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Does Electronic Banking Affect Bank Performance in Tanzania? Evidence from Listed Commercial Banks

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Abstract

This paper aimed at examining the effect of electronic banking (mobile banking, internet banking and automated teller machine) on profitability of listed commercial banks in Tanzania. The findings show that there is a positive insignificant relationship between the internet banking and bank profitability. This may be explained by hefty initial costs incurred by banks in investments for appropriate infrastructure in facilitating internet banking channel. Regarding the mobile banking and usage of automated teller machines, the study depicts that both have statistically significant positive relationship with profitability at all conventional levels of significance, the avenue that provides extra incentive for commercial banks to utilize the transaction flow to generate more profits and serve costs which would have been incurred for conventional banking practices. These findings are of great importance to managers of commercial banks in Tanzania to understand the effect of electronic banking on profitability of commercial banks, and this may assist them in making decision on adoption of electronic banking, and further enlighten the policy makers in the banking industry on the effect of electronic banking on banks profitability, which, in a way, may provide guidance in designing appropriate policy for electronic banking adoption by commercial banking in Tanzania.

Keywords: Internet Banking, Mobile Banking, Automatic Teller Machine, Profitability

1. Introduction

Growth in technology has transformed how financial institutions provide financial services to their customers globally (Lawrence & Donald, 2023). Furthermore, the transformation has coincided with increased competition and operational costs which has instigated financial institutions to adopt emerging technologies and innovations to gain competitive advantage (Dermaku et al., 2023). Consequently, commercial banks have transitioned from manual banking to digital banking channels (Aigbovo & Orobator, 2022). Such a transition has seen the emergence of Internet Banking, Mobile Banking, Point of Sales Devices and Automated Teller Machines which

aimed at providing self-services, reliability, and accessibility as customer can withdraw and deposit 24/7 (Hidayat & Kassim, 2023).

The banking Industry has been evolving over the decades despite being dominated by manual services which required a customer to physically approach the brick-and-mortar branches to access financial services (Lugano, 2016). Such limited scope of service had inhibited the portfolio of commercial banks in utilizing the market potential as customers faced long queues, time consuming processes, and congestions which reduced convenience and efficiency (Lugano, 2016). However, the staggering growth of banks and increased competition in the banking sector forced commercial banks to become innovative in reducing costs and improve profitability (Hussain *et al.*, 2021). On this note, Kingu (2021) suggested that electronic banking channels have been opted as a strategy to reduce operational costs associated with running a conventional branch. Likewise, empirical evidence shows that servicing customer transactions through electronic banking channels is 12% and 1% cheaper in India and USA respectively as compared to servicing a customer's transaction through a conventional branch (Malc *et al.*, 2023). Consequently, commercial banks have achieved higher profitability after transitioning to electronic banking through reduced operation costs through customer self-service (Moghni *et al.*, 2020). Moreover, convenience provided to customers in terms of full-time access to financial services has further boosted the ability of banks to utilize profits (Omutonu & Osiemo, 2023).

Electronic banking involves provision of financial services to bank customers through digital channels such as Internet Banking, Mobile Banking, Point of Sales Devices and Automated Teller Machines (Chauhan *et al.*, 2022; Levy, 2022). Electronic banking has brought about benefits to both the customers and the commercial banks. For the former, electronic banking has reduced transaction costs, increased convenience, and facilitated access to financial services anytime and anywhere (Hidayat & Kassim, 2023). Likewise, for the latter, electronic banking has reduced overhead costs associated with operating physical bank branches as customers can be serviced virtually. Furthermore, it enhanced efficiency and has increased banks' portfolio as more services can be provided across multiple channels (Sullivan & Wang, 2020).

Globally, financial institutions in developed economies have heavily invested in the electronic banking channels as compared to counterparts in developing economies (Mohammed *et al.*, 2022). Such investment has materialised in increased adoption as evident in 80% of adult population in developed countries prefer electronic banking leaders being USA with 90% adoption rate followed by UAE (90%), Scandinavia nations (80%), and Great Britain (76%) (Stevanovic, 2020). Accordingly, such high adoption rates signify that commercial banks in developed economies have taken advantage of emerging financial technologies to utilize provision of financial services (Chauhan *et al.*, 2021).

