The Mobile Banking Survey

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CENTRE FOR RESEARCH ON
FINANCIAL MARKETS AND POLICY

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About this Report

This *Report* presents the findings of the first Survey conducted by the Kenya Bankers Association Centre for Research on Financial Markets and Policy. The Survey was undertaken in collaboration with *Think Business Limited*. The lead authors of this *Report* were Ochieng Oloo and Watson Macharia, respectively Chief Executive Officer and Head of Research, *Think Business Limited*. We gratefully acknowledge the efforts of the Report's authors as well as the support of the Banks and Mobile Network Operators that responded to the study questionnaire as well as all other questionnaire respondents and the team that conducted field work.

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Abstract

The CBK and the Communication Commission of Kenya (CCK) have allowed several service providers to offer mobile money services. Competition in the mobile money business is still heating up with entry of new money transfer platforms, which now allow transactions across all mobile telephone service providers. Several banks are also now riding on the back of the various service providers to offer multiple banking services. This study aims to establish and examine whether the cross boundaries in banking are inherent to deepening financial services and to what extent through mobile banking. The study is anchored on the following specific objectives:

1. To identify the extent to which mobile banking is key to financial deepening, to determine the synergies that exists between the banks and mobile operators; to determine the relationships between agency banking operated by the banks and agency banking operated by the mobile operators,
2. To determine the challenges faced by the banking sector and what the necessary framework to coping with these challenges is, and
3. To develop a mobile banking research framework that will be the basis of a series post research analysis and review.

The study is descriptive and exploratory employing both quantitative and qualitative study tools to collect data. A questionnaire was used to collect data and both secondary and primary data was used. From the findings of the study, strong synergies were identified between the banks and mobile operators in provision of mobile banking services and deepening penetration of financial services. The combined push by banks to introduce mobile banking services and enhance customer service experience has contributed to growth of mobile money transfers. It was also identified that mobile banking faces various challenges among them being, system delays by the mobile money transfer service providers, slow processing of transactions especially during the weekends, high transactions costs, limit on the amount of money that can be transacted in a day and fraud, hence the findings of the study among other things recommends that for these challenges to be solved, regular maintenance of mobile money transfer systems should be adopted which will help in managing the systems' capacity and in turn address the problem of transaction delays and improve customer service through speedy support and lower user charges. Further, the findings conclude that to some extent, banks perceive mobile money transfer service operators as competitors.

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Abbreviations

ABC1s	Middle to Upper Class
ATM	Automated Teller Machine
C2s	Lower Middle Class
CBK	Central Bank of Kenya
CCK	Communication Commission of Kenya
ETACS	Extended Total Access Communication System
GSM	Global System for Mobile
HAPI	Hand Held Aided Personal Interviews
ICT	Information and Communication Technology
IVR	Interactive Voice Response
MFSP	Mobile Phone Financial Service Provider.
MMT	Money mobile Transfer Services.
MNOs	Mobile Network Operators
PDAs	Personal Digital Assistant
SMART	Self-Monitoring, Analysis and Reporting Technology
SMS	Short Messaging Service
USSD	Unstructured Supplementary Services Data
WAP	Wireless Access Protocol
WWW.	World Wide Web

Chapter 1

Introduction

1.1 BACKGROUND OF THE STUDY

With the emerging wave of information driven economies, the banking sector in Kenya has inevitably found itself unable to resist technological indulgence. This has led to a boom in the development of mobile banking, laying down a strong base for low cost banking, and growth of mobile phone use even in rural Kenya. Mobile banking has moved quickly beyond being simply online banking using a smart phone. It is at the hub of the customer relationship and is quickly becoming a point of differentiation and is already a source of revenue for progressive banks. As smart phone penetration continues to increase, so do consumer expectations. To keep up, banks have had to continuously review the best mobile banking strategies worldwide; developing solutions that address customer needs and leverage the benefits of the channel.

Financial institutions have been in the process of significant transformation. The force behind the transformation of these institutions is innovation. Information and communication technology is at the centre of this global change curve of mobile and internet banking. In Kenya rapid development of information technology has made banking tasks more efficient and cheaper. Mobile banking is an innovation that has progressively rendered itself in pervasive ways cutting across several financial institutions and other sectors of the economy. During the 21st Century mobile banking advanced from providing mere text messaging services to that of pseudo internet banking where customers could not only view their balances and set up multiple types of alerts but also transact activities such as fund transfers, redeem loyalty coupons, deposit cheques via the mobile phone and instruct payroll based transactions.

The world has also become increasingly addicted to doing business in the cyber space, across the internet and World Wide Web (www). Internet commerce in its own respect has expanded in various innovative forms of money, and based on digital data issued by private market actors, has in one way or another substituted for state sanctioned bank notes and checking accounts as customary means of payments.

Technology has greatly advanced playing a major role in improving the standards of service delivery in the financial institution sector. Days are long gone when customers would queue in the banking halls waiting to pay their utility bills, school fees or any other financial transactions. They can now do this at their convenience by using their mobile phones, ATM cards or over the internet from the comfort of their homes. Additionally due to the tremendous growth of the mobile phone industry most financial institutions have ventured into the untapped opportunity and have partnered with mobile phone network providers to offer banking services to their clients. ATM banking is one of the earliest and widely adopted retail banking services in Kenya (Nyangosi et al. 2009). However according to an annual report by Central Bank of Kenya its adoption and usage has been surpassed by mobile banking in the last few years (CBK 2008). The suggested reason for this is that many low-income earners now have access to mobile phones. A positive aspect of mobile phones is that mobile networks are available in remote areas at a low cost. At the bottom of the income pyramid, people often have greater familiarity and trust in mobile phone companies than with normal financial institutions.

1.1.1 Mobile banking

Mobile banking (m-banking) refers to provision and availment of banking and financial services through the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, administer accounts and to access customized information. Mobile networks in Kenya offer mobile money services in the name of M-PESA by Safaricom, Orange Money by Orange, Yu-Cash by Essar, and Airtel Money by Airtel. Currently the mobile money market size is about a 17 million users transferring Kshs. 2 billion daily, of these over 14 million are Mpesa customers. Mobile money providers have partnered with commercial banks such as Equity Bank, I&M Bank, Kenya Commercial Bank, Barclays Bank, Commercial Bank of Africa and Co-operative Bank among others to offer mobile based financial products that aim to reach the unbanked.

The mobile banking space continues to be dominated by Safaricom's M-PESA service. It has a customer base of 15.2m and 35,000 agents nationwide and accounts for the majority of the mobile transfers. There are also other innovations; Mobile Pay Ltd launched their Tangaza service, which operates across any mobile phone provider. Airtel, Standard Chartered Bank and MasterCard established a payments service. Family Bank set-up a mobile payment platform to enable easy, convenient and fast payment of rent by tenants. Orange Money offered a product which enables subscribers to send or receive money without relying on SIM cards among other Innovations.

1.1.2 Financial and Telecommunication Landscape

Banking in general terms, is the business activity of accepting and safe guarding money owned by other individuals and entities and lending out this money in order to earn a profit. The Banking Act of Kenya defines banking to mean the accepting from members of the public of money on deposit repayable on demand or at the expiry of a fixed period or after notice, the accepting from members of the public of money on current account and payment and acceptance of checks and the employing of money held on deposit or on current account or any part of it by lending, investment or in any other manner for the account and the risk of the person so employing the money.

The mobile telephone services in Kenya started in 1992 with the Extended Total Access Communication System (ETACS) analogue system, which was commercially launched in 1993. Then the elite of the society were the only ones who could afford them. This resulted in a marginal mobile subscriber growth of less than 20,000 for a period of seven years. The enactment of the Kenya Communications Act in 1998 saw the introduction of competition in the industry. The Communications Commission of Kenya licensed the newly privatized Safaricom Limited and a new market entrant, Kencell Communications (now Airtel) and over the years, the industry has grown and the operators have diversified their products to include data services and the highly successful money transfer service.

In Kenya, the mobile phone has become a very powerful gadget. Apart from just receiving and making calls, the cell phone can do a lot of other things that a few years ago were thought impossible. From the cell phone one can; send and receive email, buy airtime from a bank account, receive airtime from another phone user, top up another phone user and pay bills.

The latest tool is sending and receiving cash, a concept that has caused grumbling in Kenya's banking industry. Three cell phone operators Safaricom, Yu and Airtel have introduced money transfer services as a value addition to their business. Despite grumbling from the bankers to have the Central Bank of Kenya (CBK) explain what laws the mobile phone companies are operating under, the CBK has instead insisted that the bankers to partner with telecommunication companies to provide better financial services to Kenyans.

1.1.3 Synergies between Banks and Mobile Operators

The use of mobile banking in Kenya is widely recognized as an increasingly important component of national and regional economic development. Mobile Banking enhances the number of existing channels of distribution that a bank employs to offer its services. The efficiency of a distribution channel can be measured by its fulfilment of three major objectives namely;

- Increasing Sales Volume, which is the primary tasks of a distribution channel, is to increase the volume of demand for products at profitable prices. This objective is arrived by increasing operational efficiency so that those losses caused by delays in catering to customer orders are minimized. Further, a favourable reputation of the firm's logistical capacities may help generate additional orders. Mobile Banking contributes to achieve this goal by providing services anytime and anywhere.

