MOBILE BANKING AS A COMPETITIVE ADVANTAGE TOOL

A CASE OF CHASE BANK OF KENYA

BY

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UNITED STATES INTERNATIONAL UNIVERSITY

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A Research Project presented to the Chandaria School Business in partial fulfillment of the requirements for the award of a Degree in Global Masters of Business Administration (GeMBA)

UNITED STATES INTERNATIONAL UNIVERSITY

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DECLARATION

I the undersigned, declare that this research project is my own original work and has not been presented for examination or otherwise to any other university, college, tertiary institution or institute for academic credit other than the United States International University - Africa.

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This research proposal is submitted for examination with my authority as the designated supervisor.

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ABSTRACT

This study sought to investigate the use of mobile phone banking as a source of competitive advantage at Chase Bank. To investigate competitive advantage, the study analyzed the effect of mobile banking on customer satisfaction levels, the effect of mobile banking on overall operational efficiency and effect of mobile banking on overall organization performance of Chase Bank Kenya ltd.

The study utilized a descriptive research design using Chase bank Riverside branch for the study. In total the number of customers was 1,500 over the study period and number of employees was 40. The study was conducted during the month of October 2016. Using Yamanes formulae, a total of 400 customers and 12 employees were selected for inclusion in the sample size using stratified random sampling. Data for the study was collected using a questionnaire personally administered by the research to enhance a high response rate. After data collection, descriptive statistics analysis was undertaken to establish patterns through the use of frequency distribution tables. To infer relationships, Pearson’s correlation coefficient analysis was undertaken. Analyzed data is presented in tables and figures for ease of interpretation and presentation of findings.

The study found that the use of mobile in Chase Bank of Kenya was a key competitive advantage strategy tool. Mobile banking use enhanced overall customer satisfaction and a positive significant correlation exists between mobile banking use and customer satisfaction. Mobile banking use enhanced customer convenience, perceived efficiency, perceived efficiency, perceived security and perceived ease of access which were key drivers of customer satisfaction and thus a source of competitive advantage.

In addition, the study found that the use of mobile banking had a negative correlation to operational efficiency. The use of mobile banking led to reduced operational costs for Chase bank. Some of the costs reduced by mobile banking were: customer service costs, employee related costs, administrative expenses and new branch set up expenditure.
Finally, the study found that there was a significant positive correlation between mobile banking use and the levels of organization performance. The use of mobile banking enhanced revenue generation, individual customer revenues, improved profitability, product development, innovation and distribution to customers. Finally, customer attraction, retention and loyalty levels improved because of mobile banking use at Chase bank.

This study concluded that mobile banking and use of technology at Chase Bank is a key competitive advantage tool and strategy. The use of mobile banking at Chase Bank enhanced customer satisfaction levels by enhancing the reliability, security and convenience of customers in accessing banking needs and services. This study concluded that a negative significant correlation exists between mobile banking and operational costs. Finally, the use of mobile banking increases the total revenues of the bank and reduces the total costs. This improves the total profitability and asset utilization in the company.

The study recommended that Chase Bank explores the possibility of introducing mobile credit on their mobile banking platform. Further, massive employee and customer education awareness be undertaken on the use of mobile banking. Finally, the study recommended that Chase bank leverages on mobile banking as a key customer relationship management tool.
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This research project is a product of God's unending grace and blessings upon me. May He continue to shine upon my ways. Glory unto Him for His blessings.

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To all the respondents in this study, and especially the management of Chase bank for the authority to conduct the research in the company. May God Bless you.
DEDICATION

A true testament that if you can dream it you can achieve it.
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Mobile banking is an information technology innovation that has altered the conduct of normal business activities in the banking sector (Okiro & Ndungu, 2013). It has forced transformation in the financial institutions around the world through rapid development of applications and programs that enhance access to banking services and products through the use of mobile phone technology. Around the world, banks and other financial institutions have had to adopt mobile banking to acquire a competitive edge, as well as enhance customer satisfaction through enhancing easy access to financial services and products (Vaidya, 2011).

The growth of information technology innovations such as the world-wide web, electronic commerce, mobile banking and electronic wallets have progressively altered the pervasive approach to financial services delivery and provision of services and products across various sectors of the economy (Okiro & Ndungu, 2013). In the early 21st century, mobile telephony technology was primarily used for communication such as making calls and sending text messages. Advances in mobile banking led to provision of auxiliary banking services such as accessing the bank balance. Nevertheless, innovations in the mobile telephony framework have improved the access of almost all banking services through the use of mobile phones (Cohen, 2001). Today, individuals can access bank balances, transfer funds, withdraw funds, make payments, request for loans and other credit facilities, purchase insurance and many other services over the mobile phone (Rutto, 2015).

The use of technology in the delivery of services is a major competitive advantage tool. Acquisition of a competitive advantage is a key goal for any organization (Xu & Quaddus, 2013). Competitive advantage is defined as the, “product or service that an organization’s customers value more highly than similar offerings from its competitors.” Competitive advantage implies that the firm offers unique and distinct services or products that
competitors cannot match. Baltzan and Phillips (2010) argued that competitive advantage are temporary positions for organizations that last for only a while since competitors will seek other ways of matching the products and services. Using Michael Porter’s Model on competitive forces, organizations must continually improve and develop new products and services to maintain their competitive advantage. Consequently, a firm must develop and actualize plans and strategies that are useful in overcoming the five competitive forces identified by Porter: Rivalry of competitors in an industry, threat of new entrants, threat of substitute goods, customer bargaining power and supplier bargaining power (Porter, 1992; Porter, 2004; O’Brien & Marakas, 2011). Some of the strategies that organizations can use to acquire a competitive edge include: innovation, growth through mergers and acquisitions, strategic alliances, differentiation, cost leadership and focus (Manyika 2009; Booth, Roberts, & Sikes 2011; Chui & Fleming, 2011; Rigby 2011).

The use of technology and innovation is a key competitive advantage proposition. Chui & Fleming (2011) noted that one of the strategies that organizations can use to acquire a competitive edge is innovation, which involves the creation of new products and services, new market niches, or radical changes to the business processes e.g. automation. Automation refers to the digital modelling and simulation of product design to improve on cost and time to access the product (Manyika, 2009). The use of technology is one of the key competitive strategies that an organization can undertake e.g. the use of the internet or mobile phone to deliver services and products to the customers.

According to Nofie (2011) the introduction of innovations in the banking and financial services sector has created key competitive positions for firms. Some of the competitive advantages include: reduced transaction costs, improved customer satisfaction, lowered costs of production, maximized revenue generation, reduced competition and being a major competitive talking point for a company.

Yildirim and Philippatos (2007) in a study on banking sector competitiveness in 11 Latin American countries noted that some of the key strategies that banks used to acquire a
competitive edge were the use of differentiation strategies as well as improving on financial innovation through the use of electronic means such as the World Wide Web and mobile telephony. Because of competitive advantage, banks in the Latin American countries were able to attract foreign direct investment, embrace modern management skills and managerial techniques as well as enhance employee motivation, all of which were competitive advantages. Anabalagan (2011) noted that the use of mobile telephony and other telecommunication innovations was key to enhancing competitive advantages in the banking sector as was the case in the introduction of Automated Teller Machines which created a competitive edge for the first movers in the banking sector.

In a study on Chinese banks, Yin and Zhengzheng (2010) noted that financial innovations through the use of mobile telephony was a key competitive advantage for the firms as well as a major boost to the Performance of the banks in China. Similar findings were presented by Pooja and Singh (2009) who associated the use of mobile telephony to benefits such as lower operational and administrative expenses, higher asset quality and more profitability in the banks. Siam (2006) had similar findings in Jordan.

In Africa, various studies have investigated the use of telecommunication innovations on various metrics of organization competitiveness Mabrouk and Mamoghli (2010) in a study on the use of mobile telephony in Tunisian banks found that product innovations, lower operational costs and organization effectiveness were some of the key benefits of embracing mobile telephony and other telecommunication innovations. Joshua (2010) in a similar study Ghana also noted that the introduction of financial innovations such as the Automated Teller Machines was key to acquiring a competitive edge. Other financial innovations that improved organization competitiveness include: e-commerce, e payments and internet banking (Adebiyi, Fatudimu & Ekong, 2008; Aderonke & Charles, 2010).

Adoweyo (2013), analyzed the impact of mobile banking in Nigerian commercial banks and noted that the use of mobile telephony innovations such as mobile banking improved organization competitiveness through better and efficient service delivery, lower costs of
service delivery as well as improved effectiveness in service discharge. Gardachew (2010) investigated mobile telephony use in Ethiopian banks and noted that it has not had any impact on organization competitiveness due to slow uptake of technology in the banking sector. However, the case was not similar in Uganda where electronic and mobile banking utilization enhanced access to banks, attracted more customers to banks and improved the operational efficiency and effectiveness in service delivery for Ugandan banks (Porteus, 2006).

Since the advent of mobile money transfer in Kenya (M-Pesa), mobile telephony innovations have played a key role in the transformation of service delivery and business efficiency. According to Mwania and Muganda (2011) use of mobile telephony and other mobile innovations, organizations have been able to enhance human capital productivity, improve the assets valuation, increase revenue generation and enhance customer attraction and retention in the banks. Kenya is cited as a success case study on mobile banking as it has had resounding success in embracing mobile banking and mobile money transfer. In the year 2016 first quarter, mobile money transfer transactions increased by 3.3% reaching Kshs 840.3 billion between the months of January and March 2016 (Communications Authority of Kenya, CAK, 2016). Mobile money transfer transactions, though dominated by Safaricom’s M-pesa, also realized a rise in the value of transactions made by banks in Kenya. While M-pesa transacted Kshs 343.5 Billion in the period, Equitel transacted Shs 47 billion, Mobikash Kshs 118.8 million and Airtel Money Kshs 5.9 billion (CAK, 2016). The statistics above imply that mobile banking has grown in stature and value in Kenya.

Chase Bank is a privately-owned bank incorporated in Kenya in 1996 (Chase Bank, 2012). It is a conventional one stop financial institution with a focus on the SME Market. In addition, Chase Bank has an Islamic window branded Chase IMAN which was introduced in May 2009 and it was licensed and approved by the Central Bank of Kenya and the Shariah Board respectively. The Bank is working to position itself as the preferred SME Bank (Chase Bank, 2014). Commercial banks have continued to leverage on robust ICT platforms rather than recruiting a corresponding number of employees to serve the increasing number of
customers. In July 2011, Chase Bank successfully changed their core banking system from Micro Banker to Oracle Flex cube (Chase Bank, 2014). Chase Bank, of the leading Tier II banks, was one of the earliest banks to adopt mobile banking through its Chase Mfukoni application. Chase Bank introduced the product in the year 2013 and has received astonishing success winning awards such as the Top Bank Awards (Mobile Banking Category). In addition, Chase Mfukoni has been a key customer attraction tool for the bank.

