

**RESEARCH AND INNOVATION AS A STRATEGY FOR
COMPETITIVE ADVANTAGE IN THE HEALTH SECTOR: A
CASE OF THE AGA KHAN UNIVERSITY HOSPITAL, NAIROBI**

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DECLARATION

This research project is my original work and has not been submitted for examination in any other university.

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

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DEDICATION

I dedicate this project to my parents, Mr. and Mrs. Patrick Nginga Kinyungu for their immense support during my studies.

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LIST OF ACRONYMS

AKDN	-	Aga Khan Development Network
AKF	-	Aga Khan Foundation
AKU	-	Aga Khan University
AKUHN	-	Aga Khan University Hospital, Nairobi
ANNAS	-	African National Accreditation System
CMEs	-	Continuous medical education
ERP	-	Enterprise Resource Program
HOD	-	Head of department
ICT	-	Information, Communication Technology
OECD	-	Organisation for Economic Co-operation and Development
RBV	-	Resource Based View
SCP	-	Structure Conduct Performance

ABSTRACT

Achieving competitive advantage is a major pre-occupation of the managers in many businesses today. Organisations globally now seek to actively differentiate themselves from their competitors in terms of quality of service, flexibility, customisation, innovation and rapid response. The Aga Khan University Hospital Nairobi has heavily invested in hospital equipment as well as information systems to manage patients and support systems over the past years. The hospital has also invested in ultra-modern laboratories, neuro, dental, eye care facilities and recently the hospital invested in an ultra-modern heart and cancer centre to provide quality cardiology and oncology services that include specialised cardiac operating theatres, three separate intensive care units one dedicated to open-heart surgeries and the latest radiation therapy equipment for cancer treatment. The purpose of the study was to establish the effect of research and innovation strategies on the competitiveness of Aga Khan University Hospital, Nairobi in Kenya. From the findings, the study concludes that the major forms of research & innovation practices at Aga Khan University Hospital included case studies, desktop research, market surveys, focus groups, practical research carried out by the specialized training doctors and nurses. The hospital support innovation through continuous procurement of up to date equipment such as equipment to conduct intravascular ultrasound to image inside a blocked heart arteries. The study also concludes that for the last five years there has been a lot of product innovations such as the introduction of Urodynaics Unit that offer new services of studying the function of the bladder and bladder neck in male and females. The study revealed that the research and innovation practices are very effective in creating a sustainable competitive advantage as AKUHN is preferred by most people especially by cancer patients, neuro cases and child delivery. This study recommends increased investment research and innovation as an effective tool that organizations can apply to improve competitiveness. However, since the positive effects of research and innovation take time to become visible, the study recommends that their impact on performance should be viewed in perspective of the future trends. The study also recommends that the research and innovation strategies be dynamic as the customers' needs are dynamic and not static. This would ensure that the hospital remains competitive all the time and do not get caught up in obsolete old strategies.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Competitive strategies are employed by firms within a particular industry. The strategies adopted are expected to tolerate the performance of the companies. Long term strategy should derive from a firm's attempt to seek a competitive advantage based on one of three generic strategies. Low cost leadership depends on some fairly unique capabilities of a firm to achieve and sustain their low-cost position within the industry of operation. Striving to create a market unique product for varied customer groups through differentiation is another key competitive strategy, which aids performance. Competitive strategies dependent on differentiation are designed to appeal to customers with special sensitivity for a particular product attribute. Such customers will be willing to pay a premium hence improve the firm performance. Competitive strategy consists of all those moves and approaches that a firm has and is taking to attract buyers, withstand competitive pressure and improve its market position. Competitive strategies adopted by a firm should result in a competitive advantage. These are cost leadership, differentiation and focus (Grant, 2002).

Competitive strategies employed by firms in their operations vary widely. The current operational set-up in Kenya's health sector is a turbulent one and highly competitive market condition. To ensure survival and sustainability in the market place, the private hospitals require adopting a competitive strategy. Markets may be liberalized or controlled and at various stages of development depending on the country. Private hospitals which have adopted competitive strategies have realized a performance advantage over competitors that pursue other generic strategy type or those that are stuck-in-the-middle (Dandira, 2011). Surprisingly, an important topic such as strategic innovation is built by a thin body of literature.

The idea of a Sustainable Competitive Advantage surfaced in 1984, when Day suggested types of strategies that may help to "sustain the competitive advantage". The actual term "Sustainable Competitive Advantage" emerged in 1985, when Porter discussed the basic types of competitive strategies that a firm can possess (low-cost or differentiation) in order to achieve a long-run Sustainable Competitive Advantage. Also according to Furrer et al (2008), the focus of inquiry changed from the structure

of the industry, e.g., Structure Conduct Performance (SCP) paradigm and the five forces model) to the firm's internal structure, with resources and capabilities (the key elements of the Resource Based View (RBV)). In light of these, this study will be hinged on sustainable competitive advantage theory and the Resource Based View theory of competitive advantage in Aga Khan University Hospital.

1.1.1 Concept of Strategy

One management tool that has been acclaimed internationally as effective in improving the performance of state owned enterprises as well as government departments is the use of strategic planning. Strategic planning is important to any organizational work performance because it determines the organisation's success or failure (Bryson, 1998). A strategy is a plan that is intended to achieve a particular purpose. It is a disciplined effort to produce fundamental decisions and actions that shape and guide what an organisation is, what it does and how it does it with a focus on the future. Wernham (2004) observes that in a strategic planning process, resources such as people, skills, facilities and money to implement the strategy must be adequate. Many organizations today are focusing on becoming more competitive by launching competitive strategies that give them an edge over others. To do this, they need to craft workable strategies.

The process of strategy formulation basically involves six main steps. Though these steps do not follow a rigid chronological order, however they are very rational and can be easily followed in this order. These steps include setting organizations' objectives, evaluating the organizational environment, setting quantitative targets, designing aims that are in context with the divisional plans, performance analysis, and choice of strategy (Dandira, 2011).

The key component of any strategy statement is to set the long-term objectives of the organization. It is known that strategy is generally a medium for realization of organizational objectives. Objectives stress the state of being there whereas Strategy stresses upon the process of reaching there. Strategy includes both the fixation of objectives as well the medium to be used to realize those objectives. Thus, strategy is a wider term which believes in the manner of deployment of resources so as to achieve the objectives. While fixing the organizational objectives, it is essential that the factors which influence the selection of objectives must be analysed before the

selection of objectives. Once the objectives and the factors influencing strategic decisions have been determined, it is easy to take strategic decisions (Pearce and Robinson, 2007).

The next step is to evaluate the general economic and industrial environment in which the organization operates. This includes a review of the organizations competitive position. The purpose of such a review is to make sure that the factors important for competitive success in the market can be discovered so that the management can identify their own strengths and weaknesses as well as their competitors' strengths and weaknesses. After identifying its strengths and weaknesses, an organization must keep a track of competitors' moves and actions so as to discover probable opportunities of threats to its market or supply sources (Drucker, 2004).

The next step involves setting quantitative targets where an organization must practically fix the quantitative target values for some of the organizational objectives. The next step is designing aims that are in context with the divisional plans due to the fact that the contributions made by each department or division or product category within the organization is identified and accordingly strategic planning is done for each sub-unit. This requires a careful analysis of macroeconomic trends (Gode, 2009).

The next step is performance analysis and it includes discovering and analysing the gap between the planned or desired performance. A critical evaluation of the organizations past performance, present condition and the desired future conditions must be done by the organization. This critical evaluation identifies the degree of gap that persists between the actual reality and the long-term aspirations of the organization. An attempt is made by the organization to estimate its probable future condition if the current trends persist. Finally, the choice of the strategy is the ultimate step in Strategy Formulation. The best course of action is actually chosen after considering organizational goals, organizational strengths, potential and limitations as well as the external opportunities (Wernham, 2004).

