MOBILE BANKING SERVICES AND FINANCIAL INCLUSION AMONG COMMERCIAL BANKS IN NAIROBI CITY COUNTY, KENYA

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D53/OL/CTY/26763/14

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTERS OF BUSINESS ADMINISTRATION DEGREE (MANAGEMENT INFORMATION SYSTEMS), KENYATTA UNIVERSITY

NOVEMBER, 2018
DECLARATION

I declare that, this project is my own original work and has not been presented for award of any degree in any University.

Signed: __________________________   __________________________

DANIEL MUNYILU MUSANGO       DATE:
D53/OL/CTY/26763/14

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

Signed: __________________________ Date___________________

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Department of Management Science
Kenyatta University
DEDICATION

This project is dedicated to my dear wife Susan for her support, love and inspiration. To my family that had to bear with my busy schedule of class, job and family affairs. May God bless you all.
ACKNOWLEDGEMENT

I would like to thank the Almighty God for giving me the opportunity and energy to pursue my education. It is through His abundance grace that has brought this research work this far. This work would have not been possible without my supervisor Dr Nzuki who guided me all through. I appreciate his understanding, support and guidance towards completion of this work.
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# ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ATM</td>
<td>Automatic Teller Machine</td>
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<tr>
<td>CBK</td>
<td>Central Bank of Kenya</td>
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<tr>
<td>CA</td>
<td>Communication Authority</td>
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<td>CRA</td>
<td>Community Reinvestment Act</td>
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<tr>
<td>GSM</td>
<td>Global System for Mobile Communications</td>
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<td>ICT</td>
<td>Information Communication Technology</td>
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<td>KBA</td>
<td>Kenya Bankers Association</td>
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<td>MFI</td>
<td>Micro Finance Institutions</td>
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<td>MMT</td>
<td>Mobile Money Transfer</td>
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<td>MNO</td>
<td>Mobile Network Operators</td>
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<td>M-PESA</td>
<td>Mobile Money service by Safaricom</td>
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<td>M-SWARI</td>
<td>Mobile money service by Safaricom and CBA bank</td>
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<td>CBA</td>
<td>Commercial Bank of Africa</td>
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<tr>
<td>RTC</td>
<td>Rural Transaction Center</td>
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<td>TAM</td>
<td>Technology Acceptance Model</td>
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**OPERATIONAL DEFINITION OF TERMS**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tr>
<td>Mobile Banking</td>
<td>This is any trade, including the trading of proprietorship or rights to use stock and tries, which is begun or conceivably wrapped up by using insignificant access to computer mediated frameworks with the help of an electronic device.</td>
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<tr>
<td>Financial Inclusion</td>
<td>the movement of cash related administrations and availing of economic services that include banking and insurance at reasonable cost to the great segments of lacking and low-income earners in society.</td>
</tr>
<tr>
<td>Financial Intermediation</td>
<td>Is how much cash related establishments bring shortage spending units and surplus spending units together.</td>
</tr>
<tr>
<td>Commercial Bank</td>
<td>Bank implies an organization which goes ahead, or proposes to bear on a mix of money related exercises, for example, tolerating stores, giving credits, outside trade dealings and other related monetary intermediations.</td>
</tr>
<tr>
<td>Kenya Bankers Association (KBA)</td>
<td>KBA is the umbrella body of the managing an account industry in Kenya whose enrollment is drawn from every single business Bank in Kenya.</td>
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ABSTRACT

Financial inclusion continues to be a major issue of concern in the developing countries because of high numbers of persons without access to formal and regulated banking services. The government Vision 2030 objective on budgetary administrations was to make a lively and internationally satisfactory monetary area that would advance elevated amounts of funds and financing for the nation’s venture needs. The purpose of this study was to investigate the role of mobile transfer of funds, mobile payment for goods and services, bank account management over the mobile platform and mobile credit facilitation on financial inclusion in Kenya. The study was anchored on technology acceptance theory, diffusion of innovation theory and theory of financial intermediation.

The study adopted a descriptive research design. The target population was the number of mobile money users across both banked and non-banked population in Nairobi City County while the respondents were 336 management level staff among the 16 selected commercial banks in Nairobi County. The study relied on primary data collected by use of structured questionnaires. The collected data was coded into SPSS for analysis. Both descriptive and inferential statistics were used to analyze the data. The findings of the study were that all the variables were highly correlated with financial inclusion. Findings of the study established that mobile transfer of funds, mobile payment for goods, mobile account management and mobile credit facilitation significantly influenced financial inclusion on economy. The study concludes that mobile banking has improved the level of access to financial services to persons without formal access to commercial banks and the amount of money transferred through mobile phones has increased in commercial banks. The outreach of the banks has expanded because of provision of pay bill services and many customers were settling their bills through pay bill numbers. Minimal maintenance charges in mobile phone-based accounts attracted more customers and reduced fees charged on mobile funds transfer transactions attracted more customers to the bank. Banks customers ought to request the banks to link their account with mobile money payment services, introduction of pay bill services ought to reduce customer queues, increase the cash reserve ratios of the bank and increase the cash deposit ratios. Flexibility in the amount of credit extended through mobile phones ought to attract more customers and flexibility in repayment of mobile phone-based loans ought to attract more customers.
CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Financial inclusion involves movement of cash related administrations and availing of economic services that include banking and insurance at reasonable cost to the great segments of lacking and low-income earners in society whose access to the services is limited. It remains a vital consideration in an impressive fiscal progression and cash related advancement standards. It is held that when each individual from the general public can affect cash related administrations, their joint duties regarding the entire progression process made speedier and more quantitative impact (Ndungu, et al. 2015). Inventive improvements like handheld contraptions, PDAs, motivation behind offer devices, corners, negligible exertion ATMs has opened up a couple of movement channels for giving budgetary administrations to isolated individuals. The present time could, thusly, see the advancement of productive plans of activity as banks see cash related fuse as a sensible business opportunity. The key expectation for banks, thusly, is to make designs of activity that enable budgetary thought and are in like manner gainful over the medium to long term (Bansal, 2014).

It is undeniable reality that majority of the less privileged people need to acquire and engage in practical money related exchanges. Thus, we are tasked to address the barriers that prevent majority of the people from enjoying services available in the financial sector which include access to bank accounts, loan facilities, cash transfer services, acquiring and settlement administrations. The major focus of financial inclusion is geared
at repackaging of the services offered through the formal budgetary system to capture and consolidate people with low wage and those surviving in low living standards.

According to Jenkins (2008) the utilization of mobile cash wallets minimizes common dangers of losing money besides offering a wide coverage of usage by relying on a mobile telephony technology that has been accepted and adopted by many people all over the world. Traditional threats while using hard cash are possibilities of theft, and for those that dispatch money through traditional means, for instance, mates or relatives and public transport service providers, there are odds of the cash not getting to the wanted recipients. These casual methods of cash transmission and exchange are characterized by prolonged periods to deliver and inconveniences translating to costs through lost time and opportunities. These challenges have seen government authorities and interested stakeholders among them the CBK develop products that are accessible to the disadvantaged. Hannig and Jansen, (2008) say, Access to financial services is an area that has attracted attention of policymakers, experts, and scholars who have been pushing for its consideration as a policy concern. In South Africa, the Mzansi check is a National keeping cash development, instigated in 2004 for banking institutions to offer accounts at minimal costs with a specific extreme goal to make banking reachable and sensible to the general society (Kotler, 2010). Banks like Standard Bank have offered the branchless idea where they have ousted the rigid banking hall operations with ATMs and other automated electronic service delivery channels. A major notable hindrance to banking services has been the fees and commissions that banks charge to operate accounts making it difficult for low wage authorities to persevere. The Standard Bank South Africa
developed and has shown the Mzansi Blue Account as a possible relief for the financially deprived people (Kotler, 2010).

A study by FinMark, (2012) indicated that 65% of the Zimbabweans stays in the rural range and that a mere 5% of these are able to approach a bank which is located in 30 minutes accessible distance. A structural policy for financial thought was set up by the Reserve bank, the financial services industry and diverse related accomplices. The policy is directed at encouraging banks to avail their services to the deprived masses by establishing countryside centers or initiating and adopting innovative developments that would incorporate and serve interest of the unbanked masses. The RBZ continued push for the unbanked to be considered in financial services is remarkable as the devolved financial activities would activate economic growth and development.

Since its introduction in 2007, Safaricom's portable money service, M-Pesa, has completely transformed Kenya's financial system and has become the leading medium of cash exchange for many. It is at present used by no under 70% of families in the country, and at least 450% of the country's GDP activities are coordinated through M-Pesa. In 2014, more than $20 billion was executed through the administration. The organization has evolved from a simple money trade stage to a monetary adjust, and a portion arrange that empowers customers to pay for economic and social engagements around the country. It would be obvious to express that the explosion of fluid money has been much the same as the web in Kenya; a total change in business, and in the way, which people deal with, and utilise money. How this worked out as expected is a delayed consequence of three stand-out parts; improvement, inaction as for controllers, and vitality of a
monopolistic market on-screen character. These three reasons are greatly attributed to the powerlessness to borrow the Kenyan portable trade by the other African nations that have a sweeping unbanked masses requiring ensured and expedient money trade benefits. This evolution has received acceptance from a wide range of various foundations and has come to great service of the officially disregarded poor. Affordability and access to mobile devices by nearly all the people is the major driving force behind acceptability and successful adoption of the service (Mbiti and Weil, 2011).

In the year 2002, around 8 percent of Kenyans claimed a cell phone, however that figure has exponentially grown to 80 percent today, a ten times rise (Poushter and Oates, 2015). M-pesa and related versatile smaller scale credit offices M-Shwari and KCB-M-PESA have prompted increment in reception of more monetary developments. This has expanded rivalry, lessened cost, enhanced consideration of the low market section with low pay and speedier approaches to execute (Ntwiga, 2016). Indeed, even with all these budgetary consideration advancements, certain market fragments, around 25 percent of grown-up populace are still not getting to money related administrations as featured in FSD 2013 report.

1.1.1 Mobile Money Services
These are the services that interface supporters monetarily through the cell phone and enable movement of money from one point to another. The services permit members of a mobile telephony company to register and store monetary value in a phone and allow them to share the value with others in the same system network. The stored value is accessible and convertible to cash at easily reachable points at cheap costs. Use of cell
phones to move money has become one vital system through which mobile technology is changing the life and the way people do business in growing economies (Gavin K and Jesse M, 2009).

