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Exploring Customer Satisfaction through Electronic Banking Adoption in Rwandan Commercial Banks: A Case Study of Banque Populaire du Rwanda

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ABSTRACT

This study examines the relationship between electronic banking and customer satisfaction at BPR branches in Nyamirambo and Muhima. The research aims to identify the influencers influencing electronic banking adoption, evaluate customer satisfaction levels, and establish the correlation between usage and customer contentment. The study involved 89 respondents from 850 users, using Slovin's method to ensure a representative sample. Demographic insights revealed a predominance of male customers aged between 26-30 years, with bachelor's level education. Most respondents had under a year's experience with electronic banking, highlighting its accessibility and ease for transactions. The study found that electronic banking fulfilled the majority of banking needs, leading to increased satisfaction levels among bank clients. However, the research emphasizes the need for increased awareness about mobile banking products due to lower adoption rates. Recommendations include disseminating information about electronic banking services, elucidating their functionality, and highlighting their benefits to enhance adoption rates and maximize customer satisfaction.

Keywords: Electronic Banking Adoption, Customer Satisfaction, Rwandan Commercial Banks, Banque Populaire du Rwanda, Information Technology in Banking

INTRODUCTION

Technology is making a tremendous impact upon service companies in general and the financial services sector is no exception. The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamentals importance and concerns to all banks and indeed a prerequisite for local and global competitiveness in banking industry [1]. As a result of this technological improvement business environment in financial sector is extremely dynamic and experience rapid changes and demands banks to serve their customers electronically. The evolution of e-banking started from the use of Automatic Teller Machine (ATM) and Finland is the first country in the world to have taken a lead in e-banking [2]. According to [3], Electronic banking is the automated delivery of new and traditional banking products and services directly to the customer through the electronic communication like computers, ATM‟s and internet websites. It also means the provision of retail and small value banking products and services through electronic channels. [4], define Internet banking as an internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments. With the exception of cash withdrawals, Internet banking gives customers access to almost any type of banking transactions at the click of a mouse. However, Electronic banking is a 24-hour access to cash through an automated teller machine (ATM) with Personal Identification Number (PIN) for the purpose [5] or direct deposit of paychecks into checking or saving accounts. However, internet banking includes the systems that enable financial institutions customers, individual or businesses access accounts, transact business or obtain information on financial products and service on public or private network including internet while it

is further defines internet banking as the act of conducting financial intermediation through the internet. Many banks worldwide including developing countries like Uganda use computers and computerized equipment like ATM's which is the perfect example for such equipment whose purpose is to provide banking services to customers at their convenience and such banking service include cash withdraws, balance enquiries, mini bank statement and many others [6]. The use of the Internet as a new alternative channel for the distribution of financial services has become a competitive necessity instead of just a way to achieve competitive advantage with the advent of globalization and fierce competition [7]. According to [8] there is little doubt that the proliferation of, and advancements in, Internet-based technologies have resulted in fundamental changes in how companies interact with their customers. However, [9] explains that since the rise of the internet the way business interact with people and other businesses has changed and banks have benefited with the advantages associated with the electronic banking services. The benefits banks derive from electronic banking products and services delivery are improved efficiency and effectiveness of their operations so that more transactions can be processed faster and most conveniently, which will undoubtedly impact significantly on the overall performance of the banks, [10] Customer satisfaction refers to the extent to which customers are happy with the products and/or services provided by a business. [11] Describes it as an electronic connection between the bank and the customer in order to prepare, manage and control financial transactions. Electronic banking according to [12] is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick and mortar institution. In Rwanda, the central bank has taken many initiatives towards introducing and upgrading safe and efficient modes of payment systems in the country to meet the requirements of the public 74 large and the international standards in particular. A payment system is usually known as a set of instructions, instruments and procedures that are involved in making a payment from payment initiation to finality. Technological innovations contribute to the distribution channels of banks and hence improve their positions to better finance businesses [13]. Many more sophisticated electronic banking products were thereafter, introduced to improve service delivery and customer satisfaction. [14] reports that Automated Teller Machines (ATM), Cards, Telephone Banking, Personal Computer Banking and Internet Banking are now available in the banking system.Thus, Rwandan banks today are seriously into new electronic delivery channels forbanking products and services with a view to delivering better services and satisfying customers the more. Electronic banking allows customers to access banking services 24 hours a day, 7 days a week. Like ATMs, electronic banking empowers customers to choose when and where they conduct their banking transactions. However, electronic banking innovations at Nyamirambo and Muhima branches seem not to have achieved its aims. Long queues are still seen in the banking hall. Those long queues are as the results of the breakdown of the computers used by bank tellers. This discourages customers, especially when the weekend is nearby.

