EFFECT OF FINANCIAL INNOVATIONS ON FINANCIAL PERFORMANCE OF TIER ONE COMMERCIAL BANKS IN KENYA

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ABSTRACT

Commercial banks play a critical role in any nation in the world, primarily owing to their intermediation function. Poor performance can result in bank runs, bank crises and a significant financial crisis. The study aimed at investigating how financial innovations affect tier one commercial banks' performance in Kenya. Specifically, the study sought to establish the effect of internet banking, mobile banking, agency banking and Automated Teller Machine (ATM) banking on the financial performance of tier one Commercial Banks in Kenya. The study was guided by financial intermediation theory, Silber's Constraint Theory of Innovation and diffusion of innovation theory. This study adopted the cross-sectional descriptive research design. Study population was human resources, finance, marketing, research and development, and IT in tier one commercial banks (Kenya Commercial Bank, Equity bank, Co-operative Bank, Absa Bank plc, National Commercial Bank of Africa (NCBA), Standard Chartered Bank, Stanbic Bank and Diamond Trust bank (DTB)).The study used both primary and secondary data. A semi-structured questionnaire containing open and close-ended questions was used to collect primary data whereas secondary data collected from the Central Bank of Kenya and the commercial banks websites. The data collected was analyzed using the Statistical Package for Social Sciences (SPSS version 25.0) where both descriptive and inferential statistics were analyzed. The study found that internet banking provided unique products and services, and had low operating costs. The study also found that mobile banking lowered transaction costs by removing the need for customers visiting banks branches; mobile banking transactions transferring funds between customer-related accounts was simple and efficient; m-banking transactions increased the customer base; and customers were able to check an account balance or check recent transactions on their mobile phone devices. The study found that agency banking eased the conduct of business, and financial inclusivity was assured by agency banking. The research found low maintenance costs for ATMs; and investment in ATMs was mainly driven by bank income. The study concluded that agency banking had the greatest influence on the financial results of Tier One commercial banks in Kenya, mobile banking was followed by Automated Teller Machine (ATM) banking, while internet banking had the least effect on the financial performance of Kenya Tier One commercial banks. The study suggests that all tier one commercial banks should take advantage of lower internet rates to reduce their transaction costs, which in return would attract potential customers, thereby building consumer loyalty.

Key Words: *internet banking, mobile banking, financial performance, tier one commercial banks, automated teller machine*

INTRODUCTION

Banks play a very important role in nations' economic growth, as they largely exert control over money supply in circulation and are the key stimulus for economic change (Meredith, 2012). Tucker (2014) said that bank performance can be described as a reflection of how a bank's resources are utilized in such a way as to help them accomplish their goals. The term bank efficiency, moreover, implies the adoption of a collection of metrics that signify the position of the bank, and the degree of its ability to achieve the desired goals. Some of the reasons why we assess banks ' performance are to decide their operating results and overall financial position, calculate the quality of their assets, the quality of management, Performance and achievement of its goals, as well as assessing the efficiency of its profits, liquidity, capital adequacy and degree of banking services. Typically, the ratios are used to assess an organization's financial results. It is assumed that a well-planned and implemented financial management would positively contribute to the development of a business (Albertazzi & Gambacorta, 2011).

One way to foster development and competitive advantage is to implement strategies in the various parts of the company that facilitate creativity. Due to needs for efficiency and sustained performance, innovations are an inherent objective that is being sought by many modern organizations irrespective of whether they are involved in production of goods or provision of services. Marques, Gerry, Covelo, Braga and Braga (2011) note that companies and countries seeking to be competitive must be innovative. Evidently, therefore, innovation is a tool for enhancing the position of firms and countries in the markets. It is also important to note that innovations are not only in the financial sector but also in other sectors of the economy. In this respect there are a variety of aspects for innovations and this study considered financial innovations.

