THE EFFECT OF TECHNOLOGY INNOVATIONS ON THE1` COMPETITIVE ADVANTAGE OF EQUITY BANK KENYA LIMITED

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DECLARATION

This research project is my original work and has not been presented for a degree in any other University.

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

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DEDICATION

To my loving daughter Iman Njeri.

ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
ATM	Automated Teller Machine
CBK	Central Bank of Kenya
KBA	Kenya Bankers Association
KNBS	Kenya National Bureau of Statistics
ROA	Return on Assets
ROE	Return on Equity
PCT	Perceived Characteristics Theory
TAM	Technology Acceptance Model

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ABSTRACT

Strategy is the match between an organization's resources and skills and the environmental opportunities as well as the risks it faces and the purposes it wishes to accomplish. Firms develop strategies to enable them seize strategic initiatives and maintain a competitive edge in the market. Technology has become a part of the current world the banking industry has embraced it to better meet the growing needs of the customers as well as remain competitive and relevant in the current world. The research sough to investigate the effect of technology innovations on competitive advantage of Equity Bank. The study conducted a census on all managers involved with strategy and technology management at the Bank. The research applied descriptive research design and undertook a study on 100 respondents. The study findings indicated majority of the customers were enrolled on the virtual banking platform and that had limited difficulty using the technology in place. The study finds also that customers preferred usage of the online platform to undertake multiple transactions. This reduced customer teller led strategy at the bank. It is evident that these strategies have improved the quality of services giving it competitive advantage over its competitors. The study faced challenges like some respondents not being available because of their busy schedules and the fear of disclosing sensitive information. The study recommends that due to all organizations should adopt technological changes. This should be adopted also by the public sector to ensure quality products and services. More research should be conducted on all industries and the partnerships taking place due to technological changes and the sustainability of that strategy.

CHAPTER ONE

INTRODUCTION

This chapter introduces the study background, discusses technology innovations and competitive advantage in brief. It also provides briefs on the commercial banks in Kenya and Equity Bank Kenya Limited. The chapter introduces the research problem, states the objective of the study and provides the value of this study.

1.1 Background of the Study

Preferential client management and technology application are complimentary in the banking sector (Omar, 2011). Omar, (2011) further notes that technology innovations is an increasing concept in the world of finance management and controls requiring limited facial interactions as the technology processes transfers and makes human like operations on behalf of the bank and client instructions. Technology innovations are the online transaction or operational nature of monetary mobility or resource mobility with interface control attributes (Konana & Balasubramanian, 2005).

Organizational performance is the overall growth in service delivery and human participation for an expected output or gain in share among other competitors (Sangmi & Nazir, 2010). Technological attributes are mobile apps or internet accessibility in the banking and transfer of funds and resources may include the instructions and financial exchange sent from one end to another with no human interactions (Turban *et al*, 2008). This setting has proved economical and cost effective for the consumer and maintenance being a concern for the security inclusions.

The innovation diffusion, perceived characteristics and financial intermediation theories are considered for this study. Clark (1995) forwards that innovations are in perception of the ability to deliver than fully trusted by the users in this case who rely on the society judgments about the efficiency and ability to deliver. This theory is based on user perception and the intake by the users and time lag occasioned during the roll out. Perceived characteristics theory closely relates to the innovation diffusion theory however, varies in terms of the factorial considerations by the users and providers. This theory based on the compatibility, adaptability, usefulness, sustainability factors to which the providers and users base their perception on for possible intake or roll out (Konana & Balasubramanian, 2005).

Technology innovations by banks are an important technology as it's a collective approach of various technologies working to deliver bank services to the esteemed customers. Failure of the technology innovations would signify market competitive advantage limitation and loss of clients thus efficiency is taken keen of. Financial intermediation theory argues that the intermediaries exist in imperfect markets to fix the missing attributes necessary for transactional and performance of bank or market services (Tchouassi, 2012).

In the modern banking sector based on high standard customer delivery and technological inclusions, the performance of the sector and the banks or financial institutions is a major concern. The decision by clients to which are the choice bank to subscribe to or not is independently based on the fairness, ease and speed of delivery (Tchouassi, 2012). Technology enhances the efficiency in production of goods and services. The rate to which technology is adopted in the system of delivering services and sale of products is proportional to the efficiency taste the clients would feel or associate with over time (Omar, 2011). Service based industry is volatile rather competitive depending on what strategy is in application in the market (Njuguna, 2010). The banking industry in the recent times has faced stiff competition from other financial service providers that are in virtual basis particularly the credit lending. This has necessitated the study to determine the effect of technology innovations on the competitive advantage of Equity Bank Kenya Limited.

1.1.1 Technology Innovations

Technology innovation can be argued as a cumulative or composition package of innovations (Molla, 2006). Rogers (1995) presents technology innovation in form of organizational innovation to be a composition of ideological, systems and technologies that an institution adopts. Adoption of innovations can be argued as the process of progressively generating and developing of new ideological concepts and implementation of new ideologies and behavioral characteristics (Rogers, 1995).

Technology innovations play a role in contributing to the distribution channels and competitiveness of banks. The merging of various technologies forms the electronic banking. Each of these evolved in different ways, but in recent years different groups and industries have recognized the importance of working together. Bankers now see a kind of evolution in their business, partly, because the world has taken a quantum leap in the use of technologies in the last several years (Porteous, 2006). Mobile Banking refers to provision of bank-related financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized information. Banks offering mobile access are mostly supporting some or all of the following services: Account Balance Enquiry, Account Statement Enquiries, Cheque Status Enquiry, Cheque Book Requests, and Funds Transfer between Accounts, Credit/Debit Alerts, Minimum Balance Alerts, Bill Payment Alerts, Bill Payment, Recent Transaction History Requests, and Information Requests like Interest Rates/Exchange Rates (Porteous, 2006).