Kenya is acknowledged globally as the overall pioneer with respect to portable money administrations. The telecom leader Safaricom pushed its money transfer service M-Pesa in 2007 as a fundamental way to address movement of little portions of money between customers but the service has currently transformed into the world's best and admirable money trade advantage.

According to CA statistics (2017), the development has been utilized by nearly 30 million people to acquire and settle payments for necessary services, get to credits, and facilitate unlimited movement of money all through the world. M-Pesa is in like manner a primary wage generator and a major boost for Kenya's economy and has spread to 10 countries, including Albania, Egypt, Romania, Lesotho, and Tanzania.

Regardless, in Kenya the drawback has dependably been the lack of mobile interoperability to enable sending money among customers of different communication networks. Much of the time, customers have seen it as too involving and not affordable to them. Competing companies, for instance, Airtel have also protested that Safaricom's quality and leadership in the market weakens their business, and have been lobbying for governments intervention to ensure none has business advantage over the other.

However, this is set to come to an end if new interoperability arrangements pioneered by the industry players and experts from both Kenya's ICT ministry and the Communications Authority of Kenya. The arrangements are at advanced stage to
empower customers to send money across the different networks at no additional cost. Successful interoperability is expected to result to a common and better controlled payment system which would improve the customers’ service feel. This would also make the operating environment more competitive for the players in the industry as a result of a common levelled playing field.

The selection and acceptance of cell phone has happened at unimaginable rate and to the most profound level of any customer level innovation ever (Jack and Suri, 2010). Three months after the official introduction of M-PESA service to the public by Safaricom, over 111,000 users had enrolled for the service. This pattern had exponentially risen to 23.4 million users as at of December 2017. Notable growth has also been seen in other mobile money services like Airtel money, Telkoms T-cash, Equity Bank equitel, Iko Pesa, Mobi cash, Tangaza and family Bank Pesa Pap which enable subscribers to enroll, store and pull back cash and settle different bills at the comfort of their homes or offices. Overall, as at of December 2017 30 million users had subscribed to mobile money services. M-pesa the pioneer mobile money service by Safaricom was originally developed to enable microfinance borrowers repay their loans by using Safaricom airtime resellers located across various parts of the country. However this has transformed to win a large share of formal banking services in the country. According to Omwansa and Sullivan (2012) the banks were fighting hard to have M-PESA shut down one year after its launch because its popularity was spreading very fast and was posing a major threat to their operations.

Mobile banking services keeps on assuming a leading position in Kenya’s financial landscape by guaranteeing consistent exchange of cash, portable installments among
different exchanges. The quick development of the cell phone-based cash exchange eminently the M-PESA, since its presentation in 2007 has been seen by numerous as having delivered a noteworthy move in Kenya's money related scene. The quick acknowledgment, selection and utilization of cash exchange benefits by nearly all the grown-up populace have clearly recommended that there is an immense potential for the advancement of comprehensive formal money related administrations through cell phones (Susan and Graham, 2012). With the enhanced MMT networks posing an adaptable exchange accounts which are accessible anywhere and at any time with minimal effort the technology subsequently offer adequate income administration advantages capable of promoting financial inclusivity.

Adoption of mobile based applications by banks to allow access to their services has enabled customers both new and existing to open accounts and operate them without physically accessing the bank premises. Nearly all the commercial banks in Kenya have employed mobile banking services. According to the CBK, in 2016 transactions amounting to over Kshs 9.2 billion were conducted daily through real-time mobile-based platforms.

Technological advancement and the perceived digital generation has seen the persistent development and innovation of banking patterns. With the growing and un-ending demand for finance related services, entities other than the historical banks have joined the industry in an effort to seize a portion of opportunity within the banking industry. Non-bank entities have developed mobile banking based applications which are currently leading in mobile loan disbursements in Kenya. These include; Tala, Branch and Saida.
1.1.2 Financial Inclusion

According to the word bank, financial inclusion involves access to money related products and services that meet their needs at fair and reasonable considerations. The services include savings and withdrawal of cash, payments and transfer of funds, insurance and credit facilities. It is expected access to these services would generally enable individuals and businesses to achieve their planned goals and hence improve their standards of living.

As indicated by Demirguc, (2008) poverty is an option that is other than an absence of money. It extends to scarcity and nonappearance of access to the tools and means through which the poor could enhance their living standards. Evasion from the formal money related structure has dynamically been perceived as one of the hindrances to a world without destitution. In many creating countries, most of families don't have a record with a money related association, while little firms sometimes allude to inconvenience in getting to and overseeing financing as a key constraint on their improvement (Kunt, 2011).

Regardless, the utilization of unregulated financial arrangements proposes that the poor are constrained in their capacity to spare, repay duties, and manage financial risks. On a macroeconomic level, this money related challenges on the poor can deter budgetary headway and widen financial resource disparities (Honahan, 2008).

Finding incorporative means to extend cash related administrations to the poor has now transformed into a pressing test. The force around mobile virtual cash has ascended to some degree since it is extensively observed as a sensible method to offer access to
financial resources around the world. As indicated by the CGA, around 1 billion persons across the world own a mobile device but lack access to formalized bank services. Enabling access to flexible monetary associations would encounter challenges and is apparently not going to succeed rapidly as expected. In spite of uplifting financial lives of the penniless society, versatile money is a strong foundation to overhaul business output by expanding the proficiency and slashing down the cost of trades, upgrading security and making a starting phase on which diverse trades can thrive.

Mas (2010) noted the potential that mobile money has displayed in changing money related considerations. "Whereas most traditional budgetary consideration models have concentrated on either lending' or 'reserve funds' approaches, the M-PESA revolution proposes another approach concentrating on building the funds movement channels on which a more extensive arrangement of monetary administrations can flow (Radcliffe, 2010). More advantages of mobile money technology emerges in light of the fact that liquid cash frameworks can fill in as a stage for extra advancements, ranging from online cash settlement services to productive money exchanges for persons in remotest areas.

1.1.3 Mobile money services on Financial Inclusion
The transformation seen in mobile phones technology in making money related transactions has been developing across the world at an extraordinary phase. The continued acceptance of the mobile money transfer services has added impetus towards financial accessibility by non-banked population.
The achievements and advancement in technology specifically mobile devices have completely changed delivery of financial services and facilitated innovative ways of providing services to the deprived.

The increasing adoption of mobile banking has shaped new business models in Africa and has forced financial service providers to reach to consumers in geographically remote areas where formal banking services are lacking (Jack & Suri, 2014). Credit facilities which include loans available via mobile devices have been developed to serve the underprivileged in addition to traditional formal loans and savings offered by banks (Ngugi, 2015). Mobile applications developed to avail these products have completely changed how Kenyans access loans, and brought to an end the inconveniences of completing long application documents, searching for guarantee or being subjected to extensive scrutiny for little loan amounts.

The Governor of the Central Bank of Kenya, noted that formal banking setup and practices, restricted access to bank branches due to their locations in majorly densely and urban areas and complex and costly account opening and maintenance which are to blame for lesser financial inclusion in most developing countries. The mobile companies have continued to concentrate on this opportunity in trying to take advantage of the high adoption rates of their services through movement of money from one device to another almost instantly. Mobile devices are easily accessible and transferring money using the devices is simple and available in many parts of the country. Using mobile devices to move money is seen to be the solution to this financial exclusion challenge since the mobile customer numbers are growing significantly. While launching mobile banking
application, the CEO of Barclays Bank Kenya noted that more than 50 per cent of consumers around the world want to do their banking via the mobile phone and the future of banking is digital. The formal banking and financial service organizations are driven by extra acceptance, extended reach by agencies and low cost of mobile money services (Waihenya, 2012).

Kenya has earned a global profile as the pioneer and market leader in mobile money services. It is much easier to pay for a taxi service using a mobile device in Nairobi that in New York. This is because of the global-leading innovative mobile money service, M-PESA (The economist, 2015). The number of people with mobile subscription by December 2017 stood at 42.8 Million representing 94.3% penetration rates (CCK Sector Statistics report, 2017). Interestingly, 30 million of these are subscribed for mobile money services. All the mobile companies in the country have established a mobile based money movement service and recruited agents all over the country to serve their customer money exchange needs. Currently, there are forty two licensed commercial banks and twelve microfinance banks in Kenya with a total of 41.7 million with bank accounts (CBK annual report, 2016) whose fast growth is associated with adoption of mobile phones to open accounts. Nevertheless, 22.3% of bank accounts are dormant (FSD, 2016). All the members in the financial sector utilizing every opportunity available to ensure they work together with the mobile companies not only to maintain the existing relationships but also reach the new customers who would not have been captured if the banks remained contented (Wainaina, 2009). Major parts of the country covering some parts of the rift valley, Easter and North eastern have a massive population without access to formal financial services. These provide mobile service providers with the chance to
focus on offering mobile money services at affordable cost and limited documentation. The companies have also partnered with banks in order to offer comprehensive financial products to the population that would better lives. Safaricom Ltd partnered with Commercial Bank of Africa and later Kenya Commercial Bank and developed services branded “M-SHWARI” and “KCB-M-PESA” that enable non-bank customers to open a bank account for safaricom’s M-PESA registered customers that has credit and saving features. With such collaboration, the society at large would also benefit with more persons involved in the formal financial segment (Kabbucho & Coetzee, 2010).

To realize monetary presence for the underprivileged population, the development of mobile money technology has been mentioned as a turning point in the financial industry. (IFC Mobile money report 2011).

1.2 Statement of the Problem

Availability of formal financial services that include savings, credit, and remittances continues to be a challenge for the underprivileged society members globally. These sections of the society have for long been deterred from participating in the formal financial segment. Renowned financial organizations like banks have been competing and some have ended up closing some local outlets thus blocking entrance to these locations by financial organizations (Agarwal, 2010). Incredible progress in the formal banking has been realized but only 43.7% have access to formal banking operations in the town areas and 21.3% access to the rural locations. (Financial Sector Deepening Kenya et al. 2013).
The reasoning attached to opening bank account is majorly associated to the necessity to receive payments like salaries and not to accumulate savings. To great extent, this informs the high number of dormant accounts in commercial banks (Johnson 2014). A study by Inter Media Kenya (2015), indicated account dormancy rate at 25%. The study indicated that users were abandoning the traditional bank accounts for the convenience of mobile money services.

