INNOVATION STRATEGIES AND COMPETITIVE ADVANTAGE AMONG TELECOMMUNICATION PROVIDERS IN KENYA

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DECLARATION

I hereby declare that this research project is my original work and has not been presented in any other institution.

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This research project has been submitted for examination with my approval as the University supervisor.

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DEDICATION

This research project is dedicated to everyone who supported in the various stages of the research work.

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TABLE OF CONTENTS

LIST OF TABLES

ABBREVIATIONS AND ACRONYMS

GDP	Gross Domestic Product
KCC	Kenya Cooperative Creameries
AMOLED	active-matrix organic light-emitting diode

ABSTRACT

In strategic management theory and practice, innovation is deemed one of the core settings for competitive advantage and for success, thus a firm’s strategy for innovation is a significant component of developing long term strategies. Telecommunication providers are innovating and changing their product offerings. The general objective of the study was to investigate the influence of innovation strategies on competitive advantage among telecommunication providers in Kenya. This study was based on two theories, Schumpeter`s theory of innovation and Porter`s theory of competitive advantage. The target population for this study comprised of the 38 tier 1 and 2 telecommunication network providers in Kenya. The data was collected from staff members of the telecommunication providers. Analyses was done using descriptive analysis, linear regression and correlation analyses. It was established that process innovation and administrative innovation influence innovation strategies to a great extent while many telecommunication network providers embraced market innovation and product innovation at moderate extent. The study established a positive relationship between competitive advantage and innovation strategies. It was concluded that product innovation, administrative innovation and market innovation were positively related to competitive advantage. The study recommends that telecommunication providers should invest in research and development with a view to improving the quality and diversity of their products.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Over the last twenty years, innovation strategies across industries have become tools of rivalry and define the degree of competitiveness of a company. Subramanian and Nilakanta, (2015) claim that, in today's competitive business environment, the capacity to innovate has become a critical factor in evaluating a company's viability and that it is also very rare to find an organization which has not regularly or continuously implanted or has a potential to adopt technological innovations. Reguia (2014) argues that innovating companies have a greater worldwide market share, faster growth rates, increased profitability and a higher value. However, regardless of the significant significance played by innovation policy in defining the competitive advantage of a company.

This research was driven by two theories: Schumpeter's innovation theory and competitive advantage theory. Schumpeter's theory of innovation emphasizes its financial possibilities as a reward for incorporating innovation into the operations of an organisation or company (Lemanowicz, 2015). The size and type of competition is governed by the dynamics of the industry according to Michael Porter: purchaser power in negotiations, the danger of alternative goods, jockeying amongst present competitors, negotiating power among suppliers and the threat to future competitors (Porter, 1985). The theory will be important to this research since it describes how sectors acquire competitive and thus assist managers to build competitive advantages.

Over time, the telecommunication industry has grown both in its contributions to the country's GDP and in the creation of jobs. However, in comparison to established nations, the industry is tiny and not as developed. Kenya's telecommunication industry, primarily because of the structural reform process being out by the government with the aim of strengthening the country's economic and social environment, is under transition (Black, 2010). The telecommunication industry has undergone a change in engineering products such as mobile subscription, money transfer, and internet provision to become one of the most popular consumers of electronic products and services.

The motivation of the study is that telecommunication firms in Kenya are major enablers in achieving next use cases in terms of innovation. Most of the recent innovations are based on mobile phone usage as part of the process, which makes it even more acceptable, time saving and modern. These innovations cut across various industries such as the security and surveillance, automotive, aviation, hospitality and medical.

1.1.1 Innovation strategies

Innovation is termed as effectively development, application and utilization of fresh or structurally enhanced services, products, organisational forms, technology or process (Hartley, 2006). Innovation as process is not considered singular action but rather is a sum of various interrelated sub procedures thus, innovation does not end with new concept or idea, new market development or new device invention but all these processes combined in an integrated manner. Muradi, (2011) asserted that innovation can also be considered as thinking beyond the obvious as it entails discovering new concepts, things, developments, improvements, and ideas so as to attain strategic advantages.

Hansen and Birkinshaw, (2007) considered innovation strategies as conscious and active organization, execution and control of activities that results to innovation. Further, innovation strategies can be described as the manner in which organization directs its resources for a given period of time and obtain capabilities that impacts the performance of innovation. This includes organization behaviours and economic perspective which is concerned with internal operations. It is also acknowledged that organization forms association with other organization and trade, cooperate as well as compete with one another. Thus, the operations of individuals within an organization are also known to affect the innovation process. Rushe and Waples, (2008) indicated that innovative companies do not have control of their share prices but of their innovation strategies, sales and profits.

Innovation Strategies mostly adopted originate from various typologies that include service, marketing or commercial, production, management, organizational, process and production innovations. Possibly the best innovation strategies contribute to the establishment of organizational culture and the environment which have a favorable effect on innovation characteristics (Aarons, 2004). Innovation Strategies therefore improve the interdisciplinary team's expertise, boost customer satisfaction since customer feedback is taken into account in the innovation process, guarantee that allotment and use of resources is suitable and promote the continuity of the innovative process (Aykut, 2011).

1.1.2 Competitive Advantage

Competitive advantage is defined as the state that enables a firm or a country to generate services or goods at an affordable price and one that meets the preferences and desires of the customers (Wagner, 2014). A firm’s competitive advantage is associated with many factors that include the customer support, intellectual property, cost structure, distribution network, quality, and brand. According to Meihami, and Meihami (2014), organizations that have a sustainable competitive advantage consistently produce products or services that carry the qualities that match the major buying criteria for most of the consumers in the market. It involves achieving superior performance and economic value over a prolonged period in the market.

Many scholars have concluded that some forms of competitive advantage cannot be easily imitated which enables the firm to reap long-lasting benefits. This perception has contributed to the growth of the competitive advantage concept from resourced based perspective and the industrial organizations (IO) in the previous years which led to the advancement of the sustained competitive advantage (SCA). Therefore, competitive advantage is said to constitute two elements: The first is, the above average performance notion, as a relational measure within an industry and the second is the durability notion. Even though an industry's above average performance can be measured justifiably as the returns in comparison to the average of the industry, the notion of durability is not clear.

Peteraf, (2013) noted that the key competitive advantage indicators are presented as regards the cost of tangible asset. Porter (1996) stated that the competitive advantage depends on three main features: unique features, low cost and concentration. Porter further stressed that competitive forces may be handled on the basis of the danger of replacements, strong and demanding consumers, new entry threats and competition, as well as dominant providers. In 2012, Barney and Hesterly expressed their view that there were two types of organizational competitiveness: temporary and sustained competitiveness.

1.1.3 Telecommunication Industry in Kenya.

Telecommunication is the transmission or exchange of information over certain distance by electronic means. It mainly refers to text, voice, data and video transmission. The sector in Kenya has been one of the most dynamic and competitive sectors in the country having evolved significantly due to increased competition and rapid developments in the sector (Communications Authority of Kenya, 2020). Kenya is one of Africa's largest telecom markets since the liberalization of the sector in the 1990's and since then, the country has experienced significant mobile phone and internet growth. Developments in the sector have positively impacted Kenya's economy. The number of mobile phone subscriptions stood at 57omillionoino2020 and mobile penetration in the country averaged 119.9% in the same year (Communications Authority of Kenya, 2020).

