



INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES



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To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v11-i11/11525> DOI:10.6007/IJARBSS/v11-i11/11525

Received: 08 September 2021, **Revised:** 11 October 2021, **Accepted:** 28 October 2021

Published Online: 22 November 2021

In-Text Citation: (Julius et al., 2021)

To Cite this Article: Julius, S. M., Gudda, P., & Agoki, D. (2021). Technology Adoption as a System Lock-in Strategy and its Effect on Financial Performance of Commercial Banks Operating in Narok Town, Kenya. *International Journal of Academic Research in Business and Social Sciences*, 11(11), 1970–1982.

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Vol. 11, No. 11, 2021, Pg. 1970 – 1982

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www.hrmars.com

ISSN: 2222-6990

Technology Adoption as a System Lock-in Strategy and its Effect on Financial Performance of Commercial Banks Operating in Narok Town, Kenya

Sasai Momposhi Julius, Patrick Gudda, Diana Agoki

School of Business and Economics, Maasai Mara University, Narok, Kenya

Email: juliussasai15@gmail.com, pgudda9@gmail.com, dianaagoki@mmarau.ac.ke

Abstract

With the increasing competition, commercial banks are not just expected to offer traditional products and services such as checking and savings accounts, certificates of deposit and safe deposit boxes, but to provide services and product that meet customer's satisfaction and competition. The overall objective of this study was to determine the effect of technology adoption as a system lock-in strategy on financial performance of commercial banks operating in Narok town. The study used a cross-sectional design. The study targeted a population of 10 commercial banks operating in Narok town. The study used census because the population was not vast. Data was collected using a questionnaire. The questionnaire was tested for validity and reliability to ensure that it provided the data that was required for the study. The data was analyzed using descriptive statistics for frequency and percentages, Pearson correlation analysis and simple linear regression analysis to summarize and classify data, to establish the relationship between the variables and to determine the strength of association between the technology adoption and financial performance of commercial banks operating in Narok town. On the correlation between technology adoption and financial performance of commercial banks operating in Narok town, it was noted that there was a statistically significant correlation when tested using Pearson correlation ($r = 0.373$; $p\text{-value} = 0.002$). On the magnitude of the effect of technology adoption on financial performance of commercial banks operating in Narok town it was established that the ($R^2 = 0.139$). The hypothesis was tested using the t-values, where the null hypothesis was rejected based on the t-value (3.896) which was greater than the critical t-value. The study therefore concluded that commercial banks that seeks to improve their financial performance should embrace technology as it improves service delivery.

Keywords: System Lock-in, Technology Adoption, Financial Performance.

Background of the Study

In today's highly competitive markets, consumers are more informed about choosing the products and services that provide the most value to them. Firms on the other hand, are seeking the most appropriate strategies to be able to fulfill the needs of their customer's.

Firms are therefore, becoming aware of strategic positioning in the face of competition for survival and improved performance (Opreana & Vinerean, 2015). Competition has made banks to diversify their services to meet the needs of the customers. Since banks are unable to offer all the required services and products to their customers there is need to diversify their possible products and services a fact that requires adoption of an effective strategic positioning.

Commercial banks are not just expected to offer traditional products and services such as checking and savings accounts, certificates of deposit and safe deposit boxes, but to provide services and product that meet customer's satisfaction and competition (Elly & Ojung'a, 2015). Increased publicity and brands in the banking sector have made it very difficult for customers to focus on strategic positioning for sustainability than before. Offering value satisfaction helps banks to attract customers by distinguishing their products and services from those of competitors. In addition, strategic positioning of banking services/products was a concept which most banks undertake so as to be more competitive in the financial industry in Kenya.

The Banking industry in Kenya is governed by the Banking Act, the Central Bank of Kenya Act and the various prudential guidelines issued by the Central Bank of Kenya (CBK, 2015). Since its liberalization in 1995, the CBK has remained the main institution charged with the responsibility of policy formulation to guide the banking sector (CBK, 2015). The incorporation of the Kenya Bankers Association as a body charged with the responsibility of ensuring that the interests of the banks are addressed has seen many banks grow and improve based on the assets, deposits, profitability and products offering (Price Water House Coopers, 2013). Technological advancement has been the main strategy that has initiated many successful strategies experiences by the banking sector in the last decade. Players in this sector have experienced increased competition over the last few years resulting from increased innovations among the players and new entrants into the market (CBK, 2013).