The speedy acceptance of mobile money services in the country has sparked eagerness all over the world on the ability to offer financial services to the underprivileged through the mobile phone technology (FSD Kenya). Mobile saving money has been seen as an answer for budgetary and financial incorporation and the test is to affirm whether use of mobile devices to settle transactions is the answer for monetary consideration in Kenya. Most of the Kenyan populace remains 'unbanked' and a portion of the components that have been referred to as causing poor people and helpless gatherings not to take saving money services are; unavailability, complexity and high expenses (Wandera, 2010).

Studies done locally include; Murega (2013) studied the relationship between mobile money transfer and financial inclusion in Kenya. The introduction of mobile money transfer services has been the crucial landmark in the reinforcement of the service and suitability by the financially excluded people more so in the sidelined set ups. He further indicated the essential facilitators towards this remarkable growth of mobile money transfer service to be the number of subscribers with access to the phone. Boro, (2016) studied the effect of mobile banking on financial inclusion in Kenya. He notes that the number of mobile money subscribers, mobile money agents, mobile money transactions
and value of mobile money transactions were satisfactorily explaining deposit bank accounts. He further notes Income, population, literacy, deposit and credit diffusion as key determining factors to financial inclusion. Munyi, (2011) in his research on responses by commercial banks to the introduction of mobile money transfer notes that there has been notable improvement in the innovation and solution development in both telecommunications & financial institutional set ups both geared towards ensuring that there is improved availability of money when needed conveniently and at low transactional costs. The study indicates that since 2007 there has been unexpected competition to commercial banks products from the instruction, rapid evolution & run-away success on mobile money transfer services leading to increased access and availability to financial ability at the convenience of the GSM handset.

Waihenya (2012) in his study on the effects of agency banking on financial inclusion in Kenya identifies that unavailability of financial services in the developing economies such as Kenya; financial services are largely used by only sections of the population. The demand for these services has not been adequately provided. The excluded regions are the rural, poor regions and those living in harsh climatic conditions where it is difficult to provide the financial services. The excluded population then has to entirely rely on informal and unstructured modes for accessing finance at very exorbitant prices. This therefore leads to a cycle of poverty and dependence on the informal financial services service provides at whichever costs hence major portion of their earnings is paid to the money lender and the population is in perpetual poverty cycle.
The studies on mobile money service and financial inclusion focused on transformational aspect of mobile banking with specific attention to M-PESA and relied primarily on secondary data.

This study therefore sought to evaluate the relationship between mobile banking services and financial inclusion in Nairobi City County with focus on both additive and transformational aspects of mobile banking and in addition incorporating primary data in the study.

1.3 Objectives of the study

The general objective of the study was to establish the relationship between mobile banking services and financial inclusion in Nairobi City County, Kenya.

1.3.1 Specific objectives

The specific objectives include;

i. To examine the effect of mobile money transfer on financial inclusion in Nairobi City County, Kenya.

ii. To assess the relationship between mobile payment for goods and services and financial inclusion Nairobi City County, Kenya.

iii. To determine whether mobile account management affects the degree of financial inclusion in Nairobi City County, Kenya.

iv. To establish the effect of mobile credit facilitation and financial inclusion in Nairobi City County, Kenya.
1.4 Research Questions

The research questions include;

i. What is the effect of mobile money transfer on financial inclusion in Nairobi City County, Kenya?

ii. What is relationship between mobile payment for goods and services and financial inclusion Nairobi City County, Kenya?

iii. Does account management using mobile phones influence the degree of financial inclusion in Nairobi City County, Kenya?

iv. How does mobile credit facilitation influence financial inclusion in Nairobi City County, Kenya?

1.5 Significance of the study

To the financial sector, the study would be of great use in demonstrating the potential influence and impact mobile money services have in facilitating transfer of money, exchange of goods and services, managing bank accounts, banking over the phone and also accessing credit and other bank services across the customers in real time and convenient hence enabling the financial inclusion. To commercial sector, the study would highlight the trends in the acceptability of the services hence provide further focus in defining and enhancing products & services to achieve technological superiority supporting the financial sector.

The County government & regulators with the understanding of this study would affect the required administrative structure, enactments and extra control methodology required
in the keeping money industry towards operational and foundational dangers that may emerge from the utilization of the new technology.

While this is a rapid changing environment, the study would provide insights and contribute to body of research & literature in this field and future researcher in the understanding the concept of mobile banking services & financial inclusion.

1.6 Scope of the Study

The study sought to establish the relationship between mobile banking services and financial inclusion in Kenya. The specific context of interest was the Nairobi City County, Kenya. The study used primary data that was collected from management level managers and supervisors of the 16 selected tier one and tier two banks in Nairobi City County.

1.7 Limitations of the study

High competitiveness and confidentiality in the banking industry hindered honesty in information sharing by the respondents. Unwillingness of respondents to take part in giving required information was anticipated as a challenge. The problem was curbed by assuring respondents that the study was merely academic and their information was handled with utmost confidentiality. Another limitation of the study was the challenge of insufficiency of funds to meet all the financial obligations adequately. However, the researcher was expected to optimize available resources in the prevailing circumstances the integrity of data analyzed.
1.8 Organization of the Study

The project comprises of five chapters. Chapter one involves background of the study, statement of the problem, objectives of the study, research questions, and significance of the study, scope of the study, limitation of the study, and organization of the study.


Chapter three deals with research methodology under; introduction, research design, target population, sampling design, rationale for sample selection, data collection instruments, validity of the research instrument, reliability, data analysis and ethical considerations. Chapter four explains the findings of the data analysis, presentation and interpretation of the findings. Chapter five summarizes the analysed findings, makes relevant conclusions and recommendations while at the same time giving suggestions for further studies.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of the evolution of mobile banking services and its relationship with financial inclusion in the developing economies. It also provides empirical review of studies on Mobile banking and the relationship it has on financial inclusion in Kenya. Finally, it provides summary of literature review and the conceptual framework.

2.2 Theoretical Review

This study was anchored by the following theories; theory of technology acceptance model, financial intermediation theory and diffusion of innovation theory. The theories were relevant to the study because they established a positive link between financial access and economic progression.

2.2.1 The Theory of Technology Acceptance Model (TAM)

TAM is a hypothetical model proposed by Davis, (2009) that describes how clients come to acknowledge and utilize an innovation. Flexible installment methodology is basically data innovation (IT) techniques and channels through which clients make different installment exchanges. Studies demonstrate that the acknowledgment to utilize the transferrable installments changes with the setting in which clients can utilize an adaptable installment method. This investigation concentrates on flexible management of an account and money related consideration and applies the Theory of Technology Acceptance Model (TAM). The model proposes that when clients are given another
innovation, various elements impact their choice about how and when they would utilize it. These components are seen convenience characterized as how much a man trusts that utilizing a specific framework would improve his or her activity execution, and saw usability characterized as how much a man trusts that utilizing a specific framework would be free from exertion (Davis, 1989). These two components are thought to be the essential determinants for embracing and utilizing another innovation and are affected by different factors, for example, security concerns, cost, comfort, and fulfillment (Lu, Yu, Liu and Yao, 2003). Seen convenience specifically influences saw value and both decide the client's demeanor towards utilize and in the end to the real utilization of the framework (Viehland and Leong, 2007).

TAM has been generally used to anticipate client acknowledgment and utilize in view of perceived value and usability (Ndubisi and Richardson, 2002). Thusly, TAM was picked as the suitable model and was stretched out to incorporate different factors, for example, perceived simplicity of availability of the portable installment administrations, perceived minimal effort of the versatile installment administrations, perceived accommodation, perceived security, perceived support from the flexible service provider.

2.2.2 Financial Intermediation Theory
Money related intermediation is the degree to which monetary establishments bring shortfall spending units and surplus spending units together (Ndebbio, 2004). A vital inquiry that speculations attempt to answer is the reason do financial specialists initially loan to banks who at that point loan to borrowers, rather than loaning straightforwardly? Contentions indicate out the way that banks can viably screen borrowers and along these
lines assume the part of appointed observing (Diamond, 1984). Diamond demonstrates that lessened checking costs are a wellspring of this similar preferred standpoint. He contends that delegates give benefits by issuing optional budgetary resources for purchasing essential money related resources. On the off chance that a intermediary gave no service, financial specialists who purchase the optional securities issued by the go-between should buy the essential securities straightforwardly and spare the middle person's expenses.

Money related market gratings can be the basic system for producing steady pay disparity or destitution traps. These market contacts incorporate data asymmetry and exchange expenses and assume a focal point, affecting key choices with respect to human and physical capital amassing and word related decisions. For instance, as indicated by (Demirguc-Kunt, Asli, Beck, and Honohan. 2008) in hypotheses focusing on capital gathering, money related market flaws decide the degree to which the poor can get to put resources into tutoring or physical capital. In speculations focusing on business enterprise, money related market blemishes decide the degree to which capable however poor people. Taking everything into account, this theory is important to the examination since it sets up a positive connection between money related advancement and monetary development.

2.2.3 Diffusion of innovation theory

This theory of technology was put forth by Rogers (2003). In the theory, a technology is simply a plan for value relation that lowers the doubt in the cause-effect relationships involved in achieving an intended outcome. The theory of innovations has four key elements. These are: innovation, communication channels, time and social system.
According to Rogers (2003) an innovation is an idea, practice, or project that is perceived as new by an individual or other unit of adoption irrespective of when it was invented. Communication is a process through which parties produce and exchange facts to reach a common agreement. Communication occurs through conduits between terminals. A channel is the means by which a message gets from the generator of the message to the receiver. In interpersonal channels, the communication may have a characteristic of homophily or heterophily. In homophily, the focus is on the degree to which different individuals communicating share common features, such as beliefs, education, and socioeconomic status. Heterophily refers to the degree to which two or more individuals who interact are different in certain attributes. For innovation to diffuse there must be heterophily. Time is another element in the theory of diffusion by Rogers (2003). The innovation-diffusion process and rate of adoptions have a time element. The last element in the diffusion model is the social system.

The social system refers to the set of connected units engaged in common problem resolution to accomplish a similar aim. Five stages are involved in the innovation diffusion process and include; the knowledge stage, the persuasion stage, the decision stage, the implementation stage and the confirmation stage. In the knowledge stage an individual learns about the presence of innovation and sought knowledge about the innovation. Awareness knowledge involves a person knowing an innovation exists. How-to-knowledge involves how to use an innovation correctly while the principles knowledge involves knowing functioning principles describing how and why an innovation works (Rogers, 2003).
This theory was importance to this research since it laid out the manner in which new innovations spread. An innovation was, therefore, spread if people got to know about it, and were persuaded that it was good, if they decided to adopt and implement it and if others confirmed it as a good choice. Failure at any stage hindered the spread of the innovation.