- Reducing Costs of Distribution by adopting mobile banking technology, the manual collection, processing, transmission and archiving of data by bank employees in branch offices is substituted, as in the Internet-based banking, by automated processes. Luber (2004) cites a US study according to which a transaction carried out in a branch office costs banks on average $1. When carried out via telephone it costs only $0.5. The same transaction, when carried out via Internet or mobile devices costs the bank just 1 cent. The advantage of Mobile Banking vis-à-vis conventional banking is that mobile banking makes it possible to offer ubiquitous, semi personal consulting services in real time. These services can be centralized to exploit economies of scale and scope as well as regional cost differences. Diversification of distribution channels helps reduce business costs that arise in the form of sales lost due to sudden collapse of a channel and to minimize customer dissatisfaction.
- Increasing Customer Satisfaction as mobile banking will aid streamlining of business processes by increasing efficiency through more attention and better consulting for customers due to automation of routine processes, and provision of anytime services customized for individual preferences and current geographic location of the customer thus increasing customer satisfaction and reducing the customer attrition rate.
- Mobile Banking can also serve as a source of revenue. Mobile services can be offered on a premium basis with reasonable prices so that customers are willing to pay for them. Additional revenues can be generated by offering innovative and premium services to existing customers and attracting new customers. New customers contribute to revenue generation not only by utilizing mobile services but also by using other conventional distribution channels. There are reports of banks that have successfully employed Mobile Banking as a source of revenue.
- Mobile Banking is used as an image product to gain strategic advantages. A bank may hope to win or retain a positive image amongst technology-savvy sections of the society and strengthen the brand-reputation of being innovative and visionary (Georgi & Pink, 2005). The image of being a technology leader can help the bank win customers looking for modern products and services and at the same time help it retain its own existing base of technology-savvy customers, some of whom otherwise might have switched to other banks while looking for such a product.

  Further, the bank can profit from an early-mover advantage by actively shaping technological standards that are based on one's own strengths. This is, of course, fraught with a substantial risk of incurring financial and image losses if the propagated technology fails to establish.

1.1.4 Cross Boundaries between the Banks and Mobile Operators

A cornerstone of Mobile Commerce is built by Mobile Banking. Unlike in the past, when banks offering mobile services suffered a severe setback due to lack of customer interest and unripe technologies, the time seems to be now ripe for (re-)launching mobile banking services. Mobile Banking, defined as carrying out banking business with the help of mobile phone. The offered services may include transaction facilities as well as other related services that cater primarily to informational needs revolving around financial activities. With the emerging wave of information driven economy, the banking industry in Kenya has inevitably found itself unable to resist technological indulgence. This has led to a boom in development of mobile banking laying down a strong base for low cost banking, and growth of mobile phone use in rural Kenya.

Co-operative Bank pioneered mobile banking way back in 2004 by enabling customers to access their accounts and transact using their mobile phones. It offers services such as balance enquiries, mini-statements, SMS alerts on credit and debit transactions to an account, pay utility bills and funds transfer.

Standard Chartered Bank in 2009 launched its mobile banking in seven markets in Africa. In the Kenyan market it offers a number of services on a unique, user-friendly platform called Unstructured Supplementary Services Data (USSD) and is only available on GSM carrier networks which enable customers to access banking in real time, anywhere in the world, through their mobile phones. The platform is a convenient menu-driven application that is not dependent on specific customer handsets and does not need to be downloaded.

Barclays Bank's m-banking platform is known as 'hello money'. It allows customers to carry their bank in their mobile devices and access banking services anytime/anywhere on the move. Unlike other players in the sector this is all for free.

Equity bank on the other hand has its own m-banking platform known as Eazzy 24/7 offering services similar to those of Co-operative Bank.

Telephone and PC banking is a facility that enables customers, via telephone calls, find out about their position with their bankers by merely dialling the telephone numbers given to them by the banks. In addition, the computers on the phone would require special codes given to the customers as a means of identification of authentic users before they can receive any information they requested for. Telephone and PC banking brings the bank to the doorstep of the customers, it does not require the customer to leave his premises.

The card system is a unique internet payment type. Smart cards are plastic devices with embedded integrated circuit being used for settlement of financial obligations.

Depending on the sophistication, it can be used as a Credit Card, Debit Card and ATM cards.

The cards are loaded with cash value via the internet and can be carried around like cash with all the information stored on a microchip. The microchip contains a "purse" in which value is held via an online float. In addition, it also contains security programs, which protect transactions between one card user and the other. It can also be transferred directly to a retailer, merchant or any other outlet to pay for goods and services, and like cash, transactions between individuals without the need for banks or any other third parties. Also, the system does not require central clearing, it is valued immediately.

1.2 RESEARCH PROBLEM

Mobile Banking is developing to be one of the most widespread mobile commerce applications. There are various mobile applications that major banks and similar financial institutions are rolling-off using this newfound medium of reaching out to their customers. Most of these services can be deployed using more than one channel. Presently, Mobile Banking is being deployed using mobile applications developed on one of the following four channels, namely IVR (Interactive Voice Response), SMS (Short Messaging Service), WAP (Wireless Access Protocol), and Standalone Mobile Application Clients. These are the technologies that are driving the mobile applications in the banking industry (CGAP, 2008).

Mobile money has emerged as a strong competition to financial institutions in Kenya. Initially cellular phones were developed to improve communication from the earlier primitive forms of communications. Financial institutions introduced ICT as an improvement to the banking channels.

With similar research work done around the economics and sustainability of mobile money and mobile banking and the application and challenges faced thereon, this study seeks to fill in the wider research problem of interoperability within the Mobile Banking stakeholders sphere, The study seeks to answer the question on why the banks and Telcos must work together and what they must consider to enhance this relationship.

1.3 RESEARCH OBJECTIVES

The overall objective under which the research study was conducted was to establish and examine whether the cross boundaries in banking are inherent to deepening financial services and to what extent through mobile banking and more specifically to:

i. To identify the extent to which mobile banking is key to financial deepening.

ii. To determine the synergies that exists between the banks and mobile operators.

iii. To determine the relationship between agency banks operated by the banks and agency banking operated by the mobile operators.

iv. To determine the challenges faced by the banking sector and necessary framework to cope with this challenges.

v. To develop a mobile banking research framework that will be the basis of a series post research analysis and review.

1.4 SIGNIFICANCE OF THE STUDY

The study will be crucial to existing and emerging financial institutions as it will prove the success and growth associated with the implementation of mobile banking and highlight the areas of banking operations that can be enhanced via mobile banking. It will also highlight the factors retarding the implementation of mobile banking in Kenya.

It is equally significant for bank executives and indeed the policy makers of the banks and financial institutions to be aware of mobile banking as a product of internet commerce with a view to making strategic decisions. The study is also expected to give an insight on the state of mobile money services as a competition to the commercial banks in Kenya and the factors that have greatly influenced its growth. Players in the financial institution sector and telecommunications industry will find the study useful as they can use the findings to strategize on how they can mutually benefit from this development. Finally, our study adds to the existing literature, and is a valuable tool for students, academicians, institutions, corporate managers and individuals who want to learn more about mobile and internet banking.

1.5 LIMITATIONS OF THE STUDY

In undertaking this study a number of challenges emerged, mainly;

1.5.1 Bureaucracy in organizations

Though some responders/institutions were willing to participate in the exercise, there was the challenge of bureaucracy in getting approval to respond to questionnaires with most institutions insisting that permission be sought from the Chief Executive Officer or Human Resource Manager. This led to delays in obtaining the required responses for data analysis in time, to the extent that by the time this final report was being drawn, quite a number of responses were yet to be received.

1.5.2 Data required treated as company secret

A number of institutions in our sample treated the data required from them for the survey as company secrets and exclusive for internal company use and thus could not be shared. This therefore reduced the expected response rate.

Chapter 2

Literature review

2.1 INTRODUCTION

The purpose of the literature critical review was to examine previous studies regarding what had been done and the gaps that needs to be fulfilled. This chapter comprises the critical review of past studies, summary and the conceptual framework.

2.2 REVIEW OF OTHER SIMILAR WORK

Issues regarding mobile money and mobile banking have gained centre stage in the recent couple of years. New legislative frameworks and other regulatory guidelines have come up to act as a guide and to monitor the extent to which these services can be used. It has become necessary to safeguard the consumer from any ill the actions of players concerned, notably the Mobile Network Operators (MNOs) as well as the corresponding banks [Central Bank of Kenya(CBK) prudential guidelines and the Banking Act]

The financial regulator plays a crucial role in the economy of any country; for ordinary citizens, it is the regulator that stands between them and financial chaos, by attempting to ensure the financial stability of the economy, and that those institutions wishing to offer financial services do so in a responsible manner. So, in addition to his role in maintaining financial stability, the regulator also has a key responsibility for consumer protection. There is a third role for the regulator, though, that is particularly important for emerging economies; that of promoting the country's social objectives, by ensure that suitable financial services are available to the widest population possible. The CBK is the regulator of banks in Kenya.