Networking of branches is the computerization and inter-connecting of geographically scattered stand-alone bank branches, into one unified system in the form of a Wide Area Network (WAN) or Enterprise Network (EN); for the creating and sharing of consolidated customer information/records. An Electronic Funds Transfer at the Point of Sale is an on-line system that allows customers to transfer funds instantaneously from their bank accounts to merchant accounts when making purchases (at purchase points). A POS uses a debit card to activate an Electronic Fund Transfer Process (Chorafas, 2010).

1.1.2 Competitive Advantage

Competitive advantage is an advantage over competitors gained by offering consumers greater value, either by means of lower prices or by providing greater benefits and services that justifies a higher price (Porter, 1985). Porter (1985) defines competitive advantage along the three dimensions of cost, differentiation and focus with competitors trying to set themselves apart from those perceived as "stuck in the middle" without competitive advantage. Porter's (1985) work suggests that being able to produce an event at a lower cost compared to the competitors is one-way to competitive advantage.

According Barney (2002) a firm experiences competitive advantages when its actions in an industry or market create economic value and when few competing firms are engaging in similar actions. Barney goes on to tie competitive advantage to performance, arguing that a firm obtains above-normal performance when it generates greater-than-expected value from the resources it employs. The competitive advantage is measured using indicators such as market coverage, market share, profitability and efficiency. The market share refers to the percentage of the customers served by a particular bank over a specified time period. Profitability in this case refers to the ability of the banks to earn profits. On the other hand, efficiency refers to the ability of the banks to serve their clients to the satisfaction at minimum costs (Barney, 2002).

1.1.3 Commercial Banks in Kenya

Over the recent past, the banking sector in Kenya has experienced drastic changes that have seen other commercial banks close down or merge and acquired by others with some in receivership over irregularities and financial crises (Dang, 2011). In Kenya, the banking sector is under statutory monitoring and regulation. The banks are established and subjected to companies, central bank of Kenya, and the banking Acts.

The Central Bank of Kenya has the watchdog mandate over operations of banks. With liberalization in the sector and flexible entry terms, it has seen the sector grow tremendously over the recent past both in portfolio, profitability, customer strength and deposits made. Further, the CBK has the sole role of formulating the monetary policy and ensuring sustainable environment for banks' operations.

Commercial banks have mutual and lobby representation through the Kenya Bankers Association (KBA) through which their issues and interests are represented (KBA, 2008). As of current, the CBK regulates forty three banking institutions, three working credit reference bureaus and six function foreign represented banks and a hundred and ten foreign exchange institutions with ten microfinance deposit taking institutions. Each of the operational banks have a mobile application with features customized for their client bases enabling borrowing, transfer, deposit and withdrawal of cash from and to the bank. All these are under regulation of the Central Bank of Kenya and with content licensing from other Government of Kenya agencies.

1.1.4 Equity Kenya Limited

Equity Bank Limited was incorporated, registered under the Kenyan Companies Act Cap 486 and domiciled in Kenya. The Equity bank headquarter was located at Upper hill in Nairobi. The Bank was licensed under the Kenya Banking Act (Chapter 488), and continues to offer retail banking, microfinance and related services. The Bank had subsidiaries in Kenya, Uganda, South Sudan, DRC, Rwanda and Tanzania. Its shares were listed on the Nairobi Securities Exchange and Uganda Securities Exchange. Equity Bank was founded as Equity Building Society (EBS) in October 1984 and was originally a provider of mortgage financing for the majority of customers who fell into the low income population. The growth in business volume and outreach necessitated the conversion to a commercial bank. The bank was registered as a commercial bank in December 2004 and listed at the Nairobi Stock Exchange in the same year. Equity Bank had more than 8 million customers making it the largest bank in terms of customer base in Africa and having nearly half of bank accounts in Kenya.

Equity Bank retained a passionate commitment to empowering its clients to transform their lives and livelihoods. Equity Bank's business model and its visionary leadership had continued to earn local, regional and global accolades and recognitions. In April 2013, Equity Bank was named Best Bank in Kenya Tier 1 (banks with an asset base exceeding Ksh 150 billion) at the annual Banking Awards 2013. The Bank at the time it had a study asset base of over Ksh 252 billion. Equity Bank's focus on affordability and inclusivity was recognized with the Bank with Lowest charges award at the Banking Awards 2013. Equity Bank was voted the best bank in Kenya in terms of customer deposits amongst banks with a deposit base of over Ksh 75 billion in a recent survey on the performance of Kenyan banks released by accounting and consulting firm RSM Ashvir.

Diversification strategy paid off as Equity Group Holdings posts a 13% growth in PBT and welcomes new Strategic Investor. Regional financial services provider, Equity Group Holdings, had recorded a 13% increase in Profit before Tax in the first quarter of 2015. The Group's pre-tax profits for the period increased by 13% to KES 6.1 billion up from KES 5.4 billion as posted over the same period last year. The performance was largely attributed to growth in intermediation business and successful outcomes from the revenue diversification initiatives under implementation. Customer deposits maintained a positive trajectory and grew by 35% to KES 278 billion up from KES 206 billion in March, 2013.

The Group's total operating income grew by 19% to KES 13.2 billion up from KES 11.1 billion registered in same period previous year. The increase in income was buoyed by significant successes in driving non- funded revenues which grew by 36 % to reach 42 % of total operating income. Total expenses grew by 24% to KES. 7.1

billion on the back of investments made in an expanding the IT capacity in 2014. Driven by a rich portfolio of diversified investments, Equity Group Holding"s total assets grew to KES 372.5 billion up from KES 295.3 billion representing a 26% growth year on year. Net loans recorded a 25% growth from KES. 179.3 billion in March 2014 to KES. 224.8 billion in March 2015 while maintaining high quality of the loan book.