Objectives of the Study

The general objective of the study was to examine and to assess the impact of electronic banking adoption and customer's satisfaction at Banque Populaire du Rwanda.

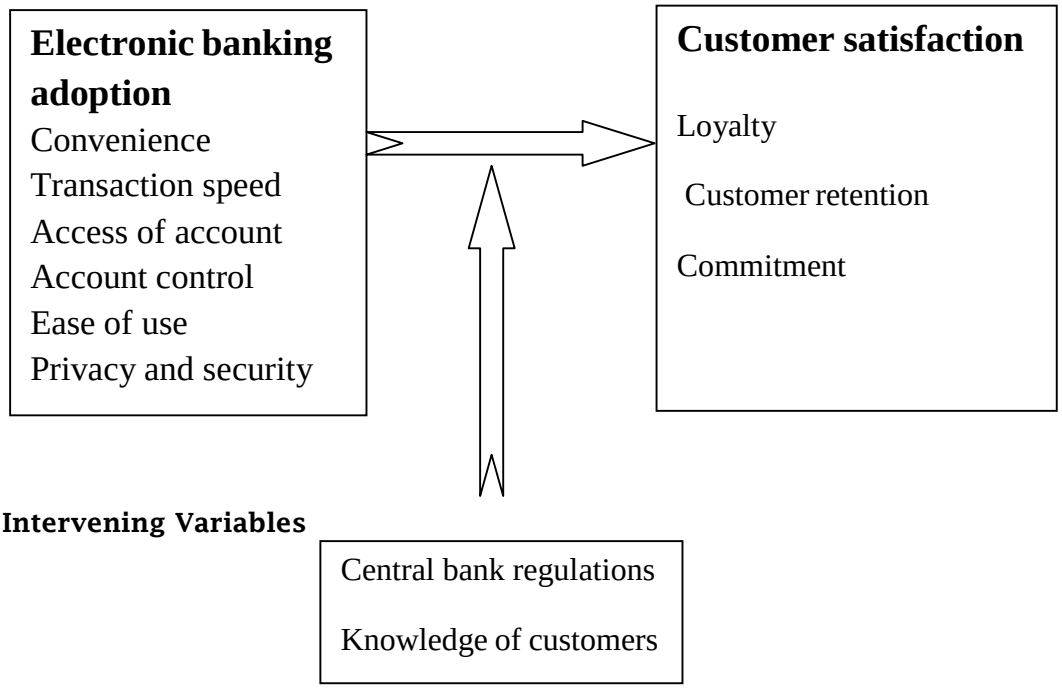
Specific Objectives

i. To determine factors that influence internet banking adoption.
ii. To assess the level of customer satisfaction at BPR Muhima and Nyamirambobranches.
iii. To examine the relationship between electronic banking adoption and customer satisfaction.

Conceptual Framework

This study has two variables, customer satisfaction is the dependent variable, while account access, privacy and security and ease of use are the independent variables.

Figure 1: Conceptual framework



Source: Researcher (2014)

Electronic banking is independent variable which has been examined through Four Indicators; perceived risk, security perception, ease to access, convenience and information on online banking that help customer to access to their account easily at all time and place. Customer satisfaction is dependent variable which has been examined through the following indicators loyalty, customer retention and commitment.

