

THE INFLUENCE OF ELECTRONIC BANKING ON CUSTOMER SATISFACTION IN THE TANZANIAN BANKING INDUSTRY: A CASE OF NMB BANK BRANCHES IN MOROGORO REGION, TANZANIA

ABSTRACT: The increasing number of digital platforms has allowed financial institutions to gain a competitive advantage and increase their market share. This has also led to developing new banking methods that can improve customer satisfaction. The study aimed to analyze the effect of electronic banking on NMB Bank customers' satisfaction. The study was conducted on a target population of more than 50,000 NMB Bank customers in the Morogoro Region. From there, a total of 200 individuals participated in the research. Data collection was carried out through primary methods, and a questionnaire was used to gather information about the participants. Descriptive statistics were utilized to summarize the data to determine the effects of electronic banking on customer satisfaction. At the same time, multiple regression analyses were also carried out to test the relationship between the outcome variables and predictors. The study revealed that only ATM and mobile banking had a positive, strong, and statistically significant influence on customer satisfaction, denoting that customers experience satisfaction through security, costs and ease of use when using ATM and mobile banking.

In contrast, internet banking had a negative and statistically significant influence on customer satisfaction, meaning that customers were not satisfied with online banking due to costs, security and ease of use. The study concluded that ATMs and mobile phones positively influenced customer satisfaction, while Internet banking negatively influenced customer satisfaction. Furthermore, all sectors, including government, private, and individual entities, must recognize the significance of electronic banking for improving living standards and economic development. The findings of this study indicate that banks still need to improve their network troubleshooting procedures to facilitate quick services.

Keywords: Electronic banking, customer satisfaction, commercial Bank.

Introduction

The rise of electronic banking has revolutionized the traditional way of doing business. Using an electronic device allows customers to conduct transactions more quickly and easily. Most banks, including mutual and large institutions, have started offering online banking services to their customers. Technological advancements have resulted in new ways of handling transactions within the banking industry, especially within the online channel. Due to the increasing number of mergers and acquisitions within the financial sector globally, it is becoming more competitive and turbulent. Due to the recent economic recession and the financial crisis, leaders of banks are under

increasing pressure to maintain their customer satisfaction while lowering their costs. To do so, they have taken advantage of the technological advancements in the banking industry (Claude, 2022).

Electronic banking is becoming an integral part of the Tanzanian financial sector, helping improve service quality and strengthen the country's banking industry (Ernst & Young LLP, 2022). With this technology, any transaction or enquiry can be conducted online without needing a physical branch. It also eliminates geographical and physical boundaries and allows consumers to conduct banking transactions from anywhere. The traditional ways of conducting banking transactions have drastically changed due to the technological advancements in the industry (Nzabirinda, 2020). Traditional banking involves the establishment of a physical presence within a geographical area.

Despite the various advantages electronic banking has brought, some people still need to be satisfied with this technology. This is because they prefer traditional banking methods. Some of the main reasons why people are not satisfied with the use of electronic banking include the complexity of its technology and the security risk associated with it. In addition to these, other factors, such as the cost of implementing the new system, also contribute to the low number of people using this type of technology (Kato, 2019).

The government's monitoring of the country's financial organizations began after the number of people signed up for electronic banking increased. The government has started to monitor the activities of the various financial institutions in the country (Kimario, 2019). The goal of this project is to ensure that the government can collect enough revenue from the use of this technology. In addition, to ensure that the country's financial institutions can operate efficiently, the government has also introduced laws aimed at protecting the public from the risks associated with using e-banking (Kato, 2019).

The banking sector claims that adopting new technology can help banks establish a stronger relationship with their customers and enhance their service level (Kayode & Jimoh, 2023). It is also clear that numerous banks in Tanzania have benefitted from the innovations brought about by international technology, such as mobile banking and ATMs. Ngaida, (2020) reported that Tanzanian banks were able to reduce their customer wait times by about 20% through technology. This has been demonstrated through the improvement in their service delivery and the responsiveness of their customers. As the banking industry expands, more banks are expected to adopt new technology to provide efficient services. Thus, this study is conducted to determine the effect of electronic banking on customer satisfaction in the Tanzanian banking industry.

Statement of the Problem

Several banks all around the globe have recognized the significance of cultivating and maintaining good client relationships and enhancing client satisfaction as integral components of their business strategies (Kayode & Jimoh, 2023). Nevertheless, despite the various initiatives that they have

carried out, several banks worldwide still need to improve their customer satisfaction (Ayinaddis et al., 2023). According to a study conducted by Nyiranzabamwita and Harelimana, (2019), the main reason why many banks are still experiencing high levels of dissatisfaction is due to the technological issues that they have. KPMG, (2016), survey revealed that over 60% of African bank customers are dissatisfied with their service. The survey also noted that the increasing number of people willing to switch banks due to the lack of secure service also contributes to the increasing dissatisfaction.

