

# Automated Teller Machine And Customer Satisfaction In Tanzania: A Case of CRDB Bank In Iringa

**Hadija Matimbwa**

Ruaha Catholic University- Tanzania

**Alexander Ochumbo**

Ruaha Catholic University, [hadija.matimbwa@gmail.com](mailto:hadija.matimbwa@gmail.com)

---

## Abstract

This paper examined the factors that determine customer satisfaction with ATM services offered by CRDB Bank in Tanzania specifically Iringa Municipality. Considering that there are divergent views on dimensions of customer satisfaction as regards ATMs as established by miscellaneous researchers, the current study therefore aimed at determining dimensions that truly associate with customer satisfaction and the effect of each dimension on customer satisfaction specifically in the Tanzanian context. A quantitative study described the relationship between social economic factors, various aspects of ATM services and customer satisfaction was applied to 100 respondents drawn from 340 CRDB customers who are also holders of ATM cards. Results reveal customers usually use basic ATM services such as balance inquiry and withdrawal. The relationship between overall customer satisfaction and convenience, efficient operation, security, reliability, responsiveness and cost were significant at  $p < 0.01$ . Privacy was found to have a negative significant relationship with overall customer satisfaction at  $P < 0.05$ . The study suggests that CRDB bank should develop strategies to motivate its customers to use emerging ATM services apart from basic.

**Keywords:** Customer Satisfaction and Automated Teller Machine



**Journal of Business  
Management and  
Economic Research**

Vol.2, Issue.3, 2018

pp.11-20

Doi: 10.29226/TR1001.2018.23

---

## **1. Introduction**

The growth of computerized banking in a country depends on many factors, some among such factors include; adequate internet access, new online banking features, household growth of internet usage, legal and regulatory frameworks. Computerized banking is expected to offer quicker and dependable services to customers in comparison to those in manual systems of banking. Computerized banking systems not only generate latest viable returns but also get better dealings with customers (Singh, 2009).

In Tanzania ATM industry has witnessed explosive growth in recent times. ATMs represent the single largest investment in electronic channel services for banks. CRDB set the trend when it set up the first ATM machine in Tanzania in 1997 and since then, they have become a common sight in many metros (Mboma,2006). ATMs have gained prominence as a delivery channel for banking transactions in Tanzania as banks have increasingly deployed ATMs to increase their reach. While ATMs facilitate a variety of banking transactions for customers, their main utility has been for cash withdrawal and balance enquiry (Hossain,2010).

Despite the fact that the main utility for the ATM is for cash withdrawal and balance inquiries, CRDB ATM has many services including cash withdrawals, balance inquiries, mini statements, PIN number change, bills payments, transfers between own CRDB bank accounts. With the phenomenal increase in the Tanzania population and the increased demand for banking services therefore: speed, service quality, flexibility and customer satisfaction are deemed as key differentiators for each bank's future success and thus, it is imperative for banks to obtain useful feedback on their actual performance with regard to ATM machines and customer service quality aspects of retail banking, this will in turn facilitate banks in making positive steps towards maintaining a competitive edge usage in ATM services (Mattila, 2001).

Various studies conducted in and outside Tanzania reveal that ATMs significantly contribute to customers' satisfaction. Khan (2010) established the effect of ATM service quality on customer satisfaction by using five key ATM service quality factors: convenience, efficient operation, security, privacy, reliability and responsiveness and discovered a strong relationship between ATM service quality and customers' satisfaction level. Sheshuoff (2000) in a study of customer satisfaction writes that banks introduce ATM in an attempt to create powerful barriers to customers exiting. In general, it has been reported that ATM saves time, provides convenience and accessibility, and has a positive impact on customer satisfaction (Mattila, 2001).

Although Mboma's study is the only one that focused on ATMs in Tanzania (Mboma,2006), unfortunate however, is that it was concluded that flexibility and speed were the only key factors that bring about customer satisfaction. A similar study by Khan (2010) associates satisfaction with five factors, while a study by Adeoye (2012) concluded that customers were not satisfied with the quality and efficiency of ATM services. Furthermore, Hossain (2010) conducted a research on satisfaction of debit card users and found that on average, debit card users were satisfied and further suggested that through improvement on network service, provision of receipt after transactions and prompt problem solving, banks can make their debit card users fully satisfied. Based on the various disagreements on key variables, it can be safely asserted that the question of customer satisfaction with ATM services is debatable and yet to be fully clarified in terms of factors that truly associate with customer satisfaction and the effect of each factor on customer satisfaction needs to be established.

