

MAKERERE UNIVERSITY BUSINESS SCHOOL

AN ASSESSMENT OF MOBILE BANKING ADOPTION BY CUSTOMERS OF  
UGAFODE MICROFINANCE LIMITED (MDI)

By

LVA GARO ALO WILLIAMS

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PLATE B

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**DECLARATIO 1.**

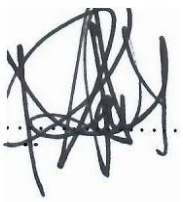
I, L\\anga Ronald Williams. do hereby declare that this research is original to the best of my knowledge and belief, and has never been submitted to any University or Institution of Higher learning for any academic award.

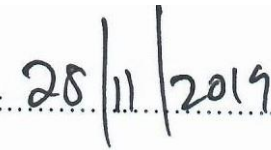
Signed:  .....   
L\\VA GA RO AL  
2016/IIDI0/2996/U

**APPROVAL:**

I hereby certify that this Work has been submitted with my approval as a University supervisor.

**Dr. Rachel Mindra Katoroogo**

Signature:.....

Date:.....

**Dr. Rebecca Namatovu**

Signature:..... Date:.....i .).,. ). \ .....

## **DEDICATION:**

To Kiberu William, My father, Late Stella Kabagenyi My Mother, My auntie **Juliet** Lwanga Seki-wano, Margaret Namyalo, Prof Victoria Mwaka, Nalwanga Sarah, my dear wife and to my beloved daughter Juliane Kayla Lwanga and My Supervisors and so much more.

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## ABSTRACT

Technological advancements in the financial services sector have led to significant changes in the banking behavior. Mobile banking (m-banking) is an innovative product that has been advanced as way to reduce and manage banking affairs efficiently. Understanding the primary determinants of m-banking adoption by customers is significant for banks, financial institutions and other users. This study is aimed at determining the factors affecting mobile banking adoption and usage by customers at UGAFODE Microfinance Ltd (MDI). The research was guided by three research questions: What are the factors that encourage adoption of mobile banking by customers? What are the challenges hindering the adoption of mobile banking in UGAFODE Microfinance Limited (MDI) and what strategies should be adopted to improve the adoption of mobile banking at UGAFODE Microfinance Limited? The study employed a quantitative design. 174 questionnaires were distributed to UGAFODE customers registered on mobile banking ranging from those who are active to non-active customers. Primary data was collected by administering questionnaires to the respondents who are customers. Statistical tools like Excel and Statistical Package for Social Scientists (SPSS) software were used to analyze the data and draw conclusions. Data analyzed was presented in form of tables. From the 174 questionnaires that were distributed 173 were successfully returned. Each variable was measured using 5-point Likert-scale. The results suggested that Perceived risk, Trust, Perceived usefulness, Perceived ease of use are the determining factors that influence customer's ability to adopt mobile banking. From the findings, it is recommended from the findings that UGAFODE Microfinance Limited strengthen security and privacy on the mobile banking platform to improve their confidence levels to adopt and use of mobile banking. In addition, the institution should put in place training mechanisms for customers on how to use the mobile banking service. Lastly, UGAFODE should provide for customers about the products and services to empower staff in terms of the product knowledge.

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## LIST OF ABBREVIATIONS AND ACRONYMS

PC	Perceived credibility
PLRU	Perceived ease of use
LTAM	Extended technology acceptance model
"\ 1S	Short message service
TA:-I	Technology acceptance model
L TAUT	unified theory of acceptance and use of technology
PC	Perceived usefulness
TPB	Theory of planned behavior
TRA	Theory of reasoned action
CTP8	Combined theory of planned behavior
IDT	Innovation diffusion theory
p E	Perceived self-efficacy
IDT	Information diffusion theor)
PBC	Perceived behavior control
PSS	Statistical Package for social science
\I-Baking	Mobile Banking
BOU	Bank of Uganda
L:CC	Uganda Communications Commission
\INOs	Mobile Network Operators
CGAP	Consultative Group for the Poor
.\PP	Application
LSSD	Unstructured Supplementary Service Data
UGAFODE M	UGAFODE Mobile Banking Operations Manual
\!FI	Microfinance Institution
MDI	Microfinancc Deposit Taking Institution
FI	Financial Institution
UNCDF	United Nations Capital Development Fund

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Background**

The recent change in technology innovation holds the potential to make significant changes within financial institutions (Ragoobur & Ayrga, 2011). This has created opportunities for the emergence of electronic banking services like mobile banking. Mobile banking is the use of mobile devices like a mobile phone to access financial services and perform banking transactions where the mobile phone enables clients in the remote locations and non-remote areas within the network connectivity to access their accounts from anywhere and at any time (Wamai & Kandiri, 2017).

With the recent introduction of 3G and 4G smartphones in Uganda coupled with an increasing number of Ugandans with access to mobile phones (UCC, 2017), mobile-banking has emerged as a strategic option for promoting efficiency, controlling of operations and reducing of costs incurred by customers when accessing financial services through a branch network. This has caused changes in the financial services industry where banks, MDIs, MFIs, and other financial institutions have opted for digitized service processes like mobile banking, internet banking and other digital banking services that are beyond the traditional brick and mortar system where bank services are delivered through self-service portals.

