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The Impact of Mobile Banking on Financial Inclusion

By

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Abstract

The study sought to investigate the impact of mobile banking on financial inclusion. The barriers to financial inclusion of mobile banking customers and the impact of mobile banking on financial inclusion remain unknown. Consequently, the un-banked and under-banked continue to be marginalized or excluded from beneficial participation in the formal financial sector. This study therefore aimed to fill a gap by concentrating on the barriers to financial inclusion and the impact of mobile banking on financial inclusion. The study employed quantitative data collection methods. A survey was used to capture data of a statistical nature on the impact of mobile banking services on financial inclusion. A sample of 95 mobile banking customers was selected from the study population. The study was conducted in Dzivarasekwa, Seke, and Epworth low income suburbs. The major findings of the study were that mobile banking services had a positive impact on financial inclusion whilst barriers to financial inclusion manifested in the form of poor access to loans or credit facilities, problems with network coverage and security concerns related to mobile banking. Mobile banking services improved savings amongst customers over time and efficiency and convenience in effecting financial transactions. However, usage of mobile banking services did not result in improvements in access to credit facilities. The main conclusion of the study was that Network coverage and awareness in the use and access to mobile banking services all remain primary issues for those using mobile banking services. This research makes the recommendation that banks ought to create awareness among customers so that mobile banking platforms are as secured as traditional banking channels.

There is need for qualitative studies and studies which triangulate quantitative and qualitative research methodologies. Such studies will enable a better comprehension of the foundations of barriers to financial inclusion and relationship between cause and impact of mobile banking services on financial inclusion.

CHAPTER 1

1.0 Introduction

Mobile banking has grown to be recognized as an important driver of economic development (Maimbo, 2010). It allows faster and efficient money transfers thereby facilitating trade and finance transactions. It improves access to finance by the largely low income and unbanked populace. According to Demombynes and Thegeya (2012), the lives of many Africans have been transformed by the technological developments in mobile banking. The previously excluded can now access financial transactions using mobile money transfers and savings. Asoungu (2012) argues that mobile money transfers, a conduit of financial inclusion have grown in Africa on the basis of high growth and penetration of mobile telephony.

Mobile phones have become powerful means for financial inclusion in the world's poorest countries (The Economist, 2008). In the African region, Botswana ranks first and it has 125% as its mobile penetration rate, followed by Zimbabwe with 94%, South Africa at 102% and Kenya has a rate of 50%. Emerging markets have experienced a notable rise in the use of mobile phones. However emerging markets still lag behind the first world countries which are more advanced in terms of Information Communication Technologies (ICTs) (POTRAZ, 2012).

Aker and Mbiti (2010) argue that available empirical evidence suggests that mobile phones can potentially serve as a tool for financial inclusion in Africa. However, few studies have been done in the developing world to ascertain the role of mobile banking

on financial inclusion (Aker and Mbiti, 2010; Thacker & Wright, 2012). It is therefore the purpose of this study to address this gap.

Thus this study seeks to establish the impact of mobile banking services on financial inclusion. The research also intends to explore strategies which can be adopted in order to enable a positive impact of mobile banking services on financial inclusion. The background to the study is discussed next.

1.1 Background to the study

Mobile financial services are among the most promising mobile applications in the developing world (Donovan, 2012). Mobile financial services are defined as retail banking services offered to customers on their mobile phones (Juniper Research, 2011). These services are categorised into mobile payment and mobile banking.

The World Bank recognised the important role that mobile banking can play in stimulating economic development (Jack and Suri, 2011). Mobile money has the potential to transform economies as it can be adopted across commerce, health care and agriculture (Donovan, 2012). M-PESA a well-known mobile money system which started in Kenya and is operational in six countries has seen more than US\$500 million being transferred in a month in 2011 (Donovan, 2012). Currently it has 15 million registered users which accounts for 70% of Kenyan adult population and 25% of the country's GDP flows through it (CGAP, 2012).

Globally, the uptake of mobile money in the developed world has been minimal due to availability of robust and accessible banking systems (CGAP, 2012) in these countries. Countries that have Automated Teller Machines (ATM's), credit cards and internet banking have little use for mobile money (Economist, 2012). However, in developing countries, the absence of well developed banking systems and other money transfer services have meant high levels of adoption of mobile money services.

The financially excluded have active financial lives and as such relevant financial instruments have been developed specific for this group (Asoungu, 2012). The use of informal financial instruments limits the poor in their ability to save, repay debts and manage risk responsibly (Donovan, 2012, p. 62). At a macroeconomic level, these financial constraints on the poor can slow economic development and worsen inequality (Donovan, 2012). The World Bank, (2012) maintains that the provision of financial services to the 2.5 billion unbanked people could boost economic development. Harnessing the power of financial services can help people to pay for schooling, save for a home, or start a small business that can employ others (www.worldbank.org).

The fact that mobile money services can be accessed anywhere where there is a wireless phone service overcomes distance limitations and the lack of physical branches in rural areas (Chikoko and Mangwendeza, 2012). The rapid spread of mobile phone penetration has created a fertile ground for mobile money to grow in Zimbabwe. The next section will provide an overview of mobile banking services in Africa. The discussion is meant to provide relevant context for a deeper understanding for mobile banking and its impact on financial inclusion in developing countries.

1.1.1 Mobile Banking in Africa

Jack and Suri (2011) argue that the introduction of mobile phone technology culminates in reduced communication costs especially in the developing countries. Aker and Mbiti (2010) posit that growth of mobile telephones in Africa has been rapid and has brought unexpected change in communications technology. The average annual growth rate in mobile subscriptions in Africa has averaged more than 65 percent since 2001 (Hosman and Fife, 2012). The continent was unconnected in the 1990's with inadequate transport and communication infrastructure but currently over 60 percent of Africans now have mobile phone coverage. There are now over ten times as many mobile phones as landline phones in use in Africa (Aker and Mbiti, 2010).

Even so, macro-level statistics on the ownership and usage of mobile phones are inherently misleading as the notion of a subscriber in the developing world is

complicated and shared use of phones tends to underestimate the actual number of users (de Silva and Zainudeen, 2007). Further data does not reflect the disparity between connectivity among urban and rural settings.

Initially, mobile banking technology allowed mobile phone users in Africa to transfer money across distances through an airtime facility wherein the recipient would trade air-time to a local broker in return for cash, or for goods and services. Such practices resulted in a transfer of purchasing power from the initial sender to the recipient (Jack and Suri, 2011). In March 2007, Safaricom a mobile phone company in Kenya, formalised the mobile money transfer facility with the launch of M-PESA. The product is an SMS-based money transfer system which allows individuals to deposit, send, and withdraw funds using their cell phone without limitation to airtime facility as a medium for transfer of purchasing power. It has grown rapidly and is widely viewed as a success story (Vaughn, 2007). The platform had over 1.1 million registered users and US\$87 million in transfers in the eight months since inception (Safaricom, 2007). These figures grew to 14 million and US\$7 billion respectively by September 2011 which is equivalent to 25 percent of Kenya's GDP (Safaricom, 2012). The agent network also increased from 450 in 2007 to 18 000 by April 2010 (Safaricom, 2009; Vaughn, 2007).

The combination of mobile penetration and the fact that M-PESA is affordable, secure and affordable has led to tremendous changes in the planning of economic activities, risk management and family interactions (CGAP, 2012). Communication, sending and receiving money among relatives in different parts of Kenya was difficult a decade ago. Currently when in need of assistance relatives can communicate and access help timeously. The remittances though smaller are frequent and overallly huge amounts are moving to rural areas. (Morawczynski and Pickens, 2009).

Mobile money services in Kenya have also had an impact on savings. Morawczynski and Pickens (2009) in their study note that individuals keep money in their mobile

wallets even though its interest free. Plyler (2010) also note that some users store the money for security reasons especially when travelling for long distances.

1.1.2 Mobile Financial Services in Zimbabwe

Zimbabwe is characterised by a literate population and a sophisticated financial service sector. These characteristics make it easier to introduce such electronic products as mobile banking because they result in higher levels of adoption and usage. Zimbabwe went through a hyperinflationary period where investments in technologically based financial products took a back seat (Chikoko and Mangwendeza, 2012). The adoption of multicurrency stabilised the economy with businesses mostly in the banking and telecommunications sector developing new products channelled through ATMs, POS, mobile phones and the internet.

Mobile money has provided an opportunity for the inclusion of the country's largely unbanked population into the formal financial system. High demands set by banks to open accounts, loss of confidence in the banking sector by Zimbabweans and the booming of the informal sector have been cited as the major reasons for the exclusion of people from the formal financial system (Chikoko and Mangwendeza, 2012). The 2004/2005 domestic financial crisis which resulted in the collapse of more than 10 financial institutions with depositors losing their hard earned savings resulted in customers losing confidence in the Zimbabwean banking system (ibid). It is believed that at least US\$2.5 billion is estimated to be circulating outside the formal banking system (RBZ, 2012). This represents a huge pool of funding which when formalised can be used to develop different sectors of the economy. Mobile money services can also provide millions of unbanked people in Zimbabwe with access to savings accounts, credit and insurance.

Whilst the Zimbabwean market has been innovative and introduced new payment services, the regulatory environment has not changed at the same speed with these developments and as such there are gaps in the legal framework. However, The Reserve Bank of Zimbabwe (RBZ) has since taken initiative to the regulatory

environment and provides mobile finance services providers with guidance. The bank continues to involve all relevant stakeholders like Ministry of Finance, Ministry of Transport and Communications, Ministry of ICT, Post and Telecommunication Regulatory Authority of Zimbabwe (POTRAZ) and Bankers Association of Zimbabwe (BAZ) in the development of payment systems in the country (RBZ 2013, p.53).

The central bank is working on a Memorandum of Understanding and Regulatory Guidelines with these stakeholders in 2013 as the products become complex. These will give direction on participation of non-bank financial institutions in the payment system, rules around system interconnection, exclusivity of distribution networks, and risk based account opening requirements for low value accounts (Dermish et al., 2012).

Electronic infrastructure is as important as a sound regulatory framework in mobile financial services. Electronic infrastructure is still relatively limited in Zimbabwe due to inconsistent power supply and mobile coverage in many rural areas. The urban centres have better infrastructure and also are close to traditional banking services. This has resulted in uptake of the mobile financial services in the urban centres first before the rural areas. The flow of money has been from urban to rural also because employment and productivity are higher in urban centres (Dermish et al., 2012).

The number of financial institution that have introduced mobile banking services has increased. According to the Reserve Bank of Zimbabwe, fifteen (15) banking institutions in partnership with mobile network operators introduced mobile banking services as at 31 January 2012. This information is shown in Table 1.1.

Table 1.1: Mobile Banking Products

Institution	Mobile Network Operator	Mobile Banking Platform/Brand Name
FBC Bank	Net One/Telecel	ZIPIT*/One Wallet
Kingdom	Telecel/Kineto Mobile	Kingdom Cellcard
POSB	Net One/Telecel	ZIPIT

CABS	Net One/Telecel	ZIPIT/Textacash
Metropolitan	Net One/Telecel	ZIPIT, Metbank mobile
FBC Building Society	Net One/ Telecel	ZIPIT
Interfin	Net One/ Telecel	ZIPIT
Barclays	None	Inbuilt Plaform
TN Bank	Econet	EcoCash
Tetrad	Telecel	e-Mali
CBZ	All	E-Tranzact /CBZ mobile/ ZIPIT
Stanchart	Net One/ Telecel	ZIPIT
Trust	All	E-Tranzact/Bank at Ease
ZB		E-Solutions
Allied Bank		E-Solutions

Source: RBZ Monetary Policy (2012, p.43)

The first financial institutions to launch mobile banking were Kingdom Bank and Tetrad Investment Bank. Their products enable customers to transact using mobile phones. However uptake of the products was low because the two banks have a small branch network. Their representation is low in the high densities and rural areas where demand is likely to be high. This negatively impacted on the spread of product knowledge and resultant usage.

CABS in partnership with Telecel and Zimswitch launched its innovative mobile banking solution called designed to provide banking and a money transfer service using cell phone technology, to both banked and unbanked Zimbabweans nationwide. Customers are able to link their CABS card to their cell phone allowing them to conduct banking transactions, such as checking their account balance, viewing a mini-statement or transferring cash between accounts, pay for goods and services. (www.oldmutual.co.zw). The transcactions are carried out at approved agents which model is flexible as financial services can be offered countrywide saving people from

having to travel long distances to the major cities to access financial services (www.oldmutual.co.zw).

Econet Wireless partnered with TN Bank now Steward Bank at the end of September 2011 and launched EcoCash. The product is a mobile money transfer and is SMS based. Non Econet subscribers can only receive money and cash out. The registered Econet user does all transactions on the phone and is not charged monthly fees.

According to GSMA (2009) banks and mobile network providers are restricted by regulatory authorities from operating individually in offering mobile money transfer products. In Zimbabwe, the Banking Act entails providers of financial services to have the relevant licence of which telecommunication companies cannot acquire due to the nature of their business. Hence, mobile banking services such as EcoCash have to be offered when there is a partnership between a bank and a network service operator.

1.2 Statement of the problem

More often than not, the benefits of mobile banking are viewed in terms of facilitation of money transfer among the public in general. However, studies (Njanike, 2010; Kufandirimbwa, 2013, conducted in the Zimbabwean financial sector reveal that in as much as there are several mobile banking services available to banking customers, adoption and usage of these services is relatively low. The barriers to financial inclusion of mobile banking customers and the impact of mobile banking on financial inclusion remain unknown. Consequently, the un-banked and under-banked continue to be marginalized or excluded from beneficial participation in the formal financial sector. This study therefore aims to fill a gap by concentrating on the barriers to financial inclusion of mobile banking customers, and the impact of mobile banking on financial inclusion and the performance of financial institutions.