2.3 THE KENYAN CONTEXT

In 2008, Kenya had a stable, growing banking sector that appeared to have avoided most of the problems arising from the global financial crisis of 2007/8. However, despite the strong growth of leading local retail banks like Equity Bank in the preceding five years, still only 19 percent of Kenya's population of 35 million had bank accounts. As in many developing economies, banking was still generally considered a preserve of the rich who could afford the regular and expensive fees; or those less well-off but who lived in urban centres with more access to bank branches, albeit overcrowded and offering poor customer service. With 70 percent of the population still living in rural arrears, there was not only limited access to basic infrastructure, there was also very limited access to affordable financial services, such as payment facilities or savings. At this time there existed little incentive for banks to serve the unbanked, mainly due the significant costs of establishing a branch network and the tight margins associated with banking the poor. This was indicative by the low penetration of conventional banking channels. When M-PESA, the first money transfer service was launched in March 2007, there were only 1.5 bank branches per 100,000 people and only one Automated Teller Machine (ATM) per 100,000 people.

But for every Kenyan who had access to a bank account, at least two others had access to a mobile phone. Mobile phone penetration in 2006 was nearly 30 percent and growing much faster than bank account penetration. The Financial Access Survey in 2006 first highlighted to the CBK the very low reach of the traditional banking sector, with more than a third of the population were excluded from all financial services, and another third dependent only on informal services.

Kenya was one of the few pioneering countries where financial services were starting to be offered by mobile network operators to people. There was considerable interest in the development of these services since it offered good prospects of providing services to people who did not have bank accounts. Today, instead of using bank branches, basic payment services are now offered through a range of retail outlets. A wide range of outlets are now being used to offer banking services. These include supermarkets, petrol stations, pharmacies, seed and fertilizer merchants, post offices etc.

Among the first mobile network operators in the world to offer branchless banking were Globe Telecom and SMART in the Philippines. They launched their Smart Money service in 2000 (in conjunction with Banco de Oro) followed by the G-Cash service in 2000. These services allowed customers to store cash, send funds from person to person, pay bills, make loan repayments and purchase goods at shops.

Kenya has had one of the fastest rates of mobile adoption in the world. In 1999, only about 15,000 people owned a mobile phone; by the time of the first Fin Access study in 2006, there were over 14.5m mobile subscribers. Results from the second Fin Access study that was completed in March 2009 showed that 47.5% of the adult population in Kenya had their own phone. Including those able to use a phone through a friend, family member or agent, access was 78.4%. There was considerable growth between 2006 and 2009 in rural areas with mobile phone ownership increasing from 19.2% 2006 to 41.6% in 2009 to 61.5% in 2013. This development was mostly driven by the availability of low cost mobile phones and the emergence of pre-paid airtime (FSD study, 2009 & 2013).

In line with the increase in mobile telephone penetration as highlighted above, there has equally been a proportionate rise in the numbers of mobile-money related service users. Kenya's mobile market has four key players - Safaricom, Bharti (was Zain), Telkom Kenya (Orange/ France Telecom) and Essar Telecom Kenya (known as the brand Yu). Safaricom dominates the market with an 80% market share.

In March 2007, following an initial pilot co-funded by Vodafone and the UK's Department for International Development (DFID) Financial Deepening, Challenge Fund, Safaricom (the Kenyan Vodafone affiliate) launched M-PESA, a mobile-based payment service. Within the first 3 months of the commercial launch 111,000 people registered for the service. A year after the launch there were 1.6 million registered users and a network of over 1,200 agents where people could register, deposit, and withdraw money, and the numbers of registered MMT users now is over 17 Million according to company statistics.

In 2011, Money transfers through mobile phones crossed the Sh1 trillion mark with Tangaza shocking its more established rivals to lie behind Safaricom' s M-PESA in market share. Data from the Central Bank of Kenya shows that in the month of December 2011 alone, M-PESA moved Sh116.6 billion, miles ahead of Tangaza's Sh1.31 billion and about three times the combined share of the other four rivals for that month. Airtel Money transferred Sh420 million, Orange and Yu Sh20 million each while MobiKash handled Sh4 million, the Central Bank data showed

There is increased use of mobile phone financial services by both individuals and corporate organizations. Statistics also show that person to person usage is still dominant while business to persons and persons to business are all increasing. Industry Projections show that by the end of 2014, the total number of mobile subscribers is predicted to rise from 24.6 million mobile subscribers at year-end 2010 to 33.2 million.

M-PESA is an innovation that clearly dominates its money-transfer predecessors on virtually all dimensions. Users say it is faster, cheaper, more reliable, and safer, and a very large majority report that they would suffer significant negative consequences if it were to be shut down. .Jack and Suri, 'Economics of M-PESA' 2009.

In their study, they state that these expressed preferences suggest that M-PESA is valued more by individuals than it costs. On the other hand, the precise source of these benefits – i.e., the specific economic impacts of M-PESA – is not easy to calculate. "We have identified a number of potential economic effects of MPESA at the household level – for example from impacts on saving and investment, to risk spreading and insurance. At the macroeconomic level, there could be important impacts on money supply and inflation, with implications on Central Bank regulation and the conduct of monetary policy."

The Kenyan banking community expressed concern that M-PESA could not meet the risk management requirements associated with a large payment system network; and that it was dangerous for any institution to operate on that scale outside of regulation. Banks were arguing that there was in fact a double standard with the CBK allowing

a non-bank to conduct financial services without the regulatory burden that is imposed on the banking industry. Furthermore, while M-PESA enabled money transfers using mobile phones, it still relied on agents to deposit and withdraw cash, something which banks were prohibited from doing. These agents relied on the banking system to be able to maintain their floats of electronic money. As a result of more people sending more money home faster, the pattern of cash flows in the country had changed markedly, and some banks with widespread branches had incurred additional costs of providing liquidity in remote branches where M-PESA agents would come to get cash.

In 2009, the Central Bank of Kenya (CBK) commenced measures to open up banking channels to non-bank agents. An amendment to the Banking Act (passed as part of the Finance Act 2009) allowed banks to start using agents to deliver financial services. Using small shops, petrol stations, pharmacies and other retail outputs as agents could have a dramatic impact on improving access to financial services, especially in rural areas.

The various studies conducted as well as the findings highlighted above all point towards the fact that innovations such as Mpesa are all but important in the quest of financial inclusion to both the banked and unbanked population. However, these studies have failed to point on the great importance of the different kinds of synergies and the immense challenges that are working against these synergies being wholesomely felt by the mainstream financial sector and the MNOs while working together. This therefore forms the basis of expounding our research on the cross boundaries between firms operating platforms like Mpesa and the banks in provision of mobile banking services and the barriers hindering the banks from integrating with the Mobile Operators.

Chapter 3

Research Methodology

3.1 INTRODUCTION

This section will try to highlight and conceptualize the set of practices or procedures that will be employed to help in undertaking and interpreting the problems within the scope of this study. Included in this section will be an elaboration of the study setting (case study), research design, study sample, data collection method, and analysis.

In its bigger picture this study will address the Kenyan banks, mobile phone operators and the mobile users within the East African boundaries. However, this would prove to be a herculean task and therefore it would be imperative to draw our sample within the boundaries of Kenya. Hence the setting of this study will consist of three sub-settings namely a sample of the Kenyan banks, the four mobile banking/money service operators and a sample of mobile users, who will be very essential in providing feedback on their experience with mobile banking services.

End user

3.2 RESEARCH DESIGN

The study was both descriptive and exploratory and used both quantitative and qualitative study tools to collect data. The quantitative data was derived by conducting a systematic review of the already existing platforms in mobile banking and review of mobile banking transactions to identify the range of services needed, utilization patterns and the extent to which these services are relied upon by their users. The qualitative data was derived from questionnaires administered to banks, mobile operators and mobile banking users.

Table 1: Description of respondents and settings

Demographics		Male	Female	18 – 29 Yrs.	30 – 39 Yrs.	40 – 49 Yrs.	50 – 54 Yrs.	55 + Yrs.	AB	C1	C2
Total		583	675	750	344	107	32	25	383	720	155
Nairobi	(355) 28%	29%	27%	31%	27%	16%	28%	24%	30%	23%	48%
Coast	(227) 18%	16%	20%	15%	22%	29%	9%	24%	19%	21%	-
Nyanza	(151) 12%	10%	14%	14%	9%	9%	6%	16%	14%	13%	2%
Central	(83) 7%	7%	7%	7%	5%	8%	13%	-	3%	6%	20%
Rift Valley	(190) 15%	15%	16%	14%	17%	18%	28%	-	12%	19%	4%
Eastern	(128) 10%	10%	11%	9%	11%	11%	13%	12%	8%	11%	9%
North Eastern	(74) 6%	10%	3%	7%	3%	4%	3%	8%	11%	3%	6%
Western	(50) 4%	4%	4%	3%	5%	5%	-	16%	2%	3%	12%

The study was quantitative in nature and utilized HAPI (Hand held Aided Personal Interviews) data collection methodology. The total sample of participants achieved was 1258 and as indicated on table 1 above were aged 18 years and above but with a skew towards the younger participants of below 30 years of age (62%). The respondents were also split between males and females with a slight skew towards females (54%).

