

**MOBILE BANKING AND FINANCIAL INCLUSION AMONG WOMEN  
ENTREPRENEURS IN NAIROBI CITY COUNTY, KENYA**

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**D53/ CTY/PT/33548/2015**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF  
BUSINESS ADMINISTRATION (FINANCE) SCHOOL OF BUSINESS,  
KENYATTA UNIVERSITY**

**NOVEMBER, 2022.**

## **DECLARATION**

### **Declaration by the candidate**

This research project is my original work and has never been presented for an award of a degree in any other university or any other institution of higher learning.

Sign..... Date .....

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### **Declaration by the supervisor**

I confirm that this research project has been carried out by the candidate under my supervision

Signature.....Date.....

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## **DEDICATION**

I dedicate this project to Mr. and Mrs. Macharia, my parents, for their inspiration, support, and unconditional love, to my daughter Natasha Kanyi for bearing with my busy schedule while I carried this study. May God bless them.

## **ACKNOWLEDGEMENT**

Firstly, thanks to God for the courage, strength and opportunity for pursuing my studies further. This research work has come this far because of His abundant grace. Secondly, I appreciate the guidance and support of Mr. J. M. Theuri, my supervisor, without whom this project would be impossible. I acknowledge his understanding, support and guidance towards completion of this project.

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## **ABBREVIATIONS AND ACRONYMS**

<b>ANOVA</b>	Analysis of Variance
<b>CGAP</b>	Consultative Group to Assist the Poor
<b>MFI</b> s	Microfinance Institutions
<b>SACCO</b> s	Savings and Credit Co-Operative
<b>SMS</b>	Short Message Service

## OPERATIONAL DEFINITION OF TERMS

- Financial Inclusion:** It's the process through which monetary administrations are transmitted at prices that are, contrary to financial exclusion in cases of costliness or inaccessibility of such services, charged to population proportions that are both underprivileged and poor.
- Mobile Loans:** These are any form of loans that are applied using mobile devices.
- Mobile Money Transfer:** Entails payment services performed via or from a mobile device and operated under financial regulations. People all over the world have adopted mobile money in varying ways.
- Mobile Payment:** Refers to money payment a person makes for a service or product using a portable electronic device, including cell phones or tablets.
- Women Entrepreneurs:** Refers to women who organize and manage an enterprise, especially a business.
- Mobile Banking:** This refers to a service provided by a financial institution such as a bank to its customers which enables them to access financial services remotely using mobile devices such as phones and tablets.
- Mobile savings:** These are money deposits made by customers to financial institutions through their portable devices for future use.

## ABSTRACT

In Kenya, businesses fail within their first year of operation mainly because of poor financing. More than half of these businesses are normally owned by women. This clearly shows the urge for women to be supported financially in their ventures. The banking industry has developed a way of ensure clients have full access to banking services at their convenience. The evolution in technology has made it possible for people to deposit, withdraw, and pay bills and even access loans through mobile gargets. This paper was meant to find out how financial inclusions and mobile banking have affected women entrepreneurs in Nairobi County, Kenya. The study aimed at determining the impact that mobile loans and financial inclusions have on these groups of people. The specific objectives were to lay out the impact of portable deposits and savings on Nairobi City female entrepreneurs, to determine how mobile payment platforms have affected Nairobi City's County women entrepreneurs and finally to assess the impact of mobile money transfers among these business ladies. This paper focused on businesses such as art, groceries, clothes and carpentry among other small scale businesses. The study was anchored by Financial Intermediary theory and Technology Acceptance Model theory. The study area covered all the sixteen sub counties in Nairobi City County. In Nairobi City County, there are about 5339 registered women entrepreneurs. These people constituted the study population. Data was gathered from a 204 people sample size which was selected randomly from the population. Interviews were conducted and questionnaires where necessary as means of data collection during the research. The researcher managed to collect data from 152 respondents out of the sampled population. The obtained data was then subjected to analysis through content and descriptive analysis to come up with accurate research findings which will then be introduced in graphs and tables using Microsoft Office packages. Inferential statistics regression was utilized in laying out the current connection between monetary inclusions, also mobile banking in Nairobi City County, among the women entrepreneurs. The discoveries of the review laid out that mobile loans, savings and deposits, payment platforms and mobile transfers significantly and positively impact financial inclusion of women entrepreneurs in Nairobi City County, Kenya. Mobile loans are ignited by several opportunities as mobile credit administrations have all the earmarks of being overcoming any barrier for women entrepreneurs with no formal ledgers, or whose wages are not sufficiently steady to acquire from formal monetary foundations. Linkage of cell phone installment and financial balance has enabled women with transactions on daily basis which has attracted more women into entrepreneurship as a result that financial inclusion of women becomes more likely. Introduction of pay bill through mobile payment platforms has increased women entrepreneurs' cash deposit and reserve ratios while settling their bills. Sending or receiving money through mobile platforms contributes to the popularity of financial inclusion process for it allows assortment of markets tools allowing efficient money exchange. The study recommends the relevant stakeholders to map out ideal policies to improve financial inclusion among the unbanked in the society and enable them to access different banking products and services.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of the study**

Monetary consideration is among the world's major pillars of development. This concept guides the United Nations goals of ensuring poverty is eradicated in the world (Emma, 2019). It allows for gender equality, innovation and infrastructural growth. In addition, development is achieved through increased decent work opportunities consequently promoting economic growth. All these ideas are as a result of financial inclusions.

It is evident that developing countries face a significant test with regards to empowering low economy business people (Emma, 2019). It is not easy for a person with low capital to get huge loans from financial institutions to help support their business. This is why the market today needs financial inclusions that allow these low economy people to save and borrow money from banking institutions. A study conducted in the sub Saharan Africa, (IMF, 2014) indicate that a very small percentage of the population have bank accounts; approximately 30%. Moreover, those who can access services from the financial institutions such as loans is 80 percent. In western countries, entrepreneurs are given financial boost through such concepts. With better financial services, the less privileged will be able to enjoy services such as insuring their businesses against misfortunes, get money for business capitals and for general growth of business. When the underprivileged experience financial freedom, the society grows economically hence eradicating poverty.

Mobile banking provides an avenue for people to access banking services anywhere anytime. Clients are able to transact at their convenience. Since the introduction of

mobile banking, low economy traders have been able to borrow loans, save money and carry out all forms financial transactions with ease. This method has made banking cheaper than the traditional methods. It has also extended the sector as people from even rural areas are able to access these services. Research shows that this invention has brought tremendous growth in the banking sector (Demirgüç, Kunt et al., 2014). In many developing countries, financial institutions will need collaterals for an individual to be granted a loan. This has greatly undermined development and economic growth of underprivileged business people. They cannot afford most of the banking services condemning them to a very slow growth in their businesses. Mobile banking has been used to bridge this gap. Everyone has an equal opportunity at being served and getting loans. These services do not require one to have collaterals and are accessible from any location. It is through this technology that clients are able to get financial aid boosting their profit margins. Mobile banking has with time gained popularity across Africa and other developing countries.

### **1.1.1 Mobile Banking**

Mobile banking can be said to be an avenue that allows banks and other similar institutions to conduct financial transactions from portable devices. This form of banking does not require a client to physically go to the banks. Clients can send or receive money while in their homes or any desired location. These services are rendered electronically. All a person needs is good internet service and a smart device that can access the internet (Shallone & Simon, 2013). These methods are very convenient. Asfaw (2015) explains that mobile banking is a prevailing instrument for motivating innovation, supporting

growth, increasing competitiveness, and pushing progress. The world that is developing has experienced faster and great embracing of mobile technology in comparison to other technologies brought by human beings in his existence.

Subsequently, there has been established an incredible text messages flow that can go beyond a person's necessities for communicating. Also, exclusive custom-made amenities such as mobile banking are by the day presented as a requirement to people living in remote or less developed areas globally (Tarazi & Michael, 2012). Financial transactions via the mobile platform comprises the uncommon extension of network for versatile appliances e.g cellphones in the nations which are coming up hence provides a chance for virtual ledgers operations over cellular phones. Mobile banking provides fiscal services like cash transfer, bills imbursement and other services without having to depend on cash. This has greatly solved the problem of looking for financial institutions physically in order to transact. (Claire & Katakam, 2013).

This technique can also be said to be a term used when describing effecting transactions in bank or getting banking data via portable gadgets. Asfaw (2015) states that few years ago, these services could be conducted through text message communication only. SMS banking provided users with the ability to inquire changes in security personal ID passcodes and numbers, generation of reports on credit or pay, and obtain information on their account balances. The penetration of the very first smartphones that connected without wires allowed banking transactions to be conducted through mobile platforms. The US Federal Reserve report (2012) explains that betting on versatile discharges and platforms contains chances of growth in financial services to clients that live far from

banks including people who are not properly banked by raising the availability of financial services and goods and minimizing transaction charges.

M-PESA continues to be among the most productive packages of transmitting mobile money worldwide accredited to numerous descriptions; considering the fact that costs associated with the platform's transactions are pretty minimal compared to other avenues of banking. The M-pesa offers banking transfer, saving, loans and savings services with high convenience. According to the World Bank (2012) this service was constantly charging approximately half the transaction charges of other similar service providers. Lesser charges straight change into cash can be reserved by those that are poor. According to McKay & Pickens (2010), a study carried out by a consulting group that assists the poor realized that such financial inclusions greatly benefited upcoming financial institutions. These institutions mainly do not have branches in various cities. Accessing them physically is therefore almost impossible for clients.