1.1.2 Research & Innovation Strategy

Innovation is the development of new products, services and processes, which maybe based on cutting edge research. A large body of evidence shows that innovative economies are more productive and faster growing. They deliver higher returns on investment and increased living standards. They are better at responding to changing

circumstances through redeploying old activities and jobs. They are more able to find solutions to global challenges such as reducing dependence on fossil fuels, helping people live longer and healthier lives (BIS, 2011).

Businesses have to invest more in innovation activities to grow. Innovative businesses grow twice as fast, both in employment and sales, as businesses that fail to innovate. Innovation will drive the competitiveness of our businesses in the global economy. In Technology-based sectors, research are a primary driver of innovation, and research can also discover and exploit new technologies, sometimes giving rise to new industries. In other sectors the rapid adoption of technologies and the development of intangible assets are essential to innovate, sometimes transforming existing industries (BIS, 2011).

Hansen and Birkinshaw (2007) maintain that there is no universal solution for improving innovation in organisations. They believe that management needs to take an end-to-end view of their innovation efforts, pinpoint their particular weaknesses, and tailor innovation best practices as appropriate to address the deficiencies. The innovation value chain offers a framework that breaks innovation down into three phases (idea generation, conversion, and diffusion) and six critical activities (internal, cross-unit, and external sourcing; idea selection and development; and spread of the idea) performed across those phases.

Using the innovation value chain, management can identify the organisation's weaknesses and, as a result, be more selective about which innovation tools and approaches to implement. For example, an Information Technology company with good idea for new products and businesses did not have a process for selecting and developing the best ideas and killing the others. The engineers became increasingly frustrated seeing their creative talents not materialising and the brainstorming sessions that management implemented to help mend the relationship with the engineers only made things worse. Failure to identify the weak link (idea selection) and focusing more time and resources on the strong link (idea generation) ultimately undermined the company's innovation efforts (Hansen & Birkinshaw, 2007).

1.1.3 Competitive Advantage

Competitive advantage is defined as comparing the expected results with the actual ones, investigating deviations from plans, assessing individual performance and

examining progress made towards meeting the targeted objectives (Ngah & Ibrahim, 2010).

There is no unique way to measure competitive advantage. Methods for measuring competitive advantage can be categorized into four groups, financial, intellectual capital, tangible and intangible benefits and balanced score card (Kaplan & Norton, 2000). According to Ellis and Singer (2007), traditional measurement techniques that emphasize solely on financial performance can be misleading and counter-productive in a development environment

In order to achieve a competitive advantage, firms are required to make strategic choices about the type of competitive advantage they seek to attain and the scope within which it will attain it. Choosing the competitive scope or the range of the firm's activities can play a powerful role in determining competitive advantage because it aims to establish a profitable and sustainable position against the forces that determine your industry competition. Strategic choice decisions that a firm can pursue to achieve competitive advantage for growth may broadly be categorized into intensive, defensive, joint venture and a combination of strategies (David, 2001). Depending on the competitive environment firms choose strategies that are able to give them sustainable competitive advantage.

1.1.4 The Health Sector in Kenya

The health function is critical to the welfare and prosperity of any nation. The way the health sector is run largely determines the effectiveness of service delivery. Devolution presents opportunities and challenges to the health sector that together determine the effectiveness of service delivery and the character of the overall health system. Proponents of devolution believe that it is an unfinished, ongoing process [rife with opportunity and pitfalls] that involves a constant search for the most efficient balance between centralised steering and localised self-rule that allows citizens to determine the conduct of service delivery they desire (Okwaroh, 2013).

In Kenya, on one hand, devolution now allows county governments i) the space to design innovative models that suit the terrain of their unique health sector needs, ii) sufficient scope to determine their health system priorities, iii) and the authority to make autonomous decisions on subsector resource allocation and expenditure. On the other hand, devolving the health function presents equity, institutional and resource

challenges that must be dealt with to assure effective and sustainable health care. It requires harmony in health sector planning, budgeting, Monitoring and Evaluation at national and county levels. It demands strategic management of shared responsibilities vertically, between national and county governments, and horizontally, between county administrations. It shall also compel health sector stakeholders to ensure different devolved governments with varying resource constraints deliver standard health care service (Okwaroh, 2013).

Health care system in Kenya is structured in a step-wise manner so that complicated cases are referred to a higher level. Gaps in the system are filled by private and church run units. The structure thus consists: Dispensaries and private clinics, Health centres, Sub-district hospitals and nursing homes, District hospital and private hospitals, Provincial hospital and National hospital. Growth in the hospital industry in Kenya will be supported by increasing expenditure on healthcare, within both public and private sectors. This expanded outlay within the public sector, coupled with rising private expenditure and greater levels of insurance coverage will drive the further growth of the medical devices and pharmaceutical industries. Kenya has an extensive network of private healthcare facilities, from small local clinics, to large, high-class hospitals. Private healthcare can be quite good, with small but modern health facilities and well-trained medical staff (Aad et al, 2013).

1.1.5Aga Khan University Hospital

Established in 1958, Aga Khan University Hospital, Nairobi (AKUHN) is a private, not-for-profit institution that provides tertiary and secondary level health care services. The decision to upgrade the Hospital to a tertiary level teaching hospital was taken in order to respond to the health care needs of the people of East Africa. AKUHN is a premier provider of ambulatory care and quality in patient services, including critical care (AKUHN, 2015).

The Hospital plans to strengthen existing partnerships with the Ministry of Health and other universities offering health education, with an aim to share experiences, strengthen public sector delivery systems and collaborate on teaching and research. In recent years, the Hospitals have grown, expanding services and upgrading their facilities. The expansion programme has emphasised the introduction of new

diagnostic services and the raising of the quality of care to international standards (AKUHN, 2015).

AKUHN primary goal is captured in its vision; to be the premier tertiary, teaching and referral health care facility in Sub-Saharan Africa while mission places a lot of emphasis on the core principles of Quality, Impact Relevance and Access. The AKUHN serves to maintain quality standards in its programmes and services, comparable to the best academic and health care institutions in the industrialized world. Its education programmes and health services are relevant within the communities it serves and have a significant impact on problems and issues that affect the developing world. The university hospital is accessible to all regardless of gender, faith or ethnic origin (AKUHN, 2015).

AKUHN Outreach Medical Centres products are services oriented and include; medical services / consultation which are offered off campus these are Diagnostic Services, Consultation, Pharmacy, Laboratory specimen collection and testing services. Due to the perception as a premium brand AKUHN has largely segmented its market into two social groups A & B mostly working and business class with adequate purchasing power. Mostly they patronize AKUHN due to the brand and quality perception. AKUHN main competitors are other hospitals such as Nairobi Hospital, Mater Hospital, Getrudes Children's Hospital, Meridian Medical Centres, Karen Hospital, Nairobi Womens Hospital and Avenue Hospital among others (AKUHN, 2014).

There are a number of major milestones the university hospital has achieved. The AKUHN has achieved ISO 9001:2008 certification after completing extensive middle level management staff training, reviews of quality objectives manuals and departmental policies. AKUHN was the first hospital in the region to acquire the certification (AKUHN, 2014). It also achieved the Joint Commission International Accreditation & Certification (JCIA) accreditation. This is the proven process any health care organization needs to help ensure a safe environment for its patients, staff and visitors. It shows the organization's commitment to continuously improving patient safety. The AKUHN acquired JCIA accreditation and certification in July, 2013 (AKUHN, 2014).