METHODOLOGY

Research Design

[15], defines research design as "the outline, plan or strategy used to investigate the research problem". The researcher used both descriptive and analytical designs. Both designs were used in order to have issues related to the study described and analyzed. Descriptive research describes data and characteristics about the population or phenomenon being studied. Theanalytical design analyses issues related to the study area. The researcher used both designs in order to ensure that sufficient data for the research is acquired. The research designs were based on both qualitative and quantitative methods.

Target Population

A population according to [16] refers to as the totality of persons, objects within which the study is concerned. The term population simply means possible people from whom information can be obtained. The population of this study was e-banking customers of BPR in two branches (Muhima and Nyamirambo) located in Nyarugenge District. The two branches have 850 users of electronic machines.

Sample size

[16], defines sample size as the number of observations used for calculating estimates of a given population. The sample size has been determined from the population of 850 using Soovin's formula to select the minimum sample size.

$$Where = \frac{N}{1 + N(e^2)}$$

n= is the minimum sample size
N= is the total of users of electronic banking at Nyamirambo and Muhima branches
e= is the margin of errors estimated at 10

percent.

$$n = \frac{850}{1 + 850(0.1^2)}$$

= 89

n=89 which is the minimum sample size which represented the total number of users of electronic banking at BPR at Nyamirambo and Muhima branches.

Table 1: Sample Size Distribution

Branches	Customers	ATM	Mobile banking
Muhima	47	40	7
Nyamirambo	42	36	6
Total	89	76	13

Sampling Technique

A sampling technique refers to the identification of the specific process by which the entities of the sample have been selected. Simple Random sampling was used to select the customer's users of electronic banking products. The researcher used this method since a simple random sample is a subset of individuals (a sample) chosen from a larger set (a population). Each individual is chosen randomly and entirely by chance, such that each individual has the same probability of being chosen at any stage during the sampling process. The simple random sampling helped the researcher choose the cases that had the required information with respect to the objectives of the study. Therefore, a sample of 89 respondents were selected from the whole population.

Data Collection Methods

Data Collection Sources

This includes the methods that the researcher used to collect both primary and secondary data from various sources. Primary data were those collected at the first hand, where a researcher went on the field and collect raw data from the clients and employees of BPR Nyamirambo and Muhima branches. However, secondary data have been collected through the review of relevant literature from text books, journals, reports and internet.

Data Collection Instruments

[17] Defines a questionnaire as a set of questions designed to generate the data necessary for accomplishing the objectives of the research project, or it's a set of questions which have to be answered by the respondents in writing. For the case of this research, the researcher designed questionnaires which respond to research questions and distributed them to the respondents.

Data Reliability

The reliability looked at the dependability or repeatability of the information. Therefore, it is the degree to which an instrument measured the same way each time as it used under the same conditions with the same subjects. Reliability has been further enhanced by using probability sampling for quantitative data collection whereby minimum sample size which estimated with statistically accepted confidence of 90% as Slovin's formula.

Data Validity

A draft questionnaire has been used to establish validity. Validity is the amount of systematic or built-in error in measurement [18]. Validity has been established using a field test that determine whether the questionnaire was valid, in other words, is the questionnaire measuring what it intends to measure, does it represent the content, is

it appropriate for the sample or population and lastly is the questionnaire comprehensive enough to collect all the information needed to address the purpose and goals of the study.

Data Processing and Analysis

This part of the study shows the findings of the study. Different tables were used for better interpretations of the results with an understanding way. For data analysis the researcher was used Pearson's correlation. This statistical method has been used to test the relationship between the variables of this study.

Ethical Consideration

This research will follow the ethical research procedures provided in the Ethics Guidelines of the Research and High Degree Committee. The researcher avoided any kind of bias to provide relevant and reliable information. The information from respondents was confidential.