According to CBK, (2017), Kenyan banks have continued to embrace new technology to improve service delivery. A considerable number of banks have adopted the use of alternative channel delivery systems with the advancement in technology to enhance convenience to their customers. In this regard, a number of new products that leverage on ICT has been developed (CBK, 2017). These banks have also continually improved on their strategic positioning in the market to gain competitive advantage and improve on their performance. Financial performance refers to how adequately a financial firm meets the needs of its shareholders (owners), employees, depositors and other creditors and borrowing customers. At the same time, commercial banks must find a way to keep government regulators satisfied that their operating policies, loans and investments are sound, protecting the public interest. Performance in the banking sector is measured using bank profitability that is measured using both monetary and non-monetary indicators (Rasiah, 2018).

The success or failure of banking institutions in meeting the expectations of others is usually revealed by a careful study of the financial statements of the bank (Chung, Rose, & Huang, 2012) The significant changes that have occurred in the financial sector including widespread privatization, intense competition, and an increasing need for market-oriented banking systems. The main objective of shareholder's wealth maximization is now a priority for many banking institutions How to achieve these goals and go around the challenges being faced is a matter of concern by many bank managers (Koch & Macdonald, 2015). This study therefore sought to assess the effect of technology adoption in strategic positioning on financial performance of commercial banks in Narok town, Kenya.

Statement of the Problem

In the last decade, there has been an explosion of different forms of remote access of financial services. These have been provided through a variety of different channels, including mobile phones, automatic teller machines (ATMs), and Point-of-Sale (POS) devices and banking correspondents. In many countries, banks are employing various strategies enhancing to enhance financial inclusion and ensuring that the banks performance is maintained by reaching as many people as possible. One of the main obstacles to ensuring customer retention and hence financial performance of the commercial banks is cost, both the cost to banks involved in servicing low-value accounts and extending physical infrastructure to remote rural areas, and the cost (in money and time) incurred by customers. One way of confronting the competitive and performance pressures in any business is through Strategic positioning. However, commercial banks in Kenya are still experiencing failure in the strategic positioning because of stakeholder related problems, lack of appropriate plans, lack of finances, poor leadership, and ideological challenges. Though there exist previous studies on strategic management in the banking sector, there are limited studies that have considered the aspects technology adoption in strategic positioning and financial performance of commercial banks in Kenya. This study will therefore, add more knowledge into the gap on how technology adoption in strategic positioning affects commercial banks financial performance. Hence, the need to assess the effect of technology adoption as a system lock-in strategy on financial performance of commercial banks in Kenya with a focus in commercial banks operating in Narok town, Kenya.

Research Objective

To determine the effect of technology adoption as a system lock-in strategy on financial performance of commercial banks operating in Narok town, Kenya.

Research Hypothesis

H₀: There is no significant effect of technology adoption as a system lock-in strategy on financial performance of commercial banks operating in Narok town, Kenya.

Significance of the Study

The findings of this study will be of great value to different stakeholders including commercial bank managers, bank customers and policy makers. The finding of this study will be of great benefit to the managers in the banking sector as it will explain the significance of a technology adoption as a strategic positioning tool to improve on customer retention and enhance financial performance of commercial banks. The managers will have an opportunity to effectively utilize the available strategies to improve on financial performance of the banks. The Kenyan government will find the results of the study very valuable in enhancing the banking sector through appropriate strategies to boost the performance of the commercial banks.

Theoretical Framework

The theoretical foundation for this study was anchored on efficiency theory. The proponent of this theory is Densetz (1973). The theory is a good complement of the systems theory and it postulate that with effective management the organization can achieve more efficient results and improve a firm's profits. According to the theory effective management may not only lead to increased profits but also has other benefits such as increased market shares and

customer retention (Athanasoglou et al. 2015). According to Birhanu, Lanka, & Rao (2014) efficient firms increase their profits, grow their market share and increase in their size. Onuonga (2014) notes that Efficiency theory is premised on the argument that banks attain profits if they operate more efficiently than their competitors. It also assumes that internal efficiencies influence profitability of commercial banks (Njoroge, 2016). The theory, further notes that, banks that operates efficiently in comparison to their competitors increase their profits due from low operating costs.