The banking sector of Tanzania has been regarded as one of the country's fastest-growing industries. From 1990 to 2022, the number of banks increased from one state-owned Bank to 46 (Ernst & Young LLP, 2022). According to the Bank of Tanzania Annual Report for 2021 to 2022, the country's number of supervised institutions grew to 59 by June 2022; these included 46 banks and 13 non-bank organizations. Deposit-taking was handled by 34 commercial banks, five regional and community banks, five microfinance institutions, and two development banks (Bank of Tanzania, 2022). Despite the country's rapid growth, many banks still use traditional methods to conduct their transactions. The use of electronic payment systems is still in its infancy (Morrow & Falsin, 2023).

Despite the efforts made by banks to ensure that their consumers can benefit through e-banking, many banks still need help implementing the service. Some of the issues they face include the high cost of doing business in electronic banking, the lack of sufficient staff members to handle the issue, and the inability to provide customers with the necessary information (Obinne, 2022): (Ernst & Young LLP, 2022). Besides these, technological advancements in the e-banking industry have also contributed to its growth. (Omotayo, Adewale & Kadiri, Kayode & Jimoh, 2023).

Mobile banking is one of the technologies that banks have started to adopt to improve the efficiency of their operations. This allows them to increase the speed and accuracy of their transactions. Furthermore, in recognition of electronic banking's influence on customer satisfaction in Tanzania, a few studies, such as Kimario, (2019); Mchomba, (2018), studied such phenomena and determined the effect of electronic banking on customer satisfaction. They determined satisfaction using seven matrices of service quality while focusing on electronic banking in general. However, this study looks at specific aspects of electronic banking, namely ATM, mobile phones and internet banking, towards specific parameters of customer satisfaction which are rarely spoken.

Research Questions

- i. What is the influence of Automated Teller Machines (ATMs) on customer satisfaction?
- ii. What is the influence of mobile phone banking on customer satisfaction?
- iii. What is the influence of Internet (online) banking on customer satisfaction?

REVIEW OF LITERATURE

Concept of Electronic Banking

An electronic banking system allows customers to access the Bank's services and conduct transactions without physically visiting a bank branch (Metlo et al., 2021). It is ideal for banks as it allows them to integrate all their activities into one system. Through an e-banking system, consumers can access their accounts, make payments, and manage their finances. Its ultimate objective is to make sure that there are no references to the locations of bank branches in the system. Electronic banking makes it easier for customers to manage their finances, putting them at ease and putting them at the lowest possible inconvenience. Customers can conduct various transactions online from anywhere using the Internet Banking site.

Concept of Customer Satisfaction

According to Chukwuma et al. (2022), customer satisfaction measures how consumers feel about a product or service after purchasing it. It can be used to identify the factors that influence their decision-making process and satisfaction with the institution. This type of feedback can also help the institution improve its efficiency and deliver better services. Today, customer satisfaction is a highly sought-after concept in the global marketplace. It measures how satisfied consumers are with a product or service.

Theoretical Review

Technology Acceptance Model

The Technology Acceptance Model (TAM) is a widely used model for assessing the impact of new technology on an individual's behaviour. It has been used in various studies to examine the factors that influence an individual's decision to adopt new technology. The concept of sequential association between attitude, belief, and intention helps predict the likelihood of an individual using a new technology.

The concept of TAM is based on the TRA, which states that people's attitudes toward information systems are influenced by how perceived they are to be helpful. The goal of innovation is to act as a mediator between the actual use of a system and the perceived usefulness of its components. In 2014, Hanafizadeh and colleagues noted that the TAM model was used to analyze the factors influencing an individual's decision to adopt a new technology. According to this theory, perceived ease of use and usefulness influence an individual's decision to adopt a new technology.

Higher levels of knowledge can lead to better customer satisfaction and productivity. Unfortunately, criticisms of the technology acceptance model were not taken into account, rendering it incapable of accurately predicting the adoption of ICT. It also provided inadequate precursors to mobile and social influence conditions.

This study recognized the Technology Acceptance Model (TAM) as a theoretical framework that aims to understand how technology acceptance affects users and their use of electronic banking services. Through the use of TAM, financial service providers can improve their customers' understanding of the usage and acceptance of their technology. It helps them design better services and products. Furthermore, the Technology Acceptance Model aims to help financial service providers identify the factors that influence the use and adoption of their mobile money services. This process can also help them identify the barriers that prevent their customers from adopting their technology.