## **2. Literature Review**

### **2.1. Theories guiding the study**

This study is based on both the utility theory and service quality model, utility theory states that consumers have different levels of satisfaction for the various types of goods available on the market (Henard and Szymanski, 2001). It is no wonder that amidst a variety of things consumers may have a liking for; there are those they are fond of than others and can probably derive preferences of some sort since they only have a limited amount of wealth and have to make decisions on purchases. This theory postulates that the individual is the best judge of his/her utility; it was therefore upon such postulation that the current study intended to establish ATM card holders' own judgment of their satisfaction with ATM services. It also supported by the Service quality model which views service quality in light of the gap between the expected level of service and perceptions of customers regarding the level of satisfaction with service received.

### **2.2. Customer preferences on ATM services**

Customer preference is defined as subjective individual tastes as measured by satisfaction attached to a variety of goods or services (Henard and Szymanski, 2001). Different organisations including banks provide varied types of goods and services to its customers; it is therefore important to study consumer preference since it will facilitate banks in an effort to combat problems that may occur due to consumer uncertainty, something that may pose as a negative impact on bank strategy. Normally, consumers have different preferences toward services (Pol, 2010). Risk adverse consumers prefer payments with higher levels of protection (Hayashi, Sullivan and Stuart, 2003). Jeon (2012) argued that consumers prefer ATMs located within their vicinity, banks with dependable ATM network and low fees charge.

A similar study addressing consumer preference by Choodambigai (2011) revealed that some customers only utilised ATMs to complete withdrawals while others used the machine for both withdrawals and obtaining statement receipts, others operated the machine to complete both withdrawals and balance enquiries and a couple of customers utilised the machine to withdraw cash, obtain statement receipts and make balance inquiries. Therefore most of the customers prefer basic ATM services which are withdrawal and balance inquiry.

### **2.3. Effect of customer quality service dimensions on overall customer satisfaction**

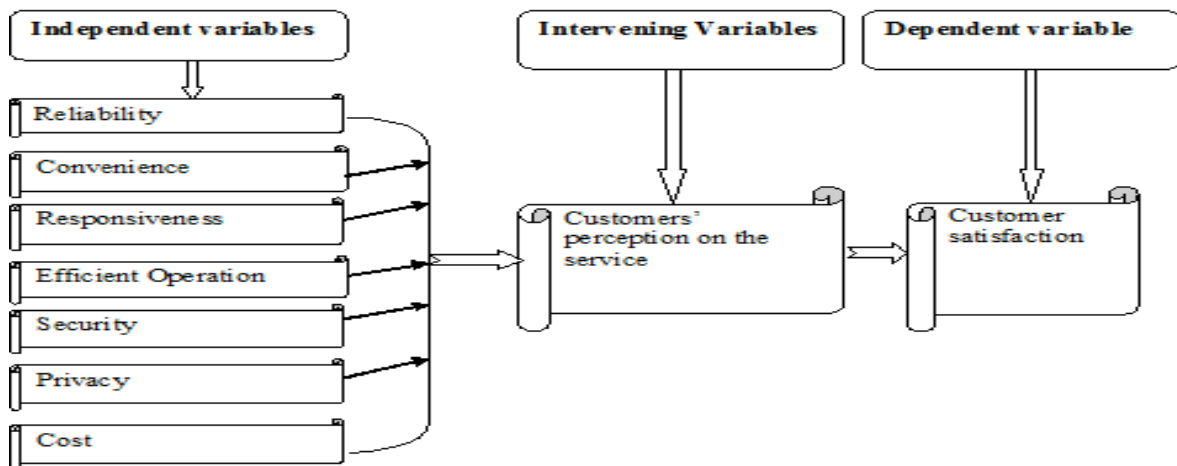
Lovelock (2000) mentioned secure and convenient ATM services, adequate numbers of ATMs, user friendly systems and functionality as important dimensions/factors for customer retention. Joseph and Stone (2003) conducted a similar study on ATM services and revealed that customer satisfaction is influenced by cost involved in the use of ATMs, efficiency and the availability of reliably functioning ATMs. Studies by Kumbhar (2011) that sought to assess the influence of demographic factors on customer satisfaction with a particular focus on factors like education of customers, their age, income, gender and profession revealed that overall service quality and customer satisfaction on internet banking are approximately the same however, service quality differs dimension wise.