1.2 Statement of the Problem

Financial innovation has stimulated performance of banks. As a consequence, banks have been able to effectively discharge their financial intermediation roles (Mabrouk, Mamoghli, 2010: Mwania & Muganda, 2011). Around the world, studies exist to show the relationship between mobile phone banking, financial innovation and organization competitiveness. Yin and Zhengzheng (2010) noted that financial innovations through the use of mobile telephony was a key competitive advantage for the firms as well as a major boost to the performance of the banks in China. Pooja and Singh (2009) associated the use of mobile telephony to lower operational and administrative expenses, higher asset quality and more profitability in the banks. Mabrouk and Mamoghli (2010) in a study on the use of mobile telephony in Tunisian banks found that product innovations, lower operational costs and organization effectiveness. Adoweyo (2013), noted that the use of mobile telephony innovations such as mobile banking improved organization competitiveness through better and efficient service delivery.

Majority of studies existing on mobile phone banking and use in Kenya have focused on the impact of mobile phone banking on financial performance. Njoroge, Muate and Bula (2016) in their study investigated the effect of technology on performance of mobile phone companies in Kenya and found a positive correlation between technology use and firm performance. Muturi and Ngari (2014) in a similar study investigated the effect of financial innovation on financial performance of commercial banks and found that there was a positive strong relationship. Okiro and Ndungu (2013) investigated the impact of mobile and internet
banking on performance of financial institutions and found that the use of technology enhanced financial performance in the banking sector.

As noted, there existed ample literature in support of the impact of mobile phone technology use and firm performance. Nevertheless, there existed gaps and scarcity of literature on how mobile phone banking has enabled commercial banks in Kenya acquire other metrics of organization competitiveness such as lower costs, better service delivery, better customer satisfaction or operational efficiency. These gaps showed that there exists deficiencies in available research on mobile phone banking, practice gaps on how banks use mobile phone banking and other financial innovations to acquire organization competitive advantages. This study sought to fill these research gaps.

1.3 Purpose of the Study

The purpose of this study was to investigate the effect of mobile banking on organization competitive advantages using Chase Bank as the case of the study

1.4 Research Questions

The research questions for the study were:

1.4.1 What was the effect of mobile banking on customer satisfaction?
1.4.2 What effect did mobile banking have on operational efficiency?
1.4.3 What was the effect of mobile banking on organization performance?

1.5 Significance of the Study

This study is significant to the following stakeholders:

1.5.1 Government of Kenya

The government of Kenya is keen to enhance financial inclusion in the country. Mobile banking is one key strategy to acquire this econometric goal. This study informs the
government on the key success areas of mobile banking and how this can be used to acquire the econometric goals. As a result, the government can develop monetary and non-monetary strategies to enhance mobile banking.

1.5.2 General Public

This study informs the general public on the benefits other than financial performance of using mobile banking. As a consequence, this study informs increased patronage of mobile banking products in Kenya.

1.5.3 Commercial Banks

Commercial banks can use the findings of this study to inform plans and programs on acquiring a competitive edge. This study could inform developments on the use of mobile banking as a key competitive advantage position for firms.

1.5.4 Academia

This study addresses key gaps such as a literature and research gap. In addition, it addresses a practice gap in the use of mobile banking as a key competitive advantage tool. In addition, this study contributes to the existing body of knowledge on organization competitiveness and use of mobile banking.

1.6 Scope of the Study

This study used Chase Bank as the case of the study. The study was conducted in the month October 2016. The population of the study was drawn from employees and customers of the bank. In total, there were 47,000 customers of Chase Bank and 1,200 employees. Since the study was limited to Chase Bank head office and branch at Riverside Mews, Riverside, Nairobi County, the population of the study was 5,300 account holders and 40 employees in the bank HQ branch. Data for the study was collected using a questionnaire.
1.7 Definition of Terms

1.7.1 Financial Performance

It is a measure of how well a firm can use assets from its primary mode of business and generate revenues. There are many ways to measure financial performance, but all measures should be taken in aggregation. Line items such as revenue from operations, operating income or cash flow from operations can be used, as well as total unit sales (Business Dictionary, 2011).

1.7.2 Operational Efficiency

Operational efficiency refers to the efficient delivery of services at the lowest costs. It implies effectiveness and efficiency in service delivery and cost management (Goetzmann, 2009).

1.7.3 Competitive Advantage

Product or service that an organization’s customers value more highly than similar offerings from its competitors (Xu & Quaddus, 2013).

1.7.4 Mobile Banking

Mobile is the use of mobile phones and mobile telephony technology to deliver banking services such as deposits, withdrawals, payments, transfers, balance inquiry and many more (Malmendier, 2009).

1.7.5 Customer Satisfaction

Customer satisfaction refers to the contentment by a customer with a product or service. It is mainly expressed as a person’s feeling of disappointment or happiness or pleasure from the consumption of a good or service (Kotler & Keller, 2009).
1.8 Chapter Summary

This chapter has presented the background of the study, the statement of the problem and the research questions. The research questions inform subsequent chapters such as the literature review and choice of research methodology. The chapter also details the significance of the study and key definition of terms.

Chapter two presents the review of existing empirical and theoretical literature on the research objectives of the study. Literature is reviewed from up-to-date and relevant scholarly articles and sources such as Journal articles, thesis and dissertations. Books are also being used in literature review.

Chapter three presents the research design and methodology. It presents the research design, the research population and sampling techniques, data collection systems and data analysis processes.

Chapter four presents in detail the findings and results of the study. Tables and figures will be utilized to enhance the interpretation of the findings.

Chapter five presents the summary of findings, the discussion of results and conclusions of the study. In addition, recommendations for study are included in the study.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

Chapter two reviews the existing literature on the research objectives of the study. Specifically, the study presents past studies and articles on how technology use has enhanced organization performance, customer satisfaction and operational efficiency.

2.2 Mobile Banking and Customer Satisfaction

Technology and innovation has continued to transform the conduct of business and how business is conducted around the world. Various industries have continued to embrace the use of information technology with the aim of enhancing the attainment of organization goals and objectives. Davis (1996) noted that the use of technologies has dramatically enhanced the attainment of organization goals and objectives. In addition, technology use has enabled organizations to change their production, financial, reporting, management and administrative systems in pursuit of organizational excellence (Cakmak & Tas, 2012).

The analysis of mobile banking and customer satisfaction is intertwined with the aspects of customer attraction and retention. According to Cakmak & Tas (2012) technology use in any organization enhances customer satisfaction which leads to customer attraction and retention. This is key in building customer loyalty. This is validated by the findings of Makee et al., (2014).

Makee, Willy and Atandi (2014) in a cross sectional study on the impact of mobile phone technology use on the performance of micro and small enterprises noted that the use of mobile phone technology and other innovations had a positive impact on the performance of the organization. There was a strong positive correlation between the use of mobile phone technology and customer attraction and retention. Similarly, a positive correlation exists between technology use and customer satisfaction (Makee et al., 2014). Specifically, Makee
et al., (2014) noted that the use of mobile phone technology enhanced customer attraction and retention. According to the study that utilized over 500 small and medium enterprises the use of mobile phone technologies such as Lipa na Mpesa enhanced the attraction and retention of customers in the business. Furthermore, customers indicated that they were more satisfied with the use of technology when transacting with the SME’s. Similar findings were presented by Kirithu, Kapiyo and Muna (2003) in a study that analyzed the impact of technology use in the agricultural sector and how technology use enhanced customer satisfaction amongst farmers.

2.2.1 Technology Use and Customer Attraction

Baltzan and Phillips (2010) provide adequate evidence on the use of technology and innovations as a key competitive advantage tool. According to Baltzan and Phillips (2010) the use of technology and technological innovations has the effect of attracting customer’s especially early adopters of technology to the company. For example, when a new invention has been presented to customers, the adoption of that technology by an organization makes it attractive to the customers (Booth, Roberts & Sikes 2011). This enhances customer attraction and locks in the customers. This is a key competitive advantage for the organization.

The findings of Baltzan and Phillips are validated by those of Rigby (2011) who noted that the adoption of technology by firms enhances its customer attraction levels. According to Rigby (2011) and Manyika (2009) the use of technology enhances customer attraction to the firm as it enhances the convenience and efficiency of the customer to access services and products. Some of the strategies that firms have used technology to enhance customer attraction, include locking in customers and suppliers through the use of technology as well as building strong associations with partners and supports such as banks providing customers with multiple access to their accounts and other services (O’Brien & Marakas 2011).

In Kenya, the growth and growth of Safaricom has been attributed to the embracing of technology by the firm. By the year 2003, Safaricom and Celtel (now Airtel) were peers with similar customer numbers and products. Nevertheless, by the year 2015, Safaricom was a
major player in the industry and a leader with over 10 million customers while Airtel had slightly above 2 million (Duncombe & Boaten, 2009). The differences in the growth rates in customer numbers between the two companies have been singled to one reason only, early adoption of technology. While Safaricom was the first to introduce M-Pesa a global award winning innovation that enhances peer to peer and peer to business transfer of money as well as access to credit, its competitors were slow to adopt technology and thus Safaricom was able to attract customers and lock in the customers (Onyango et al., 2014; Duncombe & Boaten, 2009). As a consequence of the first mover advantage, safaricom has been able to withstand immense competitive forces such as price undercuts to maintain its leadership position in the country in revenues and customer numbers.

The effect of technology use on customers have been widely analyzed around the world. According to Nyangosi and Arora (2011) the adoption of technology especially in the banking sector has been in response to customer needs and wants. The use of technology enhanced the acquisition of customers, provision of after sales services, increasing the patronage of products and attracting customers to the bank.

2.2.2 Technology Use and Customer Satisfaction

Technology is used to enhance customer service or service quality by organizations. According to the SERVQUAL model presented by Parasuraman, Zeithaml, and Berry (1988), who perceived the service quality attributes as reliability, tangibility, security, empathy and assurance the use of technology enhances the provision or attainment of this service quality attributes in an efficiency and effective way (Iacovou et al., 2005).

In the analysis of the impact of technology use on customer satisfaction, Chung and Dutta (2012) found that the use of internet banking was quite widespread around the world. In addition, the use of internet and other forms of technology based banking was in response to customer needs and wants. Banks are embracing the use of technology to meet customer demands and needs and as such acquire a competitive edge (Aliyu & Tasmin, 2012). Organizations have realized that it is important to take into consideration the needs and wants
of the customers, the life styles of customers as well as preferences of customers in service delivery. Since there is a preference for technology use in service delivery, banks must adopt technology to acquire a competitive edge and attract and retain customers.