According to the theory, banks can attain increased profitability because of efficiency hence improved financial performance and increased market share (Micheels & Boecker, 2016). According to Fisseha (2019) the efficiency theory presupposes that profitability and high intensification results from efficient cost management practices and better management strategies across the organization. The efficiency hypothesis prevails when a positive significant correlation between profitability and the market share exists (Mensi & Zouari, 2016). Regarding this study, efficiency theory helped explain how customers could be locked into a system due to improved service provision achieved through appropriate technology adoption.

Conceptual Review

Technology Adoption as a System Lock-in Strategy and Financial Performance of Commercial Banks

The stiff competition which has brought about deregulation, globalization and widespread mergers and acquisitions taking place in the banking sector has also led to closure of many branches which have been replaced by such technological advancements such as self-serviced banking (SSB) facilities like the ATMs, mobile, agency and internet banking. Technology adoption in the banking sector is so massive and rapid that it has brought about a lot of changes in the strategic positioning of the banks. The new innovations are replacing the traditional banking systems of the branch teller. With this advancement in technology the study seeks to assess how these systems lock in the customers and the effect the lock in has in the performance of the banks.

According to Awasthi et al (2018) advancement in technologies, work is expected to be done faster and more accurately hence provide customers with better service. The financial sector in Kenya has advanced to a great extent due to the availability and accessibility in technological adoptions. Giesler and Thompson (2016) on the other hand notes that the ability of an organization to develop a relationship with customers requires effective technologies that allow an understanding of customer behavior. Technologies assist in the integration of IT in business operation to improve the capabilities of understanding customer behavior, develop predictive models, build effective communications with customers and respond to those customers in real time and with accurate information. This development has allowed customers to access their accounts in all the countries in which the banks are present.

Ogongo (2017) in his study that sought to establish the strategies adopted by commercial banks in Kenya to enhance customer retention and to determine the level of customer retention among commercial banks in Kenya. The objectives of the study were to establish the strategies adopted and to determine the level of customer retention among commercial banks in Kenya to enhance customer retention. There has been frequent switching of

customers from one bank to another due to good competitive advantages like competitive interest rates and ledger fees reduction by the banks. Using cross sectional research design, a census was used where all the commercial banks operating in Nairobi were considered for the study. Questionnaires and secondary data were used in collecting the data. Analysis was done both descriptively and inferentially to establish the relationship between the variables. The study established that customers were satisfied with quite a number of factors that the bank had put in place to enhance the level of satisfaction and hence retain the customers.

A study by Young et al (2017); Hernando and Nieto (2017) also reported that most banks in the US reported an increase in financial profitability after adoption of Internet banking there was increased performance. The study further noted that the relationship between internet delivery channels and bank's performance, it was established that adoption of internet as a delivery channel involves gradual reduction in overhead expenses particularly, staff, marketing and IT which translates to an improvement in banks' performance.

Bellingkrodt and Wallenburg (2015) in their study on the role of customer relations for innovativeness and customer satisfaction noted that among the causes of dissatisfaction among customers is congestion in the office place. Data were collected from 778 SPs via an online survey. Structural equation modelling was used to analyze the empirical data. According to this study the partnership between banks and mobile money service providers has eased the congestion in the banking halls and hence influenced the satisfaction of the customers. Both types of SPs benefit from close customer relations in terms of innovativeness and customer satisfaction. However, ITSPs rely more on a large number of customers to be innovative than logistics service providers (LSPs) further LSPs can evoke a higher level of customer satisfaction when being innovative. The study was conducted in different countries with different banking rules and procedures and hence makes it not appropriate to be generalized for the study. This study sought to assess whether the same findings could be replicated in the Kenyan environment.