2.3 Empirical Review

This section reviewed literature from previous studies on mobile banking services and financial inclusion in Kenya.

2.3.1 Mobile money transfer and Financial Inclusion

Waiyenya (2012) studied the effects of agency banking on financial inclusion in Kenya. The examination inferred that agency banking has the impact of expanded money related incorporation in the country. Findings of the study indicated that the levels of budgetary incorporation are low and that there is eminent gap not filled by formal banking system. It additionally noticed that office managing an account is confronting a great deal of difficulties from the expanding portable infiltration in the nation and versatile cash exchanges expanding at a similar rate.

Achieng (2011) studied the strategic responses of Kenya Commercial Bank to mobile money transfer in Kenya and found out that the money transfer service industry could be described as emerging, rapidly growing or a high-speed market in Kenya and any developing country. The study indicated that with the strategic positioning of the mobile telecommunications providers and the need for banking institutions to partner and
integrate with the Mobile money transfer provides in order to remain relevant and share
in the huge potential offered to mobile subscribers. A few cross-sectional examinations
have been embraced on media communications and financial development pointers in
developing nations. In any case, ideas have demonstrated the presence of system
externalities in media transmission framework prompting higher development impacts.
Further, in developing nations, cell phones and established lines showed up substitutes
instead of supplements.
In any case, not very many examinations have concentrated on the African continent, in
spite of the critical development of flexible rollouts experienced by numerous African
nations and great success especially with the recent M-PESA phenomenon and related
products that has taken the world to a surprise in its uniqueness and adaptability in Kenya
and efforts to replicate the same in other networks like India, Qatar, Fiji, Vietnam are
underway. These are the developing economies where there has been identified growth in
mobile phone penetration which are consistent with those studies carried out in the major
economies.
Chithral and Selvam (2013) in their endeavor to recognize and break down the
determinants of budgetary Inclusion did observational investigation that uncovered that
financial components like Income, Literacy and Population were found to have
noteworthy relationship with the level of monetary incorporation. Further, physical
foundation for availability and data were additionally altogether connected with monetary
incorporation. Among the keeping money factors store and credit infiltration were
discovered altogether connected with monetary consideration. At long last, credit-store
proportion and venture proportion were not fundamentally connected with money related consideration.

An examination by Ozurumba and Chigbu (2013) basically surveyed determinants of budgetary developing in Nigeria in the vicinity of 1970 and 2010. The investigation was necessitated by the focal part which the management of an account framework plays in the activation of funds and designating cash for venture exercises required for financial improvement. Among the factors perceived against monetary developing are; bank speculations, cost of bank credit, sparing activation by business banks, clearing exercises by the banks and private division credit. The investigation utilized of optional information sourced from the Central Bank of Nigeria distributions and those of the Bureau of Statistics for a time of 41 years. From the review the examination watch that the parts of store cash banks in the improvement of Nigerian money related framework are basic.

The estimation of checks cleared has a negative and huge association with budgetary extending. Budgetary sparing and prime loaning rate have a negative and immaterial effect on monetary developing; store cash banks resources and private segment credit are measurably huge and decidedly identified with money related extending. The investigation prescribes foundation of banks branches and country managing an account plot keeping in mind the end goal to prepare financial resources that are outside the framework for profitable assumption. The service experts ought to likewise fortify the lawful and administrative system inside which the commercial banks and financial systems operates.
2.3.2 Payment for Goods and Services and Financial Inclusion

A study by Mutsune in (2014) examines money related consideration through flexible managing an account in Kenya. The investigation inspects Kenya's exceedingly fruitful cash exchange display, M-PESA, with an end goal to investigate the nature and part of budgetary comprehensiveness in empowering financial action. The examination concentrated on investigating a system that can be utilized to assess how money related consideration in Kenya through versatile managing an account has affected financial dynamism. The thoughts displayed are a creative investigation that mixes financial considering and with parts of common science with the point of building up a structure that can be connected to proper information. The investigation prescribes adaptability in this new type of innovation application by approach producers. Because of expanding speed of exchanges in Kenya, and the expanding presumption of managing an account benefits by portable specialist co-ops, the financial experts ought to backpedal to the planning phase to recalibrate controls on cash supply and keeping money benefits separately. The examination recommends a nearby regard for arrangement worries in future investigations.

Keeping money is typically characterized as managing an account administration with the assistance of cell phones or PDAs. The offered services may incorporate exchange offices and also other related administrations that cook essentially for instructive requirements spinning around money related exercises (Tiwari, 2006). Mobile money saving began with the making of administrations by banks which was found through the cell phone. These offices went for empowering clients get to data identifying with their records. Consequent advancements have seen the portable keeping money marvels keep
on growing consistently. Portable keeping money takes a few measurements of execution all speaking to another appropriation channel that permits monetary establishments and other business performing actors to offer budgetary services outside commercial bank premises.

2.2.3 Mobile Account Management and financial inclusion

The requirement for helpful methods for getting to budgetary assets past the regular standards has seen the repetitive development and modernization of saving money designs. What's more, given the colossal interest for back situated administrations, organizations adjacent to the recorded banks have joined the shred trying to get a bit of the apparent cake of chance inside the saving money industry. The repressed interest for a reasonable and dependable method for holding stores while guaranteeing that hazard levels are dispatched to a base is reliably unfurling. A framework with the possibility to pulverize the chronicled obstacles of cost and free access which have for quite a while hindered willing partakers of keeping money administrations summons quick consideration and premium. The phenomenal take-up of cell phone managing an account benefits in Kenya is a demonstration of this reality (Wambari, 2009).

Porteous (2006) categorizes mobile banking into two facets; First being additive where a mobile device is just used a supplemental conduit to manage and maintain an existing bank account by adding more features for convenience and secondly being transformational where financial products and services offered through mobile devices are aimed at users who have no formal bank accounts with the traditional banking establishments. It is thus basic to know the business condition in which banks work and recognize client groups that the banks may try to target by means of Mobile banking. For
instance, many people do not own bank accounts but own mobile phones and this unbanked population possess controls huge chunk of money running into billions of shillings which is not banked as witnessed in M-pesa transactions which runs into billions since its advent (Asongu, 2012). As a result, this clientele has been brought on board to main banking stream thereby enabling banks tap on the resources much needed to grow their revenue base as well as their customer base as occasioned in the recent launch of M-shwari partnership between Commercial Bank of Africa with Safaricom which is going to reach many unbanked populations.

2.3.4 Mobile Credit Facilitation and Financial Inclusion

Mobile banking facilitates a good number of means in which the bank can use to give services. The effect of a conveyance means is determined by three goals which are related. These are increasing sales volume, reducing costs of distribution and increasing customer satisfaction. One of the essential errands of a circulation channel is to build the volume of interest at items at gainful costs. This object is reached by expanding operations productivity with the goal that those losses/costs are limited that are caused by interruptions in considering client purchases orders. Facilitate a positive notoriety of the association's calculated limit may help produce extra requests. Versatile managing an account adds to accomplishing this objective by following means: whenever anyplace access to keeping money administrations; accessibility of push administrations to propose transaction and access to credit on an urgent basis.
As per Jonathan and Camilo (2009), most portable exchanges in the creating scene empower clients to do three things: Store esteem (money) in a record open through a handset. At the point when the client as of now has a ledger, this is for the most part an issue of connecting to a financial balance. On the off chance that the client does not have a record, at that point the procedure makes a financial balance for him/her or makes a pseudo ledger, held by an outsider or the client’s portable administrator; Convert money into and out of the store esteem account. At the point when the record is connected to a ledger, at that point clients can visit banks to trade out and money out. In many occasions, clients can likewise visit the GSM suppliers’ retail locations.

As indicated by Demombynes and Thegeya (2012), from one viewpoint a mostly coordinated item plainly depicts the part of the bank (which gives and claims managing an account administrations) from that of the versatile specialist co-op (which gives portable communication foundation and controls the operator arrange). Hence the bank repays the versatile specialist organization for access to the system and appreciates the rest of the benefits. This sort of agreement all the more nearly resembles an obligation contract between parties. The mobile phones are used to rate the credit worthiness of a customer based on the volume and frequency of mobile money transfer. This rating determines the amount of credit one can access. The credit is applied and received over the mobile platform. Like in Kenya there are credit platforms on Airtel Money, M-PESA, Mshwari, KCB M-PESA and even branch.com network.

Then again, a completely incorporated arrangement may not draw a similar refinement amongst bank and versatile specialist organizations. For this situation, the dispersion of
surplus is dependent upon the relative dealing energy of the bank and portable specialist organization. This kind of agreement all the more nearly takes after a value contract between two gatherings. Value like contracts would probably be mind boggling and in this manner harder to consult than obligation like contracts, there-by exhibiting a potential obstacle towards the objective of expanding access.

The web and the Mobile telephone two innovative headways that have significantly influenced human conduct in the most recent decade-have begun to merge. The results of this affiliation are versatile information administrations. Utilizing an assortment of stages, administrations are being made to empower cell phones to perform numerous exercises of the conventional web but in a lessened configuration for cell phones. One zone of movement is portable managing an account – one of the primary regions of business exchange on the remote web. Managing an account is a range that has reached out in various courses as of late, including phone and internet keeping money. Versatile keeping money gives yet another diverts to managing an account benefits in developing business sector, gives some probability to turning into an essential channel.

The spread of cell phones over the creating scene is a standout amongst the most exceptional innovation endeavors of the previous decade. Floated by prepay cards and economical handsets, a huge number of first time phone proprietors have made voice calls and instant messages some portion of their day by day lives. However, a significant number of these new cell phone clients live in casual or potentially money economies, without access to monetary administrations that others underestimate. Without a doubt over the creating scene there are presumably a greater number of individuals with
versatile handsets than with ledgers (Porteous, 2006). Different activities utilize cell phones to give budgetary administrations to the unbanked. These administrations take an assortment of structures including long separation settlements, micropayments and casual broadcast appointment trading plans – all pass by different names including versatile keeping money, portable exchanges and versatile installments.

