

**INNOVATION STRATEGIES AND COMPETITIVE  
ADVANTAGE OF MANUFACTURING PHARMACEUTICAL  
COMPANIES IN NAIROBI, KENYA**

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## DECLARATION

This is my original work and has not been presented for the award of a degree in any institution of higher learning.

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**D61/86246/2016**

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

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## **ACKNOWLEDGEMENT**

I thank God for sufficient grace that saw me complete this project. I thank my supervisor Dr. Kennedy Ogollah whose support and encouragement enabled me to complete this project. To the management of all the pharmaceutical companies who gave me ample time to collect data that helped in the analysis of this project, I say thank you.

## **DEDICATION**

I dedicate this research project report to all my friends and family members for the support they accorded me.

## ABSTRACT

The growing number of traditional and herbal medicinal products has increased competition for pharmaceutical companies too. About 70% of the population in Kenya relies on traditional medicine. This trend is worrying to the entire pharmaceutical industry especially those manufacturing pharmaceutical companies. It is a threat to their competitive advantage and long-term survival. The study examined the link between innovation strategies and competitive advantage among companies engaged in the manufacture of health care products. The design adopted was descriptive. The population comprised of 22 manufacturing pharmaceutical companies in Nairobi. The study adopted a census on all the 22 companies. Data for the study was sought by the use of questionnaires. The presentation of the findings was done using tables. The study established that (88.0%) change in competitive advantage of the studied manufacturing pharmaceutical companies is explained by their innovation strategies in place (process, product, technology and market innovation). The study concludes that innovation strategies significantly influence competitive advantage. As a recommendation, the management of all manufacturing pharmaceutical firms need to improve on their process, product and technology and market innovation in order to significantly influence competitive advantage of their companies. Policy makers including the ministry of health and the PPB of Kenya should create a conducive environment that encourage and support innovation among manufacturing pharmaceutical companies.

# TABLE OF CONTENTS

<b>DECLARATION</b> .....	ii
<b>ACKNOWLEDGEMENT</b> .....	iii
<b>DEDICATION</b> .....	iv
<b>ABSTRACT</b> .....	v
<b>ABBREVIATIONS AND ACRONYMS</b> .....	ix
<b>LIST OF TABLES</b> .....	x
<b>CHAPTER ONE: INTRODUCTION</b> .....	1
1.1 Background of the Study.....	1
1.1.1 Concept of Strategy.....	3
1.1.2 Innovation Strategies.....	4
1.1.3 Competitive Advantage.....	5
1.1.4 Manufacturing Pharmaceuticals in Kenya.....	6
1.2 Research Problem .....	7
1.3 Research Objective .....	10
1.4 Value of the Study .....	10
<b>CHAPTER TWO: LITERATURE REVIEW</b> .....	11
2.1 Introduction .....	11
2.2 Theoretical Review .....	11
2.2.1 Schumpeter Theory of Innovation .....	12
2.2.2 Resource Based View Theory.....	13
2.2.3 Porter’s Theory of Competitive Advantage.....	14
2.2.4 Diffusion of Innovation Theory.....	15
2.3 Innovation Strategies and Competitive Advantage .....	16
2.4 Summary of Literature and Research Gaps.....	19

<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>20</b>
3.1 Introduction .....	20
3.2 Research Design .....	20
3.3 Population of the Study.....	21
3.4 Data Collection.....	21
3.5 Data Analysis.....	22
<b>CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS .....</b>	<b>23</b>
4.1 Introduction .....	23
4.2 Response Rate.....	23
4.3 General Information of Respondents.....	24
4.4 Descriptive Analysis .....	26
4.4.1 Innovation Strategies.....	26
4.4.2 Competitive Advantage.....	31
4.5 Regression Results.....	32
4.6 Discussion of the Findings .....	34
<b>CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS</b>	<b>37</b>
5.1 Introduction .....	37
5.2 Summary of the Findings .....	37
5.3 Conclusion.....	39
5.4 Recommendations of the Study.....	40
5.5 Limitations of the Study.....	41
5.6 Suggestions for Further Studies.....	41
<b>REFERENCES .....</b>	<b>42</b>
<b>APPENDICES .....</b>	<b>51</b>
<b>APPENDIX I: LETTER OF INTRODUCTION .....</b>	<b>51</b>

<b>APPENDIX II: QUESTIONNAIRE .....</b>	<b>52</b>
<b>APPENDIX III: LIST OF MANUFACTURING PHARMACEUTICAL COMPANIES IN NAIROBI, KENYA .....</b>	<b>56</b>



## **ABBREVIATIONS AND ACRONYMS**

**RBV:** Resource Based View

**PPB:** Pharmacy and Poisons Board

**SMEs:** Small and Medium Enterprises

**HR:** Human Resource Manager

## LIST OF TABLES

<b>Table 2.1:</b> Summary of Literature and Research Gaps.....	19
<b>Table 4.1:</b> General Information on Respondents.....	24
<b>Table 4.2:</b> Process Innovation .....	27
<b>Table 4.3:</b> Product Innovation.....	28
<b>Table 4.4:</b> Technology Innovation .....	29
<b>Table 4.5:</b> Market Innovation.....	30
<b>Table 4.6:</b> Competitive Advantage .....	31
<b>Table 4.7:</b> Model Summary.....	32
<b>Table 4.8:</b> Analysis of Variance .....	33
<b>Table 4.9:</b> Regression Coefficients.....	33

## **CHAPTER ONE: INTRODUCTION**

This chapter contains the background of the study, the research problem, research objectives and the value of the study. The background presents the conceptual and contextual argument that clearly brings out the variables of the study. Innovation strategies were taken as the independent variable while competitive advantage was the dependent variable of the study.

The research problem clearly articulates the contextual and conceptual arguments that link innovation strategies and competitive advantage. Studies on innovation strategies and competitive advantage are reviewed under the research problem to clearly bring out contextual, conceptual and methodological gaps that the current study sought to fill. The research objective serves the purpose of the study and it was drawn from the main topic of the study. The value of the study presents the relevance of the findings to policy makers, theory and practice.

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

The world has witnessed a paradigm shift resulting from the forces of globalization and stiff competition. Customer needs, demand and preferences for products and services from various companies are also ever changing. These forces have affected all organization irrespective of the industry and sector. In order to counter these forces and remain competitive in the market, most companies have been forced to critically examine their strategies. Only those organizations that have put in place strategies to counter these forces are able to have competitive advantage in the market (Mommen & Jilberto, 2017).

According to Schumpeter Theory of Innovation, any organization that seeks to remain competitive in the market must innovate. This theory suggests that innovative companies are in position to come up with new products, modify existing systems and thus creating more avenues for competitive advantage (Schumpeter, 1934). The Resource Based View (RBV) Theory on the other hand suggests that organizations leverage on resources they have to gain competitive advantage.

According to this theory, companies are made up of bundles of both tangible and intangible resources that help in gaining competitive advantage. Having resources in its own is not sufficient to enable a firm gain competitive. These resources need to be rare, valuable, imperfectly imitable and with no substitutes (Penrose, 1959; Barney, 1991). Innovation is a costly initiative and requires a firm to dedicate its resources (both human and financial). Porter's Theory of Competitive advantage suggests that an industry that a firm operates is characterized by five forces of competition which include barriers to new firms entering the market, the power of suppliers and buyers to bargain and threats emanating from substitute goods and services in an industry (Porter, 1979). In view of the Diffusion of Innovation Theory (DOI), the underlying features of an innovation include compatibility with existing systems and an ability to be replicated it across departments in an organization (Rogers, 1983).

