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****Original Research****

THE EFFECT OF ELECTRONIC BANKING ON COMMERCIAL BANKS' FINANCIAL PERFORMANCE IN TANZANIA

Authors

Fadhili Ephraim Maseko
Institute of Accountancy Arusha
Email: fmaseko@iaa.ac.tz

&

Arnold Kalama
Institute of Accountancy Arusha
Email: akalama@iaa.ac.tz

ABSTRACT

The paper investigated the effects of e-banking on the profitability of commercial banks as a measure of their financial performance. The study is pertinent since e-banking is a significant innovation that hinders bank operations in both urban and rural areas. A case study design and a quantitative approach were adopted. The study population consisted of 171 individuals, from whom 120 respondents were drawn using the (Cochran, 1963) formula (n= N/(1+N e2)). The study used questionnaires to collect data that were analysed using descriptive statistics and regression. Results showed that customers utilised all four electronic banking products and that they were statistically significant: ATMs (P=0.0001, CI = 0.78-1.2), agency banking (P=0.0001, CI = -1.32 -0.52), mobile banking (P = 0.004, CI = 0.16 -0.8), and online banking (P=0.0001, CI= -1.33 -0.41). The relevance of EFT in explaining NMB profitability was determined to be 0.02 and the p-value to be 0.05, thus concluding that EFT has a significant impact on NMB's profitability. There is positive correlation between e-banking and the profitability of the banks. The use of PINs instead of signatures was recommended, with expectation that it is easier to manage cybercrime occurrences when PINS are used.

Keywords: ***Electronic banking, Automatic Teller Machines, Mobile money, EFT, Financial performance***

1.0 INTRODUCTION

Commercial banks are financial institutions that provide financial services such as loans, savings accounts, current accounts, fixed accounts, and overdrafts to society's customers and, in some cases, issue Certificates of Deposit (CDs). Commercial banks engage in a variety of activities, but lending loans, advances, and overdraft facilities to both individual and corporate clients is one of the most profitable. Profit margins are based on the interest charged on loans, advances, and overdraft facilities. According to Satta (2003), approximately sixty percent (60%) of a commercial bank's revenue comes from lending. In addition to the performance of the banking system, the stability and growth of Tanzania's economy rely heavily on its performance.

When commercial banks perform well, shareholders, customers, and other stakeholders gain confidence that their funds are secure, and Tanzania becomes more attractive to investors. However, there are various things that allegedly affect banks' performance; therefore, it is necessary to link monitoring of the banks and profit efficiency so as to boost the banking industry's model (Akhigbe & McNulty, 2021). In this case, the study has directed itself to the effect electronic banking has on banks' financial performance. According to Ogare

(2013), the effects of electronic banking on the financial performance of commercial banks in Kenya. Debit / Credit cards have a significant positive financial relationship with the financial performance of commercial banks in Kenya. Munyocho (2015) argues that there is a positive relationship between debit and credit cards on financial performance and that there is an improved efficiency, speed, accuracy and flexibility in the operations of commercial banks. A strong positive relationship between electronic banking and the financial performance of commercial banks (Njogu, 2014).

Utilising both financial and non-financial indicators, the performance of banks is evaluated from a variety of perspectives. Hughes and Mester (2015) identify non-structural and structural approaches to measuring the performance of banks. Non-structural approaches utilise a variety of performance metrics, including return on Equity (ROE), return on Assets (ROA), net interest margins, and Tobin's q-ratio, among others. In contrast, structural approaches rely on theoretical models of banking behaviour, including efficient and profit frontiers. Efficiency measures how well a bank converts inputs into outputs in comparison to other banks in the same industry. As intermediaries between depositors and borrowers, banks distinguish themselves from other business entities. Therefore, banks' performance must be evaluated in light of the financial intermediation process. Banks' financial stability is determined by their overall long-term financial performance.