The participants were drawn from the upper to lower middle social economic classes but with a bias towards the upper middle socio-economic categories ABC1s (87%). The living standard measures were the main indicators of social economic classes and mainly involved the ownership of a number of household items (see appended questionnaire) and media consumption. The middle to upper class (ABC1s) owned most of the indicated items in addition to those that the lower middle class (C2s) had like a fridge, a video recorder, a Hi fi music system or home theatre, pay TV and a personal computer.

About half of the respondents (52%) have post-secondary education and are in marriage relationships. More respondents were in self-employment (32%) and the average income for most respondents (57%) falls between Ksh.20, 000 and Ksh.60,000. Only about 6% of the respondents have an income over Ksh.120,000.

The study was spread across both rural and urban areas and with a skew towards urban (89%). The study was spread across the whole country and spread across all eight provinces in Kenya that include Nairobi, Coast, Nyanza, Central, Rift valley, Eastern, North eastern and Western Kenya.

Banks

The Kenyan Banking sector is highly fragmented. As such, based on the *Banking Survey 2013 (Think Business Limited*), the banks were divided into four categories namely, 1st Tier Banks, 2nd Tier Banks, 3rd Tier Banks and lastly, 4th Tier Banks based on their size. In the 1st category we had 4 banks; 7 in the 2nd category, 12 in the 3rd category and 19 in the 4th category.

In our sample we included all the banks in the Tier I. This is deliberately taken because they have a wide network of branches across the country and hence many people are either aware of them or bank with them. We then employed Simple Random Sampling technique in selecting the Tier II, III and IV banks based on their mobile banking products offering.

Mobile Network Operators (MNOs)

The Second setting included the four mobile phones operators in Kenya and Tangaza (the 2nd largest Mobile Money Transfer platform in terms of values transacted)

3.3 DATA COLLECTION METHODS

Empirical research instruments

Data was collected via three different questionnaires' for the three different sub settings. One for the banks, one for the mobile operators and one for the mobile end user.

Design of the questionnaires.

3.4 DATA COLLECTION PROCEDURES

To get important information in this study, we used both secondary and primary data. Our secondary data provided us with a theoretical background to the research problem and was obtained from past studies, journals, books and internet sources. The primary data was collected using appropriate research instruments mainly through administration of closed questionnaires and interviews to the respondents from the three different sub-settings explained earlier. Each setting had its own unique questionnaires with different questions with the main aim of obtaining maximum and pertinent data for analysis.

Chapter 4

Data interpretation and analysis

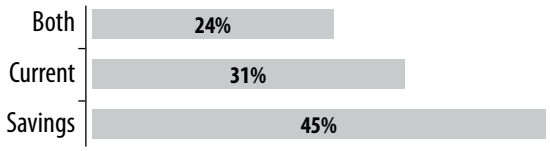
4.1 MAIN FINDINGS OF THE STUDY

- **END USER/ CONSUMER**

4.1.1 Habits and Usage of Banking Services

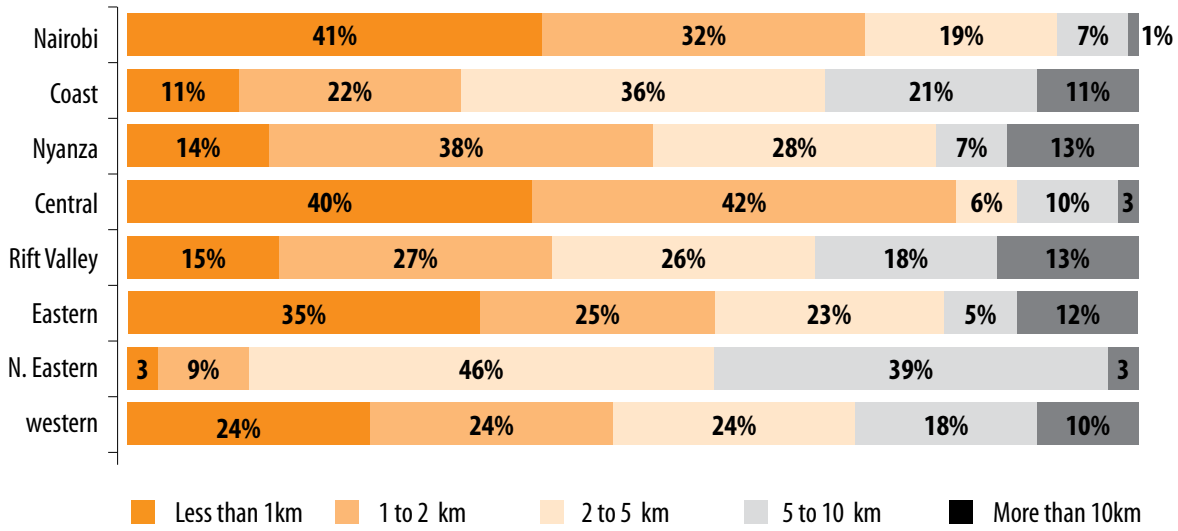
Penetration of banking services was high with a large majority (88%) claiming they operated a bank account with some variations across the subgroups. The banking penetration deepens as one moves up the socio-economic ladder with a vast majority of ABs (97%) having a bank account. Eastern and Western regions have the lowest level of banking penetration at 77% and 76% respectively. Use of banks seems higher than use of mobile phones for banking transactions across this category of respondents. Savings account is slightly more prevalent (45%) than the current account (31%) whilst about a quarter (24%) of respondents operated both the current account and savings account. (See figure 1 below)

Figure 1: types of bank accounts held (n-1111)



Awareness of banks is high with Equity (98%), Co-operative 96%), KCB (94%) and Barclays (92%) receiving the highest mentions. Equity bank has also the highest level of penetration at 57%.For most respondents (54%) the branches are less or about 2kms away with banks being more accessible in Nairobi and Central region. In North Eastern and to a lesser extent Coast region banks seem to have fewer branches hence exhibiting thin distribution and poor accessibility.

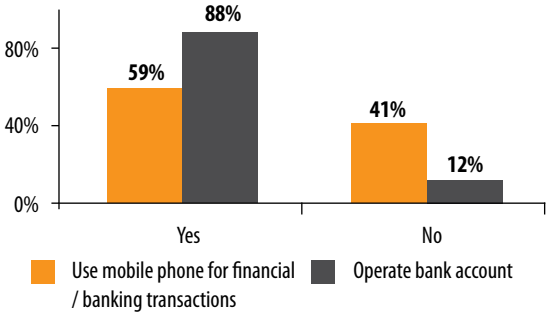
Figure 2: Distance to the bank (n-1258)



4.2 MOBILE FINANCIAL/ BANKING SERVICES

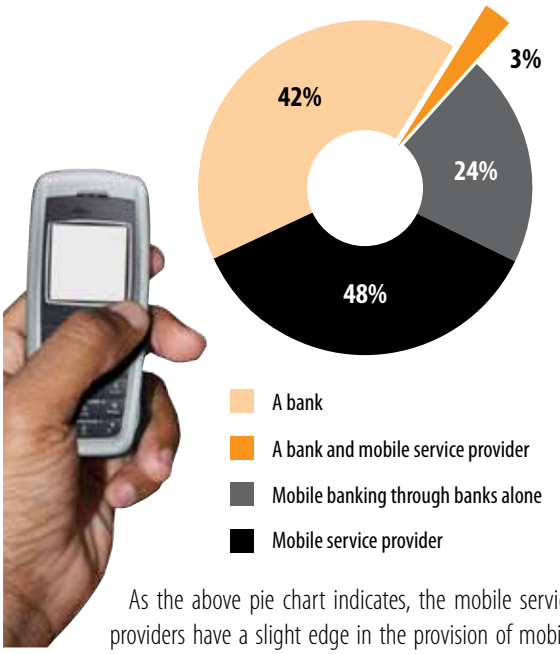
All the respondents as per the eligibility criteria owned mobile phones with ordinary phones being more prevalent (68%). The upper to middle socio-economic category (AB) were more likely to own and use smart phones (56%) more so than the lower socio-economic categories of C1s (24%) and C2s (12%). More participants in the North Eastern (61%) seemed to own smartphones with the lowest penetration of smartphones being exhibited in Rift valley (15%), Eastern (18%) and Central (20%) regions. The younger respondents are also more likely to use smart phones (35%) more so than the older respondents (16%). Smart phone penetration also increases with the level education of respondents. University educated respondents using smart phones were (58%) more than their counterparts with lower education level. The same applies to gender. Penetration was higher amongst males (38%) compared to their female counterparts (27%).

Figure 3: Use of banks and mobile phones for financial services



As the chart above indicates nearly 60% of the respondents used their mobile phones for financial and or banking transactions. There were noticeable variations across subgroups on the use of mobile phones for financial transactions with the ABs (67%), males (63%), and those with the university level of education (78%) depicting a higher level of mobile use for financial transaction and banking more so than their counterparts in the lower socio-economic category, female and lower education level respectively. Respondents in rural areas (71%), more so than their urban counterparts, used mobile phones for financial transactions than those in urban (57%) and particularly so in Eastern region (80%). The use of mobile phones for financial transactions is lowest in Coast region (38%).