The pharmaceutical industry supports the overall growth of an economy by supporting the healthy sector. Manufacturing pharmaceuticals ensure a constant supply of drugs and other health products that support human life. However, there are challenges like changing customer demands, advancement in technology and a rise in fake drugs in the market that has adversely affected competitiveness (Van-Oort, 2017).

According to Wallace (2017), innovation is one of strategic responses at disposal for pharmaceuticals to achieve competitive advantage. The adoption of the innovation strategies has enabled organizations including manufacturing pharmaceuticals to gain competitive advantage that highly relies on the ability of a firm to internalize its innovation activities. Innovation according to Tukker et al. (2017) is the ability of an organization to respond to environmental turbulence for future opportunities. Parker and Alstynne (2017) noted that this environment turbulence emanates from advancement in technology and changes in business environment. To be innovative, most organization have heavily invested in research and development followed by launching of new products and services as a way of responding to ever changing needs and wants of customers.

### **1.1.1 Concept of Strategy**

Strategy is a broad guideline that outlines how an organization would achieve the set goals and objective. It is a roadmap that guides an organization in achieving its core purpose. According to Grant (2016), the term strategy refers to long-term scope and direction of an organization which include the ability of the firm to align itself with the changing environment. Porter and Lee (2015) defined strategy as the ability of an organization to match its activities and resources to its environment. Thomas and Ambrosini (2015) defined strategy as a perspective, position, pattern, ploy or plan. Any form of business or organization requires strategies. Without proper strategies, an existing organization is likely to drift away from customers and loss competitive edge in a market or an industry.

Strategies result into synergy in an organization by giving an overall sense of direction to its members. It helps an organization to establish clear goals and objectives and how well to implement them for competitive advantage (Bryson, 2018). Formulation of strategies starts by evaluating the vision and mission statements of an organization to determine the intended future direction. The success story of most blue chip companies lies in their ability to formulate and implement strategies that are in line with their overall goals and objectives.

### **1.1.2 Innovation Strategies**

Innovation is the ability to implement new products (goods and services) or improve on the existing business practices like marketing, organizational structure and culture and other systems and processes within an organization. It is a successful process of making sure that creative ideas are fully implemented within an organization (Wachira&Ondigo, 2016). As a strategy, innovation results into new products or improvement in the way an organization carries out its activities. Innovation strategy is concerned with introduction of new products, changes in structures and systems of an organization, utilization of technology. Kogan, Papanikolaou, Seru and Stoffman (2017) indicated that firms can innovate radically or incrementally. The emphasis of incremental innovation is on exploration of existing facilities like technology, products and processes. Radical innovation on the other hand results into processes, products and systems that are unique with improved features that result into overall cost reduction. The resultant product from radical innovation has capability to attract both existing and new customers (Rosenzweig, Grinstein, Sinkula & Baker, 2014).

All organization require to put in place innovation management team or research and development departments charged with responsibilities of developing innovation processes, innovation strategies and establishing a culture of innovation among all employees (Tukker, Charter, Vezzoli, Stø, & Andersen, 2017). According to Anderson, Potočnik and Zhou (2014), innovation strategies can be evaluated through the forms or types of innovation. This includes process, product, institutional, market and technological innovation.

For an innovation strategy to be effective in an organization, it needs to be centered on meeting the ever-changing needs, preferences and wants of customers. Innovation strategies act as bearing centering the whole efforts of an organization on the general goal of innovation. Furthermore, innovation strategies need to indicate how well an organization will effectively carry out or convey innovation and how it will be perceived by customers who determine competitive position of an organization (Autio, Kenney, Mustar, Siegel& Wright, 2014).

### **1.1.3 Competitive Advantage**

Porter (1985) is the guru of competitiveness who defined it as the ability of an organization to carry operations at relatively lower costs as compared to other similar players in an industry. Competitive advantage is the added value in operational circumstance of an organization in relation to other firms in an industry offering similar products. Highly competitive companies are always progressive to sustain the lead in the market (Porter, 1985).

Competitive advantage is a superior or unique position gained by an organization over its rivals. Firms derive competitive advantage through their products, processes or ways of carrying out operations and activities (Harrison, Jaumandreu, Mairesse & Peters, 2014). Understanding sources of competitive advantage is critical to any firm. The greatest sources of competitive advantage are the resources, internal capabilities, opportunities and threats and the key competencies of an organization own (Klewitz & Hansen (2014). Firms should not just be interested in gaining competitive advantage but it should be sustained. Firms strive to be competitive by owning rare resources that cannot easily be substituted by competitors and that they have no perfect substitutes (Lara, Kolasani& Ramamurthy, 2014).

#### **1.1.4 Manufacturing Pharmaceuticals in Kenya**

All companies dealing in pharmaceutical products in Kenya are regulated by the Pharmacy and Poisons Board (PPB) that was established under specific Act of the Parliament. PPB has established some mechanisms and guidelines to streamline firms that manufacture, transport, retail and sale the drugs to final consumers in the country. This is done to safeguard the quality, efficiency and effectiveness of the entire sector in Kenya (Pharmacy & Poisons Board, 2016). There are three key segments that form the pharmaceutical sector; these include manufacturers, distributors and retailers.

The efforts of the government to improve the pharmaceutical sector have positively influenced the growth of the sector (Economic Survey, 2016). In Nairobi County, there exist 22 leading firms that engage in manufacturing of pharmaceutical products in Nairobi (Ministry of Health, 2016). The sector has witnessed tremendous growth the call its players to formulate adequate innovation strategies as a way of remaining competitive.



Pharmaceutical companies today have been found in a highly competitive environment. The existing regulatory framework in the country has not been effective as there have been many cases of fake drugs in the country. There have been several incidences where the Pharmacy and Poisons Board has recalled some of the already distributed drugs in the country that has adversely affected competitive position of these manufacturing Pharmaceutical companies. In order to regain back their market share and competitive advantage being threatened by these challenges, innovation strategies are paramount (Bartlett & Beamish, 2018). Thus, the study assessed how these innovation strategies would transpire into competitive advantage of these manufacturing pharmaceutical companies.

## **1.2 Research Problem**

Customer needs, demand and preferences for products and services from various companies are ever changing. In order to survive in this competitive environment, innovation is paramount. If successfully put in place, Wachira and Ondigo (2016) argued that innovation results into new products or improvement in the way an organization carries out its activities. For an innovation strategy to be effective in an organization, Autio et al.(2014) noted that it needs to be centered on meeting the ever-changing needs, preferences and wants of customers. Firms derive competitive advantage through their products, processes or ways of carrying out operations and activities (Harrison et al., 2014), and these are best realized through innovation strategies put in. The innovation strategies put in place go a long way to shaping the competitive desire of an organization.

The growing number of traditional and herbal medicinal products has increased competition for pharmaceutical companies too. According to Ameade, Ibrahim, Ibrahim, Habib and Gbedema (2018), about 70% of the population in Kenya relies on traditional medicine. This trend is worrying to the entire pharmaceutical industry especially those manufacturing pharmaceutical companies. It is a threat to their competitive advantage and long-term survival. To regain competitive advantage in this case, innovation among manufacturing pharmaceutical companies is pertinent.

Several studies have been done on how innovation strategies affect competitive advantage of organizations in different contexts. Globally, Ionescu and Dumitru (2015) critically examined the how firms can leverage on innovation to gain competitive positioning in the market.