It also received the South African National Accreditation System (SANNAS) accreditation. Recognized by the South African Government as the single National Accreditation Body that gives formal recognition that Laboratories, Certification Bodies, Inspection Bodies, Proficiency Testing Scheme Providers and Good Laboratory Practice (GLP) test facilities are competent to carry out specific tasks. Its responsible for the accreditation of Medical Laboratories to ISO 15189:2007, Certification bodies ISO/IEC 17021:2006, ISO/IEC 17025:2003 and 65:1996 (and the IAF interpretation thereof), and laboratories (testing and calibration) to ISO/IEC 17025:2005 (AKUHN, 2014).

There are a number of innovations in the medical sphere that AKUHN has led on. The hospital leads the region in implementing world class cardiology care. It recently unveiled a new technology to image the inside of blocked heart arteries. This procedure is known as Intravascular Ultrasound. The hospital also pioneered an operation to treat high blood pressure in East Africa through performing a Renal Denervation Therapy on a patient with treatment-resistant hypertension. The hospital also opened up an Urodynamics Unit to provide evidence based investigations and care for women and men with bladder problems (AKUHN, 2014).

1.2 Research Problem

The days when firms could simply wait for clients to beat a path to their door are long gone. Organisations must realise that their products, regardless of how good they are, simply do not sell themselves (Kotler, 2001). Achieving competitive advantage is a major pre-occupation of the managers in many businesses today. Organisations globally now seek to actively differentiate themselves from their competitors in terms of quality of service, flexibility, customisation, innovation and rapid response (Ghalayani & Noble, 1996). The environment is complex and ever changing and it will continue to change rapidly and unpredictably (Burnes, 1996). According to Ansoff and Mc Donnell (1990), major escalation of environment turbulence means a change from a familiar world of new technologies, new competitors, new consumer attitudes, new dimensions of social control and above all an unprecedented questioning of a firms role in society. Mann (1995) notes that inefficiencies within commercially oriented state enterprises have clear national, financial and fiscal implications as their activities impact directly on overall public sector expenditure and resources.

The Aga Khan University Hospital Nairobi has heavily invested in hospital equipment as well as information systems to manage patients and support systems over the past years. The hospital has also invested in ultra-modern laboratories, neuro, dental, eye care facilities and recently the hospital invested in an ultra-modern heart and cancer centre to provide quality cardiology and oncology services that include specialised cardiac operating theatres, three separate intensive care units one dedicated to open-heart surgeries and the latest radiation therapy equipment for cancer treatment. The hospital is also a teaching hospital that supports research work in health care industry. There are many other innovations that AKUHN has undertaken. These are strategic investments that are meant to enhance the competitiveness of the hospital in Kenya and the entire region. This study therefore seeks to examine how research and innovation can be used as a competitive strategy among hospitals in Kenya with a specific reference to Aga Khan University Hospital, Nairobi.

A few studies have been done on this area. Mwangi and Ombu (2013) examined how competitive strategies affect the performance of mission hospitals in Kenya with a specific focus on Kijabe Mission Hospital and found that cost leadership had the greatest effect on the performance of the mission hospitals, followed by product/market development strategies, then market focus while differentiation had the least effect on the performance of the mission hospitals. The major limitation of this study is that innovation was not one of the strategies examined as the focus of the paper was on generic strategies of cost leadership, differentiation and market focus. Varmah (2012) examined the competitive strategies adopted by AKUHN and the challenges faced in their implementation and established that product design/style, advertisements/promotions, quality products, brand reputation and use of publicity were the major strategies that were employed to remain competitive in the market. One limitation of this study is that it did not examine research and innovation as one of the strategies as it was based on branding and promotional strategies as the competitive strategies. Following the review of the studies above as done in Kenya, the researcher did not come across any study done on the use of research and innovation for competitiveness among hospitals. This study addresses this gap in literature. The research question is therefore: what is the effect of research and innovation on the competitiveness of AKUHN in Kenya?

1.3 Research Objectives

The objective of the study was to establish the effect of research and innovation strategies on the competitiveness of Aga Khan University Hospital, Nairobi in Kenya.

1.4 Value of the Study

The results of this study would benefit various groups. First, the results would benefit managers and board of directors of Aga Khan University Hospital, Nairobi. They would be provided with information concerning the general state of competition in the health sector and how research and innovation strategy has influenced their competitiveness.

Secondly, the research findings will be useful to potential investors in the sector. They will be informed on the challenges faced by the institutions already operating and therefore prepare themselves accordingly before entering the industry. Further, the research findings will be useful to the government by informing them on the role and contribution made by Aga Khan University Hospital, Nairobi in health care delivery in Kenya. Areas of unfair competition that require streamlining through policy guidelines shall be articulated.

Finally, this is expected to contribute to the existing knowledge in the field of Strategic Management, more specifically in the area of competitive strategy in not for profit institutions in Kenya. The outcome should also be a useful source of reference for scholars and researchers who might be interested in carrying out further research based on the findings of the current study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature related to the subject under study presented by various researchers, scholars and authors was reviewed intensively to appreciate the related works done by others and also identify knowledge gaps that need to be filled by this study. The materials are drawn from several sources which are related to the study objectives.

2.2 Theoretical Review

These section discusses the sustainable competitive advantage theory and resourced based review.

2.2.1 Sustainable Competitive Advantage Theory

The idea of a Sustainable Competitive Advantage surfaced in 1984, when Day suggested types of strategies that may help to "sustain the competitive advantage". The actual term "Sustainable Competitive Advantage" emerged in 1985, when Porter discussed the basic types of competitive strategies that a firm can possess (low-cost or differentiation) in order to achieve a long-run Sustainable Competitive Advantage. Barney (1991) argues that a firm is said to have a sustained competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors and when these other firms are unable to duplicate the benefits of this strategy.

Recognizing the importance of an effective strategy to firms, Day and Wensley (2003) focused on the elements involved in competitive advantage. Specifically, they identified two categorical sources of competitive advantage: superior skills, which are "the distinctive capabilities of personnel that set them apart from the personnel of competing firms", and superior resources, which are "the more tangible requirements for advantage that enable a firm to exercise its capabilities".

In a contribution to Sustainable Competitive Advantage, Day and Wensley's (2003) the constructed their framework for assessing a firm's competitive situation as the first step in achieving a Sustainable Competitive Advantage. Unlike past attempts of performance outcome measures (such as profitability and market share), they suggest using perspectives of both the customer and the competitor to assess the firm's

performance. Measures of customer input such as satisfaction and loyalty balance the competitor focus and help to complete the assessment of Sustainable Competitive Advantage of a firm. Similarly, Bharadwaj, Varadarajan, and Fahy (2011) also stress the importance of customers in determining the sources of competitive advantage; they state that a firm's skills and resources can be considered sources only if they offer benefits desired by customers. This outward focus on customers links the sustainable competitive advantage construct to concepts such as branding, market orientation, organizational learning, innovation, customer value, relationship marketing, and business networks.

2.2.2 The Resource Based View (RBV)

The resource based view of the firm (RBV) draws attention to the firm's internal environment as a driver for competitive advantage and emphasizes the resources that firms have developed to compete in the environment. During the early strategy development phase of Hoskisson's account of the development of strategic thinking (Hoskisson et al. 2009), the focus was on the internal factors of the firm.

Researchers subscribing to the RBV argue that only strategically important and useful resources and competencies should be viewed as sources of competitive advantage. They have used terms like core, distinctive competencies and strategic assets to indicate the strategically important resources and competencies, which provide a firm with a potential competitive edge. Strategic assets are, 'the set of difficult to trade and imitate, scarce, appropriable and specialized resources and capabilities that bestow the firm's competitive advantage'. Powell (2001) suggested that business strategy can be viewed as a tool to manipulate such resources to create competitive advantage.

