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Examining the Roles of Automatic Teller Machines in Banking Services Delivery in Tanzania: A Case of Commercial Banks in the Mwanza City, Tanzania

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Abstract:
The study was conducted in Mwanza region to assess the roles of information and communication technologies to effective and convenient bank services delivery in Tanzania. Specifically, the study analysed the infrastructures, updated information technology, adequate security system and performance of ATM technology on banking service delivery. The study used exploratory research design and it was carried out in commercial banks found in Ilemela and Nyamagana administrative districts of Mwanza region. Convenient and purposive sampling were adopted to select participants with undisputed knowledge on ICT banking. The sample of 215 bank customers, 52 bank employees and 2 representatives from the regulatory bodies were involved in this study. The data were collected by using observation, interview and questionnaires tools. Data was analysed statistically using the Inferential statistics with an aid of SPSS. According to findings 62.8% of all respondents, own ATM cards and 34.6% and 76.6% of all respondents agreed that ATM is useful in banking services delivery, 92.9% of respondents that ATM services are convenient, 66.2% stated that ATM transaction costs are reasonable and fair. Also, 80.6% of respondents agreed that ATM are reliable all day and night.

Keywords: *Information Communication and Telecommunication, Electronic Banking, Automated Teller Machine, Mobile banking Internet banking, ICT software*

1. Introduction

ICT enhances product development, improves market infrastructures, helps implementation of effective techniques in controlling the business risks and also the financial intermediaries can reach geographically distant and diversified markets (Tiwar 2012). Banks use several technologies for effective service delivery. ATM is one of the common technologies used by banks for timely services delivery (Muniu, 2015). It is an e-banking technology which usually brings enormous benefits, including timely announcement, convenient money withdrawal and deposit. Other ATM benefits are time saving, more service for customers, greater efficiency and increased bank's reputation (Yang., 2018). In essence, ATM helps out build new markets and fuel the economy.

Also, ATM heightens efficacy in banking operations and reduces significantly costs, improvement of services quality, and increase the values and faith to bank customers (Kamel 2005). Shekhar (2020) identifies ATMs banking as one of the channels for banking services delivery. Furthermore, the services offered through ATM include cash withdrawal, cash deposits, and balance enquiry, providing mini statement, deposit cheques, and fund transfers. In addition to that, customers may also perform activities such as paying utility bills, recharging mobile services, cheque book requests status of a cheque deposited for collection, request for cheque book or statement of account, record stop payments, and Information on bank products.

It is safe to demonstrate that ATM adoption rate has been influenced by age, background, education (Lubua 2012), as an example bank customer choose ATM to avoid carrying excessive money when going to deposit and being at risks of robberies (Kennedy & Ndungu 2013). However, technological advancements may generate enormous problems, such as payments interoperability between different network providers (Kijang 2018), inadequate ATM, inappropriate ICT policies and poor internet connection (IFC 2017) may prohibit or cause delay in adoption of the ATM technology, for example, the first official Tanzanian National ICT Policy was adopted in 2003 but by 2009/2010 the strategic plan for the public sector was still only a draft (Lubua 2012).

It is important to declare that designing and adoption of ATM is not as easy as have been proclaimed because before accepting a particular technology an institution should estimate the calculated risks associated with the adoption of that technology (Kamel 2005). Whilst some banks introduce and adopt ATMs in a hope to depopulate the conventional banking halls, customers still populate the banking halls with long and endless queues (Ameme 2015). As consequences, the majority of financial institutions in Tanzania have failed to adequately utilize ATM opportunities. It was, therefore, an attempt of this study to assess the roles of ATM in banking service delivery in Tanzania. This study aimed at assessing the roles of ATM in banking services delivery in Tanzania. Specifically, the study sought to analyse how Automatic Teller Machine technology affects banking services delivery and to analyse the interaction between ATM and the legal regulatory structure governing banks.

