The effect of e-Banking on Tanzania commercial banks' Return on investments: A case of CRDB bank in Same district Kilimanjaro Region

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Abstract- The objective of the study is to assess the performance of electronic banking on Return on Investment of CRDB Bank. There is a mixed result on relationship between e- banking, bank performance. A survey design was adopted wherein CRDB branches in Same district were involved. The study collected information from 120 respondents, out of whom 100 were bank customers and 20 were bank officials. The study established that e-banking played a great role in providing financial services to the customers and that the e-banking has a positive effect on return on investment of CRDB bank. The study recommends, BOT to issue policies and guidelines which will help bank customers, on dealing with electronic banking and there is a need to have proper laws on adoption and cover of E-banking as the Banks and Financial Act of 2006 do not cover the E-banking practice.

Index Terms- Electronic banking, Return, Investment, Financial performance

I. INTRODUCTION

The use of information communication technology such like electronic banking is of paramount importance in the age of globalization. E-banking has brought significant improvement in the banking industry as it has easen provision of bank services and operations in general. Steven (2002) cited in Wisdom (2012) stated that e-banking has become not only an option but also a need that is useful to all banks as it improves bank activities and increases customer satisfaction. Electronic banking has been defined by Georgescu (2005) as cited by Kinyua (2014), as providing retail banking products and services as well as large payments and other wholesale banking services delivered electronically. Daniel, (1999) cited by Husni, (2011) stated that electronic banking is a system that enables all financial institutions stakeholders to make use of bank service such as accessibility of bank accounts and transactions of business and other activities.

According to Chang (2003), electronic banking is significant towards bank performance and customer satisfaction. That means that banks which use e-banking services are seen as having a better brand image both in the eye of the customer as coined by (Keremet et al., 2003). It has been discovered that the forms of electronic banking include internet banking, telephone banking and personal computers banking. Telephone banking is undertaken through call centers depending where the customer is (Peter, 2003), personal computer banking consist of using a personal computer to make banking transaction with a financial institution while mobile banking exploits the mobile phone system by making transactions between the customer and the bank (Chovanova, 2006). ATMs make clients to withdraw cash, transfer money and make balance inquiries without necessarily visiting the bank hall (Sing & Komal, 2009).

Robert (2011) found that electronic banking has landed in Tanzania and several based electronic banking services exist until today such as automated teller machines (ATM), internet banking, smart cards, credit cards, m-banking, phone banking and anywhere-anytime banking. All these services have provided a number of convenient services to the customer, increased service quality while increasing as well customer satisfaction and bank financial performance. For example, to adopt Automated Teller Machines in various banks and financial institutions has become of pride leading to a successful financial performance, the adoption of m-banking by various communication companies such as Tigo, Vodacom, Airtel and Halotel gear have made quick deposits and transfers of money or payments (Robert, 2011).

CRDB bank is one amongst the commercial banks which uses electronic banking and has been attractive to many bank stakeholders because it accepts deposits and makes loans (Saunders & Cornett, 2003). It was expected that, provision of electronic banking services should result in cost reduction, performance improvement, wider coverage, revenue growth, and customer convenience and profit maximization (Bradley & Stewart, 2002; Chau & Lai, 2003).However there is documented questioning of the usefulness of electronic banking on bank financial performance, although as found out by (Rotchanakitumunai & Speece 2003), electronic banking helps bank customers to manage personal finances and make transactions 24 hours a day in 365 days in a year without visiting the bank and from any locations of the globe. Electronic banking has undoubtedly brought a significant impact on the overall performance of both the banks and customers. Therefore, electronic banking services have been of great importance even

thought, there is a debate about whether and how their adoption improves bank performance. This study assessed the effects of e-banking on financial performance using return on Investments of commercial Banks in Tanzania, taking CRDB bank at Same district in Kilimanjaro, as a case study.

1.1 Problem statement

In the time of globalization and competition, most financial institutions have moved up the performance chart by serving at competitive price (Chase, 2003). For example, commercial banks in both developed and developing world have adopted electronic banking in order to maxize their profit and minimize operational costs.Munaye (2009) found out that electronic banking services help a bank customer to access banking service from their bank accounts 24-hours access throughout the year. However, despite the benefits that e-banking has brought towards banking performance (Sathye 1999), there is a debate in the literature about whether and how the adoption of that technology improves bank financial performance. This is because, according to Shuqair (2003), electronic banking service will have a negative impact on the bank's performance in the short run because of employee training costs and electronic infrastructure costs. Shuqair's study is similar to Sullivan (2000) who studied banks comparing those that had adopted electronic bank and those which did not. The findings of the study were that performance for both were similar. Thus from the study, it was concluded that e-banking has no relationship with performance. However, (Onay, Ozsoz and Helvacioglu,2008) found that electronic banking has a positive impact on bank financial performance. This study is consistent with that of Munyoki et al (2015) who found that electronic banking has a positive impact on financial performance of banks. Basing on the discussions above, one can conclude that there is no exact effects of e-banking on the bank performance proved since there are mixed results which render the conclusion to be vague. It was due to the mixed conclusions that triggered the researcher to undertake this study from Tanzanian context to establish the effects of e-banking on financial performance of commercial banks with a case of CRDB bank. The purpose of the paper therefore is to assess the effects of electronic banking on the financial performance of commercial banks using CRDB bank as a case study and in so doing the study specifically expected to determine electronic banking services provided by CRDB bank in Same district, examine the effects of e-banking services on Return on Investments of the CRDB Bank, and investigate challenges of e-banking on provision of financial services. The study is relevant due to the fact that e-banking is necessary innovations which hamper bank operations, in urban and rural areas; furthermore the study is expected to fill the gap which has been identified, also e-banking is considered as one of the strategies to meet more customers.

