Customer Retention in Financial Institutions: The Role of Information and Communication Technology

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Abstract:
The rapid development of Information and Communication Technology (ICT) has not left Tanzanian banking sector far behind. This is because the banking sector in has recently witnessed growth of internet money transfer and mobile banking notably the M-PESA ‘miracle’ that is relatively unique. Although adoption of ICT varies between large commercial banks and community banks, the latter that appears to be understudied has also made some progress in technological adoption. This paper investigates ICT use and customer retention in Mwanga Rural Community Bank (MRCB) in Tanzania. The paper attempts to integrate logics related to ICT use and to what extent such use influence customer retention based on customers’ perceptions in two lenses: (i) the adoption of ICT defined by increased use of internet banking and mobile banking improve public communications in the bank (ii) the improved communication create customers’ trust hence customer retention.

The research variables were developed based on the Technology Adoption Model in the bank and additional variables were

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innovatively included to form three hypotheses. The hypotheses were tested using $\chi^2$ square and multiple regressions model. It was found that internet and mobile banking were determinants of the length of time customers opted for banking services in a particular branch. However, given the nature of community banks with few branches, mobile banking especially MPESA was not effective in all regions of Tanzania.

**Key words:** ICT use, Internet banking, Mobile banking, Trust, Customer retention

## 1 INTRODUCTION

Customer retention which entails length of time customers often opt for services and get satisfied is important especially in an environment where competition is fierce and financial institutions must realise that any effort made to retain customers is rewardable. In Tanzania for example, there is an increasing trend of many banks and non-banking financial institutions that has increased competitions for customers all over the country (Kassim 2005; Rahimi 2008). It is common to find banking officers in the street searching for customers especially those interested on consumable loans using their salaries as collaterals. Most teachers employed by the government and private schools are largely potential customers and in this instance, they are also my witnesses. In this context, for financial institutions to survive, customer retention is not an option but a compulsory strategy (Loots and Grobler 2013). This is because customers can always choose which bank or non-bank financial institution to use that also involves shifting from one to another if they are not satisfied elsewhere. ICT use is noticeably, among strategies that can help these institutions to retain customers. However, most non-banking financial institutions in Tanzania seem to lag behind because they often open accounts, transfer money and keep records in
manual systems. Contextually, these institutions face more communication barriers than the banking institutions which have relatively huge investment in ICT use, thus; affect their ability to compete.

It is noted that among the reasons that hinder non-banking financial institutions to use ICT for customers’ retention is the lack of clear knowledge on the benefits of such strategy given that the costs of acquiring it are relatively high (Rahimi 2008). Nevertheless, some few formerly non-banking financial institutions such as Mwanga Rural Community Bank (MRCB) have been able to utilise micro-bank system successfully and this has actually assisted in retaining customers not only at the district level but also at the country level (Kassim 2005). As for now, the bank has a branch in Moshi urban where there is an access of wide range of customers. This paper not only informs other non-banking financial institutions which do not use ICT about the good practice, but also offer empirical evidences to inform customer service and retention literature on how even small non-banking financial institution can improve and benefit from ICT use. In so doing, this paper elevates the importance of ICT in customer retention and customer services in a financial sector.

Historically, before the emergence of ICT, brick and mortar banks were the key to banking. However, technological innovations have influenced the banking sector in one way or another. Supported by the resource based view (in Loots and Grobler 2013), Kassim (2005) explains that the technological revolution has produced new developments in the banking industry. It is no doubt that ICT is now a very strategic issue in the banking realms (Moodley 2007) as reported by Moodley (2007). Significant development in ICT has paved way for banking applications such as electronic funds transfer and telephone banking. The development in the banking industry also incorporates the use of the global network (Internet), which
can be accessed by anyone at any time (Basel Committee on Banking Supervision 2001).

According to Zineldin (2006) and Moodley (2007) the use of electronic payment and increase in customer connection to the Internet eliminates geographical constraints and customers may not need to access banks physically, implying that customers can have access to banking services in any area at any time. Furthermore, Myamoto and Rexha (2004) argue that new ICT has created new commercial opportunities. The theories underpinning this research are the Public Relations theory (Ledigham and Bruning 1998) and the commitment-trust theory (Morgan and Hunt 1994) in which Loots and Grobler (2013) calls for integrated framework that explains customer retention better. The earlier theory is more concerned with communication between banks and the customers while the latter is focused on how customer service can create trust thus retaining customers.

One of the key yardsticks used for rating a modern business enterprise is its ICT infrastructural layout (Moodley 2007). This is an indication of the importance of ICT for business establishments. Banks in particular adopt information and communication technology to improve the efficiency and effectiveness of services offered to customers, improve business processes, as well as enhance managerial decision making and workgroup collaborations (Moodley 2007). This helps strengthen their competitive positions in the current changing and emerging economies. Environmental, organizational, and technological factors are creating a highly competitive business environment in which customers are the focal point. Thus, the growth of any enterprise is tied to its ability to retain loyal customers, improve productivity, cut costs, increase market share, while providing timely organizational response. ICT thus provide means to achieve these dynamic attributes. Because the pace of change and the degree of uncertainty in today’s competitive environment are accelerating geometrically.
Organizations are operating under increasing pressures to produce more, using fewer resources. In order to succeed (or even merely to survive) in this dynamic world, companies must not only take traditional actions such as lowering costs, but also undertake innovative activities such as changing structure or processes and continuously revising competitive strategies.