Nonetheless, where there are no lesser transaction charges, mobile money programs take a long period of time to get started. According to World Bank (2012), an example is in Botswana where the cost of transaction is not less than \$1.07 (8 pula) for each transaction. Remarkable growth of e-banking worldwide has an exceptional opportunity for availing economic and social facilities using mobile network. Mobile banking minimizes space and time restrictions from transactions of the bank like, inquiry of balances and money transmission across accounts not essentially being actually in those branches. Gardachew (2010) explains that it enhances efficiency, provides banking and financial facility proximities, builds inventive chances for the generation of revenue and upsurges governance and assists in giving the disadvantaged persons a voice.



### **1.1.2 Financial Inclusion among women entrepreneurs in Nairobi City County, Kenya**

This technique is said to enable the less privileged to access monetary transfer services at a cheaper and more convenient manner. This eradicates the difficulties that this group of people used to face when it comes to banking. Some of these challenges include expensive transaction charges and long distances from their home to financing institutions (Demirguc, 2008). In Kenya, these advantages have greatly benefited women in the business industry. Bell, Harper and Mandivenga (2002), express that sustaining ladies business people is significant particularly on the grounds that it advances development in a nation's economy. For a nation to achieve complete. It is necessary to ensure that money transfer services are affordable and accessible at all time. It is only after this is achieved that a country will enjoy complete financial inclusion. The processes must also be safe and secure to ensure clients do not lose their investments or suffer any related loss. According to (Gardeva & Rhyne, 2011), mobile banking must meet all the needs of the market. A person must be able to send and receive money at their convenience. Customers must also have access to loans that have friendly interest charges and also they must be able to save without having to visit the banks physically.

For a long time, according to Donovan (2012), formal financial systems omissions have been identified as a limitation towards the elimination of poverty. Irrefutably, absence of admittance to facilities of monetary nature like savings plus loans lessens the capacity of people to invest, react to surprises and save. Small financial inclusion levels prompt lesser economic growth and deteriorate income discrepancy at the macro level. Sharma

and Kukreja (2013) state that financial inclusion can be explained as the absence of obstructions that can either be non-cost or cost in financial service usage. Monetary inclusion comprises of any idea or technique that can be used to make clients efficiently access banking services. These methods must be cost effective and time saving. Accessibility of services means that they have to be tailored to meet the requirements of every client as much as possible. The services must also be available at all times. While ensuring that these two requirements are met, costs associated must be affordable for the target customers. Prices associated with moving over long distances to reach a branch of a given bank; and, mainly, it ought to be make sense in terms of the business, convert into returns these offices' providers, and subsequently be open consistently (AFI, 2013). Measuring access is not an easy task. In many instances, people take the rate of service usage for measuring accessibility of that particular service. This is not an accurate approach as it does not consider people who are within reach of the services but do not use them. This way of analysis therefore yields inaccurate results (Demirguc, Levine & Ross 2009).

As indicated by Kithinji (2010), there are a bigger number of ladies than men who work little and medium endeavors. This is on the grounds that ladies carrying on with work in Kenya do everything they can in the little areas and they leave the greater undertakings to the men (Chibba, 2012). Beneficially, there is gigantic improvement seen in the medium and little ventures and they have extended to serve more than 10 million families in the entire world. The principal concern raised by Love (2003) was that the monetary consideration was extremely poor, particularly in Africa. Monetary foundations typically bar the unfortunate networks due to their low pay and different boundaries to free

monetary access. Discoveries by World Bank according to an exploration done in 2014, monetary consideration is exceptionally poor in the Sub-Sahara Africa. As per the report, just 34.2% of the populace own a record with monetary foundations. Monetary consideration in Kenya is a vital drive since it will guarantee that the monetary administrations are made accessible to the clients without anybody feeling separated.

### **1.1.3 Relationship between financial inclusion and Mobile Banking**

Sarma and Pais, (2010) stated that sending or receiving money via digital gadgets contributes to the popularity of financial inclusion process for it allows assortment of markets tools allowing efficient money exchange. This technological advancement enables clients to receive all services that a bank can offer. Instead of having to travel to an ATM machine to withdraw cash, a person can easily use mobile banking applications available on google play or apple store and satisfies their financial needs without moving an inch. With tough economic times, people are encouraged to save. This is a very tough culture to maintain as it requires high levels of self-discipline. Communication service providers such as Safaricom and Airtel have linked up with many banks to enable their clients save easily. An application such as M-Shwari enables one to save money any time and at no extra cost. Other than saving, business people among other people can get financial aid whenever need arises. One can borrow as low as a hundred kenya shillings as much as possible. These loans offered through mobile banking have very low interest rates charged. Furthermore, no collaterals are required. A person does not stand to lose their properties to auctioneers in case they delay paying back the loan borrowed. This has given many Kenyans financial freedom and has promoted economic growth as people are able to invest and increase their stock conveniently. The other advantage that comes with

this invention is proper time management. Instant money exchange and reduced travel time has contributed to saving time. People are now able to divert this time to other productive activities rather than queueing for long hours waiting to be served at these financing facilities (Ngugi, 2015).

Aker and Wilson (2013) state that transactions are effected at lesser costs at a much improved level of accessibility. Today, mobile users market this technique as they share information with other people. Using the mobile platform, they have adopted banking for transactions and facilities such as reimbursement, credit receipt, payroll deposit, bill payments, and international and local transmittals. With technological advancements, millions of people are linked through phones and the internet making transfer of money globally much easier than in the olden days. Banking via the mobile platform allows disbursements to bring up the sharing of risks

Jack & Suri, (2010) stated that mobile airtime has promoted financial inclusions in Kenya. People are able to buy and send airtime to other users without going to service providers in person. Recipient user can hence sell the received airtime to a local agent/agent who then pays with cash, or undeniably for merchandises, and thus finish a transmission of buying power to the receiver from the original transmitter. Companies dealing with mobile phones became first aware of the opportunity (this count is above three billion persons worldwide, in any case, who are not aware of the conventional administrations availed by banks) and another market appeared.

#### **1.1.4 Women Entrepreneurs in Nairobi City County, Kenya**

Entrepreneurs form a key part of any country's economy. This is because they provide goods and services that are much needed by the society. In so doing, they generate revenue for the government through taxes and the profits they make. According to Athanne, 2011, empowering women in entrepreneurship is highly beneficial. Kenya as a growing country has been campaigning for gender equality from time in memorial. The world has seen tremendous growth in the economy of country's that support women in the business sector (Athanne, 2011). With this as the driving force, Nairobi County has initiatives in place to ensure that ladies grow in business for the general growth in the country's economy. A study done by Stevenson and St-Onge, (2013) shows that the government of Kenya is yet to empower women to levels of other countries such as the USA. Taking Nairobi City for example, women are mainly in the informal business sector. Majority of them are in the jua kali sector and the micro-entreprises. This can be attributed to lack of adequate capital to start up formal businesses. The profits realized by these women yearly clearly indicate that women can be great achievers given the right support in business (Stevenson and St-Onge, 2013).

Women in Nairobi County particularly from the slum areas have for many years experienced difficulty in financial growth of their entrepreneurial ventures due to the weak capital base. This problem has been aggravated by the fact that few of them have been in a position to access financial support from the microfinance institutions. Despite emergence of numerous organizations offering financial assistance, very limited number of women owned businesses have been able to benefit from this assistance (Kamau,

2013). This has been manifested in the survival pace of most of these entrepreneurial ventures.

## **1.2 Statement of the problem**

There are financial institutions and funds that aim women specifically with the express objective of engaging them. In Kenya there is the Kenya Women Finance Trust, Women Enterprises Fund, Uwezo Fund among other programs. It has been proved that increases in women 's resources contribute to the family the well-being and especially for the children (Kabeer, 2013). Specifically, feminists would insist that an increase in financial access demonstrates a great opportunity for empowerment and financial freedom. As a result, microfinance institutions are perceived as an important tool for fighting women 's rights and independence. For any business venture to thrive there must be enough money to support it. In Kenya, businesses fail within their first year of operation mainly because of poor financing (Kamau 2014). More than half of these businesses are normally owned by women. This clearly shows the urge for ladies to be supported financially in their ventures.

A huge percentage of financial institutions have, therefore, evaded lending money to the women because they are not able to comply with the high costs of funds, problems in assessing and managing their risk profile, and a lack of the necessary collateral (CIDA, 2010). Research has also shown that ladies fail to meet set requirements of various institutions disqualifying them from receiving loans. Some banks require one to have very large amounts of money in an account before loan applications are approved. Other firms ask for land title deeds to serve as collaterals. These demands are too high for

Kenyan women given that this is a third world country and most of the properties here are owned by men (Katwolo, 2015).