2.0 Conceptual Considerations

The term e-banking is defined in different ways across the world because electronic banking includes several types of services done at the bank level which can be done via devices such as computer, television or mobile phone (Daniel, 1999; Sathye, 1999).According to Salehi and Zhila, (2008), e-banking involves an electronic connection between bank and customer in order to prepare, manage and control financial transactions of the customer by the bank while it is reaching its peak of financial performance and customer satisfaction. This type of banking can be done through the following channels as it has been discovered by Daniel (1999); Internet banking, Telephone-banking, TV-based banking, and Mobile phone-banking.

According to Daniel (1999), the introduction of the Information Technology within the banking sector has improved the quality services and improved customer satisfaction that in turn has harnessed banking performance. It has been discovered in the literature that e-banking refers to the use of internet banking (Daniel, 1999); while elsewhere electronic banking refers to retail banking and corporate banking as it was mentioned by Simpson (2002). Al-Gahtani (2001) found that electronic banking has for ages been recognized as an engine of socio-economic development because they create liquidity in the economy through financial intermediation between savers and borrowers and improve the life of the one doing it. Electronic banking have for long provided financial services and products and pushed the completion of transactions and in the process of operation have reduced cash intensity in the financial system, encouraged banking culture, and catalysed economic growth and life improvement as noted by Al-Gahtani (2001). However, electronic banking transactions should be done in a safe and efficient way in order to avoid disturbances from financial system that may affect both the bank and customer as further uttered by Al-Gahtani (2001).A study about the e-banking over 1999–2006 shows that the application of e-banking can improve banks' performance in terms of the growth in assets, reduction in operating expenses and portfolio enhancement (Dandapani et al., 2008). Even in 1990s, Sraeel (1996) emphasizes that creating virtual banking will not only create a new service delivery channel, but also lead to value creation to both banks and customers (Hwang et al., 2007; Murphy, 2007). AmatoMcCoy (2005) further argues that customers will be attracted to e-banking when the advanced e-banking services like e-transfer and e-bill options are available.

Financial performance

Financial performance is a measure of a firm's ability to use its assets for the purpose of generating revenues. There are many different ways of measuring financial performance, which include line items such as revenue from operations, operating income and cash flow from operations,etc (Business Dictionary, 2017).Performance measure is a process of measuring efficiency, effectiveness and capability of an action or process or system against a given standards or targets. The term efficiency refers to the relationship between the output in terms of goods, services or other results and the resources used to produce them (Maseko. F, 2013).From time to time other indicators of performance like return on investments are also engaged, Loof, et al (2002).

2.1 Theory to guide the study on e-banking

Normally a study can be guided by a theory or theories depending on the nature of the study and data to be collected. This specific study is guided by one theory known as Technological acceptance model explained herein below.

2.1.1 Technological acceptance model

The technology acceptance model (TAM) is an information systems theory that models how users come to accept and use a technology (Venkatesh and Davis, 2000). This model was originally developed from another theory, called the Theory of Reasoned Action (TRA) that describes a person's behavior by their intentions (Fishbein and Ajzen, 1975). The TRA model intends to create a theory which describes human behavior in general, whereas TAM focuses on the factors which influence a person's general technological acceptance. The TAM consists of two main factors, Perceived Usefulness (PU) and Perceived Ease of Use (PEU) that influence a person's intention to make use of a technology. The concept of perceived usefulness proclaim that, technology (ATM, internet banking, mobile banking Electronic Funds Transfer, and agency banking) can be accepted by the person or community if he/she or they believe that the use of that technology will be useful and add value in their daily job performance (Davis, 1986). TAM argues that the degree of usefulness is, in part, dependent upon how easy the system/technology is to use. A system/technology which is difficult to use is simply not going to be very useful, as it will take too much effort to reap the rewards.