Core competencies are distinctive, rare, valuable firm-level resources that competitors are unable to imitate, substitute or reproduce. Distinctive competencies refer to all the things that make the business a success in the marketplace. Wang (2004) outline an approach to firm-level analysis that requires stocktaking of a firm's internal assets and capabilities. The assets in question could be physical assets, knowledge assets (intellectual capital) as well as human resources, which in turn determine the capabilities of a firm. Maier and Remus (2002) use the term 'resource strategy' and define three steps in a firm's resource strategy -competence creation, competence realization and competence transaction. Competence creation defines and analyses the

markets, product and service. Competence realization involves the execution of services, procurement, and production. Competence transaction involves market logistics, order fulfillment and maintenance (Maier & Remus 2002). Other researchers (Barney & Wright, 1998) treated human resources as the most valuable type of resource.

2.3 Corporate Strategy

The concept of corporate strategy has attracted the attention of business consultants and scholars alike (Muiruri, 2012), with corporate strategy emerging as a subfield of management studies (Ansoff, 2003). Due to the remarkable growth in size and complexity of modern-day businesses, there has been a tremendous increase in the segmentation of management responsibilities, leading to a tendency to lose sight of what is the best for the overall business. A related problem to this is the difficulty to optimally allocate resources to the different corporate activities. This then calls for corporate strategy.

It is noted that successful companies are able to transform societal and environmental hazards into business prospects, integrating them into their business strategies. This then lets them to achieve a strategic advantage over their competition, and at the same time contribute to the society by helping forestall future crises. A company can also use such social initiatives to improve its competitive context, enhancing the quality of the business environment it operates in. Consequently, the company's initiatives should be directly linked to its core business so as to make the most of these actions (Doyle, 1994).

In whole, a strategy to an organization is, amongst other things, a plan of how the organization can achieve its goals and objectives (Lowe et al, 1996), i.e. a commitment of present resources to future expectations. The aim of strategic management is to decide on organizational goals, the means of achieving those goals, and ensuring that the organization is sustainably positioned in order to pursue these goals. Furthermore, the strategies developed provide a base for managerial decision making.

2.4 Concept of Research and Innovation as a Strategy

In both developed and developing countries, research and innovation strategies have been heralded as one of the juggernauts in propelling organizations to higher levels of

profitability and customer retention. Research and innovation are regarded as key business process that companies are using to achieve competitive advantage. Innovations are currently a fundamental prerequisite of competitiveness (Striss et al, 2009). Successful companies are currently the ones that implements innovative strategies, invests in research, development and innovations. The basic precondition for the creation and use of innovation in the enterprise is a well formulated and implemented innovative strategy.

Kovac (2007) sees innovation as a strategy for determining long-term fundamental business objectives and determines the activities and resources for achieving these goals. According to him the innovation strategy must be based on variation, long term, systematism, the time factor and the concentration of resources and activities. Dodgson et al (2008) defines an innovation strategy as a plan that helps firms decide in a cumulative and sustainable manner, about the type of innovation that best match corporate objectives, guides decisions on how resources are to be used to meet a firm's objectives for innovation and thereby deliver value and build competitive advantage.

Evidence suggests that research and innovative effort is on the rise as a share of economic activity. Investment in knowledge has grown more rapidly than investment in machinery and equipment since the mid-1990s in most OECD countries, and has surpassed the latter in a few countries such as Finland and the United States (OECD, 2005c). Research and innovation in healthcare continues to be a driving force in the quest to balance cost containment and health care quality. Innovation is considered to be a critical component of business productivity and competitive survival. Technological innovations present vast opportunities for; product innovation and enhancement of internal production processes for goods and services. Product innovations are essential to the life of any organization since they provide the most obvious means for generating incremental revenues. Similarly, process innovation is concerned with improving internal capabilities and safeguarding and improving quality (Johne & Davies, 2000).

2.5 Effect of Research & Innovation as a Strategy on Competitive Advantage

In today's highly competitive environment the goal of each organisation is to defeat competition and win new customers. Bartes (2009) agree that the 21st century is

based on knowledge, information and innovative economy. Organizations' success depends on employees' knowledge, experience, creative activity and qualification and emphasis is placed on continuous learning and research and development.

Romero and Martinez-Roman(2012) indicate that the organizational taking part in value chains could stimulate their processes of innovation and technological improvement by the spillover of knowledge and demands from larger organizations, while others consider that this possibility has been overestimated. On the other hand, business cooperation can be an important route for the transmission of the knowledge and experience in the production network. This is even more important in the case of small organizations because, in comparison to large organizations, they have a reduced innovative autonomy and they do not usually collaborate with technological centers.

According to Tidd et al (2006), research and innovation contributes to achieving a competitive advantage in several aspects. The most important characteristics of innovations include: A strong relationship between market performance and new products, new products help to maintain market shares and improve profitability, Growth by means of non-price factors (design, quality, individualization, etc.), Ability to substitute outdated products (shortening product lifecycles) and innovation of processes that lead to production time shortening and speed up new product development in comparison to competitors.

Martín-de Castro et al (2013) argues that developing successful technological innovations is essential for creating and sustaining an organization's competitive advantage. According to Zemplerová (2010) the expenditures on research, development and introduction of innovations are the determining characteristics for gaining a dominant part of the market. Autant-Bernard, Fadaïro and Massard (2013) in their survey also show the importance of the role of the regional innovation and they argue that organization must have original strategies and support the knowledge flows from and to organization. Achieving a higher competitiveness by means of research and innovations means producing less costly products/services of better quality compared to those of competitors.

The internal environment of an organization needs to have a suitably preset innovative culture, since this type of culture is characterized by the transience of organizational

structures, utilization of specialists and temporary teams, mobile offices, the necessity of speedy and flexible changes responding to new opportunities, which increases the innovative potential of such organisations (Molina-Morales et al, 2011).

Locally, Mutia (2013) conducted a study on Innovation Strategies and Competitive Advantage in the Telecommunication Industry in Kenya. The study aimed at establishing how innovations strategies enhanced, if at all, the competitive advantage of the different players in the Kenyan telecommunication industry in Kenya. The study established that understanding customer needs was the major reason for success levels of products in the market and this can be attributed to lead to a superior competitive advantage. The study therefore recommended that top management in the telecommunication industry should realign their research and innovation strategies to understand customer needs in order to acquire competitive advantage.

Bwaley (2011) also did a research on The relationship between innovation strategies and competitive advantage among banks listed in the Nairobi stock exchange and established that majority of the banks have adopted and innovated various strategies so as to gain competitive advantage. Finally, Waloba (2013) did a study on Innovation as a basis of creating sustainable competitive advantage among shipping agents in Kenya and established that innovation is indeed widely used as a basis of creating competitive advantage in the shipping agency business in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methods that were used in the collection of data pertinent in answering the research questions. The chapter begins with a description of the research design, data collection procedure and then the data analysis

3.2 Research Design

This research was conducted through a case study since it is a research on one organization. A case study is an in-depth exploration of a particular context that involves the collection of extensive qualitative data usually via interview, observation, and document analysis (Creswell, 2003).

The primary purpose of a case study was to determine factors and relationships among the factors that have resulted in the behavior under study. This design also allows a thorough, meticulous and systematic data collection on the research problem (Yin, 1994). Kothari (2004) noted that a case study involves a careful and complete observation of social units.