Kenya suffers lack of adequate financial service providers. The population poses demands higher than what the government can satisfy. Taking marginalized areas for example, there are countable financial aid institutions in the northern part of the country. Taita town only has one KCB branch that is meant to serve the locals Waihenya (2012). Research did show the number of clients that these scarce facilities serve on a daily basis in such rural areas is very minimal. From such, it can be concluded that, aid in terms of finances is only enjoyed by a very small portion of Kenya's population. The remaining portion has to settle for informal sectors as they are less expensive and have cheaper monetary demands. With this kind of set up, people living in rural areas and the less fortunate will continue being poor.

Mobile banking however has helped bridge this gap. Money is now available to almost everyone even in remote areas. This study focused on discovering the effect that these online services have had on women's business growth in Nairobi.

### **1.3 Objectives of the study**

The overall objective of the study was to lay out the impact of financial inclusion and mobile banking on women entrepreneurs in Nairobi City County, Kenya.

#### **1.3.1. Specific objectives**

- i. This following was a rundown of the review goals:
- ii. Assessing how financial inclusion among women entrepreneurs in Nairobi City County, Kenya is impacted by mobile loans;
- iii. Finding out how the financial inclusion among women entrepreneurs in Nairobi City County, Kenya is influenced by mobile savings and deposits;
- iv. Evaluating how the financial inclusion among women entrepreneurs in Nairobi City County, Kenya is influenced by mobile payment platform;
- v. Determining how the financial inclusion among women entrepreneurs in Nairobi City County, Kenya is influenced by mobile money transfer.

### **1.4. Research Questions**

The following is a list of the research questions as derived from the specific objectives.

- i. How is the financial inclusion among women entrepreneurs in Nairobi City County, Kenya impacted by mobile loans?
- ii. How is the financial inclusion among women entrepreneurs in Nairobi City County, Kenya influenced by mobile savings and deposits?



- iii. How is the financial inclusion among women entrepreneurs in Nairobi City County, Kenya influenced by mobile payment platform?
- iv. How is the financial inclusion among women entrepreneurs in Nairobi City County, Kenya influenced by mobile money transfer?

### **1.5. Significance of the Study**

This research was geared towards promoting gender equality in Kenya. It encouraged leaders in different positions to support women in their entrepreneurial activities. Bodies that offer this type of aid were encourage lowering demands and setting reasonable requirements for a larger percentage of the population to access loans. In addition, other stakeholders such as non-profit organizations, private sector players as well as women groups could gain insight from the findings. The information gathered will be used to improve the lives of Kenyan women who form the larger percentage of the total current population of Kenya. This study provided reference material for further research by other scholars.

### **1.6. Scope of the Study**

This research was restricted to impact online financing services among women entrepreneurs in Nairobi City County, Kenya. The review zeroed in because of mobile loans, mobile savings and deposits, mobile payment platform, and portable cash move on monetary consideration among women entrepreneurs.

### **1.7. Limitations of the Study**

Since the review required filling questionnaires as a means of primary data collection, there was no guarantee that the sample accurately filled the forms. This may have given wrong data thereby affecting the results of this exercise. However, efforts were made in

clarifying to the respondents the importance of this study and urge them to give sincere feedback. The research was restricted to women entrepreneurs who are engaged in small scale trade. As such, it may not have been possible to generalize the findings to other women entrepreneurs in other areas, since enterprises are influenced by localized demand.

### **1.8. Organization of the Study**

This paper constituted three sections. The first one dealt with introduction to the subject under study. It explained the need for this research and the shortcomings that Nairobi faces presently. It also elaborated the objectives that were to be met at the end of the research. The second chapter explained existing literature that relates to the topic of research. Scholars have looked into this matter before and so this second chapter tried to explain their findings. It also detailed the frameworks of the paper. The third chapter gave the methodologies, procedures, data gathering and analysis techniques and eventually the findings presentation methods. This chapter also detailed the validity of the study and whether the results obtained will be accurate. The fourth chapter provided investigation and conversation of the review discoveries. The final section focused on the study summary, conclusions and recommendations.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1. Introduction**

In this chapter, data collected and analyzed by previous scholars on the topic of interest will be reviewed. The aim of this exercise was to identify gaps that were left by these researchers so that this study fills them. Study materials such as books and journals on this kind of banking were studied in detail and useful information drawn from them.

#### **2.2 Theoretical Literature Review**

The philosophies that make the basis of this research were elaborated under this. They are Financial Intermediary theory and Technology Acceptance Model theory which are discussed in subsequent sections:

##### **2.2.1 Financial Intermediation Theory**

In the business sector, intermediation refers to the act of linking money lenders and money borrowers. The person or unit that creates this connection between the two parties is the mediator (Ndebbio, 2004). Most researchers have tried to answer questions on the necessity of having intermediation. It is possible for entities with surplus money to lend loans to borrowers directly without having a third party in between. This third parties, intermediators are to some extent, just an extra cost that can be done away with (Diamond, 1984). According to Ndebbio, (2004), in cases where banks acts as the third parties, the only role that the banks play is getting to the credit value of a client. Hence, that can be done by investors themselves. However, these units assume a significant part with regards to curbing risks. They ensure that borrowers have assets that can be used to recover the loan in case the debtor is unable to pay back.

Financial intermediaries gather relevant data and deal with any charges that may be incurred during the loan transaction process on behalf of the money lenders. They are key aspects in this process. Intermediaries determine the amount of money certain borrowers receive (Demirguc-Kunt et. al 2008). They scrutinize the financial status of individuals and set limits for their borrowing capacities. As far as financial inclusion is concerned, intermediation disadvantages a large part of the population. Poor people will be limited to certain borrowing limits and will therefore never grow economically. Existing literature studied here indicates the need for a system that does not require intermediation. Online money transactions come in handy when it comes to eradicating this problem.

### **2.2.2. Theory of Technology Acceptance Model**

The world has seen technology advance from manual operations to complex computerized systems and to the present day simplified systems that are easy to operate. These changes have been dealt with differently for different groups of people. According to Davis (2009), a system known as the Technology Acceptance Model is used to access the way people accept and utilize technological advancements. The systems explains that there are various elements that influence acceptance' degree of innovations. A portion of these elements incorporate the benefits that come with various innovations, the flexibility of the inventions and the ease of use of these new models (Davis, 1989). Other important determinants include the costs associated with them, degree of security in terms of investment losses, whether the idea satisfies existing needs better than present methods and also the comfort that comes with the new models. Scholars have adopted the technology acceptance model in determining how various innovations in the banking industry have been adopted. Mobile banking is seen to have been accepted positively

worldwide (Ndubisi and Richardson, 2002). People find this service to be convenient and very beneficial. This is because of its simplicity in operation, low transaction charges and the efficiency of accessing financial services from any location around the globe, any time.

## **2.3 Empirical Review**

Data and information gathered from experience, interviews and observations of a sample will be discussed under this segment.

### **2.3.1 Mobile Loans and Financial Inclusion**

Christabell and Raj (2012) researched on how, through mobile loans, microfinance allows financial inclusion of poor rural Indian women. The research used secondary data sources provided by various financial organizations including (CGAP), World Bank, Reserve Bank of India, etc., to examine how the linkage of Self Help Groups to Bank has progressed. The report established a positive impact of microfinance in introducing and spreading banking to rural India. The report resolved that mobile loans are a lubricant, which oils the wheels of development. However, the biggest challenge come in on ensuring individuals in rustic regions approach mobile administrations. It's because most of them are mainly illiterate hence hard to adopt new ideas. The need for training them on how to use gadgets and the internet arises making it a difficult task.

Shankar (2013) did a research on whether the obstacles of access in India have been addressed by Microfinance Institutions. He acknowledged the common obstacles to inclusion under the factors of demand and supply. To carry out the analysis of the spread of Microfinance penetration Shankar conducted interviews on 103 MFI field officers. It was realized that entrance in the nation was slanted metropolitan regions and that there

are constraints in the scope of their outreach, although multiple obstacles to financial inclusion are broken by MFIs. It was also found out that on account of the way they function, they have not been able to avail services to some financially left out persons, even in areas where MFIs function. The recommendations of the researcher were that MFIs should factor in offering accounts' profitability and embracing more flexible models. Further, in order to allow greater access to MFI membership, the researcher also suggested skill based training.

Karlan (2014) investigated the evolving of philanthropic associations in making microcredit accessible to individuals with low livelihoods. While looking at major developing countries in the world, his argument was that the responsibility of nonprofit organizations has been transformed concerning benefit organizations have penetrated the market and started to offer these types of assistance efficiently. The article is designed around three issues: contacting people who are not covered by the for-benefit area, including that excessively provincial, excessively poor or excessively youthful, building trust among clients and microcredit suppliers, and advancing advancement. The researcher recons that, reaching out for destitute individuals living in exceptionally rustic regions is costly and actually unmanageable on a for-benefit premise. He argued that not-for-profit foundations are important to reinforce trust between the monetary business and its future clients, and that they are significant in ensuring that there is a smooth transition for the rise of for-benefit organizations. He proposed that not-for-profit associations oughtto advance reserve funds drove microfinance, for example, reserve funds assembles in which 10 to 30 individuals work to save and credit to one another.