Perceived Ease of Use (PEU) mostly describe that the acceptance of technology base in how easy and effortless to use, so basically claim that the society are willing to use any kind of technology as long as its effortless in using and not difficult in terms of cost and time consuming (Davis, 1986).With the connection to the acceptance of electronic banking services; one of the main reasons for some people to hesitate utilization of these channels can be difficultness of applying them in their financial transactions therefore some people would prefer to use branch tellers in performing banking activities rather than use electronic banking. The assumptions of this theory is that, TAM tells us that we need to make sure that any given bank alternative channel should finds the correct level of each of these two factors (perceived ease of use and perceived usefulness). A channel that is extremely useful may be accepted by users, even if it is difficult to use. Equally, a channel that is not particularly useful may still be employed if it is very easy to use. But a channel which receives high marks for both perceived ease of use and perceived usefulness is one that will tend to be the most readily accepted. According to this theory, as researcher became more aware of how people can accept and use a newly introduced technology in the banking industry. As related to the theory that an easy technology it's very easy to be accepted within the society compares to the difficult technology which people tends to be hesitated to use. With the relation to electronic banking in Tanzanian society, some banks' customers can be hesitant to use electronic banking because of difficulty technology associate with them.

E-Banking and Bank Financial Performance

Sameni, Jouzbarkan, Khodadadi (2015) found out and concluded that e-banking has became an area that facilitates electronic business transaction without necessarily being at the bank hall. In order to evaluate the financial performance for commercial banks as the result of e-banking activities, several metrics have been used by different researchers. One method proposed is by assessing the capital adequacy, assets quality, management quality, earnings and liquidity (or CAMEL according to Gilbert, Meyer and Vaughan, 2000 as cited by Elisha, 2000).

The Challenges of electronic banking

A research study conducted by Daft (1982) discovered that the use of electronic banking has eased the work to bank while increasing customer satisfaction even though both bank and customers may face numerous risks and challenges connected with that innovative technology called e-banking. Here, what Daft (1982) identified was the strategic risk based on the management of financial institutions that commercial banks are facing. For example Daft (1982) found that poor e-banking planning and investment decisions have increased a financial institution's strategic risk. This means that costs of establishing e-banking services has been very high. Earl (2000) demonstrated that establishing a brand which can be trusted costs too much as it requires the purchase of expensive technology in order to set it. The following are some of the problems that customers encounter while using electronic banking services including risk arising from fraud cause by the technology, network and system errors including congestion and other challenges resulting in the organization's inability to be more useful to provide product and services at the expected time. Earl (2000) further pointed out that banking activities can employ their activities of implementation and the amount of its transaction and operations can be high.

Another security problem which is associated with electronic banking as introduced by the Economist journal (1999) is that the electronic banking services insecurities as put into three ways namely those associated with fraud and theft, those by hackers and flaws in systems design are pronounced in the system of electronic banking. As found out by Earl (2002), electronic banking service challenges are lack of knowledge and the level of understanding by manager of the technology and the operation process and the lack of skills and experience to adapt the software technologies and educate their customers on how to use the technology.

Several studies which have been undertaken on the topic of electronic banking have revealed that those using the technology have got better assets turnover than those which do not use the technology, while other researcher have proved not improving bank performance as indicated by Robinson (2000) and Nyangosi (2006). Simpson (2002) found that electronic banking have led to operating costs and operating revenues maximization. A study conducted that Nader (2011) on the profit efficiency of the Saudi Arabia Commercial banks during the period 1998- 2007 indicated that the presence of phone banking, number of ATMs and number of branches had a positive impact of profit efficiency of Saudi banks. However, the same study conducted by Nader (2011) revealed that the introduction of point of sale terminals, personal computer banking and availability of mobile banking did not have any impact or improve profit efficiency and quality service delivery of commercial banks of Saudi Arabia. Kariuki (2005) found that there is a positive impact of introducing information technology in the banking industries when using bank return on investments and profits as tools of measurement of performance. He concluded that introducing electronic banking system has brought high profit growth and are using more advanced technology. He finally stated that electronic banking leads to profits in the long run though in short term the technology cost a lot due to initial expenditures (Kariuki, 2005).

Agboola (2006) studied Information and Communication Technology (ICT) in banking operations in Nigeria and he used

the nature and degree of introduction of technologies; and the impact of the adoption of those technologies on the performance of banks, and this study found that technology was the main tool of competition in the banking system. This study found that there is an increase of ATMs, EFT, smart cards, electronic home and office banking and telephone banking in the study area. And he stated that the adoption of electronic banking improves the banks' image and leads to a wider, faster and more efficient market than those which do not use the technology. He said that banks especially those which are commercial banks should use electronic banking system in order to facilitate speed, convenience, and accurate services, which done otherwise would lose customers.

A study conducted by Osage (2012) on the adoption of electronic banking by Kenyan Commercial banks found that its adoption has been useful to both banks and customer because it made availability of services 24/7, made fast transactions and customer convenience. Besides, in his study on the impact of electronic banking on service delivery to customers of Ghana commercial bank limited, Wisdom (2012) found that the negative perception of customers about bank has significantly changed many Ghana because over 76% of the respondents agreed strongly to this assertion while the rest do not. Also the study revealed that electronic banking services have impacted positively on the service delivered of Ghana commercial bank and affected negatively the customer perception on the use of these products. A research conducted by Ishengoma (2011) on the analysis of mobile banking for financial inclusions in Tanzania found out that most respondents using the service could find the technology saving them from bank charges (affordable charges with M-banking), but time serving and the perceived ease use of M-banking was not the same to every respondents in the study area because there were some of the respondents who were not able to read and write seemed to find the technology difficult while those knowing reading and writing seems to find the technology simple and understandable. The study finally concluded that there is a close relationship between the problems of not having access to an m-money agent where network agents are on the ground of the representative especially when needed by the customer.