Kenya has also led the global growth of mobile-money transfer services through the development of Safaricom`s MPESA platform. Mobile money subscriptions stood at 30.5omillionoinoJune, 2020 with MPESA commanding a market share of 98.9%. Kenyans also primarily access the internet through their mobile devices and this is evident in the Communications Authority`s report of June 2020 where mobile data subscriptions make up approximately 98.7% of the total internet subscriptions in the country. The internet market is expected to grow rapidly driven by the significant growth in mobile internet services, supported by the current roll out of the 4G mobile network and the anticipated 5G technology.

Going forward the growth of the telecommunications sector will be driven by developments in mobile money platforms, artificial intelligence, cloud computing, increased network expansion in the country, increased urbanization, population growth and internet penetration. According to the Communications Authority of Kenya (2020), there are three main Kenyan telecommunications industry players, which include: Safaricom Limited, Airtel Networks and Telkom Kenya. Safaricom Limited commands the highest market share at 64.2% of the mobile subscriptions. Airtel Networks and Telkom Kenya recorded market shares of 26.8% and 6.0% respectively. These three companies will form the sample population for this study.

1.2 Research Problem

Businesses that are expanding into international markets need to have strong innovation plans in place to succeed. Organizations may create a culture of continuous innovation and new product creation via these methods, giving them a competitive edge in the market. Firms have to change with the customers to retain the business relationship. Innovation creates growth and competitive advantage in the dynamic and uncertain environment (Muradi, 2011). Innovation is looking at company processes and operations from a different viewpoint, having forethought, being ready to take risks, and being adaptable.

Technology is a constantly changing field. According to Muzaffer (2019), technical innovation is a critical component of maintaining a competitive edge in today's global economy. Kilmann, on the other hand, determined that the only way to maintain a competitive edge in today's market is to innovate.

An economic study by The Government of Kenya highlighted that the execution of a structural alteration programme and consequent market liberalization of the telecommunication sector opened up the sector and brought about increased competition and a decline in profitability (Kyengo, Ombui and Iravo, 2016). In order to cope with these market forces that have led to increased competition and thus threatened the profitability and growth of telecommunication companies in Kenya, telecommunication companies are innovating and changing their product offerings. In the sector, Safaricom has maintained a positive financial performance, while Airtel Networks and Telkom Kenya have restructured their operations in a bid to turn around their financial performance (Mutuva, 2014).

Several studies have been done on the innovation strategies, locally and internationally. Sahay, (2011), has conducted organizational structure and innovation study internationally in the Indian bulk pharmaceutical sector. The research utilized the design of explorations. They discovered that innovation is usually essential for survival and has a favorable impact on the bottom line. Innovative companies are also receiving the greatest financial rewards. In India, Goksoy and Ozalp (2013) researched to obtain competitive benefit via commercial banks' innovation initiatives. The research focused on cross-sectional descriptive surveys. They found that sustained competitive advantage in today's economy comes via innovation. Muzaffer (2009) researched the role of technical innovation in influencing the competitiveness and profitability of companies. The research was based on a cross-sectional examination. He discovered that technical innovation must be handled effectively, taking account of internal and external variables. Technological innovation is also an essential component to maintain competitive advantages in the present competitive global economy.

Gathai (2009) conducted a case study on Equity Bank Ltd's innovation initiatives in the Philippines. The research was conducted using a case study methodology. He found that a business that embraces innovation should use managers as direct resources for the innovation team. Odhiambo (2008) conducted a case study on Standard Chartered (K) Ltd's innovation initiatives. The research was conducted using a case study methodology. He discovered that in order for a company to be creative, it must foster creativity. This results in a better level of quality and a more creative mentality. In their study of the insurance sector in Kenya and innovation processes, Kiseli, Senaji, and Eng (2016) discovered that all firms in insurance sub sector had the same degree of innovation processes knowledge that involves everyone in the company. From the foregoing, it is apparent that much work has been done in this field, yet many problems remain unsolved. Kiveu (2013) studying the challenges of implementation of innovation strategies at the New KCC found out that non inclusive change management, financing limitations, limitations in leadership, breakdown in machinery at the plants and cash flow limitations due to huge borrowings were the main challenges.

Although there have been prior studies in this field, there are major research lacunas in the methodological, contextual and conceptual realms, which this study aims to fill. In terms of context, the empirical research looked at innovation strategies and competitive advantage in settings other than Kenya's telecommunications industry. As a result, the goal of this research is to fill up these information gaps by identifying the innovative methods used by Kenyan telecommunications firms. The study will address the research question: What is the influence of innovation strategies on competitive advantage among telecommunication companies in Kenya?

1.3 Research Objective

The objective of the study was to find out the influence of innovation strategies on competitive advantage among telecommunication providers in Kenya.

1.4 Value of the Study

The theories in subject including Theory of Innovation and Michael Porter's Five Forces Theory will gain more value through this research as this research will validate the application of the theories in subject on the current business context and situation. This research was additional evidence on the already proven theories in the academia field. This research was able to test the 2 theories in relation to the gaining competitive advantage through innovation strategies.

The research was academically valuable to individuals interested in Kenyan telecommunications industry with a goal of starting a company since it helped them comprehend what to do rightly to flourish and what to avoid doing incorrectly to fail. The study was also be of value to the county government and national government as it was be relevant reference especially the Ministry of Information, Communication and Technology in forming new products development guidelines and policies. It was also adding new knowledge to the already existing scholar's body of knowledge in service industry. It was informing the readers how to overcome innovation strategies challenges

Finally, the findings of the study assisted the government officials and other sectors in regulating the formulation of policies that influence telecommunication sector so that to promote healthy competition among the telecommunication firms in Kenya and assist to generate more revenues and maximize profits. It is important to note that telecommunication industry is critical to achieving Kenya's Vision 2030 strategy and is a critical enable in the growth of the economy. Safaricom Limited actually claims to have contributed 6% of Kenya's 2019 GDP (Alushula, 2020).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the work of previous authors and scholars regarding the concept of innovation strategies and competitive advantage. It entails theories on which this study is founded and previous empirical studies. The two theories that were discussed are the Theory of competitive advantage and the theory of innovation. This chapter also reviewed studies detailing some of the innovation strategies such as product, process, market and administrative innovation strategies.

2.2 Theoretical Foundation of the Study

The study was anchored on these theories: Schumpeter`s theory of innovation and Porter`s theory of competitive advantage.

2.2.1 Porter's Theory of Competitive Advantage

The theory of competitive advantage which is one of the anchor theories of the study was developed by Michael Porter in 1980. According to the idea, the kind of rivalry and the source of competitive advantage varies across industries and within industries. Porters (1980) stated that an organization may establish an impregnable position in the market by working alone or in concert with other organizations in the same industry to outperform the competition (Thompson, Strickland, and Gamble, 2007). The competitive advantage concept was coined by Day in 1984. He stated that the approach used by a company may help it maintain its competitive edge in the market. Porter reaffirmed the concept of competitive advantage in 1984 when he highlighted the four broad types of competitive advantage that a company may have in order to achieve long-term sustainability.