Furthermore, perceptions of usefulness and trust influence the willingness and attitude toward adopting electronic banking. This study aims to analyze the effects of social pressure on the TAM through the use of TAM. This study can be used to implement the model in practice and improve the implementation of electronic banking.

Innovation Diffusion Theory

The concept of innovation diffusion refers to the process of how a product or service can gain momentum and become more prevalent in a particular society. According to Rogers (1962), the four main factors that influence innovation include the innovation itself, the social system, time, and communication channels (Ngaida, 2020); (Ijeoma et al., 2020); (Chukwuma et al., 2022). The goal of innovation diffusion is to sustain the community by making the product or service widely adopted. This process can help people in the social system adapt to new behaviours or ideas.

The first group of individuals involved in developing new ideas are referred to as innovators. These individuals are passionate about their new ideas and willing to take on the risks associated with them. The second group of people involved in developing new ideas are referred to as early adopters. These individuals are ready to adopt the new ideas and are usually the first ones to introduce them. Unlike other people, they do not need much time to convince themselves.

The second group of individuals involved in developing new ideas is referred to as early adopters. These individuals are usually the ones who find the new idea most interesting and are willing to take on the risks associated with it. Before they start using a new idea, they also investigate the effectiveness of the product or service.

The fourth group is late adopters, who are usually the ones who are not excited about the new idea. They can only adopt it after it has been proven to be effective and if the majority has tried it. On the other hand, early adopters require information about how the new innovation has helped them perform their daily activities.

The last group is the laggard. They are conservative individuals in a society that will never adopt new technology, even if it is successful. It is very challenging to convince them to adopt innovation, as they have to be prodded by government agencies.

This study's adoption of the innovation theory is critical in enhancing the perception of the usage and adoption of electronic banking, hence promoting customer awareness. Through the theory, the banking industry and providers of electronic banking services could design products and nurture ways to enhance user-friendly services that promote customer satisfaction and adoption. Hence, the theory is very necessary for this study as it relates to electronic banking and enhances customer satisfaction.

Empirical Review

Automated Teller Machines (ATM) and Customer Satisfaction

The study conducted by Nshimiyimana (2020) aimed to investigate the mediating effects of satisfaction on the loyalty of customers of the Bank of Kigali. Data was gathered from 364 of the Bank's customers through a questionnaire. The study was conducted using the SPSS statistical package. The study found that there is a positive correlation between the quality of service and loyalty. The study revealed that satisfaction with the Bank has a positive effect on the loyalty of its customers. It also found that customer satisfaction can mediate the relationship between various quality dimensions of service and loyalty. He further recommended that the Bank of Kigali enhance the services offered through its ATMs to gain its customers' loyalty and create a favourable brand image.

Goet (2020) analyzed the factors that influence consumers' decision-making process and satisfaction when using an ATM in Nepalese. The study was conducted using a well-designed questionnaire that gathered data from 200 subjects. The results revealed a positive relationship between the factors that influence the decision-making process and the satisfaction of consumers when using an ATM. The study also found that the fee charged and the choice of the ATM were associated with the customer's satisfaction.

From the Tanzanian perspective, a study by Ochumbo and Matimbwa (2018) examined the various factors that influence the satisfaction of consumers with the ATM services of CDRB Bank in Iringa Municipality. The research revealed that customers usually use the Bank's essential ATM services, such as withdrawal and balance inquiry. The factors that contribute to the satisfaction of customers are the establishment's efficiency, security, cost, responsiveness, and reliability. On the other hand, privacy was considered a negative factor when it came to the satisfaction of consumers. According to the study, the CRDB bank should target increasing the number of customers who avail of emerging ATM services.

Internet (Online) Banking and Customer Satisfaction

Sambaombe and Phiri (2022) revealed that the rise of online banking has made it easy for customers to conduct business transactions. However, several of Stanbic Bank's customers still need to be satisfied with the Bank's services. They are not satisfied with the Bank's overall customer service. This study aimed to analyze the effects of online banking on the satisfaction of commercial bank customers in Zambia. It was carried out through a case study conducted at Stanbic Bank's headquarters in the Lusaka district. The study was conducted using the TRA model. The relationship between the satisfaction of the Bank's customers and online banking was then determined using the Kendall tau-b correlation model. The study results revealed that there needs to be a more vital link between customer satisfaction and online banking. The adverse effects of online banking on their satisfaction were linked to various factors such as gender, education, and attitude.