2.2 Conceptual Framework

In Tanzania the introduction of electronic banking system like many other developing countries, is not old just like that in developed countries though it is becoming spread everywhere in the country and have proved successful. As discovered by Robert (2011), there are several innovative IT based service including ATM, smart cards, mobile banking, Internet banking, credit cards, phone banking and anywhere anytime banking are found in the country and have provided to customers a number of services to customers and improve the service quality of the commercial banks including CRDB bank. However, increased bank performance while increasing the use of electronic banking, is debatable thus desires the set of the study to assess in order to bridge this gap. The researcher is motivated by this controversy and employed the simple descriptive statistical Model, to investigate the relationship between Rate of Assets turnover and Electronic banking in commercial banks in Tanzania. Figure 2.2 appended shows the conceptual framework of the study. From the above conceptual framework the independent variable includes the electronic banking measured in terms of ATM, mobile money, and electronic funds while dependent variable includes the financial performance as measured by Return on Investments.

3.0 Methodology

The study has set model specification to examine the relationship between Electronic banking and the Return on Investments, on commercial banks in Tanzania. On the basis of the empirical model specification below;

Research study model

$$\mathbf{ROI = \beta_0 + \beta_1 EB + \beta_2 EB + \beta_3 EB + \varepsilon_i} \quad \text{.....(1)}$$

Where,

ROI = Return on Investment, β0 = Constant, β_1EB = e-Banking (Agency banking), $\beta_2 EB = e - banking(ATM)$, β_3EB =e- banking (Internet banking) and $\boldsymbol{\varepsilon_i}$ = Error

Thus, Return on Investment is used to measure performance of commercial banks while EB is an independent variable considered for the study. $\beta_{1,}$ Indicates how a unit changes in independent variable affects the dependent variable and $\boldsymbol{\varepsilon_i}$ is the error term to capture other variables which were not included in the model.

3.1 Type of data and sources

The analysis in this study is based on primary and secondary data which were collected from CRDB bank branches in Same district. The area of the study was chosen because it has respondents who use electronic banking, at the same time the area has significant sources of data to be collected sufficient to cover the study such as internet documentary information that could be accessed easily. The study is a descriptive one that according to Kothari (2004), includes surveys and fact-finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists at present. The main characteristic of this method was that the researcher had no control over the variables; he could only report what has happened. The study tried to describe the implication of e-banking services on the financial performance of commercial banks using CRDB Bank as a case study. The study employed research design which consists of a combination of quantitative and qualitative analysis.

A sample size of about one hundred and twenty (120) respondents was considered by the study, which was consistent to Kish (1965) and Sudman (1976) content that the sample size of between 100 and 200 respondents is suitable for statistical analysis. Simple random sampling technique which is also known as probability sampling was used to randomly select 100 customers of CRDB bank to represent the whole population and purposive sampling technique that is known as non probability sampling in selecting respondents was used to collect data from 20 key informants particularly the managers and the heads of different units of CRDB bank. The study seemed to be representing employees and customers come from all walls of organization of life and diverse areas.

Reliability was tested by use of twenty four questionnaires which were piloted with randomly selected bank employees who were not included in the final study sample to avoid response bias. Their views were evaluated and incorporated to enhance content and construct validity of the questionnaire. The rule of the thumb suggests that 5% to 10% of the target sample should constitute the

pilot test (Cooper and Schilder, 2011; Creswell, 2003; Gall and Borg, 2007). The pilot test sample was within the recommendation. The twenty four questionnaires were coded and input into Statistical Package for Social Sciences [SPSS] version 20 for running the Cronbach reliability test. The reliability of the questionnaire was tested using the Cronbach's alpha correlation coefficient with the aid of Statistical Package for Social Sciences (SPSS) software. The results of the reliability test produced an overall Cronbach Alpha correlation coefficient of 0.887. The closer Cronbach's alpha coefficient is to 1, the higher the internal consistency reliability (Sekaran, 2003). A coefficient of 0.7 is recommended for a newly developed questionnaire and therefore 0.887 was adequate for this study.

4.0 FINDINGS AND ANALYSIS

The impact of electronic banking on the Rate of Return on Assets

The study analyzed the effect of electronic banking have on return on investments of CRDB bank in Same district. The researcher verified from respondents by the use of likert scale statements in a set of questionnaire, where different variables of e-banking were tested.

4.1 The extent to which electronic banking services have used CRDB bank in Same district

The study intended to determine the extent to which electronic banking services have been used. Questions were structured with response mode of five Likert scale points ranging from 1= not used to 5= used regularly. The questions for this first specific objective were answered by selected banks' customers only. The variables used to present electronic banking were ATMs, agency banking, mobile banking and internet banking. Also, the use of bank counters was included in the questions as the contextual variable for comparison reason. Therefore, the study compared the use of electronic banking with the use of bank over the counters.