2. Methodology

The study used exploratory research design and it was carried out in commercial banks found in Ilemela and Nyamagana administrative districts of Mwanza region. A non-probability sampling procedure was adopted, particularly, convenience and purposive sampling whereby the selection of participants considered readily and easily available as well a participant with undisputed knowledge on ICT banking. The sample of 215 bank customers, 52 bank employees and 2 representatives from the regulatory bodies were involved in this study. The data were collected by using observation, interview and questionnaires tools. The units of analysis were twenty-seven banks including CRDB, CBA, BOA, Habib, Azania Bank, TIB Corp, TIB Dev, TPB, Access Bank, Stanbic, Stanchart, Barclays, I&M Bank, KCB, NBC, Letshego, Mkombozi, Diamond Trust Bank, NMB, Ecobank, Equity Bank, Exim, Finca, FNB, Bank of Baroda, Amana Bank, TADB. Data was analysed statistically using the Inferential statistics with an aid of SPSS statistical package.

3. Results

The total number of respondents were 269, whereby 59.9% of all respondents were males and 40.1% of all respondents were females. Furthermore, the respondents falling under the age 31 to 40 years were 29% males, and 19.3% of all respondents were females aged 31 to 40 years. The respondents falling under the age of 31 to 40 years were 48.3% in total which is the highest percentage. The fewest respondents felt under the age above 61 years which was 5.3% consisting of 3.4% males and 1.9% female respondents. Moreover 14.1% of all female respondents felt under the age between 19 and 30 years while 8.6% were male respondents under this age.

Table 1: Responses on effectiveness of ATM technology on banking services delivery where 1= Strongly agree 2 = Agree 3 = Neither agree nor Disagree 4 = Disagree 5 = Strongly Disagree

Item Description	1	2	3	4	5
Bank customers own ATM cards	169	93	0	7	0
	62.8%	34.6%	0%	2.6%	0%
ATMs are useful	60	146	9	27	27
	22.3%	54.3%	3.3%	10%	10%
ATM services are convenient	163	87	9	8	2
	60.6%	32.3%	3.3%	3%	0.7%
Banks provide relevant	77	168	3	17	4
information about ATM Services	28.6%	62.5%	1.1%	6.3%	1.5%
ATM transaction costs are	89	89	11	28	52
reasonable and Fair	33.1%	33.1%	4.1%	10.4%	19.3%
ATM services are reliable	94	123	2	24	26
	34.9%	45.7%	0.7%	8.9%	9.7%
Timely help from the bank in	80	87	8	78	16
solving ATM Problems	29.7%	32.3%	3%	29%	5.9%
ATM is technology of choice,	90	129	10	32	8
easier and effortless than others	33.5%	48%	3.7%	11.9%	3%
ATMs offer cash withdrawal	116	153	0	0	0
Services	43.1%	56.9%	0%	0%	0%
ATMs offer cash deposit services	0	0	34	139	96
	0%	0%	12.6%	51.7%	35.7%
ATMs offer balance enquiry	108	150	2	8	1
Services	40.10%	55.8%	0.7%	3%	0.4%
ATMs offer money transfer	0	15	9	101	144
Services	0%	5.6%	3.3%	37.5%	53.5%
Customers get all services they	16	46	42	48	117
Would need from the bank	5.9%	17.1%	15.6%	17.8%	43.5%

Table 1

Source: Field Data, 2021

Table 1 shows that 97.4% of all respondents agreed that most of bank customers own ATM cards while 2.6 disagreed with the statement, a Chi-square statistical test, at a 0.05 significant level, showed significant differences in their responses (*n = 269 Value = 69.611, P= 0.000*). Of all respondents 76.6% agreed that ATM is useful in delivering bank services, 3.3% neither agreed nor disagreed while a total of 20.1% disagreed with the statement, a Chi-square statistical test, at a 0.05 significant level, showed significant differences in their responses (*n = 269 Value = 85.659, P= 0.000*). Also, 92.9% of all respondents agreed on the convenience of ATM technology in delivering bank services, 3.7% disagreed and 3.3% neither agreed nor disagreed, a Chi-square statistical test, at a 0.05 significant level, showed significant differences in their responses (*n = 269 Value = 60.822, P= 0.032*). Of all respondents 91.1% agreed that banks provide relevant information about ATM services, 7.8% disagreed and 1.1% of all respondents neither agreed nor disagreed on the availability of relevant information about ATM services, a Chi-square statistical test, at a 0.05 significant level, showed significant differences in their responses (*n = 269 Value = 64.106, P= 0.014*).