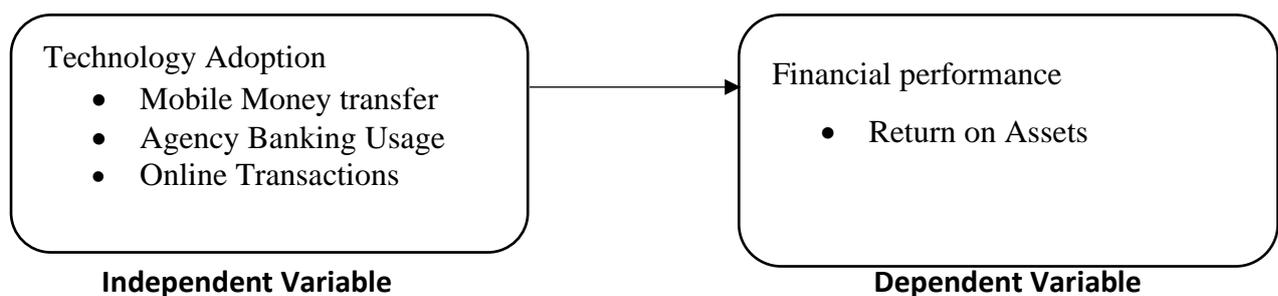


Figure 2.1: Conceptual Framework

Research Methodology

The study adopted a cross sectional design. The target population constituted all the 10 commercial banks with branches in Narok town as of December 2019. This study used Census. Census is a sampling technique that covers the entire population of interest. It was used because the population was not vast. In this study, primary data was used. The primary data was collected using questionnaires. Coding of the data was done to ensure that the data was appropriately grouped and categorized for analysis. Descriptive statistics was computed and presented through frequency distribution tables and graphs. The study checked the existence of a linear relationship between technology adoption and financial performance of

commercial banks operating in Narok town, using person's moment correlation coefficient. In order to develop the research model and assess the level of significance of the relationship between the variables the regression analysis was conducted. Fischer distribution test called F-test was applied to test the significance and level of difference between the regression mean and the error mean. This test was done at a 5 percent level of significance implying 95 percent level of confidence. This was done by analyzing the analysis of variance ANOVA test. Similarly, the t-test statistic was used to test the ability of the model to predict the level of statistical significance study. For this test the rule is that if the t – statistic is between -2 and +2 the relationship is not significant and hence the null hypothesis of the study is accepted as to be true. But if the t value is more than + 2 or less than -2 then the null hypothesis will be rejected. If the p-value is greater than 0.05 then the model is said to be not significant and cannot be used to explain the variations in the dependent variable.

Research Findings and Discussions

This section presents the research findings and discussion.

Effect of Technology Adoption as a System Lock-in Strategy on Financial Performance of Commercial Banks Operating in Narok Town

The objective of the study sought to find out the effect of technology adoption as a system lock-in strategy on financial performance of commercial banks operating in Narok town. The respondents were asked to indicate technology adopted by their respective commercial banks. The responses were recorded in Table 4.1.

Table 4.1: Technology Adoption

Technological adoptions	Frequency	Percent
Mobile banking	8	100%
Online banking	8	100%
Agent banking	6	75%

Source (Author, 2021)

The results in Table 4.1 show that all the 8 (100%) commercial banks under study had adopted Mobile banking and Online banking while only 6 (75%) commercial banks under study had adopted agency banking. The commercial banks that had adopted mobile banking, online banking and agency banking were Equity bank, KCB, NBK, Co-operative bank, Family bank and ABSA. While commercial banks that had not adopted agent, banking were DTB and NCBA. This supports the findings of Gitau (2014) who noted that mobile banking and online banking was adopted by all commercial banks in Kenya. The results are also consistent with the findings of Kanyugi (2019) who noted that only 43% of commercial banks in Kenya had adopted agent banking.

Number of Registered Clients

Respondents were asked to indicate the number of clients registered by each technology adopted since 2017 to 2019. The results are presented in Table 4.2.

Table 4.2: Number of Registered Clients From 2017 to 2019

Technology	Year 2017	Year 2018	Year 2019
Mobile Banking	22824	43672	72906
Online Banking	2366	4255	12937
Agent Banking	2134	2729	3112

Source (Author, 2021)

The results in Table 4.2 show that Mobile Banking had the highest number of registered clients for all the three years under study. Mobile banking registered 22824 clients in year 2017, 43672 clients in year 2018 and 72906 clients in year 2019. Online banking was the second technology that registered 2366 clients in year 2017, 4255 clients in year 2018 and 12937 clients in year 2019. Agent banking had the least number of registered clients, recording 2134 clients in year 2017, 2729 clients in year 2018 and 3112 clients in year 2019. The results are in agreement with the findings of Gitau (2014) who noted that mobile banking had the highest number of clients compared to other forms of technology adopted by commercial banks. This could be explained by the fact that a big percentage of the Kenya population owned mobile phones, and hence access to Mobile banking. To summarize the values in Table 4.2 in graphical form the values were plotted and Figure 4.1 generated.