Porter's Michael Generic competitive tactics include cost management, distinctiveness and emphasis. In cost management, a company becomes the low-cost manufacturer in its industry. This may involve achieving economy of scale, patented software, favoring access to raw resources and other considerations. If a business can achieve an overall cost lead and sustain it will be more than average manufacturer in its industry if it is able to manage prices at or near to average industries. (Porter, 1985).

Differential strategy implies competing based on how a company can do things a different way from its rivals. The low-cost approach believes that a company is able to get a competitive advantage by offering goods or services at the lowest feasible cost. Targeting a small market sector or focusing on a particular product or service is a niche approach. All of these need significant attention to achieve a competitive edge (Papulova & Papulova, 2006; Porter, 2004).

This theory provides a suitable framework for the study of innovation strategies and competitive advantages in telecom businesses in Kenya. The biggest shortcoming of the Five Forces Model, according to Barney (1991), is that it offers just a list of variables that may be beneficial or inappropriate to an organisation. This tool, like other scenarios like the Swot Analysis framework, is just the beginning of a comprehensive examination of organisation's performance.

2.2.2 Schumpeter`s Theory of Innovation

In 1934 Joseph Schumpeter initially developed Schumpeter's theory of innovation, which said businesses had the ability to earn or expand their profit margins by incorporating innovation. In this respect, Schumpeter's innovation theory primarily emphasizes its profit possibilities as a reward for incorporating innovation into the operations of a company. Schumpeter sees innovation proverbially as a new method for companies and commercial entities to decrease their production costs, although increasing their demand for products and services (Paris, 2015).

Innovation, according to Schumpeter (1934), is the progression of activity that includes structural changes, and he categorizes it into five kinds. The first is the use of quick manufacturing or sales techniques, which occurs during a time when innovation is not yet present. The second type of innovation consists of introducing or adding a new functionality to a current design. The third kind of innovation is the creation of a new market that previously did not exist in the sector. The fourth step is to find up-to-date raw material or partially finished material sources. The final kind is the contemporary industrial composition, which involves the demolition or development of a dominance position. Any company that wants to make money must innovate not just in terms of product, process, and market, but also in terms of human resources.

The relevance of this theory in the current context is that innovation has been a key player in the growth and expansion of the telecommunication space it is indeed an appropriate time to study the strategies that companies in this sector have adopted. The five kinds of innovation rely on the four aspects of innovations for a company to gain a competitive advantage. The theory has also been seen as limited in its view of the operating environment of organizations. Like previous business cycle theories, this hypothesis excludes other variables that cause company circumstances to fluctuate. Innovation is not the lone factor but just one of the elements that generate environmental variations (Megha, 2016).

2.3 Innovation Strategies

Innovations as a strategy are seen as new products/services, processes and ideas being developed, implemented and accepted. Innovation strategy thus informs the choice on how a company may utilize existing resources in order to achieve its innovation goal, therefore generating value and a competitive edge. (Dodgson, 2008 and Salter) This study will examine product, process, market and administrative innovations in relation to competitive advantage.

2.3.1 Product Innovation Strategies

Product innovation is the way a company creates and develops the newest products or services that are capable of achieving organizational success (Valencia, Valle, Jimenez, 2010). Product innovation according to Schilling (2010) is related to organization success as in enables organization to acquire dominant position in a competitive market. Product innovation entails two specific activities which ensure a different product is introduced in the market. The first activity is the re-modifying existing product through updating so as to improve it term of quality.

The second activity is the developing a new product from scratch which is considered challenging. This kind of product innovation forces organization to innovate new products due to changing needs and demands of the market place (Reguia, 2014). Studies have indicated strong and positive relationship that exists between competitive advantage and product innovation (Beaudreau, 2016). This postulates that companies are capable to utilize product innovation and come up with new products have high chances of gaining competitive advantage unlike those firms which are not proactive with innovative products.

2.3.2 Process Innovation Strategies

Innovation in the processes means introducing technology, mechanizing and changes in working unit procedures to develop a new products or service (Molina et al., 2015). Process innovation is in most cases focused on the way innovation is applied on the organization and execution process that results to development of new products or service. Process innovation encompasses customer services, strategic planning, employee assessment and project management (Hamel, 2006). Bharadwaj, Fahy and Varadarajan (2015) indicated that process innovation increases the capability of using advance technology during production process which allows organization to reduce their overhead and cost of production.

Herrera (2015) discovered that process innovation is linked to commercial banks' competitiveness. According to Liao, Fei, & Liu (2008) it is hypothesized that process innovation determines success and failure of an organization. Ussahawanitchakit (2018) asserted that process innovation has the capability to enhance competitive advantage.

Organizations which emphasize on process innovation and the greater capability to implement process innovation are in position to realize better business environment response and they are in best position to build more capabilities that is needed to achieve competitive advantage (Jimenez & Vall, 2011).

2.3.3 Market Innovation strategies

Innovation in the market is described as a continual process which enhances the existing marketing capacity of organizational goods and services via the learning method (Mahmod, Ibrahim & Rodina, 2010). Thus, market innovation can be described as creating and applying new ideas, delivering value to customers, communicating as well as customer relation management. Market innovation is a process which initiates significant and ongoing market changes in order to increase consumer awareness of goods and services (Trott, 2017) The innovation within the market favours one player who is capable to keep up with market structure changes hence acquire competitive advantage (Palmer, Wright, and Powers, 2015).

According to Palmer, Wright, and Powers (2015) there is a substantial link between market innovations and organizations competitive. The same results were obtained by Mahmod et al. (2010) whereby market innovations were found to provide organization capacity to expand its strategic customer base thus creating a sustainable competitiveness. Market innovation is a fundamental tool for achieving sustainable competitive advantage in an organization (Ren et al. (2010). Market innovation is crucial since it enables firms to grab market opportunities and at the same time helps a form in meeting customer needs.

2.3.4 Administrative innovation

Administrative innovation is concerned with organization structure, administrative process, information system and reward. Basically, it encompasses all work activities that are within organization and they are directly related to human resource management (Tan & Nasurdin, 2011). Efficient and efficient administration efforts, improved employee interactions, better workplace and satisfaction via improvement in the working environment and competitive pay accomplish administrative innovation. Employees are a critical factor in determining whether a company succeeds or fails. Management innovations may involve knowledge coding techniques in order to create best practice databases.

2.4 Innovation Strategies and Competitive Advantage

Using descriptive survey, Vargas (2015) investigated on the factors that determine innovative success, achievement of competitiveness and small businesses with high productivity in Greece. Primary data have been collected via questionnaires. The findings suggest that there is positive and strong proof that innovation affects competitiveness and performance of small businesses in Greece. Using Cross sectional survey, Chege (2017) researched competitive advantage and strategic innovations of Kenyan commercial banks listed in NSE. The study reveals that the bank product range had increased upon the commercial banks adopting innovation strategy in their operations.

In the Mombasa County, Kenya running logistics company, Wanyoike (2016) examined link among innovation tactics and competitive advantage. The study was descriptive. Primary data have been collected by use of questionnaires. The research shows that the competitive advantage of logistics organizations depends on innovation strategies, with product innovation being the most important approach. Shejero, (2016) also examined how competitive benefits is affected by technological innovations among SACCO in Mombasa County, Kenya. It utilized primary data which used the questionnaire. The results of the studies show that cost-saving methods and a growth in the variety of goods available to companies include key variables affecting the execution of innovation strategies with a view to attaining a competitive sustainable benefit.