### **2.3.2 Mobile Savings and Deposits and Financial Inclusion**

Fin Access (2011) researched on the levels of financial inclusion in Kenya. They investigated the penetration of financial services with a focus on savings credits and transfers. The study showed that there has been a remarkable decrease in the number of clients who acquire these services from the bank using the traditional system. It was noted that approximately 22 percent of clients use mobile banking services. This is a 4 percent increase from the previous number of users. More people prefer using M-PESA services to transact rather than using cash money. Since 2004, the sector has realized increased profit margins due to high numbers of clients (Ndii, 2009).

Mutua and Oyugi (2012) did a research on eradicating poverty through improved rural access to Kenyan financial services. The exploration included a variety of Kenyan programmes dealing with rural financing such as ROSCAs, SACCOs and MFIs. Before 2010, rural parts of Kenya had very minimal access to portable hand gadgets. Internet access was also not well spread across the country. Poor infrastructural development has made certain areas of the country inaccessible. Such challenges make it difficult for clients to access banking services. This research paper aims at finding out whether mobile banking has bridges this gap

Ellis et al. (2013) conducted a concentrate on monetary incorporation household growth and investment in Tanzania and Kenya. In a descriptive survey, they interview sampled households in Kenya and Tanzania and studied the reasons for saving and borrowing among households. The study revealed that a big number of people save and borrow for purposes of household investment. For all purposes, there was a tendency of using savings more than borrowing and men and women display the same behavior patterns in

borrowing and saving. Most common reasons for not saving or borrowing was given as deficiency of money but supply side access obstacles such as high charges were cited as well. The study confirmed that there is a need for financial services and discontinuity services supply by formal loan specialists is supplemented by informal lenders.

### **2.3.3 Mobile Payment Platforms and Financial Inclusion**

Njenga (2009) looked into the mobile banking sector with an aim of determining the impact it has on satisfying the needs of Kenyans. His main focus was on the experience that users got from using this technique. In collecting data, the scholar conducted surveys in the M-banking sector. From analysis of the collected data, it was clear that Kenyans embraced mobile banking. They depended on this service for almost all their daily monetary transactions (Njenga, 2009). They used mobile banking to settle bills, borrow money and even send funds to friends and relatives in distant cities. The system was very efficient and customer friendly in terms of charges and ease of use.

Further, in a case study of M-pesa in the Kenyan society, Munga, (2010) did an examination on versatile banking's impacts. The aim of the review was to define social and economic impact of mobile banking like M-Pesa to the Kenyan society. Primary data was collected through questionnaires and was enhanced for certain auxiliary information from the Annual Reports of Safaricom. A few factual investigation techniques, for example, expressive insights, distinction of means and Chi-Square test were utilized to assess the social financial effects M-Pesa has had. The exploration demonstrated that M-pesa immensely affected the Kenyans lives both economically and socially.



Sanz (2011) also conducted research on enhancing financial accessibility via financial services offered through mobile devices, whose sole objective was to analyze if models whose basis is on cellular technology and prepaid platforms can solve financial services' accessibility in the largest percentage of developing nations. An assessment of the appropriate factors that expound financial services' accessibility was conducted from January to March 2011. The findings pointed to a number of factors that included the creation of agents who handled cash using current networks, an intense fall in connectivity cost, allowing regulatory change, and the industry opinions in future profitability, which showed the reasons behind the usual usage of mobile banking. The study mainly paid attention on how Mobile banking has enhanced financial access.

#### **2.3.4 Mobile Money Transfer and Financial Inclusion**

The effect of mobile penetration on economic development across Indian states is assessed by Kathuria, Uppal and Mamta (2009). They do an estimation of a primary model with three conditions for 19 territories of India between 2000 and 2008 using an improved model of Sridhar and Sridhar (2004). They precisely do an examination on the links through which growth is affected by mobile phones and the restraints, if any, which limit their effect. Their finding is that the Indian states where mobile penetration rates are higher, growth is also expected to be fast, and there is a significant mass at a 25 percent rate of penetration past which the impact of cell phones on development is augmented by the effects of network. Other than all other infrastructures, telecom networks are vulnerable to the impacts of network: the growth effect is greater following the realizations of a noteworthy threshold size of network.

In Kenya, KCB is one bank that has greatly partnered with communication companies. A study was done by researchers to find out the banks opinion on mobile banking. In the study, it was realized that many clients embraced this technology. Most of KCB clients transact online and even make enquiries through phones. Only a small percentage visited the bank physically for transactions (Achieng, 2011). Over the years, the rate of growth in people using the M-Banking services has been growing tremendously. Due to this, financing institutions have seen the need to closely work with communication companies. This is a way of ensuring that the banks also get a share in the profits made through online banking. If they do not consider partnerships, there is a huge possibility that the mobile banking business will take over the tradition banking system, compromising their profit margins.

Another research on the mobile banking impact on financial inclusion was conducted by Waihenya (2012). For this study, secondary data was used because it is easy to access, less expensive and perfect for this case due to the Central Bank of Kenya submission regulations. Secondary data that was relied on include present researchers and theories carried out on mobile money transfer and financial inclusion from the internet, periodicals, and journals. The study's conclusion concerning the effect of agency banking is a remarkable rise in financial inclusion in the nation. The research findings were that there is a noticeable gap that the formal framework of banking has not yet bridged and that the financial inclusion levels are low. It further notes that multiple issues from the rising mobile entry in the country and increasing mobile money transactions at a similar rate are being faced by agency banking.

### **2.3.5 Financial Inclusion**

Every society has different groups of people with different financial needs and capabilities. Meeting these needs requires diverse strategies since the needs vary. Poor people need more lenient measures compared to those needed by wealthy people. The process of ensuring that every person gets access to adequate, suitable and affordable financial services and products is known to as financial inclusion. (Chakrabarty, 2011). Services such as saving and accessing loans must be available at all times and at reasonable fees. Financial inclusion simply denotes the intensive efforts by institutions towards spreading simple banking services at reasonable prices to the disadvantaged and low income groups in the economy with an objective and view to connect the left out with the formal banking system so as to help them gain an understanding of the available financial services and providing them with the confidence to make proper financial decisions (Patna, 2012). Mobile money has also come out as a strong competition to the commercial banks in Kenya. Though mobile phone technology concept was initially designed to enable communications, a number of economies including Kenya have invested in further innovations to provide banking services (Tiwari, Buse, & Herstatt, 2013).

Further, by using their networks to provide a variety of financial services, not as intermediaries of the commercial banks but as financial service providers to both banked & non-banked subscriber base, providers of mobile services have ensured that mobile money services are deeply-rooted into the financial sector. The financial sector in Kenya is regarded a laboratory for future growth's financial inclusion. This is described as the way of making sure that vulnerable groups like the low income and weak gatherings have

the admittance to adequate and timely financial and credit services affordably (Alexandre, 2012). Krishan Jindal (2010) explains that financial inclusion is whereby financial services are delivered to vast sectors of low income and disadvantaged groups at affordable costs.

He further observes that the main aim of financial inclusiveness is to have all the needs of every target client met fully. Transfer of money from one party to the other should be smooth and easy and with reasonable costs attached to it. Other services such as borrowing money, personal account management and acquisition of property must also be custom-made to fit user's needs and comfort. Financial systems must be guided by sound rules and regulations. In the process sustainability must be achieved. The units in place must be able to provide these services for as long as the market requires. In addition, there must be a variety of options available for clients to choose from. This might be in terms of repayment plans or the terms and conditions. By so doing, most of the customer's needs are met fully achieving the end goal.

## 2.4 Summary of the Literature Review

**Table 2. 1: Summary of Literature Review**

<b>Author (Year)</b>	<b>Title</b>	<b>Findings</b>	<b>Research Gap</b>
Karlan (2014)	Evolving of nonprofit organizations in providing microcredit to people with low incomes	Pursuing poor people living in very rural areas is costly and in fact unsustainable on a for-profit basis. He argued that nonprofit institutions are essential to strengthen trust between the monetary business and its future clients, and that they are making sure there is a change for the development of for-profit corporations	The study focused on microcredit Which did not include all the aspects of Mobile lending, deposit, money transfer and payments therefore creating a gap on those aspects
Munga, (2010)	The effects that m-banking has in Kenya Case study: M-PESA business	Both economically and socially, M-pesa impacted Kenyans lives remarkably.	The study findings were on social and economic impact and not on financial inclusion.
Sanz, (2011)	Utilizing mobile financial services to access finances.	Due the creation of agents who handled cash using current networks, an intense fall in connectivity cost, allowing regulatory change, and the industry opinions in future profitability, mobile banking is usually used.	The methodology used in the study focused on access to finance and ignored other aspects such as financial inclusion aspect creating a knowledge gap
Achien g (2011)	Strategic responses of Kenya Commercial Bank regarding mobile banking	Money lending and borrowing is a technique that is growing at a high rate in third world countries, Kenya included. This study indicated that banks and other financial institutions need to collaborate with communication service providers to reach a larger percentage of the target market. This is the only way that these financing units will realize profits from mobile banking, a technique that is very popular nowadays.	The study investigated the opinion that KCB has on the subject of discussion. The research variables were not clearly focusing on all aspects of mobile banking but only on mobile money transfer creating a knowledge gap