The findings of the study indicated that innovative ability of the firm drives its ability to gain competitive advantage. This study was not clear on the industry or sector. Conto, Júnior, Valle and Vaccaro (2016) examined how innovation can result into competitive advantage. It was noted that innovation helped organizations to align products with the needs of customers resulting into customer satisfaction. The study was however done in companies producing organic juice and wine producer and not the pharmaceutical industry. In Thailand, Tangkit and Panjakajornsak (2016) assessed how innovation has affected firms in the furniture sector. The study established that firms stood to significantly benefit from adoption of radical innovation since it leads to competitive edge. The context which the study was done was however different from the current study.

Urbancova (2013) looked at how firms remain competitive via knowledge and innovation. The findings of the study indicated that for firms to remain competitive in the ever changing business environment, they require to be innovative. The study was too general as it did not specify the sector it was carried in. Capo, Brunetta and Boccardelli (2014) looked at innovative business models in the pharmaceutical industry. The study was conducted in Italy. In Hungary, Lanyi (2008) assessed on innovation as the key of the pharmaceutical companies' competitive advantage. The study noted that innovation played an important role in so far competitive advantage was concerned.

Locally, Kariuki (2017) assessed a link between the strategies of innovation and competitiveness of banking entities. The study revealed that both products, market, process and technology innovation strategies affected competitive positioning Kenyan banks. Wanyoike (2016) sought to find a link between strategies for being innovative and competitiveness among logistics firms in Mombasa. This study was conducted in a totally different sector (logistic).

The reviewed materials focused in different contexts (furniture, banking) and not the pharmaceutical companies particularly those involved in manufacturing process. The few studies that related innovation and competitive advantage in pharmaceutical companies were not done specifically in manufacturing companies resulting into research gaps. To fill these gaps, the study strived to answer the following research questions; what is the effect of process, product and market and technology innovation on competitive advantage of manufacturing pharmaceutical companies in Nairobi, Kenya?

### **1.3 Research Objective**

The objective of the study was to determine the effect of innovation strategies on competitive advantage of manufacturing pharmaceutical companies in Nairobi, Kenya.

### **1.4 Value of the Study**

The study would be relevant to regulatory bodies like the Pharmacy and Poisons Board (PPB), the management of all the manufacturing pharmaceutical companies in Kenya and future scholars and academicians. For the Pharmacy and Poisons Board, the study would recommend possible ways of how to regulate the Pharmaceutical sector by formulating effective policies and regulation that encourage competitiveness of these companies. This would result into sustainable competitive advantage among companies involved in manufacturing pharmaceutical products.

The study would establish how best firms in the pharmaceutical sector can innovate and stay competitive in the industry. The study would recommend the best innovation strategy that would help these companies gain competitive advantage. The management of these companies would rely on the findings of this study to make relevant and informed decisions with regard to innovation and how it can lead to competitive advantage.

Future scholars and academicians would use the findings of this study to carry out further studies with regard to how innovation can be put in place to gain competitive advantage. This would be achieved by looking at limitations of the study. The study would add more literature and theory to the existing one with regard to innovation strategies and how they help an organization gain competitive advantage.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter is divided into sections based on the literature that was reviewed by the researcher. In section 2.2, the researcher looked at the theories that underpinned the study on how innovation strategies influence competitive advantage in organizations. Specifically, the researcher reviewed the Schumpeter theory of innovation, RBV theory, Porter's theory of competitive advantage and DOI.

Section 2.3 links the identified innovation strategies with competitive advantage by looking at past empirical studies. The review of literature in this section considers both international and local studies. The last section in this chapter is 2.4 where the researcher summarized all the reviewed literature in the past sections of the chapter. The essence of this section was to point out research and knowledge gaps that the current study sought to fill.

### **2.2 Theoretical Review**

The theoretical review is a critical examination of theories that form the basis of the study. Yin (2017) defined a theory as a set of principles that guide how something is done. In this context, theories were reviewed to guide how innovation strategies can best be adopted and how this would influence competitive advantage. This chapter is divided into subsections based on the theories that were reviewed. Subsection 2.2.1 reviewed the Schumpeter theory of innovation while subsection 2.2.2 looked at the resource based view theory. The Porter's theory of competitive advantage and diffusion of innovation theory were reviewed in the other two subsections.

### **2.2.1 Schumpeter Theory of Innovation**

This theory was developed by Schumpeter (1934). According to Schumpeter, entrepreneurs can use innovation for greater profits. The large amount of profits will set in imitators who shall ultimately reduce the level of supernormal profits in the industry. According to Schumpeter (1934), entrepreneurs play an important role in coming up with completely new ideas that are novel, untried and untested.

The role of innovation in an organization has been indicated by various scholars (Abramovitz, 1956& Solow, 1957). According to these scholars, innovation plays an important role in development of the country in terms of its per capita income. According to Porter (1992), innovation is way one that organizations gain competitive advantage and stay relevant in the market. Anderson et al. (2014) argues that for an innovation strategy to be effective in an organization, it needs to meet the ever-changing needs, preferences and wants of customers.

Through innovation, new products emerge to the market that imitators copy because of the supernormal profits being generated by the product. Nelson and Winter (1977) applied the theory to explain how firms can gain their competitiveness. Aghion, Blundell, Griffith, Howitt and Prantl (2009) applied this theory to explore a link between innovation and productivity of employees in an organizational setting. De-Vries, Bekkers and Tummers (2016) applied this theory to study innovation in the context of public sector.

This theory was relevant because manufacturing pharmaceuticals (being entrepreneurs) need to be innovative in coming with new products in the market in order to stay competitive in this time of environmental turbulence and intensified competition. Innovation would help manufacturing pharmaceutical companies to effectively differentiate their products with unique features for customer satisfaction and therefore competitive advantage. This was therefore the main theory that guided the current study in exploring a link between innovation strategies and the ability of manufacturing pharmaceutical companies to gain competitiveness.

### **2.2.2 Resource Based View Theory**

This theory was formulated in 1980s by Wernerfelt (1984), Rumelt (1984) and Barney (1986). A firm according to this theory is made up bundles of resources. While some of these resources can be touched, other cannot easily be touched. Firms use these resources to be competitive. For these resources to help an organization gain a sustained level of competitive advantage they must be rare, with no perfect substitutes and competitors cannot easily copy them.

This theory has been applied in different fields for instance; Koret al. (2004) used RBV theory to explore the strategies management in firms. Hitt, Xu and Carnes (2016) leveraged on RBV to explore how firms can be successful in their activities of research and development. Sedera, Lokuge, Grover, Sarker and Sarker (2016) applied the RBV to explore how firms can remain innovative and thus gain a competitive edge ahead of their rivals in the market. According to Sedera et al. (2016), firms have different resources which when well explored can help in gaining sustainable competitive advantage.

This theory however fails to address firm boundaries. This is because of its assertion that firms should have all resources that are valuable within its boundaries. This thus underemphasizes a firm seeking to gain competitive advantage by innovation strategies as opposed to expansion of its boundaries (Kor & Mahoney, 2004). However, as no such explicit suggestion is given by the theory, it can thus be extended to incorporate innovation strategies. For an organization to succeed in its innovation strategies, it requires resources. These resources could be in terms of finances and human capital (Kogan et al., 2017). Thus, an organization relies on its resources endowment to innovate and therefore remain competitive in the market.

### **2.2.3 Porter's Theory of Competitive Advantage**

This theory was formulated by Porter (1979). According to this theory, the ever changing and dynamic business environment triggers competitive responses among organizations. Competition emanates from the environment surrounding the business. The industry structure will determine the rules of the game and therefore the adequate strategy to undertake in response to these forces of competition.

The theory suggests that there are five forces within the industry that an organization operates that determines competitive position of the firm (Porter, 1979). These forces include barriers to new entrants, rivalry among other firms, bargaining power of suppliers of the business, bargaining power of customers/buyers and the threats of substitute products. The level and nature of success (profit margin) will be determined by firms in the industry (Porter, 1979).