The terms M-keeping money, M-installments, M-exchange and M-back allude by and large to an arrangement of utilizations that empower individuals to utilize their cell phones to control their financial balances, store an incentive in a record connected to their handsets, exchange finances or even access credit or protection items. The main focus for these applications was customers in the created world. By supplementing administrations offered by the saving money framework, for example, check books, ATMs, Voice mail/landline interfaces, shrewd cards, purpose of offer systems and web assets, the portable stage offers a helpful extra technique for overseeing cash without taking care of money (Karjaluoto, 2002). For clients in the creating scene the interest of these Mobile managing account/M-installments frameworks might be less about accommodation and more about availability and reasonableness.

2.4 Summary of Literature Review

This section looked at the theoretical framework where it talked about the speculations on which the investigation was discovered: monetary intermediation hypothesis Demand and supply side Twin Theory, and Productivity increases and lessening in exchange costs. As per monetary intermediation hypothesis, money related organizations exist to mediate between the surplus and deficiency units in an economy by empowering the trading of
advantages. In any case, this ought to be done in a money related way to restrain the working costs and lift the salaries for these banks. Budgetary intermediation speculation draws out the imagined by flexible sparing cash in the financial intermediation process by engaging the transparency of keeping cash benefits over the wireless. From the above dialog of the hypothetical and observational writing, restricted research has been directed on the connection between mobile money and budgetary incorporation in Kenya. It is normal that there ought to be a positive connection between flexible money saving and financial inclusion, however no known study has been directed to set up the connection between the two thus the study gap. The current investigations have been done in different economies which have diverse working environment from that in Kenya. This study therefore seeks to fill this research gap.

2.5 Conceptual Framework

A conceptual framework is a fundamental structure that comprises of certain theoretical pieces which speak to the observational, the experiential and the expository parts of a procedure or framework being imagined. It is an arrangement of expansive thoughts and standards taken from applicable fields of enquiry and used to structure an ensuing presentation. The interconnection of independent and dependent variables completes the framework for certain normal results.
Figure 2.1: Conceptual framework

Source: Author (2018)
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides the methodology of the study. It provides the research design, population, sampling design, data collection procedures, data validity and reliability and data analysis.

3.2 Research Design

Descriptive research design was employed for this study. The real motivation behind descriptive research design is to depict the situation at present in the environment of study. It is a procedure of gathering information with a specific end goal to give expected results in regard to the research under study, (Mugenda and Mugenda, 2003). The type of the study used on investigative research was appropriate in gathering information on people’s attitudes, sentiments and behaviors, (Babbie, 2004). Descriptive research was appropriate for this study because it presented specific state of affairs in describing the relationship between mobile money services and financial inclusion.

3.3 Population

The targeted population for the was 336 senior managers and supervisors of the 16 tier one and tier two commercial banks in Nairobi City County, Kenya. These according to the Central Bank of Kenya control 80% of the banking sector in Kenya and have a large branch network. According to the Kenya Bankers Association, there are 336 management staff among the 16 banks who are mainly senior managers and supervisors.
3.4 Sample

The study adopted a census of all the 336 management level staff from the 16 selected commercial banks in Nairobi City County. The selection of the commercial banks was based on bank size-based on branch network and only banks with more than 30 branches were selected. These were expected to have wider reach and presence and thus suitable to obtain more inclusive opinion on mobile money banking services.

3.5 Data Collection

Data collection was the most crucial part in gathering the required information with a view of achieving the research objectives stated. The researcher acknowledged the various options available as data collection methods or research instruments, each with its advantages and disadvantages. Primary data was collected using a questionnaire containing both closed ended questions. The open-ended questions allowed the individuals to respond and express in their own feelings what they perceive to be most significant while the closed ended questions were considered as simple to manage and fairly reasonable to evaluate.

3.6 Validity

Kothari (2004) takes note of that validity measures the exactness of the instruments in acquiring the expected information that can meet the targets of the investigation. Gay, (1992), says it is set up by specialists to decide. The supervisors’ comments and observations aided in improving the validity of the questionnaire. Pre-testing of the study instruments was completed by use of five subjects arbitrarily drawn from the populace before the field gathering of information to decide the validity.
3.7 Reliability

Mugen (2008), attest that validity upgrades unwavering quality of an instrument. Accordingly, a substantial instrument is a solid one. A dependable instrument is one which reliably delivers the normal outcomes when utilized more than once to gather information to accomplish unavering quality the instruments was broke down utilizing Cronbach's alpha, a helpful and adaptable apparatus that you can use to research the dependability of your dialect test results, Brown (2001). Orodho, (2004), prescribes a r of at least 0.7 or above for reliable information.

3.7 Data Analysis

Information got was checked and edited for consistency by use of descriptive means. Tables and other geological introductions as fitting were applied to show the information gathered for simplicity of comprehension and examination. A numerous relapse was connected to build up the connection between Mobile banking and Financial Inclusion in Kenya. Budgetary consideration was taken as reliant variable whereas a different measure of Mobile Money Transfer, for example, volume of funds transferred through cell phones, value of goods and services paid for using cell phones, number of bank accounts opened using cell phones and volume of loans disbursed using cell phones. The regression model used in this study was;

\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e \] Where,

\( Y \) = financial inclusion

\( \alpha \) = constant term

\( X_1 \) - Mobile money Transfer – volume of funds transferred through cell phones
X2- Payment for goods and services

X3- Account management - number of bank accounts opened using cell phones

X4 - Credit facilitation - volume of loans disbursed using cell phones

B1, β2, β3 = Beta coefficients indicating various levels of importance (weight of each factor)

3.8 Ethical Considerations

Informed consent was sought from the respondents before data collection. Those not willing to take part in the investigation were under no commitment to do as such. Data assembled was utilized for the motivations behind this study and the important research authorities were approached and consent allowed.
CHAPTER FOUR
DATA ANALYSIS AND PRESENTATION

4.1 Introduction

The purpose of the study was to establish the relationship between mobile banking services and financial inclusion in Nairobi City County, Kenya. The study relied on primary data that was collected by use of structured questionnaires. The data was coded into SPSS Version 23.0 for analysis and presentation. The findings are presented in form of Tables and Figures.

4.1.1 Response Rate

The researcher distributed 336 questionnaires to senior management and supervisors of 16 selected commercial banks in Nairobi City County. 255 questionnaires were filled and returned to the researcher. This gave a response rate of 76% an indication of a sufficient response rate. The findings are as shown in Figure 4.1.

Figure 4.1: Response Rate
The findings show that the study had a response rate of 76% which is deemed sufficient for the study. This is supported by Mugenda (2008) who asserts that a response rate of 50% and above is sufficient for the study.

4.1.2 Reliability Test

The researcher carried out a pilot test to establish the reliability of the research instruments. A Cronbach Alpha was computed and the findings are as indicated in Table 4.1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Items</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer of Funds</td>
<td>5</td>
<td>0.859</td>
</tr>
<tr>
<td>Payment for Goods</td>
<td>5</td>
<td>0.837</td>
</tr>
<tr>
<td>Account management</td>
<td>5</td>
<td>0.796</td>
</tr>
<tr>
<td>Credit facilitation</td>
<td>5</td>
<td>0.825</td>
</tr>
</tbody>
</table>

*Source: Field data, 2018*

The study found out that mobile money transfer had a Cronbach alpha coefficient of 0.859, mobile payment for goods had a Cronbach alpha coefficient of 0.837, mobile accountant management had a Cronbach alpha coefficient of 0.796 and credit facilitation had a Cronbach alpha coefficient of 0.825. This show that all the variables had a Cronbach alpha coefficient of 0.7 and above an indication that the research instruments were sufficient and reliable for the study. This is supported by Cronbach (1951) who stated that a Cronbach alpha coefficient of above 0.7 is deemed sufficient for the study.

4.2 Demographic Information

The researcher used demographic information to establish the appropriateness of the respondents in the study. The findings are as indicated in subsequent sections.
4.2.1 Length of Service

The respondents were requested to indicate how long they had worked in their organization. The findings are as shown in Figure 4.2.

![Figure 4.2: Length of Service](source: Field data, 2018)

The findings show that majority of respondents 57.4% had length of service between 6-10 years, 26.7% of the respondents had worked for more than 10 years and 15.8% had worked for less than 5 years. The findings show that majority of the respondents had worked for more than 5 years an indication that the respondents had gained enough knowledge and skills in their organization. Therefore, the respondents had enough know-how regarding their organization hence they were appropriate for the study.

4.2.2 Position Held

The researcher requested respondents to indicate their position in commercial banks. The findings are as indicated in Figure 4.3.
Figure 4.3: Position Held

Source: Field data, 2018

The study shows that majority of the respondents 96% were supervisors followed by 4% who were senior managers. The findings show that all the respondents were from senior management level hence were conversant with the required information in the study, an indication that reliable data was sought.

4.2.3 Highest Level of Education

The distribution of the respondent’s highest level of education is as shown in Figure 4.4.
The study shows that majority of the respondents 71.3% were highest level of education was degree followed by 21.8% who highest level of education was masters and 6.9% of the respondent’s highest level of education was diploma. The findings show that majority of the commercial banks hired learned employees for their higher required level of competency.

4.3 Descriptive Statistics

This section highlights basic data characteristics such as mean and standard deviation. The findings are indicated in subsequent sections.

4.3.1 Mobile money transfer and Financial Inclusion

Respondents were asked to indicate their level of agreement on each statement on the effect of mobile money transfer on financial inclusion in an economy. A Likert scale of 1-5 where 1= no extent, 2= little extent, 3= moderate extent, 4 = great extent and 5 = very great extent was used. The findings are indicated in Table 4.2.
Table 4.2: Mobile money transfer and Financial Inclusion

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile banking has improved the level of access to our financial services in rural areas</td>
<td>3.76</td>
<td>1.11</td>
</tr>
<tr>
<td>The number of customers accessing financial services through mobile banking has increased</td>
<td>4.11</td>
<td>.875</td>
</tr>
<tr>
<td>The number of accounts accessed through mobile phone banking is increasing</td>
<td>4.02</td>
<td>.899</td>
</tr>
<tr>
<td>The amount of money transferred through mobile phones has increased in our Bank</td>
<td>4.38</td>
<td>.774</td>
</tr>
<tr>
<td>The Bank has been able to reach out to more clients through mobile money transfer applications than its introduction</td>
<td>3.56</td>
<td>.963</td>
</tr>
<tr>
<td>The number of customers using mobile transfer services in the Bank has increased</td>
<td>3.78</td>
<td>1.17</td>
</tr>
<tr>
<td>Mobile transfer services have attracted more customers who held no account to our bank</td>
<td>3.42</td>
<td>.993</td>
</tr>
<tr>
<td>Our mobile money transfer services have attracted low income customers</td>
<td>3.76</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td><strong>3.845</strong></td>
<td><strong>0.973</strong></td>
</tr>
</tbody>
</table>

*Source: Field data, 2018*

The study pointed out that mobile banking had improved the level of access to commercial banks financial services in rural areas as supported by a mean of 3.76 with standard deviation of 1.11. Respondents agreed that the number of customers accessing financial services through mobile banking had increased as supported by a mean of 4.11 with standard deviation of 0.875. Respondents indicated their agreement that the number of accounts accessed through mobile phone banking is increasing by a mean of 4.02 with standard deviation of 0.899. This is supported by Achieng (2011) who stated that mobile telecommunications providers have partnered with mobile money transfer providers in order to remain relevant and share in the huge potential offered to mobile subscribers.