Similarly, a study by Vetrivel et al. (2020) aimed to identify the factors that influence the satisfaction of online banking customers. It uses a theoretical framework that includes five dimensions of service quality and one exogenous variable. The research was conducted on 250 bank customers. The five service quality dimensions identified were responsiveness, trust, efficiency, security, and convenience. The researchers discovered that the efficiency and trust of an online bank's website are some of the factors that can positively affect the satisfaction of its customers. This study's findings can help policymakers and bank officials develop effective policies regarding the quality of online banking services.

Raza et al. (2015) analyzed the impact of service quality on the satisfaction of consumers in Pakistan. The study was conducted through a survey questionnaire of 400 individuals who used Internet banking facilities in Pakistan's largest city, Karachi. The survey results revealed that all dimensions of the survey were reliable. The factor analysis findings also supported the hypothesis that a positive relationship exists between responsiveness, reliability, and tangibility. The study also found that empathy could have a positive impact on the satisfaction of consumers. In practical terms, it is recommended that online banks improve their customer experience by making their websites more visually appealing. To ensure the safety and security of their customers' online accounts, the management of online banks has to take the necessary steps to improve the quality of their services.

Mobile Banking and Customer Satisfaction

Metlo et al. (2021) aimed to empirically study the effects of mobile banking on the satisfaction of Pakistani consumers. It was conducted through a self-administered survey. The study's results revealed that various factors, such as ease of use, perceived usefulness, and credibility, can influence the customer satisfaction level of the banking industry. The study suggested that the management of banks should focus on enhancing the value-added services offered by their mobile banking applications and creating more user-friendly platforms to improve their customers' experience. Doing so would help them fulfil their customers' banking needs.

Similarly, Gumelar et al., (2020) analyzed the effects of various factors, such as mobile banking and customer satisfaction, on the Jakarta branch of Bank Muamalat DKI. The study was conducted using a non-probability sampling method. Data analysis was carried out using the Smart PLS application. The study revealed that mobile banking is significantly associated with customer satisfaction. Trust is also an intervening factor that influences the effect of mobile banking on the satisfaction of consumers.

Kavishemi and Thavakumar (2020) determined the impact of mobile banking on the satisfaction of consumers of banks operating in the Manumunai North division of the Batticaloa District in Sri Lanka. The study uses six dimensions to measure the satisfaction of consumers with banks. These include reliability, security, accessibility, responsiveness, ease of use, and convenience. Out of the 300 samples, the researcher collected 290 responses. Convenience sampling methods were also used to select the five banks' participants. The study's findings show that security, responsiveness, accessibility, and reliability have strong positive correlations.

A reasonable customer satisfaction metric can help business owners improve their operations. One of the most common factors that financial institutions consider when enhancing their customer satisfaction is the ease with which they can use their services. However, this can also be affected by the customer's expectations and what they want from the service. This study highlights the various factors that financial institutions and banks should focus on to improve their mobile banking services and maintain a positive relationship with their customers. Although it noted that current needs affected customer satisfaction, it did not identify the exact expectations of the consumers.

Conceptual Framework

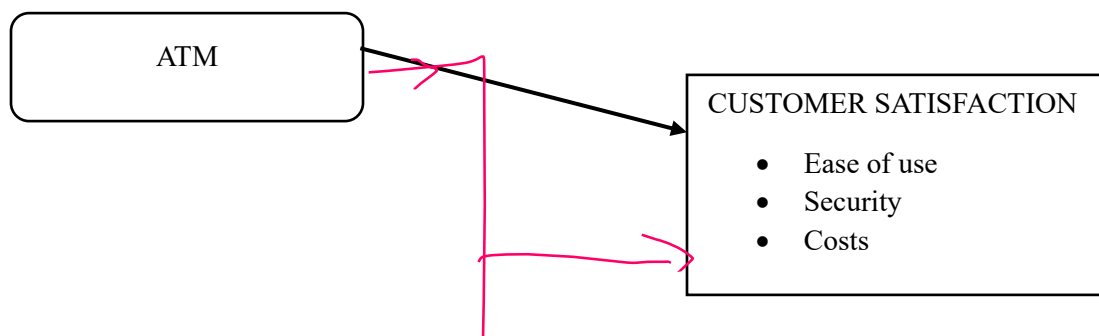
The concept of a conceptual framework helps the researcher identify the various elements of the study and their relevance to the current research. It also maps out the variables that will be analyzed in the study and their correlations. This study used an electronic banking system to improve NMB Bank's customer experience. The three independent variables analyzed in this study are ATM, internet banking, and mobile phone banking. Customer satisfaction as the dependent variable comprises costs, ease of use, and security. The study's findings indicate that the prevalence of electronic banking can affect consumers' satisfaction. It is expected to be studied and analyzed to determine its effects on the customer experience of financial institutions.