The company's financial performance is measured in monetary terms and is expressed in terms of return on investment, return on assets, added value, among other items, in terms of production. Commercial banks' principal goal is benefit. The profitability of companies is measured in different ratios, which mainly comprise; Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) (Alfred, 2017). ROA is an important ratio which indicates a bank's profitability. It is a revenue ratio to its total assets (Amalendu & Sri, 2011). It tests the capacity of the management to generate revenue by making use of the assets available to them from the company. NIM is the measure of the difference between the interest income generated by the banks and the amount of interest paid to their lenders, relative to the number of their assets (Agbada & Osuji, 2013).

Money-related innovations can be described as monetary developments in instruments, organizational structure and frameworks to tackle market inefficiencies and constraints that limit earning capacity. In the course of financial improvement, businesses are prepared to foster growth potential through the expansion and expansion of the market, drawing on other forms of financial

investors. It also helps banks to test weak ties between the management of account establishments and other commercial corporate clients, which improves productivity flow, loans for better returns and the fulfillment of clients (Misati, Njoroge, Kamau & Ouma, 2010).

Online banking and electronic banking are examples of financial technologies that many commercial banks have welcomed. ATMs use is on the rise since inception in the 1990s.It is necessary to remember that the Kenya Central Bank oversees Kenya's commercial banks. The use of Real Time Gross settlement (RTGS), Electronic Funds Transfer (EFT), mobile phone banking, bancassurance, payments of utility bills, and online customer self-customers are other financial innovations in Kenya. This has in turn increased the number of players in the banking industry and has ensured efficiency in service delivery (Zawislak, Alves, Tello-Gamarra, Barbieux & Reicher, 2012). In addition, the adoption and success of Mpesa has revolutionized the banking sector in Kenya.

Kenya has eight (8) Tier 1 commercial banks, including Stanbic Bank, Cooperative Bank, Absa Bank Plc, Kenya Commercial Bank, Standard Chartered Bank (K) Ltd, Diamond Trust Bank, Equity Bank, and Africa Commercial Bank. Tier 1 banks actively chose 16 other Tier 2 banks and collectively managed 41.7 percent of the market. The last tier, Tier 3, consists of 21 small banks that dominate 8.4% of the market. With tier 1 banks controlling almost half of the capital market; they are posting massive profits. Tier 1 banks also generate revenue from interest earned on loans to mobile users, such as M-Shwari, KCB Mpesa, Equitel, and Equitel (Mwangi, 2017).

Tier 1 commercial banks are the "big old banks," the ones that have been on the market for a long time, accumulating assets worth hundreds of billions of shillings and millions of customers, though their likelihood of falling into financial crisis would be near. They belong to a group of Americans too large to fail, and they are the safest. For example, the Co-Operative Bank (CO-OP), called Bank of the Year by the London financial times, has assets estimated at about SH 309 billion and a client base of more than 3.4 million depositors. They are the main banks in Kenya because of their asset base and because they are, Tier 1 commercial banks are suitable for this study (PricewaterhouseCoopers (PWC), 2012).

STATEMENT OF THE PROBLEM

Commercial banks play a vital role in any nation's economic sector in the world over. There has been a decline in ROA of tier one commercial banks through a statistical analysis where: in 2004-2011, CBK data indicated that there was a decrease. In 2011-2014, there was a slight improvement in ROA of tier one commercial bank. In the periods of 2014-2018, there was a gradual decline in ROA despite the tier one banks investing heavily in financial innovations which signifies that financial innovations has an impact on the financial performance of tier one banks and the statistics has proved that through the use of ROA. In Kenya, the emergence of new technologies, products, processes, markets and rivalry among banks has made banks to apply every ability necessary to remain financially competitive and sound. The number of automated teller machines grew from