Waihen ya (2012)	Effect of mobile banking on Financial Inclusion in Kenya	It is evident that the financial needs of Kenyans, especially female entrepreneurs are not fully met by the available financial organizations. This new technique of banking using portable gadgets is quickly taking root and replacing most financial institutions. Mobile banking has promoted the popularity of financial inclusion in the country.	The research conducted did not actually focus on women entrepreneurs thus creating a deficiency in knowledge. This research paper will fill in the missing information.
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## 2.5 Conceptual Framework

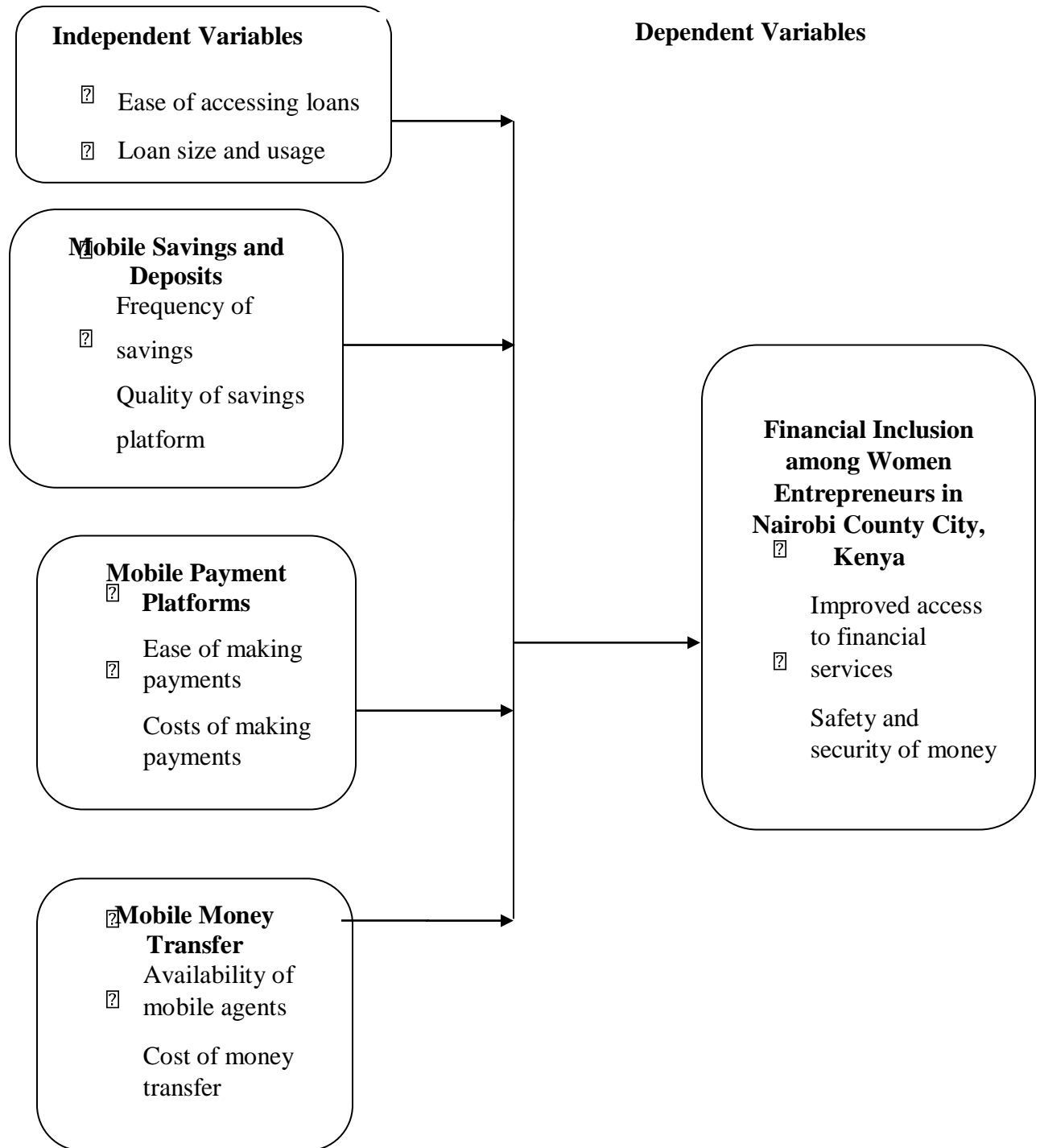


Figure 2 1: Conceptual Framework

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This section was presented in four main sections; design of the research, information collection (data gathering), diagnostic tests and data analysis.

#### **3.2 Research Design**

As described by Cooper and Schindler (2006), entails the plan that is used by researcher in collecting, evaluating, and analyzing figures. It is a planned arrangement of assumption through which the researcher's opinion is founded so as to get answers for the questions raised. The descriptive research design was utilized in this research. Ideally, descriptive design is a methodical, empirical inquiring into which, because the essentially cannot be altered or because their appearance has already happened, the control of the independent variable is not usually entirely in the hands of the researcher (Mugenda & Mugenda (2003). Therefore, because it pursues information regarding the existing relationship between financial inclusion and mobile banking among women entrepreneurs in Nairobi, Kenya, this use of descriptive research design was more feasible and suitable.

#### **3.3. Target Population**

In research, people denotes entire constituents of a sampling area. This is normally the people or objects of interest. These are normally individuals that the researcher wants to know information about (Bhattacharjee, 2012). The populations for this study consisted of women entrepreneurs in Nairobi County. The study targeted women in groceries (25%,



clothes (20%), shoes (20%), Jua Kali (10%), Hardware (15%), carpentry businesses (10%). The target population was 5338 women entrepreneurs who are active women entrepreneurs using mobile banking in Nairobi County.

### **3.4. Sampling Frame**

As defined by Mugenda and Mugenda (1999), a sample entails a sub-group or group attained from the available populace. It adopted the stratified sampling technique based on the type of business one is engaging in the categories of groceries, clothes, shoes, Jua Kali, Hardware and carpentry. Stratified sampling is defined as a likelihood examining method where the scientist splits the whole populace into diverse sections, then arbitrarily picks the last subjects proportionately from the various sections. The main explanation behind choosing this method of sampling was that it can incorporate even the population subgroups that are the smallest and the least accessible. This way, the researcher was able to sample even the uncommon extremes of the specific population and hence making the study results to become more reliable and useful. Additionally, this following formula proposed by Using Yamane (1973) was utilized by the review to determine the sample size;

Utilizing the formulae by Yamane (1973)

$$n = N / (1 + N * (e)^2)$$

Where

n = size of the sample

N = the size of the population

e = the acceptable sampling error (7%) at 93% confidence level

Thus;

$$n = 5338 / (1 + 5338) (0.07)^2$$

$n = 204$ , which is the size of the sample population (n) or number of participants

### **3.5. Data Collection Instrument**

Essential information was assembled through a questionnaire which involved questions that tried to address questions connected with the reason for this review. Open- and close-ended questions were entailed in the questionnaire to improve uniformity and to make sure that maximum data was collected and quantitative and qualitative data was generated respectively. There were two sections in the questionnaire, the background data sector and the examination questions sector. Besides, the exploration questions area were separated to segments as per the examination goals.

#### **3.5.1. Validity**

As elaborated by Mugenda and Mugenda (2003), the degree to which a tool is capable of measuring what it means to measure is described as validity. It is the precision and weightiness of inductions, which depend on the exploration results. In such manner, specialists in the field of ventures accomplished the substance legitimacy through an assessment of the substance. The instruments were given to two gatherings of specialists, one gathering was expected to assess the idea that is being tried to be measured by the instrument and the other group was requested to establish whether the set of items correctly signifies the concept that is being studied.

### **3.5.2. Reliability**

This term alludes to the consistency of information that arises using a specific technique. What is being measured by a test is measured to the degree. Mugenda (2003) explains that reliability is that the measure of the extent to which an exploration instrument produces the identical outcome after repeated trials over a specific time. During this regard, test-retest was employed to test on reliability. This involved the administration of the identical instruments twice to the identical subject groups, but after your time. Therefore, for stability determination, a test or measure was repeated on the topic within the future. To obtain a measure of stability, comparison and correlation of the results with the primary test was conducted. The responses attained during the piloting were used for the calculation of the unwavering quality coefficient from a connection network. Estimation of instrument's unwavering quality done with an internal coefficient measure known as Cronbach's Alpha Coefficient.

### **3.6. Data collection procedure**

Data collection from the objective populace was done within a week. Three examination associates aided with information assortment subsequent to preparing for two days. The instructional meetings involved updates on the goals of the review, explanation of meaning of terminologies in the review and significance of moral norms maintenance while gathering information from the respondents. The scientist and colleagues payed a visit to the respondent's area ahead of time and solicitation them to affirm the helpful time and date for the meeting and consummation of the poll. At the named time, the polls were managed. The assistants were hired from the community so as to reduce suspicion and cater for the communication barriers.

### 3.7. Data Analysis and Presentation

In this section, a content analysis and descriptive analysis was employed. Appropriate tables were used for the presentation of the collected data and for easy analysis and comprehension. Inferential statistics regression were used to characterize the connection between monetary consideration and portable banking in Kenya. The dependent variable was financial inclusion while several measures of mobile money transfer like the number of subscribers who have the access to cellular phones, the sum of portable cash agency distribution, and the enrollment count of mobile money service subscribers were used as independent variables.