Wachiuri (2013) analyzed strategies used by the Standard Chartered Bank of Kenya to create a sustained competitive advantage. The study took the case study. The research showed that innovation strategies are beneficial and substantially linked to competitive advantage and thus it is essential for the business to implement different sustainable innovation methods. Cheptegei (2012) reviewed Coca-Cola Kenya Limited's innovation strategy. The study used the design of a case study. Based on the results, Coca Cola Company has developed various entry tactics to address its profit and consumer base. Empirical research focused mostly on corporations in various industries which operate in diverse business contexts and thus the results are not generalizable. In addition, some studies on marketing entry strategy utilized and the difficulties they encounter used case study design and others used quantitative research distinct from what is being done in this study.

Several studies have been conducted on innovation strategy in the telecoms industry, although some have been conducted in other areas of the globe. The ecology in the USA and other parts of the globe is so dissimilar from Kenya that the results cannot be used without additional research in this setting. Local studies concentrated on factors other than how innovative tactics influence the company's success. There is thus a knowledge gap to be filled in this research.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter gave a discourse of the blueprint of the study methodology that was utilized as a part of the research. It focuses ono the design of the study, the population, techniques for the data collection and finally the data analysis approach. All the above are aimed at ensuring that the methods used are reliable and verify that collected data is unbiased for the research.

3.2 Research design

The study utilized the transversal qualitative research approach to explain the data and the different demographic traits and phenomena being explored. Kothari (2004) describes the design of research as organized circumstances appropriate for the gathering and analysis of data. This approach was chosen because big samples are practical and provide statistically significant findings even if many variables are analyzed. Surveys are essential because they describe the vast population well. The design answered issues like how, where, who and when the participants may reply freely. The research was based on census.

3.3 Population of the study

Kumar (2005) reports that the population is the group, family in the city, or electorate from whom a limited number of family members, pupils and voters are chosen to answer your inquiry. The population for this study was the 38 tier 1 and 2 telecommunication network providers in Kenya.

3.4 Data Collection

Both primary and secondary data sources were utilized in this research. Primary data were gathered using a structured questionnaire. The questionnaire has questions closed. The first portion included the company's fundamental information, while the second section provided the innovation plans, the third competitive advantage. The researcher used research assistant to issue questionnaires to various telecommunication companies in which the research assistant was to drop the questionnaire and come to collect later. Secondary data was collected for information relating to the various companies such as their published financial results.

3.5 Data Analysis

Questionnaires were modified for uniformity to be described as comprehensive after data collection. Any abnormalities in the replies as well as certain numerical values in the answers for further investigation are detected by editing, tabulating and coding. Descriptive statistics were utilized to analyze the data including central trend (mean) measurements and dispersion measurements (Standard deviations and variance). Results were presented using graphs and tables.

The multiple linear regressions model below was used to establish the relationship between the variables:

$$Y=o\beta_0o+o\beta o_1X_1o+o\beta o_2X_2o+o\beta o_3X_3o+o\beta o_4X_4o+oe$$

Where:

Y = Competitive advantage

β_0 = Model`s constant

β_1 to β_4 = Regression coefficients;

X_1= Marketing innovation

X_2= Product innovation

X_3 = Process innovation

X_4 = Administrative innovation

e = Error term.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

The chapter includes statistical analyses and discussions of research findings on innovation strategies and competitive advantage.

4.2 Response Rate

Out of thirty-eight questionnaires that were administered, thirty-five were returned for data processing representing 92.1 percent response rate. The findings support Mugenda and Mugenda's (2013) assertion that rates higher than 50% are acceptable in analyses. Babbie (2010) likewise considers a return rate of sixty percent to be good, and a return rate of seventy to be outstanding. The findings were sufficient for data analysis. As a result of the adequate response rate, the researcher proceeded with analyses of data.

4.3 General Information

This section is dedicated to firm's basic details. The data aided in comprehending the company' background details under consideration. It requested information on the company's time of operation, number of employees and ownership structure.

4.3.1 Period of operation

The duration of business of the telecommunications companies was given by respondents as specified in Table 4.1.

Table 4.1: Period of Operation

Years	Frequency	Percent
Less than 4 years	6	17.143
4-8 years	12	34.286
Above 8 years	17	48.571
Total	**35**	**100.0**

Source: Field Data (2021)

Table 4.1 depicts that most of Kenya's telecom providers have been working for over eight years at 48.571%, 34.286% between 4-8 years and lastly 17.143 % less than 4 years. The result implies that majority of the telecommunication providers under review have a solid experience in Innovation strategies.

4.3.2 Number of Employees

The goal of the research was to figure out how many people work for telecommunications companies. Table 4.2 depicts responses as gathered from respondents.

Table 4.2: Number of Employees

Employees	Frequency	Percentage
Less than 400	29	82.857
401 – 1000	3	8.571

Over 1000	3	8.571
Total	**35**	**100.0**

Source: Field Data (2021)

Table 4.2 depicts that most of telecommunications companies have employees less than 400 at 82.857, followed by employees between 401 – 1000 at 8.571 and lastly and lastly less than 400 at 8. 571.This implies that most telecommunication sector players are able to operate on a small scale of staff.

4.3.3 Ownership Structure

The goal of the research was to figure out the period of operation of the telecommunication providers. Table 4.2 depicts responses as gathered from respondents.

Table4. 3: Period of Operation

Years	Frequency	Percent
Private	30	85.714
Publicly listed	2	5.7142
Government owned	3	8.571
Total	**35**	**100.0**

Source: Field Data (2021)

Table 4.3 depicts most of telecommunication providers are privately owned at 85.714%, followed by publicly listed at 5.714 and government owned is at 8.571. This implies that most telecommunication firms are privately owned.

4.4 Innovation Strategies

The independent variables of this research were innovation strategies. It was essential to determine the opinions of respondents on their organization's innovation initiatives. The innovation methods have been assessed at a 5-point scale of Likert and the responses are required to either agree on "Not at all," "little extent" and "moderate extent" or “large extent”, "very large extent". For each question, the most favourable answer was given 5 points, followed by 4, 3, 2, and 1 for the least positive. This research utilized a mean value of 4.0-5.0 for large, 3.0-4.0 for moderate, 2.0-3.0 small, and 1.0-2.0 for did not agree. The telecommunication companies' innovation initiatives were evaluated using a total of 20 statements.

4.4.1 Product innovation Strategy

The participants were furnished with five questions on product innovation strategy and prompted to demonstrate their degree of understanding. Table 4.4 depicts the outcome.