Independent Variable

Electronic Banking

Dependent Variable

Customer Satisfaction



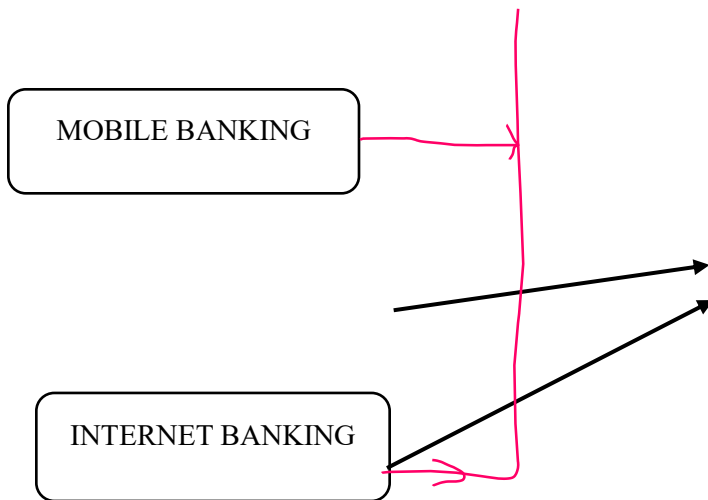


Figure 1: Conceptual Model
Source: Researcher's 2023

RESEARCH METHODOLOGY

Research Design

This study utilized a descriptive research design to improve the understanding of customer satisfaction and electronic banking. This approach allowed the researcher to collect information from various sources, increasing the usefulness of the study's findings. Good knowledge of the subject helps the researcher develop practical research questions.

Target Population

The study's target population was individuals with NMB Bank accounts in the Morogoro Region. The data collected from this group was used to analyze the various factors that affect customer satisfaction.

Sample Size and Sampling Procedures

A sample was utilized for the study, which represented a subset of the population's standards. The study utilized the Tabachnick, Ullman, and Fidell formula to determine the sample size required for the analysis. $N > 50 + 8m$ (where m = the total number of independent variables). For a study with three independent variables, the minimum number of responses from the population needed is 74. For this analysis, the researchers utilized a sample of 200 individuals who regularly visited NMB Bank in Morogoro, which is the sample size needed. The sample size of 200 was sufficient to perform multiple regression tests on the influence of electronic banking on customer satisfaction. The sample size of 200 customers who accessed NMB Bank were selected using the convenience sampling technique. This method requires the researcher to draw a sample of the subjects who are easy to participate in. The advantage of this approach is that it makes the data-gathering process more effortless.

Data Collection

The questionnaire contains various closed questions designed to elicit information from the respondents about specific issues. The researcher then used these questions to collect quantitative

data on customer satisfaction and electronic banking services offered by NMB Bank. The questionnaire structure was based on the Likert scale method, which asked the respondents to respond to various statements by indicating their agreement or disagreement. The keys used were as follows: 1 to 5, where 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; and 5 = strongly agree.

Data Analysis Method

The data collected from the questionnaires of NMB Bank's customers and employees were analyzed using the SPSS 23 software. The results were then analyzed using descriptive statistics in tables, percentages, and frequencies. The study results were then analyzed using a multiple regression analysis method to examine the effects of electronic banking on consumer satisfaction. The research's objectives were met by developing regression models, which were used to analyze the link between customer satisfaction and e-banking technology.

$$CS = \alpha + \beta_1ATM + \beta_2MB + \beta_3IB + \epsilon$$

Where; CS = Customer Satisfaction, MB = Mobile Banking, ATM = Automated Teller Machine, IB = Internet Banking

FINDINGS AND DISCUSSION

The results of this study revealed that the use of technology, such as information communication and electronic devices, can affect the satisfaction of customers. In addition, the effects of online banking and ATMs on customer satisfaction were also studied. The study's results were analyzed using a systematic method that tested the hypothesis and established the relationship between electronic banking use and customer satisfaction. The study was conducted on 124 male and 76 female respondents. The proportion of males involved in the study was 62%, while the females were 38%.

Regression Results

Multiple regressions are used to study the relationship among various factors, such as a predictor or a dependent variable. In statistical analysis, the process of estimating the relationship among multiple variables is known as regression analysis. It involves using various techniques to model and analyze the relationships among different elements. The results are as follows.