The analysis of data for this first specific objective was conducted using descriptive analysis (table 4.1) and t-test (table 4.2). Descriptive analysis was performed in order to explore the extent to which electronic banking were used by the banks' customers while t-test was used to identify channels which were significantly used by the banks' customers. In interpreting the results of descriptive statistics the mean score of 1.00-1.80 indicates that the electronic banking was "not used", the mean score of 1.81-2.60 indicates that the electronic banking was "used very rarely", the mean score of 2.61-3.40 indicates that the e-banking was "used rarely", the mean score of 3.41-4.20 indicate the e-banking was "used sometimes" and the mean core of 4.21-5.00 indicated that the e-banking was "used regularly".

The results indicated that ATMs and mobile banking are the electronic banking item which have been highly used compare to the traditional method of using bank tellers or over the counters. It was noted that ATM (mean 4.57) was used regularly by Banks' customers in accessing financial services from the bank followed by mobile banking (mean 4.06) which was used sometimes but more frequently compare with the use of bank tellers. Internet banking (mean 2.71) and agency banking (mean 2.66) have been used rarely compare to the use of bank tellers/counter. One sample t-test was conducted in order to investigate whether the use of electronic banking items (ATM, mobile banking, agency banking and internet banking) was significant or not. T-test which is non-parametric analysis was used because there was no clear dependent variable (dependent variable was latent) therefore the mean of each variable was compared against hypothesized mean (weighted mean) which was calculated and found to be 3.58. Table 4.2 appended depicts the results of t-test.

The results show that all four electronic banking items were significantly used by the banks' customers. Statistically, it was indicated that ATMs ($p<0.0001$, CI = 0.78-1.2), agency banking ($p < 0.0001$, CI = -1.32 - -0.52), mobile banking ($p = 0.004$, CI = 0.16 -0.8), internet banking ($p< 0.0001$, CI= -1.33 - -0.41). Additionally, it was noted that the use of bank tellers/counters was not significant ($p = 0.059$, CI -0.01 – 0.69) but the researcher was interested to the results pertain to the four mentioned electronic banking items rather than the result concern the use of bank tellers. Now it was concluded that electronic banking were significantly used by banks' customers whereby ATMs and mobile banking were highly used while banking agency was least used.

Besides the analysis made customers had the following comments for two items of electronic banking, that is ATMs and Mobile banking. It was argued that originally ATMs were only used to withdraw cash, but nowadays the ATMs have evolved to support a wide variety of banking services. These include deposits, withdraw and account details. Respondents argued that ATMs are frequently used by banks' customers to withdraw money from their accounts and obtain account details. The study argued that due to scatted ATMs in many places, within the city, made it easy for the banks' customers to use them in accessing some of the financial services provided via ATMs, especially cash withdrawal. They claimed that the use of ATMs was queuing effective compared to the time taken over the counter, as customers do not take long to withdraw the cash from ATM. One of the bank customer known as , Mrs. Magwero, commented as follows,''Baba we used to stand for a long time awaiting for the services, we consider these improvements as miracles, that we can get services through ATMs in short time"

Mobile banking was another electronic banking item that was highly used by banks' customers in Same district, it was argued that banks' customers could easily obtain information about their bank accounts through text messages and make payments and other transactions within few minutes using cell phones. The electronic banking item was mentioned to be time saving and more privacy method of performing bank transactions. Mr. Kangalu, one of respondents had the following comments, that '' Mobile banking saves time that could have been consumed at the bank counters waiting for the same services, Mobile saving is more privacy since one use his/her own mobile phone and perform banking activities at any place convenience to him/her."

4.2 The effect of electronic banking services on financial performance measured by Return on Investments

4.2.1 ATMs and Return on Investments

The study revealed that seventy percent (70%) agreed and ten percent (10%) strongly agreed, this essentially mean eighty percent (80%) of the respondents agreed that ATMs influenced operational costs of commercial banks hence had an implication on return on investment. Besides the study revealed that five percent (5%) were neutral and fifteen percent (15%) of the

respondents disagreed, this in total is equivalent to twenty percent (20%) of the respondents disagreed that ATMs had an influence on operational costs of commercial banks and hence return on Investments. The study investigated on whether ATMs could recoup the initial investments within three years or not and the results were seventy five percent (75%) agreed, five percent (5%) strongly agreed this is as good as saying eighty percent (80%) of the respondents agreed that ATMs can recoup the cost of investment initially put in the project and twenty percent (20%) were indifferent or rather disagreed that the ATMs can recoup the initial cost invested. On the other hand a five point likert scale revealed a mean score for the effect of ATMs on return on Investment to be 3.47. The mean score indicates that there were more respondents who agreed to the statements that ATMs influenced return on investments of commercial banks positively. The standard deviation of the responses is 0.666 indicating a spread of within one standard deviation from the mean. Table 4.3 below is of reference.