61% of all respondents agreed that ATM transaction costs are reasonable and fair, 34% disagreed while 5% of all respondents neither agreed nor disagreed with the statement. a Chi-square statistical test, at a 0.05 significant level, showed significant differences in their responses (*n = 269 Value = 115.985, P= 0.000*). The majority of respondents that is 80.6% of all respondents agreed that ATM services are reliable all day and night, 18.6% disagreed and 0.7% neither agreed nor disagreed with the statement. a Chi-square statistical test, at a 0.05 significant level, showed significant differences in their responses (*n = 269 Value = 57.283, P= 0.000*). Moreover, the survey unveiled that the total of 62% of all respondents agreed that banks provide timely help in solving ATM related problems while 34.9% disagreed and 3% of all respondents neither agreed nor disagreed with the statement. a Chi-square statistical test, at a 0.05 significant level, showed significant differences in their responses (*n = 269 Value = 70.815, P= 0.000*).

In the case of ATM usage, a total of 81.5% of all respondents agreed that ATM was the technology of their choice, easier and effortless, 14.8% disagree and 3.7% of all respondents neither agreed nor disagreed with the statement. a Chi-square statistical test, at a 0.05 significant level, showed significant differences in their responses (*n = 269 Value = 158.442, P= 0.000*). On the availability of cash withdrawal services on ATMs 43.1% of all respondents strongly agreed and 56.9% agreed that there was a cash withdraw service in ATMs, there was no respondent disagreed with the statement, a Chi-square statistical test, at a 0.05 significant level, showed significant differences in their responses (*n = 269 Value = 33.259, P= 0.000*). Also, regarding to cash deposits services on ATMs 51.7% of all respondents disagreed and 35.7 strongly disagreed on the availability of cash deposit services on ATMs, while 12.6% of all respondents neither agreed nor disagreed on the statement, a Chi-square statistical test, at a 0.05 significant level, showed significant differences in their responses (*n = 269 Value = 43.405, P= 0.000*). Moreover, 55.8% of all respondents strongly agreed on the presence of balance enquiry service in ATMs, and 40.1% strongly agreed on a statement, only 3.4% of all respondents disagreed and 0.7% neither agreed nor disagreed. a Chi-square statistical test, at a 0.05 significant level, showed significant differences in their responses (*n = 269 Value = 127.686, P= 0.000*). Furthermore, the lowest figure 3.3% of all respondents neither agreed nor disagreed that there is a money transfer service in ATM while 91% disagreed on the availability of money transfer services on ATMs and only 5.6% of all respondents agreed. a Chi-square statistical test, at a 0.05 significant level, showed significant differences in their responses (*n = 269 Value = 219.727, P= 0.000*).

4. Discussion of the Findings

For majority of bank customers to own electronic bank cards means an adoption of ATM technology is highly successfully, as it implicates the use ability of the technology. Moreover, many customers agree on the usefulness of ATM technology which show that users perceived the technology positively and this also means ATM usage is simple in such a way many customers can easily operate it. This supports perceived ease of use which is the way new users of the technology believe that the adoption of the technology might be simpler than the existing one and perceived usefulness which entails the extent at which the user believe that adoption of particular technology would substantially improve the performance of a particular task, in the technology acceptance model (Mugo 2017), this can be proved as the big number of customers agree the ownership of the bank card voluntarily which show that the technology is perceived positively by the users.

Many customers agree the convenience of the ATM technology as they get the services at their environment nearby their residence and business environment and more enough the services are provided 24 hours in seven days of the week. The critical dimensions of success in the information system success model, are; system quality, information quality, system use, user satisfaction, individual impact and organisation impact, as narrated by Nguyen (2015) in the information system success model. Moreover, unified theory of acceptance and use of technology uses performance expectancy, effort expectancy, social influence, and facilitating conditions as the constructs facilitating someone to be convenient in accepting and using the technology Mutlu (2017). This means that if all these constructs are positive the customer will develop behavioural intention which will lead to use behaviour.