Kiragu (2014) used this theory to assess the challenges that Kenyan insurance companies in their pursuit for competitiveness. Banker, Mashruwala and Tripathy (2014) applied this theory to determine how firms can effectively differentiate their products and gain competitive advantage. Camisón and Villar-López (2014) relied on this theory to assess how firms can use technology to remain innovative and thus gain competitive edge ahead of its rivals in the market.

This theory can help an organization to get itself in a favorable competitive position within the market. The theory was relevant to the study because it showed how an organization could gain competitive advantage in its industry. Although not explicitly stated by the theory, but it is implicit that innovation strategies in a firm would guide the competitive positioning of the firm in its industry.

#### **2.2.4 Diffusion of Innovation Theory**

The theory was advanced by Rogers (1995). According to Rogers, diffusion of innovation is a process of communicating an innovation by use of appropriate channels over a given period of time. The communication in this case is special in that only new ideas are communicated. The pace and speed of the diffusion of these innovations is affected by among other things, the features of the environment that diffusion occurs (Rogers, 1995).

Decisions relating to non-adoption of an innovation result into rejection of the new idea available. According to Mustonen, Ollila and Lyytinen (2003), the diffusion of innovation best explain factors that facilitate employees to accept new ideas and technology in the work place. Makowsky et al. (2013) used this theory to explain how pharmaceutical companies can use innovation for competitiveness.

As a way of measuring and explain the rate of innovation adoption, Rogers recommended determination of perceived features of innovations that include relative advantage, compatibility, complexity, reliability and observability (Kaminski, 2011). These five features according to Rogers (1995) influence the diffusion of innovation in an organization. The theory was relevant to the study because it communicates pre-requisites for innovation to take place among Pharmaceutical companies. The theory thus supported the need for innovation among pharmaceutical companies.

### **2.3 Innovation Strategies and Competitive Advantage**

In a study to examine the role played by innovation in competitiveness in Jordanian banks, Abou-Moghli et al. (2012) established that with increased environmental turbulence, competitiveness of the firm relies on its innovative ability. The findings of the study further indicated that innovation and competitive advantage are directly related. This means that an increase in innovation increases competitive positioning of the firm. The study however was limited to the banking sector. There was need for similar studies in the Pharmaceutical sector.

A study was done by Noorani (2014) to determine how service innovation and competitive advantage were related. From the findings, it was noted that an organization can improve its service innovation practices through sound customer relationship, improved distribution channels and use of technology to innovate. The findings indicated that an increase in development of new products is a greater step of an organization in achieving competitive advantage. This study however focused on one aspect of innovation; service innovation. The current study examined innovation strategies in totality.

A study was done on how innovation strategies affected learning and innovation performance by Beyene, Shi and Wu (2016). The study employed structural equation modeling analysis. The investigation was done in the textile industry in Ethiopia. The findings of the study showed that innovation strategies and product innovation performance are positively correlated with each other. The study however did not relate innovation strategies with competitive advantage. In another related study, Vergara, Vergara and Otero (2015) looked at how innovation strategies and innovative performance were related with each other. The study was conducted in Colombia among food and beverage firms. The study established that in initial stages of innovation, firms strive to cultivate good relationship key stakeholders including suppliers. This study only focused on innovation strategies influenced performance and not competitive advantage.

A critical evaluation of the role-played innovation in competitive advantage of a firm was done by Ionescu and Dumitru (2015). The findings of the study indicated that innovation result into new products, processes and technologies that transform the way organizations carry out their operations. It was noted that innovation was the significant force that helps an organization gain its competitive advantage. The study focused on innovation as a whole and did not take it as a strategy.

An evaluation of how innovation can help an organization to gain competitive advantage was carried out by Chatzoglou and Chatzoudes (2018). This was an empirical examination and the data was analyzed using structural equation modeling technique. The findings indicated that innovation and competitive positioning of a firm have direct relationship. This shows that as firms strengthen their innovative ability, their chances of remaining competitive also increases.

In a study on how innovation resulted into competitive advantage by Muthoni (2017), a case of Fast Moving Consumer Goods firms were involved. Data was collected by use questionnaires. From the findings, it was noted that competitive advantage is influenced by process, products and market innovation. Thus, innovation helps an organization to effectively compete. The study however focused on FMGCs that differ from the pharmaceutical manufacturing companies.

In the banking sector, Kariuki (2017) assessed how innovation resulted into competitive advantage. It was shown that the strategies of innovation directly impacted on competitiveness of the banks. The key types of innovation that commercial banks used to gain competitive advantage were process innovation, product innovation and technological innovation. The study was done in the banking context which differs in operations with the pharmaceutical manufacturing companies.

A study to examine how innovation influenced ability of firms to be competitive was done by Aziz and Samad (2016). The study was done in Malaysia among SMEs involved in manufacturing of food. Questionnaires were used and the analysis was done descriptively and inferentially. The study established that innovation has a direct influence on competitive positioning of the firms. The findings of the study however emanate from Malaysian SMEs and thus may not directly apply in the Kenyan context.

In Indonesia, Nuryakin (2018) looked at a link between competitive advantage and product innovation. The study was done among SMEs. Purposive method of sampling was used in the study. It was revealed that product innovation directly influences competitive positioning of SMEs in Indonesia.

The focus of the study however was on SMEs in Indonesian context thus limiting applicability in Kenyan context. In an analysis of innovation strategies and financial performance were interlined by Nandwa (2016), a case of insurance companies was used. The study entailed testing of hypotheses. It was seen that innovation strategies significantly influenced competitive positioning of insurance companies. The study focused on insurance companies and it failed to provide a link between innovation strategies and competitive advantage.

#### 2.4 Summary of Literature and Research Gaps

This section summarizes the reviewed literature on how innovation has affected competitiveness of Pharmaceutical companies. The findings are summarized under the author of the project, the topic, methodologies use and the key findings. All these are geared towards establishing gaps that the current study seeks to fill.

**Table 2.1: Summary of Literature and Research Gaps**

Author	Study	Methodology	Findings	Gaps
Al-Mualaeet al.(2012)	The link between innovation and competitive positioning	Descriptive research design adopted	Innovation and competitive advantage are directly related.	The study was conducted in the banking sector; need a similar study in pharmaceutical industry
Beyene, Shi and Wu (2016)	How innovation strategies affected learning and innovation performance	Structural equation modeling analysis	Innovation strategies and product innovation performance are positively correlated with each other	Innovation was related with innovation performance and not competitive advantage
Muthoni (2017)	How innovation resulted into competitive advantage	Descriptive research design	Innovation helps an organization to effectively compete.	The study was limited to Moving Consumer Goods

Source; Researcher (2018)

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

The chapter outlines the steps followed in order to attain the stated objectives. In this chapter, the researcher looked at the study design employed. The targeted study population that was used to offer information for the study is also covered.

The chapter also outlines how the researcher went about in sampling the population to a manageable size. The researcher also reviewed the methods used in collecting data from the identified population and how the collected data was analyzed and presented so as to draw inferences. In summary, this chapter establishes the foundation for the subsequent chapters four and five of the study.

### **3.2 Research Design**

A research design is a structure that guides the methods of collecting and analysis of data. The design adopted was descriptive. Yin (2017) argues that a descriptive research design helps in giving an account of the way things exist in their status quo. A descriptive design helps in answering questions of what? Where? When? How?