Model Summary

The model summary shows how much of the dependent variable is explained by the independent variables. It consists of R-value, R square and adjusted R square, which improves to give a better estimate. The findings are presented in Table 1 below;

Table 1 Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.789 ^a	.667	.606	12.70624
a. Predictors: (Constant), ATM, Mobile Phone Banking (NMB Mkononi) and Internet Banking				

Source: Researcher's 2024

Table 1 shows the value of the R-square, which is 0.667. This indicates that 66.7 per cent of the variance in customer satisfaction can be attributed to various factors such as Internet banking, mobile phone banking, and ATMs.

Analysis of Variance

Analysis of the variance Table as a multiple regression output through SPSS version 23 is used to show whether the regression model fits the study. Thus, the table shows how significantly the independent variables predict the dependent variable. Table 2 is presented below to show an analysis of the variance.

Table 2: Analysis of Variance (ANOVA)

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1002.849	3	334.283	53.163	.001 ^b
	Residual	3041.113	56	54.305		
	Total	40043.962	59			
a. Dependent Variable: Customer Satisfaction						
b. Predictors: (Constant), ATM, Mobile Phone Banking and Internet Banking						

Source: Researcher's 2023

From table 2, we would have expected $F=6.16$ and

$r^2= 0.03$. This seems contrary to the r square presented in table 1 and F-statistic presented in table 2

The total DF in table 2 =59. This implies that 60 respondents correctly answered the questions. This would mean that the response rate was 30%

The findings indicate whether the regression model used was a good predictor of the relationship between factors and internal audit effectiveness and whether the model was significant. The result showed an F value of 53.163 and a significant value of 0.001, indicating that the model was a significant and good predictor of the relationship between independent and dependent variables.

Regression Coefficient Results

Table 3 Coefficient Results

	Coefficients
--	--------------

Model		Unstandardized Coefficients		Standardized Coefficients	t	Expected t-values	Sig.
		B	Std. Error	Beta			
1	(Constant)	.649	.125		3.121	5.192	.000
	ATM	.466	.042	.164	5.037	11.095	.001
	Mobile Phone Banking	.532	.021	.132	4.380	25.333	.000
	Internet Banking	-.305	.045	.200	-5.383	-6.778	.001
a. Dependent Variable: Customer Satisfaction							

Source: Researcher's 2023

The author need to recheck the computed t-values. Ideally, the expected t values are inserted and highlighted.

The regression model for the customer satisfaction measure is constructed by considering the three dimensions of e-banking services, including ATM, NMB Mkononi and Internet Banking. The model is constructed with the equation below

$$\gamma = \alpha + \beta_1\chi_1 + \beta_2\chi_2 + \beta_3\chi_3 + \epsilon$$

there is need to replace α with β_0

Based on the coefficients as reported in table 3, the regression equation for customer satisfaction can be written as:

$$\gamma = .649 + 0.466\chi_1 + 0.532\chi_2 - 0.305\chi_3 + \epsilon$$

The regression coefficients for ATM, Mobile phone and Internet banking are 0.466, 0.532, and -0.305, respectively. The equation indicates that for every 1 unit increase in customer satisfaction, the banks must improve their ATM by 0.466, while they must improve mobile banking by 0.532 and online banking by 0.305. The relationship between customer satisfaction and the availability of mobile banking and ATMs is strong. However, it is also evident that the relationship between online banking and the NMB Bank is not good. This suggests that the Bank could improve its e-banking services to increase customer satisfaction.

The table above shows the beta values of the ATM, mobile phone, and Internet banking factors. These betas were statistically significant ($p < .01$). The beta values were 0.466, 0.532 and -0.305, respectively, which implies that the main driver of these independent variables was mobile phone banking (NMB Mkononi). The p-value of ATM was significant ($p < .01$), indicating a statistical significance. The value of Mobile phone banking was also significant ($p < .01$), which indicates that there was a statistically significant influence and internet banking was significant as well ($p < .01$), which indicates there was a statistically significant influence. Therefore, the results indicate that the independent and dependent factors had a positive correlation, except Internet banking, which negatively correlated with customer satisfaction.

These findings were consistent with other studies such as Ochumbo and Matimbwa (2018), Goet (2020), Putri et al. (2022), Metlo et al. (2021), Gumelar et al. (2020) and Kavishemi & Thavakumar.D, (2020) and Nshimiyimana (2020). All these studies found a positive and significant influence between electronic banking and customer satisfaction as a form of electronic banking services. Their results indicated that the adoption of electronic banking, especially ATM and mobile banking, was influenced by security, convenience, reliability and cost-effectiveness. Similar to this study, most customers agreed that increasing the use of NMB Mkononi saves them time and transport costs when transacting in brick branches. Hence, mobile phone banking was vital for determining and increasing customer satisfaction.