According to Zineldin (2006) ICT can facilitate and enhance customer relationships in various ways. It enables product customization which is the essence of the customer-centric orientation. Moodley (2007) says that companies that have big volume of customer data can perform customer management more easily and efficiently using data warehousing, data mining, and other ICTs. Greenberg (2003) looks at CRM as a business philosophy and strategy, supported by a system and technology, designed to improve human interactions in a business environment. It enables a business to develop, archive and share customer information, and information production using computers, telecommunications, software and ancillary equipment such as automated teller machine and debit cards.

Customer relationships ensure that consumers develop the perception of customization, empathy, appreciation, friendliness, communality and feelings of trust (Swartz and Iacobucci 2000). This perception leads to support and loyalty among consumers to firms. Personal relationships with clients are important, as loyalty to service firms has been associated with clients’ personal relationships with a service provider (Swartz and Iacobucci 2000). Therefore, service providers, including financial institutions like banks, should focus on building relationships with their clients to reap the long term rewards of support and loyalty.

Firms are motivated to adopt CRM strategies for both defensive and offensive reasons. Offensive arguments are associated with a desire to improve profitability by reducing cost and to increase revenues through improved customer
satisfaction and loyalty. Defensive arguments apply when a firm’s leading competitors have adopted CRM successfully, and it fears losing consumers and revenue (Buttle 2004). The fundamental reasons why firms desire to build relationships with consumers are based on economic considerations. Firms generate better results when they manage their consumer base in such a manner as to ensure that they identify, satisfy and retain their most profitable consumers. The rationale for the implementation of CRM strategies is that it improves business performance by enhancing customer satisfaction and increasing customer loyalty (Mudie and Cottam 1999; Wilmshurst and Mackay 2002).

As more and more enterprises realise the importance of becoming customer centric in today’s competitive economy, they embrace as core business strategy (Wu 2008). CRM is a way of developing a comprehensive picture of customer’s needs, expectation and behaviours and managing those factors to affect business performance (Wu 2008). Rahimi (2008) argues that CRM involves the use of refined information about current and potential customers in order to anticipate and respond to their needs and draws on a combination of business processes and ICT to discover knowledge about the customers and answer questions such as “who are the customers?”, “what do they do?” and “what are they like?”. With such effective use of information and communication technology, organization can offer their customers a variety of products, lower prices and personalized services, at the same time in order to market effectively to the individual customers, companies gather information from both internal and external sources and use it to provide a unified view or profile of the customers for target marketing purposes (Karakostas et al 2004).

Summing up from the two theoretical underpinnings, merging them to better explain customer retention is of a fundamental importance. As Loots and Grobler (2013) recently argued that the elements in Customer Relationship
Management (CRM) and those in Public Relations are worth combinable. The later, describes a marketer as a communicator, advertiser, and information holder, public image while the former view the same marketer as a service provider, distributor, cost manager, and a pricing agent. Impliedly, this paper aims to empirically merge the two theories to explain how ICT can be used as a tool for customer retention thus contributes to the customer retentions literature. Moreover, the paper provides empirical evidences that can be considered as a successful case study in ICT use towards customer retention and satisfaction.

The remaining part of this paper is divided into the following sections. The literature review section on customer retention and develops three propositions. To test the hypotheses of this framework, a combination of qualitative content analysis (for the MRCB case) and descriptive statistics (for quantitative data) was used. The methodological perspectives are detailed in the subsequent sections. The findings of this study are based on both individual case studies and embedded units within the cases. The final part of this article contains discussion, conclusions, implications and limitations of the study.

2. LITERATURE REVIEW

2.1 Theoretical review

Customer relationship variables that also include satisfaction and retention are considered important survival strategies for any organisation because they increase ability for firms to compete and make profit. These variables are often described in the commitment-trust theory that considers trust as an important element that contributes to retention. Unlike the trust element, communicative skills within the organisation are very important because they determine the way in which customers view the organisation to include the image, power,
employee-employer relationships, relationship between the public and the business organisation that also involves corporate social responsibility and many other public communicative elements. To understand this integration of the two theoretical perspectives, we detail the commitment-trust theory and the public relations perspective to see what is common and what is still under debate.

The Public Relations Theory
The asymmetrical perspective of the theory contends that in a planned effort of what should be communicated to customers, which means to be used to enhance communications and how parties involved should be integrated are among specific issues that are detailed and described by the theory. Previously marketers used the relationship management theory that did not involve other stakeholders like the general public in customer management strategies (Loots and Grobler 2013). In recent, several studies propose the Public relations theory instead (Loots and Grobler 2013; Moodley 2007; Zineldin 2006).

The Public Relations Theory (PRT) argues that communication between a business and the public that include customers is often enabled by information devices such as phones, computers, Automatic Teller Machines (ATMs) and telegraphic media (Huang 1997; Rhee 1999; Sha 1999). The communication is often made inform of messages, electronic services and feedback from customers. While the one-way model of communication does not allow feedback from customers, the asymmetrical approach is powerful because in case of non-performance, the customers can express their views and hence get satisfied keeping in their minds the possibility of future improvements (Zineldin 2006).