According to UCC (2016), the number of mobile phone users exceeds the number of people holding bank accounts. In Uganda, there are 24,034,793 mobile and fixed telephony subscriptions in comparison to 7,000,000 customers who hold accounts with banks and other financial institutions that include Microfinance (BOU, 2016). Although the number of Ugandans with access to mobile phones is high compared to bank accounts, banking through the phone is still underused and the mobile banking market segment has remained very small compared to the traditional banking segment. According to UCC (2016), 14 commercial banks and 3 Microfinance deposit-taking institutions had developed a mobile banking service platform via the mobile banking application (App) and Unstructured Supplementary Service Data (USSD). For customers to use mobile banking, they have to be enrolled first onto the service platform where the customer's bank account is linked to their registered mobile money wallet through a registered Mobile Network Operator Simcard (UGAFODE, 2017). Customers can access mobile banking through a

link application or registered institutions USSD code. Customers use mobile banking to perform various actions that include balance inquiries, Wallet to bank (W2B), Bank to Wallet (B2W) mobile money requests and bill payments among other services.

Although UGAFODE Microfinance limited was incorporated in 1994 as a Non-Governmental organization under the name of Uganda Agency for Development Limited (UGAFODE) to provide affordable financial services to its customers, the model of service delivery was based on brick and mortar branch network. After years of providing financial services to its customers through the branch network approach, UGAFODE realized challenges that came with the model, as it required building and setting up more branch locations an issue that was costly and raised the operating costs of the Institution.

In 2014 UGAFODE developed a mobile banking Solution to improve service delivery, extend banking services closer to its customers with the use of mobile phones as a branch access channel. UGAFODE Customers could now deposit, make loan repayments and withdraw from their accounts without having to move to a physical branch location and receive SMS alerts informing them of transactions on their accounts (U CDF, 2016). Over 37,874 customers have registered for UGAFODE mobile from inception to date, despite this number of registered customer's, the adoption level is still low and is projected to be below 23 % (UGAFODE, 2018) yet the institution has invested heavily in developing the mobile banking infrastructure. Out of 37,874 registered customers, only 9,010 customers are active on the mobile banking platform. It is against this background that this study was carried out to identify factors responsible for the adoption of mobile banking by customers: assess the challenges customers face in adopting mobile banking and identify strategies on how to address these challenges.

### **1.1 Statement of the Problem**

Mobile banking is perceived as a strategic approach to revolutionize traditional methods banks and other financial institutions use to operate, deliver, and vie against each other, particularly in the wake where benefits associated with a traditional branch network system are getting exhausted. This is considered as the convergence of mobile technology and financial services (Chung & Kwon, 2009)

Although Uganda agency for development microfinance limited introduced a mobile banking service to support and improve service delivery to its customers, the level of usage and adoption among customers is still low projected to be below 23 % (UGAFODE, 2018). 9,010 customers are currently using mobile banking compared to 28,864 inactive customers. Although UGAFODE put in place a mobile banking service, it is yet to gain an improvement in customer adoption. Therefore, the study seeks to find out from the customer perception, the factors that influence adoption of mobile banking service.

## **1.2 Purpose of the Study**

The purpose of the study was to examine the factors that encourage the adoption of mobile banking by customers at UGA FODE Microfinance Limited (MDI).

## **1.3 Objectives of the Study**

- 1) To examine the factors that influence the adoption of mobile banking by customers
- 2) To examine the challenges of adoption of mobile banking in UGAFODE Microfinance Limited.
- 3) To recommend strategies on how to improve the adoption of mobile banking in UGAFODE Microfinance Limited.

## **1.4 Research Questions**

- 1) What are the factors that influence the adoption of mobile banking by customers?
- 2) What are the challenges hindering the adoption of mobile banking in UGAFODE Microfinance Limited (MDI)?
- 3) What strategies should be adopted to improve the adoption of mobile banking at UGAFODE Microfinance Limited?

## **1.5 Scope of the Study**

### **1.5.1 Subject Scope**

The study focused on identifying factors that persuade or dissuade the adoption of mobile banking at UGAFODE Microfinance, challenges relating to adoption and strategies to improve adoption and usage of mobile banking in UGAFODE Microfinance Limited (MDI).

### 1.5.2 Geographical Scope

The researcher chose UGAFODE Microfinance for the study because it is one of the institutions that offer mobile banking and has low adoption rate. In addition, improving adoption is part of his core key performance indicator at UGAFODE Microfinance. The study was confined to customers at Gombo Road Branch at UGAFODE Microfinance Limited.

### 1.5.3 Time Scope

The study was carried out from the period beginning April 2018 to December 2018

### 1.6 Significance of the Study

This study will assist several players in the industry highlighted below;

- 1) The study will be used by UGAFODE Microfinance to improve the adoption of mobile banking.
- 2) Policymakers in the Banking sector to understand the factors which influence mobile banking adoption and its impact on people's lives. This will help them in formulating policies which encourage technological innovations as well as adoption in a bid to increase outreach and reduce the poverty levels in the country.
- 3) It will assist players in the mobile banking industry to understand the factors influencing and challenges affecting mobile banking adoption hence enable them to improve on existing services and come up with better services.
- 4) This study will also add to the foundation of knowledge being laid for research in mobile banking technologies. Besides, the findings of this study will act as a point of reference to current and future researchers as well as academicians in higher institutions of learning and Practitioners in digital finance

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Mobile Banking**

Mobile banking (m-banking) refers to the provision of banking and financial services through the help of mobile telecommunication devices. The scope of services offered may include facilities to conduct bank and stock market transactions, administer accounts and to access customized information and services. Mobile banking can perform various functions like mini statements, checking of account history, Sms alerts, access to card statement, balance checks, mobile airtime recharge, etc. via the usage of mobile phones (Vinayagamorthy & Sankar, 2012). The Mobile banking platform at UGAFODE offers a wide range of services that include withdrawing money from a customer's bank account, sending money to a customer's bank account, withdrawing and sending money to another registered phone number. Inter account bank transfers. payment of bills and utilities.