#### 3.7.1. Model Specification

This study utilized the regression model below;

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu$$

Where,

**Y**= Financial inclusion as assessed by Women entrepreneurs in Nairobi County, Kenya between 2014 and 2018.

**$\alpha$** = constant term

**$X_1$** = count of women who can access mobile loans

**$X_2$** = count of women who use the mobile savings and deposits service.

**$X_3$** = count of women using mobile money in making payments for utilities and purchases

**$X_4$** = Number of women who use mobile money transfer frequently

**$\beta_1, \beta_2, \beta_3$** = beta coefficients that indicate diverse importance levels

So as to cater for important scores of distribution, statistical tools were used to avail an analysis of the data. Accordingly, Statistical package for social science (SPSS) and R-Statistics were used in analysis for this purpose.

Inferential statistics to be used included variance analysis (ANOVA), the chi-square tests and regression analysis which was applied using SPSS and R-statistics.

Standard deviation, variance and mode, mean and median which are the measures of central tendency were calculated and pie diagrams, graph and tables were utilized in representation of this data.

### **3.8. Ethical Consideration**

The respondents were guaranteed by the specialist that the information was only to be utilized for the purposes of academic work and was confidential. In addition, taking part in analyzing was not be mandatory also, no respondent was constrained to take part in the meeting with the respondents started through an acquaintance from the researcher with the respondents. The researcher acquired a letter from the graduate school and a research permit from National Commission for Science, Technology and Innovation (NACOSTI).

## **CHAPTER FOUR**

### **RESEARCH FINDINGS AND DISCUSSION**

#### **4.1 Introduction**

This chapter displays study findings and discussions on the data gathered from questionnaires on the impact of financial inclusion and versatile banking on women entrepreneurs in Nairobi City County. The discoveries are in accordance with the review goals. Investigating, organizing and orchestrating to empower helpful for information examination was completely done on the poll's information. SPSS Version 26.0 was utilized to aid information examination.

#### **4.2 Response rate**

The number of inhabitants in this review consisted of 204 women entrepreneurs in Nairobi County. The type of business engaged by the respondents were in the categories of groceries, clothes, shoes, Jua Kali, Hardware and carpentry. A sum of 152 finished and usable surveys were gotten from the women business visionaries under the review bringing about a reaction pace of 74.5% as 52 polls were never returned addressing 25.5% non-reaction. This reaction rate above 70% considered agreeably reasonable as demonstrated by Mugenda and Mugenda (2019).

**Table 4.1: Response rate**

<b>Questionnaire</b>	<b>Frequency (F)</b>	<b>Percentage (%)</b>
<b>Filled &amp; Returned</b>	152	74.5
<b>Not Returned</b>	52	25.5
<b>Total</b>	204	100

**Source: Author, 2022**

### **4.3 Descriptive statistical Analysis**

#### **4.3.1 Mobile Loans and Financial Inclusion**

The review looked to research how monetary inclusion of women entrepreneurs is impacted by mobile loans in Nairobi City. To have a deeper understanding of the study objective, the researcher asked questions touching on mobile loans and financial inclusion. The proclamations were shown by Strongly disagree, Disagree, Neutral, Agree, Strongly Agree.

**Table 4.2: Distribution on the influence Mobile Loans on Financial Inclusion**

Mobiles loans and financial inclusion	SD		D		N		A		SA		Mean	Std Deviation
	(F)	(%)	(F)	(%)	(F)	(%)	F)	(%)	(F)	(%)		
Mobile loans has improved the level of financial access among women entrepreneurs	-	-	2	1.3	18	11.8	72	47.4	60	39.5	5.2	0.1782
Flexibility in the amount of credit extended through mobile phones has boosted many women into business	2	1.3	3	2	19	12.5	83	54.6	45	29.6	4.9	1.825
Interest rates charged on mobile phone based credit has been fair to women into business	4	2.6	12	7.9	13	8.6	72	47.4	51	33.5	4.4	0.7245
Time taken in processing of mobile phone credit has been good for women into business	-	-	-	-	6	3.9	76	50	70	46.1	5.3	0.6075

**Source: Author, 2022**

The table above shows that respondents agreed to the statement that Mobile loans has improved the level of financial access among women entrepreneurs, as shown by a mean of 5.2. When asked if flexibility in the amount of credit extended through mobile phones



has boosted many women into business, majority of respondents agree, as shown by 4.9; interest rates charged on mobile phone based credit has been fair to women into business, as shown by a mean 4.4; time taken in processing of mobile phone credit has been good for women into business.

It is obvious from the review results that the versatile advance administrations have all the earmarks of being overcoming any barrier for women entrepreneurs in Nairobi city who maybe lack formal ledgers, or whose earnings are not adequately steady to acquire from formal monetary foundations. Services offered by mobile phones have further developed admittance to credits in this manner greatly impacting financial inclusion on women entrepreneurs in Nairobi city. A similar study by Musango (2018) established that adaptability in how much credit reached out through cell phones should draw in additional clients along with the adaptability in reimbursement of cell phone-based advances giving many entrepreneurs the choice to enable access to useful financial products.

#### **4.3.2 Mobile Savings and Deposits and Financial Inclusion**

The next set of survey questions looked into mobile savings and deposits and how they impact financial inclusion of women entrepreneurs. This was indicated by Strongly disagree, Disagree, Neutral, Agree, Strongly Agree.

**Table 4.3: Distribution on the influence mobile savings and deposits on Financial Inclusion**

Mobiles savings and deposits and financial inclusion	SD		D		N		A		SA		Mean	Std Deviation
	(F)	(%)	(F)	(%)	(F)	(%)	(F)	(%)	(F)	(%)		
Linkage of mobile phone payment and bank account has enabled women to save more from their business	4	2.6	7	4.6	18	11.8	81	53.3	42	27.7	4.3	0.1855
Provision of mobile bank account has enabled women to do transactions on daily basis	-	-	-	-	2	1.3	88	57.9	62	40.8	5.9	1.6415
The reduced fees charged on mobile funds transfer transactions has attracted more women into entrepreneurship	9	5.9	9	5.9	22	14.5	74	48.7	38	25	4.5	0.5445
The number of women in business has increased as a result of better management of mobile accounts	15	9.9	21	13.8	39	25.7	45	29.5	32	21.1	3.9	0.50085

**Source: Author, 2022**

Majority of respondents agreed that Linkage of mobile phone payment and bank account has enabled women to save more from their business, as shown by mean of 4.3; Provision of mobile bank account has enabled women to do transactions on daily basis, as shown

by mean of 5.9; The reduced fees charged on mobile funds transfer transactions has attracted more women into entrepreneurship, as shown by mean of 4.5; the number of women in business has increased as a result of better management of mobile accounts, as shown by mean of 3.9.

It is evident from the research findings that the penetration of financial services with a focus on mobile savings and deposits has experienced a remarkable increase in the number of women entrepreneurs who acquire these services directly from their mobile phones thus impacting their financial inclusion. In line with these findings, Ellis et al. (2013) revealed that a big number of people save and deposits for purposes of business and household investment. For all purposes, there was a tendency of using savings more than borrowing and men and women display the same behavior patterns in borrowing and saving.

#### **4.3.3 Mobile Payment Platforms and Financial Inclusion**

The research also sought to investigate mobile payment platforms and how they impact financial inclusion of women entrepreneurs in Nairobi county. The statements were indicated by Strongly disagree, Disagree, Neutral, Agree, Strongly Agree.

**Table 4.4: Distribution on the influence mobile payment platforms on Financial Inclusion**

<b>Mobiles payment platforms and financial inclusion</b>	SD		D		N		A		SA		Mean	Std Deviation
	(F)	(%)	(F)	(%)	(F)	(%)	(F)	(%)	(F)	(%)		
It is cheaper to pay bills via mobile money compared to traditional payment options	1	0.7	2	1.3	6	3.9	87	57.3	56	36.8	4.9	0.1665
Provision of pay bill linkage options has attracted more women entrepreneurs to use mobile for their transactions	-	-	-	-	2	1.3	66	43.4	84	55.3	5.9	1.732
Introduction of pay bill services has increased the cash deposit ratios by women entrepreneurs	-	-	-	-	6	3.9	84	55.3	62	40.8	5.8	0.7245
Pay bill services have increased the cash reserve ratios by women entrepreneurs	1	0.7	4	2.6	14	9.2	88	57.9	45	29.6	4.9	0.3075
Many women entrepreneurs are settling their bills through pay bill numbers	-	-	-	-	-	-	74	48.7	78	51.3	6.0	0.8565

**Source: Author, 2022**

Judging from the responses above, majority of the respondents agreed that It is cheaper to pay bills via mobile money compared to traditional payment options, shown by a mean of 4.9; provision of pay bill linkage options has attracted more women entrepreneurs to use mobile for their transactions , as shown by 5.9; introduction of pay bill services has increased the cash deposit ratios by women entrepreneurs, as shown by a mean of 5.8; Pay bill services have increased the cash reserve ratios by women entrepreneurs, as shown by a mean of 4.9. The study further established that many women entrepreneurs are settling their bills through pay bill numbers, as shown by mean of 6.0

These results are a sign that quite a number of women entrepreneurs embrace adoption of mobile payment platforms such as pay bill services continually segmenting the market to increase their cash deposit and reserve ratios while settling their bills through pay bill numbers. From analysis of the collected data, it was clear that women entrepreneurs have embraced mobile banking. From a similar view, they depended on this service for almost all their daily monetary transactions (Njenga, 2009; Musango, 2018). They used mobile banking to settle bills, borrow money and even send funds to friends and relatives in distant cities. The system is very efficient and customer friendly in terms of charges and ease of use.