The design therefore helped the researcher to examine how innovation strategies have affected competitive advantage of manufacturing pharmaceuticals companies in Kenya. The use of descriptive design helped the researcher to collect mixed data that helped in establishing how innovation strategies influence competitive advantage. The descriptive design helped the researcher to collect and analyze meaningful data for making conclusions and recommendations of the study.

### **3.3 Population of the Study**

Population is a group of elements that have common attributes. Manufacturing pharmaceutical companies in Nairobi, Kenya were targeted. There are 22 manufacturing pharmaceutical companies operating in Nairobi, Kenya (Pharmacy & Poisons Board, 2018). This formed the population of the study.

Since the population was easily accessible and it had homogenous attributes, a census was adopted. According to Mugenda and Mugenda (2003), census is appropriate provided the elements of the population are less than 200. The use of census enabled the researcher to obtain detailed informed on strategies of innovation and how they influences competitive edge. It also improved on the response rate of the study.

### **3.4 Data Collection**

Questionnaires facilitated the process of data collection. Questionnaires were used because of their ability to contain fixed responses. Questionnaires were divided into sections based on study variables. Questionnaires contained both structured and unstructured questions. Questionnaires were structured into subsections. Section A detailed the general information of respondents, section B gave the information on innovation strategies while section C had information on competitive advantage.

The researcher dropped and then picked the instruments at a later stage. This enabled respondent to have adequate time for responding to questions. At the point of dropping questionnaires, contact details of respondents were noted. A follow up was done on respondents to remind them to fill in questionnaires and handle any issue.

### 3.5 Data Analysis

Data analysis is the process of extracting meaning from the collected information so as to draw inferences, make conclusions and recommendations. Data collected is usually in raw form and cannot help in decision making and thus requires to be analyzed. Before analysis of the collected data, the researcher first cleaned it and then coded into SPSS.

The findings were analyzed descriptively and inferentially. Regression was used to determine a link between innovation strategies and competitive positioning. The adopted regression model took the following form;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Whereby:

Y = Competitive advantage

$\beta_0$  = constant

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$  = coefficients of innovation strategies

$X_1$  = Process Innovation;  $X_2$  = Product Innovation;  $X_3$  = Technology Innovation;

$X_4$  = Market Innovation and  $\varepsilon$  = Error term



## **CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS**

### **4.1 Introduction**

This chapter details the findings of the analysis on the primary data that was collected in the study. In section 4.2, the researcher determined the total questionnaires issued and those that were completely filled up and returned. In section 4.3, the general information of respondents was analyzed to have a clear understanding on the people who took part in the study.

In section 4.4, the researcher analyzed the innovation strategies and competitive advantage among the studied manufacturing pharmaceutical companies. The section basically dealt with the descriptive analysis of these variables of the study. In section 4.5, the researcher carried out the inferential analysis by regressing innovation strategies against competitive advantage. The researcher then discussed the analyzed findings from the previous sections by interacting with literature in section 4.6.

### **4.2 Response Rate**

The researcher distributed 22 questionnaires to all the manufacturing pharmaceutical companies in Nairobi County. From these, 19 of them were completely filled by respondents and returned to the researcher. This was equivalent to a response rate of 86.4%. This was in line with Babbie (2010) who noted that for excellent presentation of the findings, a response rate of over 70% is sufficient. Similarly, Mugenda et al. (2003) noted that response rate of over 70% is adequate for analysis. Therefore, the current study was informed by an adequate response rate.

### 4.3 General Information of Respondents

To clearly understand the respondents of the study, the researcher collected general information. These included their gender, highest level of education, length of service and the level of employment of respondents in the company. The findings are established in Table 4.1.

**Table 4.1: General Information on Respondents**

Category	Classification	Frequency	Percentage
Gender Distribution	Male	11	57.9
	Female	8	42.1
	<b>Total</b>	<b>19</b>	<b>100</b>
Highest Level of Education	Diploma	6	31.6
	Undergraduate	10	52.6
	Post Graduate	3	15.8
	<b>Total</b>	<b>19</b>	<b>100</b>
Length of Service	Less than 3 years	3	15.8
	3-6 Years	5	26.3
	6-9 Years	9	47.4
	Over 9 Years	2	10.5
	<b>Total</b>	<b>19</b>	<b>100</b>
Level of Employment	Top Management	9	47.4
	Middle Management	6	31.6
	Operational Staff	4	21.1
	<b>Total</b>	<b>19</b>	<b>100</b>

**Source; Research Data (2018)**

The first general information sought to establish the distribution of gender in the study. Table 4.1 shows that 57.9% of respondents were male while 42.1% were female. Therefore, there was gender balance in determination of the sample size that participated in the study. Thus, representative findings were sought from these respondents. This finding on the gender of the respondents was also consistent with the constitutional requirement about the one third gender rule.

The second general information sought to determine the highest level of education of respondents as presented in Table 4.1. From the findings, 52.6% had undergraduate degrees, 31.6% had diplomas while 15.8% had post graduate degrees. This finding indicates that respondents of the study were generally literate and thus could effectively read and interpret the questionnaires. Being highly educated, it can also be inferred that respondents were knowledgeable on matters of innovation and how it results into competitive advantage. Thus, they gave reliable information as sought by the study. To gain insight into the level of experience and knowledge of respondents in respect to the matters of manufacturing pharmaceutical companies, the researcher sought to understand the number of years that respondents had worked in their organization.

From the findings, 47.4% had worked for 6-9 years, 26.3% for 3-6 years, 15.8% for less than 3 years and 10.5% for over 9 years. Thus, the respondents had worked in companies manufacturing pharmaceutical products for a relatively long period of time hence they were knowledgeable on how innovation has influenced competitive advantage of their companies. The last general information probed to understand the level of employment of the study respondents. It was indicated that 47.4% were in top level positions, 31.6% in middle level management and 21.1% in operational level. Therefore, diverse opinions were sought from these respondents since they were generally drawn from different levels.

#### **4.4 Descriptive Analysis**

In order to clearly understand how innovation and competitive advantage were interrelated, descriptive statistics were employed. This included the use of means and standard deviations. Means were used to determine the agreement of respondents with various constructs of innovation and competitive advantage. Standard deviation on the other hand indicated the degree of convergence and divergence in the views expressed by respondents. Smaller values of standard deviations indicated that respondents were of the similar opinions on any given statement. On the other hand, larger values of standard deviations indicated greater divergence in the views expressed by respondents on any given statement.

##### **4.4.1 Innovation Strategies**

The study aimed at investigating the innovation strategies applied by manufacturing pharmaceutical companies. The first innovation strategy presented to respondents was process innovation where several statements were formulated and these sought the responses of those who undertook the study. When the five point scale used is placed on a continuous scale, values of means below 3.5 shows disagreement while those above 3.5 indicate that respondents agreed and therefore the strategy was applicable in their organization. Table 4.2 gives a breakdown of the results.

**Table 4.2: Process Innovation**

<b>Statements</b>	<b>Mean</b>	<b>Std. Dev</b>
The company has invested in modern tools in design of drugs	3.68	0.589
Advanced facilities are used in manufacture of drugs in my company	3.75	0.776
Our company combines various techniques to develop drugs	3.83	0.829
Our company has implemented Quality Management System in production process	3.71	1.076
All manufacturing processes are closely monitored by the quality management system in my company	3.66	0.872
<b>Overall Mean Score</b>	<b>3.72</b>	<b>0.828</b>

**Source; Research Data (2018)**

Table 4.2 indicates that the company combined various techniques to develop drugs (M=3.83) and used advanced technologies to manufacture drugs (M=3.75). Most of the studied companies also had implemented Quality Management System in production processes (M=3.71). The values of standard deviations on these statements are so low showing that there was convergence in views expressed by respondents.