RESULTS

Table 2: Gender of the respondents

Respondent	Frequency	Percent
Male	51	57.3
Female	38	42.7
Total	89	100

Source: Primary data 2014

As shown in Table 2 about the gender, the dominant number of respondents was male because they represent 57.3 percent of respondents and the minimum number of respondents was female because they represent 42.7 percent of respondents. The result therefore gives an impression that, the distribution of male is higher than female and hence males have contributed much in this study.

Table 3: Educational level of respondents

Respondents	**Frequency**	**Percent**
Diploma	35	39.3
Degree	41	46.1
Masters	13	14.6
Total	89	100.0

Source: Primary data, 2014

Table 3 indicates that the majority of the respondents are bachelor's degree holders who constituted 41 out of 89 respondents and thus constituting a percentage of 46.1%. Also, the findings reveal that, among the 89 respondents, there were 13 with master's degree and 35 with secondary school certificate. This enabled the researcher to have the reliable information.

Table 4: Age of the respondents

Respondent	Frequency	Percent
Below 25	2	2.2
26-30	44	49.4
31-35	25	28.1
35-40	10	11.2
41 and above	8	9.0
Total	89	100.0

Source: Primary data, 2014

Table 4 indicates that for 100 percent respondent users of electronic banking services about the ages of respondents, the dominant number of respondents were 26-30 ages because they represent 49.4 percent of respondents, 31-35 ages represent 28.1 percent of the respondents, 35-40 ages represent 11.2 percent of the respondents, 41 and above represent 8 percent of the respondents and the minimum number of respondents represent 2.2 percent.

Table 5: Period spent using electronic Banking

Respondents	Frequency	Percent
Less than 1 year	48	53.9
1-2 years	31	34.8
2 years and above	10	11.2
Total	89	100.0

Source: Primary data 2014

Table 5 shows that the number of respondents that have spent 2 years and above using electronic banking are 11.2% of the total that were questioned, those that have spent 1-2 years are 34.8%, 53.9% of the respondents spent less than 1 year.

Table 6: Which type of electronic banking service delivery do you use?

Which type of electronic banking service delivery do you use?		
Respondents	Frequency	Percent
ATM	76	85.4
Mobile banking	13	14.6
Total	89	100.0

Source: Primary data, 2014

Table 6 indicates that for 100 percent of the respondents, the dominants number of respondents using ATM with 85.4 percent and the minimum number of respondents usingMobile Banking with 14.6 percent.

To determine factors that influence internet banking adoption

Table 7: I can access anytime and anywhere my account

	Frequency	Percent
Strongly agree	69	77.5
Agree	20	22.5
Total	89	100.0

Source: Primary data, 2014

Table 7 shows that 77.5 percent strongly agreed that electronic banking services at BPR are easily accessible, 22.5 percent agreed. This implies that BPR‟s electronic facilities are easily accessible.

Table 8: It is easy to transfer money from one account to another account electronically

Respondent	Frequency	Percent
Strongly agree	81	91.0
Agree	8	9.0
Total	89	100.0

Source: Primary data, 2014

Table 8 indicates that 91.0% out of 89 respondents strongly agreed that it is easy to transfer money from one account to another account electronically in BPR while 9.0% agreed. This implies that BPR can easily transfer money from one account to another electronically since most of the respondents agreed with the statement.

Table 9: I check my transaction details and statement anytime and anywhere

Respondent	Frequency	Percent
Strongly agree	58	65.2
Agree	23	25.8
Not sure	8	9.0
Total	89	100.0

Primary data, 2014

Table 9 shows that 65.2 percent out of 89 respondents strongly agreed that it is easy to check statement and account balance enquiries electronically anywhere and anytime at BPR, 25.8 percent of the respondent agreed and a small number of 9.0 percent of the respondent were not sure. This implies that at BPR the customer can check transaction details and statement electronically since most of the respondents agreed with the statement

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Table 10: It is easy to withdraw money from any ATM branch

	Frequency	Percent
Strongly agree	71	79.8
Agree	18	20.2
Total	89	100.0

Source: Primary data, 2014

Table 10 Findings show that it is easy to withdraw money from any ATM branch. This is true because 79.8 % of the customers questioned strongly agreed and 20.2 % of the respondents agreed.

