

**ANALYSIS OF MOBILE BANKING FOR  
FINANCIAL INCLUSION IN TANZANIA:  
CASE OF KIBAHA DISTRICT COUNCIL**

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## **ABSTRACT**

The study analyzed the Mobile Banking (M-Banking) system coverage for financial inclusion in Tanzania, the case study of Coast region at Kibaha district council. Objectives of the study were to analyze coverage of M-Banking for financial inclusion, the usage behavior of mobile subscribers to M-Banking services, understand the extent in which mobile banking systems had impeded financial development and the assessment of service effectiveness and service cost charges.

The main aim was supported by specific objectives which were determined by using the Technology Acceptance Model (TAM, 2009). In this model, I could analyze the M-Banking system usage behavior of the population understudy.

The instruments used were questionnaires and interview which were administered to mobile subscribers and retail agents of the mobile banking systems. The findings were collected, organized, analyzed and interpreted using SPSS Tables.

The outcome indicates that 79% of the population understudies were using the M-Banking system technology of which almost 100% has helped in accessing financial services in an easy way. It further shows that, the illiterate populations are facing the difficulty in using technology compared to literate one. Also, the service cost charges are still not clear to the study hence recommending further study into this.

However, those who were not registered with any of M-Banking facility they could show their interest to use it due to perceived importance of technology in financial accessibility at an easy of which the same group of those not registered with the facility showed their awareness of the service that is believed to be convenient in obtaining services at an easy way.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1:0 INTRODUCTION**

Financial inclusion is the delivery of financial services at affordable costs to sections of disadvantaged and low-income segments of society. Mobile Banking refers to activities performing balance checks, account transactions, payments and credit applications via a mobile device or Personal Digital Assistant (PDA). Financial inclusion has important role in stimulating development by providing banking related financial transactions in an easy way.

### **1:1 BACKGROUND OF THE PROBLEM**

The UNCDF report of January 2009 illustrate that, the financial inclusion has been of an importance in third world countries since the early 2000s after the research findings about financial exclusion and its direct correlation to poverty in third world countries. It has shown that, the banking services are still inadequate to include people from full participation in accessing financial services such as saving, insurance, payments, short and long-term credit, pensions or local money transfers.

The financial inclusion is now a common objective for many central banks among the developing nations as it addresses the constraints of financial exclusion. Ways of overcoming financial exclusion have been cited through which the introduction of financial inclusion facilities to an easy way (Kempson and Dominy, 2003).

During the second quarter of 2010, Tanzania had a total of 19,592,795 mobile subscribers. By September 2010 there were about 20,771,487 subscribers who were receiving services from seven telecommunications companies (Vodacom, Airtel, Tigo, Zantel, TTCL, SaSatel and Benson Informatics (BOL)). Vodacom is the market leader with 8,426,097 subscribers followed by Airtel with 5,901,634 subscribers, Tigo with 4,575,534 subscribers, Zantel with 1,586,516, Tanzania Telecommunication Company Limited with 256,064, Sasatel with 23,071 and BOL with 2571 subscribers (Tanzania Communications Regulatory Authority report, 17th January 2011).

In Tanzania, the early 2007 Vodacom-Tanzania mobile company introduced a Vodafone M-PESA as a new mobile money transfer service in partnership with Vodafone Group. With M-PESA, Vodacom customers could convert cash into electronic money at an authorized M-PESA agent. So far the population under which Vodacom-Tanzania has registered its subscriber occupies 17.9% of the total population (Vodacom-Tanzania report, August 2008).

However, the mobile money transfer in Tanzania has been a common objective for almost all the mobile companies in Tanzania. This could be seen through the introduction of M-banking system by the four Telecommunications companies namely M-Pesa, Zap, Tigo Pesa and Z-Pesa.

## **1:2 STATEMENT OF THE PROBLEM**

The July 2010 estimates of Tanzania total population was estimated to be 41,892,895, thus the population under which Tanzania has registered mobile subscribers occupies 49.58% of the total population. The number of mobile subscribers under the above Telecommunication company with M-Banking system occupies 48.9% of the total population i.e 20,489,781 of which 16,391,824.8 i.e. 39% of total population are rural people living under poverty (TCRA, 2011).

Taking the consideration of the above figure, the mobile industry in Tanzania by 2010 earned the revenue that was doubled amount of what the mining industry got i.e. \$2.684billion (TSh3.6trillion) per year, this makes telecommunications be the country's leading industry (UDSM,2011).

According to provisional data as of 30 June 2010, 9.2 million of registered subscribers are for mobile payment services from four mobile operators (Vodacom, Airtel, Tigo and Zantel) who are currently offering the mobile payment services. The service provision however requires that the phone companies partner with commercial banks (TCRA, 2011).

Since almost half of Tanzanians own a mobile phone through which they can save money and handle financial transactions without needing a bank account, to what extent has the M-Banking system covered the financial inclusion in Tanzania? Are these mobile subscribers use the money transfer system in accessing financial services?

However, the official statistics from TCRA, Tanzanian mobile subscribers spend the second most on mobile phone use in the region. Despite this rank, there is still a large weak consumer purchasing power in the country where half of the population still lives on less than a dollar a day.

### **1:3 RATIONALE OF THE STUDY**

The study intends to discover the coverage of financial inclusion through mobile banking system in Tanzania by examining the Vodacom-Tanzania M-PESA, Tigo Pesa, Zap and Z-Pesa banking systems.

The findings will indicate whether the mobile banking system is as far-reaching, accessible and contributes to the potential understanding on how to make formal financial procedures through mobile banking to mobile subscribers.

The study is built on the rationale that the mobile banking systems in Tanzania could bring several positive effects that include financial services accessibility such as money transfers. This could be seen through the increased demand in money transfer between 2008 and 2009 through Vodafone's M-Pesa in Tanzania that could possibly improve the banking system.

Also the study will help policy makers in considering the opportunity available for M-Banking in the development and growth of the economy.

#### **1.4 general Objective of the Study**

The general objective of the study is to understand the mobile banking system in financial Inclusion coverage in Tanzania.

##### **1.4.1 SPECIFIC OBJECTIVES**

- To examine the awareness of the operation of mobile banking systems and understanding of the technology usage to mobile subscribers.
- To assess the usage behavior of the service by the mobile subscribers
- To assess the service effectiveness and cost charges of the mobile banking systems.
- To identify the extent in which mobile banking systems had impeded financial development.

##### **1:5 RESEARCH QUESTIONS**

- Are the mobile subscribers using the M-Banking systems in accessing financial services?
- Are the mobile subscribers happy and satisfied with the technology? Do they understand the use of it?
- Is the service cost effective?

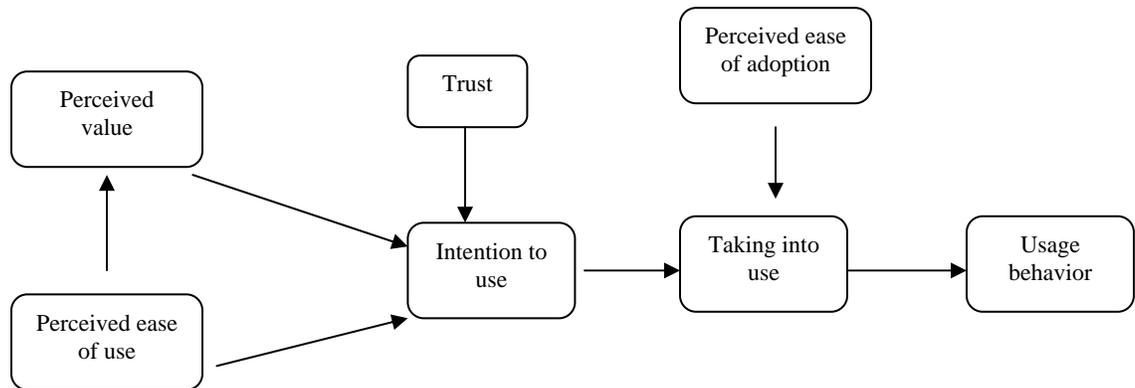
- To what extent does mobile banking system in Tanzania has covered the financial inclusion?

## **1:6 CONCEPTUAL FRAMEWORK**

In this study, many models have been proposed to explain and predict the use of a system but for the case of environment that the researcher chose to conduct her study, the Technology Acceptance Model was taken into account since it has been the only one which has captured the most attention of the Information Systems community (Venkatesh&Davis,2000).

The Technology Acceptance Model (TAM) is an information system theory that models how users come to accept and use a technology. It is essential for anyone willing to study user acceptance of technology to have an understanding of the Technology Acceptance Model (Mohammad Chuttur, 2009).

**Figure 1: The Technology Acceptance Model**



The model suggests that when users are presented with new technology, a number of factors influence their decision about how and when they will use it (Venkatesh & Bala, 2008).

Hence, from above model the usage behavior of mobile subscribers (customers) in using a technology (M-Banking) are predicted to be much dependable on the perceived value of the technology and the perceived ease use of it that will bring forward the intention to use the perceived technology. The following are defined factors influences users with the usage behaviors of the new technology:

- Perceived usefulness (PU)

This was defined as a degree to which a person believes that using a particular system will enhance his or her job performance (Fred Davis, 1989).