For a banking firm, the PRT is important because it describes the process of information sharing between the bank and its customers. Yiu, Grant and Edgar (2007) argues that modern banking is possible only if the customers can access
mobile banking services, electronic money transfers, online purchasing of goods and services and other internet based services. Rahimi (2006) points to specific examples in the banking sector of Tanzania that utilizes the recent innovation in money transfer known as M-PESA. In fact, not only the large banks have opted for the services but also some specific cases like MRCB are noted to use the service successfully. However, its services are still limited to few regions. This also involves inter-braches banking connections and the possibility of accepting customer feedback. Customers can freely express in electronic systems if they are satisfied with the services or not. It is the response from the bank that determines in if the customers will be retained or not hoping for the better future.

In contrast, the PR theory is argued to be unable to fully describe the customer retention that appears to be the key goal firms. Loots and Grobler (2007) for example, argue that the theory mainly focuses on how communication between customers, the public and the banks can be enabled and neglect the possible elements within the communication that can enhance customer retention and specifically, how the communication flow works to retain customers. In that regard, scholars in the field call for an integrated approach that combines communication and trust variables to better explain customer retention strategies. Yiu et al (2007) in describing the implications of mobiles in the banking sector, they put it clear that the mobile banking practice has not fully contextualized to the customer retention strategies. This is because to understand the essence and importance of ICTs in retaining customers, different contexts such as small non-banking financial institutions, community banks, and other banks that range from country to country need to be dealt uniquely (Al-alak 2013). Before integrating the two concepts, the next section describes how the Commitment-Trust Theory (CT) is related to public relations and customer retention.
The Commitment-trust Theory
The communication between customers and the banks is not on its own purpose rather is important to consider the impacts of such efforts in customer retention and their willingness to establish long lasting relationships with the banks. Morgan and Hunt (1994) in the Commitment-trust Theory (CT) argue that trust and commitment on relationships are basic elements towards customer retention.

The concept of trust is widely used in many fields ranging from social economics (Williamson 1975), social relations (Granovetter 1985) and organizational arrangements and planning (Mayer, Davis and Schoomarman (1995). Based on this field diversity, the concept of trust has accorded a high level of complexity is describing it however with respect to this paper the concept will be described based on both the economic and social perspectives. Trust is described by the level of confidence parties into business may have on each other thus leading to long lasting relationships and higher commitments (Myamoto and Rexha 2004; Johanson and Grayson 2005). For the banking sector, customers should be able to create and maintain confidence to specific banks for long time thus argued as a high level of trust to the banks. If trust were lacking, there could be a low chance of being committed into relationships with the specific banks.

2.2 Empirical literature review
Customer Retention/relationships Management (CRM)
Customer relationship management has attracted the attention of both marketing practitioners and researchers over the last decade. Despite, or maybe due to, the attention drawn to the subject, a clear agreement on what CRM is and especially how CRM should be developed remains lacking. CRM is the values and strategies or relationship marketing with particular emphasis on customer relationships turned into practical application (Johanson and Grayson 2005). CRM is a strategy
view of how to handle customer relationship from a company perspective. “The strategy deals with how to establish developed and increase customer relation from profitability perspective, based upon the individual customer needs and potentials. The basic underlying CRM is that the basis of all marketing and management activities should be the establishment of mutually beneficial partnership relation with customers and other partners in order to become successful and profitable (Wu 2008).

CRM is the integration of customer focuses in marketing, sales, logistics, accounting i.e in all parts of the organization operation and structure. Those are the activities a business performs to identify, qualify, acquire, develop and retain increasingly loyal and profitable customers by delivering the right products or services to the right customer through the right channel at the right time and the right cost” (Johansson & Storm, 2002). CRM can be best describes as an evolution of marketing from product or brand management to customer management (Johanson and Grayson 2005).

Thus, customer relationship management is the initiation, enhancement, and maintenance of the mutually beneficial customer and partner long-term relationship through business intelligence-generated strategies based on the capture, storing and analyzing of information gathered from all customer and partner touch points and transaction processing system (Moodley 2007). Therefore, ICT and CRM is the strategic use of information, process, technology, and people to manage the customer relationship with the company across the whole customer life cycle (Zineldin 2006). In fact, in this study, ICT and CRM are seen as a supportive tool that facilitates the activities needed to achieve successful customer relationship management implementation.

Swift (2001) defines CRM as enterprise approach to understanding and influencing customer behavior through meaningful communications in order to improve customer
acquisition, customer retention, customer loyalty and customer profitability. CRM is the enterprise approach to understanding and influencing customer behavior through meaningful communications in order to improve customer satisfaction, customer acquisition, and customer retention and decrees customer loss. CRM is an IT enhanced value process, which identifies, develops, integrates and focuses the various competencies of the firm to the “voice” of the customers in order to deliver long-term superior customer value, at a profit, to well identify existing and potential customer segments (Moodley 2007).

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Johanson and Grayson (2005) observed that the motivating factors for companies moving toward CRM technology are to improve customer satisfaction level, to retain existing customers, to improve customer lifetime value, to provide strategic information from the CRM system and to attract new customers. The real value to a company lies in the value they create for their customers and in the value the customers deliver back to the company. Accordingly, it is important at mark that the value doesn't lies in more information and in more advanced technology. The value lies in the customer knowledge and in how the companies use that
knowledge to manage their relationship. Knowledge is according to Swift (2001) the sole of CRM. Unfortunately, few companies are transforming the information to customer knowledge and therefore they miss the opportunities to provide value to their customers. However, applied in the right way, CRM is the tool that contributes to profit. If companies transforming the customer data into knowledge and then uses that knowledge to build relationship it will create customer satisfaction, acquisition, retention, loyalty, and decrease customer’s loss (Rahimi 2008).