Table 11: It is easy to buy electricity and airtimes electronically

	Frequency	Percent
Strongly agree	13	14.6
Not sure	76	85.4
Total	89	100.0

Source: Primary data, 2014

Table 11 indicates that for 100 percent respondents' users of electronic banking services at BPR, about how it is easy to buy electricity and airtimes electronically, at the rate of 85.4 percent of respondents, they confirm not sure to buy electricity and airtimes electronically, 14.6 percent strongly agreed that it is easy to buy electricity and airtimes electronically. According to the information provided above it shows that most of the respondents are not sure because they don't use that service. Findings show for those who use mobile banking that it is easy for them to buy electricity airtimes electronically at BPR .

Table 12: Electronic banking services are available all time (24 hours)

Respondent	Frequency	Percent
Strongly agree	60	67.4
Disagree	29	32.6
Total	89	100.0

Source: Primary data, 2014

Table 12 shows that 67.4 percent of the respondents strongly agree and 32.6% agree that electronic banking services are available all time. This implies that BPR¨s electronic banking services are all time available which makes it easy for its customers.

Table 13: Electronic banking is time saving

Respondent	Frequency	Percent
Strongly agree	74	83.1
Agree	15	16.9
Total	89	100.0

Source: Primary data, 2014

From the table 13, 83.1 percent of the respondents strongly agree and 16 percent of respondent agree. The findings imply that using electronic banking services at BPR saves people's time

Table 14: ATM's are located in convenient places

Respondents	Frequency	Percent
strongly agree	55	61.8
agree	21	23.6
not sure	6	6.7
disagree	7	7.9
Total	89	100.0

Source: Primary data 2014

In table 14, findings show that 61.8 percent of the respondents strongly agreed that ATM"s are located in convenient places, 23.6 percent agreed, 6.7 percent of the respondents were not sure and 7.9 percent of the respondent disagreed. The information above indicates that the higher number of respondents who provided information about the location of ATM at BPR said that ATM's are located in convenient places hence making the withdraws easy for the customers

To assess the level of customer satisfaction

Table 15: Before the introduction of electronic banking products, how frequent in a month did you have to visit the bank for transaction?

Respondent	Frequency	Percent
Rarely	51	57.3
Frequently	30	33.7
Very frequently	8	9.0
Total	89	100.0

Source: Primary data

Table 15 shows that 57.3 percent of respondent rarely visit the bank for transaction 33.7 percent of the respond frequently visit the bank and 9.0 percent of respondent very frequently visit the bank for transaction. According to the findings provided above before the introduction of electronic banking products the most of customers visit the bank for transaction rarely

Table 16: Approximately how much time do you spend in the queue waiting to be served by the teller?

	Frequency	Percent
45 minutes	31	34.8
Over 45 minutes	58	65.2
Total	89	100.0

Source: Primary data, 2014

Table 16 indicates that the dominant number of respondents were answered that you can wait to be served over 45 minutes at the rate of 65.2 percent, 34.8 percent answered that you can wait to be served for 45 minutes. This implies before the introduction of electronic banking services the customers waited for a long time to be served by the tellers because there was a long queue

Table 17: Approximately how much time do you spend in the ATM?

Respondent	Frequency	Percent
5minutes	73	82.0
10 minutes	16	18.0
Total	89	100.0

Source: Primary data, 2014

Table 17 indicates that the dominant number of respondents confirmed that they spend 5minutes in the ATM service at the rate of 82.0 percent,18.0 percent said that they spent 10 minutes at ATM machine. This information shows that the higher number of respondents indicates that ATM machines are very faster than the services provided by bank teller

Table 18: With the introduction of e-banking, how many times in a month do you visit the bank for transaction?