According to Deloitte (2013), mobile phones are used as an alternative to personal computers and the task remains with the mobile network operators (MNOs) to provide a service that is trusted by customers and that provides additional value to consumers. The rapid change in the computing environment, revolving economic changes and changes in the regulation have informed decisions for Microfinance Institutions to become more innovative thus leading to developments in electronic innovations such as mobile banking (UNCDF, 2016)

#### **2.1 Adoption of mobile banking**

Adoption is the acceptance and continued use of a particular product, service or idea (Safeena, Hema & Kammani, 2011). This means acceptance, being able to accept a new banking channel when introduced and recommended by a financial institution. By accepting the new service, it means a customer uses or will use the service. According to United Nations Capital Development Fund, (UNCDF, 2016) when a customer is enrolled and registered on the mobile banking platform, he or she chooses at their will and convenience to adopt and use mobile banking as an alternative banking channel to access their bank accounts at any time and also transact from anywhere beyond the bank branch network.



Internet to Mobile banking

The literature available reveals that much of the research on electronic banking has largely been done on Internet and online banking whereas not much research has been done on mobile banking. (Puschel et al., 2010)

### Technology Acceptance Model

The Technology Acceptance Model (TAM) is an extension of the theory of reasoned action (TRA) model which was introduced by (Davis, 1986). This theory is mainly based on the idea of technology adoption. TAM replaced Theory of reasoned action (TRA) with two psychological accepted features, perceived usefulness (PU) and perceived ease of use (PEOU). It has been proven to be of significance to the adoption of mobile banking. This model has been used by researchers when analyzing issues relating to the acceptance and usage of mobile banking (Lakongoro, 2014).

According to Davis (1989) Perceived usefulness is an extent to which a person believes the use of a certain technology will benefit and improve his/her service performance while perceived ease of use refers to the extent to which a customer understands that the use of a new technology will be simple, not too complex for him or her when accessing a service. This theory provides an important relationship in the study of factors affecting mobile banking adoption by customers. Mobile banking offers a wide range of benefits to customers that include checking account balances, making deposits, airtime top-ups, and inter-account transfers.

Lee and Yoon (2013) focused their study on the Technology acceptance model and examined consumer acceptance of mobile banking services, by explaining relationships that exist between a number of variables that include perceived ease of use, perceived usefulness, perceived credibility (PC), Perceived self-efficacy (PSE) and found that the results showed that perceived usefulness, perceived credibility, perceived ease of use had an influence on the adoption of mobile banking. The technology acceptance model was used in Malaysia to examine the relationships between variables that affect Mobile Banking Adoption (Daud et al., 2011). The findings of this research revealed the model to be capable of predicting the goal of adopting mobile.

The aim of Technology acceptance model (TAM) is to be able to explain customer user behavior across the different technology channels that are employed by financial institutions in particular

mobile banking and other services while at the same time it's being economical and hypothetically justified. Customer acceptance of new technology is assumed to be determined by their willingness to use the technology. In recent years, several studies have adopted the technology acceptance model constructs to examine the acceptance of mobile-related technologies by customers of financial institutions (Kim et al., 2010). Technology acceptance Model suggests that one can use Perceived usefulness (PU) together with Perceived ease-of-use (PEOU) to predict users' intention to adopt a given technology. Perceived usefulness (PU) - This was defined by Davis as the degree to which a person believes that using a particular system would enhance his or her job performance while Perceived ease-of-use (PEOU) is "the degree to which a person believes that using a particular system would be free from effort" (Davis, 1989, p.319). This theory relates to this study to the extent that mobile banking adoption by customers is affected by two important constructs, which are Perceived ease of use (PEOU) and Perceived usefulness and this study aims to examine the relationship towards mobile banking adoption.

## **A Factors that encourage adoption of mobile Banking**

### **A.1 Perceived usefulness**

Perceived usefulness of mobile banking refers to the extent to which a person using the service feels that using the service system would enhance his or her transactions performance (Davis, 1989). Customers assess the significance of their mobile banking adoption basing the ongoing attractiveness or usefulness of the mobile banking service (Chitungo and Munongo, 2013). According to Liao and Cheung (2002) individual expectations regarding the accuracy, security, ease of use and convenience of the online banking service are very significant quality attributes that determine perceived usefulness of online banking services like mobile banking. These factors are crucial in determining the customer's decision to use or not to use online service like mobile banking. Customer's perceived usefulness is considered to be an important factor in their decision to adopt and use the new technology. This is identified as a crucial success factor for any new product Sripalawat et al (2011). Further Sripalawat and Dasgupta et al, (2011) in their study identify perceived usefulness as an important crucial factor in the uptake and usage of any product or service. Although it was originally referred to as job-related productivity and performance, perceived usefulness is an important belief identified in technology acceptance model for

...providing analytical insight into how user beliefs and attitude towards usage are influenced (Obbin, 2013).

## **2.2 Perceived ease of use of mobile banking**

Several research studies have indicated a significant level of effect that ease of use has on mobile banking adoption (Venkatesh & Davies, 2000). An institution's mobile banking platform must be designed with features that are both easy to learn and easy to use to prevent users from having problems when using mobile banking. In this study, it is argued that the mobile banking ease of use is one of the motivating factors of perceived usefulness of mobile banking. According to Laukkanen and Cruz (2010), functional and psychological barriers to innovation positively and significantly affect non-adoption of mobile banking as a result a negative relationship exists between resistance to innovation and the intention by the customer to use mobile banking services.

### **2.2.3 Trust in the mobile banking system**

Trust is an important factor that influences the intention to use and adopt mobile banking. Trust is broadly observed and identified as a crucial factor envisaging customer's perception and intention to adopt mobile banking. According to Zhou (2011) trust is a key factor that determines the possibility of customers to use mobile banking. Existence of a mobile banking system hacks can affect customer's intention to adoption and usage behavior (Zhou, 2012).

