



Effects of Information and Communication Technology (ICT) on Sustained Competitive Advantage in the Banking Sector (Kenya)

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ABSTRACT: *The link between Information and Communication Technology (ICT) and Sustainable Competitive Advantage (SCA) has continued to take a central place in strategy research and scholarly debates. The perspectives through which ICT has been studied in organizational settings has appeared to strongly emphasize it as a powerful competitive weapon for sustainable competitive advantage, yet the extent to which it has contributed to the sustainability of the competitive advantage has not been established. The study aimed at examining the effect of ICT investments on SCA of Kenya Commercial banks by determining the extent to which the banks have invested on ICT and find out the extent to which ICT assets and ICT capabilities have each contributed to sustainable competitive advantage of the banks. The study is important to the banking industry since it will guide the banks' decision makers on the ICT aspects to invest in to achieve sustainable competitive advantage. The study targeted all the seven commercial banks in Nyahururu town with an estimated population of 94,102 customers. It was guided by the resource based theory that seeks to direct organizations along the path to achieving sustainable competitive advantage through the use of resources and capabilities. Cross sectional surveys design were adopted. Using Cochran's formula a quota sample of 384 quota sampling was used to identify customers in the banks selected and systematic random sampling aimed selecting the nn. A pilot test was carried out on commercial banks in Nakuru town to test for the validity and reliability of the research instrument. Data was then analyzed using both descriptive and inferential statistics with the aid of Statistical Package for Social Sciences (SPSS) computer software tool. The results were presented using frequency tables, charts and graphs. Multiple regression analysis was used to draw inferences. The findings of the study will be used by the banking industry player to make policy decisions on ICT investments.*

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The Information and Communications Technology (ICT) sector has proven to be a strong growth factor toward the Gross Domestic Product (GDP) of nations across the world; from developing countries such as Kenya, India and the Philippines, to developed nations such as the US and Ireland, the ICT sector has contributed to the success of each of these nation's economies, the advancement of its people's skills and capabilities and positioning the nation as place for global firms to more efficiently do business. The ICT sector has been the major economic driver in Sub-Saharan Africa over the past decade, witnessing an annual compounded growth rate of 40% (Global Information report, 2012).

The government of Kenya is playing a very active role in encouraging the adoption of ICT among business in the country. The main purpose is to accelerate the competitiveness of the businesses in particular and sustainable Kenyan economy as a whole. In the Vision 2030 strategy Plan which took effect from 2008 to 2030, the government is committed to improve access to the internet, telecommunication and an increase Information Technology literacy, to develop strategies to improve access to ICT by decreasing cost of internet to business, reducing the cost of communication, management and transaction of data, ensuring the availability of a minimum supply of ICT infrastructure and Electricity especially in the remote and



rural areas with a special emphasis to the servicing of the small and medium enterprises.

Information and Communication Technology has played a major role in businesses' operations including, saving of inputs, general cost reductions, higher flexibility and improvement in product quality, networking and communication as firms use these technologies to facilitate communication among employees and reduce co-ordination costs, enhances the production process in organizations as monitoring technologies could be used to reduce the number of supervisors required in the process and has helped in information gathering and dissemination, inventory control and quality control (Arvanitis and Loukis, 2009). Olugbenga (2006) argues that ICTs are being used for strategic management, communication and collaboration, customers' access, managerial decision making, data management and knowledge management since it helps to provide an effective means of organizational productivity and service delivery. In addition, Buhalis (2003) also notes that the application of ICT in businesses causes fundamental changes that can provide powerful strategic and tactical tools for organizations if properly applied and used. This could have great impact in promoting and strengthening organizational competitiveness.

The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness. ICT directly has affected how managers decide, how they plan and what products and services are offered in the banking industry. It has continued to change the way banks and their corporate relationships are organized worldwide and the variety of innovative devices available to enhance the speed and quality of service delivery.

Harold and Jeff (1995) contend that financial service providers should modify their traditional operating practices to remain viable in the decades that follow. They claimed that the most significant shortcoming in the banking industry was a wide spread failure on the part of senior management in banks to grasp the importance of technology and incorporate it into their strategic plans accordingly. The banking industry has witnessed tremendous changes linked with the developments in ICT over the years. The quest for survival, global relevance, maintenance of existing market share and sustainable development has made exploitation of the many advantages of ICT through the use of automated devices imperative in the industry. This study evaluated the response of commercial banks in Nyahururu-Kenya to this new trend and examined the extent to which they have adopted innovative technologies in their operations and the resultant effects in terms of sustained competitive advantage.

1.2 STATEMENT OF THE PROBLEM

Information and Communication Technology (ICT) is the single largest capital expense in most industries, banking industry included. The large investments in ICT have had a major impact on how firms operate. Indeed, ICT has become a necessity for survival. Thus, organizational reliance on IT continues to grow and is in part reflected by the large sums of money being spent on its adoption. The International Data Corporation estimated an ICT investment of US\$ 1.0 trillion in 2007 and US\$ 1.5 trillion in 2010. Despite banks' large investments on ICT, there are contradictory findings concerning the payoffs of ICT and its effect on sustained competitive advantage. In addition, the extent to which they have adopted ICT innovative technologies in their operations and the resultant effects in terms of sustained competitive advantage has not been determined. Therefore, the study intended to establish the effect of ICT applications on commercial banks' sustained competitive advantage.



1.3 GENERAL OBJECTIVE

The aim of this study was to examine the effects of Information and Communication Technology (ICT) on Sustained Competitive Advantage (SCA) in Kenyan Banking Sector.

The Specific objectives were;

1. To determine the extent to which banks in Nyahururu town have invested on ICT.
2. To establish the extent to which ICT assets are a source of banks' SCA in Nyahururu town.
3. To find out the extent to which ICT capabilities are a source of banks' SCA in Nyahururu town.