Table 4.4: Product innovation Strategy

Statement	N	Mean	Std. dev
The organization introduces new or significantly improved products.	35	4.18	0.95

The organization changes products to reflect changing customer tastes and preferences.	35	3.73	1.06
Your company's research and development efforts generate new information or address scientific or technological issues.	35	3.57	0.99
Customers' tastes and preferences vary, therefore the company adjusts its offerings accordingly.	35	3.00	1.02
The firm develops goods that may not be lucrative in the near term but will benefit the company in the long run.	35	3.40	1.05
Composite mean	**35**	**3.57**	**1.01**

Source: Field Data (2021)

Organization introduces new or significantly improved products having a 4.18 as mean and a 0.95 as standard deviations as depicted in Table 4.4. Having a 3.73 as mean and a 1.06 as standard deviations, it was also discovered that the business adjusts its goods to suit changing consumer tastes and preferences. Research and development activities carried out by firms in order to generate new information or to address scientific or technological issues having a 3.57 as mean and a 0.99 as standard deviations as espoused by survey data. While the companies develop new goods that aren't immediately lucrative, their goal is to acquire a competitive edge in the long term, which is why they do it. Using this data, the mean was 3.40, and the standard deviation was 1.05. In addition, issues having a 3.00 as mean and a 1.02 as standard deviations, the businesses modify their services to better represent changing consumer tastes and preferences. Overall, the mean was 3.57 which implies that many telecommunication providers embraced product innovation strategy to moderate extent.

4.4.2 Process Innovation Strategy

The participants were furnished with five questions on process innovation Strategy and prompted to demonstrate their degree of understanding. Table 4.5 depicts the outcome.

Table 4.5: Process Innovation Strategy

Statement	N	Mean	Std.dev
The company introduces new or substantially better techniques for production or production of products or services	35	4.20	0.89
The business introduces logistically, transportation or distributing techniques new or substantially enhanced for your materials, products or services.	35	3.70	1.08
The company acquires sophisticated gear, equipment, software and structures for new or substantially enhanced processes	35	4.30.	0.92
The company buys existing knowhow, copyright, patented and unpatented innovations.	35	4.11	1.10

The company finds non-value added tasks in delivery processes to be eliminated.	35	3.80	0.99
Composite Statistics	**35**	**4.02**	**0.996**

Source: Field Data (2021)

Table 4.5 provides companies with purchase of sophisticated machinery, equipment, software and buildings for usage as shown by a mean of 4.30 and a std deviation of 0.92, for new or substantial improvement processes. The organizations introduces improved and new method of production or manufacturing of good or service having a 4.20 as mean and a 0.89 as standard deviations while the organization acquires existing know-how, copyrighted products, patented and unpatented inventions having a 4.11 as mean and a 1.10 as standard deviations. In order to remove non-value-adding operations in delivery processes, companies also determine a mean 3.80 and a std deviation of 0.99. Finally, businesses create new or substantially better techniques for input, products or services having a 3.70 as mean and a 1.08 as standard deviations. Overall, the mean was 4.02 which implies that process innovation strategy influences innovation to a great extent.

4.4.3 Market Innovation Strategy

The respondents were told five things about the strategy for market innovation and asked to demonstrate their degree of understanding. Table 4.6 depicts the outcome.

Table 4. 6: Market Innovation Strategy

Statement	**N**	**Mean**	**Std. Dev**

The organization renovates the methods of promoting existing and/or new services provided.	35	4.11	1.17
The business renews distribution routes, but does not change the logistical procedures connected to product delivery.	35	3.73	0.98
The organization renews general marketing management activities.	35	3.34	1.19
The company seeks possibilities based on future consumer demands and develops solutions to fulfill these requirements.	35	3.90	0.89
The company is attempting to predict future industry trends to develop suitable tactics	35	3.23	1.07
Composite Statistics	**35**	**3.66**	**1.06**

Source: Field Data (2021)

Firms refresh methods used to promote current and/or new service provided by Mean 4.11 and std deviation 1.17. The companies are also looking for possibilities based on future requirements of the customers and are developing goods that can fulfill these demands, which show an average difference of 3.90 and 0.89. In addition, businesses refresh the distribution channels, but do not change logistical procedures linked to product delivery having a 3.73 as mean and a 0.98 as standard deviations. Organizations also renew general marketing management activities and had a mean of 3.34 and std deviation 1.19. Finally, the companies attempt to predict future market trend in order to develop suitable strategies, having a 3.23 as mean and a 1.07 as standard deviations. The overall mean was 3.66 which implies that many telecommunication providers embrace market innovation strategy to a moderate extent.

4.4.4 Administrative Innovation Strategy

The participants were furnished with five questions on administrative innovation strategy and prompted to demonstrate their degree of understanding. Table 4.7 depicts the outcome.

Table 4.7: Administrative Innovation Strategy

Statement	N	Mean	Std Dev
The firm periodically changes its structure to enable team work	35	4.11	.504
The company promotes cooperation across various departments so as to speed up the invention process and get more feedback from the product released	35	4.54	.505
The company uses analytical techniques to assist decision-making processes	35	4.23	.798
The firm has upgraded its administrative system	35	4.63	.547

There is increasing investment in innovative technology	35	4.26	.611
Composite Statistics	**35**	**4.35**	**.652**

Source: Field Data (2021)

In regards to Table 4.7, the firms have upgraded their administrative system with a mean 4.63 and std deviation 0.547. The companies also promote cooperation across various departments to speed up innovation and to get more input on the product being released having a 4.54 as mean and a 0.505 as standard deviations. Investments in new technologies are rising, with a mean of 4.26 and a variation from 611. In addition to this, the company uses analytical techniques to assist decision-making having a 4.23 as mean and a 0.798 as standard deviations. Finally, companies are changing their structure regularly to allow teams to operate with a mean difference of 4.11 and 0.504. The overall mean was 4.35 which implies that many telecommunication providers embrace administrative innovation strategy to a great extent.

4.5 Competitive Advantage

Under this research, a firm competitive advantage was a dependent variable. The respondents' opinions on the competitive advantage of their company had to be established. The competitive advantage was assessed on a 5-point Likert scale and participants were asked to either agree: "to a very large degree" "big degree," "moderate degree," "little" and "not at all."" The answer to each question which identified the highest favorable reaction for these activities was assigned 5 points, and then 4, 3, 2, and 1, correspondingly, to the least positive. The following analysis has been espoused to distinguish the extent: mean value of 4.0<50.0 to a large, a moderate extent of 3.0<4.0, a small extent of 2.0<3.0 and an average score of 1.0<2.0 to a small degree. 5 statements were used to evaluate competitive advantage among Telecommunication providers.

4.5.1 Cost Leadership Strategy

The participants were furnished with five questions on Cost Leadership Strategy and prompted to indicate their degree of agreement with each of them as specified in Table 4.8.

Table 4.8: Cost Leadership

Statement	N	Mean	Std dev
The firm reduces its operational costs	35	4.63	0.487
The firm ensure tight controls for overhead costs	35	4.40	0.493
The company charges cheap pricing because of lower operating expenses and/or overhead costs	35	4.37	0.498
The company offers lower consumer pricing than our rivals	35	4.50	0.497
The firm adopts latest technology in our operations	35	4.40	0.456
Mean		**4.46**	**0.4862**

Source: Field Data (2021)

In relation to Table 4.8, organizations reduce their cost of operation having a 4.63 as mean and a 0.487 as standard deviations. The company offers lower consumer pricing than our rivals as shown by a mean of 4.50 and std deviation 0.497. Further, the organizations adopt the latest technologies in their operation having a 4.40 as mean and a 0.456 as standard deviations. The organizations also ensure that they have a tight control of their overhead cost having a 4.40 as mean and a 0.493 as standard deviations. Lastly, the firms charge cheap pricing because of lower operating expenses and/or overhead cost and had a mean of 4.37 and std deviation 0.498. The overall mean was 4.46 which implies that many telecommunication providers embrace cost leadership strategy to a great extent.