The study further established that the company had invested in modern tools in design of drugs (M=3.78) and that all manufacturing processes were closely monitored by the quality management system in the company (M=3.66). On overall, respondents agreed (M=3.72) that process innovation was practiced in their company. The values of standard deviations (SD=0.828) were low which indicates there was significant deviation in agreement of respondents of the study on process innovation. Table 4.3 presents the findings on product innovation as another strategy employed by manufacturing pharmaceutical companies to stay competitive.

**Table 4.3: Product Innovation**

<b>Statements</b>	<b>Mean</b>	<b>Std. Dev</b>
The manufactured products meet the quality of life in my company	3.77	0.889
The health products come in several brands	4.06	0.756
New care health products are manufactured that meet the needs of customer	3.83	0.760
Our company strives to improve on performance of the existing health care products	3.63	0.874
New features are added to existing health care products manufactured in my company	3.79	1.003
<b>Overall Mean Score</b>	<b>3.81</b>	<b>0.856</b>

**Source; Research Data (2018)**

From the findings in Table 4.3, the health products came in several brands (M=4.06) the new care health products were manufactured that met the needs of customer (M=3.83), new features were added to existing health care products manufactured in the company (M=3.79) and that the manufactured products met the quality of life in the company (M=3.77). It was also revealed that the company strived to improve on performance of the existing health care products (M=3.63). On average, respondents agreed (M=3.81) on product innovation and how it influenced competitive advantage in their company. Table 4.4 presents the findings on technology innovation employed by manufacturing pharmaceutical companies.

**Table 4.4: Technology Innovation**

<b>Statements</b>	<b>Mean</b>	<b>Std. Dev</b>
Latest technology is used in production of health care products in my company	4.07	0.564
Our company combines state-of-the art technology to manufacture health care products	3.98	0.702
Use of latest technology in production has resulted into quality health care in my company	4.01	0.765
An integrated information system is used in manufacture of health care products in my company	3.86	0.662
We have invested in automated machineries used in manufacture of health care products in my company	3.63	0.761
<b>Overall Mean score</b>	<b>3.91</b>	<b>0.690</b>

**Source; Research Data (2018)**

The findings in Table 4.4 indicate that the latest technology was used in production of health care products in the company (M=4.07) and the use of latest technology in production had resulted into quality health care in the company (M=4.01). The study found out that most of the companies combined state-of-the art technology to manufacture health care products (M=3.98) and that integrated information systems were used in manufacture of health care products (M=3.86). Some other companies had invested in automated machineries used in manufacture of health care products (M=3.63). On average, respondents agreed on technology innovation (M=3.91) which shows that most manufacturing pharmaceutical companies use the strategy to remain competitive. Table 4.5 presents the findings on market innovation as another strategy used by manufacturing pharmaceutical companies.

**Table 4.5: Market Innovation**

<b>Statements</b>	<b>Mean</b>	<b>Std. Dev</b>
There has been significant change in product design in my company	3.72	0.883
The marketing department strives to exploit new markets in my company	4.13	0.479
New ways of packaging health care products have been implemented at in my company	3.69	0.763
The company has come up with new ways of promoting products	3.67	0.872
Improved ways of distributing manufactured health care products are in place in my company	3.88	1.005
<b>Overall Mean Score</b>	<b>3.81</b>	<b>0.800</b>

**Source; Research Data (2018)**

The study revealed that the marketing department strived to exploit new markets in the company (M=4.13). There were improved ways of distributing manufactured health care products in the company (M=3.88). There has been significant change in product design in the company (M=3.72). These statements were supported by lower values of standard deviations showing that there was convergence in views expressed by respondents.

The study further revealed that new ways of packaging health care products had been implemented at in the company (M=3.69). The company had come up with new ways of promoting products (M=3.67). On the overall, respondents agreed (M=3.81) on market innovation showing that most manufacturing pharmaceutical companies employ the strategy to remain competitive in the industry. On the challenges faced by the companies as they strived to remain innovative, it was said that innovation required adequate resources including finances and skilled employees that were in short supply in their companies. This according to respondents hindered the innovative ability of their companies.



Respondents also indicated that innovation meant change in processes and systems of an organization where most employees were resistant to due to fear of unknown. In order to improve on the innovation strategies in place of the studies companies, respondents said that there was need for management to increase their commitment towards innovation by availing sufficient resources towards the same. The study revealed that manufacturing pharmaceutical companies need to benchmark and increase their collaboration with other blue chip companies that have been successful in their innovations.

#### 4.4.2 Competitive Advantage

Competitive advantage was the dependent variable of the study. The researcher sought to establish how the studied companies had been competitive given their innovation strategies. Table 4.6 breaks down the findings.

**Table 4.6: Competitive Advantage**

<b>Statements</b>	<b>Mean</b>	<b>Std. Dev</b>
Our market share has improved due to innovation strategies	3.73	1.006
There has been repeated purchase in my organization due to innovation	3.83	0.870
We have retained past customers due to our innovation strategies	3.77	0.980
Innovation strategies have helped us to attract new customers	3.92	0.542
We have maintained a superior market position because of innovation	3.57	1.007
Our skilled workforce create value to customers	3.74	1.074
We manufacture drugs at a lower costs as competitors	3.81	0.641
We differentiate our manufactured drugs based on customer needs	3.75	0.653
There has been an increase in brand loyalty in my company	3.79	0.329
We manufacture drugs that meet needs of a specific market niche	3.85	0.873
My company has improved its image in the market	3.66	0.862
We have efficient operations compared to our competitors	3.65	0.812
<b>Overall Mean</b>	<b>3.75</b>	<b>0.804</b>

**Source; Research Data (2018)**

As shown in Table 4.6, innovation strategies have helped them to attract new customers (M=3.92). Manufactured drugs met needs of a specific market niche (M=3.85). There had been repeated purchase in the organization due to innovation (M=3.83). Drugs were manufactured at a lower costs as competitors (M=3.81). There had been an increase in brand loyalty (M=3.79). The company had retained past customers due to its innovation strategies (M=3.77). There was differentiation of manufactured drugs on customer needs (M=3.75) and that skilled workforce created value to customers (M=3.74).

The study established that the market share had improved due to innovation strategies (M=3.73), the company image had imported in the market (M=3.65) and that there were efficient operations compared to competitors (M=3.65). Other companies had maintained a superior market position because of innovation (M=3.57). On average, respondents agreed (M=3.75) on competitive advantage because of innovation. Thus, it can be inferred that competitive strategies influenced competitive advantage of the studied companies.

#### 4.5 Regression Results

In order to determine the link between innovation and competitive advantage, regression analysis was employed. Only regression analysis would help the researcher to make relevant inferences and deductions. Table 4.7 presents the Model Summary.

**Table 4.7: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.938 <sup>a</sup>	.880	.863	1.92029

a. Predictors: (Constant), Process Innovation, Product Innovation, Technology Innovation, Market Innovation

**Source; Research Data (2018)**

The four independent variables that were studied therefore explain (88.0%) change in competitive advantage of the studied companies. Thus, apart from the examined strategies of innovation, other factors are in place with influence on competitiveness by 12%. Table 4.8 is the Analysis of Variance (ANOVA) that was conducted at 5% level of significance.