Figure 4: Providers of financial transactions through mobile phones



As the above pie chart indicates, the mobile service providers have a slight edge in the provision of mobile service although synergies exist between the banks and mobile service providers at 42% of the cases. Mobile banking through the banks alone is low at a quarter (24%) of the reported cases. Mobile banking is transacted through a separate account or through the same account as an additional service with a slight skew towards the former (56%).

Banking Transactions and frequency

Cash transactions of withdrawals (76%) and deposit (67%) are the main banking transactions undertaken by the respondents. Other transactions are savings (59%), balance enquiry (40%), airtime recharge (26%), fund transfer (23%) and bill payments (21%).

Most transactions and especially on cash withdrawals, deposits, savings, investments, pension fund management are monthly activities whilst international remittances are occasional.

Table 2: Regular banking transactions and frequency (n-1258)

Type of transactions		Daily – Several times	Daily-once	Weekly-several times	Weekly-Once	Monthly-several times	Monthly-Once	Occasionally (less than once a month)
		117	141	608	484	786	1328	626
Cash withdrawal	76%	9	12	149	133	260	254	141
Cash deposit	67%	7	20	142	105	166	272	132
Savings	59%	6	29	73	89	159	293	88
Balance enquiry	40%	11	15	47	53	88	163	122
Airtime recharge	26%	76	52	120	29	21	18	9
Fund transfer	23%	3	4	46	42	47	80	69
Bill payments	21%	-	1	13	18	20	193	17
Other payments	5%	-	2	8	2	14	16	19
Purchasing	4%	4	5	7	8	6	15	11

Cash is largely withdrawn at the ATM lobby (58%), while mobile operators transact about a fifth of all cash withdrawals. Cash is mainly withdrawn during the working hours of the day for most respondents 61% and the average amount of withdrawal ranges between Ksh.1000 and Ksh. 5000 (as indicated on figures 5 and 6 below).

On fund transfer, money is mainly transferred across the country by virtually all the respondents with only a few respondents (21%) transferring money internationally.

Mobile phones are the main avenues through which most (64%) respondents receive or send money locally with a few respondents sending or receiving money through the banks.

The few transactions on international money transfers are through Western Union, MoneyGram and Nation Hela.

Figure 5: place where cash is withdrawn (n-1258)

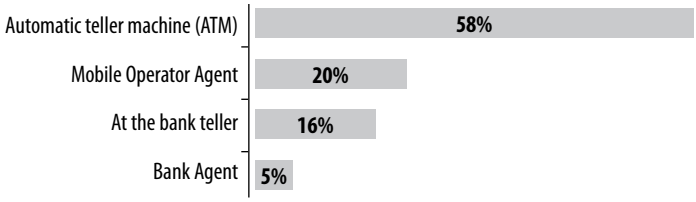


Figure 6: Amount of cash withdrawn (n-1258)

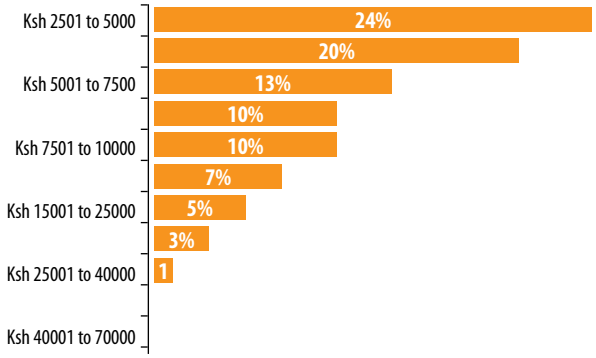
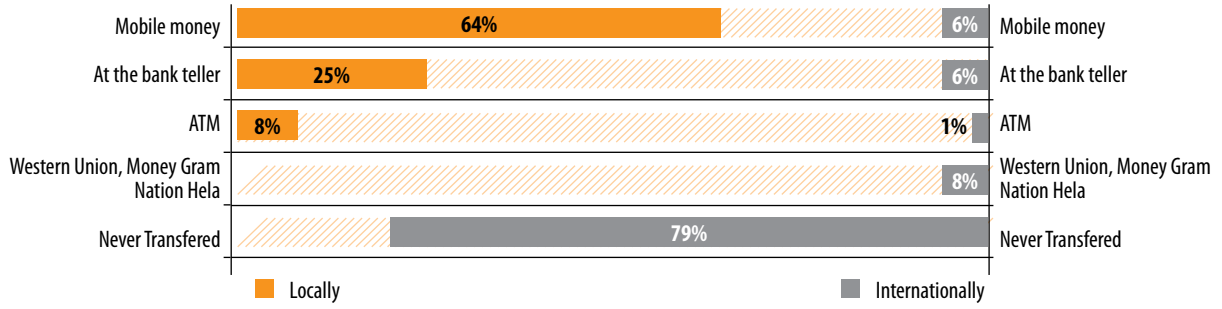
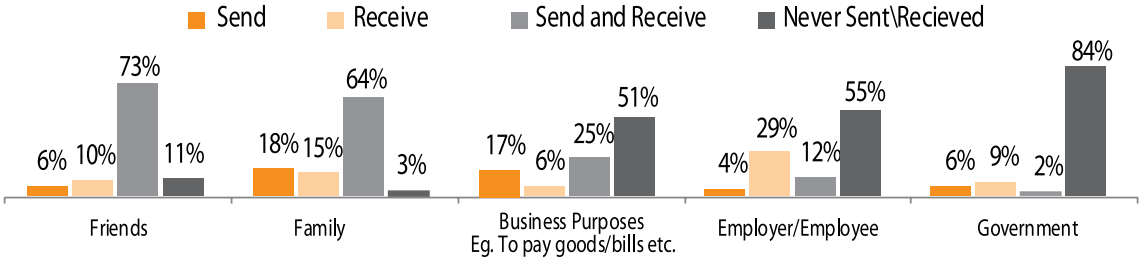


Figure 7: Money transfer avenues (n-1184)



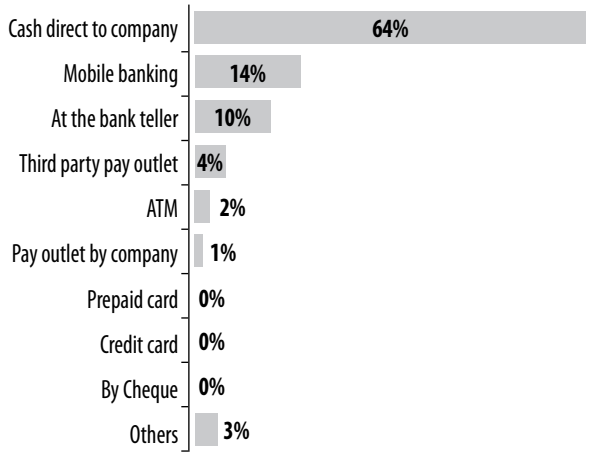
The transfer of money as is indicated on figure 8.below is largely across family and friends with about a quarter of money transfer being for business purposes.

Figure 8: To whom transfer of money is undertaken (n-1258)



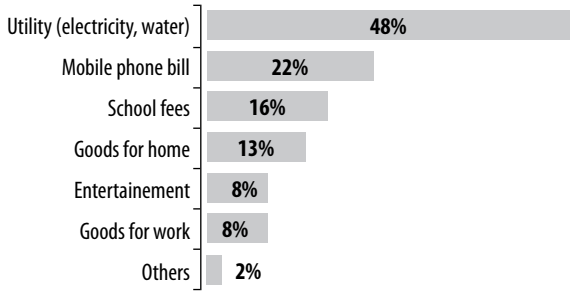
On payments of bills, most respondents (65%) pay their bills by cash with only 14% of the respondents using mobile phones.

Figure 9: payments of bills (n-1258)



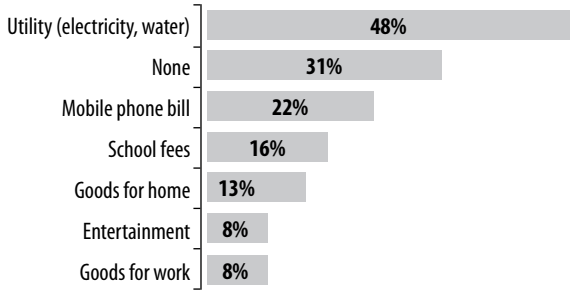
The bills that receive payments through mobile phones as indicated below on figure 10 are mainly utilities like electricity and water (48%) and to a lesser extent mobile phone bill (22%). The use of mobile phone for the payments of other bills like school fees (16%), goods for home (13%) and office (8%) and entertainment (8%) is quite low with less than 20% of the respondents paying for them through their mobile phones.

Figure 10: Bills paid through Mobile phones



The payments are on average paid on monthly basis and amount paid ranges between a mean amount of Ksh.1,631 and about Ksh.20,000. The highest amount paid on mobile phones is for school fees and is on average Ksh.19,278.