The study established that the amount of money transferred through mobile phones had increased in respondents commercial Banks as supported by a mean of 4.38 with standard deviation of 0.774. Respondents indicated that their Bank had been able to reach out to
more clients through mobile money transfer applications than its introduction by a mean of 3.56 with standard deviation of 0.963. This agrees with Achieng (2011) who states that activation of funds and designating cash for venture exercises required for financial improvement.

The study further pointed out that respondents agreed that the number of customers using mobile transfer services in the Bank had increased as supported by a mean of 3.78 with standard deviation of 1.17. Respondents indicated that mobile transfer services had attracted more customers who held no account to their bank as indicated by a mean of 3.42 with standard deviation of 0.993. Respondents agreed that their mobile money transfer services had attracted low income customers as supported by a mean of 3.76 with standard deviation of 1.00. This is supported by Ozurumba and Chigbu (2013) who established that the more customers are embracing mobile money transaction.

4.3.2 Mobile payment for Goods and Services and Financial Inclusion

Respondents were asked to indicate how Mobile payment for goods and services influenced financial inclusion of economy. A scale of scale of 1-5 where 1= no extent, 2= little extent, 3= moderate extent, 4 = great extent and 5 = very great extent was used. The findings are indicated in Table 4.3.
The study established that respondents agreed that majority of their customers had requested for linking their account with mobile money payment services as supported by a mean of 3.91 with standard deviation of 0.52. Respondents indicated that many customers were settling their bills through pay bill numbers as supported by a mean of 3.45 with standard deviation of 1.09. Provision of pay bill linkage options had attracted more customers to respondents’ bank as shown by a mean of 3.55 with standard deviation of 1.17. This is supported by Mutsune (2014) who established that money related transactions in buying of good and services in Kenya through versatile managing an account has affected financial dynamism and inclusion.

Respondents indicated that the outreach of their bank had expanded because of provision of pay bill services by a mean of 3.83 with standard deviation of 0.813. Pay bill services had increased the cash reserve ratios of respondents Bank by a mean of 3.96 with standard deviation of 0.870. The introduction of pay bill services had reduced customer queues in the bank by a mean of 3.63 with standard deviation of 0.484. The introduction of pay bill services has increased the cash deposit ratios in our Bank by a mean of 3.84 with standard deviation of 1.10.

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Majority of our customers have requested for linking their account with mobile money payment services</td>
<td>3.91</td>
<td>0.52</td>
</tr>
<tr>
<td>Many customers are settling their bills through pay bill numbers</td>
<td>3.45</td>
<td>1.09</td>
</tr>
<tr>
<td>Provision of pay bill linkage options has attracted more customers to our bank</td>
<td>3.55</td>
<td>1.17</td>
</tr>
<tr>
<td>The outreach of our bank has expanded because of provision of pay bill services</td>
<td>3.83</td>
<td>.813</td>
</tr>
<tr>
<td>Pay bill services have increased the cash reserve ratios of our Bank</td>
<td>3.96</td>
<td>.870</td>
</tr>
<tr>
<td>The introduction of pay bill services has reduced customer queues in our Bank</td>
<td>3.63</td>
<td>.484</td>
</tr>
<tr>
<td>Introduction of pay bill services has increased the cash deposit ratios in our Bank</td>
<td>3.84</td>
<td>1.10</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td><strong>3.271</strong></td>
<td><strong>0.672</strong></td>
</tr>
</tbody>
</table>

*Source: Field data, 2018*
queues in respondents Banks as shown by a mean of 3.63 with standard deviation of 0.484. Respondents indicated their agreement that introduction of pay bill services had increased the cash deposit ratios in their Bank by a mean of 3.84 with standard deviation of 1.10. This is supported by Tiwari (2006) who established that keeping money is typically characterized as managing an account administration with the assistance of cell phones.

4.3.3 Mobile Account Management and Financial Inclusion

Several statements on the effect of mobile account management on financial inclusion in an economy were identified by the researcher. Respondents were asked to indicate the extent to which they agreed with each statement. A scale of 1-5 where 1= no extent, 2= little extent, 3= moderate extent, 4 = great extent and 5 = very great extent was used. The findings are as shown in Table 4.4.

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our Bank provides detailed statements on customers mobile payment transactions</td>
<td>3.83</td>
<td>1.05</td>
</tr>
<tr>
<td>Linkage of mobile phone payment and bank account has attracted more customers to our Bank</td>
<td>3.01</td>
<td>1.13</td>
</tr>
<tr>
<td>Provision of mobile bank account has enabled customers in remote areas to open accounts with our Bank</td>
<td>3.90</td>
<td>.900</td>
</tr>
<tr>
<td>The reduced fees charged on mobile funds transfer transactions has attracted more customers to our bank</td>
<td>3.53</td>
<td>.866</td>
</tr>
<tr>
<td>Minimal maintenance charges in mobile phone-based accounts have attracted more customers to our bank</td>
<td>4.21</td>
<td>.831</td>
</tr>
<tr>
<td>Minimal maintenance charges in mobile phone-based accounts have attracted more customers to our bank</td>
<td>4.04</td>
<td>.765</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td><strong>3.753</strong></td>
<td><strong>0.924</strong></td>
</tr>
</tbody>
</table>

*Source: Field data, 2018*
The findings show that majority of the respondents agreed that their Bank provided detailed statements on customers mobile payment transactions as shown by a mean of 3.83 with standard deviation of 1.05. Respondents indicated that linkage of mobile phone payment and bank account had attracted more customers to respondents Bank as supported by a mean of 3.01 with standard deviation of 1.13. Respondents agreed that provision of mobile bank account had enabled customers in remote areas to open accounts with their Bank as supported by a mean of 3.90 with standard deviation of 0.900. This is supported by Tiwari (2006) who established that keeping money is typically characterized as managing an account administration with the assistance of cell phones.

The study established that the reduced fees charged on mobile funds transfer transactions had attracted more customers to respondent’s bank as indicated by a mean of 3.53 with standard deviation of 0.866. Respondents agreed that minimal maintenance charges in mobile phone-based accounts had attracted more customers to their bank as shown by a mean of 4.21 with standard deviation of 0.831. Minimal maintenance charges in mobile phone-based accounts have attracted more customers to respondent’s bank by a mean of 4.04 with standard deviation of 0.765. Mutsune (2014) established that minimal maintenance of mobile money transactions charges in mobile phone-based accounts have led to increased customers.

4.3.4 Credit Facilitation and Financial Inclusion

Several statements on how mobile credit facilitation affects financial inclusion in an economy were identified by the researcher. Respondents were asked to indicate the extent
of their agreement on a scale of 1-5 where: 1= no extent, 2= little extent, 3= moderate extent, 4 = great extent and 5 = very great extent. The findings are indicated in Table 4.5.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offering of credit facilities through mobile phones has attracted more customers to our bank</td>
<td>3.86</td>
<td>.894</td>
</tr>
<tr>
<td>Quick processing of mobile phone credit applications has attracted more customers to our bank</td>
<td>4.00</td>
<td>.871</td>
</tr>
<tr>
<td>Lack of paper work in mobile phone-based credit has attracted more customers to our Bank</td>
<td>3.91</td>
<td>.917</td>
</tr>
<tr>
<td>Flexibility in the amount of credit extended through mobile phones has attracted more customers to our Bank</td>
<td>3.36</td>
<td>.913</td>
</tr>
<tr>
<td>Flexibility in repayment of mobile phone-based loans have attracted more customers to our bank</td>
<td>3.02</td>
<td>.974</td>
</tr>
<tr>
<td>Competitiveness of interest rates charged on mobile phone-based credit has attracted more customers to our bank</td>
<td>3.43</td>
<td>.874</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td><strong>3.60</strong></td>
<td><strong>0.9072</strong></td>
</tr>
</tbody>
</table>

Source: Field data, 2018

The findings show that offering of credit facilities through mobile phones had attracted more customers to respondents’ bank as shown by a mean of 3.86 with standard deviation of 0.894. Respondents agreed that quick processing of mobile phone credit applications had attracted more customers to respondent’s bank by a mean of 4.00 with standard deviation of 0.871. Lack of paper work in mobile phone-based credit had attracted more customers to respondents Bank as supported by a mean of 3.91 with standard deviation of 0.917. This agrees with Jonathan and Camilo (2013) who established that quick processing of loans by credit facilitator enhances and keeps clients to the organization.
Respondents indicated that flexibility in the amount of credit extended through mobile phones had attracted more customers to their Bank by a mean of 3.36 with standard deviation of 0.913. Flexibility in repayment of mobile phone-based loans had attracted more customers to respondent’s bank as shown by a mean of 3.02 with standard deviation of 0.974. Competitiveness of interest rates charged on mobile phone-based credit had attracted more customers to commercial bank as shown by a mean of 3.43 with standard deviation of 0.874. Demombynes and Thegeya (2012) established that low interest rates and flexibility of paying a loan attracts and keeps royal customers.