The findings indicate that ATMs have the ability to generate income for banks and hence the aggressive ATM network expansion by CRDB bank may lead to reasonable return on investments. Moreover, ATM machines are now located at non-traditional locations like at the petrol stations, supermarkets, universities and colleges and in the rural areas, indicating the importance that banks attach to ATM machines in reaching and maintaining customers and strategically earning fees for their use. The findings of the study are in consistent to the study conducted by Akram and Allam (2010) in Jordan and found that use of information technology which is embodied in ATMs improved the matrix of financial and operational performance. The study concluded that information technology had an impact on return on Investments. The results of the study are also consistent with the study done by Nadia, Anthony and Scholnick (2003) in United States of America, which found the use of ICT platforms such like ATMs facilitate responses on internal cost cutting leading to better return on investments.

4.2.2 Mobile Banking and Return on Investments

The study revealed that mobile banking has a capacity of reducing operational costs, this was justified by respondents to the tune of eighty six percent (86%) of the respondents agreed that mobile banking has reduce operational costs while ten percent (10%) were neutral and 2% disagreed which was equivalent to twelve percent (12%) of the respondents disagree that mobile banking reduces operational costs. On the other side the study wanted to know if the investments made to facilitate electronic banking can be recouped within three years, and about eighty percent (80%) of the respondents agreed and it was revealed that mobile banking had a capability of having a positive impact on bank margins this was justified by respondents who agreed by sixty five percent (65%).The mean score of the responses was 3.79 implying that mobile banking influences return on investments positively. The standard deviation was 0.477 which meant the existence of the responses clustered within one standard deviation from the mean. Table 4.4 appended refers.

The findings were in consistent to the study done in Africa and Bangladesh respectively by (Aker and Mbiti (2010) and Rayhan, Sohel, Islam and Mahjabin (2012) which found out that mobile phones offered an opportunity for banks to improve their incomes and hence better return on investments by having a large number of virtual mobile accounts especially for the unbanked individuals. CRDB bank in Same district has embraced the use of mobile banking which in a short has made transformation of their business operations transformed which leads to more income. There is increased collaboration between bank and mobile phone, telephone service providers which are mainly driven by income sharing and customer retention. The competition for income generating initiatives through the mobile phones has made CRDB bank to participate in competing for space in the SIM card. This means that the more a bank makes its activities visible on the SIM card the more income it is likely to make towards recovering its investments in mobile banking.

4.2.3 Agency Banking and Return on Investments

The study collected information relating to the influence of Agency banking on return on investments and the results are summarized in Table 4.5 below. Thirty six percent (36%) of the respondents agreed, forty two percent (42%) were neutral and twenty three percent (23%) disagreed, this essentially mean sixty five percent (65%) of the respondents disagree with the statement that Agency banking could influence the reduction of operational costs. The study further investigated on whether the income earned through Agency banking contributed positively to bank margins, and the results were as follows, sixty one percent (61%) agreed, of the respondents while thirty five percent (35%) were neutral and five percent (5%) disagreed this means forty percent (40%) of the respondents disagreed with the statement that income earned through Agency banking contributed positively to bank margins. The responses had a mean score of 3.52 indicating the existence of more agreement with the statements on the positive influence of Agency banking on banks' return on assets. The standard deviation for the results was 0.737. The findings of the study was supported by the study conducted in Italy, Spain and USA respectively by (Hasan, Schimiedel and Song (2010), Hernado and Nieto (2006) and DeYoung (2005)), which concluded that investment in electronic technology seemed to influence positively the performance of banks as measured by return on investments and return on equity. The conclusions also suggested that electronic technology like Agency banking was used more as a complement than as a substitute for physical branches, suggesting the dominance of a multi channel banking model. The findings of this study and corroborations from previous empirical studies suggest that Agency banking technology has been helpful to both the banks and their customers. Agency banking has been popular among Tanzanian banks due to the ease of transferring funds from one bank to another and from one customer to another.

4.2.4 Regression Analysis – Return on Investments and electronic banking

The regression Analysis shows the effectiveness of the model in measuring the influence of electronic banking on return on Investments of CRDB bank as per Table 4.6. The overall correlation coefficient (R) between return on Investments and electronic banking is a strong positive correlation of 0.972. The coefficient of determination R Square indicates that the e-banking in the regression model can explain 94.4% of the variations in return on investments of CRDB bank in Same district holding other factors constant.

Table 4.6: Model Fitness – Return on Investments and Electronic Banking

Indicator	Coefficient
R	0.972
R Square	0.944
Std. Error of the Estimate	0.77288

Source: Field data 2022

The researcher did variance analysis of the innovations, which are included to explain the return on investments of CRDB bank. The overall significance of the model is 0.000 which is at level of significance of 0.05 and conclude that e-banking have a positive influence of return on investments of CRDB bank. This shows that the electronic banking included in the model have an overall high significance in explaining the return on investments of CRDB bank. The individual significance levels of the bank innovations are presented on Table 4.7

Table 4.7: ANOVA – Return on Investments and e-banking

Indicator	Sum of Squares	df	Mean Square	F	Sig.
Regression	880.061	5	176.012	294.66	0.000
Residual	52.036	87	0.597		
Total	932.097	92			

Source: Field data 2022

4.2.5 Regression Coefficients – Return on Investments and electronic banking

The study has run the regression coefficients of the individual independent variables which have been portrayed in Table 4.8 below. The study concluded that investment in electronic technology had a positive influence on the performance of banks measured by return on investments. The conclusions suggested that electronic technology like the ATM, Mobile banking and EFT were used more as a complement than as a substitute for physical branches, suggesting the dominance of a multi channel banking model. Mobile banking requires heavy initial investment outlay and hence, initially they have lower income margins and therefore lesser contribution to return on investments.