3.3 Data Collection

In this study, two types of data were collected, the primary data and secondary data. Primary data was collected using an interview guide. The interview guide had open-ended questions which enabled the researcher to collect qualitative data. The interview guide was administered through face interviews to allow for further probing. Secondary data was also obtained by reading relevant literature which elaborates on the issue being studied to add to the data collected using the interviews and to clarify issues related to the problem.

The data collection instrument used in this research was an interview guide since it makes use of open ended questions and directs the interviewer on the direction he/she should take when conducting the interview so as to get relevant information on the research being conducted.

The respondents consisted of Chief Executive Officer, Director of Corporate Strategy, Director of Operations, Director of Credit and Director of Information, Technology

and Innovation Center. The respondents were considered to be involved in the formulation and implementation of policies regarding research and innovation in the hospital. The researcher also considered the categories of staff to be in a position to offer valuable information regarding the hospitals research and innovation strategies.

3.4 Data Analysis

Data collected was analyzed using content analysis. According to Creswell (2003), content analysis is a research technique used to determine the presence of certain words or concepts within texts or sets of texts. The researcher quantifies and analyzes the presence, meanings and relationships of such words and concepts then make inferences about the messages within the text. To conduct a content analysis on any such text, the text was coded or broken down, into manageable categories on a variety of levels; word, word sense, phrase, sentence, or theme and then examined using content analysis.

In this research, content analysis was used to analyze the responses collected from the interviewees so as to bring out common themes or data from the various responses collected. This approach ensured any unanticipated themes are given the opportunity to emerge from the data. According to Ngechu (2004), data analysis procedure includes the process of packaging the collected information putting in order and structuring its main components in a way that the findings can be easily and effectively communicated. Data analysis consisted of examining, categorizing, tabulating, testing, or otherwise recombining both quantitative and qualitative evidence to address the initial preposition of a study.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the data findings from the field, its analysis and interpretations there-of with regard to the research objectives. The purpose of this research was to establish the effect of research and innovation strategy on competitive advantage in the health sector with reference to the Aga Khan University Hospital, Nairobi.

4.2 Interviewees Profile

This section provides the profiles of the interviewees, arrived at by analyzing their educational and professional backgrounds, positions within the organizations, and tenure. The data was collected from seven senior managers.

All interviewees were in senior management, including two directors of the organization. The interviewees had worked in Aga Khan University Hospital for more than five years each, and were directly involved in the implementation of the research and innovation strategy at Aga Khan University Hospital, Nairobi by virtue of their positions and the departments they worked in. As such, they were appropriate candidates for the interview. All interviewees were university graduates, with three Bachelors degrees; three had Master degree qualifications as well as professional charters in relevant disciplines. As such, all interviewees had sufficient educational, professional and practical experience and background to understand the concept of research and innovation strategy and how it affects competitive advantage of Aga Khan University Hospital, Nairobi

4.3 Research & Innovation Practices at Aga Khan University Hospital

The interviewees were in agreement that the major forms of research & innovation practices at Aga Khan University Hospital, Nairobi included case studies, desktop research, market surveys, focus groups, practical research. They indicated that research activities are carried out by the specialized training doctors and nurses e.g., paediatricians, oncologists, cardiologists and some medics are sponsored to carry out research abroad. They were of the view that the hospital support innovation through continuous procurement of up to date equipment such as equipment to conduct intravascular ultrasound to image inside a blocked heart arteries. The interviewees

cited a survey carried out in 2009 to establish the most suitable Information, Communication Technology (ICT) support system that would support efficient and reliable patient' electronic data and information.

4.3.1 Types of Innovations

The interviewees indicated that for the last five years there have been a lot of product innovations and the new products that are more attractive and effective. They cited the introduction of Urodynaics Unit that offer new services of studying the function of the bladder and bladder neck in male and females. They added that the Hospital has introduced a video assisted thoracic surgeries.

The interviewees also unanimously agreed that the hospital has adopted process innovations as the hospital has improved processes through online access to information. They added that the University has programmes that support this factor for example School of Nursing and Midwifery provides an opportunity to the working nurses to upgrade their skills and practice at the same time hence improving quality of nursing. They cited the introduction of Enterprise Resource Programme (ERP) - Care 2000 ICT Management of Information system that helps to in-put and fast retrieval of patients' data and information. The interviewees also said that the hospital give clients a choice to select a doctor online based on their preference or any other information required.

According to the interviewees, the hospital also adopts market innovation through high expansion to all regions and towns. They intimated that the hospital has introduced specialty clinics targeting different markets such as Child Psychiatry, Paediatric Cardiology Clinic, Paediatric Chest Clinic, Paediatric Neonatal Clinic. All these clinics target children market. There is also Well-Woman Clinic targeting women market.

Regarding, technological innovations, the interviewees intimated that the hospital has recently acquired quite a number of technological improvements and new technologies have been adopted in care delivery. This is for example by introducing an endoscopy machine that examines and show human system from the mouth to the stomach and the hospital is also implementing paperless medical records.

The interviewees were unanimous that the hospital reviews its research and innovation strategies annually and the process involves functional areas eg, ICT on

ICT related activities, Medical Health Care providers in Medical Services section. The hospital reviews research and innovation in various functional areas on annual basis and make recommendations to the senior leadership team.

The interviewees were in accord that the research and innovation practices contribute to the Hospital's competitiveness in that they have given a mileage to the hospital saying find AKUHN is preferred by most people especially by cancer patients and neuro cases, child delivery. The research and innovation practices makes the hospital attractive to most patients for example the ICT Care 2000 has enabled fast processing of patients data therefore the queues move fast and therefore most people prefer that. They added that the research and innovation help the hospital in meeting the current market needs and the hospital is able to improve on services and also stay on top with the latest innovation.

4.4 Factors affecting the research and innovation process

The interviewees indicated that the organizational structure support research and innovation within the Hospital as the hospital has different functional areas that support research and innovation activities. For example, Training and Development, Marketing, Information and Technology, the Aga Khan University. They said that the organization structure support by installing specific units to support research and innovation for example ICT Division to support innovation at various levels, Aga Khan University and marketing departments to support research process.

All interviewees were in agreement that the leadership and management of the Hospital has been supporting the research and innovation process since the senior leadership team encourages staff at different levels to participate in research and innovation and evaluates performance annually and also through direct involvement at strategy formulation and implementation. The Senior Leadership Team evaluates performance of research and innovation annually.

According to the interviewees, some of the factors that increases the innovative potential of the hospital include staff training and development, staff sponsorship to participate in research activities, continuous medical education (CMEs), staff forums, availability of resources, support of the workforce by the top management, laying

down structures that support innovation, customer needs expectations for services that are tailored and demand.

The interviewees considered the research and innovation strategies adopted by the Hospital as very effective in creating a sustainable competitive advantage as it has guided the hospital on areas they need to invest on guided by the market survey for example the heart and cancer center investment. After introduction of a new and advanced services the number of patient increase significantly e.g. launching of the heart and cancer center, introduction of diagnostic centers. They cited the strategy of making heart and cancer center to house various new services for cardiovascular treatment has been realized.

The interviewees were in accord that the knowledge flows from and to organizations that help it in the Research and Innovation process is very effective through staff forums at different functional areas, during the monthly CMEs, customer satisfaction forms and through training and communication, both upwards and downwards.

On the Hospital's capability to acquire knowledge and technology through external linkages and networks that would help in its research and innovation endeavor, the interviewees were in agreement that the hospital is also a university and therefore a good network for research and innovation. They said that the hospital is capable to acquire knowledge and technology through the established networks e.g.; Aga Khan Development Network (AKDN), Aga Khan University (AKU) training linkages, the kidney research centre. The hospital has partnered with Aga Khan Foundation (AKF) and Aga Khan Development Network (AKDN), Aga Khan Museum in Toronto and donors that support through provision of knowledge and resources to support research and innovation activities.