**Internet banking**

Through the World Wide Web, customers in a bank may be enabled to communicate with their banks on basis of money withdrawal, deposits, and transfers. Similarly, payments may be possible via online systems using the VISA or MasterCard. According to Loots and Grobler (2013) internet banking is a tool that simplifies transactions and creates trust and long commitment relationships between the customers and their banks. They also argue that customer retention is measured in term of length customers stay with the banks, quality of the services and products offered by the banks and the level of satisfaction as perceived by customers. Since then, several articles have highlighted about the importance of internet banking in retaining customers.

Yiu et al (2007) argue that internet banking enable customers to perform banking transactions online. However, Internet Banking, defined as “the delivery of banking services through the open-access computer network (the Internet) directly to customers’ home or private address” (Degbey 2015) offers a wider range of potential benefits to financial institutions (Johanson and Grayson 2005) due to more accessible and user friendly use of the technology, as the Internet does not restrict banks to physical locations or historical geographical areas. The technology therefore allows
banks to think and operate in new geographical zones with new markets, market spaces and product scopes. New fee-based income generated from improved or new services such as advertising, bill presentment, alerts, and notifications and customized information is attractive to modern banks. Such activities provide added value for the customer and opportunities for banks to bolster income streams and secure longer term customer loyalty, through relationship management.

However, Yiu *et al* (2007) also argue that internet banking is contextual in nature because the practice of the online services will differ according to the nature of the banks, the nature of customers and the country in which the banks are operating. Tanzania for example, is not considered as developed as China or most countries in Europe. This will affect the level of technology that finally determines the level of internet banking possible in the country. United Sates of America for example, guarantees and insure online banking transactions while in Tanzania most online transactions are done at the customers’ own risk. Similarly, community banks in Tanzania are different from the large multinational banks. While most of the studies done in Tanzania are in the large banks, few have focused in the small banks and non-banking financial institutions. Specific cases in Tanzania like the MRCB have not accorded serious research attention and it is believed that understanding the operational characteristics of small banks is not only a key to improving the performance of the bank on discussion but also is an important step to improving the performance of the small banks and non-banking performances in Tanzania. Thus,

\[ P_1: \text{The use of internet banking has relationships with customer retention at MRCB.} \]
Mobile Banking

Mobile banking is new innovative technological wonders of the world that has not only over-simplified the banking services but has brought the services on the hands of the customers. Through this innovation customers can transfer, withdraw and check bank balances worldwide using their handset phones. According to Shaikh and Karjaluoto (2014) the m-banking has gone beyond the ordinary services offered through ATMs and other online services. Loots and Grobler (2013) contends that m-banking also acts as a powerful tool in extending entrepreneurial opportunities in the financial sector and provide employment to the ordinary citizens. Through the use of smart phones which are most common in developed countries, mobile banking has softened the money transfer process and payment services. Most businesses in developed countries’ firms or business companies have registered in mobile banking to be able to reactive payment systems via phones of their customers. This does not only guarantee a sustained customer services but also increase revenue and profitability to the companies under discussion.

As already argued by Yiu et al (2007), there is a difference between the mobile banking practice in developed and most developing countries. While most customers in Europe for example, use smart phones, in Tanzania the situation is different because most of banks’ customers use ordinary phones. However, each situation has its own success stories because some banks like MRCB in Tanzania have connected to customers thorough service providers such as Vodacom, airtel or other telecommunication companies. The most remarkable enabling discovery in East Africa for example is the use of M-PESA services that was invented in Kenya as the way to simplify mobile baking and electronic money transfers using phones. This unique kind of mobile banking need to be studied on its own and this calls for a specific research in the banking sector because through this services it
is argued that banks are likely to retain customers and increase their relationship commitments. Thus,

P2: M-PESA services at MRCB have relationships with customer retention.

Inter-Branches web connections enable the banks to transact using minimum time and low cost because, banking staff in any branch is able to view transactions of another branch instantly. According to Tamuliene and Gabryte (2014) both mobile banking band inter-branches web connections enable the banking transactions not only within a country but also internationally. Although the issue of interconnectivity of branches is not new (Yuan et al 2016; Al-alak 2013), to the developing countries especially in the rural community banks is just getting adoption. In fact, Al-alak (2013) argues that for one to understand the interconnectivity of branches within a bank, each bank should be approached separately because often the community banks lack the resources and share business environment that is not common for other large commercial banks. Community banks for example, transact largely with micro-financial institutions such as SACCOS, which often save rural communities that lack education and to them the use of information and communication technology appears a new thing that does not only simplify their banking services but also accord a great challenge given their environment. This is because most rural areas in Tanzania lack electricity, and whenever is there is not stable and the community banks may not be able to purchase and operate a power backups.