- Perceived ease of use (PEOU)

It was defined a degree to which a person believes that using a particular system would be free from effort

Since technologies and elements of uncertainty exists in the minds of decision makers with respect to the successful adoption of them, people tends to form attitudes and intention towards trying to learn to use the new technology prior to initiating efforts directed at using(Bagozzi&Warshaw,1992).

Therefore, the study findings are made under the assumptions made in the TAM model since it has behavioral element on intention to use/act and be free to act without limitation.

### **1.7 The significanCE of the Study**

Kothari 2000 asserts that, “Research inculcates scientific and inductive thinking and it promotes the development of logical habits and organization”. The conduct of this research expects to contribute differently to the expectations of different groups of people who will be interested in its findings as follows:

- To the researcher, the study is for partial fulfillment of the requirements for the award of the degree of Master in Business Administration (Finance and Banking) at Tumaini University, Iringa College. It has also been an opportunity for the researcher to explore and get much insight to the problem under study.

- To policy makers, the study aims at understanding of opportunities available for financial accessibility development.
- To the academicians and other researchers, the findings of this study will serve as a basis for further investigations in this area.

### **1.8 LIMITATIONS OF THE STUDY**

It was argued that “no research is free from limitations” (Katega and Mdendeni, 2004) the main constraints to this research were as follows:

- Inadequate research materials and facilities since there are inadequate secondary information of the problem under study.
- Also the researcher faced the respondents very busy that could not answer her questionnaire therefore forced her to do interview while they are at work.
- Financial constraints where by the researcher fall short of fund in conducting the research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2:0 INTRODUCTION**

Mobile Banking as activities performing balance checks, account transactions, payments and credit applications via a mobile device or Personal Digital Assistant (PDA). It includes provision of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions to administer accounts and the access of customized information.

Furthermore, the Mobile banking system is also referring to SMS Banking as a technology that enables services offered by banks to its customers by permitting them to operate over their mobile phones using SMS messaging (Davis, 2010)

#### **2:1 HISTORY OF M-BANKING**

The earliest mobile banking services were offered via SMS with the introduction of the first primitive smart phones with WAP support enabling the use of the mobile web. In 1999, European banks started to offer mobile banking on this platform to their customers. Mobile banking until 2010 often been performed via SMS or the Mobile Web.

The M-Banking system operates in such a way that a specific sequence of SMS messages will enable the system to verify if the client has sufficient funds in his or her wallet and authorize a deposit or withdrawal transaction at the agent.

Also, when depositing money, the merchant receives cash and the system credits the client's bank account or mobile wallet. In the same way the client can also withdraw money at the merchant: through exchanging SMS to provide authorization, the merchant hands the client cash and debits the merchant's account.

## **2:2 SERVICES PROVIDED BY M-BANKING SYSTEMS**

Mobile banking can offer services such as account information, mini statements, checking of account history, alerts on account activity(passing of set thresholds) monitoring of term deposits, access to loan statements, access to card statements, mutual funds (equity statements, stop payment on cheque, ordering cheque books, balance checking in the account.

Also, it can do payments, Deposits, Withdrawals, and Transfers such as domestic and international fund transfers, micro-payment handling, mobile recharging, commercial payment processing, bill payment processing, peer to Peer payments, withdrawal at banking agent, deposit at banking agent.

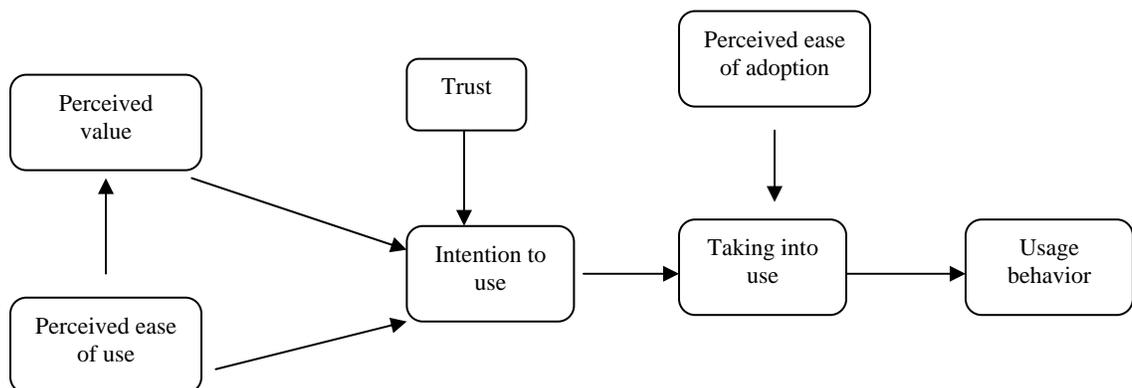
## 2:3 THE TECHNOLOGY ACCEPTANCE MODEL (TAM)

The Technology Acceptance Model (TAM) is an information system theory that models how users come to accept and use a technology. It is essential for anyone willing to study user acceptance of technology to have an understanding of the Technology Acceptance Model (Mohammad Chuttur, 2009).

TAM is an adoption of the theory of reasoned action (TRA) to the field of IS. It posits that perceived usefulness and perceived ease of use determine an individual's intention to use a system with intention to use a system with intention to use serving as a mediator of accrual system use.

The model suggests that when users are presented with new technology, a number of factors influence their decision about how and when they will use it (Venkatesh & Bala, 2008)

**Figure 2: The Technology Acceptance Model**



Hence, from above model the usage behavior of mobile subscribers (customers) in using a technology (M-Banking) are predicted to be much dependable on the perceived value of the technology and the perceived ease use of it that will bring forward the intention to use the perceived technology.

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However, since technologies and elements of uncertainty exists in the minds of decision makers with respect to the successful adoption of them, people tends to form attitudes and intention towards trying to learn to use the new technology prior to initiating efforts directed at using(Bagozzi&Warshaw,1992).

## **2.4 UNDERSTANDING OF DIFFERENT MODELS IN M-BANKING**

### **A mobile banking conceptual model**

In this model, the Mobile Banking can be said to consist of three inter-related concepts known as Mobile Accounting, Mobile Brokerage and Mobile Financial Information Services.

The accounting and brokerage services are offered invariably in combination with information services. The information financial services are offered as an independent module.

### **Mobile banking business models**

In this model, a wide spectrum of Mobile/branchless banking models is evolving, if mobile banking is being used to attract low-income populations in often rural locations, the business model will depend on banking agents i.e. retail or postal outlets that process financial transactions on behalf telecoms or banks.

The banking agent is an important part of the mobile banking business model since customer care, service quality and cash management will depend on them. Many telecoms will work through their local airtime resellers.

### **Bank-focused model**

The bank-focused model emerges when a traditional bank uses non-traditional low-cost delivery channels to provide banking services to its existing customers. Examples range from use of automatic teller machines (ATMs) to internet banking or mobile phone banking to provide certain limited banking services to banks' customers.

This model is additive in nature and may be seen as a modest extension of conventional branch-based banking.

#### Bank-led model

The bank-led model offers a distinct alternative to conventional branch-based banking in that customer conducts financial transactions at a whole range of retail agents (or through mobile phone) instead of at bank branches or through bank employees.

This model promises the potential to substantially increase the financial services outreach by using a different delivery channel (retailers/ mobile phones).

The bank-led model may be implemented by either using correspondent arrangements or by creating a JV between Bank and Telco/non-bank. In this model customer account relationship rests with the bank.

#### Non-bank-led model

**The non-bank-led model is where a bank has a limited role in the day-to-day account management. Typically its role in this model is limited to safe-keeping of funds. Account management functions are conducted by a non-bank (e.g. Telco) who has direct contact with individual Mobile Banking Services**

## **2:5 THE BANK-LED MODEL IN M-BANKING FOR A GROWING ECONOMY LIKE TANZANIA**

The bank-led model is an alternative to conventional branch-based banking where customers conduct financial transactions at of retail agents through mobile phone instead of at bank branches or through bank employees.

The model promises the potential to substantially increase in the financial services outreach by using a different delivery channel including retailers or mobile phones. In this model customer account relationship rests with the bank.

Thus, the Central bank's objectives in financial inclusion to provide a greater role in modernizing the national economy by promoting the M-Banking system in the country could possibly help in financial inclusion .The bank-led model helps in realizing the significance of M-Banking system in Tanzania since it may be cheaper than bank based alternatives.

## **2.6 M-BANKING IN DEVELOPING COUNTRIES LIKE TANZANIA**

The research Analyst with Audience Scapes project suggests that, For a developing country like Kenya a standard of success and reach by which deployments in other countries are often measured. From a development perspective, a study provided encouragement by indicating that M-PESA is reaching down Kenya's socio-economic spectrum, thus providing efficient and affordable financial services to those at the

bottom of the pyramid (BOP).The study further analyzed about the neighboring Tanzania, a relatively poorer country where mobile money is notably slower to take off.

National surveys in Kenya in mid-2009 and Tanzania in mid-2010 which included questions about use and knowledge of mobile money. Researchers have highlighted the significant differences between Kenya and Tanzania in geography, population density, economic development and access to financial services, which put Tanzanian m-money service providers at a relative disadvantage. Indeed, at the two-year point, the surveys showed that only 11.5% of Tanzanian adults had used an m-money service, versus 56% of Kenyans.