Also, according to the survey banks provide relevant information to their customers on ATM usage, security, charges and locations, as a result it is easier for customers to know the introduction of new innovation on the technology or improvement of the existing ones but also the bank to get feedback from the users of the technology. This is important as it shows that there is proper communication between the transacting parties which usually makes the new products be known to customers. It seems to be complicated as some customers are not satisfied with the banks' provision of the information, about 8% of all respondents don't agreed with this and some are unsure if the information is provided. Banks may be providing insufficient, irrelevant or selective information to the customers in such a way that customers are not even aware on the way bank charges for the transaction. More over the channel of providing information to bank customers may be irrelevant or not friendly in such a way not reached to the intended parties.

Therefore, banks need to rescreen the information to be seen in their websites and advertisements to increase the objectivity in everything they are doing. Also, the delivery channels of these information should be enhanced to make sure that they reach to the consumers of banking services, examples of the advertisement through the televisions may have more impacts than expecting the personalised advertisement on the ATMs machines. Dearing (2018) in the diffusion of innovation theory, explains about the way innovative ideas can be spread, accepted and adopted by users in a particular system and it entails on the probable communication channels for diffusion of new technological ideas and the ways the innovate can spread the new ideas in a system. Banks can learn from this theory as it focuses on which are channels, time, communication and social system and hence the theory narrated users' willingness to accept a technology as an enhancement to perform their daily activities

Bank customers rate ATM transaction costs as reasonable and fair though, but due to the fact that some customers don't agree on the reasonable costs, banks need to make some review on their cost because the number of customers who disagree is also big that make the different between the one agreeing and those disagreeing to be small (66.2% agreeing and 29.7% disagreeing). Apart from reviewing the cost the banks charge to their customers there is a need also for the bank to disclose their charges to enable customers to make right choice basing on the options available because the customers that are uncertain about the transaction charges are also many (4.1%), this means they are not sure if banks charge high or low transaction cost.

However commercial banks could have genuine reasons for hiking transaction fee including government taxes and vendor charges which are hardly or wrongly communicated to customers for justification. It is a high time for the banks to be transparent and alert their customers when either introducing or charging any bank charges. More importantly, if the intention of the bank is to enable customers utilize the technology, the charges to the cards should be reviewed. To make right choice of the technology to use everything need to be clear to the users of that technology specially the cost in terms of time and resources. The majority of customers have adopted ATM technology due to reasonable and fair ATM transaction costs; it is highly evidenced by rural customers who usually travel from the rural to the city for withdrawing their money. Also, some public employees who work in the rural areas where there are no bank services travel to the city to withdraw the money especially at end of every month after getting their salaries. Such customers incur costs including transport fare, risk of contracting covid-19 and others. In those cases, bank customers find ATMs as a convenient and useful technology and they regard it as the bank at their door steps. It additionally serves the customers during day and night and seven days in a week. Also, due to the technological advancement, customers have unlimited cash withdraw as they can get their money from all ATMs due to interbank transactions being allowed in ATM.

It is important to note that, not all customers find transaction costs fair and friendly. In other words, some bank customers complain that banks charge high ATM transaction costs, almost 30% of all respondents find the transaction cost to be high, this should not be ignored by the bank. It is obvious that different banks charge ATM transaction costs differently depending on banks' policies. Globally, some banks offer ATM services for free. In Tanzania, all banks charge transaction costs for all ATM services. However, it is still unclear which bank charges the lowest or highest ATM transaction costs in Tanzania. The low transaction costs or free ATM services may attract majority of customers to use ATM technology and reduce considerably some of avoidable bank operation and administration costs. It would also increase bank-customers interactions which will make it easier for the banks to communicate with customers through ATMs instantly.