The Group sustained its track record of value creation for its investors and efficiency in utilization of its assets registering Returns on Equity (ROE) and Return on Assets (ROA) of 27.6% and 4.8% respectively. The Group"s latest innovation Equitel, maintained an impressive trajectory managing an 81% growth to close the trading period with over 650,000 subscribers (Equity bank official homepage, 2017). The bank is a choice for the study owing to the high subscriptions on its mobile banking platform as key technology innovations segment in consideration for determination of the effect of the technology innovations on the competitive advantage of Equity Bank Kenya Limited.

1.2 Research Problem

Banks are among the financial institutions that provide financial services to the majority in the public and private sectors. Technological innovations are driving the banking and financial sector steering the operational growth and efficiency in the performance of services delivery (Njuguna, 2010). Kenya has been in the mix of adopting such innovations to keep in pace with the technological wave and speed of competition while maintaining the market share (Dang, 2011). Consumers are largely adaptable to ease of accessing finance than lagged procedures that consume time.

Growth in consumers who bank has attributed to technological adoptions in the banking industry to increase the speed and control of the monetary unit mobility in the market and ensure consumer retention is maintained at par. Commercial banks hold cash and aid the transfer of cash from one end to another not limiting the deposit acceptance from the public. In addition, the banks act as custodial stores of the wealthy materials such as gold and other mineral or high value products for the clients (KBA, 2010).

The banks are under watch and regulation of a Central Government institution mostly Central Banks that ensures the operations are as per the statutes enshrined in the laws of the land. The sector has evolved since time immemorial occasioning the emergence of the technology. The technology has increased efficiency, increased security concerns, improved productivity, reduced lagged human capital and provided venues for other strategic developments in the sector (Omar, 2011). Presences of positive and negative contributions in this sector, commercial banks currently are the largest consumers of the technology (Tech, 2011).

Commercial Banks in any given setting generate data and these data will require processing, storage and retrieval at any given moment of requirement. An example is the extension to the clientele of the commercial banks that require speedy services to aid their financial consumption preferences. This has made banks progressively invest in the research and development to ensure the preferences of the customers are at high utility levels and increased growth return from the services they offer.

The entry of mobile based banking in the banking sector in Kenya has caused disruptions. This was mitigated to avoid loss of the revenues from the virtual platforms (KBA, 2015). The consistent operation of the technological platforms from the manual platforms or traditional means of accessing finance has proved faster and lacking such service entails loss of clients, increased costs and low growth in the revenue generation. The Banking Act has allowed the inclusion of the technological platforms albeit the foresighted risks in the inclusion. Such risks of dependency on technology have induced insurability to cover losses implying a marginal cost for every risk security inclusion with the technology innovativeness in the sector.

Studies have been conducted in the banking sector with most focus on the agency banking (an extended ATM service platform using the Point of Sale technology to access and withdraw cash). Emoru (2012) conducted a research on the factors influencing growth of agency banking: case of equity bank limited which revealed reduction in the market share and increased growth of competition in the market had the largest influence of Equity Bank Agents. Wabwoba (2012) undertook a study on investigating the challenges facing equity agency banking as a case of the West Pokot County in Kenya which revealed with failure in the provider network posed a challenge on mobile phone money transfers.

With a difference in the topography and geographical zones, the application of the technology innovations remains a key challenge as noted by the Central Bank of Kenya, (2010). From the studies, there are security and efficiency, lack of clear transactional processing, unclear consumer perception and quality of services. With this, the study sought to answer the question: what is the effect of technology innovations on the competitive advantage of Equity Bank Kenya Limited?

1.3 Research Objective

The study sought to determine the effect of technology innovations on the competitive advantage of Equity Bank Kenya Limited.

1.4 Value of the Study

The study was useful to the policy makers who may be interested in the understanding the overall contribution of the technology innovations and in specific the mobile banking platform boosting and adoption (where applicable). In addition, the study enriched the regulators in the financial sector on formulation and implementation of the Laws and regulations or guidelines regarding the inclusiveness of technology that aids technology innovations in the financial sector and other related sectors.

Technology innovations are an all-inclusive concept with wide range of participatory inclusions. The study benefited the banking sector and users of the mobile banking to access and transfer funds online. It also provided insights into technology innovative attributes on standardizing the platform usage for the users and providers of the technology in realizing the efficiency.

The study remained of great essence to the scholarly and research world with the text useful as the reference text and may offer more insights into the mobile banking technology application and financial inclusion with no limit to the performance of banks in Kenya. Further, the outcome of this study was recommended to areas for further research and assessment by interested scholars.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter in sections seeks to present in detail the theoretical foundation, and relationship of the virtual banking. It further seeks to present the concept of competitive advantage and illustrate a conceptual framework. Finally, this chapter seeks to present the summary of the literature.

2.2 Theoretical Foundation

This study is anchored on three theories mainly the innovation diffusion theory, the perceived characteristic theory and the financial intermediation theory. This section introduces the theories and provides the underpinnings of the theories regarding this study. This section also discusses the relevance of the theories regarding the technology innovations influence on the performance of Kenya.

2.2.1 Innovation Diffusion Theory

Innovation is defined as the perceived idea, practice or object by the members of the society to providing an activity facilitation of task delivery over a given period of time (Mahajan & Peterson, 1985). Dang (2011) defines diffusion as the intake and usage of the new concepts and innovations by the members of the society. There is a time lag in adopting to these new innovations as some regardless of their goodness, the target individuals or parties may take long to adopt them (Clark, 1995). Diffusion of innovation may be a subject of resistance in cases whereby the target are not readily in position to adopt the new changes (Sevcik, 2004).