Table 4.8: Regression Coefficients – Return on Investments and electronic banking

Indicator	Beta	Std. Error	t	Sig.
ATM	-0.104	0.333	-0.312	0.755
Mobile Banking	0.16	0.17	0.945	0.347
Agency Banking	-0.245	0.17	-1.44	0.154

Source: Field data 2022

The effects of electronic banking on Return on Investments of CRDB bank in Same district

The study revealed that e-banking had positive influence on return on investments of commercial banks in Tanzania. This is supported by the coefficient of determination which shows that banks innovations explain the variations in return on investments of CRDB Bank. The test for significance also showed that the influence was statistically significant. This means that e-banking are good at skimming out incomes and having a good return earlier from the initial outlay. E-banking innovations are also able to be modified and upgraded to improve their capabilities and hence improving return on investments for the CRDB bank.

4.3 The challenges of electronic banking on provision of financial services

The study wanted to identify challenges that affecting usefulness of electronic banking. Some variables were prepared with the aim of capturing respondents suggestions concern factors challenge usefulness of electronic banking. Correlation analysis was used to analyze the findings obtained so as to identify common factors that hinder effectiveness and efficiency of electronic banking. The results of such correlation analysis are given in the table 4.9 appended below: The study revealed lack of knowledge and awareness to the customers of the banks is among the challenging factors which hinder efficiency and effectiveness of electronic banking services. It was also revealed that weak or failure of internet and network was the challenge ($p<0.0001$). Furthermore language barrier in using internet banking was the challenge and security problem hinder to some degrees efficiency of e-banking services ($p= 0.0001$). It was concluded that lack of knowledge and awareness of the existence of electronic banking services to customers, weak or failure of internet and network due to low investment in them, some security problem especially on mobile banking, language barrier in using internet banking since some details were written in English were the common factors affecting usefulness of electronic banking services in Same district.

5.0 Conclusion

Based on the findings of the study, it can be concluded that electronic banking influence financial performance of CRDB positively. The adoption of e- banking in CRDB Bank at Same district has got high potential of improving financial performance and hence better returns to the shareholders. The versatility of electronic banking has made their adoption rate to be high among both the bank and their customers. It could have been challenging if the adoption was only with either the banks or the customers. CRDB Bank has continued to perform well even when other sectors of the economy show lagged performance. This can be explained by the use of electronic banking which has enabled bank to start making income away from traditional sources like interest, trade and asset financing. The bank has been able to make more commission income from transactions done through e-channels like; ATM, mobile phones and electronic fund transfer and so on.

The study recommends that the government should pursue a strategy to provide incentives for technology transfer from more developed economies in order to promote the adoption of world first class innovations this will enable customers to get super services and banks will definitely have super profits. Besides the government of Tanzania and the Bank of Tanzania (BOT), have to issue guidelines or policies concerned adoption of e-banking in Tanzania banking industry. Tanzania has adopted e-banking without guidelines or policies, at the same time we do not have proper laws on adoption of e-banking. The Banks and Financial

Act of 2006 do not cover the e-banking practice. The law still insists on documentary evidence and signature recognition, while under e- banking PIN is used for recognition. Therefore, our Tanzania's laws do not help to decide cases under cyber crimes which are on increasing rate in the banking industry today. This being the case customers are hesitant to use e-banking because they do not trust it since there is no security and also risky on operation. The guidelines, policies, and laws will help customers to know their liability once financial loss occur; currently banks tend to shift burden to customers.

Another issue is that banks are dealers to the Central Bank (BOT) while mobile phone operators are dealers to Tanzania Communication Regulatory Authority (TCRA). It is their duty to enable (agent) network growth as a precursor for mobile banking enhancing and scaling- up mobile banking or mobile phone financial services up-scale, encouraging implementation of second generation financial services for deepening financial access, encouraging interoperability of mobile banking and consumer protection in mobile services. Moreover the regulators have a critical role in providing appropriate regulatory and supervisory frameworks that ensure safety and credibility of mobile banking that ultimately contribute to scaling-up of financial services. Consumer protection is a fundamental in the mobile banking/financial services by maintaining consumer trust through ascertaining credibility and safety of mobile payment services. Mobile phone operators should make sure that the mobile users benefit from access to financial services and it will accelerate the introduction of electronic services to the rural areas. Furthermore banks should create awareness to customers on e-banking and allied services offered through mobile banking in order to increase customers especially in rural areas who do not have banking services

