IMPACTS OF ATM SERVICE QUALITY DIMENSION ON CUSTOMER SATISFACTION A CASE STUDY OF BANK OF KIGALI

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Abstract - Studies on banking worldwide have proved that a poor service quality leads to customer dissatisfaction whereas a good service quality leads to customer satisfaction, loyalty and in return bring revenue accumulation and wins new customers. The purpose of this study was to evaluate the impacts of ATM service quality dimensions on Customer Satisfaction in Rwanda, a case study being Bank of Kigali, The study reviewed existing literatures on service quality and customer satisfaction. The literature confirms that there is a relationship among the two. This research has been guided by the SERVQUAL model by [1] and the researcher found it important to include some moderating factors thus Price and service Diversity into the study. On the basis of the results of this study, it can be concluded that service quality plays a significant role in customer satisfaction. The results show that Assurance and Empathy are the high indicators of Service quality in Bank of Kigali while security and Tangibility had weak results which is a room for improvement, but nevertheless the results indicate that all the six dimensions combined together give positive perception of the service quality on the customers of the bank of Kigali.

Key words - Service quality, Banking industry, Customer satisfaction and SERVQUAL model.

I. INTRODUCTION

Background of the Study

As technology rapidly spreads all over the world also E-Banking increasingly becomes a common purchasing mode for bank services. With the increasing competition in the Banking sector in Rwanda, banks have put more efforts into sustaining and retaining their customers by delivering quality service and making customer satisfaction their strategy to out compete their competitors. This advancement in technology has played an important role in service delivery standards in the banking sector. As a consequence of this tension, banks have introduced new technology (Electronic banking systems) and changed the way of conducting business by making their services easily accessible by their customers without queuing up on the bank premises. To clarify on this point, Automated Teller Machines came with an advantage that customers can carry out banking transactions even past banking hours and also Customers have two option of getting money through the ATM, by withdrawing hard cash unlike the internet mode of E-banking that encourages cashless transactions and to make payment without using hard cash by doing Money Transfer. However at its sound the online mode of banking sounds much easier than the automated teller machine because all you need is a devise with Internet without doing any movements but culture ,perception and trust has held it back unlike in developed countries like USA, UK, China and others where purchases are mostly done online

Banks nowadays are more focused on customer satisfaction mainly with an aim of retaining their old customers as they attract new ones through providing service quality, determining ways to measure their service standards and also suggesting a continuous improvement in their operation by adopting to the new technology and customer needs that changes every now and then.

According to Davies, Moutinho et al., [7] the factors that influence customers' satisfaction on ATM include factors like Cost/Price charged by the use of ATM and efficient functioning . He said that Technological readiness influence the perceived Automated Teller Machine technology service quality and behavioral intentions which may result into a positive impact on customer satisfaction while lovelock [6] identified the dimensions of ATM service quality to be; security, convenience, adequate number of ATM, User-friendly systems and it's functionality.

For all customers that don't meet the service provider physically, high standard service quality is the means by which the potential benefits of the internet can be realized because it is much easier to compare product technical features and prices online than through traditional channels, service quality becomes a key factor for customers[13]. Yang, Jun and Peterson[14] urges that Research over the past two decades has demonstrated that service quality influences consumption decisions, but only recently these findings have been applied to e-commerce [15]. For example, service quality satisfaction with e-commerce channels, and determinants of web site success [16,17]. As vital Facets E-service quality can be defined as overall customer evaluations and judgments regarding the excellence and quality of service delivery in the virtual marketplace). Electronic banking customers thus expect equal or

higher levels of service quality than traditional channels customers[17]. According to Yavas[18] customer focused Automated Teller Machine systems that fulfil customers' needs and maximize operational performance are essential dimensions for banks to achieve and sustain competitive advantage whereas Dilijonas[19] examined the essential aspects of Self-service machine quality in Baltic states and he identified them as (adequate number of ATMs, Convenient and secure location and user-friendly systems); important dimensions of operation of ATM (maximum speed, minimum errors, high uptime, cash back-up); and value- based aspects were (quality service at reasonable cost, maximum offering to cover maximum needs of customers) .