In Africa, electronic banking has been spearheaded by mobile banking which has experienced a surge in usage as it accounts over 75% of the entire online traffic, this can explain why commercial banks opt for mobile banking apps as compared to internet banking (Digital Banking Transformation Report, 2023). Specifically, over USD 495 Billion is transacted through mobile money in Africa annually which accounts for over 65% of the total mobile transactions globally (GSMA, 2021). However, few nations have pioneered digital banking in Africa notably Kenya where access to banking services through digital platforms has increased from 26% in 2006 to over 87% percent in 2021 (Harvard Business Review, 2021). Likewise, South Africa and Mauritius and have achieved over 64% internet and mobile penetration whilst amassing over 70% and 90% of banked population respectively which has simplified the adoption of electronic banking (de Bel *et al.*, 2020). Despite the progress over 90% of transactions in Africa are done through cash payments whilst digital channels only account for an average 5-7% of total transactions (Mc Kinsey, 2022). This low average is a result of the continent having over 50% of unbanked population (Digital Banking Transformation Report, 2023). Furthermore, low internet penetration of a mere 26% has complicated the ability of African economies to utilize electronic banking opportunities (de Bel *et al.*, 2020).

In Tanzania, the banking sector has evolved from a state-dominated sector into a liberalized sector to include the private sector in the financial sector (Marobhe, 2019). Such reforms at the beginning of 1990s brought about emergence of competition and laid foundation for the incorporation of commercial banks in the economy (Kapaya *et al.*, 2020). Despite the introduction of commercial banks, the banking sector remained staggering and

focused on few service portfolios such as formation of credit registry, providing micro and rural loans, develop financial markets, and provide long term financing among other services (Balele *et al.*, 2018). Despite the influx of commercial banks from 29 in 2000 to over 59 banks by 2022 the banking industry was struggling with low returns as they lacked innovation and technology strategy. However commercial banks transitioned to digital innovation through electronic banking to reduce risk, reduce operational costs, increase financial services accessibility, and increased efficiency (Kapaya *et al.*, 2020). Consequently, the introduction of electronic banking in the past decade has seen an increase in profitability among the commercial banks which may be attributed to servicing a broader market, increased convenience to customers, and reduction in operating costs of servicing customers through branches.

To further maximize the profit potential, provision of banking services through electronic channels has gradually increased in recent years. The improvement is evident as transactions volumes processed over electronic channels have increased two-fold from an estimated 133 Million transactions in 2016 to approximate 304 Million transactions in 2021 (BOT, 2021). The drastic improvement in financial technology has instigated financial institutions to heavily invest and integrate innovative technologies in provision of financial service (Rootman & Kruger, 2020). Nonetheless, emergence of bottle-neck competition in the banking sector has necessitated early adoption of digital banking channels as a vital tool to gain competitive advantage and acquire product and service differentiation in the market (Mbegu *et al.*, 2019). Such technological innovations have led to emergence of electronic banking channels in terms of Mobile Banking, Internet Banking, ATMs and PoS channels that have presented banks with abundant opportunities such as service accessibility, market expansion, customer convenience, operational efficiency and cost savings which have a high potential to enhance revenue and profitability (Njogu, 2014).

In appreciating the role of electronic banking, various scholars in Tanzania have pursued the concept in an attempt to widen the knowledge of the notion of electronic banking and its direct influence on commercial banks. In light of this, Mbegu *et al.*, (2019) drew attention to trend analysis of increase in internet banking customers and effectiveness of fees collection through electronic banking channels. Likewise, Kiunsi (2013) examined the benefits of electronic banking channels on time saving, cost saving, and convenience.

Moreover, Magoma *et al.* (2020) conducted a trend analysis of growth in mobile banking and retail banking channels. Also, the study analyzed the trends of loan ratio through electronic banking channel. Furthermore, Lugano (2016) envisaged on the impacts of electronic banking on banking operations of commercial banks in Tanzania.

Despite the scholarly insights on the effect of electronic banking channels on various operations of commercial banks, there is an extensive debate and scant retrievable empirical evidence on how electronic banking channels in Tanzania enhance the profitability of commercial banks in Tanzania. This study aims at examining the influence of mobile banking on the profitability of listed commercial banks in Tanzania.

2. Related Literature

2.1 Theoretical Underpinnings

2.1.1. Expectation Confirmation Theory

The theory was developed by classical scholar Richard Oliver in a series of academic articles between 1977 and 1980 and the theory has since been applied in marketing, psychology, and information system discipline (Bhattacharjee, 2001). Subsequently, technology scholars and practitioners have applied the theory to examine the continuous usage of emerging technologies among customers and institutions (Rahi & Ghani, 2019). The basic assumption of the theory is that continuous use of emerging technologies relies on the customer's perceived usefulness and perceived performance which are then compared to the performance expectations.