Contrary to findings by Kumbhar above however, Mobarek (2007) and Dilijonas *et al* (2009) suggest that adequate number of ATMs, convenience, secure location and user friendly systems, speed, minimum errors, high uptime, cash backup, cost and service coverage are essential dimensions of service quality aspects of ATM services necessary for the enhancement of customer satisfaction. Islam and Kumar (2007) examined the satisfaction level of ATM card holders of a leading bank in Bangladesh and found a significant relationship between ATM

service qualities and satisfaction. The study identified that location, personnel response, quality of currency notes, promptness of card delivery and performance were positively and significantly related to customer satisfaction. The security, frequent breakdown of machines and insufficient number of ATM were major contributors to customer dissatisfaction. It is therefore evident that researchers hold divergent views as regards the use and effectiveness of ATM and Customer Satisfaction, Al- Hawari and Ward (2006) compiled a list of five major dimensions entailing ATM service quality and these included convenience and secured locations, functions of ATM, adequate number of machines and user friendliness of the system and product.

#### 2.4. Conceptual Framework

The variable of primary interest to this research is the dependent variable which is customer satisfaction. Independent variables are used in an attempt to explain the variance in customer satisfaction. These variables are reliability, security, privacy, convenience, responsiveness, efficient operation, user friendliness, accuracy, trust, convenient location, adequate number of ATMs, functionality of ATM, high uptime, cash backup, cost, flexibility, accessibility, quality of currency notes, and promptness of card delivery. However, all these have to be measured basing on the customer’s perception of the service rendered as satisfactory. In the current study, the above variables are grouped into seven major service quality dimensions namely reliability, convenience, responsiveness, security, privacy, efficient operation and cost. This has been adopted from Khan (2010) with minor modifications



**Figure 1 Relationship between ATM service dimensions, Customer perceptions and overall customer satisfaction**

#### 3. Methodology

A cross sectional descriptive study was adopted as similarly used by Agbor (2011) who studied the relationship between customer satisfaction and service quality. The study was descriptive considering that it aims at describing the relationship between social economic factors, various aspects of ATM services and customer satisfaction and Saunders *et al* (2009) describes this sort of study as descriptive. Systematic sampling method was used to draw sample of 100 customers counted one to four and each fourth customer was interviewed until the sample of 100 customers was obtained. The researcher collected primary data from ATM card holders

through questionnaires in which respondents transcribed their responses that depicted their perceptions on customer preferences on various ATM services; suggestions on areas for improvement were obtained so as to determine factors for customer satisfaction and effect of each factor on customer satisfaction.

#### 4. Results

##### 4.1. Demographic Information

Findings in Table 1 and 2 provide data on social economic characteristics of the respondents. It includes variables such as age, sex and education levels.

**Table 1 Age of respondents vis-a-viz their sex**

		Age range						Total	
		18-24	25-34	35-44	45-54	55-64	65 and +		
Sex of respondents	Female	14	4	12	9	2	2	43	
	Male	13	23	1	11	8	1	57	
Total		27	27	13	20	10	3	100	

**Source:** Field Data 2017

Table 1, shows that there were more males (57%) than female (43%) however the difference in number of respondents by sex was slightly small indicating that both males and females enjoy equal access of ATM services in the area of study.

The ages of most female respondents ranged from 18 to 24, while ages for 23 male respondents ranged from 25 to 34, it is evident that majority of respondents (64%) were youngsters (below 34). This may be an indication that young people who are more inclined to experimenting new technology may be using this machine service than much older people. CRDB is also well established within Universities compared to other banks; therefore young people who use CRDB ATMs are mostly students. Distribution by age group among males and females was significantly at chi-square ( $\chi^2$ ) = 0.000,  $p < 0.01$ . Moreover Table 4.1 depict, that respondents from 18 to 65 years of age were involved in this study suggesting that the entire age range is energetic for economic activities.