Similarly, Michael and Enang (2022) investigated the relationship between credit risk and bank performance in Nigeria, discovering that Non-Performing Loans (NPLs) had a positive relationship with ROE. From 2008 to 2019, Isayas (2022) estimated the determinants of 14 commercial banks' profitability in Ethiopia using the generalised method of moments (GMM) estimation of dynamic panel data. It was discovered that firm size, liquidity ratio, asset tangibility, capital adequacy, leverage, and real Gross Domestic Product (GDP) growth rate have a positive and statistically significant effect on bank profitability in Ethiopia, whereas firm age and inflation rate have a negative but statistically insignificant effect. Using a panel data analysis, Lawa et al. (2021) investigated the factors of bank performance in South Africa. Many customers are opting for online banking because it is a more convenient option than traditional branch banking (Kumbhar, 2017). According to Sameni et al. (2015), online banking facilitates electronic commercial transactions without requiring a visit to the bank. According to Bank of Tanzania, 2020, the usage of mobile money which is one of the electronic services has an increase of 21.8 percent in volume and 8.9 percent in value compared with 2018/2019 usage of electronic transactions as quoted in (Mswahili, 2022).

Financial performance, on the other hand, plays a vital part in a bank's performance that is reflected in monetary terms. The easiest way to determine a bank's performance is to deduce from its financial statements (Ashebir, 2017). In addition, financial performance is a measure of a company's capacity to use its assets to generate revenues (Almajali et al., 2012). It assesses the financial health of a company over a certain time period, often one year. Indicators of financial performance include, among others, profits, return on investment, return on assets, value-added, and margins. Financial performance guides management in the adoption of initiatives and policies to enhance the organization's sustainability (Almazari, 2011). The purpose of financial performance measurement is to maximise the organization's return on the capital invested in the firm (Ngui, 2010). It is essential for businesses to improve their financial performance by growing their profit, reducing their costs, and ensuring that their personnel are competent while simultaneously offering value to their clients, as this will ultimately determine the firm's business survival (Pimpong & Laryea, 2016).

Given this background, the current study sees the value of e-banking on the financial performance of a bank. This is because e-banking facilitates electronic commercial transactions without requiring customers to visit the bank. This, in turn, improves financial inclusion and has a positive implication on the financial performance of commercial banks in Tanzania (Sameni et al., 2015; Ishengoma, 2011).The study done in Rwanda commercial bank found that electronic banking has a great impact on financial performance, as it increases profitability, return on assets, return on investment, return on equity and loans, improves bank management quality, increase bank assets and promotes bank growth and expansion (Ngango et al., 2015). Regardless of the value highlighted from other contexts, there is limited information on its impact in Tanzania. It is because of this reason that this study determined the impact of electronic banking on the financial performance of commercial banks in Babati, Tanzania.

2.0 LITERATURE REVIEW

This section discussed the literature review based on subsections presented in the next part.

2.1 Model for Technology Acceptance

The Technological Acceptance Model is used to guide the study. The technology Acceptance paradigm was built on the theory of reasoned action (Lubua & Pretorius, 2019). It says that two things affect how well people like an information system: how easy they think it is to use and how useful they think it is (PU). Davis says that a high-performance information system is useless if the user does not learn to use and accept the technology. Because of this, it is important to find out why users accept or reject systems so that they can be

explained and updated in the future. Davis (1993), Saade and Bahli (2005), and Nair and Das (2011) all say that accepting and using new technology takes little effort. PEU is the degree to which a person thinks that using one system takes the least amount of effort (Sun et al.,2009). Studies have shown that people will get used to new technology if they think it is easy to use (Davis, 1989; Liang et al., 2010). Acceptance of technology is also affected by how useful people think it is. Perceived usefulness is proven when a user thinks the technology makes his or her job easier (Tarhini et al., 2015). PU is "how much a person thinks that a certain system will help them do their job" (Sun et al.,2009). It also has to do with the idea that technology makes people better at what they do (Liang et al., 2010). TAM and its external models from other research show that PU helps people reach their goals both when they have no choice and when they do (Verkasalo et al., 2010).