Sevcik (2004) opines, this falls into the slow pace of innovation roll out than halting the innovation and attribution inclusions. Adopting the new innovations is a subject of key factors mainly the compatibility, relative advantage over other existing innovations, observatory and trial nature (Rogers, 1995). Rogers (1995) further argues that these factors are instrumental however; the perceived view by the adopters will determine the performance of the innovations. In Kenya, the banking industry is experiencing high operational costs and inflow of technologies that are disruptive to the whole industry. Technology innovationsis a cumulative participation of technology tools in place to delivering to the needs of the bank customers.

The perception held by the majority customer base over the efficient delivery of services by the technologies and the management perceived nature in gaining a competitive advancement over other industry competitors lays in as factorials towards the intake of the technologies. This raises the compatibility and observatory concerns by the clients and the management of the banks. It would occasion a slower pace in adoption as other technologies in particular the technology innovations are dependent on the parent innovator for success thus raising a sustainability concern. Thus, this study adopts the innovation diffusion theory as relevant in application to the study.

2.2.2 Perceived Characteristics Theory

Perceived Characteristics Theory (PCT) borrows constructs from the TAM Model on the perception address by the users of technology and the outcome expectations (Moore and Benbasat, 1991). Moore and Benbasat (1991) define PCT as a collection of the individual attributes towards the usability and performance of a given technology or its segment in application for a given period of time. Like TAM, that is based on the user perception, the acceptance by the users and the collective dependence on the usage of the technologies, PCT shares a more similar view however; the latter is based on the predictive abilities and factorial consideration of both social and psychological characteristics in facilitating its acceptance (Orlikowski & Iacono, 2001).

The user prediction on the outcome of the technology is directly proportional to the acceptance prediction by the provider to its users (Konana & Balasubramanian, 2005). King and He (2006), opine that the internal attributes of the technologies would contribute to the perceptions by the users and the medium nature of predictions. The social argumentation over a technology workability and usefulness characteristically contributes to the compatibility and innovation adoption of the very technologies (King & He, 2006). This theory is based on frameworks mainly the usefulness, compatibility, the perception and the psychological affirmation to these technologies. The degree of visibility and trial of the technologies offers can offer adoption characteristics by the expected usability of the technologies (Moore & Benbasat, 1991).

This theory is the choice of this study by the usability of technology innovations is individual choice based upon which the user uses the services with an expectation for efficient service delivery. The characteristics in the banking sector are mainly the perception of the individual client preferences, the service delivery costs and charges inclusive, the trust and confidence of the providers (banks and the staff) onto the technologies. Their decisions to using these banking technologies in aid of faster service delivery is a concern for them and to the providers whose the provisions in terms of efficiency and performance basis facilitate the decision making.

2.2.3 Financial Intermediation Theory

Financial intermediation is the collective process of unit depository of funds in surplus with the financial and banking institutions who are tasked with lending to the units in deficits (Scholtens & van Wensveen, 2003). Scholtens and van Wensveen (2003), argues that in creation of financial goods and services, there is need to have a well-functioning financial intermediary. For instance, the intermediary presence can set the pricing of commodities and manage to cover the overall direct and indirect costs.

Market imperfections offer chance for the intermediary existences. Market imperfections such as information asymmetry, transactional costs and transport costs with indifferences in buyers and sellers, make the existence of intermediaries valid. Entrepreneurs have internal information about their projects they intend to finance and the lenders lack the clear information about the borrowers' interests and their industriousness rather total collateral with them. Transferability of information in the markets is hampered by the moral hazard existence in the market.

This theory is the choice of the study in the manner technology innovations facilitates operations and the service delivery to the clients by the banks. Banks apply technology innovations as the efficiency inclusion is significant for high portfolio performance. The technology innovations platform is subject to security assessment and information collection is subject to policies. This creates addition confidence and trust to the clients and providers given the dependence placed on it for cost reduction, high customer retention and applicable competitive strategy.

2.3 Technology Innovations and Competitive Advantage

Arrawati et al (2015) carried a study on bank competition and efficiency: empirical evidence from Indian market. Results showed there was an increasing trend for competition for the period 1996 to 2004, and after that there was fall in competitive levels. Granger causality tests showed that competition positively affects efficiency and vice-versa. Mathooko and Ogutu (2015) carried a study on Porter's five competitive forces (PFCF) framework and other factors that influence the choice of response strategies adopted by public universities in Kenya.

The study found out that Porters' five competitive forces framework influenced the choice of response strategies adopted by the public universities "to a great extent", the most influence being the threat from new entrants. Pressure from stakeholders, changes in government policies and regulations, reforms in higher education, unethical response strategies by some universities and university location also influenced the choice of response strategies. Kungu et al (2014) carried a study on an assessment of the effectiveness of competitive strategies by commercial banks: a case of Equity bank Kenya. The study found that equity bank used different competitive strategies among them combination strategy, cost leadership strategy, differentiation strategy, and focus strategy. The study found that equity bank makes organizational changes that make it to remain competitive in the banking industry in Kenya.

Simpasa, (2013) carried a study on increased foreign bank presence, privatization and competition in the Zambian banking sector. The study shows that Zambian banks earned their revenue under conditions of monopolistic competition. 18 Generally, the findings lend support to previous research suggesting that foreign bank penetration and privatization can heighten competitive pressures in the banking sector. The aim of the research work was to fill the gap on whether there was a relationship that exists between competitive strategies and firm"s performance and the impacts of competitive strategies on organizations goals and objectives. Porter's five competitive forces and resource-based view have great impact on formulation of competitive strategies leading to high performance.