1.3 Research objectives

The study will assess the impact of mobile banking on financial development in Zimbabwe.

The main objectives of the research were to:

- Identify barriers to financial inclusion
- Assess the impact of mobile banking on financial inclusion
- Explore strategies which can be adopted in order to enable a positive impact of mobile banking services on financial inclusion.

1.4 Research questions

The research will seek to provide answers to the following questions;

- What are the barriers to financial inclusion?
- What is the impact of mobile banking on financial inclusion?
- What strategies can be adopted in order to enable a positive impact of mobile banking services on financial inclusion?

1.5 Study Proposition

The study proposition is that mobile banking, a conduit for financial inclusion plays an important role in promoting the beneficial participation of individuals and households in the formal financial sector.

1.6 Justification

The study will be of importance to policymakers who will be steered towards formulating policies that alleviate liquidity challenges through the use of mobile banking initiatives. Government can also come up with legislation that ensures that financial transactions in the informal sector can be accounted for and used for economic development initiatives. In addition banks and telecommunication companies are expected to use findings to tailormake their products so that they can be used as a medium of financial transactions.

There are a few studies which focus on the impact of mobile banking on financial inclusion and barriers which hinder positive impacts of mobile banking on financial inclusion. The findings from this study will therefore contribute towards literature on the impact of mobile banking on financial inclusion and strategies which can be adopted in

order to facilitate the positive impacts of mobile banking on financial inclusion. The findings are likely to stimulate interest by academics to further extend research in the areas of mobile banking and financial inclusion.

1.7 Scope of the study

The research focused on mobile banking customers in Harare. The participants included low and middle income mobile banking customers living in the high density suburbs. Low income mobile banking customers are deemed to be individuals who earn \$500 and less per month whilst middle income mobile banking customers are those individuals with a monthly income of greater than \$500 but less than \$1000.

1.8 Organization of the rest of the document

The rest of the document is arranged as follows:

Chapter 2 reviews relevant theoretical and empirical literature. The methodology is presented in Chapter 3. Study findings are presented and discussed in Chapter 4. Chapter 5 concludes the study.

CHAPTER 2

2.0 Literature Review

2.1 Introduction

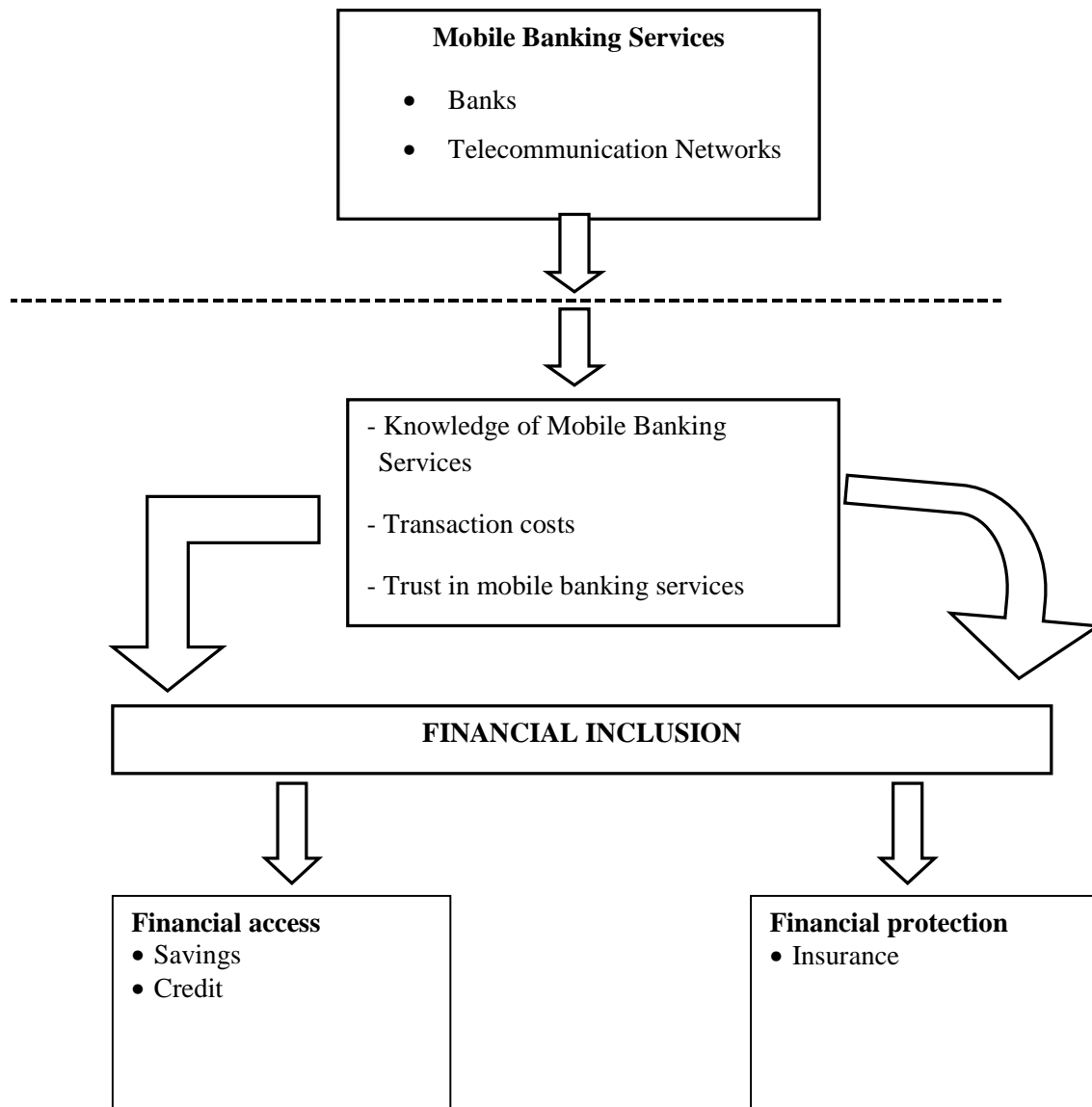
The literature review covers key concepts and available information relating to mobile banking and financial inclusion. The literature will therefore cover general overview of key concepts, benefits of financial inclusion, the conceptual framework for the study, barriers to financial inclusion, the impact of mobile banking on financial inclusion, and strategies which can be adopted in order to enable a positive impact of mobile banking services on financial inclusion. This chapter is arranged in four sections. Section 2.1 presents the conceptual framework. Section 2.2 and 2.3 discusses mobile banking and financial inclusion respectively.

2.2 Conceptual Framework

Conceptual framework is a visual or written product that explains either graphically or in narrative form, the main constructs to be studied. It shows the key factors, concepts, or variables and the presumed relationships among them (Miles and Huberman, 1994). In order to lend clarity to the subject matter under study, that is, impact of mobile banking on financial inclusion, a conceptual framework has been developed as illustrated by Figure 1.1. The study is guided by this conceptual framework which explains the relationships between variables.

In this framework, the main constructs are financial access and financial protection. For each of these variables there are underlying indicators such as savings, credit, protection and financial transactions (Maimbo, 2010). It is assumed that mobile banking services culminate in improved savings through safekeeping of customers' money in mobile banking accounts and interest earned on deposits. Further, it is assumed that mobile banking services present opportunities for access to credit and insurance to mobile banking customers.

Figure 1.1 Conceptual Framework



Source: Developed by Author

In sum, the conceptual framework illuminates the fact that the provision of mobile banking do not automatically lead to financial inclusion. Essentially, there is no linear relationship between the dependent variables and independent variables, but a relationship controlled or manipulated by an array of factors (intervening or control variables) which are education or knowledge of mobile banking services, set up costs

transaction costs, and others. The conceptual framework indicates that the control or intervening variables have a direct effect on outcomes of mobile banking services.

2.3 Mobile Banking

Mobile banking is discussed in detail in this section. Focus is made on its success stories, business models, drivers and the different technological solutions that are available for use in mobile banking. Mobile banking also referred to as m-banking is conceptualised in various ways in the market place of ideas (Suoranta, 2003; Tiwari & Buse, 2007; Diniz et al. 2011). According to Suoranta (2003) mobile banking is an application of mobile commerce that enables customers to bank virtually at any convenient time and place. This definition recognises the value of the mobile banking service or application to banking customers. On the other hand, Tiwari & Buse (2007) view mobile banking as the provision of banking and related financial services such as savings, funds transfer, and stock market transactions among others on mobile devices.

However, for the purposes of this study, a more comprehensive definition of mobile banking offered by Diniz et al. (2011) will be adopted. The authors conceptualise mobile banking as a set of mobile banking services which involves the use of portable devices connected to telecommunications networks that provide users with access to mobile payments, transactions and other banking and financial services linked to customer accounts, with or without the direct participation of traditional banking institutions. This definition emphasizes both the service of mobile banking and the channel through which the service is delivered. In essence, it highlights the combination of the mobile phone and the channel through which the service is delivered.

2.3.1 Mobile Banking Business Models

There are a variety of mobile banking business models that are evolving depending on the target market being served (Wambari, 2009). The difference in the models comes on who establishes the relationship with the customer. The Bank or Mobile Network Operator (MNO) can open the account, take deposits and lend. The models can be

ranked into three different groups. They are specifically bank focused, bank led and non-bank led (Lee et al., 2003).

A bank-focused model is when a traditional financial institution implements non-traditional channels of offering its services to its current clientele base. These channels are mostly cheaper than the existing methods of extending service (Ondiege, 2010). An example of such a channel is the use of automated teller machines (ATMs), mobile and internet banking. The model adds to the existing traditional banking activities and is seen as its extension thereof (Wambari, 2009).

In contrast, a bank-led model provides a different option to the traditional branch based banking in that customers conduct financial transactions through an agent network of retail outlets using the mobile phone. (Wambari, 2009). According to Ondiege, 2010 the bank led model has potential to serve and increase the outreach of financial services. This is mainly because it uses different delivery channel, trade partner and target market. This channel is also cheaper than the traditional set up of banks. The next section discusses mobile banking technology solutions.

2.3.2 Mobile Banking technology solutions

According to Tiwari & Buse (2007) the mobile banking technology solutions in use are browser based applications, interactive voice response (IVR), messaging-based applications (SMS) and standalone client-based applications. These are highlighted and discussed individually below.

Interactive Voice Response Service (IVR)

An Interactive Voice Response service (IVR) is accessed through specific number that banks advertise to the customers. The service uses pre-recorded electronic messages which customers use to access different financial services product available on the menu by pressing the corresponding numbers on their keypads. The major disadvantage of IVR based mobile banking is that it is used for inquiry services. In addition it is more expensive for the customer compared to other technologies as they

have to make a call to access the services. Data and message based channels tend to be cheaper.

Short Messaging Service- SMS

The link between the financial institution and customer in messaging based applications is done via text messages. Customers have to register their mobile numbers and then send prerecorded instructions to the bank. Transactions are done using text messages linking with the bank. The Unstructured Supplementary Service Data (USSD) is an example of a message based application and is compatible with most mobile phones. Prominent products based on USSD are WIZZIT in South Africa (WIZZIT, 2005), M-PESA in Tanzania and South Africa (Camner and Sjöblom, 2009) and FNB mobile banking (FNB, 2010).

The most pronounced disadvantage for SMS based platforms is security concerns. However the use of SMS is mainly because it is available on most mobile phones and hence product deployment is faster.

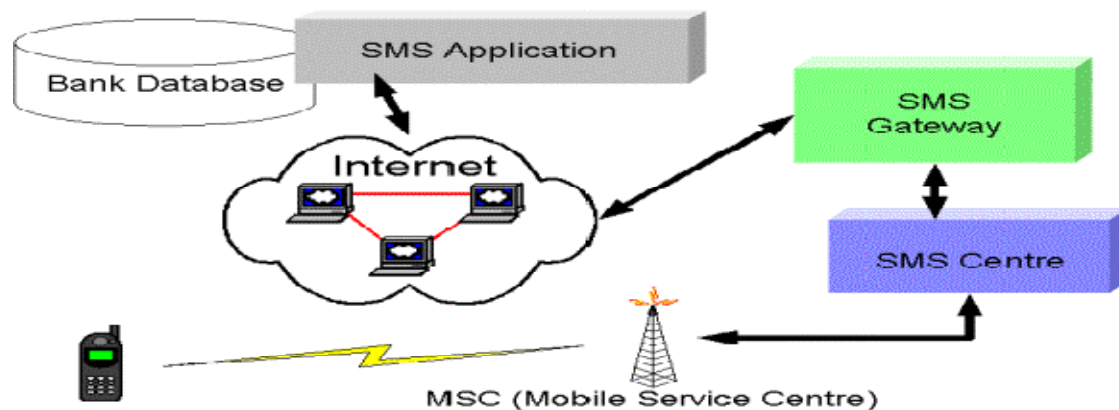


Figure 1.1: SMS Network Architecture

Source (Ondiege, 2010)

Wireless Access Protocol-WAP

According to Tiwari & Buse (2007) WAP uses a concept that is the same with that used in Internet banking. Customers can access WAP sites which are maintained by banks through their compatible mobile phones. WAP sites offer the familiar form based interface. It has high security standards. Customers can be linked to a bank's site using the WAP gateway, the same way internet banking can be accessed through a web portal. (Ondiege, 2010)

The figure below outlines the framework which allows mobile applications to be used over WAP. The real systems that feed into the mobile application are domiciled on a WAP server. These are released and used on request. The WAP Gateway feeds into the internet from the mobile network.