Agboola (2006) in a study on the use of information communication technology in the banking sector in Nigeria noted that one of the major benefits of technology is the enhancement of service delivery which enhances customer satisfaction. Technology use enhances the speed, convenience and accuracy of service delivery which enhances customer satisfaction and ultimate a competitive advantage amongst its peers (Tiwari et al., 2006; Agboola, 2006).

Okiro and Ndungu (2013) in a study on the impact of mobile and internet banking on the performance of financial institutions in Kenya found that mobile and internet banking enhanced the levels of customer satisfaction through convenience service access, improvement of the service delivery channels, efficiency and reliability of the technology used in service delivery and the security apparent in the systems which was a perception created due to intense consumer education (Nyangosi et al., 2009). Consequently, the findings of these studies indicate that customer satisfaction and technology use in service delivery share a positive correlation. As a firm uses technology, customer satisfaction from the service quality levels improves. This is using the SERVQUAL service quality model and framework.

The use of technology has provided for banks to access previously unbanked populations. According to Ceylan and Emre (2011) the use of technology has enhanced financial inclusion which implies that customer numbers have increased as a result of technology use in service delivery. In addition, the use of technology has enhanced the innovation of new products and services that were based on technology such as mobile credit, mobile insurance. Furthermore, the use of mobile technology has enabled customer to access additional services through their mobile phones such as prepayment of electricity, money remittances to friends and relatives, increased savings, purchase of airtime and payment of bills and many more services which
has increased customer satisfaction due to higher levels of convenience (Ivatury & Pickens, 2006; Morawczynski, 2008).

2.3 Mobile Banking and Operational Efficiency

The relationship between mobile banking and operational efficiency can be discussed on two folds. How technology enhances efficiency and effectiveness in service delivery. According to CBK (2014) technology use in the banking industry enhances operational efficiency by reducing the overall costs of service delivery and improving the convenience and ease of access to services by customers. According to Okiro and Ndungu (2013) the use of technology in service delivery in the banking services reduces the costs of accessing services by customers while enhancing the services accessible by the customer without visiting the bank branch. For example, a customer can access their balance, transfer funds, withdraw funds, pay school fees, pay for bills and shopping, borrow from a bank and many other transactions at the comfort of their homes or offices (Nyangosi et al., 2009). Operational efficiency will be enhanced by reducing costs of service delivery and enhancing ease of access to services

2.3.1 Reduction of Operational Costs

Chui and Fleming (2011) and O’Brien and Marakas (2011) noted that the use of technology enhanced operational efficiency in organizations. According to them, companies such as P&G have utilized technology to reduce their total operational and administrative costs. Furthermore, the use of technology has streamlined services such as administration, employee management, customer management and many other services that a firm has to undertake to be efficient and effective (Laudon & Laudon 2012).

In cross sectional study in various states in the United States of America, Shirley and Sushanta (2006) noted that the use of information technology especially in the banking sector enhanced cost savings as well as reduced the total operational costs. According to the study, though in the earlier years, the total costs of installation and training for IT readiness was
high and reduced the overall profits, from the third year, banks enjoyed the benefits of the use of technology as the overall costs reduced and profits increased. This was similar to the findings of Tiwari, Buse and Herstatt (2006).

Donner and Tellez (2008) had similar findings on the use of technology in service delivery. In their study, Donner and Tellez (2008) found that the use of mobile banking, provided an alternative strategy for cost reduction by banks through lower costs from moving services from one place to another as well as enhancing access to services by a larger number of individuals but at lower costs. This is supported by the findings of Malhorta and Singh (2009) who noted that the use of technology in the banking sector especially through the use of internet banking enhanced operational efficiency and profit maximization. In addition, the study found that use of technology in the banking sector enhanced asset quality and lowered expenses in the banking sector.

Simpson (2002) notes that the use of technology enhances operational costs minimization as well as revenue maximization. Online banking for example acts as a substitute for the establishment of conventional banking branches and delivery of services at anytime and anywhere. In addition, the growth of technology has made it possible for banks to create value creation chains and diversify into other areas such as money transfer and micro credit through the use of technology (Delgado & Nieto, 2004).

Muiruri and Ngari (2014) conducted a study on the impact of financial innovations on the performance of commercial banks in Kenya and found that there was a significant negative correlation between technology use and the overall operational costs of a company. According to the study as the banks adopted the use of technology in service delivery, the overall costs incurred in delivering these services reduced. This is validated by the findings of Rutto (2015) who noted that the use of technology was a key strategic alternative used by commercial banks to drive down the operational costs and enhances the total performance and efficiency in the banking sector.
Ritho and Jagongo (2015) analyzed the impact of mobile banking and financial performance and noted that the use of an innovative product such as M banking enhanced organization efficiency as well as improved cost reduction in commercial banks in Kenya. In addition, m

According to the Banking sector regulator in Kenya the Central Bank of Kenya (2015), the use of technology in service delivery through means such as internet banking and mobile banking has reduced the total operational costs of banks by reducing the total number of branches that banks open to attract more customers as well as reduced the total number of employees that banks have to employ in order to serve their customers. This has improved the levels of operational efficiency in the banking sector.

While the impact of technology use on cost reduction has been identified as negative i.e. use of technology reduces the costs of operation, the analysis of the productivity and profitability of ICT use remain ambiguous due to conflicting findings. Some studies find that technology use enhances employee productivity, profitability while others indicate that there is no significant effect of technology use on profitability (Haq, 2005; Delgado & Nieto, 2004). A third class of scholars argue that technology use has a negative or detrimental effect on profitability due to the need for higher skilled employees, the initial costs of technology installation and the trustworthy concerns by customers as well as increased demands by customers and competitors for better products and innovations and the ever changing innovation arena which forces the firm to continually invest in technology since technology evolves on a daily basis (Aliyu & Tasmin, 2012; Chung & Dutta, 2012).

### 2.3.2 Improved Employee Productivity

The effect of technology use on employees is varied. While some authors argue that it disorients employees as technologies reduces the jobs available, others argue that the use of technology enhances employee productivity and performance (Wahla & Awan, 2014). The growth of technology and especially the mobile phone has had an effect on the productivity of employees. According to Roland (2011), the primary purpose for the invention of the phone whether fixed or mobile was for business purposes and military purposes. According
to Prieger (2006) the developers of the mobile phone initially thought it to be a business rather than a social tool. Consequently, the mobile phone was developed to enhance business productivity. According to Andrew (2014) and Nokia (2011) showed that majority of individuals used the mobile phone as a business and social tool. In addition, the text message was the most important tool in the mobile phone. This therefore raises the question, since the use of the mobile phone is shifting from the initial business focus to social use, does this have an impact on the productivity of individuals?

Baliamoune (2002) found that the use of mobile phone and other technologies has a positive impact on the overall productivity of individuals, organizations and even countries. According to Baliamoune (2002) technology use has enhanced redefining of business models as well as improving the levels of productivity and efficiency in production in all economic sectors around the world. This finding is supported by the findings of Agar (2005) who attributed the industrial growth and revolution in the Eastern parts of Europe to the use of technology and especially the mobile phone.

While evidence in support of increased productivity from the use of technology exists, there also exists evidence to the contrary. According to a study by Ronald (2011) the interruptions caused by the mobile phone and other electronic gadgets costs almost US$ 600 million in a year. This is because “Because the few seconds in which a person decides to pick up a phone call or ignore it are enough to break his concentration and it takes a time to get back to work again. If the employee is in production line then this brief pause of concentration can lead to very negative consequences” (Yihong, 2010).

Kagan and Lingam (2008) analyzed the impact of technology use on employee productivity and performance using community banks. The study found that the use of technology improved the overall employee productivity measured by the staff costs and the profit per employee. According to them, the use of technology was a cost cutting strategy and asset enhancement plan that enhanced the overall productivity of employees in the organization as well as reduced the staff costs for the organization. This is similar to the findings of
Daneshvar and Ramesh (2012) who identified improved employee productivity and employee profitability as a result of technology use in the banking sector.

### 2.4 Mobile Banking and Financial Performance

Technology use has an effect on the financial performance of organizations. Various studies have found a positive effect and relationship between technology use and financial performance. Nevertheless, studies still exist to show that the high levels of capital injection needed for technology enrollment has a negative effect on profitability and consequently, technology use may not enhance profitability in organizations.

Spanjol et al., (2011) noted that the use of technology improved financial performance in any organization. According to them, the technical ability to produce new products, the competitive edge, the flexibility of products and multiple access to the products and services, enhanced the levels of financial performance in the organizations. This is similar to the findings of Anal et al., (2011) who noted that the preference of customers for organizations that use technology improved the financial performance as well as customer loyalty levels. Other scholars who found a positive correlation between technology use and financial performance include Slater et al., (2012) and Cristima (2012) who found that investment in information technology enhanced superior organization performance, new market innovation and innovation of unique products and services.

Firm performance may also be measured using competitive advantage. According to a WEB (2010) report, the use of technology enhanced the acquisition of a competitive edge due to the conversion of knowledge into a product which is unique and differentiated from those of others. Lum (2011) notes that the pro-activeness of any organization towards technology use in service delivery has enhanced positive organization Performance due to uniqueness of the products as well as new products. In fact, Anal et al., (2011) notes that technology is a moderating variable to organization performance and customer satisfaction (Benedetto & Mu, 2011).
2.4.1 Technology Use and Revenue Generation

Simpsons (2002) in a study on the impact of technology use in the banking sector found that the use of technology such as internet and mobile banking had a positive correlation to the revenue generation of a company. The use of technology increases the customer numbers, the patronage of products by customers and the increase in the number of products used by customers. These presents unique opportunities for firms to maximize their revenues (Delado & Nieto, 2004). In addition, Haq (2005) supports this findings and notes that the use of technology enhances economies of scale in an organization and promotes information symmetry between savers and borrowers which enhances overall organization revenues and profits.

Makee et al., (2014) in the study on the impact of mobile phone transfer services on organization performance amongst SME’s found that the use of the mobile phone increased the levels of revenues generated by the firms. Other benefits identified from the use of mobile phone transfer services were: time and money savings which led to higher profits.

2.4.2 Technology Use and Profit Maximization

The analysis on the relationship between technology use and profit maximization is to a great extent ambiguous. According to Aliyu and Tasmin (2012) while technology use may lower the operational costs, the profitability of the organization is a different perspective since the costs of IT installation and operations is deductible from the overall profits. According to Aliyu and Tasmin (2012) the use of technology may lower costs for a firm but may not necessarily enhance profitability of the firm.

Daneshvar and Ramesh (2012) conducted a panel study on banks for the period 1998 – 2009 to analyze the effect of information technology use on organization productivity and profitability. Using correlation and regression analysis on return on assets and deposits in the banking sector, the study found that the use of technology enhanced asset optimization, improved the return on assets and improved the profitability per employee. Consequently,
Daneshvar and Ramesh (2012) concluded that the use of technology enhanced the profitability of banks in India.