1.4 RESEARCH QUESTIONS

1. To what extent have banks in Nyahururu town invested in ICT?
2. To what extent are ICT assets a source of SCA of banks in Nyahururu town?
3. To what extent are ICT capabilities a source of SCA of banks in Nyahururu town?

1.5 JUSTIFICATION OF THE STUDY

Information and communication technology (ICT) investments have had a tremendous impact on firms by reducing costs, improving product quality and increasing value to customers, thus enabling the firms to gain sustained competitive advantage (SCA). ICT expenditure in financial industry consumes an ever increasing portion of operating costs. Yet with regard to planning for the implementation of these technologies, Information and communication Technologists executives struggle with the challenging issue of how to justify investment into ICT.

Information and communication Technology investments carry significant long term business implications. Assessing ICT investments and its contribution to SCA is thus difficult;

both before the investment is undertaken, and after the new (or enhanced) systems have been acquired and implemented. Emphasizes on the importance of selecting appropriate ICT investment is crucial, as they significantly impact the effectiveness of decision making and have a consequence on banks' return on investment.

Therefore, the development and use of appropriate justification approaches and techniques is crucial to ensuring that ICT infrastructure in banks are evaluated for all the strategic, operational and economic benefits they can provide and for all the costs that are associated with their acquisition and operation. This study attempted to provide empirical evidence on the current state of practice in Kenyan banking institutions in evaluating ICT investments. The study sought to determine the level of investment in ICT infrastructure by commercial banks in Kenya. This study also attempted to establish whether the choice of ICT adopted contributes to banks' overall SCA. The results of this study will help to establish banking industry-wide benchmarks and best practices in ICT investments that can be applied across other service industries, thereby assisting firms to make more informed decisions for future investments.

1.6 SCOPE OF THE STUDY

The study was carried out in the commercial banks within Nyahururu town. This study was focused on Information Technology (IT) competencies for new and ongoing products, and firms' sustained competitive advantage.

1.7 LIMITATIONS OF STUDY

Due to the confidentiality policies of banks, access to information was not readily available. In addition, the contributions made by IT to the overall performance of the banks may not be out rightly recognizable to all the respondents.



1.8 DEFINITION OF OPERATIONAL TERMS

ICT Asset

Are technological based collection of technologies, people, and processes that facilitates scale connectivity and effective interoperation of an organization's ICT applications

ICT Capability

Is the extent to which a firm is knowledgeable about and effectively utilizes ICT to manage information within a firm.

Resources

Are inputs into a firm's production process, such as capital, equipment, the skills of individual employees, patents, finance, and talented managers. Resources are either tangible or intangible in nature. With increasing effectiveness, the set of resources available to the firm tends to become larger. Individual resources may not yield to a sustained competitive advantage. It is through the synergistic combination and integration of sets of resources that sustained competitive advantages are formed.

Strategy

This is a technique/tactic employed by an organization to help it gain competitive advantage over others and overcome the environmental, political, social, economic and technological challenges that it meets in the course of operations.

Sustained Competitive Advantage

Is the prolonged benefit of implementing some unique value-creating strategy not simultaneously being implemented by any current or potential competitors along with the inability to duplicate the benefits of this strategy.

CHAPTER TWO

LITERATURE REVIEW

2.1 THE CONCEPT OF SUSTAINED COMPETITIVE ADVANTAGE

Sustained competitive advantage is a management concept that has been so popular in the contemporary literature of management nowadays. The reasons behind such popularity include the rapid change that organizations face today, the complexity of the business environment, the impacts of globalization and unstructured markets, the ever changing consumer needs, competition, the revolution of information technology and communications, and the liberation of global trade.

Despite the fact that interests in this subject has started many decades ago, it wasn't till the 60's of the twentieth century that the concept has spread out when Edmund Learned & Kenneth Andrews described SWOT analysis denoting strength as a competitive advantage (Schendel, 1994). Kotler, 2000 also defined sustained competitive advantage as an organizational capability to perform in one or many ways that competitors find difficult to imitate now and in the future. Nevertheless, Porter recognized competitive advantage as a strategic goal; that is a dependent variable and the reason behind this is that the good performance is related to achieving a sustained competitive advantage (Read & Difillipi, 1990).

Others see sustained competitive advantage as an ability to produce products or offer services different to what competitors do, by utilizing the strengths that organizations possess so as to add value in a way that competitors find it difficult to imitate (Pitts & Lei, 1968). The assumption therefore is that sustained competitive advantage is a relative quality that organizations claim to possess through which organizations can exceed their rivals' performance, and achieve long lasting benefits as perceived by clients.

Much of the research on sustained competitive advantage focused on core competencies as a major source of



that advantage, core competencies include the particular set of skills and resources affirm possesses as well as the way those resources are used to produce outcomes (Fiol, 2001). Core competencies are particular strengths relative to other organizations in the industry which provide the fundamental basis for the provision of added value. Core competencies are the collective learning in organizations, and involve how to coordinate diverse production skills and integrate multiple streams of technologies. It is communication, an involvement and a deep commitment to working across organizational boundaries. Few companies are likely to build world leadership in more than five or six fundamental competencies.

Hamel and Prahalad (1994) define core competence as a bundle of skills and technologies that enable a company to provide a particular benefit to customers. Core competencies are not product specific; they contribute to the competitiveness of a range of products or services. They are the roots of competitiveness and individual products and services are the fruit. A core competence is a tapestry woven from the threads of distinct skills and technologies. A skill must meet three tests to be considered as a core competence, i.e., customer value, competitor differentiation, and extendibility.