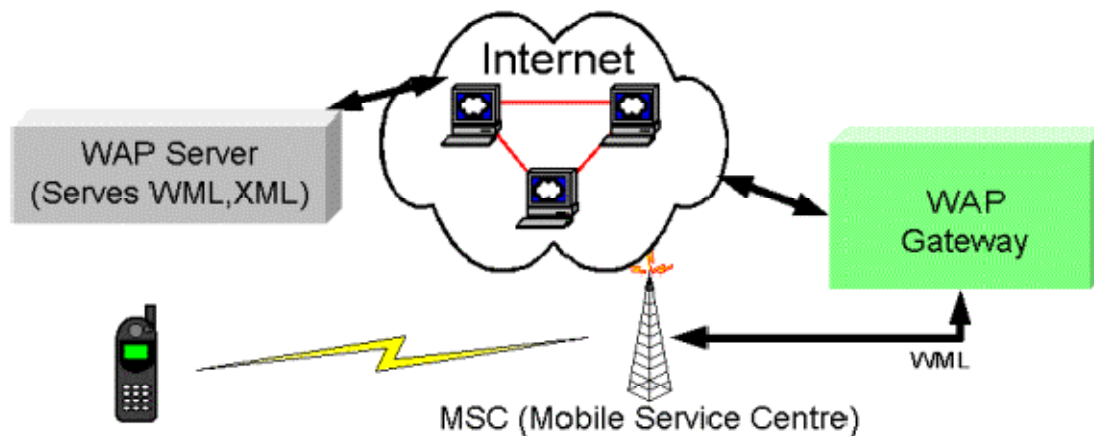


Figure 1.2: WAP Network Architecture for Mobile Applications
Source (Ondiege,2010)

Standalone Mobile Application Clients

Standalone mobile applications are enabled to carry out more complex banking transactions which include securities trading. The applications can be customised according to the user interface. These applications allow for customisation according to the interface of the users and a specific relevant software is installed on the mobile phone. Communication on standalone mobile applications are secure and reliable.

The SIM Toolkit (STK) standard is an example of a client-based application (TiwariandBuse, 2007). According to Safaricom (2007), M-PESA uses what is called the STK technical platform. The major disadvantage of this solution is that it has to be linked to each mobile phone.

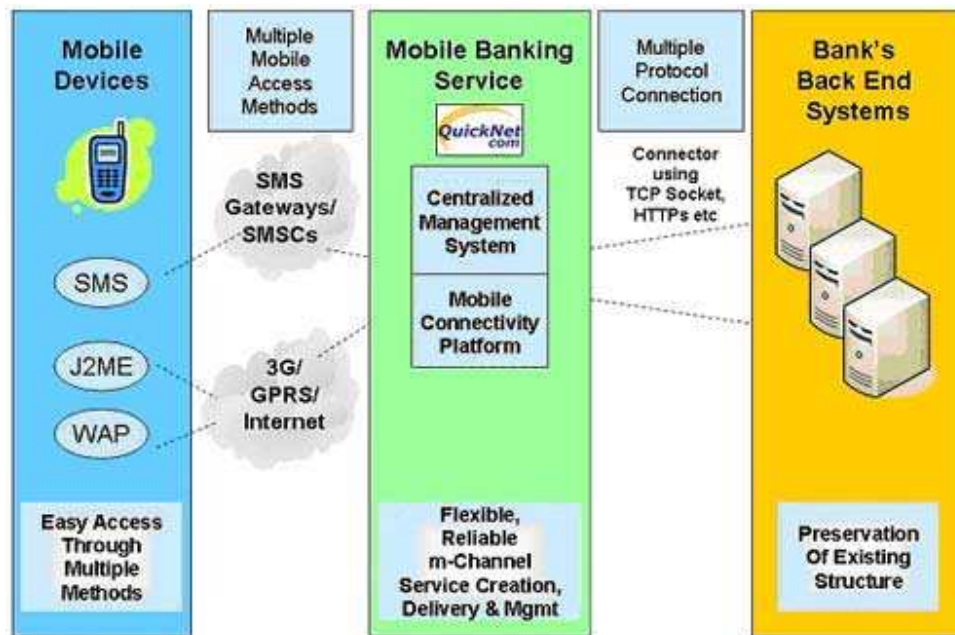


Figure 1.3: Standalone Mobile Application

Source (Ondiege,2010)

2.4 Mobile Banking Cases

The following section discusses literature on various mobile banking cases. These are mainly in developing countries where adoption has significant.

M-PESA

The mobile banking product marketed as M-Pesa was launched in March 2007 by Safaricom, a Kenyan mobile network operator. M-PESA is an SMS-based money transfer system which allows individuals to deposit, send, and withdraw funds using their cell phone. It has grown rapidly and is widely viewed as a success story (Vaughn, 2007). The platform had over 1.1 million registered users and US\$87 million in transfers

in the first eight months of inception (Safaricom, 2007). These figures grew to 14 million and US\$7 billion respectively by September 2011. About 25% of Kenyan GDP is being channelled through M-PESA. The agent network also increased from 450 in 2007 to 18 000 by April 2010 (Safaricom, 2009 and Vaughn, 2007).

Afghanistan

M-Paisa was launched in Afghanistan in 2008, through a partnership between Vodafone and Roshan, the main mobile operator in that country. The service helped detect corrupt activities thereby saving taxpayers money. M-Paisa was used to pay policeman salaries across the country. It resulted in the discovery of ghost workers that amounted to 10% of the workforce. Anomalies in salary distribution were ironed out and all the policeman were able to ascertain their true salary figures. The service was upgraded so that customers could pay for goods and services, make transfer person to person and disbursing loans.

South Africa

M-Pesa was launched in South Africa by Vodacom and Nedbank in 2008. It was estimated that about 13 million people were unbanked but economically active. The uptake of the product has been slow to the point that of the 10 million expected registration by 2010, only 100 000 were captured. This slow uptake has been attributed to different market dynamics between South Africa and Kenya. In addition South Africa has tough banking regulations especially in terms of customer registration and setting up the agent network. The product was not clearly educated to customers and this also resulted in the slow uptake. Vodacom and Nedbank have tried to reposition the product through a campaign in June 2011.

2.5 Overview of Factors affecting Mobile Banking

The uptake and usage of mobile banking applications by users has been affected by many factors. The factors discussed below are security, socioeconomic background and culture, service characterization, cost of service and device, and device features.

Security

Users in all target markets are concerned about the security when making decisions to use mobile banking applications (Mattila, 2002). Brown et al, (2003) also concurred and from their study of the Chinese market discovered that individuals worry about security when inputting data. However, there are some previous studies carried out by Suoranta (2003) where findings brought about the fact that security issues were not a prominent hindrance for users in deciding to adopt mobile banking (Suoranta, 2003).

Socio-economic background and culture

According to Mattila (2002), it is important for potential users to understand the product and also its benefits. The target market is usually the poor and uneducated and hence customer education is of great value. Heinonen (2004) pointed out that culture also has an important role in user acceptance of mobile banking. For example in China they traditionally cash and use cash and hence they are less affected by the advancements in technology. Some customers also are just used to transact in the banking hall and these are usually slow in adopting new technology.

Service characteristics

The aim of mobile banking is to provide financial services at the convenience of customers. It is therefore important that the services offered are relevant to customer need. For example according to Lauronen (2005) the account balance function is popular with customers as it helps them to plan financially anywhere by making informed decisions.

Cost of service and device

The main cost attached to mobile banking is the cost of the device and services offered. Users view this as an investment and as such affects the rate of uptake of the service. Sheth (1989) pointed out that consumers would only change the way they carry out

financial activities if the performance and price are more favourable than the existing status quo.

Device features

The success of mobile banking also hinges on capability of the mobile devices. It is important for customers to have clear display of the information and also be able to see information without screen size being a hindrance. In addition Laukkanen (2007) is of the opinion that experience on the side of the user also attracts customers to adopt mobile banking.

2.6 Drivers of Mobile Financial Services

Mobile banking succeeds in conducive economies. A supportive political, economic, legal and social environment results in higher levels of adoption, usage and resultantly the service has a positive impact on financial inclusion.

Proportional Regulatory Framework

This relates to a framework that is in line with the level of risk aligned to the type of financial service. It encourages innovation because regulation would have set different levels of risk for each type of service. Sutton and Jenkins (2012) point out that buy in from leadership at the highest government level is important. Countries like Mexico and Pakistan have demonstrated their commitment by placing financial inclusion as key in the overall financial strategy for the country.

Consumer Protection

According to Sutton and Jenkins (2012) introducing new services, service providers and delivery channels to inexperienced service users can result in an environment conducive to consumer fraud, abuse and errors in using the product. Stakeholders like government, regulators and supervisors should work towards regulations that protect the consumer. In Columbia and India liability of violation of regulations for the financial product by agents is placed on the service providers.

Market Competitiveness

A competitive market is a breeding ground for innovative products. If the business environment allows for new ideas to be developed and a sound regulatory framework then technologically based products in the mobile financial services can be introduced.

Distribution and Agent network

The main reason behind financial exclusion is the fact that service providers of financial products may not have branches in the rural areas. There is no physical infrastructure to enable the rural populace to access these products. The success of mobile financial services rides on a robust distribution and agent network. This is a cheaper model for service providers as these agents are already operating in those rural areas and startup costs are less.

2.7 Financial Inclusion

This section reviews literature on financial inclusion. It focuses on its benefits, barriers, impact on mobile banking and strategies that can be adopted to ensure financial inclusion makes a positive impact.

2.7.1 Financial Inclusion Defined

The meaning and use of the term Financial Inclusion (FI) differs across the world and within different countries. (Rahman, 2009). Barring these variations, the term generally implies reaching out to the financially marginalised people of a country so as to provide them with reliable, suitable and cheap financial services such as accounts, credit, and insurance amongst others Ssonko (2010).

The United Nations (UN) defines financial inclusion as how easy it is for people to access financial services products like savings, tailor-made loans for the poor, small and medium sized businesses, insurance and merchant services (United Nations, 2006). To put financial inclusion into context, it can be split into the narrow and broad approaches.

The Center for Financial Inclusion defines financial inclusion as a state in which all people who can use them have access to a full suite of quality financial services, provided at affordable prices, in a convenient manner, and with dignity for the clients (Gardeva and Rhyne, 2011). In as much as the definition includes most of the essential elements for achieving financial inclusion it is not complete in that it does not consider the financial literacy of the target clients.

Narrowly, financial inclusion refers to the supply of savings, tailor-made loans for the poor, small and medium sized businesses, insurance and merchant services to the large group of the poor and low income groups (Nagadevara, 2008; Sarma, 2008; Leeladhar, 2005). In support, Mohan (2006) maintains the same definition that financial inclusion relates to the provision of suitable financial products to the low income group.

2.8 Benefits of Financial Inclusion

Subbarao in Ssonko (2010) observed that financial inclusion provides a way for pooling liquidity from the informal sector from the unbanked to the formal financial system. These funds can be used for loans in the informal market whilst the poor earn interest from their savings. Financial Inclusion protects customers from unscrupulous money lenders that tend to treat customers unfairly. (Sarma, 2008). Subbarao (2009) also agrees to the fact that financial inclusion provides financial freedom and guards the under privileged from the abuse of unethical money lenders.

Access to financial services results in economic opportunities on a personal level and this improves household welfare (Maimbo, 2010). It is most beneficial to the poor as they are able to save, make investments and also borrow. In addition the poor are also able to insure themselves against income shocks and set aside money for emergency cases like death, sickness and unemployment.

Governments can benefit immensely from financial inclusion in areas still to be appreciated and exploited. Financial inclusion allows governments to distribute pension funds and other grants straight to the beneficiaries' accounts. The method is relatively

cheaper and also minimises leakages associated with cash distributions (Subbarao, 2010).

2.9 Barriers to Financial Inclusion

This section will focus on challenges related to mobile banking which hinder financial inclusion. The barriers identified in the literature include transaction costs, usage levels of mobile banking services, trust in mobile banking services among others. The factors are presented in the above mentioned order.

Transactional cost has an impact on financial inclusion through adoption of mobile money services by consumers. Various scholars (Tornatzky and Klein, 1982; Mallat, 2007; Omwansa, 2009) emphasise the importance of transaction costs in the adoption of mobile money services. Tornatzky and Klein in Omwansa (2012) conceptualise transactional cost as the extent to which the use of a product or service is perceived to be relatively expensive. The uptake of mobile banking is slower when it is perceived to be expensive.

The transaction costs of sending money through the mobile payment technology are lower than those of banks and money transfer companies (Omwansa, 2009). Further Mallat (2007) asserts that there exists a negative relationship between transactional cost and consumer adoption if a consumer bears the economic costs of a transaction.

Omwansa (2012) states that poor people behave rationally when it comes to choosing a mobile money transfer service basing on the costs of effecting a money transfer transaction. However Qingfei et al. (2008) suggest that cost is a user's assessment of the object world or reality and not his/her perception. Seemingly, the authors emphasise the influence of psychological factors in consumer behavior towards choosing a mobile money transfer technology.

The transaction costs in reference are deemed to include set up costs or costs of associated mobile money transfer technology, registration fees, and transaction price. Agrawal (2008) argues that people excluded from formal financial systems resort to the informal sector where they access financial services albeit at unreasonable rates. The

author attributes the unfavourable rates on the informal financial markets to limited credit options.

In as much as the authors acknowledge the positive influence of transactions costs on the adoption of mobile money services, they are oblivious of the importance of availability, quality of service, and access of other money transfer technologies which may have a bearing on the choice money transfer technologies by consumers. For instance in Zimbabwe, most money transfer technologies can only be used primarily by consumers who share the same mobile money transfer technologies. More so, there is an absence of international money transfer technologies which are important among the poor as they receive most of their income in the form of remittances from migrants abroad.