However, the model has been criticised by people like Bashange (2015), who say that most literature has used the Technology Acceptance Model as a dependent variable instead of a way to figure out the factors that affect behaviour. Javid, Okamura, Nakemura, and Wang (2013) say that the model does not take into account other external factors like education and age, which could also affect a person's willingness to adopt and use new technology. So, the model has not been seen as a good link between technology and how it is adopted and used (Ajibade, 2018). This theory is used to explain why banks in Tanzania offer online services for making financial transactions. E-banking will likely be used by banks and their customers because it is easy to use and works. So, if they and their customers think that e-banking will make them better at providing banking services and will not cost them anything, they will use it. This shows how e-banking affects how well the bank does financially.

2.2 Determinants of Financial Performance

The literature presents the following as factors of the financial performances of commercial banks: (i) Size of the riverbanks: Klein (2013) stated that the size of a bank could impact its financial performance. (ii) Economies of scale: The study elaborated on how large banks can leverage economies of scale and scope, making them more efficient than smaller banks. The study indicated that small banks might have less power to compete in the market than large banks; therefore, they may find it difficult to compete with giant banks, especially in highly competitive markets. (iv) Solvency: The credit crisis research by Borio (2002) demonstrated that large commercial banks are more solvent than smaller ones, even if their financial ratios have the same numerical value. This means that smaller banks are more susceptible to failure during a

recession. (v) Nonperforming Assets: According to Mombo (2013), nonperforming loans have a negative impact on the profit of banks due to a large number of provisions for loan loss, which reduces operating profit and consequently impacts the financial performance of commercial banks. The productivity or efficiency of the banks, the profitability dimension, and the market premium are analysed to determine the performance of the banks (Abummar, 2019). Athaley et al. (2020) identified profitability, efficiency, non-performing assets, and governance procedures as four groupings of elements that influence the performance of banks based on the particular bank component affected.

2.3 Studies on the Effects of E-banking Services on Performance.

Ogare (2013) investigated the impact of online banking on the performance of Kenyan banks. It was revealed that electronic banking has a good and affirmative impact on Kenyan banks' profitability, according to the study's conclusions. The previous study, on the other hand, only looked at bank financial performance, but this study will only look at financial performance. Valahzaghard and Bilandi (2014) investigated the effect of electronic devices on how Iranian banks gain profits and to what extent they are shared in the market. Mawutor (2014) did a study at Ghana based bank to check its productivity as brought about by online banking services. The study issued 150 questionnaires to clients in Ogare (2013) and evaluated the effect of online banking on Kenyan banks' performance. According to the findings of the study, electronic banking has a positive and beneficial effect on the profitability of Kenyan banks. In contrast, the previous study solely examined bank financial performance, but this study will only examine financial performance. Valahzaghard and Bilandi (2014) evaluated the impact of electronic devices on the profitability of Iranian banks and the extent to which their profits are shared with the market. Mawutor (2014) examined the productivity of a Ghana-based bank as a result of its online banking services. The survey distributed 150 questionnaires to agricultural development clients. This is a quantitative method used by banks to collect data regarding internet banking.

According to Sameni et al. (2015), e-banking enables electronic commercial transactions without the need for a bank visit. Researchers have utilised numerous variables to evaluate the financial viability of commercial banks' e-banking services. He thinks that electronic banking improves the image of banks and leads to a larger, faster, and more efficient market. He proposed that banks, particularly commercial banks, should develop electronic banking systems in order to provide services that are quicker, more convenient, and more accurate. According to Osage (2012), the usage of electronic banking by Kenyan commercial banks benefited

both banks and clients because it made services available 24/7 and sped up transactions. Wisdom (2012) revealed in his study on the impact of electronic banking on service delivery to Ghana commercial bank limited clients that the negative view of bank customers has changed in many Ghana, as over 76% of respondents strongly agreed with this statement. The survey also revealed that electronic banking services had impacted the service performance and consumer perception of Ghanaian commercial banks.