Consequently, should a customer perceive the performance outcome of a technology to be in line with expected performance standards, then satisfaction is achieved thus triggering continuous use. Specifically, Continuance Intention and post-adoption satisfaction are functions of perceived usefulness and Expectation Confirmation. The theory is applicable to the study as it examines how continuous utilization of electronic banking channels is an outcome of the technologies meeting the performance expectations and perceived usefulness of the commercial banks in terms of profitability. The theory is composed of four main components; perceived usefulness, expectation confirmation, customer satisfaction, and continuance intention. Expectation confirmation can be referred to as the extent to which a customer perceives that expected performance standards are confirmed throughout the course of actual usage of a technology service. Accordingly, customers will be satisfied with electronic banking if the services meet the performance expectations (Tsai *et al.*, 2014; Hoehle *et al.*, 2012). Nonetheless, perceived usefulness can be referred to as the extent to which customers have a high confidence and belief that an emerging technology can fulfill the performance expectations (Mc Kennie *et al.*, 2006).

2.1.2. Technology Acceptance Model

To understand, predict and explain why people accept or reject information systems; researchers have developed and used various models to understand the acceptance of users of the information systems. The technology acceptance model (TAM) that was adopted by Yani, E., Lestari, A. F., Amalia, H., & Puspita, A. (2018), is one of the most cited models that researchers used to study underlying factors that motivate users to accept and adopt a new information system.

The primary goal of TAM is to provide an explanation of factors affecting computer applications' acceptance in general. In addition, this model helps researchers and practitioners to identify why a particular system is unacceptable (Yani *et al.*, 2018). Using an information system is directly determined by the behavioral intention to use it, which is in turn influenced by the users' attitudes toward using the system and the perceived usefulness of the system. Attitude and perceived usefulness are also affected by the perceived ease of use. Technology acceptance model is used to explain how banks adopt electronic banking.

2.2 Empirical Literature

Mobile banking is an emerging platform that has enabled customers to access financial services through mobile cell phones. In assessing the relationship between mobile banking and financial performance, Fentaw and Thakkar (2022) ascertained a strong effect of mobile banking on profitability of Egyptian banks.

Kumar *et al.* (2020) in their study on analyzing the Mobile Banking adoption framework in India, and found that perceived ease of use and perceived usefulness have a positive influence on the adoption of mobile banking, and ultimately such adoption motives have improved the volume of transactions through mobile channels thus leading to profitability.

In Kenya, Karimi *et al.* (2021) conducted a study of the agility of mobile banking and performance of commercial banks, and found that 34% of variation in performance of commercial banks was explained by agility (an opportunity for banks to utilize as it provides the flexibility to the customer in accessing the financial services any place, any time even after conventional working hours) in mobile banking. These studies explicate that mobile banking has allowed commercial banks to maximize their clientele base by servicing them without incurring extra costs as the case with conventional branches. Moreover, cost saving is seen to have impacted both the clients and the commercial bank as majority of services can be executed literally anywhere. Considering that mobile banking allows for payments of bills and cash withdrawals and deposits anytime of the day and even on weekends, it provides extra incentive for commercial banks to utilize the transaction flow to generate profits.

While Ghose and Maji (2022) reported a positive influence of internet banking channel on profitability of the commercial banks in India, conversely, Phan *et al.* (2020) established that adoption of electronic banking has negatively impacted the Indonesian banking industry. Likewise, in Amman Stock Exchange, Al-Amameh (2023)

shows that investment in ICT such as internet banking has a significant relationship with bank cost efficiency which leads to higher profitability performance.

Sadia *et al.* (2020) suggested that Internet banking enhanced customer's satisfaction through bank's website design and communication responsiveness. Such components have attracted more customers to subscribe to internet banking services as the website is user-friendly and provides more efficient communication with customers. Consequently, such convenience yields improved profitability of the banks.

Consistent with Sadia *et al.* (2020), Subahudin and Shahrom (2023) established that website design is among the major determinant of customer satisfaction through internet banking, and they revealed that satisfaction of customers through internet banking increases client business. Consequently, the studies embrace that commercial banks can leverage on emerging technologies such as artificial intelligence, internet banking applications, and electronic websites to increase their market reach and maximize profits.