Furthermore, mobile money in Tanzania remains primarily a tool for the banked and the well to do. Only 3.9% of respondents among Tanzania are financially excluded or unbaked. Similarly, only 7% of Tanzanian respondents with a household income of less than \$2 a day reported having used m-money, compared to 41% in Kenya of which 51% of Tanzanian respondents said their household income is less than \$2 a day versus 38% in Kenya.

There is further room for optimism for development groups pushing m-money as a tool of financial empowerment for BOP individuals, if only because more lower-income Tanzanians are now owning mobile phones in larger and larger numbers.

In the Tanzanian survey, a strong connection between m-money use and mobile phone ownership. The survey defined recent adopters of the mobile phone as those who first acquired a mobile phone in the past year, and revealed that this group includes many more lower-income individuals than those who adopted mobile phones earlier (between two and five years ago).

Thus, as mobile phone usage reaches further down the income scale, there is a greater chance that BOP individuals will use m-money services. The AudienceScapes data indicate that mobile phone ownership remains a key determinant of m-money usage. Just over 92% of those who have used m-money also said that they are mobile phone owners. This connection was also found in the 2009 Kenya survey, with some 86 percent of m-money users in the survey owning their own mobile phone.

## **2:7 FINANCIAL SERVICES ACCESSIBILITY IN TANZANIA**

The research findings carried out in Kenya and Tanzania by ODI (Overseas Development Institute, 2009) on financial inclusion household investment and growth through Fin Scope Survey shows that there is higher usage of informal mechanisms than formal financial services.

Rural inhabitants save and borrow more for an agricultural investment while in urban money is used for starting business. In Tanzania, men are more likely to save or borrow to invest than women.

However, most people have never been able to go into a bank because of the minimum deposits to be so high. It can be the first step into the formal financial system for low-income Africans with mobile phone operators to connect their payment customers to Opportunity Bank operated out of trucks and storage containers across 21 countries in Africa at a cost of 3% or 4% transaction (Abbie Laugtug, 2010).

Microfinance Focus (2010) says that, “Microfinance and cash agents will continue to play a major role in the successful implementation of the pilot and indeed the mobile branchless banking value chain,” Securing the mobile branchless banking value chain against fraud is a major challenge for the region.

Fraud reduction is high on the agenda across Central Banks in Africa. New security requirements for mobile financial management insist both the financial institutions and their distribution networks take a high level of responsibility in protecting the end user, the report said.

## **2.8 M-BANKING IN TANZANIA**

During the second quarter of 2010, Tanzania had a total of 19,592,795 mobile subscribers. By September 2010 there were about 20,771,487 subscribers who were receiving services from seven telecommunications companies (Vodacom, Airtel, Tigo, Zantel, TTCL, SaSatel and Benson Informatics (BOL)).

In Tanzania, the early 2007 Vodacom-Tanzania mobile company introduced a Vodafone M-PESA as a new mobile money transfer service in partnership with Vodafone Group. With M-PESA, Vodacom customers could convert cash into electronic money at an authorized M-PESA agent. So far the population under which Vodacom-Tanzania has registered its subscriber occupies 17.9% of the total population (Vodacom-Tanzania report, August 2008).

Vodacom is the market leader with 8,426,097 subscribers followed by Airtel with 5,901,634 subscribers, Tigo with 4,575,534 subscribers, Zantel with 1,586,516, Tanzania Telecommunication Company Limited with 256,064, Sasatel with 23,071 and BOL with 2571 subscribers (Tanzania Communications Regulatory Authority report, 17th January 2011).

In Tanzania phones are said to be relatively inexpensive to purchase, the first technology in history to have more low-income users than wealthy one's. A policy advocate for CARE, "*an international humanitarian aid organization*", Mobile banking has become a hot topic.

In a lot of Africa, there are large geographic distances between population centers so it's really cost-prohibitive for microfinance institutions or banks to set up branches (Abbie Laugtug, 2010).

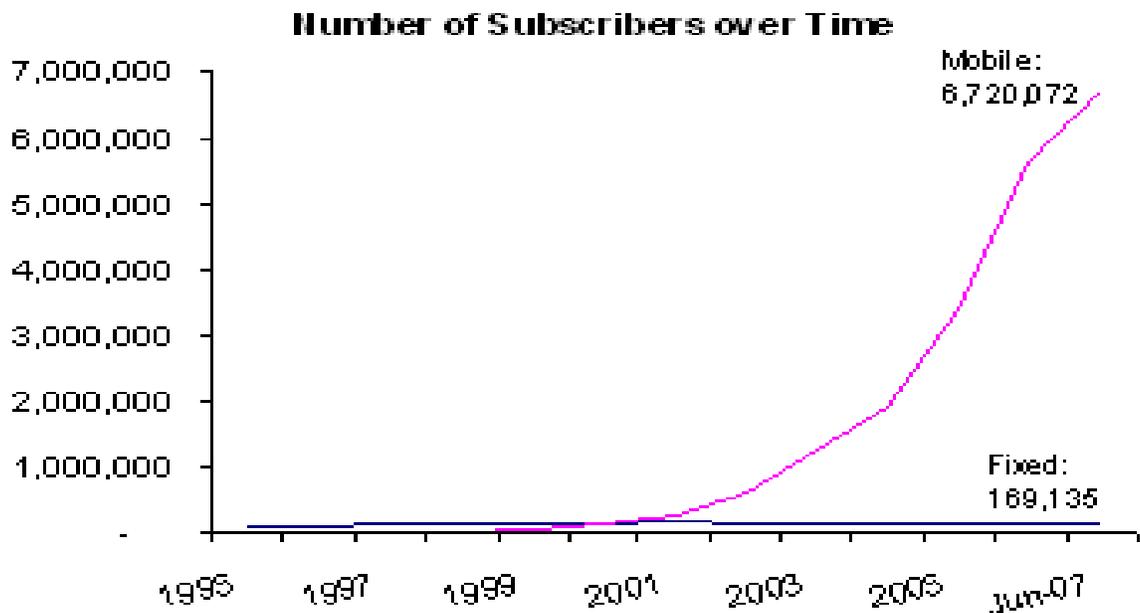
Services like M-Pesa are driving efficiencies and economic growth by allowing small business owners to focus on selling rather than on collecting payments from hard-to-reach customers. Mobile money is also helping to reduce corruption and graft (although in our meeting last week Tamara Cook relayed how corrupt officials in Kenya now sometimes demand bribes through M-Pesa).

Furthermore, developing countries governments are experimenting with using m-money on cell phones to pay public servants like police officers and teachers, with some surprising results. In Afghanistan last year, when the government started paying police officers through M-Paisa, the Afghan version of the service, it discovered that 10% of the workforce was phantom employees, their paychecks being pocketed by corrupt managers.

In Pakistan, the EasyPesa mobile banking platform there played a role in helping to distribute money to the unbanked rural poor in the aftermath of last summer's horrendous floods as a direct and efficient way to reach those most in need while minimizing the likelihood of leakage.

**Table1:**

**The following figure shows Number of subscribers over time in Tanzania from the TCRA records from 1995 to mid 2007:**



The majority of Tanzania's 41 million inhabitants live on less than \$2 a day and only 12 percent have a formal bank account. But almost half of Tanzanians own a mobile phone, through which they can save money and handle financial transactions without needing a bank account (Abbie Laugtug, 2010).

The mobile phone providers are setting up networks of agents such as shops, petrol stations and post offices who will transfer funds to and from a customer's mobile money account, increasing and decreasing the electronic value stored in the phone.

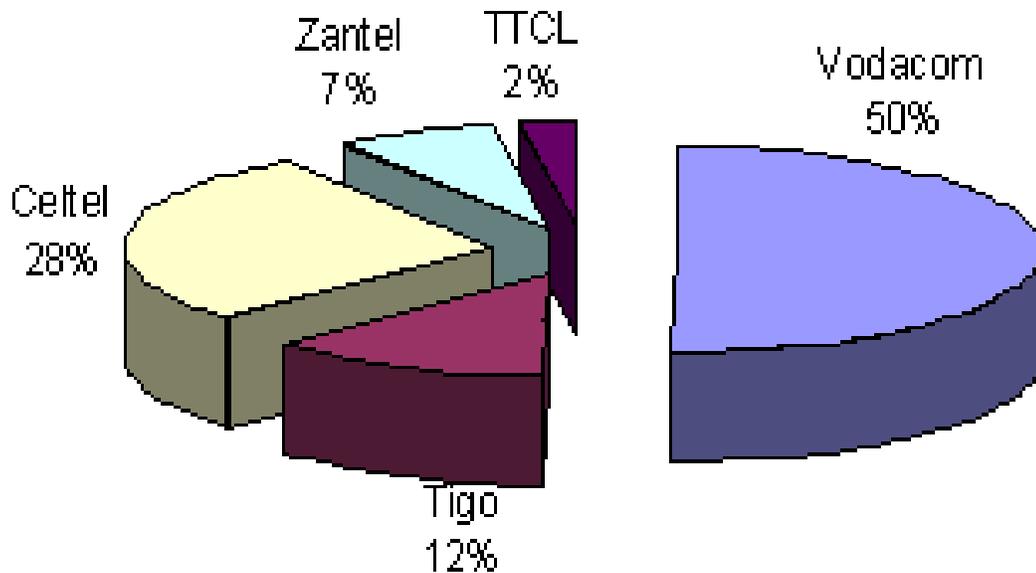
However, Tanzania covers 364,900 square miles and has fewer than 500 retail bank branches and people rely on informal networks to transfer money such as sending cash to family members through a taxi driver who will be traveling near their home village.