Sameni et al.(2015) claim that e-banking enables electronic business transactions without requiring a trip to the bank. Researchers have examined a wide range of factors to evaluate the financial performance of commercial banks' e-banking. According to him, electronic banking improves banks' reputations and creates a bigger, faster, and more effective market. He advocated that electronic banking systems should be implemented by banks, especially commercial banks, to provide services that are quicker, more convenient, and more accurate. According to Osage (2012), the introduction of electronic banking by Kenyan commercial banks benefited both the banks and their customers because it made services accessible round-the-clock and sped up transactions. In his research on how electronic banking affects service delivery to consumers of Ghana Commercial Bank Limited, Wisdom (2012) found that over 76% of respondents highly agreed with the idea, changing many Ghanaians' negative perceptions of bank customers. The survey also found that the use of electronic banking services has changed how well Ghanaian commercial banks provide customer care and how customers view these products.

Ishengoma (2011) conducted a study on the analysis of mobile banking for financial inclusion in Tanzania and found that while most users of the service were able to find the technology useful for saving them from bank fees (affordable charges with M-banking), not all users in the study area found M-banking to be as convenient or easy to use as others who could read and write. Finally, the study showed that there is a strong correlation between network agents being present on the ground of the representative, especially when the customer needs them, and problems with not having access to an m-money agent.

Juma (2014) investigated how internet banking affected a Standard Chartered bank's overall performance. Using a non-experimental method, basic random sampling was used to select six survey participants. Through the use of questionnaires, data was gathered and analysed. According to the results of the poll, Standard Chartered bank uses a variety of electronic payment options, including internet banking, credit cards, debit-prepared cards, and electronic fund transfer cards: The study, however, solely focused on one bank and ignored other commercial banks that may operate differently and consequently have different

outcomes.

Okombo (2015) investigated how online banking affected the operation of MFIs that accept deposits in Kisii. The primary objective was to investigate how MFI performance was impacted by low transaction costs. For data collection, the study used surveys, a descriptive research methodology, SPSS, and a census sampling strategy. Low transition costs have an impact on MFIs in the following ways: consumers can receive bank services anytime they choose, even after hours, and they are not required to be physically present at the bank's location. In conclusion, MFI performance considerably improves when transaction costs are reduced. However, because the study was done among MFIs, commercial banks also need to follow suit.

Wafuta and Kombe (2015) focused on KCB while examining the impact of online banking on commercial banks' financial performance. Their study involved interviewing employees of KCB Mombasa, and data was gathered using a questionnaire. Descriptive statistics and the descriptive research method were used to analyse the results. Conclusions showed that adopting new technology results in better quality and time savings rather than cost savings; the study, however, neglected to look into this among other commercial banks where the effect may be different due to variations in the internal architecture of the different banks.

3.0 METHODOLOGY

The research was conducted in Babati Town Council in the Manyara region using a case study design. The study used NMB bank as a case study to study the relationship between e-banking and the financial performance of commercial banks in Tanzania. A quantitative approach was used and the sample size was determined using the Cochran (1963) method, where $n= N/(1+N\ e^2)$. In this case, n= Sample size, N= Population size =171, and e = Error term =5%= (0.05). Tis formula is also supported by Lubua (2022)

In our population of 171, the acceptable sample size is 120. The study employed a sample size of 120 respondents, drawn from a total population of 171 bank employees and consumers. The random sampling technique was used to obtain the sample. To enhance the questionnaire's construct validity and content, their viewpoints were analysed and taken into account. As a general guideline, the pilot test should include 5% to 10% of the target sample (Cooper & Schilder, 2011; Creswell, 2003; Gall & Borg, 2007). The pilot test sample complied with the standards. For Cronbach reliability testing, the twenty-four questions were coded and entered into the Statistical Package for Social Sciences [SPSS] version 20. Statistical Package for Social Sciences (SPSS) software and Cronbach's alpha correlation coefficient were used to evaluate the reliability

of the questionnaire. The results of the reliability test yielded a Cronbach Alpha correlation coefficient overall of 0.887. The closer Cronbach's alpha is to 1, the more reliable internal consistency is. (Sekaran, 2003). The recommended coefficient for a newly created questionnaire is 0.7; thus, for this study, 0.887 was adequate.