Problem Statement of the Study

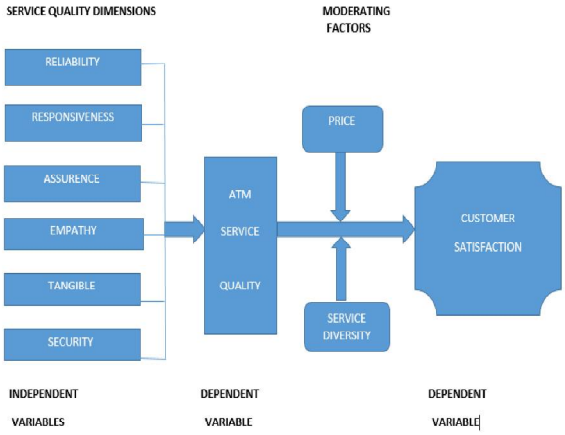
According to the national bank of Rwanda [10] there has been delays of payments of cheques between banks, long queues at the bank, fraud cases and a lot of errors brought by as a result of banks using manual work. As a result most commercial bank have received dissatisfaction complaints from their respective customers. Bank of Kigali has tried to give the best services to their customers, but it is proving to be difficult to sustain the customers due to challenges which come as stiff competition arise from other competitors and may be in form of; communication quality, service diversity, price, and different tastes and preferences of the customers as well as special offers. The researcher finds it important to study on the impact of ATM service quality dimensions on customer satisfaction because not so much has been researched about it yet the researcher believes that by the adoption of this E-banking channel should have solved above mentioned problem. The research therefore seeks to evaluate the impacts of ATM service quality dimensions on customer satisfaction by ensuring the quality of service given through ATM is assessed as well as the relationship between service quality and customer satisfaction is shown clearly.

Following are some of research questions that will be used in the research:

1. What service dimension affects the quality of ATM services?
2. Is there a significant relationship between ATM service quality and customer satisfaction in Bank of Kigali?
3. What are the impacts of price and service diversity on the relationship between ATM service quality and customer satisfaction

Conceptual Model of this Research

Shown below is the researcher's conceptual framework / research model that will be made up of two dependent variables; Service Quality and customer satisfaction. Independent Variables of this study are Six dimensions of service quality (SERVQUAL Model); Reliability, Responsiveness, Assurance, Tangibility, Empathy and security that will be used to measure the service quality of ATM. In between the two dependent variables are the moderating variables price, and service diversity



II. RESEARCH METHODOLOGY

Research Design: This research used a case study design. The study was carried out specifically to evaluate the impact of ATM service Quality dimensions on Customer Satisfaction with a case study of Bank of Kigali. It also examined how moderating factors like Price and service diversity could also affect the relationship between service quality and customer satisfaction.

Questionnaire Design: The questionnaire survey includes mainly 20 observed items under SERVQUAL model, in which items are divided into 6 components of service quality: Tangible, Reliability, Responsiveness, Assurance, and Empathy, security, price and Service Diversity. Questionnaire was guided by a 5 likert scale. This questionnaire was objective and not biased.

Population, Sampling Procedure and Technique: The population to be used in this study are ATM customers of Bank of Kigali. This will be a non-profitability sampling representing a group of sampling techniques that help researchers to select units from the population that they are interested in studying. As per Coyne's [77] definition sampling is the process by which a relatively small number of individual, object or event is selected and analysed in order to find out something about the entire population from which it was selected. In this study customers were selected at random Quantitative research was used, The survey involved automated teller machine customers from Bank of Kigali. Respondents were selected based on their convenience to come to the bank. The research requested for permission from the bank to engage their customers into answering a research questionnaire before they left the bank.

Data Analysis Method - After the fieldwork, the responses to in-depth will be analysed. The research results demanded the use of quantitative process of analysing data that was obtained. The data was then keyed in and analysed using STATA 14.1. The quantitative data generated was subjected to the descriptive statistics feature in STATA 14.1. Charts were employed to bring out salient points. Qualitative analysis used the analytic technique and specifically quick impressionist summary which according to [12] involves summarizing the key findings, explaining and interpreting the findings.