Cakmak and Tas (2012) analyzed the impact of technology use in the construction industry in Turkey and found that the use of information technology enhanced organization performance and profitability as well as being a source of competitive advantage for the organization. According to Cakmak and Tas (2012) technology use promoted efficiency in the banking sector and improved the revenues and profits for companies in the construction industry.

In a similar study, Kagan and Lingam (2008) found that the use of technology in the banking sector had a positive impact on the profitability of the organization. According to Kaga and Lingam (2008) the use of technology especially in the banking sector improved the overall profits due to multiple use of products and services. In addition, the increase in the channels for marketing the banks services improved the levels of financial performance in the banking sector.

In a study on the impact of technology use in Nigeria, Adewoyo (2013) noted that the use of technology enhanced the customer service times, improved the transaction costs and reduced the service costs. Consequently, Adewoyo (2013) noted that the use of technology improved on costs of operations. Nevertheless, use of technology did not improve the revenues or profits of the banks. According to Adewoyo (2013) the costs incurred in setting up technology platforms and networks adversely affected revenue generation and profit maximization in the banking sector in Nigeria.

Ritho and Jagongo (2015) in a study on the mobile banking and financial performance paper, noted that use of mobile banking had a positive relationship to the financial performance and profitability of the banks. According to them, the adoption of M Banking technologies has had a positive influence on the revenues and profits of the organizations and banks in Kenya.

Kingoo (2011) analyzed the impact of electronic banking on the financial performance of commercial banks in Kenya. The study found that the use of technology enhanced overall
profitability of the firms that adopted technology use in service delivery. In addition, the study found that the use of technology was a major source of competitive advantage for the organization. This is similar to the findings of Koivu (2012) who attributed the higher performance of organizations in Kenya to the use of technology in service delivery.

Other financial impacts of technology use on organization performance include asset use efficiency and lower expenses. According to Malhota and Singh (2009) the use of technology improved the asset quality in commercial banks as well as lowered the operational expenses incurred by banks in delivery of services. Nevertheless, the study found that the use of technology had a negative influence on the profitability levels for smaller commercial banks (Maholtra & Singh, 2009).

Kigen (2010) noted that the use of mobile banking reduced the transaction costs for microfinance institutions in Kenya. In addition, the study found that this improved the overall operational efficiency in the banking sector though smaller banks did not benefit from this improved efficiency due to their lower and smaller banking population.

2.5 Chapter Summary

This chapter has reviewed the existing literature on the effect of technology use on customer satisfaction, operational efficiency and financial performance. There exist ambiguities in the findings due to different findings especially on the effect of technology use on organization performance. While some scholars indicate a positive impact, others indicate that the impact of technology on organization performance is negative. This study sought to analyze the impact of technology use on various aspects of the organization to ascertain if technology use can be a source of competitive advantage.

Chapter three below presents the research methodology of the study. It includes the research design, population and sampling techniques, data collection and data analysis techniques.
CHAPTER THREE

3.0 RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter presents the research methodology and design of the study. It includes the research design, the population and sampling techniques, the data collection methods and data analysis methods for the study.

3.2 Research Design

A research design is the overall blueprint that guides a study (Saunders et al., 2009). The research design guides a researcher in a study on the processes and systems to adopt. This study adopted a descriptive research design. A descriptive research design is a research framework that focuses on the gathering of data to describe a problem, phenomenon or a solution (Cooper & Schindler, 2014). This study collected data to describe the how organizations can use technology as a competitive advantage tool. Specifically, the study was focused on providing evidence on how technology can be used to achieve: customer satisfaction, operational efficiency and improve financial performance key metrics of competitive advantage. Consequently, the use of a descriptive research design was justified.

Quantitative research methodologies were utilized. In quantitative research approach the researcher focuses on the use of quantitative or numerical data (Cooper & Schindler, 2014). This study quantified the data to acquire accuracy as well as uniformity in data collected.

A case study approach was utilized in this study. A case study approach focuses on the intense analysis of a phenomenon, element or individual at a particular point in time (Mugenda & Mugenda, 2003). The case study approach allowed for the intense analysis of Chase Bank a technology use leader in the banking sector in Kenya. The choice of Chase Bank was informed by two major factors: It was a leader in the use of technology in the banking sector in Kenya and secondly, it was a small bank (Tier II). This enabled the study to
confirm the propositions by Malhorta and Singh (2009), Kigen (2010) that technology use had not effect on financial performance in smaller banks.

3.3 Population and Sampling Design

3.3.1 Population

A population refers to the subtotal of all cases that possess unique and certain characteristics that interests a researcher (Cooper & Schindler, 2014). In this study, technology use was analyzed and its impact on competitiveness in the market. Chase Bank had been a leader in the banking sector especially in the use of technology. Consequently, the study utilized Chase Bank which had 42 branches as the case of the study. Chase Bank riverside branch was the case of the study.

3.3.2 Sampling Design

Sampling design refers to the procedures and systems that are used to acquire a sample size that is representative of the population and can be used to generalize findings (Cooper & Schindler, 2014).

3.3.2.1 Sampling Frame

The sampling frame refers to the total number of elements within the population (Saunders et al., 2007). Chase Bank Riverside Branch had a total of 5,700 accounts holders and 40 employees. These were the sampling frame of the study:

<table>
<thead>
<tr>
<th>Details</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees</td>
<td>40</td>
</tr>
<tr>
<td>Customers (Account Holders)</td>
<td>5,700</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,740</strong></td>
</tr>
</tbody>
</table>

Source: Chase Bank (2016)
3.3.2.2 Sampling Technique

This study used stratified random sampling technique. In a stratified random sampling technique, the researcher classifies the population into groups with similar characteristics. The characteristics of this group, included employees and customers / account holders. Stratified random sampling ensured that all the views of the stakeholders in acquiring a competitive advantage were interviewed and included in the study. Stratification, random sampling technique was applied where every element within the population was given an equal chance for inclusion in the study.

3.3.2.3 Sample Size

The sample size is dependent on various reasons and justifications. Nevertheless, the sample size is that number of elements or individuals selected for inclusion in a study that a researcher deems to be representative of the population (Peck et al., 2009). This study used the Yamane (1967) formulae to select the sample size for customers and employees. The formulae was as shown below:

\[ n = \frac{N}{1 + Ne^2} \]

Where:

\( n = \text{sample size} \)

\( N = \text{size of the target population} \)

\( e = \text{acceptable sampling error} \)

Using a 0.05 significance level the sample size was:
n = \frac{5700}{1 + (5700 \times 0.05^2)} = 373 = 7\% \text{ of the population}

The sample size was thus:

Table 3.2: Sample Size

<table>
<thead>
<tr>
<th>Details</th>
<th>Sample Size</th>
<th>Proportion</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees</td>
<td>40</td>
<td>30%</td>
<td>12</td>
</tr>
<tr>
<td>Customers (Account Holders)</td>
<td>5,700</td>
<td>7%</td>
<td>400</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,740</strong></td>
<td><strong>7%</strong></td>
<td><strong>412</strong></td>
</tr>
</tbody>
</table>

3.4 Data Collection

This study utilized primary data. Primary data for the study was collected using a questionnaire. A questionnaire is a data collection instrument that has various benefits such as ease of data collection, cost efficiency, ability to collect quantitative data as well as qualitative data and the ease of administration (Saunders et al., 2012). The study used two questionnaires: A customer questionnaire and an employee questionnaire. Both questionnaires contained closed ended questions for standardization and likert scale questions on a scale of strongly agree, agree, disagree, strongly disagree and not applicable.

The customer questionnaire had two sections: a customer’s background section, and a customer satisfaction section. The employee’s questionnaire had three sections: a background section, an operations efficiency section and an organization performance section.

3.5 Research Procedures

This study used various research procedures to enhance the integrity, reliability and validity of data collected. The questionnaire developed was pretested using 5 respondents who were not be included in the actual data collection process. In addition, the supervisor’s comments formed part of the research procedures and pretesting process.
After pretesting the respondent personally administered the questionnaire. Personal administration was quick, ensured that any challenges faced by the respondent were dealt with and ensured a high response rate. Personal administration of questionnaires was done for the employees and customers.

To uphold ethical considerations in the study, privacy of data collected was ensured to ensure that no data collected was accessible by third parties. Furthermore, respondents were not required to provide information that would compromise on their confidentiality. Finally, the study ensured that authority to collect data from the bank and its employees was acquired before actual data collection.

3.6 Data Analysis

Data collected was edited, analyzed and coded for keying into Ms Excel and exported to SPSS vs. 20. Data analysis involved descriptive and inferential analysis. After analysis tables and figures were exported to excel. Descriptive data analysis aim to provide descriptive statistics that describe trends and patterns in the data. Frequency distribution tables were used as descriptive statistics.

To infer relationships in the data collected, correlation analysis was utilized. Pearson’s correlation coefficient was utilized in the study. Analyzed data was presented using tables and figures. This enhanced and aided in the interpretation and presentation of data analyzed and presented as findings.

3.7 Chapter Summary

Chapter three has highlighted the research methodology for use in the study. The study used a descriptive research design using Chase Bank as the case of the study. The chapter also details the research procedures, the population and sampling design, the data collection and analysis procedures adopted in the study.

Chapter four presents the findings and results of the study.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

Chapter four is a presentation of the findings of the study based on data collected and analyzed as spelt out in chapter three of this study. The findings are based on 288 questionnaires completed by the customers out of a total sample size target of 400 representing a 72% response rate. In addition, the findings are based on 12 employees at the branch level which represent a 100% response rate. Findings are presented in form of tables and graphs to aid in data interpretation.

4.2 Background Information

4.2.1 Customers Information

Customer basic information can be broadly classified into two major categories: personal information and experience with Chase bank.

4.2.1.1 Personal information

Sixty nine percent of the customer respondents in this study were male while 31% were female. This data shows that the male gender had a higher proportion amongst customers than the female gender.

<table>
<thead>
<tr>
<th>Table 4.3: Gender of Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Chase bank prides itself in being the relationship SME bank. Consequently, its major customer’s base are individuals owning businesses within the age of 35 – 50 years. This is evident in the findings of this study which showed that 57% of the customer respondents
were of the ages 35 – 50 years while 29% were between the years 18 – 35 and only 14% were above 40 years.

Figure 4.1: Age of Customers

4.2.1.2 Experience with Chase Bank

Majority of the customers in this study had been with the bank for 4 – 8 while 47% had been with the bank for less than 4 years. Twenty one percent of the respondents had been with the bank for over 8 years. This data shows that the customer retention rates were relatively high at Chase Bank. Over 45 percent of the customers had been loyal to the bank for over 4 years.