### **2.2.4 Social Norms**

Social norms affect the intention of the customer either to adopt or not adopt mobile banking. According to Pedersen and Ling (2002), social influence cannot be ignored in the adoption of mobile banking by customers. These have been confirmed in group-oriented IT services such as email acceptance, online games and mobile banking adoption (Riquelme and Rios, 2010). According to Riquelme and Rios (2010), individuals consider the opinions and influence of their friends, family, and relatives to be important in deciding to adopt a new product and service. Thus, social norms form an important aspect in customer's decision to adopt and use mobile banking.

#### 1.1.5 Costs

Cost refers to the extent to which a person believes that they would be charged for using mobile banking (Luarn and Lin 2005). Mobile banking costs may include Sms charge, Withdraw charges, Deposit charges and mobile network charges for sending traffic SMS (Allat (2007). According to Cruz and Laukkanen (2010), the existence of subscription and service fees to access mobile banking has a significant effect on usage and acceptance by customers.

#### Challenges to the Adoption of Mobile Banking

According to Kim, Sundar, & Park (2013) Mobile phone devices with small screen sizes, limited screen resolution, and uncooperative keypads make it difficult for the customer to use mobile banking as a result this creates complexity which affects usage of the service. Perception by a customer about mobile banking complexity involved when conducting mobile banking transactions via the mobile phone is many times inversely related to a customer's experience with technology. According to the study, large screens lead to higher participants' enjoyment, while the smaller screen-size elicited greater perceived mobility. UNCDF (2016) identifies cost as a crucial factor in the adoption of mobile banking by customers to the extent that the attribute of perceived cost has a major impact on user behavior of individuals. According to UNCDF (2016), Cost was highlighted as one of the main barriers customers face when adopting mobile banking. Some of the costs associated include airtime access charges by MNOs and transaction processing fees.

According to Huili & Chunfang (2011), the uncertainty due to perceived risk is more skewed to non-users of mobile banking services. Yang (2009) and Puschel et al (2010) concluded that associated advantages when using mobile banking significantly influence customers to adopt mobile banking. Kazi and Mannan (2013) inspected those factors that affect customers in Pakistan from adopting mobile banking services. The findings from the study indicate that perceived risk and perceived ease of use has an effect on the adoption of mobile banking by customers in Pakistan. Lack of relative advantage is another contributing factor and innovation is perceived as not being better than the idea it supersedes Yang (2009). For mobile banking, relative advantage is mainly focused on the mobile value of the new banking delivery channel.

ation k, els and household income influence the proportion of relative advantage in mobile banking (Biti and Weill (2011). old and high-income people will usually have lack of interest in mobile services such as mobile banking, they find no significant benefit compared to their traditional ways and prefer other ways of access. Puschel et al(2010) concluded that relative advantages currently influence an individual's intention to adopt mobile banking.

Lin (2006) mentions that customers prefer brick and mortar as the branch due to attention received to them by a staff or the financial institution. Mobile money agents do not respond to customer queries when serving them and to some extent for those who respond provide poor responses that do not sufficiently address customer feedback. Customers hence prefer bank branch banking because it offers the opportunity for a face to face interaction which is more appropriate for processing financial transactions such as loan requests and negotiating for interest rates (Christos, 2008). In this aspect, mobile banking does not offer this kind of personal touch and feel since the parties involved complete the transaction by use of technology infrastructure and hence they do not necessarily have to meet each other face to face.

Compatibility is one of the major challenges which impacts behavioral intention towards the adoption of mobile banking. Lin (2011) argues that the more compatible the innovation is the higher the likelihood of adoption. Lee and Chung (2009) show that system quality significantly affects customer's adoption to mobile banking and that it is essential in the context of technology acceptance. It is also likely that the relationship between compatibility and adoption will hold in the context of mobile banking.

## **2.6 Strategies to Improve Mobile Banking**

Effective communication strategies should give priority to ensuring that customers are advised about bank charge in respect or the mobile banking service and mobile network service providers (UCC, 2012). Managers or financial institutions should consider improving mobile banking services by offering online customer assistance by using a combination of channels. These measures should enhance role clarity and decrease perceived complexity (Lee and Chung, 2009). Creating awareness about technological innovations like mobile banking is one of the other ways that improve the adoption and usage of mobile banking service by customers. Devadevan (2013) revealed that banks should implement awareness programs to customers on how to use modern advance banking innovations like mobile banking. If a customer is not aware of the technology

purchased, then he or she will see no reason to become concerned about the usage. Customer training should be conducted regularly through banking halls and at regional training centers for bank staff whom are customer frontlines facing. This can be done through the referral power of frontline staff engagement and performing of mobile banking customer usage journey hence actively drive mobile banking adoption among bank customers (UNCDF, 2016). Security awareness should be emphasized to customers when using electronic commerce systems (Vijayakumar & Jayachitra, 2013). Awareness is an important factor in raising the consciousness level of issues, including security threats.

According to Durkin et al., (2008) financial services industry must place greater emphasis on proactively advertising the benefits of new technologies such as mobile banking to encourage customers to adopt mobile banking.

Explaining the use of mobile banking services to clients. According to Jeon & Yoon (2013) for mobile banking to be adopted by clients of financial institutions, the extent of usefulness of the service and its advantages' should be explained to clients, when this is done customers will adopt and in turn start to use mobile banking to perform their day to day banking services.

According to Jeon & Yoon (2013) for mobile banking to be adopted by clients of financial institutions, the extent or use of the service and its advantages' should be explained very well. When this is done customers, intention to adopt mobile banking will improve and in turn start to use mobile banking to perform their day-to-day banking services.