166 in 2001 to 2529 in 2018, according to data from the Central Bank of Kenya (2020), the number of debit cards rose from 160,000 in 2001 to 16,167,386 by the end of 2018, while mobile banking transactions rose from 48,000 per year in 2007 to 810.9 million transactions in 2018-2019. Mwangi (2017) has already depicted the banking industry as displaying little business orientation and satisfying services with little concern for customer needs as well as including efficiency-dissimilar branches that have led to low financial results. For instance, in the last five years Imperial Bank and Chase bank were put under statutory management due to malpractices (CBK, 2014). Long queues, transaction errors, queuing, instability and network failures are the most common problems with tier one commercial banks using banking services (PricewaterhouseCoopers (PWC), 2012). This significantly decreases the understanding of the consumer of the quality of service offered and thus decreases the reputation of the bank, thus profitability. Some financial banks in Kenya have adopted financial innovations like Stanbic has Digibank, Equity Bank has Eazzy pay, CBA has partnership with Safaricom to provide M-Shwari digital bank branch, CBA also has Loop which is an online banking platform but still have reported deteriorating performance (Albertazzi & Gambacorta, 2011). However, there is no exhaustive evidence all these financial innovations improves bank's profits and shareholders wealth. It is in this context that one wonders whether mobile banking, Internet banking, credit cards and agency banking have influenced the financial performance of Tier 1 commercial banks. As the importance of financial innovation in developing countries such as Kenya is increasing, so is the need for research in this field. It is on this backdrop that the relationship between growing investment in financial innovation and banks' financial performance in Kenya needs to be explored (Orlitzky, Schmidt & Rynes, 2013). Existing literature demonstrates different study gaps. Mateka et al. (2017) focused on internet banking and the financial performance where they found that online banking has a positive effect on bank sales, operating costs, credit books and customer deposits. The   study however focused only on internet banking leaving out other financial innovations strategies. Further, Mbugua and Omagwa (2017) studied the relationships between agency banking on financial performance of commercial banks where it was found that agency banking costs affect financial results. The study however excluded other financial innovations strategies and focused only on agency banking. Abdullai and Nyaoga (2017) explored the impact of Automated Teller Machines Use on commercial banks ' operational performance in Nakuru County, Kenya. The study introduced a cross-relational research design. Though this study established that use of ATM has a favorable connection with operational results and proposed that commercial bank management invest heavily in ATMs because it has a positive impact on operating efficiency, it didn't focus only on tier one banks. The research, however, focused on Kenya's Microfinance Institutions (MFIs). The present research concentrated on tier one commercial banks Kenya's commercial banks. This study therefore contributes to the existing literature on the effect of financial innovation and financial performance of commercial banks taking into account the heavy capital expenditure and frequent changes in technology. A research gap the study entailed to fill.

GENERAL OBJECTIVE

The study generally investigated financial innovations effect on the financial performance of tier 1 commercial banks in Kenya.

SPECIFIC OBJECTIVES

1. Examining how internet banking affects financial performance of tier one Commercial Banks in Nairobi, Kenya.
2. Establishing the effect of mobile banking on the financial performance of tier one Commercial Banks in Nairobi, Kenya.
3. Determining the effect of agency banking on the financial performance of tier one Commercial Banks in Nairobi, Kenya.
4. Investigating the effect of Automated Teller Machine (ATM) banking on financial performance of tier one Commercial Banks in Nairobi, Kenya.

THEORETICAL REVIEW

Financial Intermediation Theory

The financial intermediation theory was developed by Gurley, Enthoven and Shaw (1960). They argued that financial intermediation involves the actions of depositing surplus units with the available financial institutions so that they can consequently lend the same funds to deficit units in the economy. Bisignano (1998) opine that financial intermediaries are further divided into four categories: the first encompasses deposits that are for a fixed term, the second category entails deposits meant for the short-term in comparison to their equivalent assets. The third group includes a significant portion of liabilities that can be withdrawn on demand without delay, and the last is cash and liabilities which to a great degree cannot be readily transferred. The major contribution of financial intermediaries therefore is to ensure that funds flows in a steady manner from the deficits to the surplus units that exists.

The theory of financial intermediation underlines the contribution of different financial and non-financial intermediaries towards the provision of financial commodities. Important to note is that the existence of markets that support a large pool of such intermediaries leads to the provision of quality financial commodities available to end consumers that is both borrowers and lenders (Boot & Thakor, 1997). This is in turn leads to wide acceptance of the offered products and services by end consumers due to quality service provision. Financial intermediation is seen as the degree to which money related foundations pool deficiency and abundance spending parts in a single spot (Nimalathasan, 2017).