Table 4.4: Experience with the Bank (Customers)

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 4</td>
<td>135</td>
<td>47</td>
</tr>
<tr>
<td>4 - 8</td>
<td>92</td>
<td>32</td>
</tr>
<tr>
<td>Above 8</td>
<td>61</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>288</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
The most dominant product consumed by customers were loans and credits (40%), savings accounts (19%), current accounts (18%), money transfer services (11%) and other products such as Mpesa floats, Share Trading and Forex (12%).

![Bar chart showing the percentage of customers who consumed different types of products.](chart.png)

**Figure 4.2: Products**

There are high levels of satisfaction amongst customers with the products and services offered at Chase Bank. Data from this study shows that over 65% of the customers had a high level of satisfaction. Eleven percent were very highly satisfied, 58% were highly satisfied, 18% had average levels of satisfaction and 13% had low levels of satisfaction.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>32</td>
<td>11</td>
</tr>
<tr>
<td>High</td>
<td>167</td>
<td>58</td>
</tr>
<tr>
<td>Average</td>
<td>52</td>
<td>18</td>
</tr>
<tr>
<td>Low</td>
<td>37</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td><strong>288</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**Table 4.5: Levels of Customer Satisfaction (Products)**
4.2.2 Employees Information

Employee’s background information can be generally classified into two major groups. Personal and Business information

4.2.2.1 Personal Information

Amongst the employees, the female gender was more dominant that the male gender. Sixty seven percent of the employee respondents were of the female gender while 33% were of the male gender.

![Gender (Employees)](image)

**Figure 4.3: Gender (Employees)**

Over 90% of the employees at Chase bank were between the ages 36 – 50 years. Only 8% of the employees were of the ages between 18 – 35 years.

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 - 35</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>36 - 50</td>
<td>11</td>
<td>92</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**Table 4.6: Age of Employees**
This study utilized employees of various job levels. However, majority of the respondents were senior managers who had information of technology use and its effect on business operations at Chase Bank. Forty percent of the respondents were senior managers, 33% were middle level managers, 17% were junior managers and 8% were other job levels.

Figure 4.4: Job Levels

4.2.2.2 Business Information

In the analysis of the impact of technology on bank performance, employee respondents were given open ended questions on the actual impact of technology on bank performance. Most of the employee respondents indicated that the use of technology had a positive effect on the bank performance and pushed the bank towards digitalization. Some of the respondents particularly indicated that the introduction of mobile banking such as mfukoni and online banking had led to increased customer numbers and profitability of the bank. Employee No 4 indicated that, “Technology has been the biggest drive for the bank, innovations like mfukoni and online banking have given the bank a great push in profits and customer base.” According Employee No 1, “The use of technology has enhanced information flow and has
led to more availability of vision clarity leading to operational efficiency and led to new innovations.”

Furthermore, the study analyzed the effect of technology on operational efficiency, customer satisfaction and organization performance. According to the respondents, the use of technology reduced the operational efficiency by reducing the human errors in operation, led to customer satisfaction through convenience in service delivery and increased bank revenue streams and reduced paper costs. According to Employee no 3, “the use of technology has enhanced operational efficiency through increased operational efficiency. Customer satisfaction was enhanced through customer service speeds and convenience and organization performance was improved through improved profits and customer base.”

4.3 Mobile Banking and Customer Satisfaction

4.3.1 Interaction with Mobile Banking

Eighty seven percent of the customers at Chase Bank had interacted with technology and mobile banking use. Only, 13% of the customers had not interacted with technology use. The data therefore show that the use and awareness of technology use at Chase bank was very high for customers.
In the awareness of the technologies in use, mobile banking was the most prevalent with 56% of the customers indicated that they had interacted with it, 22% indicated internet banking, 17% indicated they had interacted with express branch banking while other forms of technology based banking was identified by 5% of the customers.
Figure 4.6: Technology Products

This study found that over 70% of the customers of chase bank were satisfied with the technology based banking services and products offered at Chase Bank. According to the study, 13% were very highly satisfied, 61% were highly satisfied, 22% were averagely satisfied and 4% were lowly satisfied with the technology based banking services offered at Chase Bank.

<table>
<thead>
<tr>
<th>Table 4.7: Satisfaction (Technology Products)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Very High</td>
</tr>
<tr>
<td>High</td>
</tr>
<tr>
<td>Average</td>
</tr>
<tr>
<td>Low</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

4.3.2 Convenience

Nineteen percent of the customers at chase bank strongly agreed that mobile banking at Chase Bank was very convenient for them which enhanced their customer satisfaction levels. Fifty six percent of the customers agreed, 14% were neutral and 11% disagreed.
Consequently, this study finds that over 65% of the customers of Chase bank were satisfied with the convenience afforded by use of mobile banking at Chase Bank.

![Figure 4.7: Convenience](image)

4.3.3 Ease of Access

The ease of access to banking services is a key factor influencing customer satisfaction. According to this study, 34% of the customers strongly agreed that there was convenience, 64% agreed and 1% were neutral that the use of mobile banking enhanced their ease of access to mobile banking. This study thus finds that access to banking services is a key customer satisfaction factor for 90% of the customers at Chase bank.
Figure 4.8: Ease of Access

4.3.4 Encounter with Errors

Thirty percent of the customers at Chase Bank strongly agreed that they rarely encountered errors when using mobile banking at Chase Bank which made the satisfied customers. In addition, 64% of the customers agreed, 2% were neutral, 3% disagreed and 1% strongly disagreed respectively. The findings show that occurrence of errors when using mobile banking was very rare to most customers. This was a key customer satisfaction factor for chase bank customers.

Table 4.8: Encounter with Errors

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>85</td>
<td>30</td>
</tr>
<tr>
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<td>3</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>288</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
4.3.5 Efficiency

Twenty eight percent of the customers to this study strongly agreed that mobile banking was efficient, 59% agreed, 11% were neutral and 2% disagreed that mobile banking at Chase bank was efficient. The study thus finds that mobile banking was very efficient and this influenced customer satisfaction levels for the customers.

Figure 4.9: Efficiency of Mobile Banking

4.3.6 Access to Multiple Products

Access to multiple products is an influential attribute of technology which drives customer satisfaction levels. This is applicable in Chase Bank were 12% of the customers strongly agreed, 59% agreed, 19% were neutral, 7% disagreed and 3% strongly disagreed respectively that the provision and access to multiple products over mobile banking made them satisfied customers.

Table 4.9: Access to Multiple Products

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
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<td>12</td>
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<tr>
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<td>168</td>
<td>59</td>
</tr>
<tr>
<td>Neutral</td>
<td>53</td>
<td>19</td>
</tr>
<tr>
<td>Disagree</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Strongly Disagree</td>
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<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>284</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
4.3.7 Access of Banking Services

Thirty eight percent of the respondents to this study strongly agreed that they could access banking services using mobile banking at all times. In addition, 47% of the customers agreed, 12% were neutral and 3% disagreed. The findings show that access to banking services was a key customer satisfaction factor.

![Chart showing access to banking services at all times]

**Figure 4.10: Access to Banking Services at All Times**

Similarly, enhancing customer satisfaction levels at chase bank was the access of banking services convenient at home. This was identified by 18% of the customers who strongly agreed, 57% of the customers agreed, 18% were neutral and 7% of the customers disagreed.

**Table 4.10: Access at Home**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Agree</td>
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<td>57</td>
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<tr>
<td>Neutral</td>
<td>52</td>
<td>18</td>
</tr>
<tr>
<td>Disagree</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>288</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
4.3.8 Reliability

Nineteen percent of the respondents to this study strongly agreed that the provision of reliable banking services at Chase Bank was a major factor that influenced customer satisfaction levels. In addition, 65% of the customers agreed, 14% of the customers were neutral and 2% disagreed respectively.

Figure 4.11: Reliability of the Services

4.3.9 Security

Fifteen percent of the customers strongly agreed that the banking services and products offered over mobile banks were secure and 57% agreed. Nevertheless, 6% of the customers disagreed and 3% strongly disagreed that the banking services provided at Chase Bank were secure that thus enhance their customer satisfaction levels. Nineteen percent of the customers were neutral. Over 70% of the customer’s perceptions of security in the banking system was an important factor that influenced their customer satisfaction levels.
Table 4.11: Perceived Security

<table>
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<th>Percent</th>
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</thead>
<tbody>
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<tr>
<td>Disagree</td>
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<td>6</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>288</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.3.10 Problem Solving

The ability to solve customers’ problems and queries is a major factor that influences customer satisfaction levels. Similarly, at Chase Bank 11% of the customers strongly agreed and 31% agreed that mobile banking solved their problems and queries fast which enhanced their customer satisfaction levels. On the other hand, 10% of the customers disagreed and 2% strongly disagreed while 46% of the customers were neutral.

Table 4.12: Problem Solving

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
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</thead>
<tbody>
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<td>11</td>
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<tr>
<td>Agree</td>
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</tr>
<tr>
<td>Neutral</td>
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<td>46</td>
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<tr>
<td>Disagree</td>
<td>29</td>
<td>10</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>288</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.3.11 Access to Credit

Eight percent of the customers strongly agreed and 18% agreed that mobile banking aided access to credit in cases of need at Chase Bank. On the other hand, 29% of the customers disagreed and 18% strongly disagreed while 26% were neutral. The findings indicate that the provision of credit over the phone was not one of the strong points of chase bank.
4.3.12 Pearson’s Correlation Analysis

Pearson’s correlation analysis was undertaken to analyze the type and strength of relationship between attributes of mobile banking and customer satisfaction amongst customers. As shown in the table below:

From the correlation analysis table, it is evident that customer satisfaction had the strongest positive correlation with perceived levels of reliability of the mobile banking applications (0.719) significant at 0.05 significance levels. Similarly, a strong positive significant correlation exists between customer satisfaction and perceived efficiency of the mobile banking application (0.671) and perceived levels of security in the mobile banking system (0.615). Other significant correlations between mobile banking and customer satisfaction are perceived levels of convenience (0.516). The findings show that the most important factors that customers perceived important in informing their customer satisfaction levels were perceived convenience of the mobile banking system, perceived levels of efficiency, reliability of the system and security levels in the mobile banking system.

Figure 4.12: Access to Credit Services
### Table 4.13: Correlation Analysis

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>C. Satis</th>
<th>Conv.</th>
<th>Errors</th>
<th>Efficiency</th>
<th>Multp. Prods</th>
<th>Acc. At Home</th>
<th>Acc. all times</th>
<th>Relaib</th>
<th>Security</th>
<th>Prob. Solv</th>
<th>Credit</th>
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<td>0.516*</td>
<td>0.381</td>
<td>0.671*</td>
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<td>0.392</td>
<td>0.719*</td>
<td>0.615*</td>
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<td>0.065</td>
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<td></td>
<td></td>
<td></td>
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<td>0.279</td>
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<td>0.561*</td>
<td>0.364</td>
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<td>0.349</td>
<td>0.391</td>
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<td>0.513</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at 0.05 significance levels.