Figure 11: Types of Bills paid through mobile phone

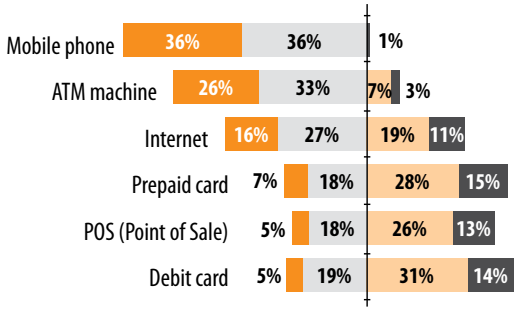


4.3 USER INTERFACE

When the respondents were asked to rate their ability to use banking devices, their ability to use their mobile phones was high at 74%. About a quarter of the respondents however feel inadequate to utilize their mobile phones. There were no major variations across the socio-economic categories and gender but on age the older respondents above 55 years were more likely to have some difficulties in operating their mobile phones and so were those with low education level with only 33% for those with no formal education and 36% of those in primary education claiming they were confident about operating their mobile phone devices. The regions also exhibited some variations with a few respondents in north Eastern 21% and Western regions (40%) exhibiting confidence of operating their mobile phones.

Over 50% of respondents were also confident about using ATM cards. Fewer respondents were however able to use the internet (43%), prepaid cards (25%) and debit cards (24%). Ability to operate these devices it seemed was poorer across the low income respondents, females, older respondents and respondents in North Eastern and Western Kenya.

Figure 12: Ratings on ability to use banking devices



Most mobile phones had menus that were easy to understand, navigate and use on payment transfers and balance enquiry. Over 50% however could not allow downloading of software, subscribe to SMS alerts or to write emails.

Figure 13: Use of mobile phone device

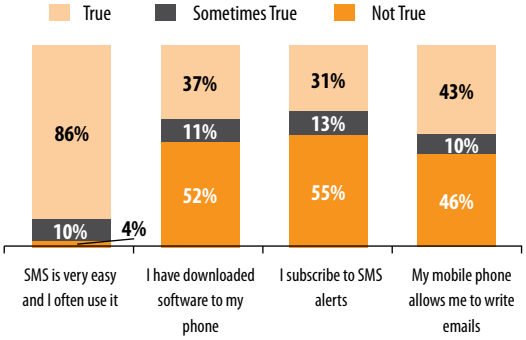
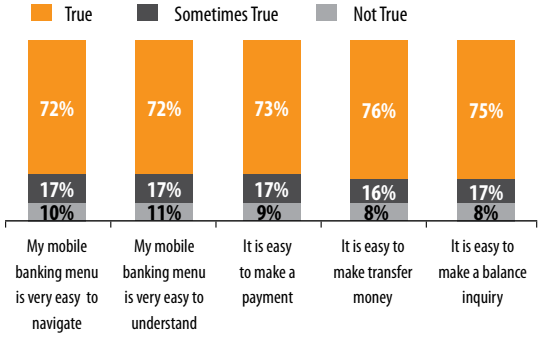
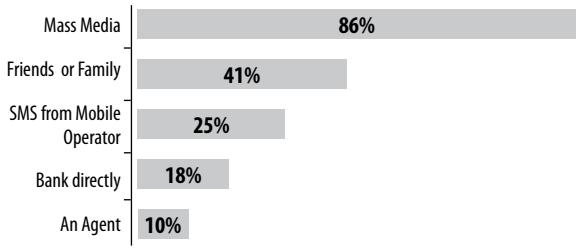


Figure 14: Use of mobile phone device



When the respondents were asked to rate their knowledge of banking services, most of them rated their knowledge high and very high and particularly so for their usual banks (59%) and branches (66%).The awareness of mobile banking is however high (88%) among the non-users of the service with no major variations across the subgroups and with mass media emerging as the main source of information (86%) followed at a distance by word of mouth (41%) through friends and relatives as indicated on chart 15 below

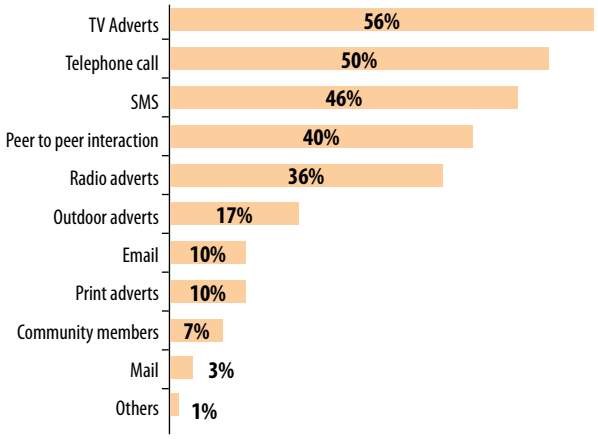
Figure 15: Source of mobile banking service awareness amongst non-users of mobile banking (n-20)



When all the respondents were asked the preferred source of information on mobile banking, as depicted in the chart below, TV emerged the most preferred source (56%).

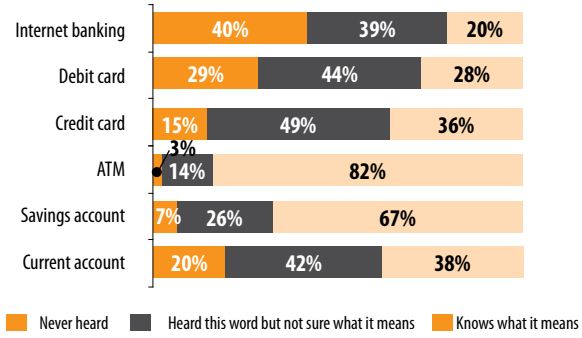
The same media and particularly the Television is the main avenue through which many respondents including both users and non-users of mobile banking services (56%) would like to receive information about mobile banking. Television is followed closely by telephone (50%) and SMS (46%) and the avenues that are likely to have a higher reach and which we would encourage the client to utilize

Figure 16: preferred source of information on Mobile Banking (n-1258)



Knowledge on financial services and particularly on internet banking across the non-users of banks is low meaning that to deepen financial access we need to address capacity building on financial services across the non-users.

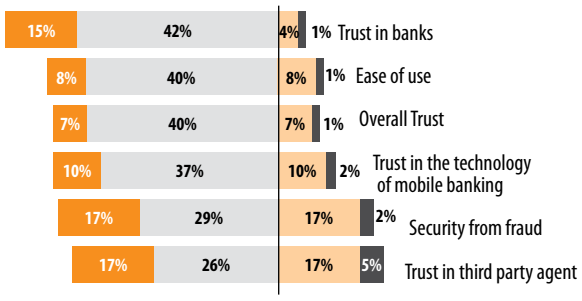
Figure 17: knowledge of financial services (n-147)



4.5 PERCEPTIONS AND ATTITUDE TOWARDS MOBILE BANKING

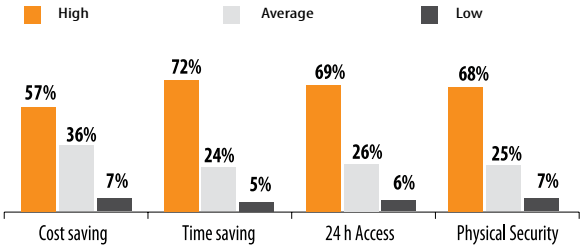
A vast majority of respondents (95%) perceive mobile banking as cheaper than normal banking services and have quite positive attitude to mobile banking as indicated in the chart below where trust in banks, ease of use, overall trust and trust in the technology, are all about 50%. Doubts increases however on security from fraud and trust in third party agents, concerns that need addressing and reassurance before they exhibit a bottleneck to mobile banking.

Figure 18: perceptions on mobile banking services



Mobile banking is mainly associated with time saving, long hours access, the security of the premises and to a lesser extent on saving costs and efforts therefore need to be made to ensure those attributes are well enforced and maintained to encourage use.

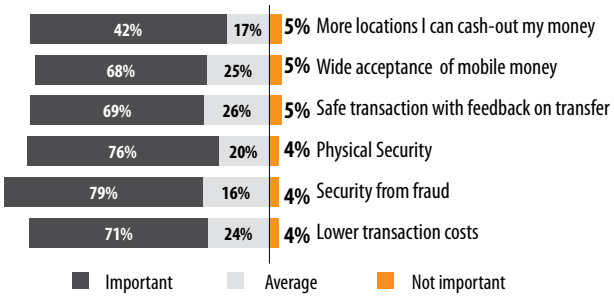
Figure 19: perceived benefits of mobile banking



4.6 FUTURE DEMAND AND WILLINGNESS TO SPEND

There is a high interest of using mobile banking (62%) across the non-users of mobile banking and particularly in Nyanza, Eastern and Western (although samples small) and the interest is likely to be driven and sustained by security from fraud (79%), more locations (78%) and physical security (76%). And as indicated above these benefits need to be enhanced and maintained to encourage continued patronage.