Respondent	Frequency	Percent
two times a month	11	12.4
three times a month and above	78	87.6
Total	89	100.0

Source: Primary data, 2014

Table 18 indicates that the dominant number of respondents said that they visited three times a month and above for transaction at the rate of 87.6 percent and 12.4 percent of respondents visited the bank two times a month with the introduction of electronic banking services. This implies that higher number of respondents agreed to visit bank for transaction at any time because ATM is in provision of 24 hours continuous services without being out of services which lead to the higher level of customer satisfaction.

Table 19: Electronic banking services are secure

Respondents	Frequency	Percent
Strongly agree	28	31.5
Agree	14	15.7
Disagree	19	21.3
Strongly disagree	28	31.5
Total	89	100.0

Source: Primary data, 2014

Findings reveal in table 19 that 31.5 percent of the total number of respondents strongly agreed, 15.7percent agreed, and 21.3 percent were disagreed and 31.5 percent strongly disagreed. This implies that the dominant number of respondents said that electronic banking services are not secure this means that the services are fairly safe and this calls for an improvement in their security.

Table 20: I truly enjoy electronic banking

Respondents	Frequency	Percent
Strongly agree	42	47.2
Agree	21	23.6
Not sure	26	29.2
Total	89	100.0

Source: Primary data, 2014

In table 20, the researcher found out that 47.2 percent of the 89 respondents strongly agreed that they enjoy e-Banking. 23.6 percent respondents agreed and 29.2 percent of the respondents were not sure. According to these findings therefore, it shows that most people enjoy using e-Banking.

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Table 21: I am very satisfied with the service I get each time I use electronic banking

Respondents	Frequency	Percent
Strongly agree	54	60.7
Agree	18	20.2
Disagree	17	19.1
Total	89	100.0

Source: Primary data, 2014

In table 21 findings also revealed that 60.7 percent of the respondents strongly agreed that they are satisfied each time they use e banking, 20.2 percent agreed and 19.1 percent of the respondent disagreed. The findings imply the biggest percentage of people is satisfied with the services they get each time they use e banking.

Table 22: There are a lot of problems associated with electronic banking

	Frequency	Percent
Strongly agree	68	76.4
Agree	21	23.6
Total	89	100.0

Source: Primary data, 2014

In table 22 findings indicate that most respondents strongly agreed that there are a lot of problems associated with electronic banking at the rate of 76.4 percent and 23.6 percent agreed. According to the information above, this implies that there are a lot of problems associated with electronic banking because they take a long time to work on ATM‟s whenthere is a breakdown of machines due to network problem

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Table 23: I have got many benefits by using electronic banking facilities

Respondents	Frequency	Percent
Strongly agree	53	59.6
Agree	10	11.2
Not sure	26	29.2
Total	89	100.0

Source: Primary data, 2014

Table 23 indicates that 100 percent respondents „user of electronic banking about benefits get by using electronic banking facilities, 59.6 percent of respondent as the higher number of respondents strongly agreed that they get many benefits,29.2 percent of the respondents were not sure while 11.2 percent of the respondents as smaller number agreed. This information indicates that the dominant number of respondents accepted that they get benefits by using electronic banking facilities this implies that the respondent's level of satisfaction is high.

Table 24: To examine the relationship between electronic banking adoption and customer satisfaction

The relationship between electronic bankingadoption and customer satisfaction		Electronic banking adoption	Customer satisfaction
Electronic bankingadoption	Pearson Correlation	1	.975**
	Sig. (2-tailed)		.000
	N	89	89
Customer satisfaction	Pearson Correlation	.975**	1
	Sig. (2-tailed)	.000	
	N	89	89

Source: Primary data

According to the Table 24, findings revealed that there is a positive relationship between electronic banking adoption and customer satisfaction as evidenced by thecorrelation coefficient of 0.975 and a significance value of (0.000<0.05).