Exploratory studies conducted by Thulani et al. (2009) on the adoption and usage of internet banking in Zimbabwe reveal that usage levels of internet banking and mobile banking services in Zimbabwe are relatively low compared to the available services. Further the study found that challenges faced by banks in the adoption of internet banking manifested in the form of security concerns and low investments in related infrastructure and implementation concerns.

Customer trust is an important factor in the success of mobile banking (Masinge, 2011). An increasing number of studies investigate the impact of trust, how it is made up and how it works when customers choose to use mobile banking products.(Bhattacharjee, 2002; Kim, Chung and Lee, 2010; Shin, 2010).

Kim et al. (2009) defined trust as a an expectation in the mind that the other party will not take advantage of a situation. On the other hand Chung and Lee (2010) defined trust as a how a person decides to depend on another person or an object for desired results. However, Siau and Shen (2003) grouped trust differently namely the trust of the technology and that of the institutions providing the mobile banking product. Impact of mobile banking is likely to be negative where customers lack trust in the product and its providers.

Ssongo (2010) observes that social exclusion can be occasioned by natural divisions like religion, race and language. The author perceives the natural stratifications in society as a predictor of the economic capacity or economic status and social exclusion. Barry (1998) acknowledges both the presence of a close connection between economic divisions and social segregation. However the author also maintains that social exclusion (and consequently financial exclusion) can occur in groups of similar characteristics.

Comninos et al. (2008) posit that convenience and security determine the adoption and use of mobile banking services. In a study conducted in India, Sharma and Singh (2009) found that security issues, difficulties in conducting financial transactions using mobile based technologies, the installation and maintenance of application software were the major challenges encountered by mobile banking users.

The next section of the study discusses literature on the impact of mobile banking on financial inclusion.

2.10 Impact Of Mobile Banking On Financial Inclusion

The impacts of mobile banking on financial inclusion are quite varied. Mobile banking affects access to financial services, savings, access to credit, and financial protection of customers. Studies on the impact of mobile banking services on the savings of households reveal both positive effects and linear effects of mobile banking on household savings. Collins et al. (2009) and Banerjee and Duflo (2011) observe that low-income households use various platforms to manage and save their money.

A survey conducted by the National Council of Applied Economic Research (NCAER) and Max New York Life Inc. found that over 81 percent of Indian households save part of their earnings whilst 33 percent kept their cash in their homes. Another important finding of the survey was that poor households save about 40 percent of their annual income despite being in debt.

Ssonko (2010) observes that participation in the formal financial system results in a higher level of managing finances. According to Sarma (2008), individuals without bank accounts will encounter challenges in effecting payments for utilities and other expense. More so, individuals will risk losing their money in insecure and often fraudulent informal markets.

Donovan (2012) avers that mobile money has the potential to change financial inclusion. According to Donovan (2012) traditional financial inclusion models are based on the provision of either credit or savings financial instruments. However, Mas and Radcliffe (2010) note that the M-PESA experience added another dimension through the introduction of innovative mobile money based financial services such as financial instruments which allowed for bill payments, and effecting targeted cash transfers which are meant for poverty alleviation. (Donovan, 2012).

Inherent benefits

The main reason behind innovative technologically based products like mobile banking is that they tend to be relatively cheaper and convenient than traditional financial products. According to McKay & Pickens (2010) branchless banking was 19 percent cheaper in a study that compared. The difference in price doubled in low value transactions which include money transfers. M-Pesa in Kenya resulted in savings of between one-third and one-half compared to the other methods of money transfers. These savings are significant for the low income group and this increased usage among the Kenyans as the product made economic sense.

On the other hand, countries like Botswana have had a slower uptake of mobile banking services mainly due to high transaction costs. The minimum cost per transaction is a 8 pula which translates to (US\$1.07). Mobile money transfer services which are robust

offer a safe and reliable option for the transacting public. Studies carried out in Kenya when M-PESA was in its infancy showed that there was a decline in muggings as less people travelled with cash. According to Morawczynski (2009) women also managed to make savings on their own without the consent of their spouses.

Traditionally the less privileged and low income group made savings using less liquid items like livestock and gold. At times these assets are negatively affected by the financial markets and the fact that they are not liquid makes it difficult to use in emergencies. These types of assets are also difficult and risky to transport. Therefore mobile banking services offer the populace an avenue of making safe, risk free savings which are readily available for use.

Benefits from scale

The spread of use among the low income groups results in the laggards to also adopt the products. With time they gain confidence and start to rely on the system. According to Suri and Jack (2011), Kenyan households benefitted from the rapid adoption of the product. Households were able to assist each other timeously in the event of economic and social shocks like job losses and death. Consumption in households that did not use M-PESA fell by an average of 6-10 percent. Households using mobile banking were able to absorb the economic and social shocks timeously. This was evident during the Kenya's 2007 political disturbances and mobile banking was the only means that residents in Kibera could carry out financial transactions. (Morawczynski 2009).

Mobile banking is still relevant in less turbulent times as it serves the needs of the poor. They do not have access to the traditional bank branches where they can transact and

hence the availability of robust agent network allows for financial transactions to take place at those levels. (Stuart and Cohen 2011).

Mobile money also benefits the service providers financially. Banks and mobile network operators are in business to make money. The aim is to move high number of transactions which culminate in high levels of transactions fees. For most mobile network operators the products is used to ensure customer loyalty and resultantly increase profits. Safaricom which offers M-PESA received revenues of US\$90million in the first half of 2011 (Safaricom, 2011). Furthermore the network of agents also grow their business and profit from it.

Benefits from innovation

Innovation almost always brings about positive change. Mobile banking services are a product of innovation which have given opportunity for the less privileged to participate in the formal financial sector. However early studies have shown that mobile money transfers alone do not capture the effectively the potential for financial inclusion. According to Stuart and Cohen (2011) the money transfer service has not resulted in access to banking compared to the traditional banking channels like traditional bank account targeted at the poor which comes with ancillary services like insurance, security trading and loans. Though M-PESA has significantly grown in Kenya, the bulk of the transactions are still money transfers. (Stuart and Cohen 2011).

It is important for the poor to have access to savings, loans and insurance as they are beneficial to them. This needs an enabled political, economic, social and legal environment that is active in innovative ways.

Ssonko (2010) posits that there is a positive connection between social exclusion and financial exclusion. Samantaray (2010) notes that in India, the clusters which are socially excluded and financially excluded include farmers in the peripheral areas, slum dwellers, migrants and the self employed.

The authors assume that poverty and financial exclusion are synonymous and do not qualify the mechanics behind the relationship. However, from a three hundred degree sensibility check the connection between social exclusion and financial exclusion is conditioned by several intervening factors which include age, availability and setting among others.

2.11 Impact of Mobile Banking on Financial Access

Mobile banking facilitates access to basic financial services through reducing time and distance travelled to the nearest bank branch. (CGAP in Masinge, 2011). Ssonko (2010) provides that internet banking the service level that customers get from their banks improved significantly through the usage of mobile banking. In addition transaction costs also decreased.

Of a similar mindset to Masinge and Ssonko(2010) are Gu et al. (2009) who aver that the convergence of banking services with mobile technologies implies that customers are able to conduct banking services at any place and at any time through mobile banking. This, according to the Masinge (2011) enables banks to overcome challenges related to the distribution and use of banking services by customers.

Ssonko (2010) asserts that customers that are already banked continue to benefit from internet banking services whilst the poor have no access as they are not able to open accounts. The author further argues that, since the poor are not able to afford to open up bank accounts they are left with no other alternative but to participate in the insecure cash based economy. However, in practice, the advent of mobile banking services has facilitated cheaper access to formal banking channels as the cost of registration and effecting of financial transactions is cheaper.

2.12 Strategies Which Can Be Adopted To Enable A Positive Impact On Financial Inclusion

Strategies which can be adopted in order to enable a positive impact of mobile banking services on financial inclusion include promoting knowledge, awareness and education in financial products and services among mobile banking customers. Leeladhar (2005) suggests that in order to achieve financial inclusion banks and mobile network operators need to carry out massive customer education campaigns, offer a complete package of mobile banking products which include but not limited to credit and savings.

The market for mobile banking services is mainly available in low income groups. It is therefore strategic for service providers to use technology to bring access to the remote areas. The necessary outreach to remote areas at low cost is achievable with the use of technology. (Rangarajan, 2008; Kochhar, 2009).

Ibeachu (2010) documents factors that need to be addressed for the successful financial inclusion of mobile banking customers. The author notes that financial institutions need to consider customer considerations, availability of affordable mobile banking services, and the provision of extensive customer information and transparency, among others. Similarly, Billou (2007) emphasizes availability, affordability, acceptability and awareness in the providing of mobile banking services. In practice the needs of customers vary by setting and income status. Tagoe et al., (2006) cited in Ibeachu (2010) observe that successful financial inclusion requires that customers have adequate knowledge about financial facilities and services.

Kempson et al. (2000) state that it is difficult to meet the financial needs of low income customers as their needs are modest and have small profit margins. In contrast, Anderson and Billou (2007) in Ismail and Masinge (2011) reveal that in order for companies to realize meaningful profit through serving the poor they must pursue strategies of experimentation through developing relevant product and service offerings. Kempson et al. (2000) and the World Bank financial access (2009) provide that bank

branches and service points have to be at strategic points for individuals to be able to locate them. The World Bank financial access (2009) views the distance individuals have to travel to be able to access these facilities as an issue to be addressed by financial inclusion policies.

Product innovation for meaningful financial inclusion

The concern for meaningful financial inclusion is not a major topic in some developing countries. Though some mobile banking deployments have been successful, they have not been able to reach levels of meaningful financial inclusion. According to CGAP one in every four mobile banking deployments register a million customers. Among them for those that launched since 2007, 1 in 15 has transacting customers above 250 000. (Fathallah, Mino, and Pickens 2011).

The level of usage by customers has been relatively low with a few monthly transactions. In addition, transaction fees discourage usage as they remain high in other markets and this has resulted in the predominate use of cash. Morawczynski & Krepp (2011) are of the view that there is still a gap between what the low income groups are offered as mobile banking products and what they need. The replication of M-PESA in other markets may not be the best solution for the clients in those markets. For example, Thailand has a robust and wide ATM network which efficiently serves the customers. Mobile banking will not add benefits in these markets unless tailormade products for certain groups are invented to suit their unique needs. It is essential for continuous product innovation. One in eight mobile banking products offer other services beyond peer to peer transfers. As much as peer to peer transfers are the most common, customers have an appetite to move money over time through products like insurance. This result in meaningful financial inclusion (Porteous 2007).

Whilst it is acknowledged that mobile banking can impact positively and lead to meaningful financial inclusion, it can at times disrupt social practices. In Kenya visits

between relatives lessened as money was being moved electronically. Furthermore supporters of microfinance are of the view that face to face meetings result in higher rates of repayment compared to electronic channel brought about by mobile banking. The Gates Foundation is of the view that the use of different models like cooperatives, mobile money services and banks together is more beneficial. (WEF 2011).

2.13 Summary

According to findings from the selected literature review, it can be concluded that mobile banking has an important role to play in financial inclusion. Building on literature findings the study will explore if mobile banking has the same impact on financial inclusion in Zimbabwe. The methodology of this study is discussed in the next chapter.

CHAPTER THREE

3.0 Research Methodology

3.1 Introduction

In order to achieve the main objectives of this study as outlined in Chapter One, quantitative research methods which produced empirical data based on a survey were used. This chapter details the process followed and justifies this. It consists of five sections after this introduction. Section 3.1 considers the research philosophy chosen for the study. Section 3.2 discusses the research design with particular focus on quantitative methods. Section 3.3 describes the sampling of the study. Section 3.4 describes the data collection methods used in the study. Section 3.5 provides an overview of the analysis of quantitative data. Section 3.6 describes the validity and reliability of data. Section 3.7 presents the ethical issues taken into account during data collection, and the chapter ends with Section 3.8 which presents the summary of the main methodological issues

3.2 Research Philosophy

The term research philosophy refers to the development of knowledge and the nature of that knowledge (Saunders et al. 2009). Two terms of importance in research philosophy are ontology and epistemology. 'Ontology' refers to notions of reality whilst 'epistemology' is the relationship between that reality and the researcher (Greener,

2009). The same author asserts that it is the ontological and epistemological stance of the researcher which affects the methodology and specific methods they choose for their research. Therefore, the chosen philosophy in this research forms the basis of the research strategy and the choices made in the strategy. The researcher attempted to bring out the reality that exists between mobile banking services and financial inclusion by relying on the positivism philosophy.

Positivism holds that an accurate and value-free knowledge of phenomena is possible (Fisher, 2010). According to Sobh and Perry (2006), in positivism, knowledge is statistically generalised to a population by statistical analysis of observations about an easily accessible reality. The positivism philosophy is based on the following assumptions:

- Assumes the role of an objective analyst, making detached interpretations about those data that have been collected.
- Emphasis is on a highly structured methodology to facilitate replication and on quantifiable observations that lend themselves to statistical analysis.
- That the research is independent of and neither affects nor is affected by the subject of the research.

This research falls under the positivist approach in that there is a highly structured methodology in order to facilitate replication (Saunders et al., 2009). It is mostly concerned with testing a hypothesis that mobile banking has a positive impact on financial inclusion. Due to the choice of the positivist approach, the researcher had an opportunity to control the research process and managed to collect easily comparable data economically.

3.3 Research Design

Bryman and Bell (2007) view a research design as the framework which provides for the collection and analysis of data. A research design can be defined as the general plan of how to answer the research questions (Saunders et al., 2009). This study adopted a quantitative research paradigm. The research design thus gave a detailed focus to the

researcher by having clear objectives and data collection sources. It also assisted in the selection of the appropriate methodology, samples, and methods of analyzing the research material (Fisher, 2010).