Establishing a brand image is another most important aspect of sustained competitive advantage. An organizational brand in itself determines if they will remain competitive. It may seem as a simple equation but to identify what makes a brand succeed is rather devious since two completely alike brands do not exist (Haig, 2005). Branding is most commonly associated with assets such as messaging, identity, design and of course the product or service itself. However, a brand is more than these tangible assets. A brand is more about the emotional and psychological feelings that enable a person to relate to the brand (Johns, 2004). According to John Hagel,

the historical view of a brand was that "You can rely on what we are offering because of our brand attributes". Today, that old view is replaced with a more customer centric branding that is "I know you better than the competitors and you can trust me to put together the right products or services to meet your individual needs" (Johns, 2004).

A brand increases the value of a product or a service by differentiating them from the competition and creates positive associations and forms emotional relationships with the customer. Brands provide businesses with the means to free themselves from for example constant price competition, to increase the value of their services and reduce their marketing costs. Philip Kotler has said that "if you are not a brand, you are a commodity. Then price is everything and the low cost producer is the only winner" (Greenwood, 2006).

The concept of customer loyalty has also received much consideration and attention from both academics and practitioners in different industries. In increasingly competitive markets, being able to build consumer loyalty is seen as the key factor in winning market share and developing a sustainable competitive advantage. Banking industry is no exception as it has high interaction with the customers, so managers must understand the factors which influence the loyalty of the customers towards their respective banks. It is always costly to attract new customers, so the managers always try to find ways to retain their current customers and concentrate on different factors which enhance the customer loyalty among the customers of the organizations.

Loyalty to a bank can be thought of as continuing patronage over time. The degree of loyalty can be gauged by tracking customer accounts, over defined time periods and noting the degree of continuity in patronage. During the past decade, the financial service sector has undergone drastic changes, resulting in a market place which is characterized by intense



competition, little growth in primary demand and increased deregulation (Chaudhuri and Halbrook, 2002). In the new market place, the occurrence of committed and often inherited relationships between a customer and his or her bank is becoming increasingly scarce. Several strategies have been attempted to retain customers. In order to increase customer loyalty for sustained competitive advantage, many banks have introduced innovative products and services through the use of information and communication technology (Alam and Khokhar, 2006)

2.2 COMPETITION IN THE BANKING INDUSTRY

Competition continues to affect banks in Kenya and other countries all over the world. From being the largest banks in the world in the inter-war period, the and big four' retail banks in Britain (NatWest, Midland-HSBC, Barclays and Lloyds-TSB) have seen their cosy-oligopoly gradually weaken since the 1960s. The banks have been rocked by the recession of the early 1990s and their exposure to bad debt while rounds of re-regulation and deregulation, such as the 1986 Building Societies Act, have blurred the boundaries between different financial specialisms and institutions (Alexander and Pollard, 2000).

Competition in the Kenyan banking industry has risen, so much that even international banks like Barclays and Ecobank have been hawking their services. Banks haven't been competing blindly as profitable growth and efficiency have displaced the traditional emphasis on volumetric targeting and size for size's sake (Howcroft, 2005). Kenyan banks have had to develop strategies to respond to competition, to both safeguard their niches and to enlarge their market share.

Different firms have in the past used different competitive strategies to manage their businesses. Prahalad and Hamel (1990) notes that while in the 1980's the

emphasizes wason restructuring and leaner organizations in the 1990's the focus was on identifying, cultivating, and exploiting core competences. The core competences model focused on the business as a portfolio a departure from the strategic business unit model. They also note that business in the 1990's used the core competences model to exploit their competences and build strategic architect to secure their future.

Defining the industry in which competition actually takes place is important for good industry analysis, not to mention developing strategy and setting business unit boundaries (Porter 2008b). Porter, 2008b also notes that a company strategist who understands that competition extends well beyond existing rivals will detect wider competitive threats and be better equipped to address them. However, this research has been limited to Information and communication Technology strategy in commercial banks and geographical scope limited to Kenya. Competition has always been contentious in banking. Regulators have traditionally tried to restrict competition in the sector with the aim of restricting excessive risk taking (Vives 2001). Not with standing their fears forces like globalization, liberalization, and technology have generated competition in the industry.

An analysis of the current Kenyan environment reveals the economic challenges listed below which are affecting the banking industry. According to the Minister of planning the challenges for Year 2008 included post-election disruptions, unfavorable, continued political bickering, weather conditions, high cost of food and fuel prices, high crude prices, and the global financial crisis (Kenya National Bureau of Statistics 2009). Any challenge can be converted to an opportunity, so its impact on individual banks will depend on the strategies used by its management to respond to the environment.

Banks in Kenya are competing for deposits, loans and



advances. Competition is likely to intensify in the banking industry in the background of a shrinking economy. However, the industry low penetration level of 19% still provides opportunities for banks to exploit. Banks are also competing with mobile phone operators' money transfer services like Safaricom's (M-Pesa) and Zain's (Zap). M-Pesa service has over four million registered subscribers. It transferred over KES 24 billion its first year of operation (Njiraini and Anyanzwa 2009). Most banks have also introduced phone-banking services which are largely products of Information and Communication Technologies to counter this competition.

2.3 APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN THE BANKING INDUSTRY

The application of information and communication technology concepts, techniques, policies and implementation of strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness. ICT directly affects how managers decide, how they plan and what products and services are offered in the banking industry. It has continued to change the way banks and their corporate relationships are organized worldwide and the variety of innovative devices available to enhance the speed and quality of service delivery.