4.3.5 Government Regulatory Measures and Financial Inclusion

Several statements on how government regulations affect financial inclusion in an economy were identified by the researcher. Respondents were asked to indicate the extent of their agreement on a scale of 1-5 where: 1= no extent, 2= little extent, 3= moderate extent, 4 = great extent and 5 = very great extent. The findings are indicated in Table 4.6.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our leaders are creative in thinking up new ideas and being creative</td>
<td>3.69</td>
<td>.891</td>
</tr>
<tr>
<td>Our leaders feel it necessary to make their own ideas without being coerced</td>
<td>3.50</td>
<td>1.19</td>
</tr>
<tr>
<td>Administrators are in charge of project implementation and give instructions to the subordinates</td>
<td>4.05</td>
<td>.759</td>
</tr>
<tr>
<td>Senior management level follows rules and regulations laid down by the organization</td>
<td>4.22</td>
<td>.773</td>
</tr>
<tr>
<td>Senior management are aware of the vision and mission statement of the organization</td>
<td>3.73</td>
<td>.904</td>
</tr>
<tr>
<td>Senior management levels always follow government regulations to the letter</td>
<td>3.40</td>
<td>1.04</td>
</tr>
<tr>
<td><strong>Average mean</strong></td>
<td><strong>3.765</strong></td>
<td><strong>0.926</strong></td>
</tr>
</tbody>
</table>

*Source: Field data, 2018*
The study found out that respondents agreed that leaders were creative in thinking up new ideas and being creative as supported by a mean of 3.69 with standard deviation of 0.891. Respondents indicated that their leaders felt it necessary to make their own ideas without being coerced by a mean of 3.50 with standard deviation of 1.19. Respondents agreed that administrators were in charge of project implementation and gave instructions to the subordinates by a mean of 4.05 with standard deviation of 0.759. Karjaluoto (2002) established that administrators adhering to rule and laws without being coerced have the capability of making right choice and decisions hence proper returns to the organization.

The study established that senior management level followed rules and regulations laid down by the organization as indicated by a mean of 4.22 with standard deviation of 0.773. Respondents indicated that senior management were aware of the vision and mission statement of the organization as indicated by a mean of 3.73 with standard deviation of 0.904. Senior management levels always followed government regulations to the letter as shown by a mean of 3.40 with standard deviation of 1.04. Administrators adhering to rule and laws without being coerced have the capability of making right choice and decisions hence proper productions (Karjaluoto, 2002).

4.3.6 Financial Inclusion

Several statements on financial inclusion in an economy were identified by the researcher. Respondents were asked to indicate the extent of their agreement on a scale of 1-5 where: 1= no extent, 2= little extent, 3= moderate extent, 4 = great extent and 5 = very great extent. The findings are indicated in Table 4.7.
Table 4.7: Financial Inclusion

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile services are affordable</td>
<td>3.94</td>
<td>.684</td>
</tr>
<tr>
<td>Mobile services are accessible</td>
<td>4.02</td>
<td>.626</td>
</tr>
<tr>
<td>Mobile services can transact large volume of money</td>
<td>3.57</td>
<td>.576</td>
</tr>
<tr>
<td>Mobile money has embraced agency banking</td>
<td>4.18</td>
<td>.631</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td><strong>3.928</strong></td>
<td><strong>0.629</strong></td>
</tr>
</tbody>
</table>

*Source: Field data, 2018*

The study found out that respondents indicated that mobile money services were affordable by a mean of 3.94 with standard deviation of 0.684. Respondents agreed that mobile services were accessible as supported by a mean of 4.02 with standard deviation of 0.626. Respondents agreed that mobile services transacted large volume of money by a mean of 3.57 with standard deviation of 0.576. Respondents agreed that mobile money had embraced agency banking as shown by a mean of 4.18 with standard deviation of 0.631. This agrees with Achieng (2011) who states that strategic positioning of the mobile telecommunications providers and the need for banking institutions to partner and integrate with the mobile money transfer provides in order to remain relevant and share in the huge potential offered to mobile subscribers.

4.4 Inferential Statistics

The researcher carried out inferential statistics to establish the relationship between mobile banking services and financial inclusion in Nairobi City County, Kenya. The findings of Model Summary, ANOVA and Regression Coefficients are indicated in the subsequent sections.
4.4.1 Model Summary

The findings of coefficient of correlation R and coefficient of adjusted determination $R^2$ is as shown in Table 4.8.

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.897a</td>
<td>.804</td>
<td>.796</td>
<td>1.05560</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Regulatory Measures, Transfer of Funds, Credit Facilitation, Account Management, Payment for Goods

The findings show that the coefficient of correlation R was 0.897, an indication of strong positive correlation between the variables. Coefficient of adjusted determination $R^2$ was 0.796 which translates to 79.6%, therefore changes in financial inclusion can be explained by the following: regulatory measures, transfer of funds, credit facilitation, account management and payment for goods. The residual of 20.4% can explain factors beyond the scope of the current study affecting financial inclusion.

4.4.2 ANOVA

An ANOVA was conducted at 95% significant level, a comparison of $F_{\text{Calculated}}$ and $F_{\text{Critical}}$ was as shown in Table 4.9.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>439.583</td>
<td>5</td>
<td>87.917</td>
<td>204.645</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>106.972</td>
<td>249</td>
<td>0.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>546.554</td>
<td>254</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Financial Inclusion
b. Predictors: (Constant), Regulatory Measures, Transfer of Funds, Credit Facilitation, Account Management, Payment for Goods

The findings show that $F_{\text{Calculated}}$ was 204.645 and $F_{\text{Critical}}$ was 2.250, this show that $F_{\text{Calculated}} > F_{\text{Critical}}$ an indication that the overall regression model was significant for the
study. The p value was $0.00 < 0.05$ an indication that at least one variable significantly influenced the financial inclusion.

**4.4.3 Regression Coefficient**

In order to establish the individual influence of the variables on financial inclusion, the study conducted regression analysis. The findings are as shown in Table 4.10.

**Table 4.10: Regression Coefficient**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.382</td>
<td>.845</td>
<td>1.636</td>
<td>.105</td>
</tr>
<tr>
<td>Transfer of Funds</td>
<td>.169</td>
<td>.038</td>
<td>4.443</td>
<td>.000</td>
</tr>
<tr>
<td>Payment for Goods</td>
<td>.219</td>
<td>.042</td>
<td>5.214</td>
<td>.000</td>
</tr>
<tr>
<td>Account management</td>
<td>.194</td>
<td>.059</td>
<td>3.284</td>
<td>.001</td>
</tr>
<tr>
<td>Credit facilitation</td>
<td>.196</td>
<td>.053</td>
<td>3.713</td>
<td>.000</td>
</tr>
</tbody>
</table>

*Source: Field data, 2018*

a. Dependent Variable: Financial Inclusion

\[ Y = 1.382 + 0.169X_1 + 0.219X_2 + 0.194X_3 + 0.196X_4 \]

**Where:** Y - Financial inclusion

- X1 - Transfer of funds
- X2 - Payment for goods and services
- X3 - Account management
- X4 - Credit facilitation

Table 4.10 show that holding other variables constant, financial inclusion would be at 1.382. A unit increase in mobile transfer of fund holding other variables constant, financial inclusion would be at 0.169. A unit increase in mobile payment for goods and services while holding other factors constant, financial inclusion would be at 0.219. A unit increase in mobile account management while holding other factors constant,
financial inclusion would be at 0.194. A unit increase in credit facilitation while holding other factors constant, financial inclusion would be at 0.196.

The study pointed out that transfer of funds had a p value of 0.00<0.05 an indication that the variable significantly influenced financial inclusion. This is supported by Achieng (2011) who stated that mobile telecommunications providers have partnered with mobile money transfer providers in order to remain relevant and share in the huge potential offered to mobile subscribers.

The p value of payments for goods and services was 0.00<0.05 an indication that the variable significantly influenced financial inclusion of the economy. This is supported by Mutsune (2014) who established that money related transactions in buying of good and services in Kenya through versatile managing an account has affected financial dynamism and inclusion.

The findings show that the p value of mobile account management had a p value of 0.001<0.05 an indication that the variable significantly influenced financial inclusion. Mutsune (2014) established that minimal maintenance of mobile money transactions charges in mobile phone-based accounts have led to increased customers.

The p value of credit facilitation was 0.00<0.05 an indication that the variable significantly influenced financial inclusion. Jonathan and Camilo (2013) who established that quick processing of loans by credit facilitator enhances and keeps clients to the organization. Demombynes and Thegeya (2012) established that low interest rates and flexibility of paying a loan attracts and keeps royal customers.
The p value of government regulatory measures was 0.028<0.05 an indication that the variables significantly influenced financial inclusion. This is supported by Karjaluoto (2002) who established that administrators adhering to rule and laws without being coerced have the capability of making right choice and decisions hence proper returns to the organization.
CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents the summary of the key findings of the study in line with the study objectives. The key findings of the study are used in generation of conclusions of the study. The suggestions for further studies indicate areas where future scholars and researchers can expand more knowledge on relationship between mobile banking services and financial inclusion in Nairobi City County, Kenya.

5.2 Summary of the Study

The purpose of the study was to establish the relationship between mobile banking services and financial inclusion in Nairobi City County, Kenya. The study was guided by the following specific objectives; to examine the effect of mobile money transfer on financial inclusion, to assess the relationship between mobile payment for goods and services and financial inclusion, to determine whether mobile account management affects the degree of financial inclusion and to establish the effect of mobile credit facilitation and financial inclusion in Nairobi City County, Kenya.

The study adopted descriptive statistics due to its appropriateness in presentation specific state of affairs and description of the relationship between mobile money services and financial inclusion. The target population of the study was management level staff from 16 select commercial banks in Nairobi City County. The study relied on primary data collected by use of structured questionnaires. Collected data was coded into SPSS for
analysis. The study found out that the variables were highly correlated with financial inclusion.

The first specific objective was to examine the effect of mobile money transfer on financial inclusion in Nairobi City County, Kenya. The study established that mobile money transfer significantly influenced financial inclusion on economy. This depicts that an increase in mobile transactions leads to an increase in financial inclusion.

The second specific objective was to assess the relationship between mobile payment for goods and services and financial inclusion Nairobi City County, Kenya. The study found out that mobile payment for goods and services positively influenced financial inclusion of the economy. This asserts that both financial inclusion and mobile payment for goods moves in tandem that is, an increase in one variable leads to an increase in the other variable.

The third specific objective was to determine whether mobile account management affects the degree of financial inclusion in Nairobi City County, Kenya. The study established that mobile account management positively influenced financial inclusion on economy. This shows that provision of mobile bank account had enabled customers in remote areas to open accounts with the Banks and reduced fees charged on mobile funds transfer transactions had attracted more customers to the banks.

The last specific objective was to establish the effect of mobile credit facilitation and financial inclusion in Nairobi City County, Kenya. The study established that mobile credit facilitation had a positive significant influence on financial inclusion. This show that quick processing of mobile phone credit applications had attracted more customers to
the banks and lack of paper work in mobile phone-based credit had attracted more customers to the banks.