Additionally, regression analysis was used to examine how Tanzania's commercial banks' financial performance was impacted by electronic banking; the model driving this research is described below in the empirical model specification.

4.0 FINDINGS AND ANALYSIS

This section presents results of the study. Key sections are explained in the nest part.

4.1 The Extent of Using Electronic Banking Services in NMB Bank in Babati District

The purpose of the study was to determine the prevalence of electronic banking services in Tanzanian commercial banks and their impacts. Variables, including Automated Teller Machines (ATMs), agency banking, mobile banking, and internet banking, were utilised to provide electronic banking. In addition, for reasons of comparison, the usage of bank counters was incorporated as a contextual aspect of the questions. Consequently, the study examined the utilisation of electronic banking and bank branches.

Table 4.1: The Extent of Using Electronic Banking Services

Variables	Scale					N	Mean	STD
	1	2	3	4	5			
ATMs	0	1	5	9	36	51	4.57	.755
Mobile banking	2	3	8	13	23	49	4.06	1.126
Counter/tellers	2	7	7	11	23	50	3.92	1.243
Internet banking	18	6	4	12	8	48	2.71	1.584
Agency banking	12	9	8	12	3	44	2.66	1.328
WEIGHTED MEAN							3.58	

Source: Field Data (2022)

The descriptive analysis (table 5.1) and t-test (table 5.2) were utilised to analyse the data for this particular first objective. Descriptive analysis was used to examine the extent to which bank clients utilised electronic banking services, while the t-test was used to identify channels that were heavily utilised by bank customers.

In interpreting descriptive statistics, a mean score of 1.00-1.80 denotes that electronic banking was "not used," a mean score of 1.81-2.60 denotes that electronic banking was "used very rarely," a mean score of 2.61-3.40 denotes that e-banking was "used rarely," a mean score of 3.41-4.20 denotes that e-banking was "used occasionally," and a mean score of 4.21-5.00 denotes that e- banking was "used regularly."

According to the findings, ATMs and mobile banking are the most popular electronic banking services when compared to the old technique of utilising bank tellers or counters. It was revealed that bank clients utilised ATMs (mean 4.57), followed by mobile banking (mean 4.06), which was used occasionally but more frequently than bank tellers, to obtain financial services from the bank. Internet banking (2.71 on average) and agency banking (2.61 on average) are less often utilised than bank tellers/counters. The significance of the use of electronic banking products (ATMs, mobile banking, agency banking, and online banking) was determined using a sample t-test. Due to the absence of an obvious dependent variable (the dependent variable was latent), the mean of each variable was compared to the hypothesised mean (weighted mean), which was calculated and found to be 3.58. The results of the t-test are displayed in Table 4.2 below.

4.2 The Effect of Electronic Banking Systems on the Profitability of Commercial Banks in Tanzania

The study examined the financial impact of electronic banking on the NMB bank in Tanzania's Babati district as a case study. Automated Teller Machines (ATMs), Mobile Banking, and Electronic Funds Transfer were just a few of the e-banking factors that were assessed, as shown in Table 4.2

Table 4.2: The Effect of ATMs on the Profitability of the Bank

Variable	**Scale**					Mean	StD
	1	**2**	**3**	**4**	**5**		
Income from ATMs has a high margin hence contributing positively to annual bank profitability	2	6	2	78	12	3.92	0.324
ATMs have low maintenance costs leading to high levels of profitability over their economic lifetime	0	2	3	75	20	4.13	0.399
Investment in ATMs is mostly motivated by profits to the bank	4	20	44	31	2	3.05	0.853
Average						**3.70**	**0.525**