Furthermore, regarding online banking and customer satisfaction, the results conformed with the study by Sambaombe and Phiri (2022), which revealed that the rise of online banking has made it easy for customers to conduct business transactions. However, several of NMB's customers must still be satisfied with the Bank's services. They are not satisfied with the Bank's overall customer service. Thus, despite the advantages of convenience to customers' banking transactions, customers were still unsatisfied and wanted more services provided online by the Bank.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The goal of this study was to find out what impact electronic banking has on consumer satisfaction. The study analyzed the effects of automated teller machines on consumer satisfaction. It revealed that the more people used an ATM, the more satisfied they were. The study also found that the security, convenience, and reliability of the machines were important factors that contributed to consumer satisfaction.

The study also examined the effect of mobile banking on consumer satisfaction and found that it had a positive impact. It noted that the use of mobile banking had a significant impact on consumers' satisfaction. According to the study, mobile phone use has revolutionized consumers' financial transactions. These innovations have reduced time and costs while providing a more convenient and secure environment.

The study also examined the effect of online banking on consumer satisfaction. It found that using online banking hurt consumers' satisfaction. It revealed that the inaccessibility of NMB Bank's network and the high transaction costs were the main factors that affected consumers' satisfaction.

Recommendations

This section's objective is to provide recommendations regarding the enhancement of NMB Bank's electronic banking services. These recommendations are based on the findings of a study that examined the various aspects of the banking industry in Tanzania.

- The rapid evolution and emergence of technology have significantly affected the banking industry. Therefore, commercial banks in the country must adopt the digital economy to improve their customer service and reduce their costs. This can be achieved by establishing a secure and resilient banking system. Aside from reducing the time it takes to manage customers' funds, the Bank can also increase the number of transactions through electronic payment.
- NMB Bank's e-banking services should be developed through an integrated and collaborative approach involving various stakeholder groups. This method can be achieved by identifying individuals who can play a significant role in the country's electronic payment infrastructure. Due to the country's rapid economic growth, it has become necessary for the government to establish efficient payment systems, such as electronic money transfers.
- Trust is a vital concern for NMB Bank, and the company must take the necessary steps to develop this relationship with its customers. This can be achieved by carrying out trust-creating activities. Besides maintaining an efficient system, NMB Bank should also improve its user interface, including updated financial data. The establishment of regulations that support the operations of online and net banking businesses is a vital step toward addressing the security concerns that this sector encounters.
- In addition to maintaining a secure space, NMB Bank must consider the various measures it uses to protect the information it collects online. Customers are more inclined to perform transactions when they know that their information is protected. NMB Bank should regularly monitor how its technology is being used. This can be done by determining how many people use the system, and the IT department will then analyze the data to develop improvements.
- Mass media exposure, such as television, radio, and newspaper ads, can raise public awareness about the advantages of online banking. Bank managers should also constantly communicate the importance of educating their customers about its various features. NMB Bank should conduct seminars and workshops to inform the public about its banking services.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

Option 2:

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

- 1.
- 2.
- 3.

UNDER PEER REVIEW

References

- Chukwuma, K., Catherine, I., & Nwipko, C. (2022). *Electronic Banking and Customer Satisfaction : A Study of*. 24(6), 1–8. <https://doi.org/10.9790/487X-2406030108>
- Claude, D. M. J. (2022). Effect of Electronic Banking on Customer Satisfaction in Rwanda: Case of Bank of Kigali Headquarter. *Scholars Journal of Economics, Business and Management*, 9(1), 14–29. <https://doi.org/10.36347/sjebm.2022.v09i01.003>
- Ernst & Young LLP. (2022). *Tanzania Banking Sector Report: A Review of the Calendar Year 2021*. www.ey.com
- Goet, J. (2020). Customer Satisfaction Towards ATM Service In Nepalese Banking Sector. *Management Dynamics*, 23(2), 45–52. <https://doi.org/10.3126/md.v23i2.35805>
- Gumelar, A., Nasution, M. I., Oesman, I. F., Ramadini, F., Irfan, M., & Nurliana. (2020). Technology mobile banking on customer Satisfaction. *Journal of Physics: Conference Series*, 1477(7). <https://doi.org/10.1088/1742-6596/1477/7/072020>
- Ijeoma, C., Akujor, J. C., & Mbah, J. C. (2020). Electronic Banking and Customer Satisfaction in Imo State (A Study of Selected Commercial Banks in Imo State). *European Journal of Business and Management Research*, 5(6), 1–9. <https://doi.org/10.24018/ejbmr.2020.5.6.607>
- Kato, C. I. (2019). Legal framework challenges to e-banking in Tanzania. *PSU Research Review*, 3(2), 101–110. <https://doi.org/10.1108/PRR-06-2018-0016>
- Kavishemi, S., & Thavakumar.D. (2020). Impact of mobile banking applications on customer satisfaction. In *Journal of Management Matters* (Vol. 7). www.rjt.ac.lk/mgt
- Kimario, L. (2019). *THE EFFECT OF E-BANKING ON CUSTOMER SATISFACTION IN TANZANIA: A CASE OF CRDB BANK*.
- Mchomba, D. (2018). THE IMPACTS OF ELECTRONIC BANKING ON CUSTOMER SATISFACTION IN TANZANIA BANKING INDUSTRY: A CASE STUDY OF NMB BANK DOREEN. In *Transcommunication* (Vol. 53, Issue 1). <http://www.tfd.org.tw/opencms/english/about/background.html> <http://dx.doi.org/10.1016/j.cirp.2016.06.001> <http://dx.doi.org/10.1016/j.powtec.2016.12.055> <https://doi.org/10.1016/j.ijfatigue.2019.02.006> <https://doi.org/10.1016/j.matlet.2019.04.024>
- Metlo, Y., Hussain, N., Saqib, G., Phulpoto, K., & Abro, S. (2021). The Impact of Mobile Banking on Customer Satisfaction. *International Journal of Trend in Scientific Research and Development, Special Is*(Special Issue-FIIIPM2019), pp. 21–23. <https://doi.org/10.31142/ijtsrd23053>
- Morrow, C., & Falsin, S. (2023). *Assessing Progress and Priorities: Tanzania's Financial Inclusion Journey*. March.