For this analysis, this theory is important in that it captures financial outcomes, represented by financial developments. The foundations of this theory can be used to better understand how financial performance relates to financial developments and how financial technologies affect such

inclusion in commercial banks. The cornerstones of this framework can be used to help illustrate how financial success correlates with financial innovation in financial institutions.

Silber's Constraint Theory of Innovation

Silber (1975) joins money related creations to endeavors of associations exploiting incomes to diminish the impact of various sorts of restrictions that makes productivity lessen. The model accept that the key thought process of financial developments is the point of pay augmentation of money related offices. Silver records that in pursuing pay expansion there are special restrictions (checking outside requirements and inner limitations, for example, regulatory association). While these limitations not just guarantee stable organization, they diminish the viability of money related foundations, so the foundations are attempting to burden them (Silber, 1975).

The theory thus is important in that it helps shed light on the reasons that make banks venture into financial innovations. More so, banks in Kenya are strictly regulated by the central banks of Kenya and may not be free to adopt all financial innovations without the express approval of the regulator. Financial innovations have been noted as per the theory to be a move to increase the profits of the financial institutions. This theory idealises that innovations are geared towards the alleviation of a certain constraint. In connection to tier one commercial banks in Kenya, there are a variety of constraints arising from internal environment and the external environment. Banking halls operate within stipulated time of the day with rare cases of extension past the normal business hours. Thus, Sibler (1983) indicates that entities must work towards reducing the losses brought about by the constraints. To this end, mobile banking, internet banking and agency banking ensures that customers can transact round the clock. The traditional banks operate in a confined location and with strictness of time. It is due to this shortcoming that led to adoption of technologically enabled means of delivery customer service to customers.

Diffusion of Innovation Theory

Rogers created and popularized this hypothesis in 1962 after empirically analyzing over 508 research on diffusion of technology across different areas. The Diffusion of Innovations (DOI) theory was, according to Rogers (1962), the result of contributions from groundbreaking efforts in the execution of innovations. In line with this principle, five problems related to innovation characteristics decide the decision to take up innovations. These are the presumed utility, which includes matching, complexity, testability and perceivability with the innovations the social framework receives. The hypothesis additionally contends that adopters can be partitioned into a few arrangements: pioneers, early adopters, early lion's share, late larger part and lagards. Critically, the hypothesis keeps up that during the periods of development acknowledgment, purchasers contrast altogether in their highlights.

The theory shows that those utilizing any advancement expect a chime formed appropriation bend that can be classified regarding development into five sections. Rogers recorded clients as

pioneers, early adopters, early larger part, late lion's share and loafers as clients (Liu and Li, 2009). For the momentum research, this speculation is significant in that by tolerating the good old innovation taking hypotheses, models and structures to the grasping of progressive money related development, this exploration endeavors to take the discussion to the traditional modernization of innovation in writing. This idea is used to investigate how banking headway in innovation impacts money related execution in level one business banks in Kenya. It catches versatile banking, organization banking, electronic financial outlets, web banking and even cell phone administrations as they are all essential for advancements in the financial business.

RESEARCH METHODOLOGY

Research Design

This study adopted a cross-sectional descriptive research design since it is instrumental in the collection at one point in time in data from a population of interest. This examination configuration was fitting for this study as it takes into consideration both qualitative and quantitative information and furthermore makes it simple to build up connections among the factors (Cooper & Schindler, 2011). Lewis (2015) opines that the objective of elucidating research is to depict and report how things are and to choose the status of the populace under audit. The characteristics the research design adopted meets.

Target Population

The population of the study was the 8 tier one commercial banks in Kenya, the unit of observation being three senior managers in the following departments: human resources, finance, marketing, research and development and Information technology. This translated to 120 respondents.

Data Collection Procedure

Information was gathered from both primary and secondary sources. Primary data alludes to information acquired by the scientist from respondents, as indicated by Cooper and Schindler (2011), though optional information alludes to information from different sources, for example, records and archives, so essential information will be viewed as more precise and up-to - date. A semi-organized poll containing open and close-finished inquiries was utilized to gather essential information. The report used secondary data obtained from the Ministry of Finance, CBK, KNBS, KIPPRA, public libraries, national budget and other government documents as well as from the Ministry of Finance World Integrated Trade Solution (WITS). The utilization of secondary information is supported because these sources give information that was entirely important to this examination and that the overall population has verified and affirmed it.