Information and Communication Technology (ICT) is the automation of processes, controls, and information production using computers, telecommunications, software and other gadget that ensure smooth and efficient running of activities. It is a term that largely covers the coupling of electronic technology for the information needs of a business at all levels. ICT has surpassed the role of support services or only electronic data processing; its fields of applications are slightly global and unlimited. Its devices especially the Internet and modern computer email facilities

have further strengthened early modernizations like the telephone and fax. Other ICT devices include data recognition equipment, factory automation hardware and services, telecomputing and teleconferences using real time and online system (Adeoti, 2005).

It is a concept that is having a remarkable effect on almost entire aspects of the human endeavours. This implies that it involves the application of principles to engage physical component in achieving an intended goal. The merging of computer and telecommunication after about four decades of applying computers to routine data processing, mainly in information storage and retrieval, has created a new development where information has become the engine of growth around the world. This development has created catch-up opportunities for developing countries such as Kenya to attain desired levels of development without necessarily reinventing the wheels" of economic growth. This new technology has brought far-reaching revolution in societies, which has tremendously transformed most business (banking) scenes (Ovia, 2005).

Irechukwu (2000) itemized some bank services that have been revolutionized through the use of ICT as including account opening, customer account mandate, and transaction processing and recording. Information and Communication Technology has provided self-service facilities (automated customer service machines) from where prospective customers can complete their account opening documents direct online. It assists customers to validate their account numbers and receive instruction on when and how to receive their cheque books, credit and debit cards. ICT products in use in the banking industry include Automated Teller Machine, Smart Cards, Telephone Banking, Electronic Funds Transfer, Electronic Data Interchange, Electronic Home and Office Banking.

Information and Communication Technology in the Banking Industry also allows banks to apply credit-scoring



techniques to consumer credits, mortgages or credit cards. Hence, products that used to be highly dependent on the banks' evaluation of its customers have now become more standardized. Other examples of ICT impact on the Banking Industry include the increased process efficiency, which can reduce costs in banks, and the branch renewal, where focus is gradually shifting away from traditional brick and mortar banks towards the dual-bank concept presented earlier. Data storage and retrieval is another wonderful innovation brought into the Banking Industry, where specialized software is engaged to create database to be manipulated by Database Management Software (DBMS). A single database created could be used for several purposes within the system in order to eliminate data redundancy.

Harold and Jeff (1995) contend that financial service providers should modify their traditional operating practices to remain viable in the 1990s and beyond, they claim that the most significant shortcoming in the banking industry today is a wide spread failure on the part of senior management in banks to grasp the importance of technology and incorporate it into their strategic plans accordingly, Woherem (2000) claimed that only banks that overhaul the whole of their payment and delivery systems and apply ICT to their operations are likely to survive and prosper in the new millennium. He advises banks to re-examine their service and delivery systems in order to properly position them within the framework of the dictates of the dynamism of information and communication technology. The banking industry in Kenya has witnessed tremendous changes linked with the developments in ICT over the years.

Banking in Kenya has increasingly depended on the deployment of Information and Communication Technology and that the ICT budget for banking is by far larger than that of any other industry in Kenya. On-line system has facilitated Internet banking in Kenya as evidenced in some of them launching websites and banks now offer customers

the flexibility of operating an account in any branch irrespective of which branch the account is domiciled.

Woherem (2000) revealed that banks since 1980s have performed better in their investment profile and use of ICT systems. They have invested more on ICT, have more IT personnel, more installed base for PCs, LANs, and WANs and a better linkage to the Internet. Ovia (2005) opined that the revolution in ICT has made the banking sector changed from the traditional mode of operations to presumably better ways with technological innovation that improves efficiency. ICT can enhance efficiency via its use and in recent times banks have been encouraged by the rapid decline in the price of ICT gadgets. This has perhaps increased the bank level of ICT usage. The increase might have also been attributable to business environment that became relatively flexible to accommodate new forms of technological change as a result of reforms in the country.

According to Wali (2010) the relationship between ICT and the various organisational activities is similar to government & civil servants while Governments outlines policies and civil servants execute those policies. ICT acts as a tool for the actualization of various organisational activities in order to implement and enforce policies. Osabuohien,(2008) established that while the gender of the bank officials does not affect efficiency in ICT use, factors such as age, educational qualification, computer literacy and type of ICT gadgets, were significant in influencing banks intensity of ICT usage. Also ICT was found to impact positively the speed of banking service delivery, as well as productivity and profitability.

Banks should incorporate ICT into their strategic plans for effective performance in payment and delivery systems. This calls for proper analysis to determine the type, nature and extent of ICT products required for effectiveness and efficiency. It is imperative for bank management to intensify investment in ICT product to facilitate speed convenience



and accurate service. Orhan (1997) observed the relevance of a modern information infrastructure to the economic and social well-being of a society as the quality of the information determines the effectiveness of any given choice. Wisdom, knowledge and information infrastructures promote dialogue between those holding various ideas. It is only in an atmosphere where reliable facts and figures are available that citizens can form opinions, express preferences, hold government officials accountable for their actions, and that democracy can thrive and reach a consensus on the policy options towards desired objectives.

2.4 THEORETICAL FRAMEWORK

A resource based view of strategic management examines the resource capabilities of the firms that enable them to generate above normal rates of return and a sustainable competitive advantage, (Amit and Schoemaker, 1993; Barney, 1991). Resource capital can be defined as the value enhancing assets and competencies of the firm. Examples of resource capital include superior distribution channels, lean cost structures, patented core competencies and customer loyalty. According to Barney, a planning system may conceivably produce advantages, but only if it 'enables a firm to recognize resources, and some of these resources might be sources of sustained competitive advantage'

Study of (Clardy, 2008) aimed to examine the importance of Resource-Based View (R-BV) of strategy in core competencies as the critical basis for sustainable competitive advantage. Yet, discussions of strategy typically ignore the role of the Human Resource Development (HRD) function in core competency development and management. The literature on strategic HRD is reviewed to locate the R-BV as a basis for redefining HRD's role in organizational strategy. Three strategic roles for the HRD function in core competency management are proposed and discussed: participating in strategic planning, developing core

competencies, and protecting them. Specific tasks for each role are proposed.