Pertaining to Automated Teller Machine (ATM) various studies have been conducted to ascertain its impact on profitability for commercial banks. In light of this, Le and Ngo (2020) conducted a cross-country analysis to measure the determinants of bank profitability, and found that ATM enhances financial performance of commercial banks as a result of cost reduction since servicing transactions through an ATM is cheaper than servicing a transaction through a conventional branch. Likewise, in Nigeria, Jimoh (2019) confirmed that ATMs have a strong positive influence on the profitability of deposit banks. The performance was an outcome of the electronic channel increasing access to financial services to customers through reliability and convenience of ATM machines.

In ascertaining the effect of Point of Sales' transactions on profitability ratios, Ezie *et al.* (2023) established that POS transactions have a significant relationship with profitability in Nigeria. The concept of PoS is further examined by Madugba *et al.* (2021) who revealed that PoS transactions volume has a significant relationship with profitability of commercial banks in Nigeria. On the other hand, Awolusi and Aduaka (2020) conducted a survey on the impact of electronic banking on financial services in Ghana, and found that the use of PoS has a significant relationship with profitability. Moreover, Efuntade and Efuntade (2023) analyzed the relationship between electronic business and profitability, and established that PoS terminals have no co integration with electronic banking fees.

On the one hand, Jimoh (2019) conducted a study on the effect of electronic banking on the financial performance indicators of commercial banks in Nigeria, and found that Point of Sales (PoS) channels have a strong positive influence on profitability ratios of commercial banks in Nigeria. On the other hand, Mohammed *et al.* (2022) ascertained the effect of payments systems innovations on profitability of Nigerian Commercial Banks and report a strong effect of PoS on profitability which provide reliable, viable, and credible payments systems to customers.

3. Method and Data

3.1 Data

The study deployed a hand collected secondary data from quarterly and annual financial reports of the listed commercial banks from the respective banks' websites. The study adopted purposive sampling since the banks used in the study are specifically selected because they are currently the only listed commercial banks in Tanzania offering electronic banking services since. The selected banks include Cooperative Rural Development Banks (CRDB), Kenya Commercial Bank (KCB), National Microfinance Bank (NMB) and Dar Es Salaam Commercial Bank (DCB). The financial reports show annual and quarterly profitability of the commercial banks in terms of Earnings per Share, and the amount of transactions processed through electronic banking channels ranging from Mobile banking, Internet Banking and Automated Teller Machine.

3.2 Variable Description

Table 1 below provides the measurement of variables used in the study

Table 1: Measure of Variables

Construct	Indicator	Abbreviation	References
Independent Variables			
Mobile Banking	Measured by the Natural logarithm of transaction volumes through Mobile Banking of Listed commercial bank <i>j</i> in year <i>t</i> .	$LnMOB_{jt}$	Fentaw and Thakkar (2022)
Internet Banking	Measured by the Natural logarithm of transaction volumes through internet banking of Listed commercial bank <i>j</i> in year <i>t</i> .	$LnINT_{jt}$	Carlos and Ronald (2020)
Automated Teller Machines	Measured by the Natural logarithm of transaction volumes through ATM machines of Listed commercial bank <i>j</i> in year <i>t</i> .	$LnATM_{jt}$	Mahardini et al. (2022); Carlos and Ronald (2020).
Control Variable			
Bank Size	Measured by the natural logarithm of the total assets of Listed commercial bank <i>j</i> in year <i>t</i> .	$LnSIZE_{jt}$	Abaenewe (2013)
Dependent Variables			
Profitability of Commercial Banks	EPS- Measured by the company's net profit divided by the number of outstanding common shares of Listed commercial bank <i>j</i> in year <i>t</i> .	EPS_{jt}	Olatinwo et al. (2022); Madugba et al (2021).

4. Analytical Approach

In ascertaining the relationship between bank profitability measures and the mobile banking channels, the study applied a panel data regression. Likewise, the study conducted Hausmann specification test to determine whether fixed effects or random effects regression are adopted. Similarly, Levin-Lun-Chu unit root tests were conducted as a pre-requisite test to check if the variables used are stationary at level, require lags or differencing to avoid spurious results. Moreover, the study adopted pairwise correlation to test for multicollinearity among the independent variables.