3.4 Sampling

According to Cooper and Schindler (2008), “Sampling is selecting some of the elements in the population from where conclusions about the entire population may be drawn”. Sampling was used in this research due to its advantages of lower costs, greater accuracy of results, and greater speed of data collection and availability of population elements. However, sampling has its own disadvantages which include the absence of a complete inventory, and the existence of sampling error as the sample can never be fully representative of the population (Cooper and Schindler, 2008).

This study is based on a sample of 106 mobile banking customers out of the given population of 1794 (TechZim, 2012). This represents 6% of the population (which is the number of registered mobile banking users before December 2012 in the areas selected for the study) and is considered to be a representation of the population as it is greater than 5% recommended by Greener (2009).

The mobile bank customers considered were those who had had been using mobile banking services before December 2012.

3.4.1 Unit of Analysis

The units of analysis for the study were individuals who were registered mobile banking users before December 2012 and resided in Epworth, Seke and Dzivarasekwa. The three low income residential areas are predominantly urban, except for Seke. The selection of the low income suburbs was justified as they have mobile banking customers with diverse socio economic backgrounds

3.4.2 Sampling Methods

There are two main types of sampling methods namely probability and non probability sampling (Cooper and Schindler, 2008). This study employed probability sampling methods. Specifically, stratified random sampling and systematic random sampling were used to derive the sample for the study.

Probability Sampling

Probability sampling is founded on the conception of random selection. This concept is controlled and hence guarantees that each population element is given a known non-zero chance of selection. Probability sampling can further be subdivided into Simple random, systematic, cluster and stratified sampling techniques (Cooper and Schindler, 2008).

Stratified random sampling was used in the study, where items of the population were placed in groups or strata and individuals were randomly selected from the groups. The researcher took deliberate position to identify the number of strata in the population and categorized them into subpopulations discussed below. The advantage of this technique is that dividing a population into a series of relevant strata means that the sample is more likely to be representative as each stratum is represented proportionally. Subsequently, individual units of analysis were selected through stratified random sampling where every 6th element was selected. All the research participants were selected from shopping malls in the respective residential areas. The three subsamples consisted of mobile banking users from Epworth, Seke and Dzivarasekwa respectively.

Table 3.1 Summarises the population and sample frames that formed the basis of the empirical study.

Sample Area	No of population	Sample Size
Epworth	562	33
Seke	598	35

Dzivarasekwa	634	38
	1794	106

3.5 Data Collection Methods

3.5.1 Questionnaires

The term questionnaire is used to include all techniques of data collection in which each person is asked to respond to the same set of questions in a predetermined order (deVaus, 2002) as cited in Saunders et al., (2009). In addressing key issues about the research instrument, the questionnaire was pre-tested before administering them at full to the sample. This was to reveal the ambiguities, poor worded questions that were too long, unclear choices and also to indicate whether the instructions to the respondents were clear. Questionnaires were administered to seven mobile banking customers in the pre-test.

The reliability of the instrument was tested during the pilot study, conducted in June 2013. Cronbach's Alpha, a measure of internal consistency, was conducted. Cronbach's Alpha was used to determine if all the items within the instrument measure the same thing. The closer the alpha is to 1.00, the greater the internal consistency of the items being measured (George & Mallery, 2006). A score of 0.872 was obtained for the questionnaire in the pre-test.

3.6 Data Analysis

The process of analyzing data starts with data editing, coding, and data entry and data analysis (Cooper and Schindler, 2008). Only the statistical information and details which are of importance to the data will be picked up and inputted on the excel spreadsheet. This will be the main entry of data where it will be stored and analyzed. SPSS will be used to compare means before and after the merger. Collected data will be presented and analyzed through the use of tables and graphs, accompanied by thorough

explanations about the meaning of the results. Findings will be analyzed in line with the conceptual framework set out in the literature review and as much as possible objectivity was sort through out the research.

3.7 Limitations

Some participants of the study did not fully understand some of the study questions. However, the researcher used patience and was able to recast the questions in a simpler way which could be understood by the study participants until there was clarity.

3.8 Validity and Reliability

Validity can be internal and external. Coldwell and Herbst (2004) pointed out that internal validity looks at general inferences that can be made regarding the cause and effect relationship. They also argued that internal validity can be affected by the following history which is the events that may occur between the start of a study and the end. In the study there were no material changes that took place to the environment. Internal validity can also be affected by maturation which causes changes in respondents. The research did not take a lot of time collecting the data hence was able control maturation. Testing effect relates to when respondents have had an opportunity to have pre and post tests which affect responses. The questionnaire was distributed anonymously thus discouraging the respondents from discussing their responses.

External validity refers to the quality of being able to generalize beyond the data of the experiment to other situations. The research ensured that validity was controlled through the selection of a representative sample and personally conducting the interviews.

Data reliability was also ensured by identification of respondents to be included in the study, dealing with subject error (knowing the time to carry the surveys) and subject bias (taking elaborate steps to ensure anonymity of respondents to questionnaires).

3.8 Ethical Considerations

Saunders et al (2009) refers ethics to the appropriateness of the researchers' behavior in relation to the rights of those who become the subject of your work or are affected by it. The general issues of ethical concerns were addressed through notification of the intention to conduct the study; seeking consent from all participants; and non-disclosure of identities to ensure privacy.

3.9 Chapter summary

This chapter has presented the way in which this research was conducted and the respective justification of the adopted methodology. The specific concepts discussed include research philosophy, research design, sampling, data collection, reliability and validity, and data analysis. The following chapter (chapter four) presents the research findings and the respective discussion.

CHAPTER FOUR

4.0 Study Findings

4.1 Introduction

The objectives of this study were to identify barriers to financial inclusion of mobile banking customers, to assess the impact of mobile banking on financial inclusion, to explore strategies which can be adopted in order to enable a positive impact of mobile banking services on financial inclusion. Data was gathered from mobile banking customers who stay in Epworth, Seke, and Dzivarasekwa. Section 4.1 gives the response rate. Section 4.2 presents the social and demographic characteristics of the study sample. Section 4.3 presents a discussion on barriers to financial inclusion of mobile banking customers. Section 4.4 assesses the impact of mobile banking on financial inclusion. Section 4.5 presents strategies recommended by respondents. The chapter ends with section 4.6 which concludes the chapter.

4.2 Response Rate

Table 4.1 below presents the breakdown of the respondents from the three high density areas under study

Table 4.1 Responses by residential area

LEVEL	QUESTIONNAIRES DISTRIBUTED	QUESTIONNAIRES RETURNED	RESPONSE RATE
Epworth	33	29	88%
Seke	35	32	91%
Dzivarasekwa	38	34	89%

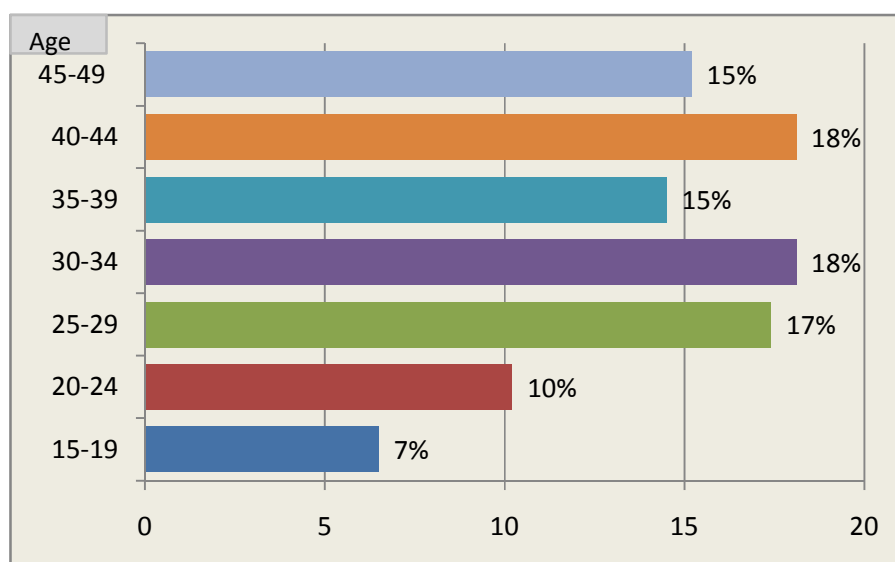
TOTAL	106	95	90%
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The high responses from the three low income residential areas were a result of the rigorous follow ups and some structured interviews. The response rate was good, a factor that gave the researcher confidence to proceed the analysis.

4.3 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

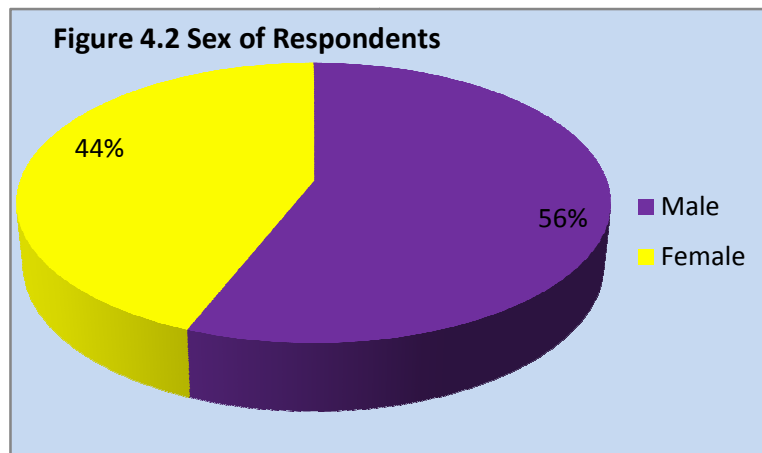
4.3.1 Age

Figure 4.1 Percentage distribution of respondents by Age



Survey respondents were middle aged, concentrated between 25 and 49 years. The largest proportion, 18%, was aged 40-44 and 30-34 age groups (Figure 4.1). These age groups were followed by 25-29 age group which comprised 17% of the sample. Those 35-39 years old comprised about 15% of the sample. The 20-24 year age group comprised 10% of the sample while those aged 15-19 years comprised only 7%.

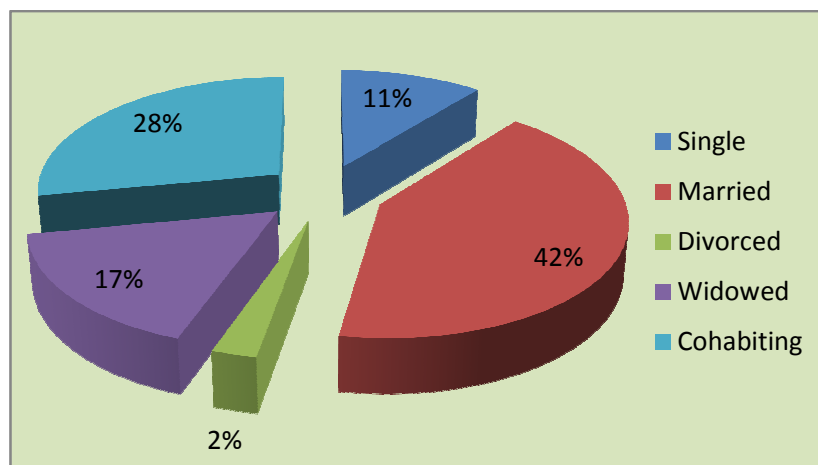
4.3.2 Sex



A question on the gender of respondents was asked. This was done to establish the profile of the respondents. A total of 95 respondents completed the questionnaire. The customers surveyed were mostly males, composing 56 percent of the responses with 44 percent being female.

4.3.3 Marital Status

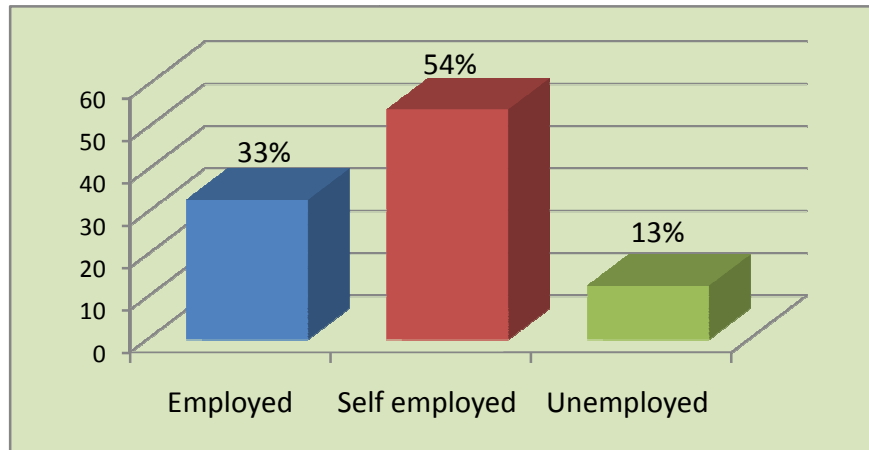
Figure 4.3 Percentage distribution of respondents by Marital Status



The largest proportions of the respondents, 42%, were married. Seventeen percent were widowed while 3% were divorced. About 11% of the respondents were single (Figure 4.3).