Moreover respondents were of different education levels, from primary to degree as indicated in Table 2 below.

**Table 1 Sex of respondents vis-a-viz their level of education**

		Education of respondents						Total	
		Primary level	Secondary level	Certificate level	Diploma level	Degree level	Other		
Sex of respondents	Female	5	13	14	3	6	2	43	
	Male	0	16	10	11	20	0	57	
Total		5	29	24	14	26	2	100	

**Source:** Field Data 2017

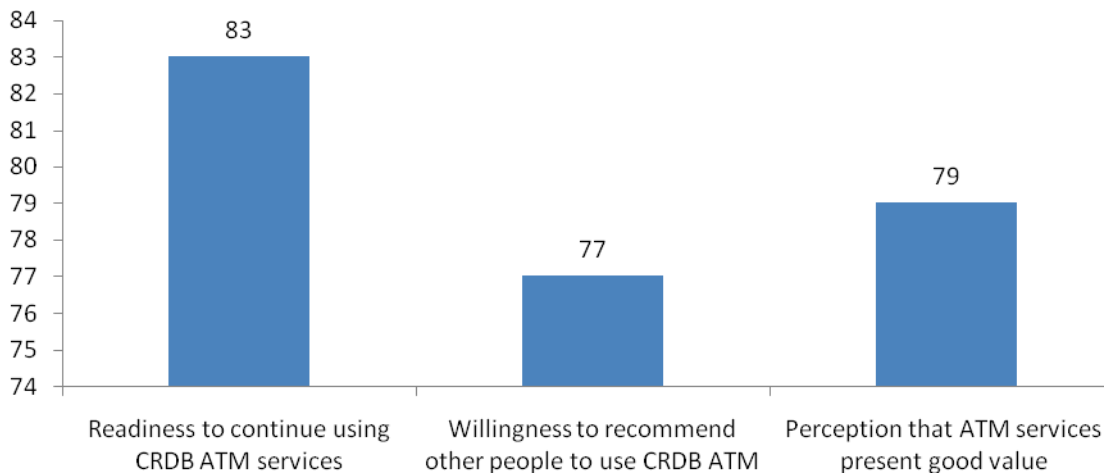
Most female respondents had obtained certificate level of education while most male respondents were degree holders however; majority of respondents (29) had acquired secondary education. This result is in line with studies by Shao (2007) who discovered that majority of respondents who had access to ATM services had at least secondary school level of

education. Distribution of respondents by level of education was significantly different at chi-square ( $\chi^2$ ) = 0.002,  $p < 0.01$ .

#### 4.2 Overall customer satisfaction

Overall customer satisfaction covers a broad spectrum and in its broad perspective can be analysed from different angles. Basing on the current study therefore, overall customer satisfaction was assessed based on readiness to continue using CRDB ATM services, willingness to recommend other people to use CRDB ATM and on the perception that CRDB ATM services present good value.

**Figure 2: Overall customer satisfaction**



**Source: field data (2017)**

Results in figure 2 above shows all these parameters scored above 75 percent indicating that customers are highly satisfied with ATM services.

#### 4.3 Customers' preference of different ATM services.

On measuring customer preference of different ATM services; cash withdraw; mini statement, cash deposit, balance inquiry, money transfer, paying bills and PIN change were assessed as presented in Table 3

**Table.3 Preferences of customers toward different ATM services**

Service	Percentage score
Cash withdraw	74.20
Balance inquiry	65.80
Mini statement	54.20
Cash deposit	43.60
Money transfer	40.80
Paying bills	37.40
PIN change	33.20

**Source:** Field Data 2017

The responses are summarized in Table 3 and show that cash withdraw was the most preferred ATM service with a percentage score of 74.20 followed by Balance inquiry with percentage score of 65.80 and Mini statement score of 54.20%. Cash withdrawal, balance inquiry and mini

statement are the only services that scored above 50% with the rest scoring less. These results indicate that most customers use ATM services to complete basic transactions like cash withdraw, balance inquiries and mini statement.