**Table 4.8: Analysis of Variance**

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	317.067	4	79.267	25.719	.000 <sup>b</sup>
Residual	43.146	14	3.082		
<b>Total</b>	<b>360.213</b>	<b>18</b>			

a. Dependent Variable: Competitive Advantage

b. Predictors: (Constant), Process Innovation, Product Innovation, Technology Innovation, Market Innovation

**Source; Research Data (2018)**

As per Table 4.10,  $F_{cal}=25.719$  while  $F_{(4, 14)}=3.112$ . This shows that on overall, the model was fit. Thus, it was suitable in linking innovation strategies and competitive positioning. Table 4.9 presents the findings on regression beta coefficients and the p values.

**Table 4.9: Regression Coefficients**

	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
(Constant)	3.207	1.474		2.175	.043
Process Innovation	.269	.095	.277	2.845	.006
Product Innovation	.182	.072	.142	2.523	.031
Technology Innovation	.179	.081	.215	2.201	.030
Market Innovation	.171	.069	.229	2.475	.015

a. Dependent Variable: Competitive Advantage

**Source; Research Data (2018)**

From Table 4.11, the following regression equation is formulated;

$$Y=3.207+ 0.269X_1+0.182X_2+0.179X_3+ 0.171X_4$$

Where;

Y = Competitive advantage

X<sub>1</sub> = Process Innovation

X<sub>2</sub> = Product Innovation

X<sub>3</sub> = Technology Innovation

X<sub>4</sub> = Market Innovation

From Table 4.9, the possible level of competitive advantage of manufacturing pharmaceutical companies all other factors held constant is 3.207. Process innovation with a p value p=0.006 had a significant influence on competitive advantage. A unit increase in process innovation would result into an increase in innovation by 26.9%. Product innovation with a p value p=0.031 had significant effect on competitive advantage. Technology innovation had a p=0.030 which is less than 0.05 and thus it significantly influences competitive advantage among manufacturing pharmaceutical companies. Market innovation had a p value p=0.015 and thus it significantly influenced competitive advantage.

#### **4.6 Discussion of the Findings**

The descriptive analysis on process innovation indicated that most companies combined various techniques to develop drugs and used advanced technologies to manufacture drugs. Most of the studied companies also had implemented Quality Management System in production processes. Thus, process innovation in most of the studied companies was through use of technologies and sophisticated techniques. Thus, it can be inferred that the studied companies had process innovation strategy.

Ionescu and Dumitru (2015) argued that innovation result into new products, processes and technologies that transform the way organizations carry out their operations. On product innovation, the study established that the health products came in several brands. The new care health products were manufactured that met the needs of customer. New features were added to existing health care products manufactured in the company and that the manufactured products met the quality of life in the company. Thus, the studied companies practiced product innovation which resulted into competitiveness.

The finding agrees with Beyene, Shi and Wu (2016) who revealed that product innovation performance are positively correlated with each other. With regard to technology innovation, the study found out that the latest technology was used in production of health care products in the company and the use of latest technology in production had resulted into quality health care in the company. The study found out that most of the companies combined state-of-the art technology to manufacture health care products. Thus, technology innovation was in place among the studied companies.

Kariuki (2017) revealed that commercial banks have greatly adopted technological innovation to remain competitive. In respect to market innovation, the study revealed that the marketing department strived to exploit new markets in the company. There were improved ways of distributing manufactured health care products in the company. There has been significant change in product design in the company. Thus, the studied companies embraced marketing innovation and this was in line with Harrison et al. (2014) who indicated that firms derive competitive advantage through their products, processes or ways of carrying out operations and activities.

From regression results, the study established process innovation with a p value  $p=0.006$  had a significant influence on competitive advantage. The beta coefficient was positive showing that an increase in process innovation would result into an increase in competitive advantage. Abou-Moghli et al. (2012) established that innovation and competitive advantage are directly related. Product innovation with a p value  $p=0.031$  had significant effect on competitive advantage. The beta coefficient was positive which shows that product innovation directly influences competitive ability of firms.

Noorani (2014) noted that an increase in development of new products is a greater step of an organization in achieving competitive advantage. Similarly, Beyene et al. (2016) showed that innovation strategies and product innovation performance are positively correlated with each other. Technology innovation had a  $p=0.030$  which is less than 0.05 and thus it significantly influence competitive advantage among manufacturing pharmaceutical companies. Kariuki (2017) assessed how innovation resulted into competitive advantage and the key types of innovation that commercial banks used to gain competitive advantage were process innovation, product innovation and technological innovation.

Market innovation had a p value  $p=0.015$  and thus it significantly influenced competitive advantage. Muthoni (2017) noted that competitive advantage is influenced by process, products and market innovation. Nuryakin (2018) looked at a link between competitive advantage and product innovation and revealed that innovation of new products has a direct influence competitive positioning of SMEs in Indonesia.

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

### **5.1 Introduction**

This chapter is structured into five sections majorly informed by the key findings and the study objectives. The first section is 5.2, which summarizes the findings of the analyzed data in line with the study variables. In the second section which is 5.3, conclusions emanating from the key findings of the study are clearly presented guided by the study variables. In section 5.3, recommendations that have relevant implications to policy and practice are presented.

Section 5.5 details the limitations of the study which are conceptual, contextual and methodological. The need for pointing out these limitations of the study is to establish the gaps which future scholars and academicians can capitalize on as they carry out similar studies in future. Section 5.6 is the suggestions for further studies, which is basically a recap of the identified limitations where it tries to offer solutions.

### **5.2 Summary of the Findings**

The study sought to determine the effect of innovation strategies on competitive advantage of manufacturing pharmaceutical companies in Nairobi, Kenya. To measure innovation strategies, product, process, technology and market innovations were used. The cross sectional descriptive design was employed. All manufacturing pharmaceutical companies in Nairobi which were equal to 22 were targeted.

From the analyzed findings, process innovation had significant effect on competitive positioning. The study revealed that the company combined various techniques to develop drugs. Advanced technologies were used to manufacture drugs. Most of the studied companies had implemented Quality Management System in production processes. The study found out that product innovation has a direct influence on competitive positioning. It was revealed that the health products came in several brands and that new care health products were manufactured that met the needs of customer. New features were added to existing health care products manufactured in the company and that the manufactured products met the quality of life in the company. It was also revealed that the company strived to improve on performance of the existing health care products.

The study found out that technology innovation had significant effect on competitive advantage. The study established that the latest technology was used in production of health care products in the company and the use of latest technology in production had resulted into quality health care in the company. The study found out that most of the companies combined state-of-the art technology to manufacture health care products and that integrated information systems were used in manufacture of health care products. Some other companies had invested in automated machineries used in manufacture of health care products. From regression results, market innovation had significant effect on competitive advantage. The study found out that the marketing department strived to exploit new markets in the company. Improved ways of distributing manufactured health care products were in place in the company and that there has been significant change in product design in the company.



### **5.3 Conclusion**

The study concludes that process innovation positively influences competitiveness. Most manufacturing pharmaceutical companies combine various techniques to develop drugs. Advanced technologies are used to manufacture drugs in manufacturing pharmaceutical companies. Majority of the manufacturing pharmaceutical companies have implemented Quality Management System in production processes. Most of the manufacturing pharmaceutical companies have invested in modern tools in design of drugs.

The study further concludes that product innovation positively influences competitive abilities. Health products in most manufacturing pharmaceutical companies come in several brands. New care health products are manufactured that meet the needs of customers in most manufacturing pharmaceutical companies. New features are added to existing health care products in majority of the manufacturing pharmaceutical companies. In most manufacturing pharmaceutical companies, the products meet the quality of life.

The study also concludes that technology innovation directly influences competitive ability of firms. Latest technology is used in production of health care products in most manufacturing pharmaceutical companies. The use of use of latest technology in production has resulted into quality health care in most of the manufacturing pharmaceutical companies. Most manufacturing pharmaceutical companies combine state-of-the art technology to manufacture health care products. At the same time, integrated information systems are used in manufacture of health care products in most of the manufacturing pharmaceutical companies.