**Figure 4.1: Number of Registered Clients from 2017 to 2019**

Source (Author, 2021)

The results in Figure 4.1 show that Mobile banking had the highest number of registered clients for all the three years under study. Online banking was second in registration for the three years. Online banking was seen to grow at a higher rate compared to agent banking. Agent banking recorded the least number of registered clients for all the three years under study. The findings are consistent with the findings of Gitau (2014) who noted that mobile banking had the highest number of clients compared to other forms of technology adopted by commercial banks. This could be explained by the fact that a big percentage of the Kenya population owned mobile phones, and hence access to Mobile banking. Similarly, the findings reflect Ndirangu (2013) argument that online banking was gaining more clients as a result of the Kenyan government enhancing internet coverage to different parts of the country and hence access to online banking through more stable internet.

Revenues Generated from Mobile Banking

Respondents were asked to indicate the amount of revenues generated from mobile banking, online banking and agent banking for the period 2017 to 2019. The results are presented in Tables 4.3; 4.4 and 4.5.

Table 4.3: Revenues Generated from Mobile Banking

Bank	Year 2017 KES. '000'	Year 2018 KES. '000'	Year 2019 KES. '000'
Equity Bank	22238	23246	23981
KCB	18738	20302	28209
NBK	7232	7928	8432
NCBA	13143	15236	15259
Co-op Bank	16464	18091	18949
Family Bank	8588	8762	9344
ABSA	14759	15291	16387
DTB	9040	9609	9532
Total	110202	118465	130093
Mean	13775.25	14808.125	16261.625

The results in Table 4.3 show that equity bank generated the highest revenues from mobile banking for all the three years under study. KCB was second while NBK generated the least revenues from mobile banking for all the three years under study.

Table 4.4: Revenues Generated from Online Banking

Bank	Year 2017 KES. '000'	Year 2018 KES. '000'	Year 2019 KES. '000'
Equity Bank	4621	6330.77	7869.1471
KCB	4164	5704.68	7090.9172
NBK	1619	2218.03	2757.0113
NCBA	2193	3004.41	3734.4816
Co-op Bank	3859	5286.83	6571.5297
Family Bank	1947	2667.39	3315.5658
ABSA	3352	4592.24	5708.1543
DTB	2929	4012.73	4987.8234
Total	24684	33817.08	42034.63
Mean	3085.5	4227.135	5254.3288

The results in Table 4.4 show that equity bank generated the highest revenues from Online banking for all the three years under study. KCB was second while NBK generated the least revenues from Online banking for all the three years under study.

Table 4.5: Revenues Generated from Agent Banking

Bank	Year 2017 KES. '000'	Year 2018 KES. '000'	Year 2019 KES. '000'
Equity Bank	987	1160.712	1322.58
KCB	887	1043.112	1188.58
NBK	336	395.136	450.24
Co-op Bank	812	954.912	1088.08
Family Bank	496	583.296	664.64
ABSA	746	877.296	999.64
Total	4264	5014.464	5713.76
Mean	710.666667	835.744	952.29333

The results in Table 4.5 show that equity bank generated the highest revenues from agent banking for all the three years under study. KCB was second while NBK generated the least revenues from agent banking for all the three years under study.

The results in Tables 4.3; 4.4 and 4.5 show that Mobile Banking generated the highest revenues for all the three years under study. Mobile banking generated a mean of Ksh. 13,775,250 in 2017, a mean of Ksh. 14,808,125 in 2018 and a mean of Ksh. 16,261,625 in 2019. Online banking was second, it generated a mean of Ksh. 3,085,500 in 2017, a mean of Ksh. 4,227,135 in 2018 and a mean of Ksh. 5,254,329 in 2019. Agent banking had the least revenues generated, recording a mean of Ksh. 710,667 in 2017, a mean of Ksh 835,744 in 2018 and a mean of Ksh. 952,293 in 2019. The results are in agreement with the findings of Gitau (2014) who noted that mobile banking generated the highest revenues compared to other forms of technology adopted by commercial banks. This could be explained by the fact that a big percentage of the Kenya population owned mobile phones, and hence access to Mobile banking.