The July 2010 estimates of Tanzania total population was estimated to be 41,892,895, thus the population under which Tanzania has registered mobile subscribers occupies 49.58% of the total population. The number of mobile subscribers under the above Telecommunication company with M-Banking system occupies 48.9% of the total population i.e 20,489,781 of which 16,391,824.8 i.e. 39% of total population are rural people living under poverty (TCRA, 2011).

**Table 2:**

**Market Share by Subscribers as provided by Tanzania Communication Regulatory**

**Authority, 2008**



**2.9 M-BANKING FUTURE IN TANZANIA**

The Bank of Tanzania (BoT) and Tanzania Communication Regulatory Authority (TCRA) have signed a MoU to regulate mobile money transfer services due to strong growth of mobile payment services in the country.

The Daily News reported that BoT attributed the sharp increase in the number of subscribers to limited access to formal banking services, especially in rural areas. The service provision however requires that the phone companies partner with commercial banks. The MoU provides a mechanism for regulatory and supervisory coordination

between the two regulators. While the central bank regulates the financial transactions, the TCRA focuses on the communication infrastructure.

The Tanzanian survey suggests that marketers and promoters of m-money services may be underutilizing word-of-mouth, SMS-text messaging and other information channels beyond mass media that have the potential to reach many more potential users. Combining these channels with mass media campaigns can enhance the effectiveness of raising awareness and use of m-money services.

Mobile operators in Tanzania have welcomed the new entrant in mobile phone money transfer service, Tigo pesa, saying competition would make the product more popular in the market. Speaking in separate interviews with *The Citizen*, Zain and Vodacom Tanzania managing directors said the market segment was yet to be exploited fully and that new players would hot up competition (Alvar Mwakyusa, 2010).

The coming of Tigo pesa brings the number of mobile money transfer providers to four. Zain operates Zap while Vodacom and Zantel operate M-Pesa and Z-pesa respectively. Competition in mobile money transfer is good provided that it is well structured, secure and reliable.

Moreover, for the mobile phone money transfer service to work efficiently there is need for wider coverage, agents' network as well as active subscribers. It takes time to adopt

new technology, the concept of sending, receiving and settling bills through mobile phones will be adopted in the near future and become part of life for majority Tanzanians (The Citizen, 2011).

From the survey, Tanzania's m- money market faces many challenges and has not replicated the success of m-money like neighboring Kenya, there are signs that Tanzania is finally turning a corner. Based on trends in the first half of 2010, take-up rates of m-money services are gaining momentum as agent networks expand and service providers devote more resources to direct marketing.

Hence, it is important to monitor not only the number of people who are signing up for these services, but also on whether there is greater penetration at the bottom of the pyramid.

However, there may be a few additional insights to be gained from looking at M-Pesa. This service has recently added an interest-bearing savings account, M-Kesho, which further strengthens people's understanding of saving.

M-Pesa provides an excellent example of a mobile money transfer service that has created best practices in the industry for addressing banking inequities and fostering entrepreneurship. Some of M-Pesa's key services that have allowed it to gain rapid adoption include:

- Strong branding and simple messaging for an easy-to-use service
- Scalable agent distribution structure for liquidity management

- Easy and quick customer registration, with rewards for agents
- Simple, affordable, and transparent retail pricing
- Free deposits, with no minimum balance requirements
- Ability to send money to non-customers

## **2.10 THE M-BANKING AND FINANCIAL INCLUSION**

The survey conducted by Tele World across Africa, Latin America and Asia, the number of people who do not have a bank account but do have a mobile phone is set to grow from 1 billion today to 1.7 billion by 2012. These ‘unbanked mobile’ individuals represent a compelling market opportunity for operators (The Guardian, 18th October 2009).

Tanzania and Malawi were the African countries mentioned where mobile telephones are taking a first step into the formal financial system. Almost 1 million active customers in Tanzania use mobile-phone payments to transfer funds to relatives, buy supplies, pay doctors and save money for future emergencies.

Recent research in Senegal suggests that high entrepreneurship rates in developing economies are a significant point of leverage for building a middle class in the developing world. Increased access to finance has been shown by the World Bank to have a significant correlation to a reduction in GINI coefficient (less income inequality).

However, lack of access to finance and banking services has been consistently reported to be the biggest factor blocking firms and entrepreneurs in developing countries from growing or launching new business ventures.

Banking rates are notoriously low in developing economies, but mobile penetration rates are high and climbing steadily. Mobile banking provides a platform from which to offer more opportunity and stability to lower and middle-class citizens in these developing nations, helping to reach development goals in an equitable manner.

Mobile banking in the developing world is emerging not as an addition to regular banking as it is in the developed world (allowing customers to use their phones to check balances or pay a bill). Instead it is an alternative to limited or non-existent bricks and mortar banks, which frankly don't want very poor people as customers anyway. Poor people are supremely innovative, especially when it comes to scarce resources like money. It didn't take long for them to figure out that they can use airtime loaded on their cell phones through scratch cards as a form of currency in Senegal.

In emerging markets around the world, the "un-banked" began trading minutes or using them to make payments for goods and services and send remittances home from their urban jobs to rural family members.

Mobile phone companies recognized the opportunity (after all, there are more than 3 billion people in the world without access to banking services) and a new market was born. For example, M-Pesa, launched by Safaricom in Kenya in 2007, has had tremendous growth as a cash transfer system quick, simple, and safe. Therefore, M-Pesa conducts millions of m-money transactions a day in Kenya, and there are five times as many M-Pesa agents (23,000) as there are banks and ATM machines combined in the country. Lack of literacy is not an obstacle, as M-Pesa clients quickly learn to text what they need on their phones.

## **2.11 M-BANKING AND THE POOR**

Despite the low rate of use among the poor, they still make up nearly a third of those who said they have used m-money, and their presence among m-money users seems to be increasing. 36% of those m-money users who began using the service in the 6 months prior to the survey also said they live on less than \$2 a day. This is a significant demographic shift away from the higher income profile of users who have been using the service longer than six months. Only 23 percent of these earlier adopters have a daily income of \$2 or less (David Montez, 2009).

Indeed, mobile money service providers have taken steps to make these services more accessible and convenient. For example, Tanzania's M-PESA (operated by Vodacom) partnered with the GSMA to tackle the problem of agent liquidity; Bharti Airtel (formerly Zain's Zap service) continues its work towards creating a cash-free ecosystem.

The Tanzania AudienceScapes survey pointed to a recent, sharp increase in the number of registered users: 63 percent of those who said they had used m-money also said that they first began using a service in the past 6 months. This corroborates recent supply-side statistics and points to a m-money market poised for further expansion.

The Tanzania survey queried respondents in the research Analyst with InterMedia's AudienceScapes project as to why they have not started using m-money. The main reason cited for not using m-money was a lack of knowledge about how to use it. At the same time, respondents expressed interest in learning more about it.

Since many agents are already airtime sellers and kiosk operators, agents are in a position to inform existing and prospective customers about m-money. Understandably, lacking access to an agent is a substantial problem in rural areas of which 93% of respondents who said they do not have access to a network agent are rural residents.

Tanzania, in particular, faces this problem as nearly three-quarters of its population reside in rural areas. These regions are often the last to see an agent network roll out due to a lack of prospective storefronts that can support an agent.

**Christine Bower (2007) further illustrates that, mobile payment options are old hat in places like Japan where mobile phones linked to credit/debit cards. The mobile banking or m-banking gives millions of poor people in developing countries access to financial services that could change the world.**

The World Bank estimates that in many countries, over half the population (the unbanked) has never had a bank account. The poor tend to be terrified of banks, since they're often humiliated or ignored when they try to enter them. That means they can't leave their savings anywhere safe, pay a bill without walking the cash to the office, or prove that they're credit-worthy. Meanwhile, mobile phone penetration is through the roof, especially in Africa.

People with no previous access to bank accounts were able to watch the World Cup via satellite services that they paid for electronically with a few taps on a mobile phone. The service is a clear sign that mobile banking is taking off in Africa, giving some of the world's poorest people a way to access financial services.

In developed countries, there were a lot of mobile banking services and they failed," says an economist who works for the Bill and Melinda Gates Foundation. The reason, he believes, is that for people who already have access to banks, as most people in the developed world do, it's difficult for such services to compete.

At the moment, enthusiasm for m-banking has outrun its implementation. For one thing, regulators break out in a cold sweat at the thought of all the overlapping issues involved. But there are success stories. SafariCom, partly owned by Vodafone, is set to expand its M-Pesa pilot to all of Kenya.