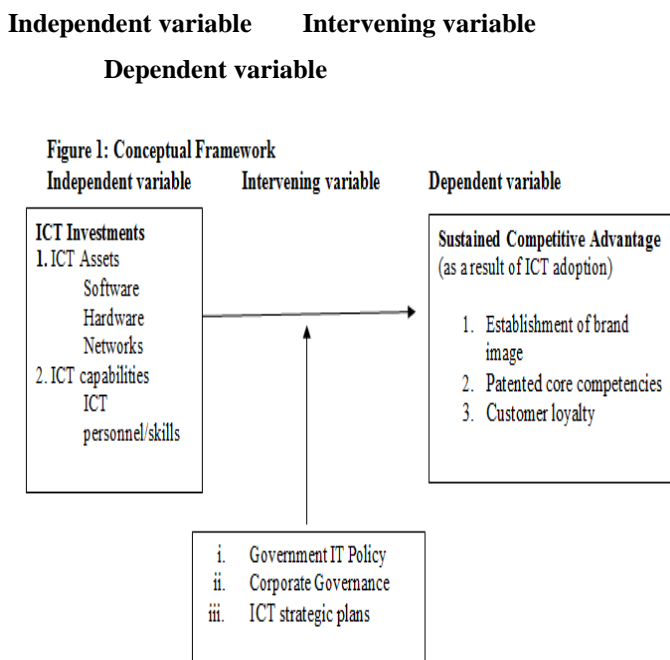
Study of (Cheng and Yeh, 2007) aimed to identify the core competencies of the air-cargo forwarding industry and to investigate the relationship between core competencies and sustainable competitive advantage (SCA). This study therefore adopts the resource-based view of the firm to examine the cause-and-effect relationships of internal dimensions such as resources, capabilities, and logistics services on SCA in the air-cargo forwarding industry. In addition, several external factors affecting SCA were examined. Results indicate that resources, capabilities, and logistics services all positively influence SCA. Capabilities are considered to be the most essential internal dimension influencing the SCA of air-cargo forwarders. In terms of the capabilities dimension, staff capability to provide better customer service was the critical factor. The results of this study will be useful for conducting future strategic planning of air-cargo forwarding.

Study of (Srivastava, 2005) aimed to develop a theoretical framework for critical competencies which can serve as a guide for managers helping them apply the concept of core competencies for gaining competitive advantage. The study makes several major contributions, some of them (I) it provides a considered and comprehensive literature review on the subject of core competence, (II) it presents proposed framework for critical competence shows that the possession of meta/ core competencies will in itself not result in competitive advantage; rather, it is important to understand how these competencies are utilized for adding value to the firm. The main conclusion of this study is that for achieving sustainable competitive advantage, firms need to have a critical competence.

Study of (Kak, 2002) aimed to examine the potential of an organization's sustainable competitive advantage depends on the rareness and imitability of its resources and capabilities.

The less imitable a competitive advantage is, the more cost disadvantage is faced by the competitor in imitating these competencies. Thus, core competence is an important source of sustained competitive advantage for corporate success and greater is its economic return. The literature has been reviewed for the sources of core competence, role of core competence for competitive advantage, and formulation of strategy with core competence and flexibility in a more focussed manner. The organizational learning, strategic flexibility, effective technology management, and people provide the important sources of core competence.

Figure 1: Conceptual Framework



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

The study adopted cross-sectional surveys design. According to Owens, (2002), cross sectional surveys, involves collection of data at one point in time from a sample selected to represent a larger population. The design

is an efficient method of collecting descriptive data regarding characteristics of the sample of a population, current practices and preliminary information for generating research questions.

3.2 TARGET POPULATION

The study was conducted within Nyahururu Town- Kenya and targeted banks senior managers of the bank since they were in the best position to give information on banks' ICT strategic matters and customers since they would provide valid information to facilitate the assessment of banks sustainable competitive advantage.

Table 1: Distribution of Population of Banks

Banks	Customer (N)	Bank Senior Managers (N)
Barclays	13,871	4
KCB	8,201	4
Cooperative Bank	18,016	4
Equity Bank	38,243	4
Faulu	3,402	4
Family Bank	6,008	4
K-rep Bank	6,361	4
Total	94,102	28

N is population size

3.3 SAMPLE PROCEDURE

The sample frame consisted of the banks' senior managers and customers of all the commercial banks under this study. The senior managers from each bank were interviewed, since they were in a better position to provide the required strategic information and the banks position in the industry.



Stratified random sampling and quota sampling techniques were used in the selection of the banks customers both at the banking halls and outside the banking hall over a period of ten (10) days.

The customers' study sample size was determined using the formula provided by Cochran's sample size formula for categorical data and an example of its use is presented here along with

explanations as to how these decisions were made.

$$(t)^2 * (p)(q)$$

no= -----

$$(d)^2$$

$$(1.96)^2(.5)(.5)$$

$$no= ----- = 384$$

$$(.05)^2$$

Where t = value for selected alpha level of .025 in each tail = 1.96.

(the alpha level of .05 indicates the level of risk the researcher is willing to take that true margin of error may exceed the acceptable margin of error).

Where (p)(q) = estimate of variance = .25

(maximum possible proportion (.5) * 1-maximum possible proportion (.5) produces maximum possible sample size).

Where d = acceptable margin of error for proportion being estimated = .05 (error researcher is willing to except).