The research will use the linear regression model to develop an equation that will help in interpreting how the two variables are related. The variable being predicted are called dependent variable and variables uded to predict the value of the dependents are called independent variables.the dependent variables are denoted by Y whereas the independent variables are denoted by x.

Equation $Y = \beta_0 + \beta_1 X +$

III. DATA ANALYSIS

Regression Analysis

The analysis was to find out the the relationship between the identified variables of Security, Reliability, Responsiveness, Assurance, Empathy, Tangibility and service quality as a dependent variable on one hand

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. reg ser_q security reliability responsiviness assurance empathy tangibility
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Source	SS	df	MS	Number of obs	=	199
				F(6, 192)	=	8.58
Model	14.8467065	6	2.47445109	Prob > F	=	0.0000
Residual	55.3643487	192	.288355983	R-squared	=	0.2115
				Adj R-squared	=	0.1868
Total	70.2110553	198	.354601289	Root MSE	=	.53699

ser_q	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
security	.0174729	.0684195	0.26	0.799	-.1174776	.1524233
reliability	.1572612	.071443	2.20	0.029	.0163473	.2981751
responsiviness	.1121786	.0630588	1.78	0.077	-.0121984	.2365556
assurance	.1955366	.0691469	2.83	0.005	.0591514	.3319218
empathy	.1724695	.0565154	3.05	0.003	.0609983	.2839403
tangibility	.0908174	.0788108	1.15	0.251	-.0646283	.2462636
_cons	1.847606	.3853666	4.79	0.000	1.087511	2.607702

Table 1 Regression Analysis of Service Quality on the six dimensions

The R^2=0.2115 or 21.15% meaning that 21.15% of the variations in the dependent variable(SQ) is explained by the independent variables (Reliability, Responsiveness,Assurence,Tangibility,empathy and Security).If the P< 0.05 it means the relationship between the independent variables and the dependent variable is significant. From the table above, most of the dimensions are significant except for Security which is (0.799) and Tangibility (0.251) are above the acceptable value of 0.05 hence a low significancy on the dependent variable service quality while Assurence (0.005) and Empathy (0.003) have the most significant impact on service quality than the others.The simple regression model equation below will help in the interpretation of the relationship between the dependent variable and independent variable results shown in above table.

$$SQ= \beta_0+\beta_1*S+\beta_2*RE+\beta_3*RES+\beta_4*AS+\beta_5*EM+\beta_6*TA+\varepsilon$$

$$SQ= 1.85+0.0175(S)+0.157(RE)+0.112(RES)+0.195(AS)+0.172(EM)+0.090(TA)$$

If all other factors remain constant, if there's a unit change in any of the 6 dimension, Service Quality will increase by 0.017, given the P-value to be 0.799 which is more than 0.05 which means that the relationship between security and Service quality is insignificant and so is Tangibility. Whereas the other remaining dimensions like Reliabity, sig (0, 02), Assurence has Sig (0.005), and Empathy Sig (0.003) are significant on a measurement of P<0.05 and Responsiveness Sig (0,070) is significant on measurement of P<0.010 thus these four dimensions have a positive relationship with Service Quality and are Significant.

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reg cust_sa ser_q
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Source	SS	df	MS	Number of obs	=	199
				F(1, 197)	=	12.14
Model	4.07731795	1	4.07731795	Prob > F	=	0.0006
Residual	66.1437876	197	.335755267	R-squared	=	0.0581
				Adj R-squared	=	0.0533
Total	70.2211055	198	.354652040	Root MSE	=	.57944

cust_sa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ser_q	.240982	.0691526	3.48	0.001	.1046075	.3773564
_cons	2.303607	.3078581	7.48	0.000	1.696487	2.910728