#### 4.4. Levels of various dimensions of ATM service on customer satisfaction

The study looked into the levels of various dimensions of ATM services in the overall customer satisfaction. Service dimensions referred to here are convenience, efficient operation, security, reliability, responsiveness, cost and privacy.

**Table 4. Levels of various dimensions of ATM service on customer satisfaction**

Dimension	Weighted Mean
Reliability	3.67
Security	3.65
Efficient operation	3.30
Responsiveness	3.23
Privacy	3.23
Convenience	2.99
Cost	2.78

**Source:** Field Data 2017

Results in table 4 above revealed efficient operation, security, reliability, responsiveness and privacy have weighted mean above the neutral point (3) while convenience and cost have weighted mean below the neutral point. Out of the seven ATM services quality dimensions under assessment, five of them scored above neutral point (3) explaining why customers think that CRDB ATM service presents good values, and are ready to offer their loyalty to the bank and at the same time recommend others to use the ATM service.

#### 4.5. Effects of ATM service dimensions on overall customer satisfaction

The study aimed to determine the influence/effects of different ATM service dimensions on overall customer satisfaction. Table 5 below illustrates;

**Table.5 Regression output on the effects of various dimension of ATM service on overall customer satisfaction**

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	7	273.1306	39.01865	35.32509	1.86E-23
Residual	92	101.6194	1.104559		
Total	99	374.75			
		<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept		3.9251	0.7465	5.258	9.41E-07
Convenience		0.1026	0.0444	2.3095	0.0231
Efficiency operation		0.0820	0.0362	2.2665	0.0257
Security		0.1083	0.0458	2.3668	0.0200
Reliability		0.1196	0.0450	2.6595	0.0092
Responsiveness		0.1067	0.0519	2.0546	0.0427
Cost		0.2482	0.0770	3.2242	0.0017
Privacy		-0.4263	0.0951	-4.4828	2.12E-5
Multiple R		0.8537			
R Square		0.728834			
Adjusted R Square		0.708202			
Standard Error		1.05098			
Observations		100			

**Source:** Field Data 2017

$$\gamma = 3.9251 + 0.1026\text{Convenience} + 0.082\text{EfficiencyOperation} + 0.1083\text{Security} + 0.1196\text{Reliability} + 0.1067\text{Responsiveness} + 0.2482\text{Cost} - 0.4263\text{Privacy} + \varepsilon$$

Findings in table 5 above imply *that* all independent variables except privacy have a significant relationship with overall customer satisfaction. The relationship between customer overall satisfaction and convenience, efficient operation, security, reliability, responsiveness and cost were significant at  $p < 0.01$ . Privacy was found to have a negative significant relationship with overall customer satisfaction at  $P < 0.05$  as indicated in Table 5 which shows results drawn from regression analysis.

The Regression (R) square of 70% indicates that there is a good model fit since the R square is greater than 50%. This implies that the specified model places overall customer satisfaction at 70.8%.

## 5. Conclusion

The study concludes that all dimensions (convenience, reliability, responsiveness, security, cost and efficient operation) were found to have strong influence on customer satisfaction, except only privacy was found to have a negative relationship with overall customer satisfaction. The possible reason for this might be the fact that as services become more confidential, some customers feel insecure hence less satisfied with the service. When customers have low knowledge on ATM services and fail to communicate some of their challenges to other customers due to privacy reasons, it may lead to dissatisfactions. It is evident that convenience, reliability, efficient operation, security, privacy, cost and responsiveness are not the only dimensions that influence customers' satisfaction, other factors that contribute to customers' satisfaction include trust, value and image of the bank (Ranaweera and Prabhu, 2003). CRDB management should monitor the environment and identify trends through marketing intelligence.

Moreover since this study determined age as a significant effect on the pattern of use of technology-based services, further research undertakings should explore the association between age and attitude and determine its effects on ATM service quality and customer satisfaction.