DISCUSSION

The first objective of this study was to determine factors that influence internet banking adoption at BPR Nyamirambo and Muhima branches. The information indicates that the dominant number of respondents users of electronic banking in BPR Nyamirambo and Muhima branches use ATM (85.4%) and the small number of respondents (14.6%) use Mobile Banking which help them to access their account at anytime and anywhere, the findings showed that out of 89 respondents 77.5% affirmed that it is easy for them to transfer money from one account to another account,65.2% affirmed that they can also check transaction details and statement,79.8% confirmed that it is easy for them towithdraw money from any ATM branch without visiting bank teller. The respondents" users of Mobile Banking strongly agreed with 85.5% that they can buy electricity and airtimes electronically. Out of 89 of respondents 67.4 % affirmed that electronic banking services are 24 hours continuous services without being out of services. All these determined factors that influence customers to adopt electronic banking at BPR Nyamirambo and Muhima branches which lead to their satisfaction. The second objective was to assess the level of customer satisfaction at BPR Nyamirambo and Muhima branches. Before the introduction of electronic banking services 65.2%of customers affirmed that they spent much time in the queue waiting to be served but now they spent few minutes on ATM machines to make transaction. The dominant number of respondents 52.8% strongly disagreed that electronic banking services are secure, out of 89 respondents 85.4% strongly agreed

that ATM machines are located in convenient places. Most of the respondents 80.8% are truly enjoy and satisfied with the service they get each time they use electronic banking services. Findings showed that out of 89 respondent 76.4% confirmed that there are sometimes problems associated with electronic banking like breakdowns of ATM machines and network problems. Findings revealed that electronic banking has satisfied most of people banking needs. The third objective was to examine the relationship between electronic banking adoption and customer satisfaction. The findings revealed that there exists a positive relationship between electronic banking and customer satisfaction. The Pearson's correlation between electronic banking and customer satisfaction stood at 0.975% which is a strong direct relationship the two variables. This shows that customers are satisfied with the electronic banking services provided by BPR Nyamirambo and Muhima branches. It is therefore true to say that electronic banking has a significant effect on customer satisfaction.

CONCLUSION

Basing on data analysis and discussion that mentioned, hence this study can be concluded that the responses of respondents on electronic banking variable is positive; majority respond are agree and strongly agree to the effects of electronic banking methods employed at BPR Nyamirambo and Muhima Branches, the service is quick, easy to use, easy to transfer money from one account to another ,easy to check transaction details and statement , easy to withdraw and easy to buy airtimes and electricity electronically. Findings reveal that Electronic Banking has satisfied most of people banking needs, most bank clients enjoy using e-Banking, this results into a high level of satisfaction. Findings revealed that there is a positive relationship between electronic banking adoption and customer satisfaction. The Pearson's correlation between electronic banking and customer satisfaction stood at 0.975% which is a strong direct relationship between the two variables. It is therefore true to say that electronic banking has a significant effect on customer satisfaction.

RECOMMENDATIONS

Based on the research findings, skills of the researcher and other constraints accounted, researcher can finish this work by giving the following recommendations all aim at further improvement in decision making by use Electronic Banking for the great success of BPR-Nyamirambo and Muhima branches. Based on the findings of this research, it is recommended that: The findings showed that a small number of respondents use Mobile Banking; much need to be done in the area of creating awareness about the availability of electronic banking services, how they operate and benefits. Bank should organize public exhibitions and make products accessible to all customers. The ATMs need to be operational 24/7 and such need to be in good working condition most of the time in order to reduce ATM machines break down and network connections. The study showed that most customers are strongly agreed with the 24 hours continuous service provided by electronic banking services. In this regard the ATM machines should be managed 24 hours a day to reduce breakdown and network problem. Better still the bank can consider having their own repair technicians to take care of faults as and when they happened.

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