### 4.4 Mobile Banking and Operational Efficiency

#### 4.4.1 Overall Operational Costs

Forty two percent of the respondents to this study strongly agreed that the use of mobile banking reduced the overall operational costs of Chase Bank. In addition, 33% of the employees agreed and 25% disagreed. This shows that most employees at Chase Bank believed that the use of mobile banking reduced the total operating costs of Chase Bank.
4.4.2 Overall Transaction Costs

Twenty five percent of the customers agreed and 42% disagreed while 33% were neutral that the use of mobile banking reduced the overall transactional costs of customers. According to the findings of the employees, there was no clear benefit on transaction costs to the customer from the use of mobile banking. This could be because the customer was charged a mobile application fee by the bank plus an access fee by the mobile phone operator or data fees to access the application.

![Overall Transaction Costs (Customers)](image)

Figure 4.14: Overall Transaction Costs (Customers)

4.4.3 Customer Service Costs

Eight percent of the employees strongly agreed that the use of mobile banking reduced the customer service costs. Fifty percent of the employee agreed, 17% were neutral and 25% disagreed that the use of mobile banking reduced the overall customer service costs. These findings show that the use of mobile banking was key in reducing the customer service costs according to the employees.
Administrative expenses in the bank were reduced as a result of mobile banking use at Chase Bank. Twenty five percent of the employees strongly agreed and 42% agreed that the use of mobile banking reduced the overall administrative expenses of the bank. Nevertheless, 33% of the employees were neutral that the administrative expenses of Chase bank were reduced as a result of mobile banking use.

### Table 4.14: Administrative Expenses

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
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<td>25</td>
</tr>
<tr>
<td>Agree</td>
<td>5</td>
<td>42</td>
</tr>
<tr>
<td>Neutral</td>
<td>4</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
4.4.5 Employee Costs

Twenty five percent of the employees strongly agreed that the use of mobile banking reduced the overall employee related costs. In addition, 42% of the employees agreed, 25% were neutral and 8% disagreed. This shows that to most employees the use of mobile banking reduced the total employee and employee related costs.

Figure 4.16: Employee Costs

4.4.6 Reduced Expenditure in New Branches

The use of mobile banking in provision of services reduces the need for banks to establish new branches which is a capital and cost intensive process for the banks. Consequently, the introduction of mobile banking reduces the banks total expenditure on new branch set up and expansion. This is similar in Chase bank where the introduction of mobile banking has reduced expenditure in branch set up according to 17% (strongly agree) and 25% (agree) of the employees. On the other hand, 33% of the employees were neutral and 25% disagreed respectively.
<table>
<thead>
<tr>
<th>Table 4.15: Reduced New Branch Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Agree</td>
</tr>
<tr>
<td>Neutral</td>
</tr>
<tr>
<td>Disagree</td>
</tr>
<tr>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

### 4.4.7 Reduced Customer Management Costs

Twenty five percent of the respondents to this study strongly agreed that the use of mobile banking at Chase Bank reduced the customer management costs. Eight percent of the employees were neutral and 67% disagreed. This shows that to most employees the use of mobile banking did not influence or affect customer management costs.

<table>
<thead>
<tr>
<th>Table 4.16: Customer Management Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Neutral</td>
</tr>
<tr>
<td>Disagree</td>
</tr>
<tr>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

### 4.4.8 Increased Efficiency

Efficiency in service delivery is a key driver of operational efficiency in any organization. At Chase bank majority of the employees agreed that the provision of services through mobile banking enhanced service delivery efficiency. This is according to 17% (strongly Agree) and 42% (agree) of the respondents. Nevertheless, 8% of the respondents disagreed. Thirty three percent of the respondents were neutral.
Table 4.17: Increased Efficiency

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
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<td>17</td>
</tr>
<tr>
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<td>5</td>
<td>42</td>
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<tr>
<td>Neutral</td>
<td>4</td>
<td>33</td>
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<tr>
<td>Disagree</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.4.9 Reduced Customer Queues

One of the major characteristics of operational inefficiency is long queues at banking halls. According to all the employees at Chase bank, the use of mobile banking reduced the customer queues at Chase bank. Seventeen percent of the employees strongly agreed and 83% agreed that the use of mobile banking reduced the long customer queues at Chase Bank branches.

Table 18: Reduced Customer Queues

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
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<td>17</td>
</tr>
<tr>
<td>Agree</td>
<td>10</td>
<td>83</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.4.10 Improved Customer Relations

Thirty three percent of the employees strongly agreed, and 25% agreed that the use of mobile banking at chase bank improved the levels of customer relations with the bank. The finds show that the use of technology improved customer relations in the banking i.e. the level of significant relationship between the bank and its customers. On the other hand, 33% of the respondents were neutral and 8% disagreed respectively.
4.4.11 Security

Perceived security is a key measure of operational efficiency. This study found that 8% of the customers strongly agreed, and 50% agreed that the use of mobile banking enhanced the customer’s perception of security in the bank. Thirty three percent of the employees were neutral and 8% disagreed.

<table>
<thead>
<tr>
<th>Table 4.19: Perceived Security</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td>Strongly Agree</td>
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<tr>
<td>Neutral</td>
</tr>
<tr>
<td>Disagree</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
4.4.12 Increased Employee Productivity

Twenty five percent of the employees agreed that the use of mobile banking improved employee productivity. Fifty percent of the employees were neutral and 25% disagreed.

Figure 4.18: Increased Employee Productivity

4.5 Mobile Banking and Organization Performance

4.5.1 Revenue Generation

Forty percent of the employees at Chase bank agreed that the use of mobile banking improved the revenues of Chase Bank. Twenty percent of the employees were neutral and 40% disagreed respectively.
Table 4.20: Revenue Generation

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
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</tr>
</thead>
<tbody>
<tr>
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<td>40</td>
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<td>40</td>
</tr>
<tr>
<td></td>
<td><strong>10</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

### 4.5.2 Revenue per Customer

According to 58% of the employees at Chase Bank the use of mobile banking in service delivery improved the revenue generated per customers. Forty two percent of the employees were neutral. The study shows that to most employees the use of mobile banking had a positive effect on revenues generated by each customer.

![Figure 4.19: Revenue per Customer](image)

### 4.5.3 Profitability

Fifty percent of employees at Chase Bank agreed that the use of mobile banking increased the profit levels of Chase Bank. Nevertheless, 33% of the customers were neutral and 17% disagreed. The findings show that to most employees the use of mobile banking improved
profitability. Nevertheless, there were significant numbers of employees who were not sure or perceived a contrary opinion.

### Table 4.21: Increased Profitability

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
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<td>50</td>
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<td>Neutral</td>
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<td>33</td>
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<td>Disagree</td>
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<td>17</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
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</table>

#### 4.5.4 Productivity

The use of any form of technology is aimed at improving and enhancing productivity. This study found that 58% of employees at Chase Bank agreed that the use of technology enhanced organization productivity. Twenty five percent of employees were neutral and 17% disagreed. Consequently, this study found that the use of mobile banking influenced productivity amongst employees and overall bank.

![Figure 4.20: Employee Productivity](image)

51
4.5.5 Multiple Product Delivery

Respondents to this study were asked to rate the statement: Mobile Banking has led to multiple product delivery for the bank. Twenty percent of the employees agreed, 40% were neutral and 40% disagreed. The study shows majority of employees were not aware of how technology could be used to deliver multiple products.

![Figure 4.21: Multiple Product Delivery](image)

4.5.6 Increased Flexibility

Eight percent of the employees strongly agreed that mobile banking led to increased flexibility in product innovation. Fifty percent of the employees agreed, 25% were neutral and 17% disagreed. The findings show that to most employees the provision of mobile banking enhanced product innovation at Chase bank.
Table 4.22: Increased Flexibility

<table>
<thead>
<tr>
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<tr>
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<td>17</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

On the other hand, 33% percent of the employees strongly agreed and 58% agreed that the use of mobile banking led to new product introduction by Chase Bank. Eight percent of the employees were neutral. The findings to employees the use of mobile banking enhanced product innovation and new product introduction in the market.

Table 4.23: New Product Introduction

<table>
<thead>
<tr>
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<th>Frequency</th>
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<tbody>
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<tr>
<td>Agree</td>
<td>7</td>
<td>58</td>
</tr>
<tr>
<td>Neutral</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.5.7 Customer Numbers

Seventeen percent of the employees in this study strongly agreed that the use of mobile banking enhanced customer numbers at Chase Bank. In addition, 58% of the employees agreed and 25% were neutral. The study shows that the use of mobile banking enhanced customer numbers at Chase bank.

Table 4.24: Customer Numbers

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
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</thead>
<tbody>
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<td>Strongly Agree</td>
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<tr>
<td>Agree</td>
<td>7</td>
<td>58</td>
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<tr>
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<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
4.5.8 Customer Satisfaction Levels

Forty two percent and 17% of the employees strongly agreed and agreed that the use of mobile banking in Chase bank had improved customer satisfaction levels. On the other hand, 25% of the employees disagreed and 17% strongly disagreed. The data shows that majority of the employees believed that the use of mobile banking had a positive influence on the levels of customer satisfaction at Chase Bank.

![Customer Satisfaction Levels](image)

**Figure 4.22: Customer Satisfaction Levels**

Similarly, 75% of the employees in this study agreed that the use of mobile banking enhanced customer loyalty while 25% were neutral. The data shows that the use of mobile banking at Chase bank was instrumental in building customer satisfaction and loyalty levels.

<table>
<thead>
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<td>25</td>
</tr>
<tr>
<td>12</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.25: Customer Loyalty
4.5.9 Increased customer Attraction

Fifty percent of the employees agreed that the use of mobile banking was key customer attraction tool for Chase bank. On the other hand, 50% of the employees were neutral. This shows that to some employees the attraction of customers to Chase bank by mobile banking was key while others did not understand this relationship. It is key to note that none of the employees disagreed.

![Customer Attraction Diagram]

**Figure 4.23: Customer Attraction**

Eight percent of the employees strongly agreed and 50% agreed that the use of mobile banking was key in enhancing customer retention in Chase Bank. The study findings show that to majority of the employees mobile banking was a key customer retention tool. Nonetheless, 42% of the employees were neutral.
Thirty three percent of the employees agreed that the use of mobile banking was a key tool for enhancing asset utilization efficiency. Fifty eight percent of the employees were neutral and 8% disagreed. The study findings show that majority of employees did not understand how the use of mobile banking was key in enhancing the use of assets in the organization.