2.4 Summary of the Literature and Knowledge Gaps

Success of technology innovations is perception based high standard of customer service and availability of resources to facilitate the system sustainability. Most studies covered have looked into the wide aspect of technological inclusion in the banking sector which is the century wave in the banking industry without singularly looking into the virtual banking.

However, there are no studies on the consumer perceptions on these technology innovations systems and the transactional levels, how quality of service using technology has led to a gain in competitive advantage. This study seeks to fill the gaps through the determination of the effect of technology innovations on the competitive advantage of Equity Bank Kenya Limited.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter introduces the research design adopted by the study. It further explains the study population considered by this study. The chapter explains in detail the data collection method, procedure and instruments used for this study, the validity and reliability of data and data analysis.

3.1 Research Design

Research design is the means and manner in which the research is conducted or to be undertaken. Mainly, the design provides the overall plan, the structuring and timing. The study adopted a cross-sectional survey in conducting the research. This method is significant when a specific tendency of a subject over a given period (Kothari, 2014).

Mugenda and Mugenda (2003) opine that a cross-sectional survey is where a sample of the population is studied at intervals to examine the effects of development, for instance, you have a group of people and you study something about them. The design method does enable one to measure and analyze, undertake a comparison and interpretation in order to comprehend the effect of technology innovations on performance of commercial banks in Kenya.

3.2 Study Population

Population refers to the entire group of people, events or things of interest that the researcher wishes to investigate. Kothari (2006) observes that a population is an entire group of individuals, events or objects having common observable characteristics. Lavrakas (2008) defines a population as any finite or infinite collection of individual elements. This study conducted a census targeting 80 respondents. The respondents comprised of thirty (30) managers and fifty (50) middle level supervisors in charge of corporate and operations departments at the Equity Bank Kenya Limited head office (Equity Bank, 2017). The choice was mainly motivated by the direct responsibility to monitoring the technology innovations and assessments reporting the officers have. The census enabled the researcher collect adequate information relevant to the effect technology innovations has on the organizational performance of Equity Bank Kenya Limited.

3.3 Data Collection

The study used both secondary and primary data in the purpose of analyzing the effect of technology innovations on the competitive advantage of Equity Bank Kenya Limited. The study used structured questionnaires with likert scale based questions. The questionnaire was in sections mainly; the demographic information, technology innovations and organizational performance. The research used pick and drop method in the administration of the questionnaires. Secondary data from the financial reports were considered. These are main reports issued by the Central Bank of Kenya and audited Financial Statements annually. This data was edited and coded to fit the study subject under investigation.

3.4 Data Analysis

Collected data was analyzed after the cleaning and coding by the facilitation of advanced statistical software to enable easier analysis. This study adopted descriptive statistics as well as inferential statistics such as standard deviation, mean and mode to analysis collected data. Data presentation comprised of illustration of charts, figures and descriptive research findings were tabulated in tables. The study research findings were interpreted with respect to the objective of the study that sought to determine the effect of technology innovations on the competitive advantage of Equity Bank Kenya.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents analyzed data from the field and results based on the analysis. It also discusses the research findings. Further, the chapter illustrates, tabulates and clearly presents the research findings in charts, figures or table forms. The data was gathered exclusively through questionnaires.

4.2 Response Rate

The researcher sought out to find the study response rate from questionnaires distributed to respondents from Equity bank Kenya Limited. Out of 80 questionnaires distributed to Equity bank Kenya Limited, 70 were successfully returned and fully filled therefore, accepted for data mining, coding and use in analysis as explained and illustrated in subsequent sections. This is 88% response rate in line Mugenda and Mugenda (2008) submissions that responses above 75% provide a clear view of the subject under investigation.

4.3 Demographic Information

This section provides demographic information collected from the field, analysed and interpreted in accordance with this study objective. This section provides gender participation, level of education, years of work experience of respondents based on their responses. The section further illustrates and presents results in table and chart forms.

4.3.1 Gender Participation

The study sought out to find the gender participation in this research report.

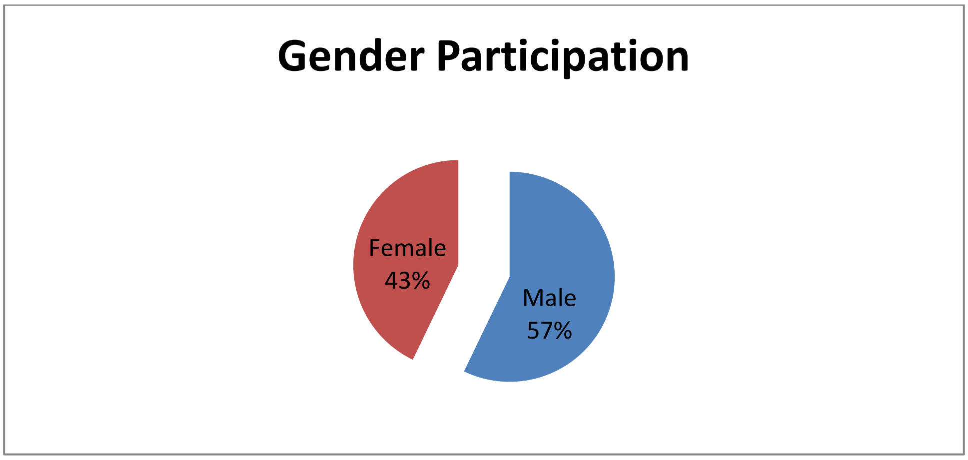

Figure 4. 1 Gender Participation

Source: Research Findings (2017)

Figure 4.1 presents 57% male and 43% female responses. This implies that the responses were gender inclusive.

4.3.2 Age Group

The researcher sought out to find the age group of the respondents.