Figure 20: Interest in using mobile banking (n-520)

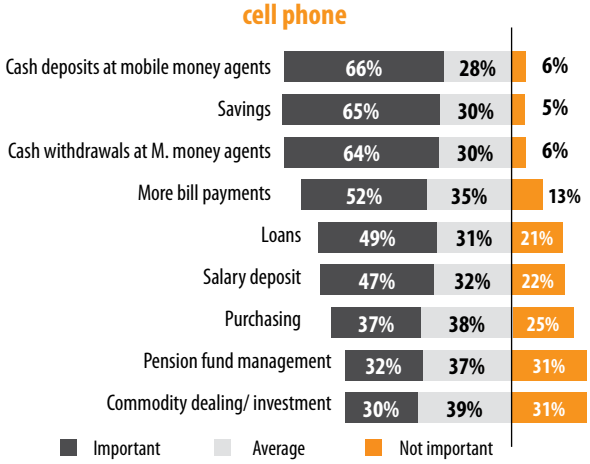


The services that are likely to interest non users are largely cash withdrawals and deposit and savings the same services that users are mainly interested in as indicated above.

Data set from Mobile Network Operators (MNOs)

As mentioned earlier, one of the challenges we faced while conducting this study was a lack of interest from the MNOs. Numerous attempt to schedule interview with the management so as to get the relevant updated information did not yied fruits. Many of the MNOs wrote to an approached felt that the information we were asking for was competitive and therefore not appropriate for public disclosure. We were however able to obtain information from Safaricom. Given that Safaricom is the dominant player in the industry controlling slightly

Figure 21: Financial services preferred to be offered via the cell phone



over 80% of the market for both mobile phone lines, money transfer Services (M-PESA) and mobile banking transaction. Our findings in this case are therefore very significant.

Increased adoption of cashless transactions saw individuals and businesses move about a third of Kenya's annual productive capacity on Safaricom's mobile money platforms between January and September 2013.

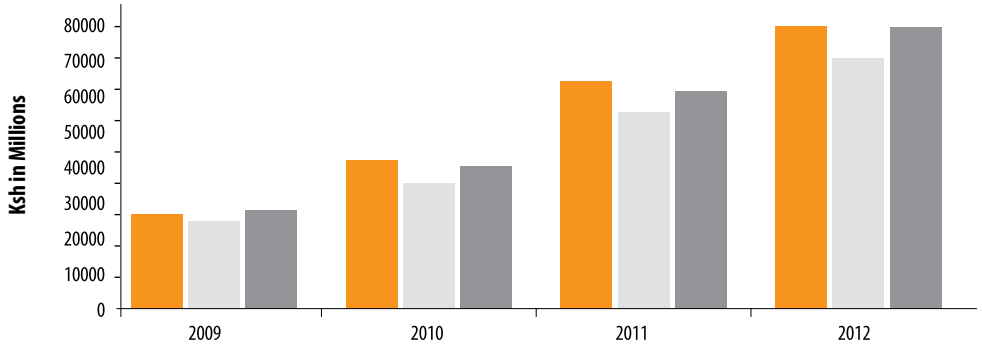
Data from the Central Bank of Kenya (CBK) shows that Ksh1.117 trillion changed hands through mobile phone money transfers, between January and September 2013, helped largely by increased interface between commercial banks and the cash remittance services of mobile telephone services firms.

Safaricom's value of transactions has showed continued growth between 2009 and 2012, and is projected to be even higher for 2013 if the trend persists.

Table 3: Safaricom's Registered Phone/MMT users compared to registered phone users

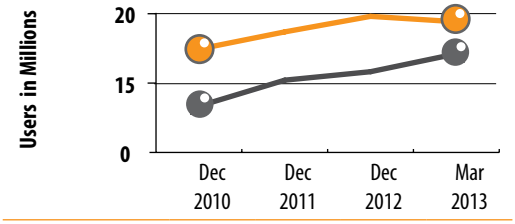
	2010 Dec	2011 Dec	2012 Dec	2013 Mar
Registered Mobile Phone Users	17.45	18.69	19.81	19.42
Registered MMT Users	13.34	15.21	15.82	17.11

Figure 22: Graph showing feedback from Safaricom on value of transactions (Millions)



	2009	2010	2011	2012
Money Transfer	25,567	41,639	63,867	79,551
Money Withdrawal	24,580	35,313	55,345	70,284
Money Deposits	27,582	39,992	61,253	79,275

Figure 23: Graph indicating the comparison between the registered MMT users and registered phone users



	Dec 2010	Dec 2011	Dec 2012	Mar 2013
Regd MP users	17.45	18.69	19.81	19.42
Regd MMT users	13.34	15.21	15.82	17.11

Tables 4 and 5 both reflect how the number of registered MMT users compares to the total number of registered mobile phone users. As at March 2013, the registered MMT users were 88.1 % of the total mobile phone users. As at December 2012, this was reflected by 79.85%

Table 4: Number of Licensed Agent Outlets

Licensed agent outlets					
2008 Dec	2009 Dec	2010 Dec	2011 Dec	2012 Dec	2013 Dec
6,104	15,216	23,397	35,350	51,455	65,547
% y/y growth	149%	54%	51%	46%	27%

Figure 24: Graph indicating the trend of registered agent outlets

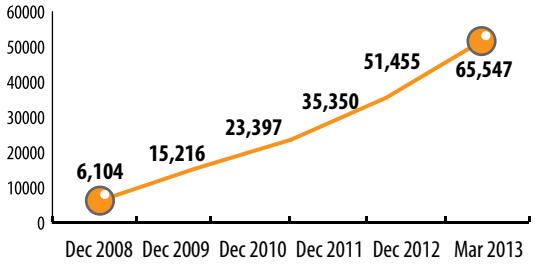


Table 4 and figure 24 above both relate to the number of registered agent outlets by the responding mobile operator. Figure 25 represents graphically the trend of growth from the years 2008 to 2013.The year 2009 as shown in figure was the year with the highest percentage on an year to year analysis showing 149% growth from the previous year's 6,104 agents to 15,216,

However, also as shown in the figures above, the year on year percentage growth is at a diminishing rate from 149% - 54% - 51% - 46% - 27% in the years 2009,2010,2011,2012 and 2013 respectively, though information relating to 2013 is as at March of the year.

Increase in the number of registered outlets indicates greater need by consumers to have many access points from where they can

access the services for whatever transactions they want to undertake. Since some agents are located deep in the rural areas where formal financial institutions have not set foot then the registered agents act as intermediaries to more financial related access.

- **DATA SET FROM BANKS**

We interviewed ten banks out of the total 43 in the sub-sector. The selection included banks in Tiers I, II, III and IV according to our classification. The objective for interviewing banks was to understand the nature and scope of their mobile banking services and to unravel the interrelationship between banks, their customers and the MNOs

Table 5: Table showing product range of services offered by banks.

Services that are offered by all bank respondents	Balance enquiry, Cash deposit, Cash withdrawal, Money transfer services, Bill Payment services	100% OF respondents offer this, because they are considered as most basic services that most consumers will want.
Additional products offered by individual banks	cheque book and ATM requisition, stop cheque, placing a standing order, invite-a-friend, loan follow-up	Vary from bank to bank.

On their mobile banking platforms, all banks who responded said they offered the most basic of transactions i.e. balance enquiry, cash deposits, cash withdrawal, bill payments and money transfer options (within and without the bank).

Other services vary from bank to bank and did not necessarily target all persons, additional options were actually differentiated on the kind of account operated by a consumer. So a consumer could benefit from other options including cheque book and ATM requisition, placing a standing order, loan follow-up etc.

Figure 25: Factors of concern to banks while adopting mobile money services

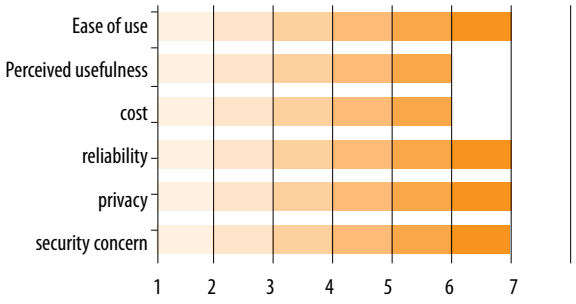
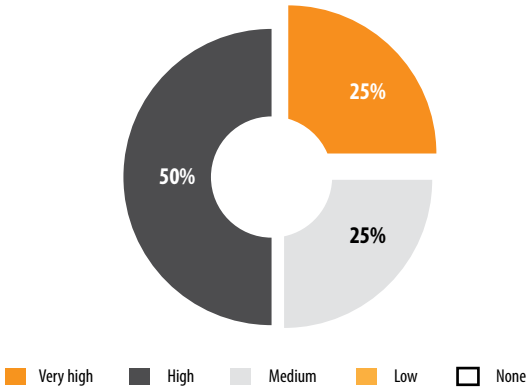


Figure 26 shows the factors of concern that a bank intending to adapt/ offer mobile banking services to its consumers considers in terms of priority. In the questionnaire respondents were to rank the options in a scale of 1-6 (with one being the most important and 6- being least important). However, the interpretations on the graph are from a reversed point of view where 6 is most important and 1 –least important.

Reliability, Ease of use, privacy, security concern and perceived usefulness to the consumer were ranked as most important factors by the banks when offering mobile banking platform. Cost and perceived usefulness came in as second major factors.