4.1 Model Specification

The following regression model was specified;

$$EPS_{jt} = C + \beta_1 LnMOB_{jt} + \beta_2 LnINT_{jt} + \beta_3 LnATM_{jt} + \beta_4 LnPoS_{jt} + \beta_5 LnSIZE_{jt} + \varepsilon_{jt} \dots (1)$$

Where:

EPS_{jt} = Earnings Per Share (EPS) of Listed Commercial Bank *j* in year *t*.

$LnMOB_{jt}$ = Measured by the Natural logarithm of transaction volumes through Mobile Banking of Listed Commercial Bank *j* in year *t*.

$LnINT_{jt}$: Measured by the Natural logarithm of transaction volumes through internet banking of Listed Commercial Bank *j* in year *t*.

$LnATM_{jt}$: Measured by the Natural logarithm of transaction volumes through ATM machines of Listed Commercial Bank j in year t .

$\beta_5 LnSIZE_{jt}$ = Measured by the Natural logarithm of Total Assets of Listed Commercial Bank j in year t .

C is Constant

ϵ_{jt} is the Error Term

4.2 Diagnostic Regression Tests

Panel Unit Root Test

The study conducted a Panel unit root test using Levin-Lun-Chu test to check whether the variables are stationary. This test was conducted for the sole objective of controlling for spurious results that may arise if regression tests are conducted with variables that are non-stationary. The results of the test presented in Table 2 showed that all variables could not achieve stationarity at level, so the variables were transformed at 1st difference, and thus the data became fit for regression.

Table 2: Levin-Lun-Chu test Panel Unit root test

Variable	Unadjusted t*	Adjusted t*	P value	Results
Internet Banking	-14.8629	-12.0831	0.0000	Stationary at 1 st Difference
Mobile Banking	-2.4517	-1.759	0.0393	Stationary at 1 st Difference
ATM	-13.1452	-9.765	0.0000	Stationary at 1 st Difference
Bank Size	-11.2955	-9.496	0.0000	Stationary at 1 st Difference

Multicollinearity Test

A pair-wise correlation was conducted to check for the presence of multicollinearity between the independent variables, and the findings in Table 3 show that there is no presence of multicollinearity between the main independent variables i.e. internet banking transaction value, mobile banking transaction value, and ATM transaction value which allows the panel regression tests to be conducted with potential objective results.

Table 3: Pair Wise Correlation

	1	2	3	4
Internet Banking (1)	1			
Mobile Banking (2)	-0.021	1		
ATM (3)	-0.0624	0.1181	1	
Bank Size (4)	-0.131*	0.1589**	0.1440**	1

Significance level; *P<0.10, **P<0.05, ***P<0.01

4.3 Panel Regression Results

Panel regression results in Table 4 reveal that the estimate of Internet Banking Transaction Value is positive (4.6283) but with an associated p-value of 0.582 and thus insignificant at all conventional levels of significance.

The results are consistent in all four models as they show an insignificant relationship between internet banking transaction values and profitability as measured by EPS. The insignificant relationship can be explained by hefty initial costs incurred in investments for appropriate infrastructure in facilitating internet banking channel. This notion is also supported by Hossain, (2021) whose results showed that commercial banks adopting electronic banking channels experienced a deterioration in their financial performance indicators in the initial year as a result of the high infrastructure costs in setting up the operations of the channel. The results are also in line with Aduaka and Awolusi (2020) who asserted that Internet Banking transaction values have an insignificant relationship with profitability among commercial Banks in Nigeria.

In light of this, the findings in this study signify that the listed commercial banks in Tanzania have yet to recoup their high initial investment costs and that may explain its low contribution towards EPS. However, the commercial banks in the long run may eventually recoup the costs and thus contribute highly towards the profitability of the commercial banks through increasing the earnings per share.

Regarding the mobile banking transaction value, the results in Table 4, for all four models, depict that mobile banking transaction value has a statistically significant relationship with profitability at all conventional levels of significance affirming that mobile banking is a vital component in increasing profitability as commercial banks leverage on the accessibility and convenience offered by mobile phones to services its market. Mobile banking is an emerging platform that has enabled customers to access financial services through mobile cell phones. The notion is further supported by Kumar *et al.* (2020) who analyzed the Mobile Banking adoption framework in India, and found that perceived ease of use and perceived usefulness have a positive influence on the adoption of mobile banking. Such adoption motives have improved the volume of transactions through mobile channels thus leading to improved profitability. It is worth noting that agility of mobile banking is an opportunity for commercial banks to utilize as it provides the flexibility to the customer in accessing the financial services any place, any time even after conventional working hours.