Data Analysis and Presentation

Cleaning of data collected was carried out, coded and arranged methodically in a way that allows analysis to be conducted using the Statistical Package for Social Sciences (SPSS version 25.0). After data cleaning which includes searching for entry errors, all quantitative variables and the information provided inform tables and descriptive statistics such as frequencies, percentages, median score and standard deviation were measured. The qualitative information from the open-ended questions was analysed and summarized in prose using conceptual content analysis. The regression analysis was used to determine the relationships between the variables that are independent and dependent. The following equation was commonly assumed by the analysis regression model;

$$Y = \beta_0 + B_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where: Y is the Financial Performance; β_0 - β_4 are the beta coefficient; X_1 is the Internet Banking; X_2 is the Mobile Banking; X_3 is the Agency Banking; X_4 is the Automated Teller Machine (ATM); ε is the error term

RESEARCH RESULTS

To measure the strength of the linear relationship between two rated or numerical variables, the study used a correlation coefficient (r) ranging from +1 to -1. The sign indicates the connection direction and intensity. The findings on the correlation analysis were presented in Table 1.

Table 1: Pearson's Correlation Analysis

		Financial Performance	Internet Banking	Mobile Banking	Agency Banking	ATM Banking
Financial Performance	r	1				
	p-value	-				
Internet Banking	r	.638	1			
	p-value	.005	-			
Mobile Banking	r	.709	.338	1		
	p-value	.022	.016	-		
Agency Banking	r	.796	.304	.201	1	
	p-value	.016	.000	.001	-	
ATM Banking	r	.684	.821	.782	.706	1
	p-value	.000	.001	.019	.008	-

From the findings, that internet banking and financial performance of tier one Commercial Banks in Kenya were significantly correlated as shown by a coefficient of 0.636 and p-value of 0.005 which is significant at α = 5%. The findings also showed that Tier One Commercial Banks' mobile banking and financial output in Kenya were significantly correlated, as shown by a coefficient of 0.709 and a p-value of 0.022 which is significant at α = 5%. The results of the study also showed

that Tier One Commercial Banks were significantly and positively related to financial results in Kenya's agency banking, As seen with 0.796 coefficient and 0.016 p-value which is significant at $\alpha = 5\%$. Finally, the study found that there is a positive and significant correlation between ATM banking and Tier One Commercial Banks' financial performance in Kenya, as shown by a coefficient of 0.684 and a p-value of 0.000 which is significant at $\alpha = 5\%$. This indicates that the positive relationships suggest that the financial performance levels of Tier One Commercial Banks in Kenya will increase when the practice of the above factors is in place.

A multiple regression analysis was undertaken. The results were as per Table 2. The R-squared was 0.797 implying that the variables in the model explain 79.7% of financial performance of tier one commercial banks in Kenya to be attributed to financial innovation while 20.3% can be attributed to other factors. This implied that model had a very strong explanatory power.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.893	0.797	0.787	0.978

From Table 3 the p-value was 6.00E-28 from the ANOVA table and the estimated F-value was 81.554. This shows that the outcomes of tier one commercial banks ' financial performance in Kenya are expected on the basis of the values of internet banking, mobile banking, agency banking and ATM banking, Since the p-value was less than 0.05, and F-calculated was greater than F-critical, the overall regression model was important (2.4817).

Table 3: ANOVA Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	323.133	4	80.783	81.554	6.00E-28
	Residual	82.216	83	0.991		
	Total	405.349	87			

The regression coefficients on the effect of financial innovation on financial performance of tier one commercial banks in Kenya in Kenya were as per the outputs in Table 4. The established model for the study was:

$$Y = 0.839 + 0.638X_1 + 0.774X_2 + 0.822X_3 + 0.658X_4$$

Where: Y= Financial performance of tier one Commercial Banks in Kenya; X_1= Internet banking; X_2= Mobile banking; X_3= Agency banking; X_4=Automated Teller Machine (ATM) banking