The interviewees were of the view that it is not easy for competitors to match the hospital research and innovation strategies since the AKUHN has done great investment in research and innovation citing that quite a number of the institutions face challenges resources and research and innovations require heavy investment. Others indicated that it was very difficult, due to continuous improvements and the generally high cost involved.

The interviewees indicated that challenges that influence development of research and innovation strategies in the Hospital included huge resources requirements, both

monetary and human, technology is very dynamic and is a challenge to maintain, sometimes the staff are too busy to concentrate on research activities and development of new diseases due to changing people's lifestyles hence the hospital is required to keep up researching on new ways of providing health care. They added that the customers are now informed hence their expectations are high. Others included organizational structure where information has to follow a certain bureaucratic process of which the information has to be communicated by the HOD to the other staff.

4.5 Discussions

The study deduced that the major forms of research & innovation practices at Aga Khan University Hospital, Nairobi included case studies, desktop research, market surveys, focus groups, practical research. They indicated that research activities are carried out by the specialized training doctors and nurses e.g., paediatricians, oncologists, cardiologists and some medics are sponsored to carry out research abroad. The study deduced that the hospital support innovation through continuous procurement of up to date equipment such as equipment to conduct intravascular ultrasound to image inside a blocked heart arteries. The interviewees cited a survey carried out in 2009 to establish the most suitable ICT support system that would support efficient and reliable patient' electronic data and information. This correlates with Wernham (2004) observations that in a strategic planning process, resources such as people, skills, facilities and money to implement the strategy must be adequate. Organizations must focus on becoming more competitive by launching competitive strategies that give them an edge over others and to do this, they need to craft workable strategies.

The study found that for the last five years there have been a lot of product innovations and the new products that are more attractive and effective. They cited the introduction of urodynamic unit that offer new services of studying the function of the bladder and bladder neck in male and females. They added that the Hospital has introduced a video assisted thoracic surgeries. This is in accord with Mutia (2013) findings that understanding customer needs is the major reason for success levels of products in the market and this can be attributed to lead to a superior competitive advantage. Varmah (2012) also in his study to examine the competitive strategies adopted by AKUHN and the challenges faced in their implementation established that

product design/style, advertisements / promotions, quality products, brand reputation and use of publicity were the major strategies that were employed to remain competitive in the market.

The study also deduced that the hospital has adopted process innovations as the hospital has improved processes through online access to information. They added that the University has programmes that support this factor for example School of Nursing and Midwifery provides an opportunity to the working nurses to upgrade their skills and practice at the same time hence improving quality of nursing. They cited the introduction of ERP - Care 2000 ICT Management of Information system that helps to in-put and fast retrieval of patients data and information. The interviewees also said that the hospital give clients a choice to select a doctor online based on their preference or any other information required.

The study further found that, the hospital also adopts market innovation through high expansion to all regions and towns. They intimated that the hospital has introduced specialty clinics targeting different markets such as Child Psychiatry, Paediatric Cardiology Clinic, Paediatric Chest Clinic, Paediatric Neonatal Clinic. All these clinics target children market. There is also Well-Woman Clinic targeting women market. This is in accordance with Tidd et al (2006) who found that innovation contributes to achieving a competitive advantage in several aspects. The most important characteristics of innovations include: a strong relationship between market performance and new products, new products help to maintain market shares and improve profitability and growth by means of non-price factors (design, quality, individualization). Ansoff (2003) also stated that due to the remarkable growth in size and complexity of modern-day businesses, there has been a tremendous increase in the segmentation of management responsibilities, leading to a tendency to lose sight of what is the best for the overall business.

Regarding, technological innovations, the interviewees intimated that the hospital has recently acquired quite a number of technological improvements and new technologies have been adopted in care delivery. This is for example by introducing an endoscopy machine that examines and show human system from the mouth to the stomach and the hospital is also implementing paperless medical records. This is in line with Kovac (2007) who sees innovation as a strategy for determining long-term fundamental business objectives and determines the activities and resources for

achieving these goals. According to Kovac, the innovation strategy must be based on variation, long term, systematism, the time factor and the concentration of resources and activities.

The study revealed that the hospital reviews its research & innovation strategies annually and the process involves functional areas e.g, ICT on ICT related activities, Medical Health Care providers in Medical Services section. The hospital reviews research and innovation in various functional areas on annual basis and make recommendations to the senior leadership team.

The study revealed that the research and innovation practices contribute to the Hospital's competitiveness in that they have given a mileage to the hospital saying find AKUHN is preferred by most people especially by cancer patients and neuro cases, child delivery. The research and innovation practices makes the hospital attractive to most patients for example the ICT Care 2000 has enabled fast processing of patients data therefore the queues move fast and therefore most people prefer that. They added that the research and innovation help the hospital in meeting the current market needs and the hospital is able to improve on services and also stay on top with the latest innovation. This is in agreement with Martín-de Castro et al (2013) who argues that developing successful technological innovations is essential for creating and sustaining an organization's competitive advantage. Zemplerová (2010) on the other hand posit that the expenditures on research, development and introduction of innovations are the determining characteristics for gaining a dominant part of the market. Autant-Bernard, Fadairo and Massard (2013) in their survey also show the importance of the role of the regional innovation and they argue that organization must have original strategies and support the knowledge flows from and to organization.

The study found that the organizational structure support research and innovation within the hospital as the hospital has different functional areas that support research and innovation activities. For example, training and development, marketing, information and technology, the Aga Khan University. The study established that organization structure support by installing specific units to support research and innovation for example ICT Division to support innovation at various levels, Aga Khan University and marketing departments to support research process. This is in

accord with Molina-Morales et al. (2011) who stated that internal environment of an organization needs to have a suitably preset innovative culture, since this type of culture is characterized by the transience of organizational structures, utilization of specialists and temporary teams, mobile offices, the necessity of speedy and flexible changes responding to new opportunities, which increases the innovative potential of such organizations.

The study found that the leadership and management of the Hospital has been supporting the research and innovation process since the senior leadership team encourages staff at different levels to participate in research and innovation and evaluates performance annually and also through direct involvement at strategy formulation and implementation. The Senior leadership team evaluates performance of research and innovation annually. This is in line with Mutia (2013) who established that understanding customer needs was the major reason for success levels of products in the market and this can lead to a superior competitive advantage. Tushman & Nadler (1986) also stressed that “organisations can gain competitive advantage only by managing effectively for today while simultaneously creating research and innovation for tomorrow” and suggested that “there is perhaps no more pressing managerial problem than the sustained management of research and innovation. Identifying visionary leadership and also people, structures and values are important factors that affect whether an organization realizes benefits from research and innovation.

The study further found that, some of the factors that increase the innovative potential of the hospital include staff training and development, staff sponsorship to participate in research activities, continuous medical education (CMES), staff forums, availability of resources, support of the workforce by the top management, laying down structures that support innovation, customer needs expectations for services that are tailored and demand. This correlates with Romero and Martinez-Roman (2012) who expressed that since knowledge is a fundamental factor in the innovation and assimilation of new technologies individual training plays an important role contributing to the internal learning and the generation of new ideas within the business. The education background of the managers, business owners and entrepreneurs has been found to be an important factor explaining innovation in organizations (Koellinger, 2008).