Currently, most community banks depend on group of customers that take group loans at an average interest rate of 18% (NBS 2013). This interest rate is not comparatively high because most of other large commercial banks also charge the same or relatively higher. The great advantage for community banks is that most of customers in these institutions are
shareholders and therefore in attempts to secure loans, no need of “big” collaterals. Unlike the large commercial banks where most borrowers will be asked to present title deeds of immovable properties, in these banks the customers may use the shares and the group guarantees to secure loans. However, in any case there is sailing amount individual customers may be disbursed from the community banks. It is obvious that large commercial banks often serve large borrowers while the focus of most community banks is often on small borrowers who surround the bank. This raises a concern that do community banks face competition? Yes they face competitions from other non-banking financial institutions which offer similar services, large commercial banks that have opened branches in rural areas, and other community banks surrounding the community. Specifically, there are more than 4 community banks at Moshi Municipality in Tanzania, and many other banks therefore, customer retention is necessary to avoid turnover because they can always opt for other banks. In this case, Degbey (2015) argues that inter-branches banking connections are important at retaining customers because often they want to make their banking transactions whenever they go. Experience show that banks that are not connected to many branches have failed to retain customers because they cannot bare with deposit and withdrawal charges when making transactions out of their branches. Thus;

P3: The interconnectivity of banking transactions among branches has relationship with length of time the customers stay with the banks.
The conceptual framework

Fig. 1. Model on an integrated approach to retaining customers

Fig. 1 shows the conceptual framework of the three variables such as internet banking, mobile banking and inter-branches connectivity to describe how the variables influence customer retention in the community banks. The variables are considered independent in the figure while public relations and customer retention are considered dependent variables. Because Loots and Grobler (2013) argues that the public relations and customer retention perspectives need to be combined in explaining how long the customers opt for a particular product or service, this model responds to the call by integrating the two variables. In any case, the purpose is to test the three hypotheses namely $P_1$, $P_2$, $P_3$ that enable us to describe customer retention specifically in community banks. Similar studies in developing countries have used the three variables to explain customer retention in the banking sector. Shaikh and Karjaluoto (2014) in their literature-based paper argued that mobile banking for example, is considered as a contemporary innovation in the banking sector not only in developing countries but also in some developed economies. In support of their argument, experience from East Africa and Tanzania in particular, account to the recently innovative M-pesa as among revolutionary moves in the banking sector. This has attracted scholarly interest in the banking sector and in particular, this conceptual framework proposes that the mobile banking has positive influence on customer retention.
In the same vein, the other variables of information and communication technology such as inter-branches connectivity and internet banking both of which appear new in the banking sector of Tanzania are also considered. The logic behind the conceptual framework is conventional belief that the three variables improve public communication that in turn is also described as customer retention because no customers can rationally opt a banking service that lacks effective and efficient communication.

3. RESEARCH METHODS

This research is a single quantitative case study. The reason is that for one to understand customer retention in the banking sector, theoretical evidences clearly support that those banks should be studied uniquely. The nature of customer retention and mobile banking are for example, not similar in all banks and never are they also similar in all community banks and non-banking financial institutions. Community banks and large commercial banks will often accord customers a different care, use different technologies, approaches to customer services and in this regard customers will perceive the same services offered by either community banks or large commercial banks differently. For example, the same customer served at Mwanga Rural Community Bank and CRDB Bank consecutively, will perceive a mobile banking at the banks differently. In a situation like this Yin (2014) suggests for single case study design however, because many customers in the same banks will have different perceptions with regard to the same services offered, each customer becomes a prospective respondent. This is what Yin (2014) calls single case study embedded design which is referred to as single quantitative case study in our paper about customer retention in financial institutions.

After the case study choice (Mwanga Rural Community Bank – MRCB) that is chosen because its popular use of the
micro-banking system that integrates the mobile and internet banking, a survey among customers within the case was conducted not aiming for statistical generalizations but in analytical and comparative generalizations (Yin 2014). Similar studies also suggest that choice of case study is important in studying customer retention. The studies distinguish banking sector in Hong Kong and many other areas (Yiu et al 2007; Al-alak 2013), and the insurance sector (Tamuliene and Gabryte 2014) from the serial acquirer banking sector (Degbey 2015). In all the studies, the cases were approached in a quantitative way thus this paper adopts similar approaches. However, wherever possible facts from individual customers that are not related to the questionnaires provided but informs the study, were captured qualitatively to supplement the quantitative information. Content analysis approach was used as a qualitative technique to explain ‘immeasurable’ stories.

Fine ‘grained’ questionnaires were disseminated through interview at the main entry of the banks in selected branches of the bank. The Reason for interview within the questionnaire was to reduce unfilled questionnaires because in Tanzania people have low tendency of reading. Hence if one issues mailed questionnaires for example, the filling rate would be very low. In any case the best approach is to conduct interview or supervise the filling of questionnaires as the customers arrive at the bank for services. This approach resulted into 91% response rate because in all the 130 questionnaires issued, 118 were filled and returned. Because the customers were arriving randomly the bank’s counter, the sample selection of 118 customers was randomly done. Case study choice was purposive because after a long experience in the bank, some selection criteria of the case were pointed out. Notable criteria were the use of micro banker system that appears unique and the nature of community banks in which relatively few have adopted the ICT use. Multiple regressions model was used to analyse customers’ perceptions on retention based on ICT use.
Independent variables were regressed with dependent variables in the following equation:

\[ Y = X_1 + X_2 + X_3 + X_4 + X_5 + X_6 + X_7 + \beta \ldots \text{eq. 1} \]

Where: \( \beta \) = other factors that explain customer retention but held constant. \( Y \) is the customer retention, \( X_1 \) is the use of internet banking services, \( X_2 \) is the use of mobile banking i.e. MPESA, TOGO PESA etc, \( X_3 \) is use of inter-organizational computerized information system, \( X_4 \) is inter-banks connections i.e. VISA, MASTER Cards, \( X_5 \) is inter-braches connections, \( X_6 \) is computerized records systems and \( X_7 \) is internet based money transfers. The variables \( X_1 \) – \( X_7 \) were considered as basic elements which when combined are important in describing the mobile banking, internet banking and inter-braches connectivity.