Table 2 Regression Analysis of Service Quality on Customer Satisfaction

The R^2 in the table 4-2 is equal to 0.05 and that shows that 0.05 of the variations in the dependent variable Customer Satisfaction is explained by the dependent variable (SQ). The P<0.05 is said to be having a relationship with the dependepend and from the figure 0.001, we say that Service Quality is significant.

```
gen m=ser_q * diversity

reg cust_sa ser_q diversity m
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Source	SS	df	MS	Number of obs	=	199
				F(3, 195)	=	8.57
Model	8.18300567	3	2.72766856	Prob > F	=	0.0000
Residual	62.0380999	195	.318144102	R-squared	=	0.1165
				Adj R-squared	=	0.1029
Total	70.2211055	198	.354652048	Root MSE	=	.56404

cust_sa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ser_q	.7074208	.2212182	3.20	0.002	.2711335	1.143708
diversity	.5047991	.2572896	1.96	0.051	-.0026285	1.012227
m	-.1372709	.0578474	-2.37	0.019	-.2513578	-.0231841
_cons	.5803741	.9965489	0.58	0.561	-1.385024	2.545772

Table 3 Regression of Service Quality and Price on Customer Satisfaction

If all other factors remain constant a change in service quality will increase customer satisfaction by 0.240. Given P-value of 0.001which is much lesser than 0.05.

We can draw a conclusion that Service quality Service Quality has a high significancy on Customer satisfaction. This is a multiple regression run to examine the moderating effect of service diversity and Service quality on Customer Satisfaction. With the R2 of 0.116, 11.65% 0f the variation in the dependent variable Customer satisfaction is explained by the independent variables Service quality and Service Diversity .Each independent variable has a P<0.05 individually and even when combined which means that Service Quality and Service Diversity have are significant.

$$CS=\beta_0+\beta_1 *SQ +\beta_2 SD* +\varepsilon$$
$$CS=0.58+0.71(SQ) +0.50(SD)-0.137(m)$$

All other factors remaining constant a change in (m) which is a combination of service quality and service diversity, will reduce customer satisfaction by -0.137 with a P-value of 0.019 meaning that there is a positive relationship between Service diversity with customer satisfaction but its insignificant.It means that giving many services to customers isn't enough to satisfy them so there might be other factors that should be added to the many services.

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. gen x=ser_q * price

.  reg cust_sa ser_q price x
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Source	SS	df	MS	Number of obs	=	199
				F(3, 195)	=	6.42
Model	6.31651964	3	2.10550655	Prob > F	=	0.0004
Residual	63.9045059	195	.327715025	R-squared	=	0.0900
				Adj R-squared	=	0.0760
Total	70.2211055	198	.354652048	Root MSE	=	.57246

cust_sa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ser_q	.9947945	.393461	2.53	0.012	.2188091	1.77078
price	.699227	.4077351	1.71	0.088	-.1049097	1.503364
x	-.179943	.0910675	-1.98	0.050	-.3595468	-.0003393
_cons	-.6448597	1.767237	-0.36	0.716	-4.130213	2.840493

Table 5 Regression Analysis of Service Quality and Service diversity on Customer Satisfaction

Looking the table above the R^2=0.09 which indicates that 1% of thevariations in the dependent variable Customer satisfaction depend on independent variable service quality and Price. Their P-value is exactly 0.05 which means that the relationship between the dependent and independent variables is significant

$$CS-\beta_0+\beta_1 *SQ +\beta_{2*} P-\beta_3 *SQ + P +\varepsilon$$
$$CS- 0.64+0.99 (SQ) +0.70 (P)-0.18 (x)$$

P< 0.05 is significant and price is exactly 0.05 meaning that there is significant and even there is relationship between the dependent variable and independent variables are strong.

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. pwcorr ser_q security reliability responsiviness assurance empathy tangibility
> ,star(0.05)
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	ser_q	security	reliab~y	respon~s	assura~e	empathy	tangib~y
ser_q	1.0000						
security	0.1331	1.0000					
reliability	0.2847*	0.1208	1.0000				
responsivi~s	0.2901*	0.1341	0.4296*	1.0000			
assurance	0.2908*	0.2404*	0.2064*	0.1830*	1.0000		
empathy	0.2202*	0.1206	0.0194	0.1013	-0.0268	1.0000	
tangibility	0.2683*	0.0737	0.2534*	0.3542*	0.3775*	0.0934	1.0000

Note:*correlation is significant at the 0.05 level (2-tailed)

Table 5 Correlation of the Variables

The above table tests the linear relationship between the explanatory variables; correlation matrix is used as a very important indicator in determining the strength of variables in the model , the correlation matrix results indicated that the variables are moderate positive correlated to each other but the six dimensions of service quality are moderate when evaluated together than to be evaluated one by one, so the study will not drop any variable from the study.