Source: *Field Data (2022)*

The findings show that ATMs do really assist commercial banks in making a profit. In order to determine the effect of ATMs on bank efficiency, three factors were looked at: Since ATM income has a high margin, it contributes to banks' annual profitability. Additionally, since ATMs require little maintenance over the course of their economic life, they generate significant profits. Finally, since banks are the main beneficiaries of ATM investments, the profits are what fund most of the capital expenditures. A 5-point Likert scale was used to assess the effect of ATMs on commercial banks' bottom lines, with 1 denoting a strong disagreement and 5 denoting a strong agreement. Standard deviations and mean scores were computed. Table 5.3 lists the rankings in terms of importance. The table also included an explanation of the computed mean. According to Guilford, the questionnaire used a five-point Likert scale with its range divided into five equal intervals or ratios and meaning assigned to each interval based on the importance of the target (1976).

4.2.2 Impact of Automatic Teller Machines on the Profitability of Commercial Banks

The NMB bank in the Babati district was used as an example in the study to show how electronic banking impacted Tanzanian commercial banks' profitability. The researcher confirmed her findings by using the respondents' responses on a five-point Likert scale. In Table 5.3's findings, the responses from respondents are shown in regard to how ATMs affect NMB bank's profitability in the Babati district. Ninety percent (90%) of respondents agreed that high margins on ATM money are what underpin banks' huge profits. Two percent (2%) were neutral, while eight percent (8%) disagreed. On the other hand, it was found that 95% of respondents agreed that ATMs have cheap operating or maintenance expenses, while 2% disagreed and 3% were neutral. Additionally, forty-four percent (44%) agreed that banks' investment in ATMs was driven by financial gain, twenty-four percent (24%) disagreed, and thirty-three percent (33%) were neutral statements in a model array.

The average score was 3.70, which showed that ATMs positively impacted NMB's revenue. Responses were fairly near the mean, as indicated by the standard deviation of 0.525. In a study of Saudi Arabian banks from 1998 to 2007, Nader (2011) discovered that branches and ATMs improved profit efficiency. Agboola (2006) found that ATMs boost a bank's reputation and profitability in Nigeria. Hasan, Schimiedel, and Song (2009) discovered that ATMs improved cost-effectiveness and bank profitability in accounting measurements. ATMs in Tanzania are a convenient way for commercial banks like NMB to make money. Tanzanian banks advertise their ATM network to draw in more customers and improve performance and profitability. In order to draw in

more customers, certain Tanzanian banks have made investments in ATMs with face and fingerprint detection.

4.2.3 Mobile Banking Influence on the Profitability of Commercial Banks

Ninety one percent (91%) of respondents concurred that the maintenance expenses of mobile banking are cheap, while 78% disagreed. Ninety-seven percent (97%) of respondents concurred that banks' primary motivation for investing in mobile banking is to generate high-margin profits. The study also examined how much mobile banking affects NMB bank's profitability. According to the average score of 3.35, there was consensus with the assertion that mobile banking improves NMB's profitability. The replies were uniformly spaced from the mean due to the 0.602 standard deviation. Please see Table 4.3

Table 4.3: Mobile Banking and Bank Profitability

Variable	Scale					Mean	StD
	1	2	3	4	5		
Income from mobile banking has a high margin hence contributing positively to the bank's annual profitability	1	2	0	87	10	4.03	0.517
Mobile banking has low maintenance costs leading to high levels of profitability over their economic lifetime	1	2	6	81	10	3.97	0.572
Investment in mobile banking is mostly motivated by profits to the bank	19	59	18	4	0	2.06	0.717
Average						**3.35**	**0.602**

Source: *Field Data (2022)*

Similar to the findings of mobile banking and bank profitability, Porteus (2006) claims that mobile banking has increased access to financial services in Uganda and, consequently, income and profits for banks. According to Ndung'u (2011), mobile banking has revolutionised the Kenyan money transfer market and sparked fresh ideas that have cut transaction costs for both banks and clients. Banks now earn more money and are more profitable as a result of the reform of the money transfer industry. This describes how Tanzania has become a major player in the world of mobile money transfers. Due to the potential of mobile banking, several nations have embraced the strategy, which poses a challenge to well-established payment methods like the EFT and the check system. Mobile phones are becoming used for many retail transactions in

Tanzania. Users of banks are able to transfer money both ways: from their bank accounts to their e-money accounts. By accelerating the velocity and movement of money in the nation, this development in mobile money services has enhanced bank profitability through commission income.