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ANNEXTURES

Table 4.1: Extent to which electronic banking services have been used

Variables	Scale					N	Mean	STD
	1	2	3	4	5			
ATMs	0	1	5	9	36	51	4.57	.755
Mobile banking	2	3	8	13	23	49	4.06	1.126
Counter/tellers	2	7	7	11	23	50	3.92	1.243
Internet banking	18	6	4	12	8	48	2.71	1.584
Agency banking	12	9	8	12	3	44	2.66	1.328
WEIGHTED MEAN							3.58	

Source: Field Data (2022)

Table 4.2: Significance of using electronic banking items

Variables	Test Value = 3.58					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
ATMs	9.350	50	.000	.989	.78	1.20
Agency banking	-4.598	43	.000	-.921	-1.32	-.52
Mobile banking	2.993	48	.004	.481	.16	.80
Internet banking	-3.813	47	.000	-.872	-1.33	-.41

Counter/tellers	1.935	49	.059	.340	-.01	.69

Source: Field data (2022)

Table 4.3: The effect of ATMs on return on Investments

Variable	Scale					Mean	StD
	1	2	3	4	5		
ATMs influence reduction of operational costs and hence better return on assets for the bank	0	15	5	70	10	3.75	0.493
ATMs investments have payback period of less than 3 years and hence good return on assets	0	1	20	75	5	3.85	0.493
Incomes from ATMs have had positive impact on bank income margins	7	37	23	30	2	2.82	1.011
Average						**3.47**	**0.666**

Source: ***Field data, 2022***

Table 4.4: The effect of Mobile Banking on Return on Investments

Variables	Scale					Mean	StD
	1	2	3	4	5		
Mobile banking influence reduction of operational costs and hence better return on assets for the bank	0	2	10	77	11	3.98	0.448
Mobile banking investments have payback period of less than 3 years and hence good return on assets	3	2	15	77	3	3.76	0.448
Incomes from mobile banking have had positive impact on bank income margins	0	5	30	61	4	3.63	0.536
Average						**3.79**	**0.477**

Source: ***Field data, 2022***

Table 4.5 Agency banking **and Return on Investments**

Variables	Scale	Mean	StD

	1	2	3	4	5		
Agency banking influence reduction of operational costs and hence better return on assets for the bank	2	21	42	35	1	3.13	0.802
Agency banking investments have payback period of less than 3 years and hence good return on assets	1	2	25	62	10	3.79	0.685
Incomes from Agency banking have had positive impact on bank income margins	0	5	35	51	10	3.66	0.725
Average						**3.52**	**0.737**

Source: ***Field data, 2022***

Figure 2.2: Conceptual Framework

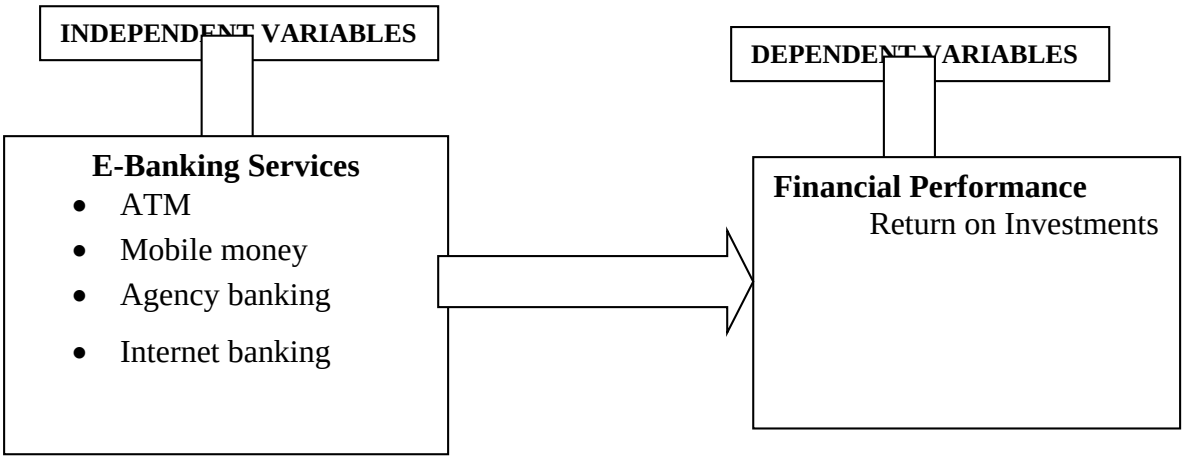

Table 4.9: Factors affecting usefulness of electronic banking services

		Lack of knowledge and awareness to the banks' customers	Weak or failure of internet and network	Language barrier in using internet banking	Some security problem
Lack of knowledge and awareness to the banks' customers	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	100			
Weak or failure of internet and network	Pearson Correlation	.824**	1		
	Sig. (2-tailed)	.000			
	N	100	100		
Language barrier in using internet banking	Pearson Correlation	.688**	.693**	1	
	Sig. (2-tailed)	.000	.000		
	N	100	100	100	
Some security problem	Pearson Correlation	.761**	.777**	.745**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	100	100	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data (2021)