Table 4. 1 Age Group of Respondents

Age Bracket	Frequency	Percentage
18-30	4	5.71
31-40	33	47.14
41-50	21	30.00
51-60	11	15.71
61 and above	1	1.43
Total	**70**	**100.00**
Mean	**14**	
SD	**13.11**	

Source: Research Findings (2017)

The results tabulated in Table 4.1 indicate that majority of the respondents are in the ages of 41-50 Years. This implies that Equity Bank Limited top management and middle level management staff involved with decision making, strategy execution and rolling out virtual banking on customers are in the ages of 41-50 Years presenting a mean of 14 and standard deviation of 13.11.

4.3.3 Highest Level of Education

The researcher sought out to find the highest level of education of interviewed respondents.

Table 4. 2 Highest Level of Education

Education Level	**Frequency**	**Percentage**
Diploma Level	4	5.71
Bachelor Degree Level	19	27.14
Postgraduate Degree Level	47	67.14
Others	0	0.00
Total	**70**	**100.00**
Mean	**17.50**	
SD	**30.80**	

Source: Research Findings (2017)

The research findings in table 4.2 indicate majority respondents hold a post graduate degree at 67.14%. This implies that majority of the senior management team working at Equity Bank are well knowledgeable capable of executing strategies related to technology in particular virtual banking.

4.3.4 Years of Work Experience

The researcher sought out to find the number of years majority respondents have served Equity Bank.

Table 4. 3 Years of Work Experience

Years of Experience	Frequency	Percentage
1 Year or less	9	12.86
2-5 Years	12	17.14
6-10 Years	23	32.86
11-15 Years	15	21.43
15 Years and Above	11	15.71
Total	**70**	**100.00**
Mean	**14.00**	
SD	**5.48**	

Source: Research Findings (2017)

The research findings indicated on table 4.3 show 32.86% respondents have 6-10 years of work experience at Equity bank Limited. This implies that they have sufficient and enabling technical expertise that would push forward the virtual banking concept.

4.4 Technology Innovations

This section is divided into two parts describing the extent of technology involvement at Equity Bank and range of customers on their virtual banking platform. The section presents findings and interprets the outcomes by giving implications on Equity Bank.

4.4.1 Extent of Technology Involvement

The researcher sought out to find the extent of technology roll out on Equity Bank using the scale 1- Strongly Disagree at all 2- Disagree, 3-Moderate 4- Agree, 5-Strongly Agree.

Table 4. 4 Extent of Technology Involvement

Statements	MEAN	SD
In your bank, it is convenient to access technology innovations system	13.20	7.26
In your bank, technology innovations provides real time alerts and updates for customers	13.20	7.50
In your bank, technology innovations accommodates multiple service transactions	12.20	8.93
In your bank, technology innovation platforms carries a subsidized rates for every service	11.20	11.45
In your bank, it’s easier for a customer to pay bills directly through technology innovations platform	10.00	6.78
In your bank, there is an increase in customer preference for virtual banking	10.60	8.08
In your bank, customers are well informed about technology innovations usage and products	10.20	4.97
In your bank, it’s easier for customers to use technology innovations for other non-banking online services/products	11.00	6.28
In your bank, customers are willing to provide credit/debit card information for further online transactions	13.20	10.11
In your bank, customers never encounter technicalities while transacting	13.40	10.14
In your bank, technology innovations has significantly reduced teller based banking	13.40	12.92

Source: Research Findings (2017)

The research findings in table 4.4 indicate majority respondents strongly agreed that customers never encounter technicalities while transacting and that the technology innovations has significantly reduced teller based banking at a mean of 13.40. This implies that Equity Bank has rolled the right technology system incorporating virtual banking enabling it reduce on customer enquiries and costs of maintaining teller human resources.

4.4.2 Range of Customers on Virtual Banking

The researcher sought out to find the range of customers on the virtual banking system.

Table 4. 5 Range of Customers on Virtual Banking

Customers Registered	Frequency	Percentage
Below 20%	1	1.43
21% - 40%	4	5.71
41% – 60%	3	4.29
61% – 80%	47	67.14
Above 80%	15	21.43
Total	**70**	**100.00**
Mean	**14.00**	
SD	**19.24**	

Source: Research Findings (2017)

The findings on table 4.5 indicate at 67.14%, majority of customers are in enrolled in a range of 61-80%. This implies that Equity Bank has an above average customer enrollment on virtual banking. This further means that Equity bank is highly involved with maintaining or developing virtual banking system to accommodate many customers on its platform.

4.5 Competitive Advantage

The researcher sought out to find the extent of competitive advantage that Equity Bank has using the scale 1- Strongly Disagree at all 2- Disagree, 3-Moderate 4-Agree, 5- Strongly Agree.

Table 4. 6 Competitive Advantage

Statements	MEAN	SD
In your bank, technology innovations services have increased profitability levels	11.20	9.18
In your bank, bank's market share has increased significantly	12.60	10.36
In your bank, there's a reduction of long teller queues	10.00	9.43
In your bank, customer delivery has improved with reduced enquiries	12.80	8.76
In your bank, there is reduction in costs regarding front bank operations	11.00	6.04
In your bank, there is an increase in customer retention levels	13.40	12.36
In your bank, there is an increase of customer satisfaction	9.40	5.13
In your bank, there is an increase in online bank operations than physical operations	10.40	10.95

Source: Research Findings (2017)

The research findings in table 4.6 indicate majority respondents strongly agreed that there is an increase in customer retention levels, customer delivery has improved with reduced enquiries and that the bank's market share has increased significantly. This implies that Equity Bank has a higher competitive advantage in terms of customer retention and customer satisfaction over other banks. Further, this implies that, Equity bank is at ease of making higher profits and has drastic cost reduction owing to the number of customers it has.