However, these telecom companies aren't offering m-banking out of the kindness of their hearts. They like m-banking because it's a way for them to attract new customers by doing what they already do well processing millions of tiny transactions. Banks aren't as interested, because they don't expect to profit from poor clients who won't be taking out a mortgage anytime soon. But the telecoms could start siphoning away bank customers who don't need all the bells and whistles.

## **2.12 IMPORTANCE OF M-BANKING IN TANZANIA**

The research conducted by the University of Dar es Salaam, indicates that there is 10% increase in penetration rate of telecommunications services in Tanzania that had pushed a country's gross domestic product (GDP) up by 1.2% (Humphrey Moshi, , 2011).

Furthermore, Economists in Tanzania say spending on telecommunications may help nurture the growth of a country's economy even though the growth depends on a number of factors such as ownership of the telecommunication firms, investment guidelines and the level of transparency in operations of the companies. The convenience of mobile payments spares members the trip to the nearest town to pay for supplies is a way to protect the capital and savings (Laugtug, 2010).

The new system of mobile payments has made it possible for individuals to save as little as \$1 or \$2 at a time, amounts too small for deposits to formal banks given the 30% cost of a deposit, said Dennis Ripley (A senior vice president at Opportunity International, 2010).

In Tanzania, the cost of transportation can be a barrier to receiving health care but a hospital in Dar es Salaam that wanted to figure out a reliable way to cover patients' costs has been done using a mobile phone system called Vodafone M-PESA .This simplified payment mechanisms.

However, the rise of banking transactions through mobile phones is giving a whole new meaning to pocket money in parts of the developing world that lack banks or cash machines. Mobile money applications are emerging as potent financial tools in rural and remote areas of the globe, allowing people with no bank accounts to get paid, send remittances or settle their bills.

The Mobile World Congress in Barcelona says that, there is a very big opportunity in M-Banking system. Mobile banking began to emerge six years ago in the Philippines and South Africa, where 8.5 million and 4.5 million people, respectively, use such services. Today, 40 million people worldwide use mobile money, and the industry is growing, according to the GSMA. There are 18,000 new mobile banking users per day in Uganda, 15,000 in Tanzania and 11,000 in Kenya, according to the report.

Mobile phones can offer a wide range of banking solutions, from sending transfers to a relative to buying goods in a store or putting money aside for a rainy day, all by dialing a few numbers on one's phone. Mobile banking can also make life easier for people in parts of Africa where paying a simple bill can be time-consuming, said Reg Swart,

regional executive of Fundamo, a company that makes banking applications.

### **2.13 M-BANKING AND THE CENTRAL BANKS**

The negative and positive experience on credit programs for the poor has been accumulated in low income countries and many of the lessons learned are relevant for any country wishing to pursue the deliberate policy. The evolution of public policy has not been different in other developing nations where poverty is so conspicuous.

Moreover, leaving behind the basic needs paradigm of the 1970s for most of the developing world in the 1980s were a decade of structural adjustment dominated by stabilization efforts designed to bring national expenditure in line with national income (or output) as well as by attempts to increase national income, through policy reforms that have promoted a more efficient use of resources (Grootaert and Kanbur, 2002).

Furthermore, the Government should come in and come up with fiscal policies that will lessen the hurdles that applicants in financial service face. The tax regime should be favorable to all players in the market whose objective is to serve the poor people. In this case, in addition to encouraging formal financial service providers, the country will promote informal players as well.

According to the open letter from Presidio Graduate School's Sustainable MBA program in San Francisco, the appropriate policy and regulations provide an environment in

which mobile banking systems and firms can thrive. Best practices for mobile banking policies include:

- Electronic banking and signatures should be legally recognized.
- Customers must be protected against fraud by implementing disclosure and dispute resolution requirements for vendors. Formation and enforcement of cyber fraud laws will also provide vendor and customer protection.
- Integration of mobile banking platforms should be encouraged to ensure consumer choice, payment system access for agents, and protect against harmful monopolies.
- Remote account customers should not be discriminated against and account opening procedures should be risk-based.
- Non-bank agents (such as stores) should be allowed to provide remote cash withdraw services for greater access and utility for users and agents.

However, it is the deliberate policy of most central banks to relax some of these legal requirements so as to maximize the numbers of the players in the market, especially those whose operational objectives is to serve the unbaked to come up with other programs explicitly designed to assist the poor.

In this regard there is a need to take stock of all antipoverty policies that have worked and which have not. We need complimentary policies that will support on the promotion of financial inclusion.

## **2.14 M-BANKING AND THE REST OF THE WORLD**

The main reason that mobile phones are being pressed into so many important services is that they provide a cheap and effective work-around to weak or non-existent alternatives. Take mobile banking, which is spreading across Africa, South Asia, and Latin America. Mobile banking, also referred to as mobile finance, or even mobile money (m-money for short), with Tamara Cook, program officer for the Financial Services for the Poor initiative at the Bill and Melinda Gates Foundation, and Mary Ellen Iskenderian, president of Women's World Banking.

This part of the mobile commerce is also very popular in countries where most of their population is unbanked. In most of these places banks can only be found in big cities and customers have to travel hundreds of miles to the nearest bank. Countries like Sudan, Ghana and South Africa received this new commerce very well.

In Latin America countries like Uruguay, Paraguay, Argentina, Brazil, Venezuela, Colombia, Guatemala and recently Mexico started with a huge success. In Colombia was released with Redesign. In Iran banks like Parsian, Tejarat, Mellat, Saderat, Sepah, edbi and bankmelli offer this service. Guatemala have the support of Banco industrial (Unbanked Report of 2011).

Mexico released the mobile commerce with Omnilife, Bancomer and a private company (MPower Ventures). Kenya's Safaricom (Part of the Vodafone Group) has had the very popular M-Pesa Service mainly used to transfer limited amounts of money, but has been

increasingly used to pay utility bills. Zain in 2009 launched their own mobile money transfer business known as ZAP in Kenya and other African countries.

## **2.15 CHALLENGES FOR A MOBILE BANKING SOLUTION**

On January 2009, Mobile Marketing Association (MMA) in their Banking Sub-Committee that was chaired by CellTrust and VeriSign Inc published the Mobile Banking Overview for financial institutions in which it discussed the advantages and disadvantages of Mobile Channel Platforms (Short Message Services (SMS), Mobile Web, Mobile Client Applications, SMS with Mobile Web and Secure SMS). The following were published:

### **Handset operability**

There are a large number of different mobile phone devices and it is a big challenge for banks to offer mobile banking solution on any type of device. Some of these devices support Java ME and others support SIM Application Toolkit, a WAP browser, or only SMS.

### **Security**

Security of financial transactions, being executed from some remote location and transmission of financial information over the air, are the most complicated challenges that need to be addressed jointly by mobile application developers, wireless network service providers and the banks' IT departments.

The mobile banking infrastructure to handle exponential growth of the customer base.

With mobile banking, the customer may be sitting in any part of the world (true anytime, anywhere banking) and hence banks need to ensure that the systems are up and running as a result customers will find mobile banking more and more useful, their expectations from the solution will increase. Banks unable to meet the performance and reliability expectations may lose customer confidence.

## **2.16 OTHER APPROACHES TO ADDRESS CHALLENGES IN M-BANKING**

Around the globe, various initiatives use the mobile phone to provide financial services to those without access to traditional banks. Yet relatively little scholarly research explores the use of these m-banking/m-payments systems.

Presenting illustrative data from exploratory work with small enterprises in urban India, it argues that contextual research is a critical input to effective “adoption” or “impact” research. Further, it suggests that the challenges of linking studies of use to those of adoption and impact reflect established dynamics within the Information and Communication Technologies and Development (ICTD) research community.

There are systems such as Mobile Transaction Platform which allow quick and secure mobile that enables various banking services. Recently in India there has been a phenomenal growth in the use of Mobile Banking applications, with leading banks adopting Mobile Transaction Platform and the Central Bank publishing guidelines for mobile banking operations.

### **Application distribution**

Due to the nature of the connectivity between bank and its customers, it would be impractical to expect customers to regularly visit banks or connect to a web site for regular upgrade of their mobile banking application. It will be expected that the mobile application itself check the upgrades and updates and download necessary patches via phones (Indian News, 2011).

However, there could be many issues to implement this approach such as upgrade / synchronization of other dependent components. Mobile banking has come in handy in many parts of the world with little or no Infrastructure development, especially in remote and rural areas.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 INTRODUCTION**

Kothari (2000) defines research methodology as a way to systematically solve the research problems. According to Burns and Burch (1995), methodology describes in as much details as necessary, how the research was, what methods were used to achieve the research objectives.

This chapter is therefore aimed at transmitting the details procedures that is showing the steps to be taken by the researcher in collecting data, the methodological foundations and the reasons behind the researcher's choice of the research methods used.

#### **3.1 RESEARCH TYPE AND APPROACH**

Kothari (2000) put it clear that there are mainly two basic approaches to research, namely quantitative approach and qualitative approach. This research will consider both qualitative and quantitative approaches.

### **3.1.1 QUANTITATIVE RESEARCH**

The quantitative research is a measure of phenomena using numbers in mathematic and statistics procedures to process data and summaries data. It involves numerical data (Kothari, 2000).