The study established that the research and innovation strategies adopted by the Hospital as very effective in creating a sustainable competitive advantage as it has guided the hospital on areas they need to invest on guided by the market survey for example the heart and cancer center investment. After introduction of new and advanced services, the number of patient increase significantly e.g. launching of the heart and cancer center, introduction of diagnostic centers. They cited the strategy of making heart and cancer centre to house various new services for cardiovascular treatment has been realized. This correlates with Waloba (2013) who did a study on Innovation as a basis of creating sustainable competitive advantage among shipping agents in Kenya and established that innovation is indeed widely used as a basis of creating competitive advantage in the shipping agency business in Kenya.

The study also revealed that the knowledge flows from and to organization that help it in the Research and Innovation process is very effective through staff forums at different functional areas, during the monthly CMEs, customer satisfaction forms and through training and communication, both upwards and downwards. This correlates with Bartes (2009) who stated that the 21st century is based on knowledge, information and innovative economy and organizations' success depends on employees' knowledge, experience, creative activity and qualification and emphasis is placed on continuous learning and research and development. This is in accordance with Charitou and Markides (2003) who stated that strategic innovation is a fundamentally different way of competing in an existing business and it starts with the innovation in one's business model leading towards a new way of playing the game. However, while other academics agree that the organization's business model is at the hearth of strategic innovation, not all researchers go till the extent of strategic innovation aiming at the disruption of the industry.

On the Hospital's capability to acquire knowledge and technology through external linkages and networks that would help in its research and innovation endeavor, the study deduced that the hospital is also a university and therefore a good network for research and innovation. They said that the hospital is capable to acquire knowledge and technology through the established networks e.g.; AKDN, AKU training linkages, the kidney research centre. The hospital has partnered with Aga Khan Foundation (AKF) and Aga Khan Development Network (AKD), Aga Khan Museum in Toronto

and donors that support through provision of knowledge and resources to support research and innovation activities.

The study revealed that it is not easy for competitors to match the hospital research and innovation strategies since the AKUHN has done great investment in research and innovation citing that quite a number of the institutions face challenges resources and research and innovations require heavy investment. Others indicated that it was very difficult, due to continuous improvements and the generally high cost involved

The study found that challenges that influence development of research and innovation strategies in the Hospital included huge resources requirements, both monetary and human, technology is very dynamic and is a challenge to maintain, sometimes the staff are too busy to concentrate on research activities and development of new diseases due to changing people's lifestyles hence the hospital is required to keep up researching on new ways of providing health care. They added that the customers are now informed hence their expectations are high. Others included organizational structure where information has to follow a certain bureaucratic process of which the information has to be communicated by the head of department to the other staff. This is in line with Furrer et al (2008) that the focus of inquiry changed from the structure of the industry, e.g., Structure Conduct Performance (SCP) paradigm and the five forces model) to the firm's internal structure, with resources and capabilities being the key elements of the Resource Based View (RBV).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings, the conclusions of the study, the recommendations, the limitations of the study and suggestions for further research based on the objectives of the study. The study sought to investigate the effect of research and innovation strategy on competitive advantage in the health sector with reference to the Aga Khan University Hospital, Nairobi.

5.2 Summary

The study found that the major forms of research & innovation practices at Aga Khan University Hospital included case studies, desktop research, market surveys, focus groups, practical research. It was clear that research activities are carried out by the specialized training doctors and nurses e.g., paediatricians, oncologists, cardiologists and some medics are sponsored to carry out research abroad. The hospital support innovation through continuous procurement of up to date equipment such as equipment to conduct intravascular ultrasound to image inside a blocked heart arteries. The interviewees cited a survey carried out in 2009 to establish the most suitable ICT support system that would support efficient and reliable patient' electronic data and information.

The study deduced that for the last five years there has been a lot of product innovations and the new products that are more attractive and effective. These include the introduction of Urodynamics Unit that offer new services of studying the function of the bladder and bladder neck in male and females. And also a video assisted thoracic surgeries.

The hospital has also adopted process innovations as the hospital has improved processes through online access to information. The University has programmes that support this factor for example School of Nursing and Midwifery provides an opportunity to the working nurses to upgrade their skills and practice at the same time hence improving quality of nursing. This includes the introduction of ERP - Care 2000 ICT Management of Information system that helps to in-put and fast retrieval of

patients' data and information and also giving clients a choice to select a doctor online based on their preference or any other information required.

The hospital also adopts market innovation through high expansion to all regions and towns. It was clear that the hospital has introduced specialty clinics targeting different markets such as Child Psychiatry, Paediatric Cardiology Clinic, Paediatric Chest Clinic, Paediatric Neonatal Clinic targeting children market. There is also Well-Woman Clinic targeting women market.

Regarding, technological innovations, the study found that the hospital has recently acquired quite a number of technological improvements and new technologies have been adopted in care delivery. This is for example by introducing an endoscopy machine that examines and show human system from the mouth to the stomach and the hospital is also implementing paperless medical records.

It was revealed that the hospital reviews its research & innovation strategies annually and the process involves functional areas e.g., ICT on ICT related activities, Medical Health Care providers in Medical Services section. The hospital reviews research and innovation in various functional areas on annual basis and make recommendations to the senior leadership team.

The study established that the research and innovation practices contribute to the Hospital's competitiveness in that they have given a mileage to the hospital saying find AKUHN is preferred by most people especially by cancer patients and neuro cases, child delivery. The research and innovation practices makes the hospital attractive to most patients for example the ICT Care 2000 has enabled fast processing of patients data therefore the queues move fast and therefore most people prefer that. The research and innovation also help the hospital in meeting the current market needs and the hospital is able to improve on services and also stay on top with the latest innovation.

The study further found that the organizational structure support research and innovation within the Hospital as the hospital has different functional areas such as Training and Development, Marketing, Information and Technology and the Aga Khan University. The organization structure supports the installation of specific units to support research and innovation for example ICT Division to support innovation at

various levels, Aga Khan University and marketing departments to support research process.

It was clear that the leadership and management of the Hospital has been supporting the research and innovation process since the senior leadership team encourages staff at different levels to participate in research and innovation and evaluates performance annually and also through direct involvement at strategy formulation and implementation. The Senior Leadership Team evaluates performance of research and innovation annually.

The study established some of the factors that increase the innovative potential of the hospital as staff training and development, staff sponsorship to participate in research activities, continuous medical education (CMES), staff forums, availability of resources, support of the workforce by the top management, laying down structures that support innovation, customer needs expectations for services that are tailored and demand.

It was deduced that the research and innovation strategies adopted by the Hospital are very effective in creating a sustainable competitive advantage as it has guided the hospital on areas they need to invest on guided by the market survey for example the heart and cancer centre investment. After introduction of a new and advanced services the number of patient increase significantly e.g. launching of the heart and cancer centre, introduction of diagnostic centres. They cited the strategy of making heart and cancer centre to house various new services for cardiovascular treatment has been realized.

The study further revealed that the knowledge flows from and to the organization that helps it in the Research and Innovation process is very effective through staff forums at different functional areas, during the monthly CMEs, customer satisfaction forms and through training and communication, both upwards and downwards.

On the Hospital's capability to acquire knowledge and technology through external linkages and networks that would help in its research and innovation endeavor, the study deduced that the hospital is also a university and therefore a good network for research and innovation. They said that the hospital is capable to acquire knowledge and technology through the established networks e.g.; AKDN, AKU training linkages, the kidney research centre. The hospital has partnered with Aga Khan Foundation

(AKF) and Aga Khan Development Network (AKDN), Aga Khan Museum in Toronto and donors that support through provision of knowledge and resources to support research and innovation activities.