4. FINDINGS AND DISCUSSIONS

The findings in this paper are discussed based on the three hypotheses with an aim to merge between customer retention elements with the public communication variables. To understand the nature of my respondents, I established their demographic profiles. More than 62.7 percent of the interviewees were individual customers and only 29.7 percent of the respondents were corporate customers. It is also noted that among all the interviewed customers, more than 58.5 percent had at least 5 years of operating experience with MRCB (see table 4 in the appendix section). The essence of these demographic characteristics is to inform of how long the customers know the banks because a typical new customer to the bank will not be able to fully explain how ICT use has influenced retention. The main measure of customer retention was customers who have been saved by the bank for at least one year. Only 9.3 percent of the customers had experience with the bank of less than a year (table 4 of the appendix section). In order to analyse quantitative information, the regression equation that was previously established had to be tested for autocorrelation and multicollinerarity.
The independent variables such as Xi to X7 explain the customer retention by 63.2% and the rest being explained by other factors (table 1). The error term in the model is 37.8%. Other important variables that are not captured in the model are explained by the qualitative information obtained during data collection. Although there is no threshold value of R, the rule of thumb (Mbura 2010) indicate that the value \( \text{R} = 63.2\% \) is above fifty percent and therefore the model is acceptable and the independent variables can be used to explain the dependent variable.

Another way to test if this model fits the study is to carefully observe multicollinerarity or autocorrelations and decide if the model is appropriate. Autocorrelation is an undesirable condition arising when most independent variables are predicting each other in such a way that deleting one variable affects the model significantly. Dubin-Watson statistic test was used in this study to test the interdependence of variables. At the level of significance \( \alpha = 90\% \) where \( P = 0.1, D = 1.39 \) (as read from the Dubin-Watson statistic table). The calculated value of \( D = 1.333 \). Therefore, because 1.39 > 1.333 (see table 5 in the appendix section), it is considered that most
of the variables are interdependent because, the values of D fall in the acceptable range.

Eigen values and Variance Inflation Factor (VIF) is an alternative to measure the problem of autocorrelation. The values in the table are close to zero (see table 6), indicating that there is a problem of collinearity but because it is only few values, rule of thumb accepts the model as a useful tool to describe relationships (Mbura 2010). The maximum VIF value is 4.847 (see table 6) to indicate that there is no problem of autocorrelation. However, the tolerance values < 0.1 (see table 6) indicate a problem with collinearity but not significant. The measurement criteria used is that if the VIF values are < 10, then there is no problem of autocorrelation and vice versa. A condition index indicator used to measure autocorrelation of independent variables. If the values are greater than 15, there is a possible problem of autocorrelation but for values greater than 30, there is a serious problem of autocorrelation. The maximum and only one condition index is 23.712 and most of the other values are less than 15 (see table 6) to indicate that there is slight autocorrelation but not a serious problem.

Based on the aforementioned tests, it was concluded that the regression model developed in the methodology section fits the data therefore it is relevant to use the equation below to test hypotheses:

\[
Y = 0.378 + 0.309X_1 + 0.334X_2 + 0.425X_3 + 0.443X_4 + 0.449X_5 + 0.561X_6 + 0.632X_7 \quad \text{---eq. 2}
\]

In the regression equation, different factors explain the dependent variable \((Y = \text{customer satisfaction/retention})\). A detailed discussion of each variable in this equation follows in next paragraphs.
To measure how ICT use influenced customer relationships, several criteria that describe ICT use were tested in a five scale to see how each relationship variable is influenced. ICT use variable include; internet banking, mobile banking, computerized information system, inter-banks connections, inter-branches connections, computerized records systems and internet based money transfers. To measure the relationships with customers a lot of measures such as long-term relationships, number of transactions, amount of savings and loans and number of accounts were used as criteria against ICT use.

Frequencies reveal that other factors being constant, 82% of amount of savings and loans for each customer depended much on the introduction of internet banking (table 3). This is because, with internet banking, most customers can deposit their money online through mobile computers for example, and avoid queues that normally arise during direct transactions. This finding is similar to the arguments by (Yiu et al 2007) that internet banking as a recent revolutionary technology in the banking sector has simplified banking transactions in the Hong Kong market. However, users must be carefully with other internet banking technologies that cannot be applicable in the Hong Kong market. In the same vein, community banks have limited branches and in essence the
Tanzanian market has suppliers who may not be trusted therefore online transactions should be handled with care.

Number of accounts a customer opened with the bank was also used as a criteria to measure the terms of relationships between the bank and such a customer. Table 3 explains that about 95% of all accounts opened with the bank were due to internet banking all other things else being equal. This means that internet banking is important factor in explaining the number of accounts that a customer opens with the bank. For example, due to increased use of online deposit and withdrawal services, balance checking online, customers are motivated and they therefore, decide to increase their accounts portfolio from for example, having savings accounts only to opening all or more accounts such as fixed deposits, current accounts and many other schemes of savings (table 4). Similarly, this may embrace entrance of new customers into the banking services.