The researcher used this type of research so as to enable her analysis of the collected data in a statistical procedure and process data in numerical forms to summarize the results.

### **3.1.2 QUALITATIVE RESEARCH**

This type of research, the research is conducted in a natural setting environment concerned, it involves collecting textuales, verbals or graphical data. It refers to data that can not be counted (Kothari, 2000).

### **3.2 RESEARCH DESIGN**

Research design refers to the plan on how the researcher systematically collected and analyzed data needed to answer research questions. It is a framework or roadmap through which a research process is conducted to explain the social phenomena under investigation (Kothari, 2000)

The study takes into account both the quantitative study. The study is about the understanding of the financial inclusion with the M-Banking systems in Tanzania. In investigating the answers, study design have been used where by the Coast Region was selected to undertake the study.

The researcher intended to analyze the coverage of M-Banking for financial inclusion in Tanzania as to whether the system is being used by mobile subscribers. The intention of

the researcher is also to identify the cost effectiveness as well as the service charges of these M-Banking systems in Tanzania.

Moreover, the study involved mobile subscribers registered under four mobile companies (TiGo, Vodacom, Airtel and Zantel) of which the M-Pesa, TiGo Pesa, Zap as well as Z Pesa Agents with both retail and wholesale activities were involved.

### **3.3 TYPES AND SOURCES OF DATA REQUIRED**

Data refers to all the information a researcher gathers for his or her study (Mugenda and Mugenda, 1999). There are mainly two types of data, namely primary data and secondary data. Primary data refers to the information a researcher obtains from the field i.e. from the subjects in the sample while secondary data refers to the information a researcher obtains from research articles, books, reports and journals. In this study the researcher makes use of both primary and secondary data.

#### **3.3.1 Primary data collection**

The primary data collection refers to the data collected directly from the field; it involves observation, questionnaires and interviews. The primary data enable to get the first handed data (Kothari, 2000).

The researcher relied on this type of data because it needs to get views directly from those concerned with the problem under study. The data collection methods used for this study are questionnaires and interviews.

### **3.3.1.1 QUESTIONNAIRES**

Kothari (2000) argued that the person who answers the questionnaire might feel in telling the truth. This is the main reason why the researcher decides to make use of this data collection method. Also the researcher thought that the use of this data collection method together with other would be suitable due to the resource restriction that hindered the exclusive use of other methods.

In this study one set of questionnaires was developed and distributed to respondents who were the mobile subscribers from the four mobile companies with the M-Banking systems as well as the Retail and wholesale agents of their operating systems.

### **3.3.1.2 INTERVIEW**

Interview refers to conversation between two people where questions are asked by the interviewer to obtain information from the interviewee (Kothari, 2000). The personal interviews were conducted in getting data through a set of predetermined questions.

The researcher chose to use this method due to the academic nature of the study and thus to her the interview method enabled her to overcome the resistance of some respondents who seemed to be too busy with their work to get time to fill in questionnaires and hence more detailed information to be obtained. Also interview was conducted to those who could not understand the English language in the questionnaire.

### **3.3.2 SECONDARY DATA COLLECTION**

Secondary data are the facts and figures that have already been recorded before the project at hand. On the other hand secondary data are those which have already been

collected by someone else and which have already been passed through the statistical process (Kothari, 2000).

As stated before the researcher made use of secondary data that were collected through an intensive review of the reports, journals, books, and magazine and internet materials.

### **3.4 Sampling Design**

Kothari, 2000 defined sampling design as the key consideration of which people, settings, behaviors or events to be included in the study. It deals with a selection of the population that would involve a great amount of time and resources to provide valid ideas of the study. This is the reason why a small number of cases were selected for study purpose to represent the whole population i.e. a sample.

#### **3.4.1 POPULATION**

A population consists of all the cases of individuals or things or elements that fit a certain specification. Thus the populations for this study consist of mobile subscribers and the mobile banking system agents of which around 20.4 million people in Tanzania are subscribed with mobile companies.

#### **3.4.2 SAMPLING TECHNIQUE**

Sampling techniques is defined as procedure used to select some elements of a population in such a way that they represent the actual characteristics of the total population (Cohen, 2000).

### **3.4.3 THE PROBABILITY AND NON-PROBABILITY SAMPLING**

There are mainly two types of samplings techniques: probability and non probability sampling techniques. Probability sampling involves the use of statistical theory in design of empirical study and the selection of sample.

Thus, it is suitable for a homogeneous population and when the researcher wants each element to have equal chance of being selected. So for non probability sampling, this technique is purposive and subjective in nature and involves selection of a sample based on judgment and knowledge.

In this research, probability sampling techniques was used because the sample selected has equal chance of being selected. Considering the academic nature of the problem under study, probability technique allowed the researcher to use cases that had the required information for the study objectives.

Other reason as why the researcher used this kind of convenient sampling techniques is because the most target group i.e. mobile subscribers and mobile banking systems agents are so scattered that non-probability sampling would have been unrealistic.

### **3.4.4 CHARACTERISTIC OF THE SAMPLE**

According to Trochin (2000) “Before gathering your sample its important to find out as much as possible about your population you should at least know some of the overall demographics, age and sex about your population”.

The population under this study is 20.4million people having 26 Regions that cover Tanzania, each Region is estimated to have 788,068 people. Since the study covered only one region. Since the sampling design is selected randomly the required sample size for the total population in one Region is 384 with the margin error of 5% (Research Advisors, 2006)

Furthermore, the researcher conducted the study covering one Region that consists of 6 districts. From the case study environment, the researcher covered one district (Kibaha Mjini) of which is characterized by both low and medium income earners.

Therefore, the population sample size to be considered was 64. The demographic sample of this study includes mobile subscribers and their retail agents including those with mobile payment services.

### **3.5 DATA ANALYSIS METHOD**

The questionnaires administered to the respective respondents for primary data collection. Data collected were analyzed both qualitatively and quantitatively through Statistical Package for Social Science.

The ideas collected from Interview were also analyzed by using SPSS and the researcher's knowledge obtained from literature review.

### **3.6 REALIBILITY AND VALIDITY**

The validity and reliability of instruments is critical in research (Ngulube, 2005). Validity and reliability refers to the quality that a procedure or instruments (tool) of a research is accurate, correct, true, meaningfully and right, and so this is the aim of the instruments used in this study.

The study validity depends much on the current state of the economy with the struggle to develop the ease access of financial services. However, the study is conducted for knowledge expansion and it is owned by the Researcher herself.

### **3.7 response rates**

Williams, (2003) argues that response rate of twenty percent for self administered questionnaire based survey is sufficient to report the results. According to (Babbie and Mouton, p.261); a questioner return rate of fifty percent is adequate for data analysis and reporting. A return of seventy percent regarded as very good. In this research the researcher came back with rate of 78% since 53 questionnaires were answered out of 64 population sample.

### **3.8 data measurement**

Data measurement means the process of assigning numbers to object or observations, the level of measurement being the function of rules under which the number are assigned. For this type of data nominal was used as the measurement.

## **CHAPTER FOUR**

### **DATA PRESENTATION AND ANALYSIS**

#### **4.0 Introduction**

This chapter presents detail research results and discussions in response to the research objectives that were set before in questionnaires and interview. The following were the objectives of my study:

#### **4:1 THE GENERAL OBJECTIVE**

The general objective of the study was to analyze the mobile banking system in financial Inclusion coverage in Tanzania.

#### **4.1.1 SPECIFIC OBJECTIVES**

- To examine the awareness of the operation of mobile banking systems and understanding of the technology usage to mobile subscribers.
- To assess the usage behavior of the service by the mobile subscribers
- To assess the service effectiveness and cost charges of the mobile banking systems.

- To identify the extent in which mobile banking systems had impeded financial development.

In fulfilling the study objectives, the researcher formulated questions which were asked in questionnaires for response from the respondent. The following section presents the understanding of the researched topic to the key areas of M-Banking system and the usage behavior of the technology from the mobile subscribers and retail agents.

#### **4.2 RESULTS AND DISCUSSION**

The following were the results from respondents and discussions according to the research objectives:

Mobile Company	Frequency	Percentage
Airtel	3	4%
Tigo	9	17%
Tigo,Airtel	5	10%
Tigo,Voda	15	28%
Tigo,Voda,Airtel	9	17%
Tigo,Voda,Airtel,zantel	4	8%
Tigo,Zantel	1	1%

Voda	3	8%
Voda,Airtel	4	7%
Total	53	100%

**4.2.1 To examine the awareness of the operation of mobile banking systems and understanding of the technology usage to mobile subscribers.**

**Table 3:**

**Responses on type of mobile company subscribed**

The TCRA Report of January 2011 has shown that Vodacom is the market leader with 8,426,097 subscribers followed by Airtel with 5,901,634 subscribers, Tigo with 4,575,534 subscribers, Zantel with 1,586,516, Tanzania Telecommunication Company Limited with 256,064, Sasatel with 23,071 and BOL with 2571 subscribers.