4.2.4 Electronic Funds Transfer and Bank Profitability

Table 4.4: Electronic Funds Transfer and Profitability

Variable	Scale					Mean	StD
	1	2	3	4	5		
Income from electronic funds transfer has a high margin hence contributing positively to the bank's annual profitability	10	69	11	10	0	2.20	0.806
Electronic funds transfers have low maintenance costs leading to high levels of profitability over their economic lifetime	5	7	25	44	19	3.65	0.841
Investment in electronic funds transfer is mostly motivated by profits to the bank	19	55	8	9	8	2.33	1.143
Average						**2.73**	**0.930**

Source: *Field Data (2022)*

Table 4.4 provides answers to queries regarding the impact of EFT on NMB's profitability. 79% of those surveyed were opposed, 11% were neutral, and 10% agreed that EFT income has a large profit margin and hence helps to bank earnings. Sixty-three percent (63%) of respondents agreed that EFT requires minimal maintenance, while twenty-five percent (25%) were neutral, and twelve percent (12%) disagreed. 74% of respondents disagreed that banks primarily invest in EFT facilities for profit. The mean response score was 2.73, indicating that there was less support for the claims that EFT increases NMB bank profitability. With a standard deviation of 0.93, 68% of the responses fell within one standard deviation of the mean. In a 20-year study of 68 US universities, Shirley and Sushanta (2006) reported equivalent results. According to the study, while electronic payments can save money, they can also induce network effects that reduce bank profitability. In 12 US banks, Shu and Strassmann (2005) found that investments in information technology provided a significant advantage for banks but did not improve bank earnings. In contrast to previous findings regarding EFT and bank profitability, Sana et al. (2011) found in a study conducted in Pakistan that electronic funds transfer reduced costs, saved time, improved accuracy, reliability, and service quality, and ultimately led to increased bank profitability. According to the research, banks should invest in EFT technology, but they

cannot rely on it to increase profitability. Due to the limited adaptability of EFT systems, NMB bank is rapidly transitioning away from EFT technology in favour of RTGS and mobile banking.

The study discovered that the reduction in earnings of large banks was not attributable to e-banking but rather to the government's choice not to deposit funds from public organisations in commercial banks. Due to the fact that enormous sums were withdrawn from banks and put in the government's bank, a great number of commercial banks were adversely affected (BOT,2020). During that era, the private sector was nearly driven out of business, as was discovered. This indicates that bank operations were trimmed back to the point of distorting revenue-generating activities, resulting in a decline in earnings.

4.3 Regression Analysis – Electronic Banking and Profitability

Table 4.5 displays the coefficients of model fitness that illustrate how effectively electronic banking explains bank profitability. Profitability has a 0.691% positive and strong correlation with electronic banking. The model's inclusion of electronic banking explains 47.8% of the variations or changes in NMB Babati Branch profitability. This indicates that additional variables not included in the model account for 52.2% of the variance in profitability. This allows future studies to include other variables that may explain bank profitability.

Table 4.5: Model Fitness – Electronic Banking and Profitability

Indicator	Coefficient
R	0.691
R Square	0.478
Std. Error of the Estimate	2529.61008

Source: *Field Data (2022)*

The total significance of the regression estimation model is displayed in Table 4.5 at a 5% level of significance; it implies that the model is important in explaining the association between profitability and electronic banking. The significance of the analysis of the variance of the model's predictors is at 0.000, indicating that electronic banking has a favourable effect on the profitability of NMB.

Table 4.6: ANOVA – Profitability and Electronic Banking

Indicator	Sum of Squares	df	Mean Square	F	Sig.