Table 2: Sample Size Obtained from Banks Total Population

Banks	Customer		Bank Senior Managers	
	N	S	N	S
Barclays	13,871	56	2	2
KCB	8,201	33	2	2
Cooperative Bank	18,016	73	2	2
Equity Bank	38,243	156	2	2
Faulu	3,402	13	2	2
Family Bank	6,008	24	2	2
K-rep Bank	6,361	26	2	2
Total	94,102	381	14	14

N is population size, S is sample size

3.4 DATA COLLECTION TECHNIQUES

3.4.1 Questionnaire

A set of questionnaires containing both structured questions

were used for the study to collect primary data. The primary data was gathered using the questionnaires administered by the researcher. The questionnaires were divided in sections based on the research objectives in order to capture relevant



information. For the purposes of this study, questionnaires were issued to respondents to collect data pertaining to the banks sustainable competitive advantage through the use of IT.

3.4.2 Banks records

Annual reports, documentary analysis of periodic publications from institutional records and publication formed the secondary sources of data.

3.5 VALIDITY AND RELIABILITY OF RESEARCH INSTRUMENT

3.5.1 Validity of Research Instrument

Construct and content validity of the questionnaire was determined by the help of experts (such as the Research supervisor). This was expected to give guidance to ensure that the instruments are constructed in a manner that would not mislead the respondents in the course of providing information. This also ensured that the items in the instruments are a representative of the skills and traits that comprise the area to be measures and to ensure that the research objectives were addressed by the information sought in the instrument.

3.6.2 Reliability of Research Instrument

In this study, a pre-test was carried out in commercial banks in Nakuru town outside the study area. This was useful for spotting contradictory or repeated questions. It allowed respondents to have an opportunity to give more insight of the research problem and facilitate consistency of responses among the respondents. The data collected from the pre-test administered in the selected banks helped in reconstructing the questionnaires by incorporating any missing information, omitting irrelevant questions and rephrasing questions that would appear ambiguous or sensitive to respondents.

3.6 DATA ANALYSIS

The data collected was organized and cleaned of errors made during data collection. The data was then keyed in the computer and analyzed using both descriptive and inferential statistics with the aid of Statistical Package for Social Sciences (SPSS) computer software tool. The results were presented using frequency tables, charts and graphs. Multiple regression analysis was used to draw inferences.

Where;

Y = a0+a1X1+a2X2+a3X3+.....anXn+εi

Y – Sustained competitive advantage

X1 . Xn- ICT assets and ICT capabilities

a0 - an - Constants

εi-Error rate

CHAPTER FOUR

FINDINGS, DISCUSSIONS AND CONCLUSION

4.1 Introduction

The research was conducted in the commercial banks within Nyahururu town. The questionnaires were issued to customers and bank managers of all commercial banks within the town. The data collected was analyzed using SPSS. This chapter contains findings, analysis, discussions and conclusions.

4.2 Respondent Details

A total of 392 questionnaires were issued to customers. Out of the bank customers who participated in the study, most of them (78%) have personal bank accounts, as shown in the table below.

Table 4.1: Type of Bank Account held

	Frequency	Percent	Valid Percent	Cumulative Percent
Business Account	65	16.6	16.6	16.6
Institution Account	20	5.1	5.1	21.7
Personal Account	307	78.3	78.3	100.0
Total	392	100.0	100.0	

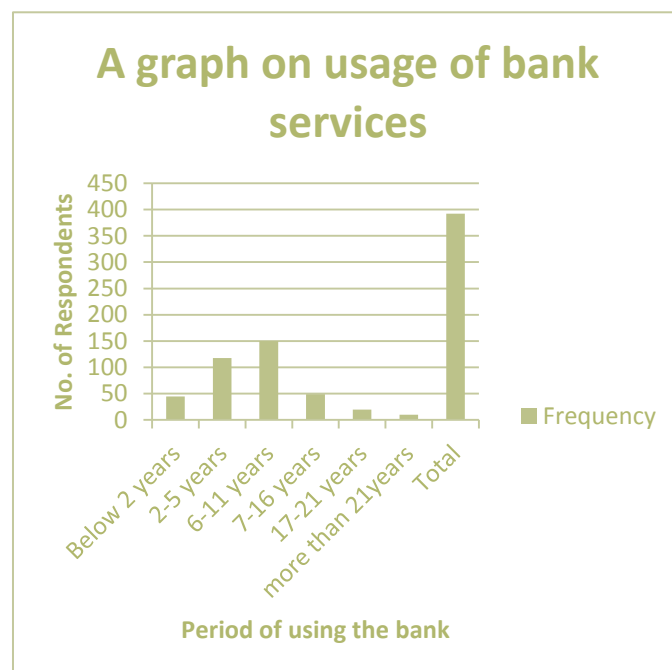
This shows in general that majority of residents in Nyahururu town and Kenya in general have personal accounts.

The research further showed that out of those interviewed, majority of those with bank accounts have a Diploma with a percentage of 43.1% and followed closely by those with Degrees at 42.3%. This further shows that majority of the residents are Diploma holders.

As to the type of bank they belong to, the findings showed that majority of bank customers in Nyahururu town (37.8%) use Equity bank. Thus Equity bank has the highest number of customers and Faulu has the least number of members (5.4%). The findings further show that majority of the customers have been using bank services between 6 and 11 years with a percentage of 38.3% as shown in the graph below.