Table 4: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.839	0.182		4.610	0.000
Internet banking	0.638	0.208	0.568	3.067	0.003
Mobile banking	0.774	0.317	0.687	2.442	0.017
Agency banking	0.822	0.312	0.781	2.635	0.010
ATM banking	0.658	0.278	0.581	2.367	0.020

The study revealed that a unit improvement in internet banking would significantly increase the financial output score of Tier One Commercial Banks in Kenya by 0.638 because p-value (0.003) was less than 0.05. These findings are consistent with Cheng, Lam and Yeung (2016) who contend that web banking is described as the computerized conveyance of new and customary financial items and administrations legitimately to clients through intelligent electronic correspondence channels.

Moreover, a unit increase in mobile banking significantly leads to increase in financial performance of tier one Commercial Banks in Kenya as shown by a regression coefficient of 0.774 and p-value of 0.017. These results are in line with Mallat, Rossi and Tuunainen (2014) who argue that the number of options available to customers has been impacted by mobile banking. In addition to the more productive transaction climate and the high replacement of banking points, this is.

The also study found that a unit increase in agency banking leads to a significant 0.822 increase in financial performance of tier one Commercial Banks in Kenya since p-value (0.010) was less than 0.05. This correlates with King'ang'ai, Kihonge, Kigabo and Kibachia (2016) Who noted that as an expansion technique, agency banking defines its idea from the branchless financial model of which the wordings would be utilized reciprocally. Organization banking likewise helps decongest banking lobbies by empowering customers to get banking administrations somewhere else. Office banking causes bank clients to approach banking administrations close enough and at the comfort of the area.

A unit increase in Automated Teller Machine (ATM) banking would also lead to an increase in financial performance of tier one Commercial Banks in Kenya by 0.658 that had p-value of 0.020. This concurs with Adeoti (2014) who also established the link that exists between increments in the number of ATM customers as well as increments of natural log of volumes transacted trough ATM`s and their influence in financial inclusion in Kenya. Amalendu and Sri (2011) noticed that electronic installments empower bank clients to deal with their normal money related exchanges without visiting their neighborhood banking branch.

In a nutshell, agency banking had the greatest impact on financial performance of Kenya's tier one commercial banks in Kenya, followed by mobile banking, Automated Teller Machine (ATM) banking, while internet banking had the least impact on the financial performance of Kenya's tier one commercial banks. The analysis showed that all variables were significant since p-values were under 0.05. The above findings can be supported by the increased number of tier one commercial banks agents in Kenya of late and the use of mobile phone in transacting bank related activities by many customers.

CONCLUSIONS

The study sought to examine how internet banking affects financial performance of tier one Commercial Banks in Nairobi, Kenya. Therefore, the study concluded that internet banking contributed positively and significantly to the money related execution of Kenya's Tier One business banks. The investigation reasoned that the utilization of web banking improved exactness and execution, dependability and speed which gave them upper hand over the remainder of the banks. It was likewise reasoned that internet banking has fundamentally discounted item costs, presented special items, brought down activities, broadened client base, improved client care administrations, gathered client information, decreased promoting costs and expanded both turnover and benefit.

The study further sought to establish the effect of mobile banking on the financial performance of tier one Commercial Banks in Nairobi, Kenya. Hence, the study concluded that mobile banking contributed positively and substantially to the financial performance of Kenya's Tier One commercial banks. The study concluded that mobile productivity has been commonly used by innovation by online banking in bank inquiries on the basis of ease, cost reduction, transaction. It has been used moderately in the payment of bills, mbanking, and rarely used in the generation of statements, inside exchange, stop checks, standing request guidance, and check book request and record/advance application assurance, unwavering quality assistance, virtual cash, telephone activity, and administration mindfulness got a mind-boggling commitment from versatile banking to improve superior. It was also concluded that mobile banking increased commission-based payments, revenue generation, annual profitability, maintenance costs and motivated benefit in the banking sector to a large extent.