Regression	504200000	6	84040000	13.133	0.000
Residual	551000000	86	6398927.157		
Total	1.06E+09	92			

Source: *Field Data (2022)*

Table 4.6 displays the regression coefficients of the predictors (Electronic Banking). The results indicate that electronic funds transfer has a significance of 0.02 and a p-value of 0.05 in explaining NMB profitability. This discovery allows us to conclude that EFT has a significant impact on NMB's profitability. The researcher concluded that ATMs and mobile banking had no significant impact on the profitability of NMBs. These findings are supported by Sana, Mohammad, Hassan, and Momin's (2011) findings on EFT and bank profitability in a Pakistani study, which discovered that electronic funds transfer reduced costs, saved time, improved accuracy, reliability, and quality of services, and ultimately led to an increase in bank profitability. In addition, Nofie (2011) found that the rising usage of electronic retail payment instruments appears to stimulate banking operations, resulting in enhanced bank performance that is dominated by fee income. The results of the regression analysis reveal the multiplier effect created by EFT money transfers. Transferring funds to or from a bank incurs fees, and once the funds reach the receiving bank, they can be utilised for a range of transactions. It can be used to pay liabilities or deposited by the customer, allowing the bank to lend out the funds and earn interest revenue over the life of the deposit. This indicates that EFT can increase bank profitability both directly and indirectly.

Table 4.7: Regression Coefficients – Profitability and Electronic Banking

Indicator	**Beta**	**Std. Error**	t	**Sig.**
Automated Teller Machines	-579.723	725.129	-0.799	0.426
Mobile Banking	-496.086	694.161	-0.715	0.477

Source: *Field Data (2022)*

The data revealed that the use of electronic banking had a moderate effect on the quantity of money earned by the NMB bank in the Babati district. The analysis yielded a coefficient of significance that revealed the proportion of differences in profitability attributable to electronic banking. The significance test demonstrates the statistical relevance of the impact that electronic banking has on the profitability of banks. The overwhelming majority of respondents said that the implementation of electronic banking positively affected the profitability of banks. The introduction of electronic banking has enabled NMB bank to boost its income

potential while maintaining cost control.

5.0 CONCLUSION

The study found that electronic banking enhances the performance of commercial banks, taking NMB bank as a case study. The way NMB bank works has changed a lot since it adopted technology and spent a lot of money on it. This could lead to better financial performance and better returns for shareholders. Electronic banking is used by both banks and customers because it can be used in many different ways. Yes, the profits of many banks have gone down, but researchers think things would be even worse if banks did not have e-banking. Because of online banking, the number of people visiting bank halls has gone down. Banks can now make money in ways other than interest, trade, and asset financing because of electronic banking. The bank has made more money from ATM, cell phone, and EFT transactions than from other kinds of transactions. Electronic banking has made it easier for commercial banks to make money, keep customers happy, and find new ones. The research suggests that the government should make it easier for countries with more developed economies to share their technologies in order to help world-class breakthroughs. The government and BOT should put emphasis on the use of rules or policies for e-banking without hesitation. E-banking is not used by many customers because it is risky and not safe, however, if the government could put an emphasis on the use of set guidelines, rules, and laws would help customers know what to do if they lose money, but banks are now putting the burden on customers.

Tanzania Communication Regulatory Authority buys and sells from mobile phone companies (TCRA). It is their job to make it possible for (agent) networks to grow as a first step toward improving and expanding mobile banking or mobile phone financial services, promoting the use of second-generation financial services to increase access to money, and promoting interoperability and consumer protection in mobile banking. Regulators play a key role in making sure that mobile banking is safe and legitimate, which helps financial services grow. Mobile banking and financial services must protect consumers by making sure that mobile payment services are legitimate and safe. To speed up the rollout of electronic services to rural areas, mobile phone companies should make sure their customers can use financial services on their phones. Banks should promote E-banking and mobile banking to get more customers, especially in rural areas that do not have access to banking services.

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