4.6 Discussions of the Findings

The study revealed that the bank has adopted many technological changes like the internet which has enabled technologically advanced machinery and systems to be adopted. It has also led to the introduction of competitive products which have been able to better serve the clients. These products tend to be leaning towards offering a unique service or to enhance efficiency in order to attract a large client base. This has also proved to be in line with other industries in the country like the communication industry which we have seen to partner with the bank in order to provide better products and services. This is because the communication industry has also changed with the technological changes evident.

According to the study we also find that Equity Bank Kenya limited adopting strategies to enable them to remain competitive is in line with what Porter, (1986) states that firms develop strategies to enable them seize strategic initiatives and maintain a competitive edge in the market. The findings are comparable with the other studies noted on the literature review which have shown that a firm must strive to achieve sustained competitive advantage by continually adapting to changes in external trends and events and internal capabilities, competencies, and resources and by effectively formulating, implementing, and evaluating strategies that capitalize upon those factors (Mintzberg, 1994). The findings are in line with a study carried out by Ombati & Ogutu (2010) where they found out that the rise of communication technology and electronic devices like the mobile phones is being used by commercial banks to expand their customer reach. They found that customers are now able to access vast information regarding current changes in the interest rates and other numerical data.

Commercial banks are making it easy for customers to use the self-service platforms in accessing the information provided by the banks. Use of technology in the online banking sector has been a vital thing to the Kenyan economy. With the introduction of every new product by Equity Bank Kenya Limited, technology has proved to be very dynamic and for it to remain relevant it has to adapt fast. Just similar to what Kim, Nam and Stimpert, (2004) introduced, the aspect of speed in attaining competitive advantage is important. They noted that the pace and intensity of change in the global business environment have become much more pronounced during the past two decades. For Equity Bank Limited Kenya we see change taking place at the same speed as technology changes. They are moving with time and not being left behind by their competitors. This in return is giving them a competitive edge in the industry.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings on the effect of technology innovations on the competitive advantage of Equity Bank Kenya Limited. It also provides the conclusions made based on the findings; the recommendations arrived at after considering the research findings and the suggestions on areas where further research may be necessary.

5.2 Summary of Research Findings

The study established that Equity Bank was founded in Kenya and is one of the largest banks in Africa with a customer base of more than 8 million customers. With a vision to be the champion of socio-economic prosperity of the people of Africa, the bank has expanded within its region having its headquarters located in Nairobi, Kenya, with subsidiaries in Kenya, Uganda, South Sudan, Rwanda and Tanzania. These study findings revealed that through alternate channels such as Visa Branded Automated Teller Machines (ATMs), Point of Sale (POS) have enabled Equity Bank Kenya Ltd to spread its financial service delivery to its customers.

Corporate social responsibility and utilization of philanthropy concept has seen Equity Bank excel in their activity performance under the Equity Group Foundation to support the concept of philanthropy and corporate social responsibility. The study also established that Equity Bank Kenya limited has adopted several competitive strategies in order to cope with the technological changes taking place. The internet connectivity of the bank is a major step to it adopting technology. Through the internet, the bank was able to have connection of all its branches and establish systems which will make bank operations easier more efficient and accurate. This in return has reduced bulk and erroneous operations in the bank. Internet connectivity leads to enhanced communication both to employees within the organization and to other stakeholders like the clients, distributors, shareholders, creditor and others.

The study revealed that for the bank to remain relevant in its industry and have competitive advantage, it has to have speed in adopting these changes .We find that Equity Bank Kenya embraces this with the adoption of new advanced technological machinery. It abandons the manual way of doing things and takes up machinery such as computers, photocopiers, scanners, cheque readers, high security vaults, money counting machines among others in order to be more efficient. It ensures that it has machinery which will ease the operations in the bank as well as making them more secure and accurate.

Speed is also evident in the introduction of new products and services. The study shows that with technological changes the industry is evolving thus introducing new products to the clients. Equity Bank Kenya limited is not left behind in this. It quickly introduces products like EMV debit cards, online banking, mobile banking, agency banking which are relevant to the technological era. It has also utilized the opportunity presented by social media to have an open platform where it can advertise its products, interact with clients on a personal basis by answering their queries and sorting out any issues presented. This in return has seen it answer many queries and make the clients more comfortable and confident in banking with them.

The other competitive strategy the bank has adopted is the partnership with other organizations especially in the communication industry. This has enabled them introduce new products not only for the banks clients but also to the other partnering organization's clients thus enabling it to remain competitive and also enlarge the customer base. The study shows that the partnerships as part of coping with technological changes has brought a positive impact not only to the customer base but also to all the relevant stakeholders involved.

5.3 Conclusion

Equity Bank Kenya limited being a commercial bank offers financial services to its customers both in the country and within the region. The technology innovations as competitive strategies it has adopted to cope with technological changes include: Internet connectivity, advanced technological machinery, digital advertisement, introduction of new products and services and partnership with other organizations. The competitive strategies have enhanced sustainable competitive advantage in areas like service quality. The services offered now are faster and efficient. Since the systems are digital there is less bulk on paper work making processes move faster and become easier. In fact the clients no longer have to visit their branches for the services but can transact in the comfort of their homes or offices through mobile and online banking.

The strategies have also improved the services by opening a platform for them to interact with their customers. This can be through social media, customer service or call centers which are efficient and fast. The competitive strategies have also enabled introduction of new products for the bank. These products have continued to add value to the organization and the partnering organizations involved.

5.4 Recommendations

From the information obtained through review of literature and the findings of this study, some recommendations are proposed. First, is that technology is here with us and it is dynamic. Everyday new ideas bring up inventions and innovation. Thus adopting competitive strategies for the banking industry is essential. This shall help the banks to remain relevant to the society and also have a competitive edge more so on the global scale. They should adopt speed in order to keep up with the technological changes taking place.