The findings, therefore, elucidate that mobile banking may allow commercial banks to maximize their clientele base by servicing them without incurring extra costs as the case with conventional branches. Moreover, cost saving may also impact both the clients and the commercial bank as majority of services can be executed literally anywhere. Considering that mobile banking allows for payments of bills and cash withdrawals and deposits anytime of the day and even on weekends, it provides extra incentive for commercial banks to utilize the transaction flow to generate profits.

Panel regression analysis, further, reveals a positive value of the estimated ATM Transaction Value of (15.0059) with an associated p-value of 0.121 indicating insignificant relationship with EPS at all conventional levels of significance. On contrary, the results in model 2 and 3 show that ATM transaction values have a significant relationship with EPS at 10% and 1% significant levels respectively. The results, therefore, signify that banks leveraging on Automated Teller Machine (ATM) eventually achieve more profitability, the results which are in line with Le and Ngo (2020) who conducted a cross-country analysis to measure the determinants of bank profitability, and established that Automated Teller Machine (ATM) has a strong impact on profitability of banks. This finding imply that ATM can enhance financial performance of commercial banks as a result of cost reduction emanating from the use of the same because servicing transactions through an ATM is cheaper than servicing a transaction through a conventional bank branch. Likewise, Awolusi and Aduaka (2020) established that ATM is also a vital source of revenue, hence, resulting in high profitability. Furthermore, the results coincide with findings by Jimoh (2019) who confirmed that ATMs have a strong positive influence on the profitability of deposit banks in Nigeria.

Table 4: Ordinary Least Square (OLS) Regression

VARIABLES	EPS (1)	EPS (2)	EPS (3)	EPS (4)
Internet Banking Transaction Value	4.6283 (0.582)	3.735 (0.664)	-	10.8753 (0.142)

Mobile Banking Transaction Value	8.2501*** (0.003)	-	8.1876*** (0.003)	8.764*** (0.001)
ATM Transaction Value	15.0059 (0.121)	18.5075* (0.059)	17.543** (0.039)	-
Bank Size	3.7134 (0.858)	36.625** (0.042)	8.3557 (0.660)	13.3775 (0.500)
Constant	-352.6628 (0.133)	-731.946*** (0.000)	-360.529* (0.083)	-384.628* (0.072)
Year Dummies	Included	Included	Included	Included
Observations	192	192	192	192
R Squared	0.3175	0.2926	0.3143	0.314
Prob > F	0.0000	0.0000	0.0000	0.0000

5. A Concluding Remark

This paper aimed at examining the effect of Electronic Banking on profitability of listed commercial banks in Tanzania. The findings show that there is a positive insignificant relationship between the internet banking and bank profitability. This may be explained by hefty initial costs incurred by banks in investments for appropriate infrastructure in facilitating internet banking channel. The banks are probably yet to recoup their high initial investment costs and that may explain its low contribution towards EPS.

Regarding the mobile banking the study depict that mobile banking has a statistically significant relationship with profitability at all conventional levels of significance. Mobile banking is considered an emerging platform that enables customers to access financial services through mobile cell phones, a device which is owned by over 70% of adult Tanzanians. Therefore, considering that mobile banking allows for payments of bills and cash withdrawals and deposits anytime of the day and even on weekends, it provides extra incentive for commercial banks to utilize the transaction flow to generate more profits.

Furthermore, the study reports a positive significant relationship between the use of automated teller machine and bank performance, implying that ATM can enhance financial performance of commercial banks as a result of cost reduction emanating from its use because servicing transactions through an ATM is considered cheaper than servicing a transaction through a conventional bank branch.

The findings of this study are of great importance to managers of commercial banks in Tanzania to understand the effect of electronic banking on profitability of commercial banks in Tanzania, and this may assist them in making decision on adoption of electronic banking. This may also enlighten the policy makers in the banking industry on the expected effect of electronic banking on banks profitability, which, in a way, may provide guidance in designing appropriate policy for electronic banking adoption by commercial banking in Tanzania.

Subsequently, the study recommends bank managers to focus on adopting internet banking channels in providing financial services, and put sound investments in the digital platforms to increase bank revenue which can ultimately offset their initial investment costs. Furthermore, due to emerging need of cost saving among commercial banks, the findings recommend banks to adopt cost-effective alternative solution through mobile banking channel, which is proven effective and efficient elsewhere.

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