<table>
<thead>
<tr>
<th>Table 4.26: Efficiency in Assets Utilization</th>
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<tbody>
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<tr>
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</table>
4.5.11 Correlation Analysis

Pearson’s correlation analysis was undertaken between selected variables of customer satisfaction, operational efficiency and organization performance. In the Pearson’s correlation, an average of customer’s opinions on customer satisfaction and average employee ratings on operational efficiency and organization performance were computed and subjected to correlation analysis. The findings are as below:

This study found that a positive significant correlation exists between the levels of customer satisfaction from the use of mobile banking and organization performance (0.352) significant at 0.05 significance levels. In addition, the operational costs had a negative significant correlation with customer satisfaction levels (-0.461) significant at 0.05 significance levels. Finally, a positive correlation exists between operational efficiency and organization (0.512) but the relationship was not significant at 0.05 significance levels. The study shows that, as the bank uses mobile banking the levels of customer satisfaction went higher, the operational costs were lower and the overall organization performance increased.

<table>
<thead>
<tr>
<th>Table 4.27: Correlation Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Satisf</td>
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<tr>
<td>Operational Eff.</td>
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<tr>
<td>Org Perfomance</td>
</tr>
</tbody>
</table>

4.6 Chapter Summary

This chapter has presented the findings of the study based on data collected and analyzed as illustrated in chapter three. The major findings of the study are: the use of mobile banking enhanced customer satisfaction levels, reduced the overall costs in the bank while improved the performance of the bank.

Chapter five below presents a summary of the findings, discussions of the study and conclusions of the study. In addition, it presents the recommendations for practice and further studies.
CHAPTER FIVE

5.0 DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the detailed discussion of the findings presented in Chapter four. It summarizes the findings, makes critical discussions while providing major conclusions. Finally, the chapter provides discussions for practice and further studies.

5.2 Summary of the Study

This study sought to investigate the use of mobile phone banking as a source of competitive advantage at Chase Bank. To investigate competitive advantage, the study analyzed the effect of mobile banking on customer satisfaction levels, the effect of mobile banking on overall operational efficiency and effect of mobile banking on overall organization performance of Chase Bank Kenya Ltd.

The study utilized a descriptive research design using Chase bank Riverside branch for the study. In total the number of customers was 1,500 over the study period and number of employees was 40. The study was conducted during the month of October 2016. Using Yamanes formulae, a total of 400 customers and 12 employees were selected for inclusion in the sample size using stratified random sampling. Data for the study was collected using a questionnaire personally administered by the research to enhance a high response rate. After data collection, descriptive statistics analysis was undertaken to establish patterns through the use of frequency distribution tables. To infer relationships, Pearson’s correlation coefficient analysis was undertaken. Analyzed data is presented in tables and figures for ease of interpretation and presentation of findings.

The study found that the use of mobile in Chase Bank of Kenya was a key competitive advantage strategy tool. Mobile banking use enhanced overall customer satisfaction and a positive significant correlation exists between mobile banking use and customer satisfaction.
Mobile banking use enhanced customer convenience, perceived efficiency, perceived efficiency, perceived security and perceived ease of access which were key drivers of customer satisfaction and thus a source of competitive advantage.

In addition, the study found that the use of mobile banking had a negative correlation to operational efficiency. The use of mobile banking led to reduced operational costs for Chase bank. Some of the costs reduced by mobile banking were: customer service costs, employee related costs, administrative expenses and new branch set up expenditure.

Finally, the study found that there was a significant positive correlation between mobile banking use and the levels of organization performance. The use of mobile banking enhanced revenue generation, individual customer revenues, improved profitability, product development, innovation and distribution to customers. Finally, customer attraction, retention and loyalty levels improved as a consequence of mobile banking use at Chase bank.

5.3 Discussions of Results
5.3.1 Mobile Banking and Customer Satisfaction

The relationship between mobile banking and customer satisfaction is one that has been analyzed by different authors with different findings and conclusions. Nevertheless, this study found that a positive correlation exists between the use of technology and the levels of customer satisfaction amongst customers. Ceylan and Emre (2011), Nyangosi et al., (2009) and Okiro and Ndungu (2013) similarly found that customer satisfaction and technology use in service delivery share a positive correlation. As a firm uses technology, customer satisfaction from the service quality levels improves. This is using the SERVQUAL service quality model and framework.

This indicates that as the levels of technology use increased the levels of customer satisfaction also increased. This is similar to the findings of Cakmak & Tas (2012) who noted that technology use in any organization enhances customer satisfaction which leads to customer attraction and retention. This was identified in this study. Makee, Willy and Atandi
(2014) noted that there was a strong positive correlation between the use of mobile phone technology and customer attraction and retention. Similarly, a positive correlation exists between technology use and customer satisfaction (Makee et al., 2014). In this study a strong positive correlation existed between the use of mobile technology and customer satisfaction levels.

In this study, the relationship between mobile phone use and customer satisfaction was influenced by factors such as the convenience provided by mobile banking, ease of access to banking services at home and at all time, the ease of access to multiple products and services through mobile banking, and the reliability and security of the mobile banking technology. The attributes enhancing customer satisfaction levels in Chase bank are similar to those established in the SERVQUAL model presented by Parasuraman, Zeithaml, and Berry (1988), who perceived the service quality attributes as reliability, tangibility, security, empathy and assurance the use of technology enhances the provision or attainment of this service quality attributes in an efficiency and effective way (Iacovou et al., 2005). Some of the attributes identified in this study were security, tangibility and reliability. Empathy in this study was measured by the ability of customers to access mobile credit through mobile banking which was non-existent at the time of the study. Consequently this variable was not identified in the study. Agboola (2006) in a study on the use of information communication technology in the banking sector in Nigeria noted that technology use enhances the speed, convenience and accuracy of service delivery which enhances customer satisfaction and ultimate a competitive advantage amongst its peers (Tiwari et al., 2006; Agboola, 2006). This was similar to the findings of this study which identified similar variables in the study.

Other scholars with similar variables driving customer satisfaction as those of this study include: Okiro and Ndungu (2013) in a study on the impact of mobile and internet banking on the Perfomance of financial institutions in Kenya found that mobile and internet banking enhanced the levels of customer satisfaction through convenience service access, improvement of the service delivery channels, efficiency and reliability of the technology used in service delivery and the security apparent in the systems.
Further, this study found that the most important factors influencing customer satisfaction levels when using mobile banking was the perceived ease of use, the access to multiple products, the reliability and security of the mobile banking technology. In particular, the reliability and security of the mobile banking technology were key to customer satisfaction. This is supported by the findings of Okiro and Ndungu (2013) who noted a strong correlation between the use of technology and customer satisfaction in the delivery of banking services in Kenya.

5.3.2 Mobile Banking and Operational Efficiency

The relationship between mobile banking and operational efficiency is negative. According to this study operational efficiency was measured by the perceived reduction in operational and transactional costs of the bank. Consequently, the findings of this study show that as the levels of mobile banking use increased at Chase Bank, the levels of operational efficiency increased measured by the reduction in total and operational costs of the bank. This is similar to the findings of CBK (2014) which found that technology use in the banking industry enhances operational efficiency by reducing the overall costs of service delivery and improving the convenience and ease of access to services by customers. Similarly, Okiro and Ndungu (2013) found that the use of technology in service delivery in the banking services reduces the costs of accessing services by customers while enhancing the services accessible by the customer without visiting the bank branch. Other scholars with similar findings include: Chui and Fleming (2011); O’Brien and Marakas (2011) and Shirley and Sushanta (2006).

Some of the operational efficiency variables identified in this study include: reduced operational costs, reduced transactional costs for the bank and customers, reduced customer service costs, reduced expenditure in new branch set up and reduced customer management costs. This is validated by the findings of Rutto (2015) who noted that the use of technology was a key strategic alternative used by commercial banks to drive down the operational costs and enhances the total performance and efficiency in the banking sector.
Similarly, Laudon and Laudon (2012) found that the use of technology enhanced operational efficiency in organizations. According to them, companies such as P& G have utilized technology to reduce their total operational and administrative costs. Furthermore, the use of technology has streamlined services such as administration, employee management, customer management and many other services that a firm has to undertake to be efficient and effective (Laudon & Laudon 2012). Tiwari, Buse and Herstatt (2006), Donner and Tellez (2008) and Shirley and Sushanta (2006) noted that the use of information technology especially in the banking sector enhanced cost savings as well as reduced the total operational costs. In their study, Donner and Tellez (2008) found that the use of mobile banking, provided an alternative strategy for cost reduction by banks through lower costs from moving services from one place to another as well as enhancing access to services by a larger number of individuals but at a lower cost. This is supported by the findings of Malhorta and Singh (2009) who noted that the use of technology in the banking sector especially through the use of internet banking enhanced operational efficiency and profit maximization. In addition, the study found that use of technology in the banking sector enhanced asset quality and lowered expenses in the banking sector. This is similar to the findings of this study on operational efficiency in specific the reduction of costs. In a local and similar study, Ritho and Jagongo (2015) analyzed the impact of mobile banking and financial performance and noted that the use of an innovative product such as M banking enhanced organization efficiency as well as improved cost reduction in commercial banks in Kenya.

In addition, operational efficiency was enhanced through reduced customer queues at the banking halls, increased efficiency in service delivery and increased security levels in transactions. In comparison, Delgado and Nieto (2004) found that the growth of technology has made it possible for banks to create value creation chains and diversify into other areas such as money transfer and micro credit through the use of technology. Ritho and Jagongo (2015) noted that the use of technology enhanced customer confidence (customer perceptions on security) in the banking sector which improved overall customer confidence in the banking sector and financial systems.
5.3.3 Mobile Banking and Organization Performance

Mobile banking and organization performance have a positive significant correlation. According to this study, as the levels of technology use in Chase Bank increased, the overall organization performance of the bank improved. This is similar to the findings of Davis (1996) who found that the use of technologies has dramatically enhanced the attainment of organization goals and objectives. However, Davis (1996) used organization goals and objectives as the measure of performance.

Organization performance is improved through increased overall revenues and increased customer revenues, increased profitability of the banks, increased innovations in the bank, and enhanced flexibility in new product launch. Similar to the findings of this study Spanjol et al., (2011) noted that the use of technology improved financial performance in any organization. According to them, the technical ability to produce new products, the competitive edge, the flexibility of products and multiple access to the products and services, enhanced the levels of financial performance in the organizations. This is similar to the findings of Anal et al., (2011) who noted that the preference of customers for organizations that use technology improved the financial performance as well as customer loyalty levels. Other scholars who found a positive correlation between technology use and financial performance include Slater et al., (2012) and Cristima (2012) who found that investment in information technology enhanced superior organization performance, new market innovation and innovation of unique products and services. Other scholars include: Kagan and Lingam (2008), Adewoyo (2013), Ritho and Jagongo (2015), Kingoo (2011), Koivu (2012), Malhorta and Singh (2009) and Kigen (2010) found that the use of technology in the banking sector had a positive impact on the profitability of the organization. According to Kaga and Lingam (2008) the use of technology especially in the banking sector improved the overall profits due to multiple use of products and services.