4.3.4 Employment Status

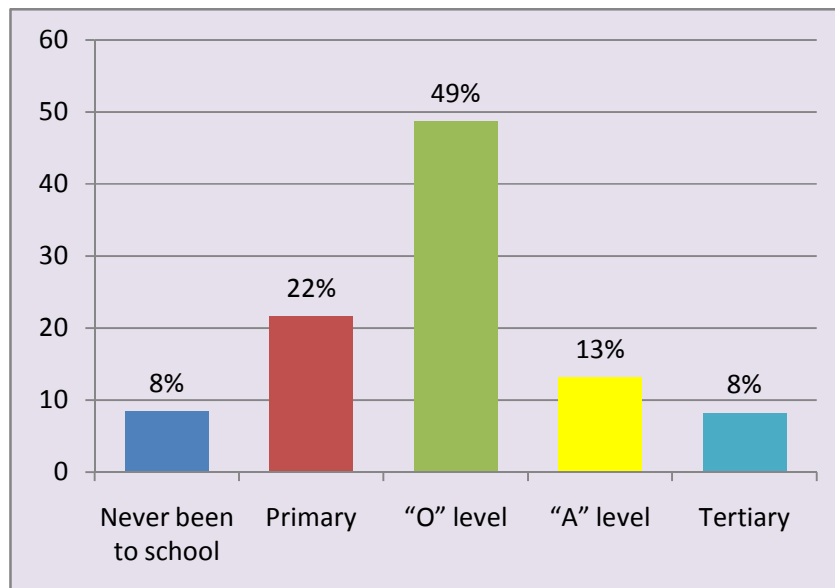
Figure 4.4 Percentage distribution of respondents by Employment Status



A majority of the respondents, 54%, were self-employed. Thirteen percent of the respondents reported that they were not employed while only 13% reported that they were employed (Figure 4.4).

4.3.5 Level of Education

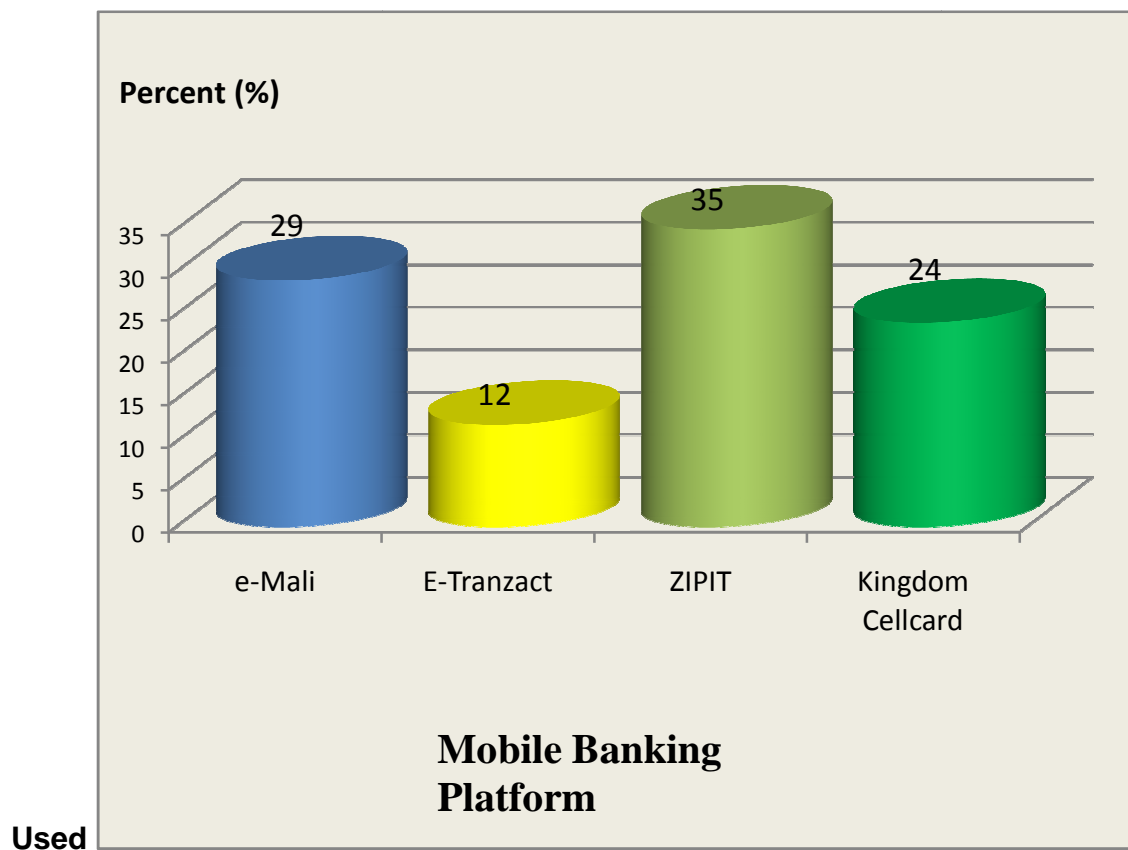
Figure 4.5 Percentage distribution of respondents by Level of Education



Participants were requested to indicate the highest level of education they attained. The majority of respondents were fairly educated with less than 8% reporting no education. About 70% reported having at least O-levels, with 49% and 13% reporting having completed O and A levels, respectively. Eight percent reported having tertiary education as depicted in (Figure 4.5). The results show that most of the respondents had high education qualifications. For participants who had ordinary level to those with post-graduate qualifications, it can be safely assumed that respondents clearly understood the questionnaire and the purpose of the study.

4.3.6 Mobile Banking Platforms Used

Figure 4.6 Percentage Distribution of Respondents by Mobile Banking Platform



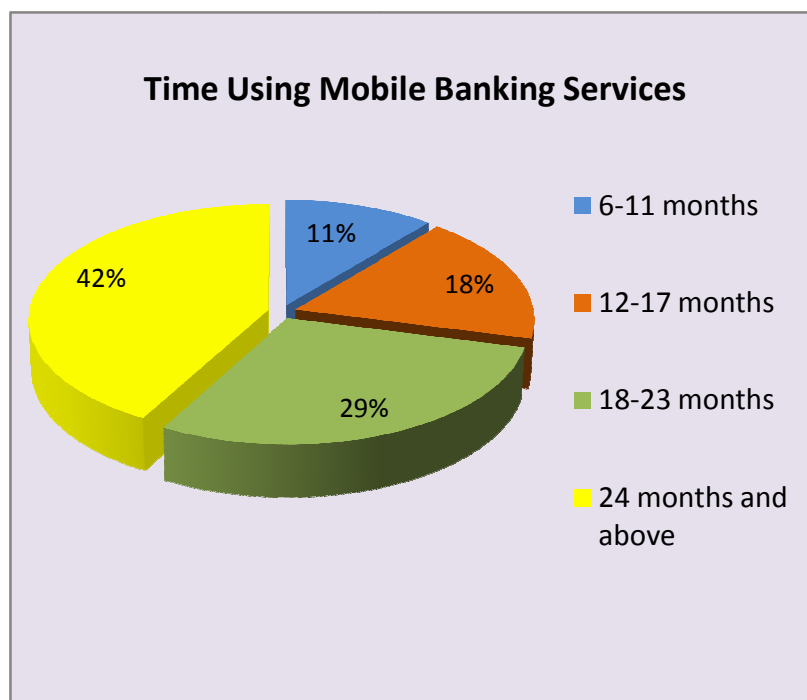
Survey respondents were asked to indicate on the mobile banking platform they used. About 35% of respondents revealed that they used ZIPIT mobile banking package. Twenty nine percent of the respondents reported that they used Tetrad Banks E-mali

mobile banking solution whilst 24% of the respondents mentioned that they used Kingdom CellCard. It is interesting to note that only 12% of the respondent reported using E-Tranzact (see Figure 4.6).

This could be due to the fact that E-Tranzact is primarily an online banking platform with banking services tailored to the needs of high income earners. The popularity of ZIPIT among customers could be attributed to the platform being offered by most of the commercial banks in Zimbabwe.

4.3.7 Time Using Mobile Banking Services

Figure 4.7 Time Using Mobile Banking Services



The proportion of mobile banking customers increased with the duration of time using mobile banking services increased. Forty-two percent of mobile banking customers reported having been using mobile banking services for more than 2 years. About 29% had been using mobile banking services for between 12 and 17 months while 11% had

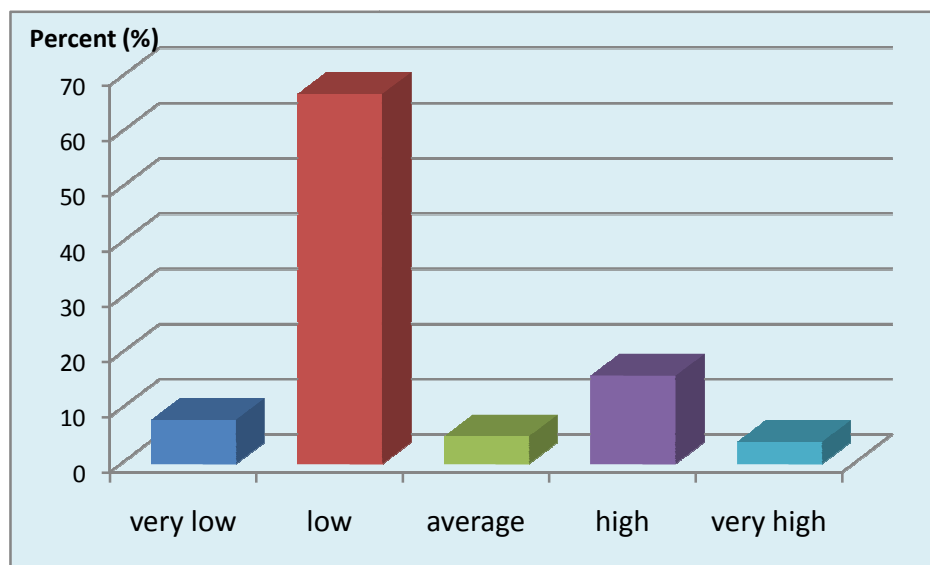
been using mobile banking services for 6-11 months (see Fig 4.7). Data on the time customers have been using mobile banking services is important for assessing the impact of mobile banking services on financial inclusion. The indicators for financial inclusion in this study included savings, access to credit, and insurance protection. Therefore, the greater the time respondents have been using mobile banking services the more accurate impact can be measured. The next section presents a discussion on barriers to financial inclusion.

4.4 Barriers to Financial Inclusion Of Mobile Banking Customers

This section covers the barriers to financial inclusion of mobile banking customers. Perceptions of survey respondents were sought on the cost of accessing mobile banking services, transactions costs and other related costs of using mobile banking services, security of mobile banking services access, education and knowledge of mobile banking services, efficiency of mobile banking services and the scope of services offered through mobile banking. These factors are discussed in turn.

4.4.1 Cost of Accessing Mobile Banking Services

Figure 4.8 Distribution of Respondents by Perception of Affordability of Set up Costs for Accessing Mobile Banking Services



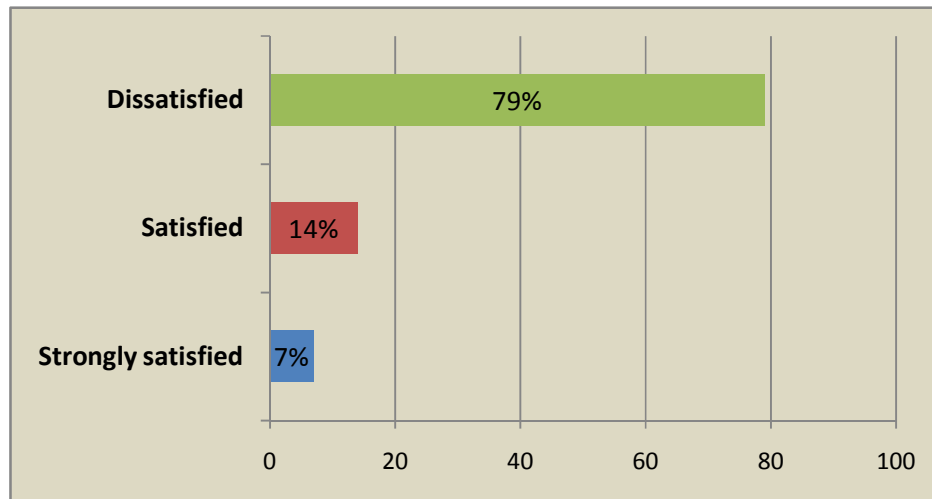
Survey respondents were asked on the initial setup costs or the costs of accessing mobile banking services. The costs in question included the physical hardware, that is, mobile phone and the cost of connecting to mobile banking services.

On the issue of initial set up costs, a significant proportion of respondents, 74%, indicated that setup costs for reaching mobile banking services were low compared to traditional banking channels. Twenty percent of the respondents mentioned that the setup costs for mobile banking services were high compared to traditional banking channels and informal banking channels. Only 6% of the respondents cited that setup costs for mobile banking services were more or less the same with those of traditional banking channels (see Figure 4.8).

The results imply that customers perceive the setup costs for accessing mobile banking services to be affordable relative to traditional banking channels. This could be due to the fact that most of the customers already had mobile phone connectivity devices prior to the introduction of mobile banking services. The study findings are in line with observations by Omwansa (2009) who highlighted that the transaction costs of sending money through the mobile payment technology are lower than those of banks and money transfer companies.

4.4.2 Security of Mobile Banking Services

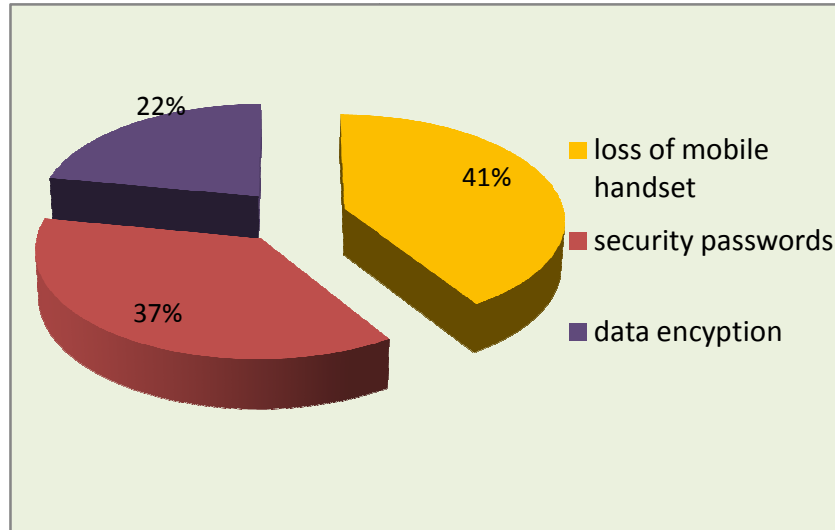
Figure 4.9 Percentage Distribution of Respondents by Extent of Satisfaction with Security of Mobile Banking Services



Survey respondents were asked on their extent of satisfaction with security of mobile banking services. A majority of respondents, seventy nine percent (see Figure 4.9) of respondents expressed dissatisfaction with the security of mobile banking services whilst only 7% and 14% of the respondents expressed satisfaction with the security of mobile banking services (strongly satisfied and satisfied respectively).