Building customer trust and mobile Banking adoption, when customers develop trust in an institution's mobile phone service it creates and grows their confidence regarding their ability, trust, and integrity for them to use mobile banking service (Yang, 2009). Institutions to improve adoption levels of mobile banking customers need to build trust to use mobile banking service as the technology that enables them to access banking services.

Selection of trusted vendor -vendor trust refers to the extent to which a customer believes the vendor will effectively fulfill the transactional obligations and provide a safeguard against in risky situations. According to Jeon & Yoon (2013). their findings indicate that lack of trust on the side of the customer towards a selected vendor by the institution affects a customer's behavioral intention to use mobile banking services.

(credibility-It is important for customers using a financial institution's mobile banking service to ensure that the information system they rely on transacting will not result in a security or data privacy breach. According to Amin et al. (2008), security and privacy are very important aspects that influence customer's perceived credibility of the mobile banking service. Several more studies have cited perceived credibility as the main reason many people are unwilling to adopt and use mobile banking service. Further according to Abdulkadir et al. (2013), Security must entail protecting an institution mobile banking system from any unauthorized access, while privacy must involve protecting personal data of the transacting customer from abusive intrusion. Thus, maintaining credibility may result in a customer's intention to adopt mobile banking.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.11 Introduction**

This chapter outlines the process and procedures that were employed in conducting the study. It defines the research design, survey population, data collection instruments and sample size, data sources, data collection instruments, data processing and analysis, Limitation of the study and ethical considerations.

#### **3.1 Research Design**

To achieve the objectives of this research a descriptive research design was used; quantitative methods were used because of the research intended to assess the adoption of mobile banking by customers at UGAFODE Microfinance Limited (MDI) through questionnaire responses. A quantitative survey was conducted as it is the most appropriate form of data collection that can be used to generate large amounts of data economically. To obtain the required data, a questionnaire with structured questions was distributed to the respondents, who are users of mobile banking at UGAFODE Microfinance Limited (MDI).

#### **3.2 Survey Population**

The survey population comprised of 200 customers of Bombo road branch. The branch was selected because it was the first UGAFODE Microfinance branch to start and successfully piloted mobile banking. (UGAFODE, 2016)

#### **3.3 Sample Size**

The sample comprised 174 registered customers on mobile banking ranging from active to non-active users. This was achieved using a simple random sampling technique. The sample size was determined using Krejcie & Morgan (1970):

#### **3.4 Data Sources**

To conduct the study primary data was used. The data were collected from registered customers on mobile banking at UGAFODE Microfinance limited.



### • 5 **Data Collection Instruments**

- Data collection was carried out by administering structured questionnaires to respondents. The questionnaire consisted of four sections A, B, C and D with close-ended questions. A Likert scale ranging from 1 to 5 was used varying between 1-Strongly Disagree, 2-Disagree, 3-Undecided, 4-Disagree to 5-Strongly Agree. The data collection instrument was adopted from Grace Makongoro (Makongoro, 2014).

### 3.6 **Data Processing and Analysis**

- All primary data was collected; data analysis was conducted using descriptive statistics, which includes mean and standard deviation. Statistical tools like excel and statistical package for social scientists (SPSS) software were used to analyze the data and draw conclusions. Data analyzed was presented in form of tables.

### 3.7 **Limitations of the Study**

- a) Distributing questionnaire to customers was a challenge, whereas the research was confined to customers of Bombo road. repeated travel had to be made customers areas of location, places of work and residence.
- b) Access to financial and other institutional reports was a challenge even with approval and permission by management.

### 3.8 **Ethical Consideration**

- a) Information used in the study was obtained with the consent of the respondents.
- b) Confidentiality and privacy were observed during the study.
- c) The anonymity of respondents participating in the research was ensured.
- d) Communication concerning the research study was done with honesty and transparency.
- e) Misrepresentation of primary data findings from the survey in any biased way was avoided.

## CHAPTER FOUR

### 4.0 DATA ANALYSIS AND DISCUSSION OF THE FINDINGS

#### Demographic Characteristics of the Participants

This chapter presents findings, analysis, and interpretation of the research data that was collected regarding the study assessing the adoption of mobile banking by customers.

**Table 1: Showing descriptive statistics of the respondents**

Description	Percentages (%)
<b>Gender of respondents</b>	
male	52
female	48
<b>Age of respondents (years)</b>	
18-23	25
24-28	31
29-34	31
35 and above	13
<b>Level of education</b>	
University	85
High School/Technical	9
Below secondary	4
Primary	2
<b>Transacting period (Years)</b>	
1st	37
2nd	34
>2nd	29
<b>Convenience of usage</b>	
I agree it's convenient	91
I disagree it's convenient	9
<b>Mobile banking services used</b>	
Deposit funds	46
Check balance	15
Buy Airtime	7
Pay bill	2
Withdraws	34
<b>Frequency of usage</b>	
Daily	10
Monthly	53

Weekly	34
Rarely	3

Results indicate that the sample was fairly split, the majority were female (52%), further from the majority of the respondents were aged between 24-34 years and were university students (85%). Further findings indicate that majority of the respondents transacted within their first year (71%) and (91%) agree using mobile banking was convenient. According to the frequency of usage findings from the sample indicate that majority (87%) used mobile banking services on a weekly or monthly basis while for the type of mobile banking services used, the majority made deposits and withdraws (80%).

**Objective One: Examine factors that encourage the adoption of mobile banking**

The first objective was to examine factors that encourage the adoption of mobile banking in UGAFODE Microfinance Limited.

**Table 2: Factors that encourage the adoption of mobile banking**

Item	Mean	Standard Deviation
Perceived Risk	3.97	0.79
Trust	3.20	0.97
Perceived usefulness	-1.23	0.87
Perceived ease of use	4.01	1.20

Findings show the respondents knowledge about factors that encourage mobile banking adoption in UGAFODE Microfinance Limited.