4.5.2 Focus Strategy

The participants were furnished with five questions on focus strategy and prompted demonstrate their degree of understanding. Table 4.9 depicts the outcome.

Table 4. 9: Focus

Statement	**N**	**Mean**	**Std dev**
The company is only concerned with selling goods to a certain market segment.	35	4.30	0.456
We develop new goods and services to meet the needs of this specific market segment.	35	4.23	0.432
We've expanded our business to include areas where consumers live.	35	4.42	0.433
As a result of consumer demand, we modify our goods and services.	35	4.57	0.443
Mean		**4.38**	**0.440**

Source: Field Data (2021)

The businesses having a 4.57 as mean and a 0.443 as standard deviations in Table 4.9, alter their goods and services in response to their specialized consumer needs. The organizations also extend their business to locations where their customers come from as depicted having a 4.42 as mean and a 0.433 as standard deviations. Further, the organizations have a focus of selling their products to a particular market niche only having a 4.30 as mean and a 0.456 as standard deviations. Lastly, the firms innovate their products and services for this niche market having a 4.23 as mean and a 0.432 as standard deviations. The overall mean was 4.38 which implies that many telecommunication providers embrace differentiation strategy to a great extent.

4.5.2 Differentiation Strategy

The participants were furnished with five statements about differentiation strategy and prompted to demonstrate their degree of understanding. Table 4.10 depicts the outcome.

Table 4. 10: Differentiation

Statement	**N**	**Mean**	**Std dev**
Our business is strategically located	35	4.32	0.467
We have an edge over our rivals because of our reputation.	35	4.43	0.454
The firm offers suitable business timing (operating days/hours)	35	4.53	0.456
The firm offers superior customer service and support	35	4.23	0.467
Mean		**4.38**	**0.461**

Source: Field Data (2021)

Table 4.10 depicts that organizations offer suitable business timing as shown by the Mean of 4.53 and std deviation 0.456. The organizations also have a reputation that gives them an advantage over their competitors as shown by a mean of 4.43 and std deviation 0.454. Further, the organizations have a strategic location for their businesses as shown by a mean of 4.32 and std deviation 0.467. Lastly, the firms offer superior customer service and support having a 4.23 as mean and a 0.467 as standard deviations. The overall mean was 4.38 which implies that many telecommunication providers embrace differentiation strategy to a great extent. The overall standard deviation and mean for the competitive advantage is 0.462 and 4.40 respectively.

4.6 Correlation Analysis

Analyses of correlation were used to evaluate connection among study variables. It helped in establishing the association between competitive advantage and innovation strategies. In this case, Table 4.11 demonstrates the outcomes of the analyses.

Table 4. 11: Pearson Product-Moment Correlations

		PI	PRI	MI	AI	CA
PI-Product innovation	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	35				
PRI-Process Innovation	Pearson Correlation	.523*	1			
	Sig. (2-tailed)	.05				
	N	35	35			
MI-Market innovation	Pearson Correlation	.583**	.141*	1		
	Sig. (2-tailed)	.01	.05			
	N	35	35	35		
AI-Administrative innovation	Pearson Correlation	.650**	.324**	.215*	1	
	Sig. (2-tailed)	.01	.01	.05		
	N	35	35	35	35	
CA-Competitive Advantage	Pearson Correlation	.783**	.638**	.466*	.625**	1
	Sig. (2-tailed)	.01	.01	.03	.01	
	N	35	35	35	35	35

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

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

Source: Field Data (2021)

Competitive advantage and Product innovation have a positive connection, as seen in the preceding Table 4.11, with a Pearson correlation value of 0.783 indicating a direct link. Competitive advantage and Process innovation have a positive connection, as seen in the preceding Table 4.11, with a Pearson correlation value of 0.638, P=0.00 indicating a direct link. Nonetheless, competitive advantage and marketing innovation have a positive moderately significant connection, as seen in the preceding Table 4.11, with a Pearson correlation value of 0.466, P=0.000 indicating a direct link. Finally, competitive advantage and administrative innovation strategy have a positive significant connection, as seen in the preceding Table 4.11, with a Pearson correlation value of 0.625. P=0.000 indicating a direct link.

4.7 Regression Analysis

Regression analyses were used to ascertain how telecommunications providers competitive advantage is supported by innovation strategies by utilizing the determination coefficient (r^2) and also to forecast the connection among variables by use of β coefficient. In order to determine the percentage of the dependent variable (competitive advantage) being predicted by four predictor factors, analyses of multiple regression was performed (Product, Process, Market and administrative innovations).

4.7.1 Model Summary

Analysis of Multiple regressions was conducted to highlight effects of predictor variables on dependent variables. Table 4.12 indicates the model summary.

Table 4.12: Model Summary

Model	R	R^2	Adjusted R Square	Std. Error of the Estimate
1	.876[a]	.767	.684	.419

Predictors: (Constant), Product innovation, Process innovation, Market innovation and administrative innovation

Source: Field Data (2021)

In Table 4.12 at significance level of 0.005, the outcomes show that R and R^2 were 0.876 and 0.767 respectively. There is a robust association of innovation strategies and competitive advantage as evident by R=0.876. The findings also showed that 76.7% of the fluctuation of the competitive advantage is shown by model predictors, whereas 23.3% is not explicit because of additional variables not in the model.

4.7.2 Goodness of Fit of the Model

The researcher selected a regression model that was appropriate for the data collection, and he conducted an analysis of variance (ANOVA). In this case, Table 4.11 demonstrates the outcomes of the analyses.

Table 4. 13: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	8.090	4	1.618	2.427	0.000[b]
1	Residual	2.460	30	.176		
	Total	**10.550**	**34**			

Source: Field Data (2021)

Table 4.13 shows F (4, 34) =2.427 to be significant at 95% confidence level. The model employed may explain the relationship in the framework of competitive advantage and innovation strategies. The relevance highlights usefulness of the 95% level of confidence regression model, where the ANOVA p-value is below alpha (P < 0.05) and thus competitive advantage is significantly forecasted by innovation strategies.

4.7.3 Model Regression Coefficients

The presentation in Table 4.14 shows significant values, t-statistics, standardized and unstandardized coefficients.

Table 4. 14: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B (β)	Std. Error	Beta (β)		
1	(Constant)	.179	.756		.236	.817
	Market innovation	.149	.239	.165	.623	.543
	Administrative innovation	.247	.159	.272	1.554	.012
	Product innovation	.239	.125	.305	1.906	.037
	Process Innovation	.200	.273	.126	.733	.476

a. Dependent Variable: Competitive advantage

Source: Field Data (2021)

Table 4.14 β value of 0.305 demonstrated a favourable and meaningful impact on competitive advantages of product innovation (p=0.037). The aforementioned equation indicated that a unit change in product innovation would substantially alter the competitive advantage by 0.305 units in the same direction when the other factors were controlled. However, the β value of 0.126 postulated the impact of process innovation on competitive advantages was positive and negligible (p=0.476). From the regressive equation, it indicated that a change of unit in the innovation process would lead to a negligible competitive advantage shift of 0.126 units in that direction if other factors are controlled. Similarly, β value of 0.165 postulated a positive and negligible impact of market innovation on competitive benefits ($p=0.543$). Hence, if other factors are put under control, a unit change in market innovation would lead to an insignificant competitive advantage shift of 0.165 units in the same direction. Finally, β value of 0,272 the positive and substantial impact of administrative innovation on competitive advantage ($p=0,012$). The regression equation implies that a change in the unit of administrative innovation would result in a significant change in a competitive advantage by 0.272 units in one direction if other factors were controlled. The whole regression equation was the following: -

$Y=0.1790+0.165X_1+0.272X_2+0.305X_3+0.126X_4$

Where:

Y=Competitive Advantage

$X_{1=}$Market Innovation

X_2=Administrative innovation

X_3=Product Innovation

X_4=Process Innovation

The overall model shows that innovation strategies influence competitive advantage with a p-value of <0.005 except the market innovation which is at 0.543 as well as process innovation 0.476 and each variable positively predicted competitive advantage. However, only administrative innovation and product innovation were statistically significant.