#### **4.3.4 Mobile Money Transfer and Financial Inclusion**

Finally, the study accessed the mobile money transfer and how they impact financial inclusion of women entrepreneurs in Nairobi county. The statements were indicated by Strongly disagree, Disagree, Neutral, Agree, Strongly Agree.

**Table 4.5: Distribution on the influence mobile money transfer on Financial Inclusion**

<b>Mobiles money transfer and financial inclusion</b>	SD		D		N		A		SA		Mean	Std Deviation
	(F)	(%)	(F)	(%)	(F)	(%)	F)	(%)	(F)	(%)		
Mobile Money Transfer has improved the level of access to our financial services by women entrepreneurs	-	-	-	-	2	1.3	94	61.8	56	36.9	5.9	0.1955
The number of women entrepreneurs accessing financial services through mobile money transfer has increased	-	-	-	-	2	1.3	87	57.2	63	41.5	5.9	1.1972
The number of accounts accessed through mobile phone banking is increasing among women entrepreneurs	-	-	2	1.6	6	3.9	74	48.7	70	46.1	5.2	0.6335
Mobile transfer services have attracted more women entrepreneurs who held no account previously	1	0.7	-	-	1	0.7	66	43.3	84	55.3	5.6	0.3475

**Source: Author, 2022**

It is apparent from the table above that a substantial set of women entrepreneurs agreed that Mobile Money Transfer has improved the level of access to our financial services by women entrepreneurs, as indicated by a mean of 5.9; The number of women entrepreneurs accessing financial services through mobile money transfer has increased,

as indicated by a mean of 5.9; the number of accounts accessed through mobile phone banking is increasing among women entrepreneurs, as shown by a mean of 5.9; mobile transfer services have attracted more women entrepreneurs who held no account previously, as shown by a mean of 5.6.

The results show that Mobile money transfer has been fully embraced by most women entrepreneurs which is beneficial to both business' and personal' interests. In line with these findings, Sarma and Pais (2010) stated that sending or receiving money via digital gadgets contributes to the popularity of financial inclusion process for it allows assortment of markets tools allowing efficient money exchange. Mobile transfers enable entrepreneurs to receive all services that a bank can offer. Instead of having to travel to an ATM machine to withdraw cash, a business person can easily use mobile banking applications available on google play or apple store and satisfies their financial needs without moving an inch.

#### **4.4 Inferential statistical Analysis**

The study intended to conduct inferential statistics to establish the relationship between mobile banking and financial inclusion of women entrepreneurs in Nairobi City. The subsequent sections provide findings of Pearson Correlation, Model Summary, ANOVA and Regression Coefficients.

##### **4.4.1 Correlation analysis**

Correlation analysis is used to check whether independent variables are linear correlated with one another and with dependent variable.

**Table 4.6: Pearson Correlation**

<b>Pearson Correlations</b>	<b>Financial inclusion</b>	<b>Mobile loans</b>	<b>Mobile savings and deposits</b>	<b>Mobile payments platforms</b>	<b>Mobile transfers</b>
<b>Financial inclusion</b>	1.00000	0.65772	0.64615	0.68897	0.68924
<b>Mobile loans</b>	0.65772	1.00000	0.56321	0.53200	0.44615
<b>Mobile savings and deposits</b>	0.64615	0.68221	1.00000	0.59592	0.45462
<b>Mobile payments platforms</b>	0.68897	0.44600	0.496142	1.00000	0.463211
<b>Mobile transfers</b>	0.68924	0.48800	0.414332	0.32223	1.00000

**Source: Author, 2022**

From the correlation model, there is a positive relationship between mobile loans and financial inclusion of women entrepreneurs. This is an indication that the period of study (2021) financial inclusion of women entrepreneurs was a result of adaptation of mobile loans; this relationship is confirmed by a correlation coefficient of 0.65772. These results are supported by prior findings by Christabell and Raj (2012) researched on how, through mobile loans, microfinance allows financial inclusion of poor rural Indian women and the report established a positive impact of microfinance in introducing and spreading banking to rural India.



This study sought to establish whether there was a correlation between mobile savings and deposits and financial inclusion. The study results indicate that there is a positive relationship between mobile savings and deposits and financial inclusion of women entrepreneurs in Nairobi city. A correlation coefficient of 0.64615 confirms this association. The findings of this study are in line with previous findings of Ellis et al. (2013) study which revealed that a big number of people save via mobile platforms for purposes of business and household investment.

There is a positive relationship between mobile payment platforms and financial inclusion of women entrepreneurs in Nairobi city. The direct association between the two variables is confirmed by a correlation coefficient of 0.68897. In line with the results, Munga (2010) study proved that M-pesa had a huge positive effect on the Kenyans lives both economically and socially.

Finally, the study results indicate that there is a positive relationship between mobile transfers and financial inclusion of women entrepreneurs in Nairobi city. A correlation coefficient of 0.68924 confirms this association. In agreement with these findings, the US Federal Reserve report (2012) explains that banking on mobile discharges and platforms contains chances of growth in financial services to clients that live far from banks including people who are not properly banked by raising the availability of financial services and goods and minimizing transaction charges.

#### **4.4.2 Model Summary**

This section presents the model summary of multiple regression model. The predictors include mobile loans, mobile savings and deposits, mobile payments and mobile transfers. Table 4.6 presents the summary

**Table 4.7: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	.856	.732	.723	4.452
a. Predictors: (Constant), outcome of mobile loans, outcome of mobile savings and deposits, outcome of mobile payments, outcome of mobile transfers				

**Source: Author, 2022**

The results showed that all the four predictors (mobile loans, mobile savings and deposits, mobile payments and mobile transfers) explained 72.2 percent variation of financial inclusion of women entrepreneurs. It is evident that considering the four study independent variables, there is a probability of predicting financial inclusion of women entrepreneurs by 72.2% ( $R^2=0.722$ ). Denoting the remaining 27.8% is attributed to other current elements affecting financial inclusion of women entrepreneurs not included in the study. ANOVA test and R square are further conducted to verify this observation.

#### **4.4.2 ANOVA**

Analysis of Variance (ANOVA) was conducted in order to test the significance of the regression model. Table 4.8 summarizes the results.

**Table 4.8: ANOVA**

<b>Model</b>	<b>Sum of squares</b>	<b>df</b>	<b>Mean square</b>	<b>F</b>	<b>Sig</b>
<b>Regression</b>	28.26200	2	4.23200	25.155	.000b
<b>Residual</b>	25.1610	170	0.0690		
<b>Total</b>	53.423	173			
<b>a. Predictors: (Constant), outcome of mobile loans, outcome of mobile savings and deposits, outcome of mobile payments, outcome of mobile transfers</b>					

**Source: Author, 2022**

The independent variables' combined contribution was significant in predicting the financial inclusion of women entrepreneurs, as shown in table 4.7 above, ANOVA which also shows that the entire regression model is significant, with an F-value of 25.155 and a p value of 0.00 significant at 5 percent. These study results attest to the significance of the overall regression. **4.4.3 Regression Coefficient**

The regression coefficient was also tested in this study. Four variables were considered in this study. The values for the regression line is clearly demonstrated by the coefficient table. The Beta column eliminates the figures tied to the intercepts. Table 4.9 summarizes the results.

**Table 4.9: Regression Coefficient**

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	21.197	7.932		1.843	.008
Outcome of mobile loans	.259	.079	.464	5.852	.002
Outcome of mobile savings and deposits	.323	.048	.469	4.778	.000
Outcome of mobile payment platforms	.269	.066	.348	4.678	.000
Outcome of mobile transfers	.316	.053	.501	5.886	.005

**Source: Author, 2022**

Table 4.8 show the outcomes of numerous regressions. tiple regressions, as presented in the mobile banking dimensions (mobile loans, mobile savings and deposits, mobile payments and mobile transfers), the financial inclusion of women entrepreneurs will be 21.197. It is revealed from the above findings that increase in mobile banking dimensions will significantly lead to financial inclusion of women entrepreneurs. Similarly, the impact of mobile loans was stated by the t-test value = 5.852 which implies that the

standard error associated with the parameter is less than the influence of the parameter. To support the current findings, financial inclusion of women entrepreneurs at a large extent is impacted by mobile loans (Athanne, 2011; Stevenson & St-Onge, 2013).

Further study results also reveal that an expansion in mobile savings and deposits significantly prompt to an increase in financial inclusion of women entrepreneurs. Influence of mobile savings and deposits is indicated by the t-test value of 4.778 which implies that the influence of mobile savings and deposits activities is surpassed by the error. Current discoveries support past factual outcomes on monetary consideration that shows the last option is upgraded by mobile savings and deposits (Ellis et al., 2013; Musanga, 2018).