- National Council for Financial Inclusion [NCFI]. (2023). *NATIONAL COUNCIL FOR FINANCIAL INCLUSION Evaluation Report on implementing NFIF2 (2018-2023)*. 2(June), 1–108.
- Ngaida, A. (2020). An Analysis of the Impacts of Electronic Banking on Customer Satisfaction in the Tanzanian Banking Industry: A Case of Kenya Commercial Bank. In *Master's dissertation, Mzumbe University*.
- Nshimiyimana, A. (2020). The Mediating Effects of Customer Satisfaction in the Relationship between ATM Service Quality and Customer Loyalty – A Case Study from Bank of Kigali. *European Journal of Business and Management Research*, 5(4), 1–11. <https://doi.org/10.24018/ejbmr.2020.5.4.351>
- Nzabirinda, E. (2020). *THE INFLUENCE OF MOBILE BANKING SERVICES ON CUSTOMER SATISFACTION*. 11(6).
- Obinne, D. bel & K. & M. &. (2022). *Digital Banking in Sub-Saharan Africa by BPC and Fincog*.
- Ochumbo, A., & Matimbwa, H. (2018). Automated Teller Machine And Customer Satisfaction In Tanzania: A Case of CRDB Bank In Iringa. *Journal of Business Management and Economic Research*, 2(3), 11–20. <https://doi.org/10.29226/tr1001.2018.23>
- Omotayo, Adewale & Kadiri, Kayode & Jimoh, B. (2023). *PERCEPTION OF ELECTRONIC BANKING (E-BANKING) ADOPTION ON BANKS ' CUSTOMER SATISFACTION IN OFFA*. 9(1).
- Putri, D. I. S., Hendrayati, H., & Hurriyati, R. (2022). The Influence of Electronic Service Quality (M-BANKING) on Customer Satisfaction. *Proceedings of the 6th Global Conference on Business, Management, and Entrepreneurship (GCBME 2021)*, 657(Gcbme, 2021), 335–338. <https://doi.org/10.2991/aebmr.k.220701.065>
- Raza, S. A., Jawaid, S. T., & Hassan, A. (2015). Internet banking and customer satisfaction in Pakistan. *Qualitative Research in Financial Markets*, 7(1), 24–36. <https://doi.org/10.1108/QRFM-09-2013-0027>
- Sambaombe, J. K., & Phiri, J. (2022). An Analysis of the Impact of Online Banking on Customer Satisfaction in Commercial Banks Based on the TRA Model (A Case Study of Stanbic Bank Lusaka Main Branch). *Open Journal of Business and Management*, 10(01), 369–386. <https://doi.org/10.4236/ojbm.2022.101022>
- Vetrivel, S. C., Rajini, J., & Krishnamoorthy, V. (2020). Review Article INFLUENCE OF INTERNET BANKING SERVICE QUALITY ON CUSTOMER SATISFACTION- AN INDIAN EXPERIENCE Responsiveness Trust Convenience Customer Satisfaction Efficiency of Web Site Security. *Journal of Critical Reviews ISSN-*, 7(2), 546–551.

UNDER PEER REVIEW