**3.1.1 Perceived Risk**

Findings indicate that customers agree that perceived risk affects a customer's intention to adopt mobile banking. Security and risk concerns about mobile banking service (Mean=3.97, SD 0.79) discourage customers from adopting and using the service. When customers feel exposed to possible frauds or misuse of their banking credentials, they end up not using the service, therefore financial institutions like UGAFODE should provide a secured mobile banking system for customers to transact. This will improve the adoption of mobile banking.

#### **4.2.2 Trust**

Customers expressed trust in the mobile banking system (Mean=3.20, SD 0.97), When customers develop trust in the using of the mobile banking service it improves adoption by customers. This plays an important role in increasing the adoption and usage of the service by customers.

#### **4.2.3 Perceived Usefulness**

Findings indicate customers agree that perceived usefulness has a big influence on customers' intention to adopt mobile banking (mean=4.23, SD 0.87) when customers perceive a technology like mobile banking to be useful it directly affects their intention to adopt and use such a service. Therefore, financial institutions should tailor their mobile banking services such that the system has service options that enable customers to accomplish their banking tasks.

#### **4.2.4 Perceived ease of use**

Further customers agree (mean=4.01, SD1.20) that ease of use is an important factor that plays a crucial role in improving the adoption of mobile banking. When customers find the service easy to use, they easily adopt such service. Therefore, financial should make mobile banking platforms easy to use by customers.

From the findings. perceived risk has standard deviation (SD=0.79) implying that data points are close to mean, perceived ease of use (SD=1.2) indicates that customers' perceptions about ease of use were far from the mean findings implying that customer's had varying perceptions about ease of use. Trust has standard deviation (SD=0.97) and perceived usefulness (SD=0.87) implying that customers' perception about trust and usefulness of the service did not deviate from the mean findings of the same.

### **4.3: Objective Two: Examine challenges of adoption of mobile banking in UGAFODE Microfinance Limited.**

The second objective was to examine the challenges of adoption of mobile banking in UGAFODE microfinance Limited.

**Table 3: Challenges of adoption of mobile banking in UGAFOOE Microfinance Limited.**

Items	Mean	SD
Do you find transacting on mobile banking expensive	4.00	0.92
The risks associated with using mobile banking are very high	4.20	0.85
Is it easy for you to use mobile banking to transact	3.89	1.45
I prefer transacting at branch than using mobile banking	3.84	1.78

Customers agree that costs associated with using mobile banking are high (Mean=4.00), costs determine customer's ability to adapt and use a service. When the costs associated with using the service are high customers do not use the service, further customers expressed fear to use mobile banking because of risks associated (Mean=4.20) when customers feel insecure and exposed to security hacks and frauds they don't use mobile banking, this affects the adoption of mobile banking. Further customers expressed difficulty in using and learning how to transact on mobile banking (Mean=3.89), such difficulties and challenges prevent a customer from using and adopting mobile banking. Besides, according to the findings, customers agree (Mean =3.84) that they prefer to using a branch location than to use mobile banking service when transacting. This implies that when a sizeable number of customers prefer using a branch location than to use mobile banking it negatively affects the adoption of mobile banking by customers.

From the findings security risks have a standard deviation (SD=0.85) implying that the data findings are not spread far from the mean and that customers do not have varying opinions about security risks of mobile banking. difficulty in using mobile banking has standard deviation (SD=1.45) implying that customers have varying perceptions about difficulty in using the service as challenge for adopting mobile banking.

further from the findings customers prefer to use branch as opposed to mobile banking has standard deviation (SD=1.78) implying that customers had varying perceptions about this finding while for the issue of costs associated with using the mobile banking service (SD=0.92) the finding was close to the mean implying that customers' perceptions about costs were not varying.

4.4 Objective Three: Identify and recommend strategies to improve the adoption of mobile banking in UGAFODE Microfinance Limited.

The third objective was to identify and recommend strategies on how to efficiently and effectively improve the adoption of mobile banking by customers in UGAFODE Microfinance.

**Table -t: strategies to improve the adoption of mobile banking in UGAFODE Microfinance Limited**

Items	Mean	SD
Training customers on how to use mobile banking and creating product awareness about the service	4.25	1.75
Continuous improvement and tightening of security on the mobile banking platform	4.62	0.89
Carrying out periodic customer user surveys to understand customer product and service needs	3.61	1.55
Simplifying the mobile banking user menu	4.12	0.82

From the findings, customers believe that by providing more training and creating more awareness about mobile banking (Mean=4.25) adoption and usage of mobile banking service can increase.

Customers awareness about the service is improved and its advantages explained to customers further improving and tightening security on the mobile banking platform (Mean =4.62) can greatly improve and increase adoption of mobile banking by customers since customers will feel secure transacting on the platform. In addition periodic customer surveys should be carried out to understand customer product and service needs, this will easily inform new changes and modifications to be added on the mobile banking service (Mean=3.61) this will improve customer's adoption of mobile banking.

Further UGAFODE simplifies the mobile banking menu to make it easier for customers to carry out transactions, without any user challenges (Mean=4.12) this will enable customers to transact without having user transaction challenges and difficulty when this is done adoption of mobile banking will be improved.

Findings indicate that customers' perceptions on training customers and creating awareness were varying (SD=1.75). further tightening mobile banking security (SD=0.89) implies that customers'

perceptions were not varying from the mean findings while carrying out periodic surveys (SD=1.55) respondents had varying opinions. Besides simplifying mobile banking menu (SD=0.82) customers' perceptions were in agreement and did not vary from the mean findings.