Also, table 4.8 indicate an increase in mobile payment platforms will significantly lead to improvement in financial inclusion of women entrepreneurs in Nairobi City. The t-test value of 4.678, which indicates that mobile payment platforms have an impact, supports the idea that the parameter's initial effect is less likely to be affected by standard error than it is by the parameter itself. In a related vein, numerous research (Njenga, 2009; Munga, 2010; Ellis et al., 2013; Musango, 2018) In the context of the business climate that specifies the aspect of mobile payment platforms, a number of positive factors financial inclusion of women entrepreneurs.

Additionally, table 4.8 show that increasing mobile transfers will dramatically boost financial inclusion of women entrepreneurs in Nairobi City. The t-test value of 5.886 indicated that this is the case, indicating that the parameter's influence outweighs its standard error. Supporting the current findings, Musango (2018) concluded that the level

of access to financial services has increased thanks to mobile transfers as result impacting financial inclusion of diverse entrepreneurs.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

The findings, conclusions, recommendations and proposals for additional research on influence of mobile banking on financial inclusion of women entrepreneurs in Nairobi City are summarized in this chapter.

#### 5.2 Summary

The study's primary goal was to investigate the impact of mobile banking on financial inclusion of women entrepreneurs in Nairobi City. Majority of women were found to be in operation between more than five years; this is a clear indication that there is had a reasonable experience in entrepreneurship in Jua Kali sector. The results of the survey show that the majority of female business owners are involved in making decisions on mobile banking activities. The majority of mobile banking activity were used by women entrepreneurs in Nairobi City were mobile loans, mobile savings and deposits, mobile payments and mobile transfers and were involved in contributing to overall financial inclusion of women entrepreneurs in Nairobi City.

Mobile loans had a strong, statistically significant impact overall financial inclusion of women entrepreneurs, in terms of how women entrepreneurs focus on mobile banking activities, it is claimed that this is the most significant subset of mobile banking.

In order to improve women's financial inclusion and give them more influence, mobile banking providers should focus on more easy access to financial credit and loans. The

implementation of mobile banking activities has increased growth of investments of women.

Mobile savings and deposits has experienced a remarkable increase in the number of women entrepreneurs who acquire these services directly from their mobile phones through linkage of mobile phone payment and bank account thus impacting their financial inclusion. The findings reveal that a big number of women save and deposits for purposes of business and household investment.

Mobile payment platforms on the other hand have improved financial inclusion of women entrepreneurs in Nairobi City. Such scenario can be demonstrated by the fact that, women have used mobile banking to settle bills, borrow money and even send funds to friends and relatives in distant cities. The system is very efficient and customer friendly in terms of charges and ease of use.

Finally, mobile money transfer has been fully embraced by most women entrepreneurs which is beneficial to both business' and personal' interests. The sending or receiving money via digital gadgets contributes to the popularity of financial inclusion process for it allows assortment of markets tools allowing efficient money exchange.

### **5.3 Conclusion**

The impact of mobile banking cannot be understated because it plays a part in financial inclusion of women entrepreneurs, and overall personal growth. When mobile banking is reported to be generating a good synergy for women entrepreneurs, as well as providing an appealing source of funding of financial inclusion. Therefore, by verifying study research questions, it was concluded that:



Mobile lending services seem to be bridging the gap for female entrepreneurs who may not have official bank accounts or whose salaries are not solid enough to borrow from formal financial institutions, which has sparked interest in mobile loans. These services offered by mobile phones have improved access to loans. Therefore, it will lead to financial inclusion if successfully implemented across a range of entrepreneurship sectors. Decision-making and general financial inclusion can be facilitated via mobile saving and deposits.

The study's findings also showed that connecting bank accounts and mobile phone payments has allowed women to do transactions on daily basis which has attracted more women into entrepreneurship as a result that financial inclusion of women becomes more likely.

The study concludes that introduction of pay bill through mobile payment platforms has increased women entrepreneurs' cash deposit and reserve ratios while settling their bills through pay bill numbers. Due to the availability of pay bill services, which many customers utilize to pay for goods and services delivered, these business owners' reach to their customers has increased.

Finally, the study concludes that the sending or receiving money through mobile platforms contributes to the popularity of financial inclusion process for it allows assortment of markets tools allowing efficient money exchange. Mobile transfers enable women entrepreneurs to receive all services that a bank can offer.

#### **5.4 Recommendations of the Study**

The review suggests that mobile loans and credit services ought to attract more entrepreneurs. Flexibility in amount of credit extended to mobile platforms should be able to draw in additional clients and adaptability in reimbursement of these advances ought to draw in additional clients.

Mobile banking providers ought to expand the provision of pay bill services to enable more users to pay their bills using the service.

The study recommends the relevant stakeholders to map out ideal policies to improve financial inclusion among the unbanked in the society and enable them to access different banking products and services.

#### **5.5 Recommendation for further research**

This research examines mobile banking in the context of financial inclusion of women entrepreneurs in Nairobi City. This study suggests the following for further research:

Collect additional empirical data and examine the impact of mobile banking on women entrepreneurs across different industries social groups. To conduct similar study in different counties especially in rural areas.

The research explored the effect of mobile banking and inclusion of women entrepreneurs, Nairobi City. It recommends to conduct similar empirical researched on other sectors of economy.

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## APPENDICES

### Appendix I: Questionnaire

Kindly, as logically guided, fill appropriately to provide useful and correct data. (This questionnaire has been provided as a word document that can mailed, filled out, and printed or filled out in soft copy and returned via e-mail).

---

#### Section A: General Information

1. Area of residence

.....

2. Tick to indicate your age bracket

a) 24 yrs. and below [ ]                      b) 25-29                      [ ]

c) 30-34                      [ ]                      d) 35-39                      [ ]

e) 40 and above                      [ ]

3. Tick to indicate your highest educational qualification level

a) Primary education                      [ ]                      b) secondary education                      [ ]

c) Certificate/Diploma                      [ ]                      d) Graduate                      [ ]

4. For how long have you been an entrepreneur?

0-5 years [ ]                      6-10 years [ ]

11-15years [ ]                      Over 16 years [ ]

**SECTION B: Mobile Loans and Financial Inclusion**

5. In a scale of 1 to 5, Please indicate the extent of your agreement with the following mobile loans and financial inclusion statements. (SD) strongly disagree; (D) disagree; (N) Neutral; (A) agree; (SA) strongly agree;

<b>Statement</b>	<b>S.D</b> <b>(1)</b>	<b>D</b> <b>(2)</b>	<b>N</b> <b>(3)</b>	<b>A</b> <b>(4)</b>	<b>S.A</b> <b>(5)</b>
Mobile loans has improved the level of financial access among women entrepreneurs					
Adaptability in how much credit stretched out through cell phones has boosted many women into business					
Interest charged on cell phone based credit has been fair to women into business					
Time taken in processing of mobile phone credit has been good for women into business					

**SECTION C: Mobile Savings and Deposits and Financial Inclusion**

6. In a scale of 1 to 5, Please indicate the extent of your agreement with the following mobile savings and deposits and financial inclusion statements. (SD) strongly disagree; (D) disagree; (N) Neutral; (A) agree; (SA) strongly agree;

<b>Statement</b>	<b>S.D</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>S.A</b>
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>
Linkage of cell phone installment and ledger has enabled women to save more from their business					
Provision of mobile bank account has enabled women to do transactions on daily basis					
The diminished expenses charged on versatile assets move exchanges has drawn in additional women into entrepreneurship					
The number of women in business has expanded because of better administration of portable records					

**SECTION C: Mobile Payment Platforms and Financial Inclusion**

7. In a scale of 1 to 5, Please indicate the extent of your agreement with the following mobile payment platforms and financial inclusion statements. (SD) strongly disagree; (D) disagree; (N) Neutral; (A) agree; (SA) strongly agree;

<b>Statement</b>	<b>S.D</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>S.A</b>
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>
It is cheaper to pay bills via mobile money compared to traditional payment options					
Arrangement of paying of bill linkage choices has drawn in more women entrepreneurs to use mobile for their transactions					
Presentation of cover bill administrations has expanded the money store proportions by women entrepreneurs					
Pay bill services have increased the cash reserve ratios by women entrepreneurs					
Many women entrepreneurs are covering their bills via pay bill numbers					

**SECTION E: Mobile Money Transfer and Financial Inclusion**

8. In a scale of 1 to 5, Please indicate the extent of your agreement with the following Mobile Money Transfer and Financial Inclusion statements. (SD) strongly disagree; (D) disagree; (N) neutral; (A) agree; (SA) strongly agree;



<b>Statements</b>	<b>S.D</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>S.A</b>
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>
Mobile Money Transfer has improved the level of access to our financial services by women entrepreneurs					
Some women entrepreneurs getting to monetary administrations through portable mobile transfer has expanded					
The records got to through cell phone banking is expanding among women entrepreneurs					
Portable exchange administrations have drawn in additional women entrepreneurs who held no record					

**THE END**

**THANK YOU**

**Appendix II: Research authorization letter; NACOSTI**

  
**REPUBLIC OF KENYA**

  
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