However, the highest influx of customers to the ATMs will automatically increase ATMs maintenance costs. Also, it is safe to say that, recently, the government has also added a VAT to ATM transaction charges. This has considerably hiked the ATM transaction charges. The commercial banks have to consider reviewing and lowering transaction costs as it may attract customers to increase ATMs uses especially during this era of COVID-19 outbreak. Increment in the frequency of ATMs usage by customers usually decreases teller-customer interactions which is one of the main preventive measures for COVID-19. Most of the services offered by the banks including mini bank statement and balance inquiry are charged by banks accordingly.

Furthermore, commercial banks charge hugely on interbank transactions, this overburden and discourages the customers from conducting interbank transactions. It is a high time the banks need to reconsider it by lowering such charges because customers sometimes hardly perform interbank transactions. it is similarly important for the banks to create awareness for their customers to understand the concept of interbank transaction as some of them are still unaware. Many respondents support on the reliability of the ATM services, this is due to the fact that the technology enables the provision of the services in twenty-four hours seven days a week. Although some customers think that they cannot rely on the ATM services as they sometimes encounter problems such as out of cash in the machines and sometimes network problems.

Furthermore, the nature of ATM services are self-services, the users of the technology need to operate the machines themselves and these users are of different education, experience and knowledge in such a way that there are frequently problems encountered by the users. Some customers agree the reception of timely help (62%) but some disagree on receiving the timely help (34%) this percentage disagreeing is too much there must be correction measures to assure the customers timely help in case of any problem. But also, technology update such as software updates and technology improvement such as use of advanced machines and all hardware parts will reduce some of the failures, errors and breakdowns.

The findings reveal that the ATM technology is the technology of choice, easier and effortless than others. This is confirmed as the customer in an ATM can recharge telephone vouchers, ca pay bill, can get the customised advertisement and furthermore the customer can perform the telephone banking such as through card less services using Mpesa, Tigopesa and other telecommunication companies' money services. On the assumptions of technology acceptance model

for users to accept and adopt any new technology there are three important elements which are perceived usefulness, perceived ease of use and user attitude towards usage (Abijade 2018), therefore the adoption of ATM technology for bank customers may entail that there are perceived usefulness, ease of use and positive attitudes towards the use of ATM technology. In a similar manner, commercial banks have also full accepted the usefulness ATM technology to the extent of extending its uses into another interaction interface with customers by delivering other services more than just money withdraw and deposits.

The ATM technology has become the effective technology in the provision of the cash withdrawal services, and balance enquiry services to many customers, this means banks provide very few options on the ATM. However, the banks should add more services to ATMs as most of them lack important services such as money transfer and cash deposit services. Banks need to introduce those services to encourage more deposits from their customers and make customers reliable to the technology. Such services will seriously increase bank customers in the rural areas where there are no or few bank branches. As farmers and livestock keepers, ATMs will provide them with opportunities for timely cash deposit and transfer as most them still keep and transfer their money in traditional manners.

Due to the research findings, customers are not satisfied with the options available in the ATMs, although ATM technology has become the technology of choice and effortless to many customers, the research findings reveal that banks provide very few options on the ATM, bank customers would expect more service through the adoption of the ATM technology. Examples of the services that customers would expect from the ATMs and they don't get they include money transfer services, bank statement services, cheque withdrawal services and cash deposit services. Furthermore, the high percentage of respondents (15.6%) are uncertain they are not sure if they are getting all the services they would need or not, these customers need more information and awareness on banks new products and technologies innovations. This has been also discussed in the diffusion of innovation theory by Dearing & Cox (2018) that, when a person learns about an innovation that they think may have important consequences for them or those they serve, uncertainty about how to respond typically leads to a search for further information, so the potential adopter can better assess whether the innovation's attributes warrant further exploration.

5. Conclusion and Recommendation

Most of bank customers use the machine firstly as a cash disperser and for balance request but ATM monitors are also used to display any new product and all useful information banks would want to communicate to their customers. Many bank customers own ATM cards. This has increased the number of users of the technology during the transaction the customers are satisfied with the timely help when they get stuck with few incidents of card capture and less experience of increase in fraud. Due to all these the ATM technology is the technology of choice to many customers, easier to use, effortless, reliable, convenient and useful to customers.