## CHAPTER FIVE

### 5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Discussions

##### Factors that encourage the adoption of mobile banking by customers

The first objective of the study was to examine the factors that encourage the adoption of mobile banking by customers in UGAFODE Microfinance.

From the findings, risks due to security concerns stand out as one of the main factors that determine customer's intention to adopt and use mobile banking: therefore, financial institutions should lay focus on improving security and privacy on the mobile banking platform. Financial institutions like UGAFODE should develop mobile banking applications that use alternative authentication solutions, such as multi-factor authentication, this will greatly improve on the security and mitigate against risk that can lead to system hacks and as result discourage adoption by customers. The finding is in line with that by Sanchez (2014) who mentions that for financial institutions developing mobile banking applications there is a need for such institutions to ensure all connections are made through secure transfer protocols and to enforce secure sockets layer certificate validation that can guard against security risks and hacks.

UGAFODE should continue to improve and expand the mobile banking services menu to allow customers to have more service options for transacting such as bill payments, utility payment options and digital loans application on the mobile banking menu. This will increase the number of services that customer can access and use, as result adoption of mobile banking will be improved. This is in line with Suoranta (2003) who mentions in his study that lack of expansion in the mobile banking service options affected the adoption of service by customers.

Further customers find perceived usefulness and ease of use to have a substantial effect on the adoption and usage of mobile banking by customers: accordingly, financial institutions should develop useful and simple, easier mobile banking services menu that will make it easier for customers to use when transacting. This is in line with what Moon and Kim (2001) mentioned in



their study, according to Moon and Kim customer's intention to adopt and use mobile banking is influenced by their perceived usefulness and ease of use of the service.

Furthermore, findings imply that customers trust in the mobile banking service is important and plays an important role in the adoption and usage of mobile banking. When customers have trust in mobile banking service and perceive it to be secure, it improves their intention to adopt the service. This finding resonates with that by Koenig-Lewis, Palmer, & Moll (2010), according to their study customer trust in mobile banking service plays an important factor that determines continued use of the service.

From the findings when a customer perceives mobile banking service to be risky and insecure, this negatively affects their intention to adopt and use the service. This finding is consistent with findings by other researchers such as Lee (2007); according to his study, risk indirectly influences customer's behavior towards the adoption of mobile banking services.

## 5.2 Challenges of adopting mobile banking in UCAFODE Microfinance limited

The second objective of the study was to find the Challenges of adopting mobile banking in UGAFODE Microfinance limited.

Customers expressed concern about high costs and charges associated with using mobile banking when transacting. When mobile banking charges are high, it discourages the customer's intention to adopt and use mobile banking. This resonates with finding by Koenig and Moll (2010) who mentioned that costs and charges associated with mobile banking delimit the ability of the customer either to accept or to decline adoption of mobile banking.

Further, customers expressed concern about the security of the mobile banking service; many had reservations to adopt mobile banking due to security concerns. Because of this many customers chose not to adopt mobile banking. This in itself is a challenge and it affects the adoption of mobile banking by customers. This is in line with findings by Elkhodr & Kourouche (2012) who mention in their study that threats to customers' due system insecurity affects their intention to adopt mobile banking.

Furthermore, customers expressed concern about lack of awareness about the benefits offered by mobile banking although they claimed to have heard about the service. Lack of awareness affects customer's intention to adopt mobile banking and this harms mobile banking adoption by customers. This is in agreement with the finding by other researchers such as Agbemabiese (2015), according to him when customers lack awareness about benefits of using mobile banking it negatively affects their intention to adopt mobile banking.

Although mobile banking offers an alternative to physical branch banking, many customers still prefer to go to branches as opposed to using mobile banking. This is a challenge and it affects the adoption of mobile banking. This finding is consistent with the findings by other researchers Malhotra and Singh (2010). According to their findings continued use of branches for banking services by customers directly affects their intention to adopt and use mobile banking.

### **5.3 Strategies on how to improve the adoption of mobile banking adoption**

Providing training on mobile banking to customers and creating awareness about the service can increase the adoption of mobile banking by customers. This finding resonates what Straub (2009) mentioned in his study, according to study Straub advises that training should be conducted through regional bank training centers to create awareness to customers about the services offered and their benefits.

Customers consider security an important consideration before applying to use mobile banking service. This implies that for UGAFODE to increase adoption of mobile banking it has to continuously keep improving on the security and privacy of the mobile banking service. This resonates with the findings by Adesina and Uyinomen (2010) who advise in their study that mobile banking security to be strengthened, continuous improvements on security and privacy must be done periodically. This will improve customer's perception about mobile banking security and will influence their decision to adopt.

Carrying out periodic customer user surveys to understand customer's user needs and attitudes towards different products and services offered by the bank can improve the adoption and usage by customers. This finding is in-line with Ali Al-Qireem & Rudaina (2013) who concluded that

understanding consumer user needs and attitudes plays an important in the adoption and usage of the service.

Customers confirmed that ease of use of mobile banking service is an important factor for them to adopt mobile banking service. UGA FODE should make mobile banking service easy to use; this will improve customer's perception about the adoption of mobile banking. This is in line with that by Adesina and Uyinomen (2010) who mention in their study that when an innovation is easy to use, it can easily be adopted by customers.

### **5.4 Conclusion**

Security concerns on the mobile banking system have a big influence on adoption by customers. This calls for financial institutions to lay more focus on security and privacy of the mobile banking systems. Further, financial institutions should focus on explaining the advantages and benefits accruing from the use of mobile banking by customers, when customers perceive and understand benefits of using mobile banking service in their day-to-day work. They will adopt and use the service. In addition, when a financial institution's mobile banking menu is easy and user-friendlier many customers will adopt and use that service.