Secondly, the adoption of competitive strategies to cope with technological changes should not be limited to the private sector but I would recommend also the Government of Kenya to adopt it too. Even if majority of the government institutions tend to be monopolized such that they don't have many competitors, the adoption of technological changes like advanced machinery and digitalization will go a long way in creating quality products and services and efficiency in the processes that they daily undertake. This will lead to better services and client satisfaction in what is offered

5.5 Limitations of the Study

The staffs of Equity bank were usually very busy. The challenge was overcome by giving assuring the respondents that the interview was to take a maximum of five minutes. Inadequate financial resources were a major challenge the study. Accommodation expenses of the data collectors and stationary costs delayed the exercise but early preparation means were sought by the researcher by taking a soft loan from one of the micro financial institutions. This study encountered a major concern in the collection of the data as some of the respondents were not allowed to reveal bank performance and operations by the management. This challenge was handled by assurance offered to respondents about data confidentiality. However, with the negative perception about the study objective, majority were unwilling to provide relevant information. This was reduced through use of incentives in order to obtain positive information beneficial for the analysis of this study.

5.6 Implication of the Study on Policy, Theory and Practice

Researchers interested in studying competitive advantage and performance of banking sectors will find these study findings beneficial in the formulation of study hypothesis and relevant research topics. Scholars and officers in handling strategic formulation that's gaining momentum in various industries will find these study findings important in managing competitive advantage presence in their areas of service. This study will contribute to theoretical approaches in the competitive advantage and strategy formulation study areas and enable Equity Bank present handle both internal and external pressures through use of technology and proper strategic positioning in the industry.

5.7 Suggestions for Further Research

Future studies should attempt to explore the impact of ICT strategies on the competitiveness of commercial banks in Kenya. Researchers should go ahead and establish the reasons behind the effective implementation of ICT strategies in the banking industry with regard to efficiency and effectiveness. Future studies will minimize challenges experienced by organizations when trying to adopt ICT practices hence improved service delivery to customers and improved productivity to their organizations. Therefore, there is a need to undertake a research engraved into the banks corporate culture to ensure sustainability of the competitive strategy.

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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS

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

P.O. Box 30197
Nairobi, Kenya

DATE 24th OCT 2017

TO WHOM IT MAY CONCERN

The bearer of this letter JOHN NDEGWA WAKABA

Registration No. D61/79185/2015

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.

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
24 OCT 2017
MBA OFFICE
P.O. Box 30197 - 00100, NAIROBI

PATRICK NYABUTO
SENIOR ADMINISTRATIVE ASSISTANT
SCHOOL OF BUSINESS

APPENDIX II : QUESTIONNAIRE

a. The questionnaire is meant for academic research purposes and shall not be used for any purpose whatsoever.

b. Do not write your name or contact on the questionnaire

c. Tick the appropriate answer and in cases where comments are needed respond accordingly

d. In cases of difficulty please ask for assistance

e. There should be no victimization of whatever kind based on the answers provided and any persons using the responses to judge or victimize shall be liable to legal action

SECTION A: DEMOGRAPHIC DATA

What is you gender

a. Male [ ]

b. Female [ ]

What is your age group?

a. 18-30 [ ]

b. 31-40 [ ]

c. 41-50 [ ]

d. 51-60 [ ]

e. 61 and above [ ]

What is your level of education?

a) Diploma Level [ ]

b) Bachelor Degree Level [ ]

c) Postgraduate Degree Level [ ]

d) Others (specify)…………………….

How many years have you served in your bank?

a) 1 Year or less [ ]

b) 2-5 Years [ ]

c) 6-10 Years [ ]

d) 11-15 Years [ ]

e) 15 Years and Above [ ]

SECTION B: TECHNOLOGY INNOVATIONS

To what extent are the following technology innovations statements true for your bank? Use the scale 1- Strongly Disagree at all 2- Disagree, 3-Moderate 4- Agree, 5- Strongly Agree?

Statements	**1**	**2**	**3**	**4**	**5**
In your bank, it is convenient to access technology innovations system					
In your bank, technology innovations provides real time alerts and updates for customers					
In your bank, technology innovations accommodates multiple service transactions					
In your bank, technology innovation platforms carries a subsidized rates for every service					
In your bank, it’s easier for a customer to pay bills directly through technology innovations platform					
In your bank, there is an increase in customer preference for virtual banking					
In your bank, customers are well informed about technology innovations usage and products					
In your bank, it’s easier for customers to use technology innovations for other non-banking online services/products					
In your bank, customers are willing to provide credit/debit card information for further online transactions					
In your bank, customers never encounter technicalities while transacting					
In your bank, technology innovations has significantly reduced teller based banking					

Please indicate the approximate percentage range of customers registered for virtual banking.

a. Below 20% [ ]

b. 21% - 40% [ ]

c. 41% – 60% [ ]

d. 61% – 80% [ ]

e. Above 80% [ ]

SECTION C: COMPETITIVE ADVANTAGE

To what extent are the following competitive advantage outcomes experienced by your bank? Use the scale 1- Strongly Disagree at all 2- Disagree, 3-Moderate 4-Agree, 5- Strongly Agree?

Statements	**1**	**2**	**3**	**4**	**5**
In your bank, technology innovations services have increased profitability levels					
In your bank, bank's market share has increased significantly					
In your bank, there's a reduction of long teller queues					
In your bank, customer delivery has improved with reduced enquiries					
In your bank, there is reduction in costs regarding front bank operations					
In your bank, there is an increase in customer retention levels					
In your bank, there is an increase of customer satisfaction					
In your bank, there is an increase in online bank operations than physical operations					

Thank You.