When analyzing the 53 respondent's views on which mobile company he/she has subscribed, 4% were Airtel subscribers, 17% Tigo subscribers, 8% were Vodacom subscribers, 7% were Vodacom as well as Airtel subscribers, 10% were Tigo as well as Airtel subscribers, 28% were Tigo as well as Vodacom subscribers, 17% were Tigo as well as Vodacom and Airtel subscribers, 8% Tigo as well as Voda, Airtel and zantel subscribers.

Since the study was undertaken in district council the Tigo subscribers were seem to be market leader but in actual sense Vodacom has penetrated internal parts of the country compared to Tigo that is not yet established to some villages

**Table 4:**

<b>Responses on M-Banking Sytem Registration</b>		
	Frequency	Percent
No	17	32%
Yes	36	68%
Total	53	100.0%

When analyzing responses on those who were registered with M-Banking services, 32% of respondents were not registered while 68% were registered and has been using the services.

The research analyst with Intermedia's audiencescapes projects,2010 asserts that in Tanzania, there is a strong connection between m-money use and mobile phone ownership. The survey defined recent adopters of the mobile phone as those who first acquired a mobile phone in the past year and revealed that this group includes many more lower-income individuals than those who adopted mobile phones earlier (between two and five years ago).

**Table 5:**

<b>Respondents reasons with no M-Banking services</b>		
	Frequency	Percent
i don't have a phone	8	16%
i don't like the service	7	14%
i'll register sometimes later	16	29%
not aware of the service	7	14%

use friend's phone	8	16%
use friend's phone,i'll register sometimes later	7	12%
Total	53	100.0%

Bagozzi&Warshaw(1992) illustrates that, technologies and elements of uncertainty exists in the minds of decision makers with respect to the successful adoption of them, people tends to form attitudes and intention towards trying to learn to use the new technology prior to initiating efforts directed at using.

Therefore from the field findings, 32% of respondents who were not registered with M-Banking services, 16% did not have phone, 14% did not like the service (they don't even think of registering themselves), 29% had intention of registering themselves for the service, 14% were not aware of services, 16% were using friend's mobile facilities and 12% were using friend's phones but had an intention of registering themselves to obtain SMS Banking.

**Table 6:**

**Response on type of M-Banking system registered**

	Frequency	Percent
m-pesa	16	30%
m-pesa,zap	4	8%
Tigopesa	17	32%
tigopesa,m-pesa	8	14%

tigopesa,m-pesa,zap	4	8%
tigopesa,m-pesa,zap,z-pesa	4	8%
Total	53	100

Among those who were registered with M-Banking system, 30% were registered with M-Pesa,8% with M-Pesa and Zap,32% were for Tigo Pesa, 14% were registered with Tigopesa as well as M-pesa,8% were registered with TigoPesa, Mpesa, Zap and 8% with tigopesa,m-pesa,zap,z-pesa.

The citizen magazine (2011) has asserted that, the coming of Tigo pesa has brought the number of mobile money transfer providers to four i.e Zain operates Zap while Vodacom and Zantel operate M-Pesa and Z-pesa respectively. Competition in mobile money transfer is good provided that it is well structured, secure and reliable.

**Table 7:**

<b>Respondents views on the use of the Technology</b>		
	Frequency	Percent
easy to use	12	22.6
Simple	6	11.3
simple,easy to use	8	15.1
simple,easy to use,need for training usage	8	15.1
simple,need for usage training	1	1.9

<b>Respondents views on the use of the Technology</b>		
	Frequency	Percent
easy to use	12	22.6
Simple	6	11.3
simple,easy to use	8	15.1
simple,easy to use,need for training usage	8	15.1
simple,need for usage training	1	1.9
Total	53	100.0

Among those who were registered with M-Banking services,30% could find the technology just easy to use,17% it was simple, 22% it was simple and easy to use, on the other hand another 22% were simple, easy to use although needed for training usage while 9% was just simple but still need for usage training.

Furthermore, research Analyst with Inter Media's Audience Scapes project as to why they have not started using m-money. The main reason cited for not using m-money was a lack of knowledge about how to use it. At the same time, respondents expressed interest in learning more about it.

#### **4:2:2 To assess the usage behavior of the service by the mobile subscribers**

**Table 8:**

**Responses on Age groups**

Age Group	Frequency	Percentage
9-17	2	4%
18-26	22	42%
27-35	14	26%
36-44	5	9%
45-53	5	9%
54-62	5	9%
Total	53	100%

From the field in analyzing the gathered data, the researcher found that out of 53 respondents 22% of respondents were between the age of 18-26, 14% were between the age of 27-35, 5% were from the age between 36-44, 45-53, 54-62, 2% were between the age of 9-17. Therefore from this analysis the youth ranging to age 18-26 are more likely to use phone than any other age group range.

**Table 9:**

<b>Gender Respondents</b>		
	Frequency	Percent
Male	28	53
Female	25	47
Total	53	100

In analyzing the gender structure, the researcher found that 53% female respondents while male were respondents 47%.

The research findings carried out in Kenya and Tanzania by ODI (2009) shows that rural inhabitants save and borrow more for an agricultural investment while in urban money is used for starting business where by in Tanzania, men are more likely to save or borrow to invest than women.

**Table 10:**

### Responses on the level of education

	Frequency	Percent
diploma	7	13%
have not gone to school	9	17%
primary school	24	45%
secondary school	11	21%
university level	2	4%
Total	53	100.0%

To analyze the level of education from the population sample chosen, 13% were the respondents obtained diploma, 45% obtained primary school, 17% have not gone to school, 21% obtained secondary school and 4% obtained tertiary (university) level.

The TAM Model illustrates that the perceived easy use of technology brings an intention to use the technology, other research findings shows that level of education matters in easy understanding of the technology. Therefore, there is a strong relationship between the factor of level of education and use of technology.

**Table 11:**

<b>Respondents views on how often using the service</b>		
	Frequency	Percent
every after 3 days	7	13
everyday	14	24
every month	22	41
every week	10	22
Total	53	100.0

From the field, 13% of respondents were using the service in every after 3 days,24% almost every day they were using their phone to acquire financial services via their mobile phone,41% were using the service every month, 22% every week.

The citizen, 2011 asserts that, mobile money service providers have taken steps to make these services more accessible and convenient where customers could now use to access financial services.

**4:1:3 To assess the service effectiveness and cost charges of the mobile banking systems.**

**Table 12:**

<b>Respondents views on the awareness of service cost charges</b>		
	<b>Frequency</b>	<b>Percent</b>
no	11	21
yes	42	79
<b>Total</b>	<b>53</b>	<b>100.0</b>

From the field, 21% of respondents were not aware of the service cost charges even though they obtained M-Banking services while 79% were aware of the service cost charges that are analyzed in the following pie chart below.

The Tanzanian survey from research intermedia's suggests that marketers and promoters of m-money services may be underutilizing word-of-mouth, SMS-text messaging and other information channels beyond mass media that have the potential to reach many more potential users. Combining these channels with mass media campaigns can enhance the effectiveness of raising awareness and use of m-money services.

**Table 13:**

<b>Responses on the service cost charges</b>		
	Frequency	Percent
affordable	18	33
costly	10	19
normal	19	35
not affordable	6	13
Total	53	100.0

From the 79% of respondents who were aware of the service cost charges, 33% respondents seems to afford the cost, 19% the service was costly for them, 35% could find the service cost just normal while 13% could not afford the service cost charges.

Abbie Laugtug, 2010 says that, most people have never been able to go into a bank because of the minimum deposits to be so high. It can be the first step into the formal financial system for low-income Africans with mobile phone operators to connect their payment customers to Opportunity.

**4:1:4 To identify the extent in which mobile banking systems had impeded financial development.**

**Table 14:**

<b>Respondents views on accessible services from M-Banking</b>		
	Frequency	Percent
all of the above	9	17%
deposit,money transfer	2	4%
deposit,money transfer,saving	2	4%
deposit,saving,purchasing airtime	3	6%
deposit,withdrawal	4	8%
deposit,withdrawal,money transfer,payment,purchasing airtime	2	4%
deposit,withdrawal,money transfer,saving,purchasing airtime	2	4%
deposit,withdrawal,money transfer,payment,purchasing airtime	2	4%
deposit,withdrawal,money transfer,purchasing airtime	4	8%
deposit,withdrawal,saving,purchasing airtime	3	6%
money transfer	4	8%
money transfer,purchasing airtime	2	4%
money transfer,saving	2	4%
Moneytransfer	2	4%
withdrawal,moneytransfer	6	9%
withdrawal,moneytransfer,purchasing airtime	2	4%
withdrwal,money transfer	2	4%
Total	53	100.0%

From the field,17% of respondents could access all of financial service categories under M-Banking system,4% could deposit and money transfer,4% could access savings, deposit and money transfer,6% could deposit, access saving, purchasing airtime,8%

could access deposit and withdrawal,4% could access deposit, withdrawal, money transfer, payment as well as purchasing airtime,4% could access deposit, withdrawal, money transfer, saving and purchasing airtime,4% could access deposit,withdrawal,moneytransfer,payment,purchasingairtime,8% could access deposit, withdrawal, money transfer, purchasingairtime,6% could access deposit, withdrawal ,saving, purchasing airtime,12% money transfer, purchasing airtime,4% money transfer, saving, 9% withdrawal,moneytransfer,4% withdrawal, money transfer, purchasing airtime,4% withdrawal, money transfer.