5.3 Conclusion

The study concludes that mobile banking has improved the level of access to commercial banks financial services in rural areas and the amount of money transferred through mobile phones has increased in commercial banks. The bank has reached out to more clients through mobile money transfer applications than its introduction, the number of customers using mobile transfer services in the bank has increased, mobile transfer services have attracted more customers who held no account to the bank and mobile money transfer services has attracted low income customers.

The study concludes that introduction of pay bill services has reduced customer queues, has increased the cash reserve ratios of the Bank and has increased the cash deposit ratios. The outreach of the banks has expanded because of provision of pay bill services and many customers were settling their bills through pay bill numbers.

The study concludes that commercial banks provided detailed statements on customers mobile payment transactions, mobile bank account enabled customers in remote areas to open accounts with commercial banks and linkage of mobile phone payment and bank account attracted more customers to the bank. Minimal maintenance charges in mobile phone-based accounts attracted more customers and reduced fees charged on mobile funds transfer transactions attracted more customers to the bank.
The study concludes that credit facilities through mobile phones attracted more customers to the bank, quick processing of mobile phone credit applications attracted more customers to our bank and lack of paper work in mobile phone-based credit has attracted more customers to the bank. Flexibility in the amount of credit extended through mobile phones has attracted more customers and flexibility in repayment of mobile phone-based loans have attracted more customers.

5.4 Recommendations

The study recommends that banks ought to reach out to more clients through mobile money transfer applications, the banks ought to increase the number of customers using mobile transfer services, mobile transfer services ought to attract more customers who have no account to the bank. Mobile money transfer services ought to attract low income customers. Mobile banking ought to improve the level of access to commercial banks financial services in rural areas and the amount of money transferred through mobile phones ought to increase.

The study recommends that banks customers ought to request the banks to link their account with mobile money payment services, introduction of pay bill services ought to reduce customer queues, increase the cash reserve ratios of the bank and increase the cash deposit ratios. The outreach of the banks ought to expand because of provision of pay bill services and many customers ought to settle their bills through pay bill numbers.

The study recommends that commercial banks ought to provide detailed statements on customers mobile payment transactions, mobile bank account ought to enable customers in remote areas to open accounts with commercial banks and linkage of mobile phone
payment. Mobile bank account ought to attract more customers to the bank. Minimal maintenance charges in mobile phone-based accounts ought to attract more customers. The banks ought to reduce fees charged on mobile funds transfer transactions to attract more customers to the bank.

The study further recommends that credit facilities through mobile phones ought to attract more customers to the bank. Quick processing of mobile phone credit applications ought to attract more customers to the bank and lack of paper work in mobile phone-based credit ought to attract more customers to the bank. Flexibility in the amount of credit extended through mobile phones ought to attract more customers and flexibility in repayment of mobile phone-based loans ought to attract more customers.

The study recommends that relevant policies be formulated to improve financial inclusion among the unbanked in the society to enable them access banking services. The findings from the study can be used to come up with a relevant policy to enable improve mobile banking services penetration.

5.5 Suggestions for Further Studies

The study recommends that future scholars ought to carry out similar studies in different counties especially rural ones. The study recommends a replica of the study to be conducted among microfinance institutions to establish the effect of the financial services they offer on financial inclusion.
REFERENCES


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Wambari, A. & Mwaura, P (2009), mobile banking in developing countries, Vaassan Ammattikkor Keakoulu University of applied science.

APPENDICES

APPENDIX I: SELECTED COMMERCIAL BANKS IN NAIROBI CITY COUNTY, KENYA

1. Bank of Africa
2. Barclays Bank
3. Commercial Bank of Africa
4. Cooperative Bank of Kenya
5. Diamond Trust Bank
6. CFC Stanbic Bank
7. Standard Chartered Bank
8. Ecobank
9. Equity Bank
10. Family Bank
11. I&M Bank
12. Jamii Bora Bank
13. Kenya Commercial Bank
14. Sidian Bank
15. National Bank of Kenya
16. NIC Bank
APPENDIX II: QUESTIONNAIRE
MOBILE BANKING SERVICES AND FINANCIAL INCLUSION IN IN
NAIROBI CITY COUNTY, KENYA

Section A: Demographic information

1. Name of your bank (Optional) _________________________________

2. Number of years the bank has been in operations in Kenya
   
   Below 5 Years [ ] 6-10 Years [ ]
   More Than 10 Years [ ]

3. What is your position in this Bank?
   
   Senior Management [ ] Supervisor [ ]
   Other (please explains) _________________________________

4. What is your highest level of education?
   
   Certificate [ ] Diploma [ ]
   Degree [ ] Masters [ ]

SECTION B: MOBILE MONEY TRANSFER ON FINANCIAL INCLUSION

5. Below are several statements on the effect of mobile money transfer on financial inclusion in an economy. Kindly indicate the extent to which you agree with each of them in as far as mobile money transfer has influenced the level of financial inclusion in your bank. Use a scale of 1-5 where 1= no extent, 2= little extent, 3= moderate extent, 4 = great extent and 5 = very great extent.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile banking has improved the level of access to our financial services in rural areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The number of customers accessing financial services through mobile banking has increased</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The number of accounts accessed through mobile phone banking is increasing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The amount of money transferred through mobile phones has</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
increased in our Bank
The Bank has been able to reach out to more clients through mobile money transfer applications than its introduction
The number of customers using mobile transfer services in the Bank has increased
Mobile transfer services have attracted more customers who held no account to our bank
Our mobile money transfer services have attracted low income customers

6. In what other ways has mobile money transfer influenced financial inclusion in your Bank?

SECTION C: MOBILE PAYMENT FOR GOODS AND SERVICES AND FINANCIAL INCLUSION

7. Below are several statements on the effect of mobile payment for goods and services and financial inclusion in an economy. Kindly indicate the extent to which you agree with each of them in as far as mobile payment for goods and services has influenced the level of financial inclusion in your bank. Use a scale of 1-5 where 1 = no extent, 2 = little extent, 3 = moderate extent, 4 = great extent and 5 = very great extent.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Majority of our customers have requested for linking their account with mobile money payment services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many customers are settling their bills through paybill numbers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of paybill linkage options has attracted more customers to our bank</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>The outreach of our bank has expanded because of provision of paybill services</td>
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<tr>
<td>Paybill services have increased the cash reserve ratios of our Bank</td>
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<tr>
<td>The introduction of paybill services has reduced customer queues in our Bank</td>
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</table>
Introduction of paybill services has increased the cash deposit ratios in our Bank

8. In what other ways has mobile payment for goods and services influenced financial inclusion in your Bank?

SECTION D: MOBILE ACCOUNT MANAGEMENT AND FINANCIAL INCLUSION

9. Below are several statements on the effect of mobile account management and financial inclusion in an economy. Kindly indicate the extent to which you agree with each of them in as far as mobile account management has influenced the level of financial inclusion in your bank. Use a scale of 1-5 where 1= no extent, 2= little extent, 3= moderate extent, 4 = great extent and 5 = very great extent.

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<tr>
<td>Our Bank provides detailed statements on customers mobile payment transactions</td>
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<tr>
<td>Linkage of mobile phone payment and bank account has attracted more customers to our Bank</td>
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<tr>
<td>Provision of mobile bank account has enabled customers in remote areas to open accounts with our Bank</td>
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<tr>
<td>The reduced fees charged on mobile funds transfer transactions has attracted more customers to our bank</td>
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<tr>
<td>Minimal maintenance charges in mobile phone-based accounts have attracted more customers to our bank</td>
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<tr>
<td>The number of customers in our bank has increased as a result of better management of mobile accounts</td>
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10. In what other ways has mobile account management influenced financial inclusion in your Bank?
SECTION E: MOBILE CREDIT FACILITATION AND FINANCIAL INCLUSION

11. Below are several statements on the effect of mobile credit facilitation and financial inclusion in an economy. Kindly indicate the extent to which you agree with each of them in as far as mobile credit facilitation has influenced the level of financial inclusion in your bank. Use a scale of 1-5 where 1= No Extent, 2= Little Extent, 3= Moderate Extent, 4 = Great Extent And 5 = Very Great Extent.

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<tr>
<td>Offering of credit facilities through mobile phones has</td>
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<td>attracted more customers to our bank</td>
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<td>Quick processing of mobile phone credit applications has</td>
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<td>attracted more customers to our bank</td>
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<tr>
<td>Lack of paper work in mobile phone-based credit has attracted</td>
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<td>more customers to our Bank</td>
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<tr>
<td>Flexibility in the amount of credit extended through mobile phones</td>
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<td>has attracted more customers to our Bank</td>
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<tr>
<td>Flexibility in repayment of mobile phone-based loans have</td>
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<td>attracted more customers to our bank</td>
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<td>Competitiveness of interest rates charged on mobile phone-based credit</td>
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<td>has attracted more customers to our bank</td>
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12. In what other ways has mobile credit facilitation influenced financial inclusion in your Bank?

SECTION F: GOVERNMENT REGULATORY MEASURES AND FINANCIAL INCLUSION

1. Below are several statements on the effect of government regulatory measures and financial inclusion in an economy. Kindly indicate the extent to which you agree with each of them in as far as government regulatory measures has influenced the level of financial inclusion in your bank. Use a scale of 1-5 where
1= No Extent, 2= Little Extent, 3= Moderate Extent, 4 = Great Extent And 5 = Very Great Extent.

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<tr>
<td>Our leaders are creative in thinking up new ideas and being creative</td>
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<td>Our leaders feel it necessary to make their own ideas without being coerced</td>
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<td>Administrators are in charge in project implementation and give instructions to the subordinates</td>
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<td>Senior management level follows rules and regulations laid down by the organization</td>
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<td>Senior management are aware of the vision and mission statement of the organization</td>
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<td>Senior management levels always follow government regulations to the letter</td>
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SECTION G: FINANCIAL INCLUSION

1. Below are several statements on financial inclusion in an economy. Kindly indicate the extent to which you agree with each of them in as far financial inclusion in your bank. Use a scale of 1-5 where 1= No Extent, 2= Little Extent, 3= Moderate Extent, 4 = Great Extent And 5 = Very Great Extent.

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<tr>
<td>Mobile services are affordable</td>
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<td>Mobiles services are accessible</td>
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<td>Mobile services can transact large volume of money</td>
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<tr>
<td>Mobile money has embraced agency banking</td>
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