In addition, the study sought to determine the effect of agency banking on the financial performance of tier one Commercial Banks in Nairobi, Kenya. Hence, the study concluded that Tier One commercial banks ' financial performance in Kenya was positively and significantly related to agency banking. The study found that agency banking expanded territory, dramatically reached the vulnerable and customer base, but did not decongest banks. because customer service was not well received in terms of money protection. Based on these facts, agency banking is increasing, and the customer base and efficiency have improved considerably. While based on lower customer numbers and confidence concerns, it has not dramatically reduced transaction costs

or close proximity to consumers. Many of these programs not only increase the model's value, but also reduce the overall banking costs for low-end bank customers.

Finally, the study sought to investigate the effect of Automated Teller Machine (ATM) banking on financial performance of tier one Commercial Banks in Nairobi, Kenya. Thus the study concluded that the automated teller machine (ATM) was positively and significantly linked to Kenya's tier one commercial banks ' financial results. The study concluded it links automatic teller machines and bank accounts to customer's mobile phones to alert customers when a customer account transaction takes place.

RECOMMENDATIONS

The study recommends that all tier one commercial banks take advantage of reduced internet prices to minimize their transaction costs, thereby attracting potential customers. If ICT is used successfully, the bank will be able to establish distinctive competence which will increase its market share. So as to guarantee the accomplishment of web banking, the bank should focus on those clients who are ICT capable. What's more, to draw likely clients, level one business banks can exploit decreased expenses and the wide accessibility of PDAs. The applications used to get to bank administrations online ought to be simple and easy to use so as to be sans bother for customers.

In addition, the study prescribes that business banks proceed to grasp and utilize versatile banking in their tasks in light of the fact that consistently the quantity of individuals with admittance to a portable handset increments. Additionally, the mix of phones and business banks has reformed the financial tasks. For instance, Safaricom Limited has dispatched M-Shwari administrations related to Commercial Bank of Africa that furnish enlisted individuals with a chance to obtain cash from the bank and pay back advantageously. This additional another perspective which is probably going to reform banking tasks for more prominent productivity.

The study recommends that the CBK should require the maintenance of higher floatation costs to by the agent banks. This creates more confidence on the customers in transacting through the agents. This will increase the transactions though agents and hence improved profitability. Regulators should improve on the customers' perception by introducing agent-banking systems in their branches and increase on their advertising activities in order to create awareness as well as increase their confidence on the security of the agent banks. This helps 39 to increase the volume of the transactions carried out through the agents, thus improving the financial performance of the banks.

The study suggests that commercial banks continue to invest in ATMs, as it has been found that this has a positive effect on financial performance. In order to ensure improved customer service, financial institutions must also step up the delivery of ATM equipment. The study advises that

financial institutions should continue to encourage their clients to use KEPSS more, as it has been shown that this approach is positively related to financial performance.

Therefore, the study suggests that the administration of business banks and other monetary establishments put more in this innovation as it incredibly adds to their budgetary extending. Managers of commercial banks and government should properly follow policies that enable businesses and the general public to use automated teller machines that increase the banking sector's productivity and effectiveness and thereby financial deepening. Additional recommendation of this study is that ATMs should be conveniently accessible to customers in different places, so that fast service and comfort are maintained, thereby enhancing financial deepening. At the same time, serviced continuously to ensure continuity of the services.

The study recommends that by adjusting to mobile banking and agency banking, tier one commercial banks can transform banking services so that they not only provide employment, but also increase market share. Where banking has not reached it would be advantageous and would boost security. Few banks have practiced the agency bank, which is why the number is still lower. The bank, on the other hand, can raise awareness of online services by providing alternative technologies that can be used in PDAs, including mobile applications.

Tier one commercial banks in Kenya can continue to invest in the delivery of innovation networks because they are much better able to handle their costs compared to investments in brick and mortar or physical branches. The amount of transactions that can be processed on networks such as the internet and mobile is high compared to offering such transactions using manual processes. This helps reduce costs per service unit, and therefore better returns to the banks. In Kenya, Tier One business banks can explore further ways to optimize their usage and returns from mobile banking and internet banking.

With regard to the adoption of ATM in Kenya's tier one commercial banks, the services can be used in areas where ATM facilities for the banked population residing in them are not offered by the respective commercial banks. We need to implement more branchless banking services products because of their benefits for both the bank and customers.

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