## References

- Adeoye, B. (2012). Customers satisfaction and its Implications for Bank Performance in Nigeria. *British Journal of Arts and Social Sciences* , VOL 5 no 1.
- Agbor, J. M. (2011). *The relationship between customer satisfaction and service quality: A study of three service sectors in Umea*. Retrieved 02 24, 2012, from <http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-48338>
- Al- Hawari, M., and Ward, T., (2006). The impact of automated service quality of financial performances and the mediating role of customer retention. *Journal of Financial service Marketing* , Vol 10(3) pp 228-243.
- Choodambigai, S. (2011). Customer Satisfaction of credit cards and ATM services of SBI in Combatore. *International Journal of Exclusive Management Avinashilingam Deemed University Combatore, India* , pp 57.



- Dilijonas, D. Kriksciunien, D., Sakalauskas, V., and Simutis, R., (2009). *Sustainability Based Service Quality Approach for Automated Teller Machine Network*. Retrieved June 06, 2010, from <http://www.vgtu.lt/leidinica/leidykla/KORS2009/PDF/241-246-P100-Dilijonas-47.pdf>
- Hayashi, F., Sullivan, J., and Weiner, S., (2003). *A guide to the ATM and Debit Card Industry*. Kansas City: Missouri, USA.
- Henard, D., and Szymanski, D.,(2001). Why Some New Products are more successful than others. *Journal of Marketing Research* , Vol 38(3) pp 362-375.
- Hossain, S. (2010). Satisfaction of Debit Card users in Bangladesh: A study on some Private Commercial Bank. *Journal of Business and Technology* , Vol 5, pp93-97.
- Islam, R., and Kumar, S., (2007). *Customer Satisfaction of ATM Service: A case study of HSBC ATM*. Retrieved July 13, 2009, from <http://papers.ssrn.com/sol3papers.cfm?abstract id=990242>
- Jeon, K. (2012). *The Benefits of ATM( Automatic Teller Machines) Fees in the Retail Banks ATM industry: Competition Welfare Research Paper*. Monroe: Department of Economics G. Street.
- Joseph, M. and Stone. G., (2003). An empirical evaluation of US bank customer perception of the impact of technology on service delivery in the banking sector. *International Journal of Retail & Distribution Management* , 190\_202.
- Khan, M. (2010). An Empirical study of Automated Teller Machine service quality and customer satisfaction in Pakistan banks. *European Journal of Social Science* , Vol 13(3) pp 333-343.
- Kumbhar, V. (2011). Factors affecting the Customer Satisfaction in E-Banking Some Evidences form Indian Banks. *The Journal of Management Research and Practice* , Vol. 3 pp 24 -35.
- Lovelock, C. H., (2000). *Functional integration in service: Understanding the links between marketing, operations and human resources*. In Swartz: T.A and Iacobucci .
- Mattila, A.(2001). The effectiveness of Service recovery in a Multi industry setting. *Journal of Service Marketing* , Vol 15, pp 583-596.
- Mobarek, A. (2007). *E- Banking Practice and Customer Satisfaction: A case study in Botswana*. Retrieved 02 16, 2013, from <http://papers.ssrn.com/sol3/papers.cfm?abstract id=1011112>
- Mboma, L. (2016). ATM and Customer Satisfaction: A case of banking industry in Tanzania. *The African Journal of Finance and Management* , Vol. 15.
- Pol, R. (2010). *Consumer Preferences and Bid - Price Control for Cloud services: Dissertation Paper*. Australia: University of Melbourne.
- Ranaweera, C., and Prabhu, J., (2003). "The influence of satisfaction, trust and switching barriers on customer retention in a continuous purchasing setting". *International Journal of Service Industry Management*, Vol. 14(4), pp 374
- Saunders, M., Lewis, P., and Thornhill, A., (2009). *Research Methods for business students 4th Edition*. Pearson Education Limited.
- Shao, G. (2007). The Diffusion of online banking: Research trends from 1998 to 2006. *Journal of Internet Banking and Commerce*, pp 41-46.
- Sheshuoff, A. (2000). Internet banking: An update from the frontlines. *ABA Banking Journal Am Bankers Association* , pp 51-52.
- Singh, S. (2009). Impact of ATM on customer satisfaction. A comparative study of SBI, ICICI & HDFC banks. *Business Intelligence Journal* , Vol 2(2).