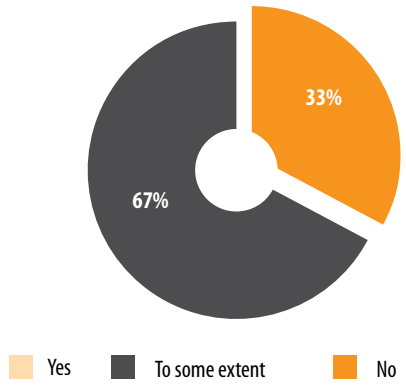
Though not captured in the questionnaire, Robustness and adaptability to system changes were also major areas where responders considered.

Figure 26: Chart representing the perceived level of synergy between the banks and the telcos.



In a question which tried to set –out the level of synergy, if any, in the new twist of business combinations where banks have partnered with mobile operators in the provision of financial services, was posed where respondents were to either respond by; none, low, medium, High, or very high. 50% of respondents gave feedback by saying they felt there was high synergy level between them and the Telco's companies as both parties benefited in different ways but most importantly because through the mobile platform then the banks would reach offer more services to even those outside the reach of the physical bank.

Figure 27: Chart reflecting the perceived level of competition by the MFPS to the banks



The question was perception based and the respondents were to give their take on whether they feel the services offered by MFSP had a competitive edge towards the bank. Response was limited to; No, To some extent and Yes.

67% of respondents sampled responded as "to some extent" indicating that they somehow felt there was an element of competition. Though they were quick to clarify that the mobile operators were not in direct competition because they are registered and licensed by different regulatory bodies and hence conduct different trades, however, the fact that the mobile operators offer money transfer services which were traditionally left for the banks has led to some business and revenue being lost by the banks, to the extent that if left unregulated may have an effect to the larger banking scene.

Chapter 5

Summary, Conclusions and Recommendations

5.1 INTRODUCTION

This chapter discusses the summary of the findings; conclusions reached and give the recommendation as per the responses received from banks, mobile operators and mobile users. The study attempted to establish if cross boundaries in banking are inherent to deepening financial services through mobile banking. The study was guided by this objectives namely; identifying the extent to which mobile banking is key to financial deepening, identify cross boundaries that exist in provision of mobile banking services, determine the synergies that exist between banks and mobile operators, determine the challenges faced by the banking sector and necessary framework to cope with this challenges and develop a mobile banking research framework that will be the basis of a series post research analysis and review and the extent to which banks may expand the platform regionally with other regional mobile operators.

5.2 SUMMARY OF THE FINDINGS

Data was gathered exclusively from banks, mobile operators and mobile users and the findings showed that mobile banking is key in financial deepening, according to mobile operators penetration of mobile banking across mobile users was slightly above average and below that of normal banking services. The main transactions conducted are cash withdrawals, deposits and bill payments, purchasing and fund transfers. Both banking and mobile operators cited that penetration will likely deepen with the enhanced awareness and knowledge on the extended use of mobile banking on bill payments, purchases and money transfers.

The study established the cross boundaries that exist in providing mobile banking services to be; Knowledge on understanding and navigating mobile phones for payments, transfer of money and balance enquiry seems high. The low use of mobile phones for such services is probably not associated with knowledge and an area that probably require more in-depth study to understand the causes of poor utilization of the devices for such services. The mobile operators cited they use mobile banking for balance enquiry, cash deposits/ withdrawal, money transfer services, and airtime top-up, bill payment services, 50% had additional features including forex trading, ATM requisition and an invite-a-friend feature.

The study revealed that there is a positive impact between banks and mobile operators and thus synergies exists, mobile phone money transfers helps largely by increasing interface between commercial banks and the cash remittance services of mobile telephone service firms. According to banks customer turn out level was high as a result mobile banking resulting to a positive impact on performance. The mobile operators reported generating high revenues from mobile money transfers which was fuelled by a high number of consumers moving money in their bank account using their mobile phones.

The study determined the extent to which banks may expand the platform regionally with other regional mobile operators which most mobile operators preferred to be communicated through mass media. It's therefore an avenue through which consumers can access knowledge. Advertisements could be formulated to enhance knowledge on banking services and particularly in those areas where knowledge is low like North Eastern and Western Kenya and across those with lower level of education and are non-users of mobile banking.

The study established the challenges faced by banks security concern, privacy, perceived usefulness and reliability were considered as the most important concerns by the banks, whereas robustness and adaptability to system changes were scored second indicating the second level of importance. Also, the bank cited the current bank regulatory framework as a major hurdle that the banking institutions had to face while setting up the mobile banking platforms followed by setting-up costs, which included infrastructure costs, staff re-training costs, product awareness costs etc. The mobile operators felt that penetration of mobile banking through banks alone is still low whilst the one through mobile service providers was found to be higher. The respondents indicated that they cannot transact when the mobile phone network is down, sometimes transactions are not online, some services are not available on mobile banking platform and phone software cannot access some utilities of mobile banking.

5.3 CONCLUSION

The study was able to achieve the set objectives; ; identifying the extent to which mobile banking is key to financial deepening, identify cross boundaries that exist in provision of mobile banking services, determine the synergies that exist between banks and mobile operators, determine the challenges faced by the banking sector and necessary framework to cope with this challenges and develop a mobile banking research framework that will be the basis of a series post research analysis and review and the extent to which banks may expand the platform regionally with other regional mobile operators.

There are strong synergies between the banks and mobile operators in provision of mobile banking services and deepening penetration of financial services. The combined push by banks to use mobile banking and enhanced customer service experience of money transfer service has contributed to growth of mobile transfers.

Mobile banking faces various challenges among them being, system delays by the mobile money transfer service providers, slow processing of transactions especially during the weekends, high transactions costs, limit on the amount of money that can be withdrawn in a day and fraud. These challenges can be solved through regular maintenance of mobile money transfer systems which will help in managing the systems' capacity and in turn address the problem of transaction delays and improve customer service through speedy support and lower user charges.

On the question of whether banks perceive mobile operators as potential competitors all respondents said "to some extent", though they were quick to clarify that the mobile operators were not in direct competition because they are registered and licensed by different regulatory bodies and hence conduct different trades, however, the fact that the mobile operators offer money transfer services which were traditionally left for the banks has led to some business and revenue being lost by the banks, to the extent that if left unregulated may have an effect to the larger banking scene.

5.4 RECOMMENDATIONS FOR POLICY

With the inevitable cross boundaries between banks and mobile operator, further enhanced and supported policies that encourage financial sector deepening should be implemented. These should be complemented with measures to promote the growth and image of banks and mobile operators in a bid to promote the synergy existing between them.

Pertaining losses due to fraudulent access of customers' accounts from hacking, there is a need to employ disciplined, qualified and well remunerated ICT staff in the bank and at the level of mobile operator., all incidences of bank officials colluding with fraudsters to fleece customers'should be eliminated with advent of ICT.

For cash transactions, one way to enable lower fees should be by creating category of street-level sub-agents, characterized by lower costs and commissions than store-based agents. Sub-agents would use normal M-PESA retail outlets to rebalance their cash and M-PESA stored value. The key principle here is that segmentation of customers' needs to go hand-in-hand with segmentation of agents.

On the regulatory challenges, there is need to include interfaces between different tiers of service providers (Banks and mobile operators), which in order to keep the public's confidence in the system, the findings recommends certain level of clarity on who is who in terms of service delivery. There is a need by regulators to revise the current loose regulatory framework to formulate clear regulations to current and prospective mobile operators, for example on transaction volumes, business use of services, and security. Lack of clarity and uncertainty is not good for any business and nor for the confidence in the financial systems. By setting the rules clearly, the playing field is more predictable and this will promote further investments and competition.

M-PESA as one of the vehicles of mobile banking services has been successful beyond what anyone could have imagined at its launch, the model still has substantial room to develop further. Our wish list for M-PESA is three-fold: (i) the mainstreaming of M-PESA's and other mobile operators regulatory treatment; (ii) pricing that opens up a much larger market of micro-transactions; and (iii) building of a much more robust ecosystem around M-PESA and other MFSP that enables customers to access a broader range of financial services

M-PESA's regulatory treatment as a payments vehicle needs to be formalized so that it can become regulated in the most appropriate way within the country.

The Kenyan experience also suggests that several country-level environmental factors need to align to set the scene for a successful mobile banking development, including the labor market profile (demand for remittances generated by rural-urban migration), the quality of available financial services, support from the banking regulator, and the structure of the mobile communications market (dominant mobile operator and low airtime commissions).

5.5 SUGGESTIONS FOR FURTHER RESEARCH

The study points a number of lessons learned for understanding mobile banking. However, the study was limited in scope and thus the impact analysis was based on a small sub-sample which also highlights the need for additional verification. Hence, there is a need to conduct more comprehensive and thorough studies of banks and mobile operators.

Further, a research gap was identified in the bank-integrated mobile savings model which needs to be filled by conducting a research to establish an attractive package that can provide for consumers beyond what basic mobile savings systems already offer.

Also, another area of future study would be in line to examining the extent which MFSPs pull away business/ services that would ordinarily be transacted in a formal financial service provider and the benefits, challenges, risks etc. that would accrue if the limits are not clearly defined.

Chapter 2

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