Future Technological Innovation

Respondents were asked to indicate whether they intended to come up with new technological innovations in the future. The responses were recorded in Table 4.6.

Table 4.6: Future Technological Innovation

Response	Frequency	Percent
Yes	6	75
No	2	25
Total	8	100

Source (Author, 2021)

The results in Table 4.6 indicate that majority of the respondents agreed that they intended to develop new technological innovations in the future as shown by (6) 75% response rate. (2) 25% of the respondents had no plans of developing new technological innovations. The commercial banks that had the intention of developing new technology in future were Equity bank, KCB, NBK, Co-operative bank, Family bank and ABSA. While commercial banks that had no intention of developing new technology in future were DTB and NCBA. The results are in consonance with the Kenya bankers association 2019 report that indicated that most commercial banks in Kenya were striving to be more innovative in order to overcome the high

cost of service delivery. The findings are further in agreement with the findings of CBK (2018) report that recognized Equity bank and KCB as the top commercial banks in Kenya in technology adoption.

The results were subjected to further analysis using Pearson's Correlation so as to establish the relationship that exists between technology adoption and financial performance of commercial banks in Narok town. The results are presented in Table 4.7.

Table 4.7: Pearson's Correlation Analysis of the Relationship Between Technology Adoption and Financial Performance

		Financial Performance
Technology Adoption	Pearson Correlation	.373**
	Sig. (2-tailed)	.002
	N	8

$p > .05$ (2-tailed); $\alpha = 0.05$.

The results in Table 4.7 show that there is a positive and statistically significant correlation ($r = 0.373$, p -value = 0.002) between technology adoption and financial performance of commercial banks in Narok town. This means that technology adoption is an important influence of financial performance of commercial banks in Narok town. The results are consistent with the findings of Mwanza (2017) that technology adoption influenced financial performance of insurance companies operating in Kenya. This could be explained by the fact that technology adoption helped lower the cost-of-service delivery and hence enhancing the financial performance of insurance companies in Kenya.

To test the null hypothesis, simple linear regression was conducted. The results are presented in Table 4.8.

Table 4.8: Regression Coefficients Results of Technology Adopted on Financial Performance

R Square	F	Beta	t-value	Sig.
.139	15.182	.395	3.896	0.002

From Table 4.8 it is noted that the goodness of fit for the regression between technology adoption and financial performance of commercial banks in Narok town was satisfactory. An $R^2 = 0.139$ indicates that 13.9% of the financial performance of commercial banks in Narok town is explained by the technology adoption. The $F(1,7) = 15.182$, $P < 0.05$ indicates that technology adoption plays a significant role in influencing the financial performance of commercial banks. A $t = 3.896$, $p < \text{critical } t\text{-value}$ led to the rejection of the null hypothesis that there is no significant effect of technology adoption as a system lock-in strategy on financial performance of commercial banks operating in Narok town, Kenya. The study thus, concluded that technology adoption was a significant factor affecting financial performance of commercial banks operating in Narok town. The results are consistent with the findings of Mwanza (2017) that technology adoption positively enhanced financial performance of insurance companies operating in Kenya. Further the results are in agreement with the findings of Ndirangu (2013) that for organizations to survive in a competitive environment, innovation and technology adoption was paramount as it enhanced their financial performance. This could be explained by the fact that technology adoption helped lower the

cost-of-service delivery by transforming fixed cost to variable cost and hence cost could only be incurred whenever there was a transaction. Also, through technology adoption new products that met customers' needs could be produced and hence locking more clients to the system. More loyal customers plus Lower service cost enhanced financial performance of commercial banks operating in Narok town, Kenya.

Conclusion

The study concluded that technology adoption has an influence on the financial performance of commercial banks operating in Narok town. Commercial banks that seek to enhance their financial performance should embrace technology.

Recommendations

Commercial banks that wish to enhance their financial performance must consider technology adoption because it helps in ensuring that commercial banks are able to offer new services/products that meet customers' needs, also through technology commercial banks are able to offer services to customers at minimized cost.

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