The study found that it is not easy for competitors to match the hospital research and innovation strategies since the AKUHN has done great investment in research and innovation citing that quite a number of the institutions face challenges resources and research and innovations require heavy investment. It was very difficult, due to continuous improvements and the generally high cost involved

The challenges that influence development of research and innovation strategies in the Hospital included huge resources requirements, both monetary and human, technology is very dynamic and is a challenge to maintain, sometimes the staff are too busy to concentrate on research activities and development of new diseases due to changing people's lifestyles hence the hospital is required to keep up researching on new ways of providing health care. The customers are now informed hence their expectations are high. Others included organizational structure where information has to follow a certain bureaucratic process of which the information has to be communicated by the Head of Department (HOD) to the other staff.

5.3 Conclusion

Organisations globally now seek to actively differentiate themselves from their competitors in terms of quality of service, flexibility, customisation, innovation and rapid response. The current operational set-up in Kenya's health sector is a turbulent one and highly competitive market condition. To ensure survival and sustainability in the market place, the private hospitals require adopting a competitive strategy. From the findings, the study concludes that the major forms of research and innovation practices at Aga Khan University Hospital included case studies, desktop research, market surveys, focus groups, practical research carried out by the specialized training doctors and nurses. The hospital support innovation through continuous procurement of up to date equipment such as equipment to conduct intravascular ultrasound to image inside a blocked heart arteries.

The study also concludes that for the last five years there has been a lot of product innovations such as the introduction of Urodynamics Unit that offer new services of studying the function of the bladder and bladder neck in male and females. And also a

video assisted thoracic surgeries. The hospital has also adopted process innovations which include the introduction of ERP - Care 2000 ICT Management of Information system that helps to in-put and fast retrieval of patients' data and information and also giving clients a choice to select a doctor online based on their preference or any other information required. The hospital also adopts market innovation through specialty clinics targeting different markets such as Child Psychiatry, Pediatric Cardiology Clinic, Pediatric Chest Clinic, Pediatric Neonatal Clinic targeting children market and also Well-Woman Clinic targeting women market. It was clear that the hospital has recently acquired quite a number of technological improvements and new technologies have been adopted in care delivery. This is in line with Varmah (2012) who established that product design/style, advertisements / promotions, quality products, brand reputation and use of publicity were the major strategies that were employed by AKUHN to remain competitive in the market.

The study revealed that the research and innovation practices are very effective in creating a sustainable competitive advantage as AKUHN is preferred by most people especially by cancer patients, neuro cases and child delivery. It is not easy for competitors to match the hospital research and innovation strategies due to continuous improvements and the generally high cost involved. This is in accord with Martín-de Castro et al (2013) who argues that developing successful technological innovations is essential for creating and sustaining an organization's competitive advantage.

It was clear that the organizational structure, staff training and development, staff sponsorship to participate in research activities, continuous medical education (CMES), availability of resources and support of the workforce by the top management support research and innovation senior leadership team encourages staff at different levels to participate in research and innovation and evaluates performance annually and also through direct involvement at strategy formulation and implementation. The hospital is also a university and therefore a good network for research and innovation and the hospital is capable to acquire knowledge and technology through the established networks e.g.; AKDN, AKU training linkages, the kidney research centre, Aga Khan Foundation (AKF) and Aga Khan Development Network (AKD), Aga Khan Museum in Toronto and donors that support through provision of knowledge and resources to support research and innovation activities.

5.4 Recommendations for policy, theory and practice

This study recommends increased investment research and innovation as an effective tool that organizations can apply to improve competitiveness. However, since the positive effects of research and innovation take time to become visible, the study recommends that their impact on performance should be viewed in perspective of the future trends.

The study also recommends that the research and innovation strategies be dynamic as the customers' needs are dynamic and not static. This would ensure that the hospital remains competitive all the time and don't get caught up in obsolete old strategies. The hospital need to move from conventional means to research and innovation strategies that allow them to intimately understand and target customers effectively. Further, for research and innovation to be effective, it must be effected across the entire value chain from the implementation of new target customer segments to realigning the product teams to develop new products with the new segments in mind, as well as ensuring all products and services are developed to speak and connect effectively with the chosen target segments. The human resource of hospital has to be ready to embrace the dynamic capabilities approach and be ready to look far and wide for the right strategies.

Finally, on policy, the study recommends that the government and industry regulator develop regulations that ensure a level playing field for all players on the one hand, and encourage value based competition on the other as opposed to price based competition which in the longer term can destroy value and hurt the health sector.

5.5 Limitations of the Study

The research was a case study of Aga Khan University Hospital, Nairobi only. It would have been more helpful especially for recommendation if the research had been extended to other organizations within the health sector, as well as to other industries. This would in effect have provided more insights to measure the effect of research and innovation strategies on the competitiveness in a cross section of firms and industries for comparative purposes.

While the study revealed that Aga Khan University Hospital competitiveness had improved as a result of the research and innovation strategies, the findings cover a period of less than 5 years from the time the firm implemented its new products and

services. This hindered the ability to evaluate the impact of the research and innovation strategies over a longer period of time, given that the real effects on performance take time.

5.6 Suggestions for further research

This study was a case study of Aga Khan University Hospital, which is in the health sector. Future studies should look at other industries to establish how they have applied research and innovation strategies and measure what influence this has had on their competitiveness. This is because while research and innovation is a universal concept, different organizations have unique characteristics and diverse contextual realities. This would therefore bring out comprehensive empirical findings on the determination of the influence of research and innovation strategies on competitiveness.

The study also recommended that further studies measure the long-term benefits of research and innovation by analyzing performance across multiple metrics such as average revenues and customer loyalty over an extended period of time. This should go hand in hand with an analysis of segment-wise profit and loss reports to measure the real returns of implementing research and innovation strategies.

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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION



UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
MBA PROGRAMME

Telephone: 020-2059162
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P.O. Box 30197
Nairobi, Kenya

DATE.....18/9/2015

TO WHOM IT MAY CONCERN

The bearer of this letter NGIRIGA SEENA CO AN GAEI

Registration No..... 061176086/2012

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.



PATRICK NYABUTO
MBA ADMINISTRATOR
SCHOOL OF BUSINESS

APPENDIX II: INTERVIEW GUIDE

This Interview guide is designed to collect data from the Aga Khan University Hospital, Nairobi on Application of research and Innovation Strategies to create a Sustainable Competitive Advantage. The data will be used for academic purposes only and will be treated with strict confidence.

The following sections provides sample questions to be used carrying out the interview.

- 1) What position do you hold in the Hospital?
- 2) What's the highest level of education you have attained?
- 3) How long have you worked in the Hospital?
- 4) In which department or division do you work?
- 5) What are the major forms of research & innovation practices at Aga Khan University Hospital, Nairobi?
- 6) How have the following types of innovation strategies been adopted in the Hospital for the last 5 years?
 - i. Product
 - ii. Process
 - iii. Market
 - iv. Technological
- 7) Does the hospital review its research & innovation strategies? If yes, how often are the strategies reviewed and who is involved in the review process?
- 8) How do the above research and innovation practices contribute to the Hospital's competitiveness?
- 9) How does the organizational structure support research and innovation within the Hospital?
- 10) How has the leadership and management of the Hospital been supporting the research and innovation process?
- 11) What are some of the factors that increase the innovative potential of your hospital?

- 12) How effective would you consider the Research and innovation strategies adopted by the Hospital in creating a sustainable competitive advantage?
- 13) How effective is the knowledge flows from and to organization that help it in the Research and Innovation process?
- 14) What is the Hospital's capability to acquire knowledge and technology through external linkages and networks that would help in its research and innovation endeavor?
- 15) In your opinion, how easy is it for your competitors to match your research and innovation strategies?
- 16) What challenges influence development of research and innovation strategies in the Hospital?