DISCUSSION

The results have indicated that the service received from the bank of Kigali is positively perceived by their Customers. Customer satisfaction of this bank was evaluated by the service quality perception of 200 respondents whereas the ATM service quality was measured by a SERVQUAL MODEL by [5] namely; Security, Reliability, Responsiveness, Assurance, Empathy and Tangibility . Service quality and Customer satisfaction are the major milestone that every business dreams to achieve and this is what motivated me to evaluate how one impacts another.The findings are consistent to the previous studies done by other scholars and service quality is an essential factor in delivering satisfaction to the customers using ATM in the Bank.The research model matched the research objectives and research questions and the perception of every variables in the model was clearly shown by the responses of the respondents as answeared on the Servqual questionnaire. According to the results of this research all the six dimensions have a positive relationship with the dependent variable which is service quality and are significant when grouped or evaluated all together. Looking at the results of each components Assurence and Empathy had the highest significance and this means that Customers highly appreciate the bank staff for being knowledgeable and to have all information about their services thus giving customers a professional experience.The customers have testified that the management of the bank is experienced, polite and are passionate about their work. Customers of bank of Kigali feel that the

bank understands their needs and they are satisfied with the financial advice, guidance of how to use the ATM services which makes the usage friendlier. A good human resource has helped the bank to create its competitive advantage in developing the expertise their personnels. Although reliability and responsiveness were not the most rated dimensions but their results show a good relationship with customer satisfaction and a positive significancy.

Regarding to Reliability the customers' responses show that the communication between the bank and their customers is good in that they are informed about every transaction done throygh the ATM by sending a message to their cellphone numbers. The accessibility, accurence of transaction records, willingness to solve customer's problem and contents displayed on the ATM screen are up-to-date hence the customers can rely on their bank. Basing on the results on Responsiveness the customers are greatful for the support of the technical team in solving the ATM problems promptly even in peek hours and the convenient location make ATms accessible.

The customers showed a disfaction in the security and the tangibility services which isn't bad to some extent because to stay competitive in the fast growing industry like Banks, there is a need for the management to know the area for distisfaction and to come up with better strategies of continueous improvement and development process.In this regard the bank should work on security because if its low then it implies that customers will not feel safe to keep their money in thebank and for their live when they are making transaction hence they will choose other banks which offer better security.

The moderating effect results indicated a slight effect on customer satisfaction which means that if the service quality of the ATM are satisfying the customers then they can bear with other factors like price and service diversity. We can therefore conclude that service quality leads to customer loyalty.

CONCLUSION

Service quality plays a significant role in customer satisfaction. The two are important constructs in the service providing industries and banking inclusive. The main objective of this study was to evaluate the impact of ATM service quality dimensions on customer satisfaction in bank of Kigali. Sighting at the financial services given through an automated Taller Machine (ATM) of Bank of Kigali, I can conclude that it is positively perceived by the customers in general but this leaves the bank with a need for maintaining the standards of service and improving it much higher to out compete other banks. Consistency in service quality will retain the old customer's satisfaction on the other hand it will advertise the bank through customer conversations with others hence inviting new costomers to the bank.

Finally this study's focus was on evaluating the impact of ATM service quality dimensions on customer satisfaction and I recommend that for further research others can examine the relationship between ATM and Mobile services on Customer satisfaction.

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