Table 4 indicates that through increased use of computerized information systems and records, long-term relationships increased by 88% all other things being equal. Customers interviewed revealed that before the use of computerized records system for example, most banks were using manual systems to check balances, to access accounts information and in fact the security of the money was not ensured. One customer argues: “kipindi cha zamani hizo tulikuwa tunaenda bank na kukaa kutwa nzima ili kuangalia taarifa za akaunti zetu bank na pia hata wale maafisa wa benki wasio waaminifu walikuwa wanaiba pesa za wateja”. This means that before computerized information systems the level of theft among entrusted bank officers was higher than ‘today’ in customer accounts. Before that we could keep our money with other banks, which were better or rather keep our money home.
4.2 ICT Use and Customer Retention

Customer retention in this section is determined by the duration (time) a customer opt for services of the bank, the perceived quality of services provided, the perceived importance of public communication in customer services and other factors that arise from the customers.

From the model (refer eq. 1), the R estimates (table 1) shows that about 63.3% of customer retention in the bank is explained by factors $X_1$ to $X_7$ and only 37% of customer retention is predicted by other factors. Interview results reveal that other factors may include but not limited to customer perception about the bank, irrational actions, and complexity of satisfying customers’ needs and the choice of banking services based on ethnic connections. For example, one customer argues that: “I normally deposit large part of my money with the Federal Bank of Middle East because the banking procedures there are considering some ethnic related policies and Islamic principals”. Other studies however found a different phenomenon because, in banks which follow Islamic policies of not giving interest for example, most of the people holding these transactions were Christians (Titko & Lace 2010).

Generally, the model attests that about 31% of customer satisfaction is explained by the use of internet banking services. This means that 31% of all customers using the services were
satisfied. This however, leaves a challenge if there are some possibilities of improving customer retention with the services to capture the minds of more customers. The findings are also supported by empirical observations in table 3 which reveal that 63.5 percent loans and deposits in the bank increased due to adoption of internet banking. Similarly, internet banking influenced number of accounts opened with the bank, number of transactions and customer retention by 65.2 percent, 77.9 percent and 68.6 percent respectively. However, these observations lack statistical justifications. To test the significance of this variable the following hypothesis is proposed:

H₀: There is no relationship between customer retention and increased use of internet banking services.
H₁: There is relationship between customer retention and increased use of internet banking services.

Using an asymptotic χ² test of significance at this factor, a level of significance of 5% two tailed test reveal that the calculated value is 0.000 (0.000 < 0.05). Based on the figures in table 2, we therefore, reject the null hypothesis and accept the alternate hypothesis. There is therefore, positive relationship between customer retention and increased of internet banking services. As aforementioned, one may argue that use of online banking transactions retain at least 31% of customers in the bank (see table 5).

An increased use of mobile banking is also considered as the factor that leads to customer retention. 33.4% of customers were retained because of an increased use of mobile banking services (table 5). The possibility to transfer, deposit and withdraw money through MPESA and TIGO PESA are just few examples of these services improved communication between the bank and its customers thus creating trust and finally retention (Loots and Grobler 2013). Observations also confirm that mobile banking is a more important factor that determines
customer retention than the use of internet banking. This might be because of the nature of Tanzanian community banking that is more rural based than urbanized. People in the rural areas may have phones able to do MPESA transactions for example, but do not favour internet connection. Among the most important variables that mobile banking influenced is customer retention and increased number of accounts by 79.3 percent and 81.4 percent respectively. Loans and deposits were only influenced by 55.9 percent indicating that the threshold for mobile transactions in Tanzania is low and cannot encourage huge transactions. These findings are similar to arguments by Shaikh and Karjaluoto (2014) that mobile banking is more adoptable in rural areas than any other element of ICT use. Customers can check balances of their accounts using mobile phones; ability to check salaries for individual customers has real improved our services (an interview with the marketing manager 2014). To test the significance of this factor the following hypothesis was proposed:

H₀: There is no relationship between increased use of mobile banking services and customer retention.

H₁: There is a relationship between increased use of mobile banking services and customer retention.

Based on the values of 0.000 from table 2 i.e. 0.000 < 0.05, we reject the null hypothesis and accept the alternative hypothesis. Therefore, there is positive relationship between an increased use of mobile banking services and customer retention.

Use of inter-organizational computerized information system is the connections between corporate customers and the bank or rather connections between individual customers and the bank. It could be for example, an increased use of mobile phones to track bank records, or organizations may be able to take overdrafts online. For corporate customers this service was common but less common for individual customers. To test the significance of this variables refer to the following hypothesis:
H₀: There is no relationship between an increased use of inter-organization computerized system and customer retention.
H₁: There is a relationship between an increased use of inter-organization computerized system and customer retention.

Table 2 shows that α = 0.05 > 0.000, we accept the alternative hypothesis and reject the null hypothesis. Therefore, there is positive relationship between inter-organizational computerized information system and customer retention.

Inter-banks connections give a customer the possibility to perform a transaction with other banks within and outside the country. Mwanga Community Bank for example, had agreements with Martin’s bank of Germany on handling joint international transactions. The connections enable customers travelling to Europe to transact cheaply using their accounts. It is also noted that 81.4 percent of customers opened new accounts in account of the number of branches the bank has and its branch connectivity (table 3). This again contributed to customer retention by 88.1 percent that marks the most important factor of customer retention in all the three factors discussed in this study.