4.8 Discussion of Findings

It was found out that many telecommunication providers embraced product innovation strategy to a moderate extent. Product innovation strategy is viewed as a procedure in which a company creates and promotes the most recent products or services that may result in corporate success. These results confirm those of Schilling (2010) is related to organization success as it enables organizations to acquire dominant position in a competitive market. Consistent to this finding, is the observation by Shejeroo (2016) who found that to a moderate extent, firms that embraced product innovation to ensure effective implementation of innovation strategies.

The study established that innovation strategy to a great extent is influenced by process innovation. Process innovation is in most cases focused on the way innovation is applied to the organization and execution process that results in developing of new product or service. The findings agree with Bharadwaj, Fahy and Varadarajan (2015) indicating that process innovation increases the capability of using advanced technology during the production process which allows organizations to reduce their overhead and cost of production. These findings are consistent with the observations of Herrera (2015) showed that innovation in processes has an important connection to commercial banks' competitiveness.

The study established that many telecommunication providers embraced market innovation to a moderate extent. This was backed by the following comments that the organization has updated the methods of promoting existing and/or new services. These results corroborate with Ren et al. (2010) indicating market innovation is a fundamental tool for achieving sustainable competitive advantage in an organization. Market innovation is crucial since it enables firms to grab market opportunities and at the same time helps a form in meeting customer needs.

Telecommunication providers embraced the administrative process to great extent. This was supported by the following statements that the firm has upgraded its administrative system and the company promotes cooperation across divisions to speed up the invention process and to obtain more input on the product being released. These findings are consistent with Tan & Nasurdin, (2011) Efficient and efficient management effort, better connections with employees, greater job and workplace happiness and improved working environment accomplish administrative innovation.

According to the findings, innovation tactics and competitive advantage have a favourable relationship. So as to discover how competitive advantage is impacted by innovation strategies across Kenyan telecommunication companies, regression analysis was used. The determination coefficient was determined as an excellent match for the data, with R^2=0.767, indicating that it is a reliable predictor. The statistical significance of the entire model of regression was shown by the p-value of 0.000 (0.05). These results back with research by Dodgson, Gann, and Salter (2008), which looked at the importance of innovative strategies in gaining a competitive edge in banking sector of Brazil. The outcome indicated that innovation strategies improve operational efficiency, adaptability, pioneering potential, invention, and management capability, all of which are competitive advantages.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents an overview of the results, as well as the conclusions and suggestions made by the researchers. This is done in accordance with the study's goals.

5.2 Summary of the Findings

The aim of this research was to impact the competitive advantages of telecommunications providers in Kenya through innovation strategies. It was found out that most of Kenyan telecommunication providers having been in business for almost 8 years and have less than 1000 employees. Most of the telecommunication providers are privately owned.

Process and administration innovation strategies were shown to have a significant impact on innovation strategies at great extent. Process innovation encompasses customer services, strategic planning, employee assessment and project management. Administrative innovation is accomplished via more efficient and effective administrative activities, improved employee interactions, and improved job and workplace happiness, all of which are facilitated by a better working environment.

It was found out that many telecommunication providers embraced product innovation and market innovation at moderate extent. Product innovation forces organization to innovate new products due to changing needs and demands of the market place. Market innovation is crucial since it enables firms to grab market opportunities and at the same time helps a form in meeting customer needs.

A connection exists between competitive advantage and innovation strategies, according to the research results. The regression model used in this research was shown to be a decent predictor in the regression analysis. The models were statistical significance, as demonstrated in a variance analysis by p-value fewer than 0.05. Administrative innovation was statistically significant. Market innovation was insignificant implying organizations do not renew general marketing management activities.

5.3 Conclusion of the study

Majority of the telecommunication providers under review have a solid experience in Innovation strategies and most of the firms are privately owned. Most of the Kenyan telecommunication providers have been in existence for longer than eight years and have less than 1000 employees.

Process and market innovations have beneficial but insignificant effects on competitive advantage. In line with those innovations, firms are using advanced technology during the production process and moreover companies have refreshed their service promotion tactics utilized to promote new products. These are the notable process and market innovations.

Product and administrative innovations influence innovation strategies significantly. Telecommunication providers periodically change their structure to enable team work. On the other hand, the firms have upgraded their administrative systems. The telecommunications providers innovate solutions which may not be profitable in the near term, but that benefit the business in the long run.

The study also suggests that the link between competitive advantages and innovation strategies is positive. The adopted regression equation was significant for administrative innovation as well as market innovation. This postulated that improvement in administrative innovation as well as product innovation during innovation strategies would results in significant improvements in competitive advantage. The model was shown to be a trustworthy predictor and suitable for the data, as demonstrated by the determination coefficient.

5.4 Recommendations

Product innovations have a good and considerable impact on competitive advantage, according to the findings. As a result, managers of the Telecommunication providers are urged to innovate their products and service offerings on a regular basis. The Telecommunication providers should upscale resources in development and research so that their products are of a better quality and diversity.

The Telecommunication providers should stipulate policies that provide and enhance platforms for product innovation so as to ensure competitive advantage. There is need also invest in product innovation strategies that would enhance new products, quality improvement, research & development and training on innovative product activities.

The study found that market innovations have an insignificant effect on the competitive advantage of the Telecommunication providers. Arising from this result, the research suggests that firms should not concentrate on market advancements but rather on their products and their administrative strategies.

The study also found that process innovations have an insignificant effect on firms` competitive advantage and therefore, telecommunications firms should not prioritise these innovations over market and product innovations.

5.5 Limitations of the study

One of difficulties was that mid-level management personnel were the target responders for the research. Many were extremely busy and strained due to the pressure at work, therefore there was not enough time to answer the surveys when the researcher provided them with the questionnaire. To guarantee that the questionnaire was properly completed, the instrument validity was checked to make sure aims of investigation are clear, brief and addressed before distributing them by email.

The onset of covid 19 necessitating people working from home and maintaining social distance limited the interactions the researcher could have with the respondents. Follow up questions had to be done remotely via a phone call or zoom meetings. These limitations further made it harder to adequately validate some of the responses as would have been the case in face to face meetings.

The research also has a further disadvantage because it focuses solely on innovative tactics. However, other variables are extremely important in obtaining a company's competitive edge.

5.6 Implications of the study

In this study, we sought to establish the innovation strategies adopted by telecommunication providers and how they impact organization’s competitive advantage. The study's results are essential the telecommunication providers as they can use the conclusions and recommendations to enhance their innovation strategies and ensure sustained competitive advantage.