As it can be seen in the graph above, bank usage has been increasing within the last 11 years and thus there are factors

Fig. 4.1: A graph on usage of Bank services



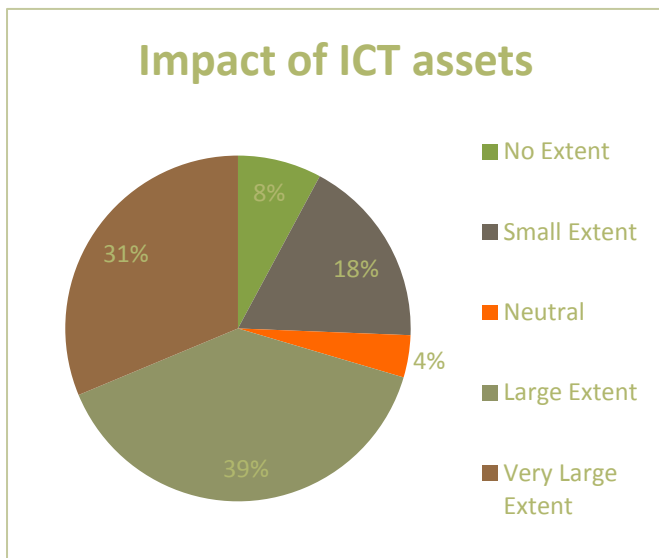
contributing to this growth and increase in usage of bank services.

Seven (7) managers also participated in the research, each one from each of the banks in Nyahururu town.

4.3 ICT Assets (hardware, software and networks)

The research wanted to find out to what extent, in the opinion of the bank customers, has Information and Communication technology assets (hardware, software and networks) made banks better than their competitors. As findings indicate, majority of the respondents said that ICT assets (hardware, software and networks) have made their banks better to a large extent (39%) as shown in the pie chart below.

Fig. 4.2: Impact of ICT assets (hardware, software and networks)



As it can be seen from the pie chart above, the impact to a very large extent follows closely and this confirms that ICT assets (hardware, software and networks) have greatly contributed to the competitive advantage of banks. These

assets can be classified into three categories which include bank's unique/patented core competencies, bank's brand image and bank's customer loyalty.

Among those who said that ICT assets (hardware, software and networks) have positively increased the competitive advantage of their bank, majority of them (10.5%) said that their banks have used ICT to make its logo attractive, better and different from those of other banks. Thus, the logo has been a strong selling point for most banks.

However, there are some who felt that ICT assets have not made any impact (8%) as shown in Fig. 4.2 above. Majority of these people (10.1%) feel that ICT tools and assets have not simplified the processes involved in service provision and therefore they can move to other banks any time soon.

4.4 Impact of Assets (hardware, software and networks) on Competitive Advantage and Sustainability

The research wanted to find out to what extent in general, ICT assets (hardware, software and networks) and tools have contributed to bank's competitive advantage and sustainability over other rival banks. From the findings, majority of the customers said that they have contributed to a large extent and very large extent (87.1%) as shown in the table below.

Table 4.2: Contribution of ICT assets (hardware, software and networks)to Competitive Advantage and Sustainability



		Responses		Percent of Cases
		N	Percent	
question 6 ^a	No Extent	77	3.9%	19.6%
	Small Extent	176	9.0%	44.9%
	Large Extent	855	43.6%	218.1%
	Very Large Extent	852	43.5%	217.3%
Total		1960	100.0%	500.0%

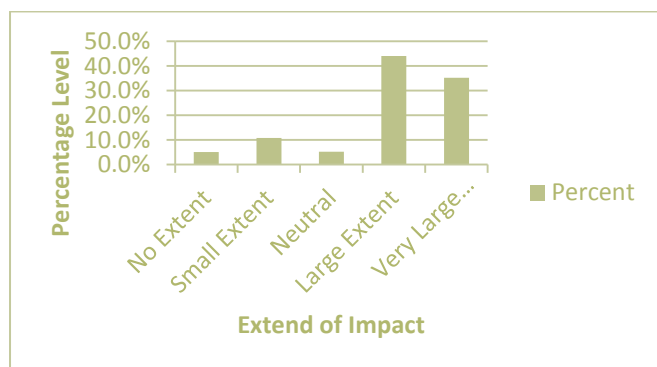
NB: 87.1% is the sum of 43.6% and 43.5% for Large Extent and Very Large Extent responses respectively.

Out of those who agreed that assets have contributed to competitive advantage and sustainability to a large extent, majority of them (20.4%) further said that the bank's brand image is widely communicated by the ICT skilled personnel. For the few who said that ICT have not contributed to the competitive advantage of banks, majority of them (27.3%) disagreed with the fact that customer loyalty has mainly been enhanced by ICT capabilities. Thus, it has not.

4.5 ICT Assets (Personnel/Skills)

The research wanted to find out how ICT personnel and skills have contributed to different aspects of sustained competitive of different banks. The findings were represented plotted on a graph as shown below.

Fig 4.3: Impact of ICT Personnel/Skills on Competitive Advantage



As it can be seen from the figure above, majority of the customers said that ICT personnel and their skills have

positively contributed to a large extent (43.9%) to the competitive advantage of different banks. Those who said it has contributed to a very large extent follow closely with 35.1% making a total of 79%. Thus it means that ICT personnel and their skills play a great role in making banks have a competitive advantage over their rivals.

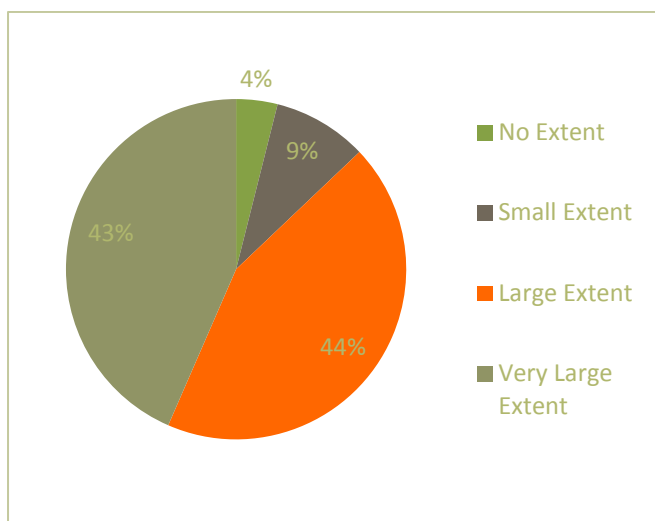
The research also sought to find out in which ways the satisfied customers feel the ICT personnel have impacted on the competitive advantage of banks. Most of them (6.3%) said that the bank's ICT skilled personnel have made them aware and constantly reminded them of the bank's purpose through effective operation among other ways.