Furthermore, ATMs don't offer money transfer services and cash deposit services and hence customers cannot get all the bank services they would need from the machines. There is also a need for innovations on ATMs technology, banks should consider looking for more advanced machines with more options for their customers, as customers think ATMs are cash dispersing machines because they can't deposit and transfer money. Banks need to work on that so that they can encourage more deposits from their customers and make customers reliable to the technology as many of the available options facilitate cash withdrawal services rather than encouraging saving behaviour by having more of depositing services.

Therefore, senior managers of the banks should give a good deal of attention for the factors that influence the adoption of the technology and factors for customer satisfactions. In boosting the capacity of the employees to handle large number of tasks, the role of Information and communication Technology is undeniable. However, bad internet and mobile network connection of which banks cannot avoid to outsource, and lack of awareness or familiarity to the technology to the employees and customers hindered the impact of Information and Communication Technology on speed of employees to accomplish specific tasks. Therefore, the concerned bodies of the banks and government should intensively invest on capacity building of their employees in terms of modernization and creating awareness programs for all product stakeholders.

6. References

i. Ameme., B. (2015). Internet Banking in Ghana: Challenges and Benefits. *International Journal of Emerging Science and Engineering (IJESE), Volume-3*(Issue-12), 8.

ii. Ameme., K. B., Y. (2016). Internet Banking Security Concerns: An Exploratory Study of Customer Behaviours based on Health Belief Model *International Journal of Emerging Science and Engineering (IJESE), Volume-4* (Issue-3).

iii. Davis, F. (1985). *Technology Acceptance Model for Empirically Testing New End User Information Systems*. Massachusetts Institute of Technology.

iv. Dearing, J. C., J. (2018). Diffusion of Innovations Theory, Principles, and Practice. *Health Affairs, 37*(2).

v. Kamel., S. (2005). The use of information technology to transform the banking sector in developing nations. *Vol. 11*, 9.

vi. Kijang, S., Dato., J. (2018). *Financial Inclusion; What we have Learned so Far?* Retrieved February 17th, 2020, from https://www.bing.com/searc hqpoint+of+sale%2C&form=EDGEAR&qs=PF&cvid=f6a9937745f44359ab04e6af7abfd20d&cc=TZ&setlang=en-US

vii. Lubua., E. M., M. (2012). *ICT Policy and Transparency in Tanzania*. Paper presented at the IST-Africa 2012 Conference Proceedings.

viii. Luoga F& Nyoni A (2017). *Directorate of Banking Supervision Annual Report 2017.* The report published by Directors of Banking supervision, ISSN 0856 – 8537.
ix. Mugo, D., Njagi, K., Chemwei, B. & Motanya, J. (2017). The Technology Acceptance Model (TAM) and its Application to the Utilization of Mobile Learning Technologies *British Journal of Mathematics & Computer Science, 20*(4).
x. Mutlu, H. (2017). Unified Theory of Acceptance and Use of Technology: *The Adoption of Mobile Messaging Technology*. *14*(1).
xi. National ICT Policy report (Tanzania) (2003) Retrieved on 1st August 2021 from www.tanzania.go.tz, www.moct.go.tz, www.tcc.go.tz.
xii. Nguyen, D. M., Nguyen, T. M., & Cao, T. H. (2015). *Information Systems Success: A Literature Review*. Banking University of Ho Chi Minh City, Saigon Technology University and Ho Chi Minh City University of Technology Springer International Publishing Switzerland.
xiii. Sharma., M. (2001). Information Technology in Banking: *Challenges for Regulators*. *Vol XXIX* (No. 4).
xiv. Tiwar R., K. R. (2012). Information technology in banking sector. *Asia Pacific Journal of Marketing and Management Review, Vol.1*(Issue 1), 9.
xv. Yang., S., Li., Z, Ma., Y & Chen., X. (2018). Does Electronic Banking Really Improve Bank Performance? Evidence in China *International Journal of Economics and Finance, Vol. 10,* (No. 2), 13.