Simpons (2002) found that the use of technology such as internet and mobile banking had a positive correlation to the revenue generation of a company. The use of technology increases
the customer numbers, the patronage of products by customers and the increase in the number of products used by customers. These presents unique opportunities for firms to maximize their revenues (Delado & Nieto, 2004). This is similar to the findings of this study that the use of mobile banking enhanced revenue generation at Chase Bank. Haq (2005) supports this findings and notes that the use of technology enhances economies of scale in an organization and promotes information symmetry between savers and borrowers which enhances overall organization revenues and profits.

In addition, organization performance at Chase bank was enhanced through increased customer attraction, retention and customer loyalty. Consequently, customer relationship management was enhanced through technology use at the bank. Similar to the findings of this study, Cakmak and Tas (2012) noted that technology use in any organization enhances customer satisfaction which leads to customer attraction and retention. This is key in building customer loyalty. This is validated by the findings of Makee et al., (2014). Makee, Willy and Atandi (2014) in a cross sectional study on the impact of mobile phone technology use on the performance of micro and small enterprises noted that the use of mobile phone technology and other innovations had a positive impact on the performance of the organization. There was a strong positive correlation between the use of mobile phone technology and customer attraction and retention. Similarly, a positive correlation exists between technology use and customer satisfaction (Makee et al., 2014).

5.4 Conclusions of the Study

5.4.1 Mobile Banking and Customer Satisfaction

This study concludes that mobile banking and use of technology at Chase Bank is a key competitive advantage tool and strategy. The use of mobile banking at Chase Bank enhanced customer satisfaction levels by enhancing the reliability, security and convenience of customers in accessing banking needs and services.
Further, this study found that the most important attributes of technology that enhanced customer satisfaction were: reliability of the system, security, convenience, ease of use and efficiency of the system.

### 5.4.2 Mobile Banking and Operational Efficiency

This study concludes that a negative significant correlation exists between mobile banking and operational costs. The use of technology reduces the total operational costs of the bank such as administrative expenses, expansion costs, customer service costs, product development and distribution costs and employee related costs.

In addition, the use of technology in service delivery enhanced efficiency in service delivery to the customers and was a major brand building tool for the bank.

### 5.4.3 Mobile Banking and Organization Performance

Mobile banking and organization performance have a strong positive correlation. The use of mobile banking increases the total revenues of the bank and reduces the total costs. This improves the total profitability and asset utilization in the company.

In addition, the use of mobile phones in banking is a key customer relationship management tool for the bank. It can be used to attract, retain and develop loyal customers.

### 5.5 Recommendations of the Study

#### 5.5.1 Recommendations for Improvement

**5.5.1.1 Mobile Banking and Customer Satisfaction**

This study recommends that Chase Bank explores the possible of introducing mobile credit on their mobile banking platform. While the other service quality attributes were present in enhancing customer satisfaction, empathy lacked. Analysis of this study shows that empathy can be created by allowing customers to borrow credit on mobile phones to meet short term and emergency needs. Chase Bank can borrow from other banks that have introduced mobile based lending.
5.5.1.2 Mobile Banking and Operational Efficiency

Mobile banking enhances operational efficiency at Chase Bank Kenya. This study recommends that massive employee and customer education awareness be undertaken on the use of mobile banking. While it is apparent that mobile banking enhances operational efficiency a significant proportion of employees are not aware of the impact of mobile banking on their own performance and even on efficiency in service delivery. This could be attributed to the lack of information and knowledge on aspects of mobile banking. This can be overcome through consumer education and awareness creation.

5.5.1.3 Mobile Banking and Organization Performance

This study recommends that Chase bank leverages on mobile banking as a key customer relationship management tool. The use of mobile banking technology to receive and solve customer complaints is key to enhancing it as a key CRM tool. Nevertheless, from this study Chase bank can leverage on the existing platform to attract and retain customers.

5.5.2 Recommendations for Further Studies

This study recommends replication of this study to other banks especially those that have an integrated mobile lending platform for their customers. This will enhance in the validation of the findings of this study.

Secondly, further analysis should be undertaken to analyze the customer awareness levels and education systems to be undertaken for Chase Bank to leverage on the current strengths in their mobile banking system. This will inform the management on how to diversify, expand or improve on the current mobile banking platform.
REFERENCES


Cakmak I., & Tas E., (2012). The Use of Information Technology on Gaining Competitive Advantage in Turkish Contractor Firms. *World Applied Sciences Journal*, 18 (2)


Nyangosi, R., & Arora, J. S. (2011). Emergence of information technology in the Kenyan banking sector: An empirical study


APPENDIX I: CUSTOMERS QUESTIONNAIRE

This questionnaire is designed to collect data on the use of mobile banking as a competitive advantage tool using Chase Bank as the case of the study. Data collected in this study will be used with utmost confidentiality. You are not required to provide personal information in this questionnaire.

Section A: Background Information

1. What is your gender:
   Male { } Female { }

2. What is your age group
   Below 18 years { } 18 – 35 years { }
   35 – 50 years { } Above 50 Years { }

3. How long have been banking with Chase Bank:………………………………………

4. What the chase bank products you use:
   Loans and Credit { } Savings { }
   Current Accounts { } Money Transfer Services { }
   Others:…………………………………………………

5. Indicate your level of satisfaction with the products and services of Chase Bank
   Very High { } High { } Average { } Low { } Very Low { }

Section B: Mobile Banking and Customer Satisfaction

6. Have you interacted with the use of technology in service delivery at Chase Bank?
   Yes { } No { }

7. If yes, what technologies have used:
   Mobile Banking { } Internet banking { }
   Express Branch banking { } Other:………………………………………………

8. What is your level of satisfaction with the use of mobile banking in Chase Banking:
   Very High { } High { } Average { } Low { } Very Low { }
Rate the following statements on your level of agreement or disagreement

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Mobile banking at Chase bank is very convenient for me which makes me a satisfied customer</td>
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<td>10. I can access my banking needs fast using mobile banking</td>
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<td>11. I rarely encounter errors when using mobile banking at Chase bank which makes me a satisfied customer</td>
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<td>12. Mobile banking is efficient which makes me satisfied</td>
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<td>13. I can access multiple products and services using mobile banking which makes me a satisfied customer</td>
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<td>14. I can access banking services at all times using mobile banking which makes me a satisfied customer</td>
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<td>15. I can access banking services at home which makes me a satisfied customer</td>
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<td>16. I am attracted to Chase bank due to its mobile banking service</td>
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<td>17. Mobile banking at Chase Bank is reliable which makes me a satisfied customer</td>
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<td>18. Mobile banking at Chase Bank is secure which makes me satisfied</td>
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<td>19. Mobile banking allows chase bank to solve my problems and queries fast</td>
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<tr>
<td>20. Mobile banking can aid access to credit in cases of need at Chase bank</td>
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</tbody>
</table>
APPENDIX II: EMPLOYEE QUESTIONNAIRE

This questionnaire is designed to collect data on the use of mobile banking as a competitive advantage tool using Chase Bank as the case of the study. Data collected in this study will be used with utmost confidentiality. You are not required to provide personal information in this questionnaire.

Section A: Background Information

1. What is your gender:
   - Male { }    - Female { }

2. What is your age group
   - Below 18 years { }  - 18 – 35 years { }
   - 35 – 50 years { }  - Above 50 Years { }

3. How long have been working with Chase Bank:………………………………………………

4. What is your job level
   - Senior Manager    - Middle Level Manager
   - Junior Manager    - Other (Please Specify):………………………………

5. What has been the impact of technology use on bank performance:
   …………………………………………………………………………………………………
   …………………………………………………………………………………………………
   …………………………………………………………………………………………………
   …………………………………………………………………………………………………

6. What is the effect of technology use on:
   - Operational efficiency:………………………………………………………………
   - Customer Satisfaction:………………………………………………………………
   - Organization performance:……………………………………………………………..

76
**Section B: Mobile Banking and Operational Efficiency**

Please rate the following statements on your level of agreement or disagreement.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.</td>
<td>The use of mobile banking has reduced the overall operational costs of the bank</td>
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<td>22.</td>
<td>The use of mobile banking has reduced the overall transactional costs for the customers</td>
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<td>23.</td>
<td>The use of mobile banking has reduced the overall transactional costs for the bank</td>
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<td>24.</td>
<td>Use of mobile banking has reduced the costs incurred in serving customers of chase bank</td>
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<td>25.</td>
<td>Use of mobile banking has reduced the administrative expenses incurred by Chase Bank</td>
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<td>26.</td>
<td>Use of mobile banking has reduced employee costs for the bank</td>
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<td>27.</td>
<td>The use of mobile banking has led to reduced expenditure in setting up new bank branches</td>
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<td>28.</td>
<td>The use of mobile banking has reduced customer management costs for the bank e.g. costs incurred to solve customer problems</td>
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<td>29.</td>
<td>The use of mobile banking has led to increased efficiency in delivery of services to customers</td>
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<td>30.</td>
<td>The use of mobile banking has reduced customer queues in banking halls.</td>
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<td>31.</td>
<td>The use of mobile banking has led to improved customer relations with the bank</td>
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<td>32.</td>
<td>Customers perceive the bank as</td>
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secure as a result of mobile banking

33. Mobile banking has led to increased employee productivity

**Section C: Mobile Banking and Organization Performance**

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
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<th>Strongly Disagree</th>
<th>Not Applicable</th>
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<tbody>
<tr>
<td>34. Mobile banking has improved revenues for the bank</td>
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<td>35. Mobile banking has improved the revenue per person/customers for the bank</td>
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<td>36. Mobile banking has increased the profitability of the bank</td>
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<td>37. Mobile banking has increased the productivity of employees</td>
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<td>38. Mobile banking has led to multiple product delivery for the bank</td>
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<td>39. Due to mobile banking, there is increased flexibility in product innovation</td>
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<td>40. Mobile banking has enhanced new product introduction into the market</td>
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<td>41. Mobile banking has enhanced customer numbers in the bank</td>
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<td>42. Mobile banking has increased customer satisfaction levels for the bank</td>
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<td>43. Mobile banking has improved customer loyalty levels for the bank</td>
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<td>44. There is increased customer attraction due to introduction of mobile banking</td>
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</table>
45. Mobile banking has led to customer retention in the banking

46. Mobile banking has enhanced efficiency in assets use in the bank

Thank You