In Tanzania, the cost of transportation can be a barrier to receiving health care but a hospital in Dar es Salaam that wanted to figure out a reliable way to cover patients' costs has been done using a mobile phone system called Vodafone M-PESA that has simplified payment mechanisms (Prof. Humphrey Moshi,2010).

Also, the poor has been accumulated in low income countries and many of the lessons learned are relevant for any country wishing to pursue the deliberate policy. The evolution of public policy has not been different in other developing nations where poverty is so conspicuous. The convenience of mobile payments spares members the trip to the nearest town to pay for supplies is a way to protect the capital and savings (Laugtug, 2010).

Further more, the researcher could interview respondents on matters regarding the reasons as to why they think the service is affordable or not, she could also ask for their comment regarding the services provided by the M-Banking systems as follows:

- TiGo subscribers for those who were accessing money transfer could further enjoyed their service as it tends to enable them to access financial services at exactly time and reaches the intended person just in time, majority of them were between the age of 18-45 years old. Most of the registered M-Banking system had no Bank Accounts but most use the technology for saving.
- Those registered with M-Pesa and Zap said that M-Pesa technology is more understandable in using than Zap even though most of it's agents are faced with inadequate Money to run their services, most times they can't provide Tsh 500,000 – Tsh 1,000,000.
- M-Pesa subscribers could find their network system ineffective since it can even take 2 days for a network to be stable to access the intended financial service. Also they could further complain on the service cost charges that M-pesa is expensive to run than TiGo Pesa.
- Those who could respond normal to the service cost charges explained that costs are not higher for them not to afford even those others could say that the cost charged are affordable since the rates are normal. Others could say affordable since it

consider time instead of queuing at the bank for 2 hours it takes few minutes access the intended service and leave.

Moreover, other respondents clarified that the withdrawal charges are expensive and should be reduced and at rural centers.

- Agents are in need especially TigoPesa. Also, those who were registered with M-pesa and Tigo Pesa could find the technology categories differently hence recommended that, there was a need for each mobile company to train their subscribers on how to use the service even though TiGo Pesa is easy to use.
- Other respondents could further state the benefit of using M-Banking that, the system has no service charges like bank service charges.
- Transactions are made easy with M-Banking systems unlike the Banking transactions. The system is also helpful to low income earners as they can access financial services at an easy way.
- Those who were not registered with any of M-Banking system were having an intention to use as they could believe that the technology is helpful in accessing financial services at affordable charges.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

#### **5.0 INTRODUCTION**

This chapter is divided into three parts which provide summary of the study findings, conclusion and recommendation on the basic service and technological usage behavior.

#### **5.1 SUMMARY**

The study undertaken, technology usage behavior of M-Banking system in the Region is more likely to be dependable on the perceived value of the M-Banking services as most respondents registered with the service could find the technology saving them from bank charges (affordable charges with M-Banking), time saving.

The perceived ease use of M-Banking was not the same to every respondents, those who could read and write (the literate population) seem to find the technology simple and under stand able to use compared to those who did not go school (illiterate population).

From the respondents views, the intention to use M-Banking service was brought forward by the perceived value of the M-Banking services, most were registered because of the belief in M-Banking that enabled them to access financial services in an easy way

Also, the level of education, age and sex were determinants of usage behavior of the M-Banking system. Female population was likely to be the most user of M-Banking facility compared to Male population. This is supported by the evidence that in Coast Region women tends to be engaged in production and savings than Men.

The study could find out that, the service cost charges are not affordable to low income earners like farmers in the rural area, on the other hand they could be affordable to those with formal education with formal employment.

Furthermore, the views given by respondents that the rates given by the retail agents to withdrawal charges were affordable to TiGo subscribers compared to Vodacom M-Pesa while the depository charges for both services are convenient.

Moreover, the study findings shows that the TiGo Pesa now has gained popularity to M-Pesa even though most of its customers are more likely covered to towns rather than in entirial centers of the country compared to M-pesa, this was evidenced by respondents who could explain that their relatives at entirial can not access TigoPesa rather than M-Pesa while TiGoPesa is more affordable to M-Pesa.

However, the study has shown that the M-Banking system has now been the desire for almost everyone in accessing financial services in an easy way hence paves a way in promoting development in financial services accessibilities.

## **5.2 CONCLUSION**

In analyzing the coverage of financial inclusion with the use of M-Banking systems in Tanzania the following are concluded based on study objectives:

- Most of the people registered with M-Banking system did not have bank accounts hence the M-Banking system are now seemed to cover the financial services more widely even to those areas with no financial services accessibilities.
- There is a close relationship between the problem of lack of knowledge and the problem of not having access to an m-money agent where network agents are on the ground of representatives for service providers.
- When analyzing M-Banking services, the poor are now saved with bank charges that were seemed to be high and not affordable to low income earners as it appears that the service cost charges of M-Banking systems are not as high as those of Bank service charges.
- Also, financial services accessibilities are now made simpler and available even to rural areas as it is now easy to access financial services to rural areas with M-Pesa.
- When analyzing the technology understandability and usage behavior, the TiGo subscribers find the technology usage categories much easier and understandable

compared to M-pesa even though they both need to simplify the technology usage categories.

### **5.3 RECOMMENDATION**

The 79% of Tanzania's population live in rural places that are denied with financial services, the use of M-Banking system could now be use as alternative way to promote the poor in accessing financial services, hence the policy makers should now see this opportunity for the country and come up with supportive policy to ensure growth of the economy in the financial sector as well as for rural financial development.

In today's world, technology has become a key factor in development in all aspects e.g. production, communication and services including Mobile Banking systems. Therefore, the mobile companies should also understand their customers and make sure that their services are convenient, affordable (reflecting cost of living) and should also consider the easiness in usage of the technologies introduced.

Mobile companies should now also consider the security of the M-Banking system looked by customers as it reflects their trust in the technology usage behavior.

However, the study covered Coast Region under Kibaha district council but the researcher wished to expand the coverage of the study by extending to other Regions but Time and Funds constraints could not allow her to do that, therefore, I recommend other researchers to do a further study of the problem to remote areas such as Mpanda (Rukwa

Region) and Uvinza (Kigoma Region) where the researcher could not afford to cover for the sake of the study.

Also the researcher, recommend further study on analyzing the coverage of M-Pesa and Tigo Pesa to remote areas as to whether they occupy the entire centers of the country or just in districts and towns.

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Date:.....

### **CHECKLIST/QUESTIONNAIRE**

My name is Anitha Ishengoma. I am a student at Tumaini University, Iringa College undertaking Masters of Business Administration. I am kindly asking you to answer my questionnaire which aims at partial fulfillment of Masters Thesis on “*Analysis of mobile banking for financial inclusion in Tanzania*”. The information which you have provided in this questionnaire will not be given out to any person. In case of any problem please do not hesitate to call 0659 900 373

#### **General Information:**

Country:..... Region:..... District:..... Town:.....

#### **Personal Information:**

1. What is your Age?
  - a) 9-17 (1)
  - b) 18-26 (2)
  - c) 27-35 (3)
  - d) 36-44 (4)
  - e) 45-53 (5)
  - f) 54-62 (6)
  
2. What is your gender?
  - a) Male (1)
  - b) Female (2)
  
3. What is your level of Education?
  - a) Primary School Level (1)
  - b) Secondary School level (2)
  - c) Diploma (3)
  - d) Tertiary level (4)
  - e) Have not gone to school (5)
  
4. Which mobile company has you subscribe yourself?
  - a) TiGo (1)
  - b) Vodacom (2)
  - c) Airtel (3)

- d) Zantel (4)
5. Are you registered with any of Mobile banking system?  
 a) Yes (1)  
 b) No (2)
6. If No,  
 Why?.....  
 a) I don't have a phone (1)  
 b) Use friend's phone (2)  
 c) Not aware of the service (3)  
 d) I don't like the service (4)  
 e) I'll register sometimes later (5)
7. Which of the following mobile banking system have you registered yourself?  
 a) TiGo Pesa (1)  
 b) M-Pesa (2)  
 c) Zap (3)  
 d) Z Pesa (4)
8. What services do you access from the system?  
 a) Deposit (1)  
 b) Withdrawal (2)  
 c) Money transfer (3)  
 d) Payment (4)  
 e) Saving (5)  
 f) Purchasing Airtime (6)  
 g) All of the above (7)
9. How often use the phone to access financial service?  
 a) Everyday (1)  
 b) Every after 3 days (2)  
 c) Every week (3)  
 d) Every after 2 weeks (4)  
 e) Every Month (5)
10. How do you find the technology?  
 a) Simple (1)  
 b) Easy to use (Understandable) (2)  
 c) Difficult to use (3)  
 d) Need for usage training (4)
11. Are you aware of the service cost charges?  
 a) Yes (1)

b) No (2)

12. If Yes, How do you find the service cost charges?

a) Affordable (1)

b) Not Affordable (2)

c) Costly (3)

d) Normal (4)

Comments on the service and technology usage characteristics.....