There were few customers who felt that ICT personnel and skills have had no impact to the competitive advantage of banks. Most of them (9.3%) feel that ICT skilled personnel in the bank are not so efficient that they cannot move to another bank any time soon.

4.6 Impact of ICT Personnel on Competitive Advantage

The research wanted to find out in general, the impact of ICT personnel on the sustainable competitive advantage of banks. The findings were plotted in a pie chart as shown below.

Fig. 4.4: Influence of ICT Personnel in General



As it can be seen from the above figure, most customers (77%) agree that ICT personnel have in different ways positively influenced the competitive advantage of banks. These include creation of bank’s core competencies, communicating bank’s brand image and enhancing customer loyalty.

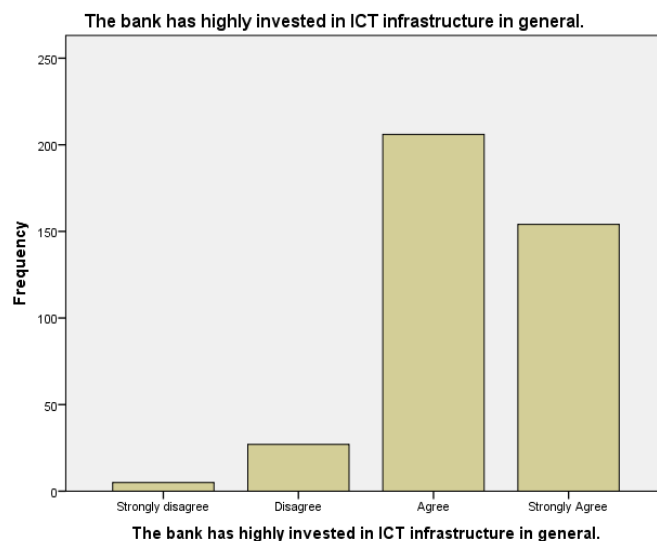
Most of people who agreed that ICT personnel have contributed to sustainable competitive advantage further said that the bank’s brand image is widely communicated by the ICT skilled personnel (20.4%). Thus, this is the factor that has contributed most to the competitive advantage of banks.

Among those who feel that ICT skilled personnel have had no impact on the sustainable competitive advantage, most of them (27.3%) said that customer loyalty has not been enhanced by ICT skilled personnel.

4.7 Investment in ICT Infrastructure

The research sought to find out the level of investment the banks have done to the ICT infrastructure. The respondents were asked on their opinion on whether the banks have invested in the ICT infrastructure. The findings were presented in the graph below.

Fig. 4.5: Investment in ICT Infrastructure.



As it can be seen from the figure above, most people agreed and strongly agreed that banks have invested in the ICT infrastructure and this has contributed to their sustainable competitive advantage.

According to the managers, the percentage of the bank’s total capital invested in ICT infrastructure in all banks range between 55% and 68%. This shows that banks have given ICT infrastructure a great priority.

4.8 Conclusions

According to the research, it is evident that banks have invested in the ICT infrastructure, with most of the banks investing over 50% of their capital in it. This include investment in areas such as ICT assets including the hardware, software and connectivity; ICT personnel including salaries and cost of additional trainings on ICT; as well as ICT strategic cost incurred in developing the plan if any.

In regard to ICT assets (hardware, software and connectivity), the research shows that they have contributed a large extent to the sustainable competitive advantage of banks. Most bank customers and managers agreed to this. Most of them agreed that among other things, the banks have used ICT assets to make its logo attractive, better and



different from other banks and this has given them competitive advantage.

In addition to this, the research further shows that ICT capabilities (personnel and skills) have contributed to the sustainable competitive advantage to a large extent. Most customers and bank managers agreed that among other things, the bank's brand image has been widely communicated by the ICT skilled personnel.

CHAPTER FIVE

RECOMMENDATIONS AND FURTHER STUDY

5.1 Introduction

This chapter contains recommendations from the research and insight for further study in relation to the topic on sustainable competitive advantage.

5.2 Recommendations

The study shows that ICT plays a very important role in improving the efficiency and operation of banks and other financial institutions. The researcher recommends the following:

- (i) As the world turns into a global village through ICT, Kenya being part of it, there is need to advise and educate the upcoming financial institutions and banks on the importance of investing in ICT infrastructure. The researcher recommends that banks be advised on how much investment in ICT can boost their productivity. Bank managers need to be sensitized on the importance of this.
- (ii) The researcher recommends that banks aim to invest in the latest ICT assets including hardware, software and connectivity. This will boost efficiency, speed and accuracy in delivery of their services.

- (iii) The researcher further recommends that banks and other financial institutions aim to train all their personnel on ICT skills. This will boost their ICT skills and enhance productivity. It will also contribute to the employees selling the brand image of the banks. The researcher further recommends employment of skilled ICT personnel into the financial institutions so to enhance their ICT personnel capacity.

5.3 Recommendations for Further Study

The researcher feels that this area is still wide and more research can be done regarding the efficiency of banks and sustainable competitive advantage. Since all banks are turning to ICT infrastructure, the researcher feels that banks will have to seek new ways of enhancing competitive advantage other their rivals and thus this is a field that is open to more research.

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