This information will allow policy-makers, trainers, consultants and institutions to design strategic initiatives, tools and actions which will encourage innovation by Kenyan telecommunication firms. The outcomes of study point out the strategies used by a telecommunication market leader thus other firms can adopt these or develop strategies on innovative practices which is in line with our findings.

Finally, the findings of the study further add on the empirical evidence on innovation strategies, competitiveness and the telecommunication sector and presents an avenue for additional studies on the concept of innovation.

5.7 Suggestions for Further Studies

This research is a cross-sectional study using a quantitative method. It simply recorded the views and impressions of participants. The cross-sectional research was chosen utilizing the quantitative technique since it was the most suitable way available to deal with problems due to restricted time and budget limitation. Therefore, comparable research on the basis of qualitative methods such as interviews is necessary.

Further, this study only focused on telecommunication sector. This leaves gaps in the effect of innovative strategies on other firms such as airline companies, large-scale farms, manufacturing firms, motor firms amongst others. Future research should be undertaken to identify the effect of innovation strategies on competitive advantage in other sectors.

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APPENDICES

Appendix I: Introduction Letter

April 2021

Masters Student- MBA

University of Nairobi

<u>**RE: REQUEST FOR RESEARCH DATA**</u>

I am a student at the University of Nairobi where I am undertaking a degree in Masters of Business Administration. I am obliged to present a research in my course work evaluation on **"INNOVATION STRATEGIES AND COMPETITIVE ADVANTAGE AMONG TELECOMMUNICATION COMPANIES IN KENYA".** To do so, your company is chosen to produce the necessary data for this research. This information is used only for academic purposes and your identity is not included in the report. The findings of the research will be used to you upon request.

Your participation and help would be greatly appreciated.

Thank you in advance.

Owino Akelo

Masters Student – Researcher

University of Nairobi

Appendix II: Questionnaire

The information gathered from this survey is meant for academic purposes only and is utilized in part for the implementation of a Masters Research project to assess the effects of telecommunications companies on innovation and competitive advantage in Kenya." All submitted information will be handled with maximum privacy. There are 6 parts.

Section One: General Information

Please choose the most suitable option.

1. In which of telecommunication companies do you work? (Enter below)

   ____

2. For how long has the company been in operation? (Tick one)

Lessothano4oyears [ ]

4-8 years [ ]

Above 8 years [ ]

3. How many employees are there in your organization (tick one)

Less than 400 [ ]

401 - 1000 [ ]

Above 1,000 [ ]

4. What is the ownership structure of your company? (tick one)

Private [ ]

Publicly listed [ ]

Government owned [ ]

Section Two: Innovation Strategies

1. To what degree do you agree with the following assertions about your company's innovation strategies? Use the scale below to help you.: 1- No extent, 2- Little extent,o3-Moderate extent, 4-Great Extent, 5- Very great Extent.

Product innovation Strategy	**1**	**2**	**3**	**4**	**5**
The organization introduces new or significantly improved products.					
Customers' preferences and tastes vary, therefore the company adjusts its goods accordingly.					
Your company's research and development efforts generate new information or address scientific or technological issues.					
Customers' tastes and preferences vary, therefore the company adjusts its offerings accordingly.					
The firm develops goods that may not be lucrative in the near term but will benefit the company in the long run.					

Process Innovation Strategy	1	2	3	4	5
The company introduces new or substantially better techniques for production or production of products or services					
The business introduces logistically, transportation or distributing techniques new or substantially enhanced for your materials, products or services.					
The company acquires sophisticated gear, equipment, software and structures for new or substantially enhanced processes					
The company buys existing knowhow, copyright, patented and unpatented innovations.					
The company finds non-value added tasks in delivery processes to be eliminated.					
Market Innovation Strategy	**1**	**2**	**3**	**4**	**5**
The organization renovates the methods of promoting existing and/or new services provided.					

The business renews distribution routes, but does not change the logistical procedures connected to product delivery.					
The organization renews general marketing management activities.					
The company seeks possibilities based on future consumer demands and develops solutions to fulfill these requirements.					
The company is attempting to predict future industry trends to develop suitable tactics					
Administrative innovation Strategy	**1**	**2**	**3**	**4**	**5**
The firm periodically changes its structure to enable team work					
The company promotes cooperation across various departments so as to speed up the invention process and get more feedback from the product released					
The company uses analytical techniques to assist decision-making processes					
The firm has upgraded its administrative system					

There is increasing investment in innovative technology					

Section 3: Competitive Advantage

1. To what degree do you agree with the following assertions about your company's competitive advantage? Use the following scale: 1- No extent, 2- Little extent,3- Moderate extent, 4-Great Extent, 5- Very great Extent.

Cost leadership	**1**	**2**	**3**	**4**	**5**
The firm reduces its operational costs					
The firm ensure tight controls for overhead costs					
The company charges cheap pricing because of lower operating expenses and/or overhead costs					
The company offers lower consumer pricing than our rivals					
The firm adopts latest technology in our operations					
Differentiation	**1**	**2**	**3**	**4**	**5**
Our business is strategically located					

We have an edge over our rivals because of our reputation.					
The firm offers suitable business timing (operating days/hours)					
The firm offers superior customer service and support					
Focus	**1**	**2**	**3**	**4**	**5**
The company is only concerned with selling goods to a certain market segment.					
We develop new goods and services to meet the needs of this specific market segment.					
We've expanded our business to include areas where consumers live.					
As a result of consumer demand, we modify our goods and services.					

Thank you very much.

Appendix III: Telecommunication Providers

Below is the list of the licensed Tier 1 and 2 telecommunication providers in Kenya.

1. Airtel Networks Kenya Limited
2. Safaricom Limited
3. Telkom Kenya Limited
4. Alan Dick & Company (East Africa) Limited
5. Atc Kenya Operations Limited
6. Atlas Tower Kenya Limited
7. Bandwidth And Cloud Services Group Limited
8. Bell Western Limited
9. Commcarrier Satellite Services Limited
10. Data Stream Solutions Limited
11. Feltwell Telecom Limited
12. Fourth Generation Networks Limited
13. Frontier Optical Networks Limited
14. Geo-Net Communications Limited
15. Harun International Limited
16. Internet Solutions Kenya Limited
17. Iway Africa Kenya Limited
18. Jamii Telecommunications Limited
19. Kenya Education Network
20. Kenya Electricity Transmission Company Limited
21. Kenya Pipeline Company Limited

22. Leavitt Holdings Limited
23. Leosat Kenya Limited
24. Liquid Telecommunications Kenya Limited
25. Mast Rental Services Limited
26. Mobile Telephone Networks Business (K) Limited
27. Moja Access Limited
28. Seacom Kenya Limited
29. Sealtowers Limited
30. Simbanet Com. Kenya Limited
31. Skymax Network Kenya Limited
32. The Information And Communication Technology Authority
33. The Kenya Power And Lighting Company Limited
34. Vodacom Business (Kenya) Limited
35. Wananchi Group Kenya Limited
36. Wananchi Telecom Limited
37. Wiafrica Kenya Limited
38. Zing Telecom Limited

Source:Register-of-Unified-Licensing-Framework-Licensees-February-2021.pdf (ca.go.ke)