An interview reveals that MRCB through Martin’s bank is among the first community banks in Tanzania to use VISA cards and Master cards. This connection with MASTER card and VISA card international allows its customers to make online payments through the bank, but also withdraw cash in any country at an exchange rate determined by the master card or VISA card international normally considered to be a competitive rate. Similarly, these services allow our customers to access the banking services in some of our branches located outside the country. The model attests that 44.5% of all customers seemed to be satisfied because of an increased use of these services. Had it been otherwise, our bank could not manage to maintain 44.5% of the customer base. To test the significance the following hypothesis is necessary:
H₀: There is no relationship between inter-banks connections and customer retention.
H₁: There is relationship between inter-banks connections and customer retention.

Table 2 shows that α = 0.05 > 0.000, we accept the alternative hypothesis and reject the null hypothesis. Therefore, there is a positive relationship between inter-banks connections and customer retention.

5 CONCLUSION AND RECOMMENDATIONS

Based on the three objectives already discussed, summary of findings are as follows:

Findings conclude that increased use of ICT has influenced the number of closed accounts, dormant accounts, opened accounts, and number of customer accounts. It has also influenced the amount of savings the bank mobilizes, number of transactions a customer makes with other banks, loan amount the customers borrow from other banks and sales revenue a customer gives the bank annually. An interview reveals that total loan disbursed per customer from the bank was in average ranging from 84.4million to 136.6 million TZS before and after ICT use respectively. Similarly, the number of banks customers opened accounts dropped from 2 to 1 account for each customer before and after the adoption respectively. This implies that due to increased use of ICT the bank managed to take other customers who were formally active in other banks.

This study further concludes that, an increased use of ICT has improved customer relations management and customer retention. Loans that the customers took from other banks decreased with increased use of ICT. There was also a decreased rate of number of transactions that the customers had with other banks, increased number of transaction for each customer and strengthened long-term relationships between
the bank and her customers. Loan disbursed to the same customer from other banks dropped from 17.4 million to 11.8 million TZS annually before and after the use of ICT respectively. These amounts were however, at the low side compared to the amount of loan disbursed to the same customers from MRCB which ranged from 84.4 million to 136.6 million TZS before and after ICT use respectively. Similarly, the increased use of mobile banking, internet money transfer and other electronic transactions has increased customer retention by strengthening long term relationships by 90 percent when all other factors are kept equal.

Finally, the model concludes that customer retention was influenced by factors like internet banking services (31%), inter-organizational computerized information systems (33%), inter-banks connections (43%), computerized records systems (45%), inter-branches connections (56%) and internet based money transfers (63%). Among all, the main three factors that explain customer satisfaction in the bank are internet based money transfer, followed by inter-branches connections and mobile banking.

Based on the findings this study has recommends the following:

At the practical level, this study recommends to the management to be carefully and keep on working on the respective customer retention variables that will increase their customer base. For example because, the most important factor that draws customer retention are internet based money transfers, inter-branches connections and mobile banking, the management is challenged to increase more branches and increase connections. This will enable the bank to capture the customers who are currently operating in other banks.

This research was an embedded case study based in MRCB, therefore it did not aim at generalizing but as informed by Yin (2014), there is a room to make analytical generalization. Analytically, the policy draws on the factors
that, the government may invest on efforts to help banks to prepare infrastructural platform to enable banks to expand branches. This could be a branch establishment subside such as reducing legal reserve requirement for a starting branch.

This study measures bank performance based on the amount of loan disbursed by the bank but most practical approaches also focus on the rate of loan repayment. Future research may investigate on how an increased use of ICT has increased the loan repayment rate.

Methodologically, this study applies a retrospective approach in an embedded case study. This means that the customers and bank managers were questioned on issues which have a historical nature. For example, to know the amount of loan disbursed before and after ICT use, the respondent had first to remember the year 1998 which is marked as time the bank started and retrieve the necessary facts that happened long time ago and recorded the trend to date. This methodology is criticized because respondents may face difficulties to remember. Future research may focus on the same subject by utilizing the longitudinal approach because we believe the technology is daily changing.

This study also focuses on a single case study i.e. MRCB; therefore it suffers a weakness of lacking statistical generalization in all banks in Tanzania. Since facts are available that other banks may have the same criteria of ICT use, and one customer may be a customer to more than one bank, future research may focus on a large sample of many customers in many banks.

Acknowledgement: I am grateful for the funding support from DANIDA under SAFIC (Successful African Firms and Institutional Change) project that enabled me to access free articles which actually simplified the literature review process. However, any technical mistakes in this article remains entirely our liability and not to the SAFIC.
6 APPENDICES

Table 4: Demographic profiles of respondents

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Table 5: Regression Coefficients

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a. Predictors: (Constant), X1
b. Predictors: (Constant), X1, X2
c. Predictors: (Constant), X1, X2, X3
d. Predictors: (Constant), X1, X2, X3, X4
e. Predictors: (Constant), X1, X2, X3, X4, X5
f. Predictors: (Constant), X1, X2, X3, X4, X5, X6
g. Predictors: (Constant), X1, X2, X3, X4, X5, X6, X7
h. Dependent Variable: Y

Source: Research Findings, 2014

Table 6: Standardized Coefficients

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# Customer Retention in Financial Institutions: The Role of Information and Communication Technology

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a. Dependent Variable: Y
Source: Research Findings, 2014

## REFERENCES


9. Ledigham, J.A and Bruning, S. D.