4.4.3 Concern about Aspects of Security

Figure 4.10 Concerns about Aspects of Security of Mobile Banking Services



Survey respondents indicated that loss of a mobile handset and security passwords were the biggest security concerns customers encountered with regards to mobile banking services. Mobile banking customers were also worried about encryption of data stored in their mobile phones. This is shown below in Figure 4.10. The next section will present data from statistical tests on barriers in using mobile banking services.

4.4.4 Barriers in using Mobile Banking Services

Table 4.2: Barriers in Using Mobile Banking

	Security Concern	Network difficulty	Difficulty in handling mobile phone	Insufficient operating instructions	Cost per Transaction
N	95	95	95	95	95
Mean	4.14	3.98	1.18	3.87	2.51
Beta	2.437	3.21	2.157	2.863	2.030

P-Value	.000	.000	.001	.000	.001

The second research objective meant to identify barriers to financial inclusion of mobile banking customers. Table 4.2 shows that the Z test summary of mobile banking barriers against security concern, network problems, insufficient operating guidance, cost per transaction and handling mobile phones.

Security Concern

Z value for 'security concern' (2.44) was significant at .01 with mean value of 4.14. The result indicates that 'security concern' is a significant barrier in using mobile banking. The results imply that banks have not placed much of their attention and resources in ensuring customers access to secure mobile banking services. Customers need to know that their banking transactions are safe through using mobile phones. The study results support observations by Sharma and Singh (2012) who found security issues related to mobile banking services as a significant barrier in the adoption and usage of mobile banking services by customers.

Network problem

Z value of (3.21) for 'network difficulty' was significant at .01 with mean value of 3.98. The result implies that 'network problem' is a significant barrier in using mobile banking. Network problems could be attributed to the competition on calling tariffs amongst telecommunication network providers which has often culminated in network congestion.

Difficulty in handling mobile phone

Z value of (2.16) for 'difficulty in handling mobile phone' was found significant at .01 with mean value of 1.18 (<3; Disagree). It may be said that 'difficulty in handling mobile phone' is not a significant barrier in using mobile banking, as now youth consist the major part of population in Zimbabwe and it is being found that youths are technology

friendly, so banks can increase their customer base through mobile banking channel by targeting this point that is it is easy to do banking through mobile phone.

Insufficient operating Instructions

Z value for 'insufficient operating instructions' (2.86) was found to be significant at .01 with mean value of 3.87 (>3 ; Agree). It may be said that 'insufficient operating guidance' is a significant barrier in using mobile banking, for this banks need to have help desk for mobile banking in every branch and need to create awareness of guidance through various channels as well like newspaper, internet, and television. Results from the study buttress findings by Leeladhar (2005) who observed that that in order to achieve financial inclusion banks and mobile network operators need to carry out product knowledge campaigns, management of financial services, insurance and savings.

Cost per Transaction

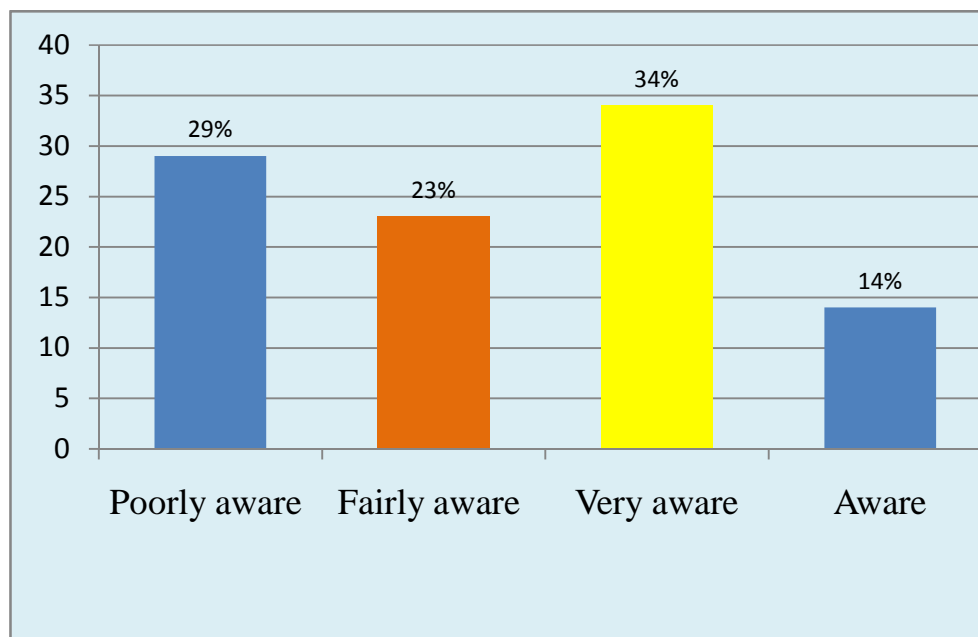
Z value for 'cost per transaction' (2.03) was found to be significant at .01 with mean value of 2.51 (<3 ; Disagree). It may be said that 'cost per transaction' is not a significant barrier in using mobile banking because it is very cheap to operate mobile banking for customer as banks charge nothing what is being charged is by the telecom companies that too very nominal, that is,. 9 cents per SMS. The next section will assess the impact of mobile banking on financial inclusion

4.5 THE IMPACT OF MOBILE BANKING ON FINANCIAL INCLUSION

The study used a set of indicators (savings, insurance coverage, etc) to help determine the impact of mobile banking on financial inclusion. Respondents were asked on their extent of familiarity with loan services offered by mobile banks, impact of mobile banking on payment, transfers, and withdrawal transactions, access to credit or lending facilities, the impact of mobile banking on savings, and the impact of mobile banking on access to insurance protection. The findings from the investigation are summarized in sections 4.3.1 through 4.3.6

4.5.1 Extent of Familiarity with Mobile Banking Loan Services

Figure 4.11 Level of Familiarity of Loan Services

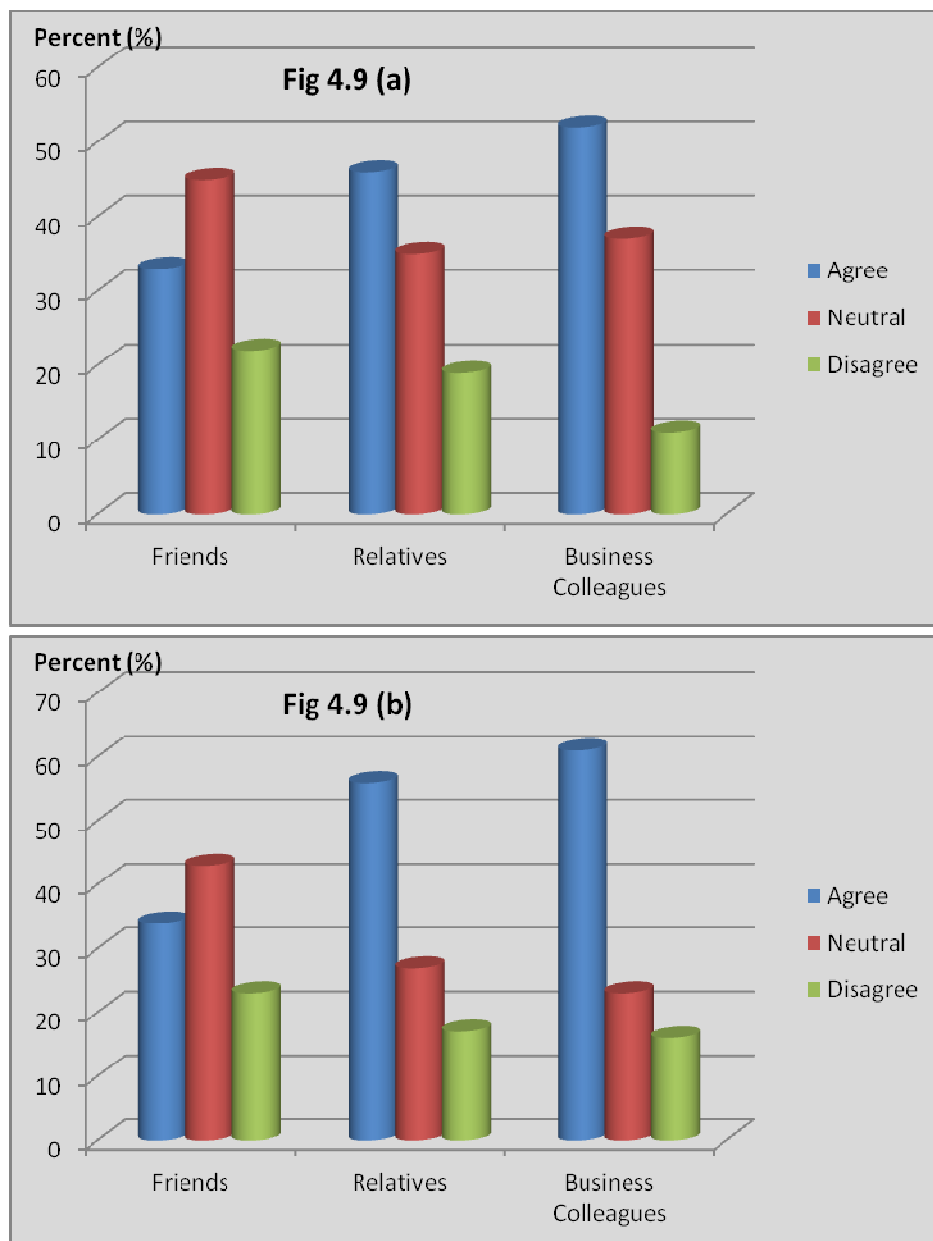


Survey respondents were asked about their familiarity with mobile banking loan services. Thirty four percent of the respondents had a higher value of general awareness in the use and access of mobile banking services. Twenty three percent of the respondents had a general awareness of the use and access of mobile banking services. However, a combined 52% of the respondents were not well informed on the use and access of mobile banking services (Figure 4.11).

The results illustrate that, the Zimbabwean banking system has not generally attracted the knowledge of the public in the use and access and the benefits of mobile banking loan services.

4.5.2 Impact of Mobile Banking on Effecting Financial Transactions

Figure 4.12(a) and Figure 4.12(b) Mobile banking services and financial services



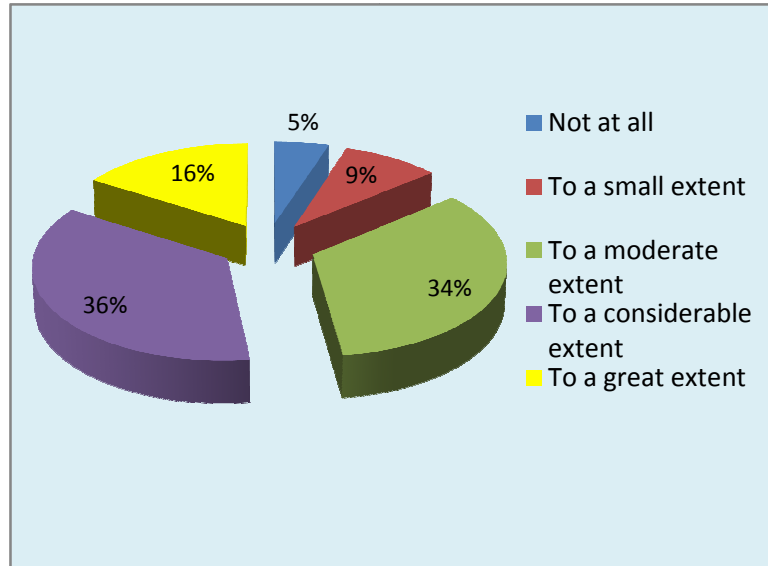
The impact of mobile banking services on expediting financial transactions were quite varied. Survey respondents were asked about the efficiency of mobile banking services they used in fulfilling financial obligations. The greatest impact of mobile banking services in terms of efficiency in effecting financial transactions was observed in making payments to relatives. A marked increase of 22% in the proportion of mobile banking customers who reported a positive impact of mobile banking services in making payments to relatives was observed before and after taking up mobile banking services.

There was a noticeable improvement in the overall efficiency of making payments to business colleagues. A change of 17% was observed in making payments to business colleagues due to respondents taking advantage of mobile banking services. The finding is significant as most (54%) of mobile banking customers surveyed were either self employed or informal traders.

Further, data from the study shows that there was no marked difference in the proportion of mobile banking reporting improvements in making payments to friends after taking up mobile banking services. An insignificant change of 3% was observed. The results illustrate that payments to friends were primarily non-contractual and were more of social transfers in nature.