The study concludes that market innovation has a direct and significant link with competitive advantage. The marketing department strives to exploit new markets in the company. Improved ways of distributing manufactured health care products are in place in most manufacturing pharmaceutical companies. There has been significant change in product design in most manufacturing pharmaceutical companies.

#### **5.4 Recommendations of the Study**

The management of all manufacturing pharmaceutical companies should improve on their process, product and technology and market innovation in order to significantly influence competitive advantage of their companies. The management of all manufacturing pharmaceutical companies should avail sufficient resources in terms of budget towards innovation in order to positively influence competitive advantage. Modern technology should be largely adopted among manufacturing pharmaceutical companies to support process, product and technology and market innovation strategies in place.

The study recommends that policy makers including the ministry of health and the PPB of Kenya should create a conducive environment that encourage and support innovation among manufacturing pharmaceutical companies. One way that these policy makers can encourage innovation among manufacturing pharmaceutical companies is through formulation of sound policies and regulations that support and encourage innovation spirit among these companies. By encouraging these companies to be innovative, they would be able to gain competitive advantage and thus positively grow the economy at large.

### **5.5 Limitations of the Study**

The current study was limited to primary data that was collected using questionnaires. However, it could be prudent when data is obtained from both the primary and secondary sources were used to substitute each other. At the same time, not questionnaires that the researcher issued to respondents were returned hence reducing the return rate.

Conceptually, the current study was limited to establishing a link between innovation strategies and competitive positioning. The study specifically focused on product, process, market and technology innovation strategies and. The study was further limited to only manufacturing pharmaceutical companies within Nairobi City County.

### **5.6 Suggestions for Further Studies**

The current study focused on innovation strategies and how they affected competitive advantage. From regression results, the study established that 88.0% change in competitive advantage is explained by the innovation strategies. Thus, there are other factors (apart from innovation strategies) that explain the remaining 12% change in competitiveness which future research should emphasize on.

The focus of the current study was on manufacturing pharmaceutical companies. Specifically, the study was limited to companies within Nairobi City County. Future studies should therefore be done focusing on all manufacturing pharmaceutical companies in Kenya or even the retail and distributor pharmaceutical companies. This would facilitate comparison of the findings.

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## APPENDICES

### APPENDIX I: LETTER OF INTRODUCTION

  
**UNIVERSITY OF NAIROBI**  
SCHOOL OF BUSINESS

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Telephone: 020-2059162  
Telegrams: "Varsity", Nairobi  
Telex: 22095 Varsity

P.O. Box 30197  
Nairobi, Kenya

DATE 29/10/2018

**TO WHOM IT MAY CONCERN**

The bearer of this letter JUSSUF ADAN DOR  
Registration No. D61/86246/2016

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

**PROF. JAMES M. NJIHIA**  
DEAN, SCHOOL OF BUSINESS

## **APPENDIX II: QUESTIONNAIRE**

You are kindly requested to fill this questionnaire to help me achieve the study objective. Note that any information you give would only be used for academic purpose. Do NOT indicate your name.

### **SECTION A: GENERAL INFORMATION**

1. Kindly indicate your gender category

Male ( ) Female ( )

2. Indicate the highest academic qualifications you currently hold?

Diploma ( )

Undergraduate ( )

Post Graduate ( )

Other ( )

3. What is the total number of years that you have worked in the current organization?

Less than 3 years ( )

3-6 Years ( )

6-9 Years ( )

Over 9 Years ( )

4. What is your level of employment in your current company?

Top Management ( )

Middle Management ( )

Operational Staff ( )

## SECTION B: INNOVATION STRATEGIES

5. Below are several statements on innovation strategies. Kindly indicate the extent of your agreement on how they are applied in your organization. Key; 1= you are in strong disagreement and 5=you are in strong agreement.

<b>PROCESS INNOVATION</b>					
<b>Statements</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
The company has invested in modern tools in design of drugs					
Advanced facilities are used in manufacture of drugs in my company					
Our company combines various techniques to develop drugs					
Our company has implemented Quality Management System in production process					
All manufacturing processes are closely monitored by the quality management system in my company					
<b>PRODUCT INNOVATION</b>					
<b>Statements</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
The manufactured products meet the quality of life in my company					
The health products come in several brands					
New care health products are manufactured that meet the needs of customer					
Our company strives to improve on performance of the existing health care products					
New features are added to existing health care products manufactured in my company					
<b>TECHNOLOGY INNOVATION</b>					
<b>Statements</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Latest technology is used in production of health care products in my					

company					
Our company combines state-of-the art technology to manufacture health care products					
Use of latest technology in production has resulted into quality health care in my company					
An integrated information system is used in manufacture of health care products in my company					
We have invested in automated machineries used in manufacture of health care products in my company					
<b>MARKET INNOVATION</b>					
<b>Statements</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
There has been significant change in product design in my company					
The marketing department strives to exploit new markets in my company					
New ways of packaging health care products have been implemented at in my company					
The company has come up with new ways of promoting products					
Improved ways of distributing manufactured health care products are in place in my company					

6. Kindly identify the challenges that your organization face in its innovation strategies?

.....  
.....

7. In what ways can your company improve on the innovation strategies in place?

.....  
.....



**SECTION C: COMPETITIVE ADVANTAGE**

8. Below are several statements on competitive advantage. Kindly indicate the extent of your agreement on how they are applied in your organization. Key; 1= you are in strong disagreement and 5=you are in strong agreement.

Statements	1	2	3	4	5
Our market share has improved due to innovation strategies					
There has been repeated purchase in my organization due to innovation					
We have retained past customers due to our innovation strategies					
Innovation strategies have helped us to attract new customers					
We have maintained a superior market position because of innovation					
Our skilled workforce create value to customers					
We manufacture drugs at a lower costs as competitors					
We differentiate our manufactured drugs based on customer needs					
There has been an increase in brand loyalty in my company					
We manufacture drugs that meet needs of a specific market niche					
My company has improved its image in the market					
We have efficient operations compared to our competitors					

**THANK YOU**

## **APPENDIX III: LIST OF MANUFACTURING**

### **PHARMACEUTICAL COMPANIES IN NAIROBI, KENYA**

1. Alpha Medical Manufacturers – Nairobi
2. Aventis Pasteur SA East Africa – Nairobi
3. Bayer East Africa Limited – Nairobi
4. Beta Healthcare (Shelys Pharmaceuticals) – Nairobi
5. Cosmos Limited – Nairobi
6. Dawa Pharmaceuticals Limited – Nairobi
7. Didy Pharmaceutical – Nairobi
8. Diversey Lever – Nairobi
9. Eli-Lilly (Suisse) SA – Nairobi
10. Elys Chemical Industries Ltd – Nairobi
11. Glaxo SmithKline – Nairobi
12. High Chem East Africa Ltd – Nairobi
13. Mac’s Pharmaceutical Ltd – Nairobi
14. Manhar Brothers (Kenya) Ltd – Nairobi
15. Novartis Rhone Poulenc Ltd – Nairobi
16. Novelty Manufacturers Ltd – Nairobi
17. Pfizer Corp (Agency) – Nairobi
18. Pharmaceutical Manufacturing Co (K) Ltd – Nairobi
19. Pharmaceutical Products Limited – Nairobi
20. Phillips Pharmaceuticals Limited – Nairobi
21. Regal Pharmaceutical Ltd – Nairobi
22. Universal Pharmaceutical Limited – Nairobi

Source; Pharmacy & Poisons Board (2017)