CLEMSON AGENCIES LIMITED
308	KIOGA (K) LIMITED	652	COMPUSYS OFFICE SUPPLIES LIMITED
309	KIRLIAN VENTURES LTD	653	CONTRALINKS SOLUTIONS AND SERVICES
310	KIYAN GROUP LIMITED	654	DETRIX COMMUNICATION LIMITED

311	KOBE HOLDINGS LIMITED	655	EASTLINK LIMITED
312	KOMBETE ENTERPRISES LIMITED	656	EUROCOM SYSTEMS LIMITED
313	KONARK ELECTRICALS LIMITED	657	EXTREME DLITE SOLUTIONS LIMITED
314	KONNEXION SYSTEM LIMITED	658	GLOBALSPEC BUSINESS SOLUTIONS LIMITED
315	KONTRACT COMPANY LTD	659	HYPERCLOUD TECHNOLOGIES LIMITED
316	KONVERGENZ NETWORK SOLUTIONS LIMITED	660	INSPIRA AFRICA LIMITED
317	KOZI CONNECT LIMITED	661	INTERGAUGE IT SOLUTIONS LIMITED
318	LAPRECIOSA LIMITED	662	INTERMASS TECHNOLOGIES E.A LIMITED
319	LAJO ENGINEERING WORKS LIMITED	663	JOMYTEL TECHNOLOGIES LIMITED
320	LANTECH (AFRICA) LIMITED	664	LEMANTIS LIMITED
321	LAQUILA ENTERPRISES LIMITED	665	MANYOTA LIMITED
322	LAUSER TECHNOLOGIES LIMITED	666	MARSHK INVESTMENTS
323	LEADCOM INTEGRATED SOLUTIONS LIMITED	667	MAVERICK DIGITAL LIMITED
324	LE-HIVE LIMITED	668	MEHTA ELECTRICALS LIMITED
325	LENATECH (K) LIMITED	669	MICRONET POWER SYSTEMS LIMITED
326	LEXCOM ENGINEERING	670	NETWARE SYSTEMS LIMITED

	LIMITED		
327	LIFTING EQUIPMENT COMPANY LIMITED	671	NEW EDGE SOLUTIONS LIMITED
328	LINKNET SYSTEMS LIMITED	672	OIL AND LUB EAST AFRICA LIMITED
329	LINKSPACE TECHNOLOGIES LIMITED	673	OPTACE NETWORKS LIMITED
330	LUCENT-VIRTUOSO & ALLIED GROUP (LLC)	674	PERTRONIC AUTOMATION & COMMUNICATIONS LIMITED
331	LUGRACE HOLDINGS LIMITED	675	PONG AGENCIES LIMITED
332	LUMATECH SOLUTIONS	676	PROLIFIC MANAGEMENT COMPANY LIMITED
333	LUNGU BUILDING CONTRACTORS LIMITED	677	QOS NETWORKS GEONET JV LIMITED
334	M AARS TECHNOLOGIES LIMITED	678	SEVEN EIGHTY SIX LIMITED
335	MAGAL SECURITY SYSTEMS LIMITED	679	STAGS LIMITED
336	MAGENTA (K) LIMITED	680	STEALTH COMMUNICATIONS LIMITED
337	MAGNATEC SOLUTIONS LIMITED	681	TECH-AWAY OFFICE LIMITED
338	M AKE IT TECHNOLOGY COMPANY LIMITED	682	TELECOMMUNICATION TODAY LIMITED
339	MARAJANI COMMUNICATIONS TOURS AND ASSISTANCES LIMITED	683	TENMO INVESTMENTS LIMITED

340	MASS ENGINEERING AND SOLUTIONS LIMITED	684	TOPPOINT NETWORKS LIMITED
341	MASTER BRANDS LIMITED	685	VASTECH ENGINEERING LIMITED
342	MASTER POWER SYSTEMS LIMITED	686	VILCOM NETWORKS LIMITED
343	MASTER TECHNOLOGIES LIMITED	687	WIDE WEB COMMUNICATIONS LIMITED
344	MATRIX VISION SYSTEMS LIMITED	688	WINGUSTAR SOLUTIONS LTD

VT OMNES VNVM SINT

APPENDIX 5: ETHICAL APPROVAL

Strathmore UNIVERSITY

4th April 2022

Mr Kimani James,
james.kimani@strathmore.edu

Dear Mr Kimani,

RE: Influence of Innovation Orientation on Organizational Performance of Suppliers in The Telecommunication Industry in Kenya

This is to inform you that SU-IERC has reviewed and approved your above SU masters' research proposal. Your application reference number is SU-IERC1312/22. The approval period is 4th April 2022 to 3rd April 2023.

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-IERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-IERC within 48 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-IERC within 48 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to SU-IERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

Yours sincerely,

for Dr Ben Ngoye,
Secretary, SU-IERC

Cc: Prof Fred Were,
Chairperson, SU-IERC

STRATHMORE UNIVERSITY INSTITUTIONAL ETHICS REVIEW COMMITTEE (SU – IERC)
04 Apr 2022
Email: ethicsreview@strathmore.edu
P. O. BOX 59857 – 00200
NAIROBI – KENYA

APPENDIX 6: NACOSTI LICENSE

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 291212

Date of Issue: 01/March/2022

RESEARCH LICENSE

This is to Certify that Mr.. James Kinyanjui Kimani of Strathmore University, has been licensed to conduct research in Baringo, Bomet, Bungoma, Busia, Elgeyo-Marakwet, Embu, Garissa, Homabay, Isiolo, Kajiado, Kakamega, Kericho, Kiambu, Kilifi, Kirinyaga, Kisii, Kisumu, Kitui, Kwale, Laikipia, Lamu, Machakos, Makueni, Meru, Migori, Mombasa, Muranga, Nairobi, Nakuru, Nandi, Narok, Nyamira, Nyandarua, Nyeri, Samburu, Siaya, Taita-Taveta, Tanariver, Tharaka-Nithi, Trasnzoia, Uasin-Gishu, Vihiga on the topic: INFLUENCE OF INNOVATION ORIENTATION ON ORGANIZATIONAL PERFORMANCE OF SUPPLIERS IN THE TELECOMMUNICATION INDUSTRY IN KENYA for the period ending : 01/March/2023

License No: NACOSTI/P/22/16886

291212

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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