4.5.3 Impact of Mobile Banking on Making Withdrawals

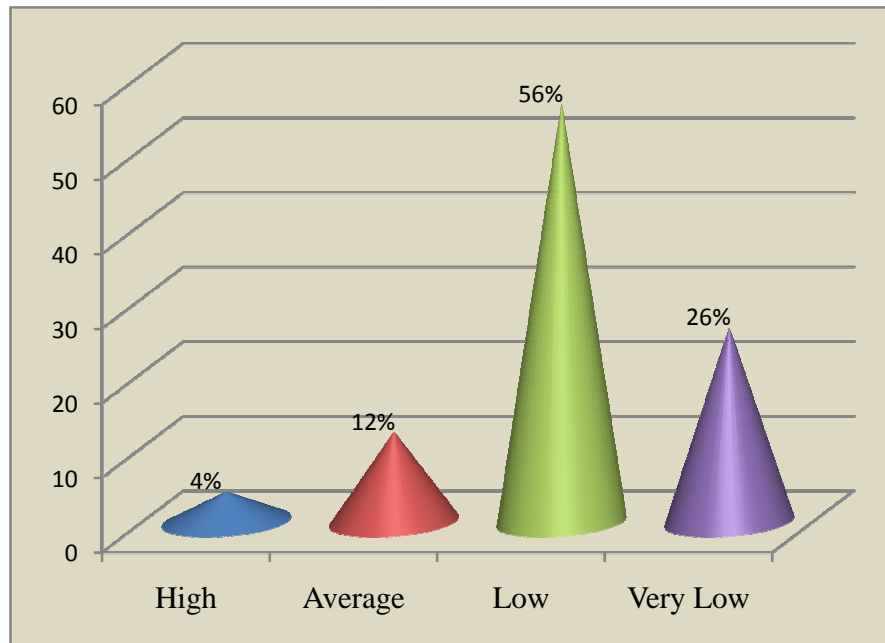
Figure 4.13 Improvements in Efficiency and Convenience in Making Withdrawals



Respondents were asked on whether they had experienced improvements in efficiency and convenience in making withdrawals since taking up mobile banking services. A significant proportion of the respondents, 52%, highlighted that they had experienced improvements in efficiency and convenience in making withdrawals since taking up mobile banking services. Fourteen percent of the respondents mentioned that they did not experience improvements in efficiency and convenience in making withdrawals since taking up mobile banking services. The results are displayed in Figure (4.13)

4.5.4 Access to Automated and Credit/lending Facilities

Figure 4.14 Mobile Banking Services and Credit Access



Survey respondents were asked on the impact of mobile banking services on individual access to credit facilities since taking up mobile banking services. A majority of survey respondents, 56%, indicated that using mobile banking services had not led to improvements in access of credit facilities as shown in Figure 4.14). It is interesting to note that only 4% of the respondents mentioned that the mobile banking services led to improved credit access.

4.5.5 Impact of Mobile Banking on Savings

The mean summed scores for savings over time for mobile banking customers over time were used to find the impact of mobile banking on savings. At Time 1, mobile banking customers reported more savings ($M = 0.251$) than those who started using mobile banking services at time 2 ($M = 0.248$). At Time 2, however, those using mobile banking services reported less savings ($M = 0.235$ and $M = 0.250$ respectively) than those who started using mobile banking services at time 3 ($M = .0423$ and $M = 0.314$, respectively).

Repeated measures of ANOVA showed that there were significant differences in savings levels over time ($F=52.91$; $df = 2, 928$; $p<.0001$), and there was a significant interaction between savings and time using mobile banking services ($F=0.923$; $df = 2, 144$; $p<.005$) see Table 4.4.

Table 4.3 Mean and SD Differences in savings level among mobile banking customers over time

			Sum of Square s	df	Mean Square	F	Sig
Time using mobile banking services * Savings level	Between Groups	(Combined)	3.633	2	1.817	.923	
		Within Groups	257.747	92	1.968		0.05
		Total	261.381	94			

N=94

4.5.6 Utility of Mobile banking services

Customers were asked on their perception of the value or importance of various Mobile banking services. Respondents were provided with a list of mobile banking services and were asked on their opinion of the value they attached to a particular service. The Mobile banking services perceived to have high utility were checking accounts balances (87%), Mini-statements (62%), Status of cheque payments (46%) and account activity (39%). the results indicate that customers prefer information based services to financial services provided by the bank.

Table 4.4: Percentage distribution of respondents by perception of Utility of Mobile Banking Services

MOBILE BANKING SERVICE	CUMULATIVE
------------------------	------------

	PERCENT (%)
Checking account balances	87
Mini statements	62
Status of cheque payments	46
Account activity	39

RECOMMENDED STRATEGIES BY RESPONDENTS

The question on strategies which can be adopted in order to enable a positive impact of mobile banking services on financial inclusion was ranked on a 5- point Likert scale from *Strongly Disagree*, *Somewhat Disagree*, *Neutral*, *Somewhat Agree* and *Strongly Agree*. The results are presented in Table 4.5.

A significant proportion of the respondents agreed that improving the security of mobile banking devices, improving the access and extension of loans to customers, improving telecommunication networks, were the most popular strategies which can be adopted in order to enable a positive impact of mobile banking services on financial inclusion (See Table 4.2). However, survey respondents reported that reducing transaction costs was not an important strategy to enable a positive impact of mobile banking services on financial inclusion.

Table 4.5 Percentage Distribution of Respondents by Perception of strategies which can be adopted in order to strengthen corporate governance practices in commercial banks

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5
Improving the security of mobile banking devices	-	-	-	49%	51%

Improvement in the provision of loans by banks				46%	54%
Improving telecommunication networks			-	57%	42%
Reduce transaction costs		52%	48%		

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION:

This chapter summarises the findings in the preceding chapter of the study with reference to barriers to financial inclusion of mobile banking customers, the impact of mobile banking on financial inclusion, and strategies which can be adopted in order to enable a positive impact of mobile banking services on financial inclusion. The chapter finalizes with conclusions and recommendations to the study.

5.2 SUMMARY OF FINDINGS

There are several factors which hinder financial inclusion of customers through mobile banking. These factors include network problems, security concerns, and insufficient operating instructions among others. Survey respondents consistently expressed concern over weak network coverage they frequently experienced when transacting through their mobile phones. Network problems were found to be a significant barrier to the financial inclusion of customers who used mobile banking services.

Data suggests that 79% of respondents expressed dissatisfaction with the security of mobile banking services. More so, statistical tests in the form of the Z test revealed that customers were concerned with security issues related to usage of mobile banking services. Findings from the study reveal that loss of mobile handsets and security passwords were the biggest security concerns customers encountered with regards to usage of mobile banking services.

Further, findings of the study indicate that mobile banking services had a positive impact on financial inclusion. Mobile banking services improved savings amongst customers over time and efficiency and convenience in effecting financial transactions. However, usage of mobile banking services did not result in improvements in access of credit facilities.

Results on strategies which can be adopted in order to enable a positive impact of mobile banking services on financial inclusion were quite varied. Study participants agreed that improving the security of mobile banking devices, and improving the access and extension of loans to customers, improving telecommunication networks were the most popular strategies which can be adopted in order to enable a positive impact of mobile banking services on financial inclusion.

5.3 Conclusion

In sum, mobile banking services had a statistically significant impact on financial inclusion. Barriers to financial inclusion manifested in the form of poor access to loans or credit facilities, problems with network coverage and security concerns related to mobile banking services. The study highlighted the importance of creating awareness of the safety of mobile banking.

In addition, although most of the findings in this study support the findings of other research conducted in this field, there is also significant additional information that has come to light. Network coverage and awareness in the use and access of mobile banking services all remain primary issues for those using mobile banking services.

5.4 Recommendations

The following proposed recommendations are derived from results of the study. It is imperative, therefore, that appropriate intervention measures be put in place to enable a positive impact of mobile banking services on financial inclusion. With regards to barriers to financial inclusion of mobile banking customers, banks ought to create awareness that mobile banking platforms are as secured as traditional banking channels.

This study had certain limitations, in particular with regards to the methodology adopted for the study. There is need for qualitative studies and studies which triangulate quantitative and qualitative research methodologies. Such studies will enable a better

comprehension of the foundations of barriers to financial inclusion and relationship between cause and impact of mobile banking services on financial inclusion.

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University of Zimbabwe



FACULTY OF COMMERCE

MASTER IN BUSINESS ADMINISTRATION DEGREE PROGRAMME (MBA)

QUESTIONNAIRE ON THE IMPACT OF MOBILE BANKING ON FINANCIAL INCLUSION

Dear Respondent

Introduction

My name is Fortune Mtetwa. I am a final year student at the University of Zimbabwe enrolled in the MBA programme. I am required to carry out a dissertation on a topic of my choice. My topic of study focuses on mobile banking and financial inclusion in Zimbabwe. This questionnaire seeks to investigate the the impact of mobile banking on financial inclusion. I am therefore appealing for your assistance by filling in the attached questionnaire. Your participation is voluntary and you are free to answer or not answer any question .You can also terminate the interview at any point or skip any questions that you do not wish to answer.

The questionnaire consists of three parts, Part A, Part B and Part C. Please answer all the questions. Where choices are given please put an X in the box provided. Where there are no choices provided please put your answer in the spaces provided.

The information you provide will be used strictly for academic research purposes and will be treated with the utmost confidentiality. If you have any questions regarding the questionnaire please feel free to contact me either by telephoning or sending a call me back on following mobile numbers; 0774 222 194. I would appreciate it if I could get the completed questionnaires back no later than 10 June 2013.

Yours Faithfully

Fortune Mtetwa

Student Number – R013699F

QUESTIONNAIRE FOR MOBILE BANKING USERS

SECTION A: BACKGROUND CHARACTERISTICS OF RESPONDENTS

A1. What is your age?

15-19	1
20-24	2
25-29	3
30-34	3
35-39	5
40-44	6
45-49	7

A2. Sex

Male	
Female	

A3. What is your level of education?

None	
Secondary Level	
Advanced Level	
Diploma Level	
Graduate	
Postgraduate	

A4. What is your employment status?

Employed	
Unemployed (but seeking employment).	
Self – employed	
Unemployed (but not seeking employment)	
Any Other	

A5. What is your Income

Below \$400	
401-600	
601-800	
801-1000	
1001-1200	
1201+	

A6. Which mobile banking services do you use?

e-Mali	
E-Tranzact	
ZIPIT	
Kingdom Cellcard	

A7. Which electronic banking channels do you often use?

	Do not use at all	Seldom	Sometimes	Often	Very often
	1	2	3	4	5
Mobile banking (SMS)					
Internet banking					
Electronic Funds Transfer					
Telephone Banking Other					
ATMs					

A8. How often do you use the following services through mobile banking?

	Very often	Often	Sometimes	Never
	1	2	3	4
Check account balance				
Bill payments				
Seeking product and rate information				
Inter account transfer				
Customer care				

SECTION B: BARRIERS TO FINANCIAL INCLUSION OF MOBILE BANKING CUSTOMERS

1. I would not feel secure sending sensitive information across mobile banking.

	1	2	3	4	5	
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

2. I think the mobile phone cost for mobile banking is expensive.

	1	2	3	4	5	
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

3. I think the access (airtime) cost is expensive to use

	1	2	3	4	5	
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

4. I think the transaction fee (bank charges) is expensive to use

	1	2	3	4	5	
--	---	---	---	---	---	--

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

5. I believe mobile network providers are trustworthy.

1 2 3 4 5

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

6. I'm worried about use mobile banking because other people may be able to access my account.

1 2 3 4 5

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

7. It would take me lots of time to learn how to use mobile banking services.

1 2 3 4 5

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

8. Mobile banking services may not complete transaction because of network problems.

1 2 3 4 5

Strongly Disagree ☐ ☐ ☐ ☐ ☐ Strongly Agree

9. Using mobile banking services would lead to a loss of convenience for me because I would have to waste time fixing payments errors.

	1	2	3	4	5	
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

10. Mobile banking services may not perform well and process payments incorrectly.

	1	2	3	4	5	
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

11. Which aspects of mobile banking security are you concerned with?

	Strongly Disagree		Neutral		Strongly Agree
	1	2	3	4	5
Hackers gaining access to my phone remotely					
Someone intercepting my calls or data					
Losing my phone or having my phone stolen					

Viruses being installed on my phone					
-------------------------------------	--	--	--	--	--

12. What is your perception of mobile banking facilities available to you?

	Strongly Disagree		Neutral		Strongly Agree
	1	2	3	4	5
Learning to use mobile banking is easy for me.					
Mobile banking is complicated to use message text to do the banking					
Using mobile banking is often frustrating because I need remember the access code to do further banking transaction each time					
The current mobile banking functions allow only simple banking tasks (e.g.: balance checking)					

SECTION C: THE IMPACT OF MOBILE BANKING ON FINANCIAL INCLUSION

1. Using mobile banking reduces my banking costs.

	Strongly Disagree		Neutral		Strongly Agree
	1	2	3	4	5

2. Do you use your mobile phone for personal transactions, business purposes, or both?

1 Personal transactions

2 Business purposes

3 Both

3. In the past 12 months, have you used your mobile phone to

A Receive money or payments for work or from selling goods

B Receive money or payments from the government

C Receive money from family members living elsewhere

D Send money to family members living elsewhere

4. Mobile banking has enabled me to increase my savings

	1	2	3	4	5	
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

5. Mobile banking has enabled me to access financial credit

	1	2	3	4	5	
Strongly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

Disagree

6. Mobile banking has enabled me to pay my utilities

	1	2	3	4	5	
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

7. Mobile banking offers affordable insurance covers

	1	2	3	4	5	
Strongly Disagree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly Agree

SECTION D – STRATEGIES WHICH CAN BE ADOPTED IN ORDER TO ENHANCE THE IMPACT OF MOBILE BANKING ON THE PERFORMANCE OF FINANCIAL INSTITUTIONS

1. In your view, what strategies can be adopted in order to enhance the impact of mobile banking on the performance of financial institutions