Financial institutions should develop mobile banking services menu that is easy for customers to learn and use, when transacting. On the other hand, although security concerns hinder mobile banking adoption. Customers will use the service if they are sure that security periodic security enhancements are carried out on the system and that no loss will result in the due course while transacting.

It is therefore important for financial institutions to ensure that security enhancements and safeguards are put in place to protect customers from potential frauds and system hacks. Finally, although several factors affect the adoption of mobile banking by customers; none of the factors single-handedly explains the lack of adoption by customers in totality.

### **5.5 Recommendations**

One of the biggest hindrances to the adoption of mobile banking by customers is security and privacy concern on the mobile banking platform. It is generally perceived by customers that mobile banking does not guarantee user security. It is therefore important that UGA FODE constantly improves and upgrades the security on its mobile banking platform. UGA FODE should put in

place one time pin second factor authentication for validating transactions by customers to avoid malicious individuals from accessing customer user platform. In addition, apart of security upgrade on the mobile banking system, they should register customer mobile banking Simcard serials against the customer user access. Such measures will enhance and improve customer trust and confidence in the system.

Also, UGA FODE should put in place sufficient training mechanisms for customers to ensure that customers are properly trained at the onboarding stage on how to use the mobile banking service. The institution should continue to carry out periodic user customer surveys on its products and services to identify the changing customer trends and needs so that it tailors existing products to match the needs of the customer. This will enable the institution to come up with an appropriate acquisition and adoption strategy.

Financial institutions should always ensure that their mobile banking applications are integrated with user biometric options such as fingerprints to enhance user access and control.

UGAFODE should explain to customers the benefits of using mobile banking as opposed to physical branch banking, which involves long queues, time and delays.

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**APPENDICES:**

**Appendix I: Questionnaire**

**TOPIC: ASSESSING THE ADOPTION OF MOBILE BANKING BY CUSTOMERS; A case study of GAFODE Microfinance Limited ( IOI)**

**SECTION A**

This section intends to identify the Demographic Information (DI) of the customers.

(Please tick the relevant box according to your choice)

1. Specify your Gender:  Female  Male
  
2. Age  18-23  24-28  29-34  35- onwards
  
3. How long you have been transacting on UGAFODE Mobile?  
 1 year  1-2 years  More than 2 year.
  
4. Education Level
  - i. Primary
  - ii. Secondary
  - iii. Technical and vocational education
  - iv. University
  
5. Do you find using UGAFODE mobile banking service more convenient than using a branch?  Yes  No?
  
6. Do you feel contented transacting using UGAFODE mobile banking service as opposed to dealing with physical cash?  Yes  No?

---

7. What do you use UGAFODE mobile banking for?

Deposit funds [ ]

Check account balance [ ]

Buy Airtime [ ]

Pay **Bills**[ ]

Withdraw Funds [ ]

8. How often do you use mobile banking?

Daily [ ]

Once a week [ ]

Many times a month [ ]



**SECTION B**

This section intends to identify your opinion regarding the factors that encourage the adoption of Mobile Banking. On a scale of 1-5 indicate if you 1 (Strongly disagree), 2 (Disagree), 3 (Undecided), 4 (Agree) or 5 (strongly agree) Please Tick in the appropriate box. The data collection instrument was adapted from the study by Makongoro G.(2014)

<b>Perceived Risk (Security and Psychological)</b>	1	2	3	4	5
Security concerns about my account details prevent me from using mobile phone banking to check my account					
Using mobile banking is risky when accessing my bank account					
I fear that I can lose money when I use mobile banking to make a transfer to another account holder					
I fear using mobile banking because I think my details can easily be shared with other people					

<b>Trust (Ability, integrity, and Goodwill)</b>	1	2	3	4	5
I believe banks are trustworthy,					
The ability of the mobile service provider has an important influence on the use of mobile banking service					
My mobile banking service provider can provide mobile banking service effectively					
The integrity of the service provider has an important influence in choosing mobile banking services					

<b>Perceived Usefulness</b>	1	2	3	4	5
It is advantageous to use mobile banking					
When I use mobile banking, I save a lot of my useful time					
Using mobile banking would make it easier for me to carry out my banking tasks					
Using mobile banking is useful as it enables me to accomplish my banking activities more quickly					
It is easy to use mobile banking to accomplish my banking tasks					

<b>Perceived ease of use</b>	1	2	3	4	5
It is easy to learn how to use mobile banking service					
It is easy to navigate a mobile banking platform					
Using mobile banking needs no training					
It takes a long time and effort to learn how to use a mobile banking service.					

## SECTION C

### Challenges to the adoption of mobile banking by customers

In your opinion, what are the reasons for the low adoption of mobile banking by customers? On a scale of 1-5 indicate if you choose 1 (Strongly disagree), 2 (Disagree), 3 (Undecided), 4 (Agree) or 5 (strongly agree) Please Tick in the appropriate box

	1	2	3	4	5
Do you find transacting on mobile banking to be expensive					
The risks associated with using mobile banking are very high					
Is it easy for you to use mobile banking to transact					
I prefer transacting at branch than using mobile banking					

**SECTION D**

**Strategies to Improve Mobile Banking**

In your opinion, what strategies should UGAFODE Microfinance employ to increase the adoption of mobile banking among customers? On a scale of 1-5 indicate if you choose 1 (Strongly disagree), 2 (Disagree), 3 (Undecided), 4 (Agree) or 5 (strongly agree) Please Tick in the appropriate box

	1	2	3	4	5
Training customers on how to use mobile banking service and creating product awareness					
Continuous improvement or security on the mobile banking platform					
Carry out periodic customer user surveys to understand customer's attitude and intention towards mobile banking adoption and usage					
Simplifying usage options on the mobile banking menu					
Explaining the benefits of using mobile banking to customers					