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The Impact of Electronic Banking Transactions on the Volume of Trade of Commercial Banks in Kenya

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Abstract

Purpose: Electronic banking is a mechanism that enables a financial institution's clients to conduct a number of financial transactions via an electronic device such as a cell phone or a personal digital assistant. Electronic banking refers to the provision of banking and financial services through electronic devices over a network. Commercial banks have been at the forefront of embracing and assimilating electronic fund transfer technology into their core tasks in order to achieve competitive advantages and manage their overhead operating costs. The purpose of this study was to determine the impact of electronic banking transactions on the volume of trade of commercial banks in Kenya. The research was guided by the following specific objectives: To determine the impact of mobile banking transactions on the volume of trade of commercial banks in Kenya; To determine the impact of Automated teller Machines transactions on the volume of trade of commercial banks in Kenya; To ascertain the impact of electronic fund transfers on the volume of trade of commercial banks in Kenya; To ascertain the impact of online/internet banking activities on the volume of trade of commercial banks in Kenya. Theories are reviewed in this section which will direct the study. It comprises of the theories leading the performance of commercial banks in their operations and precisely in the field of Electronic banking. The section evaluates the financial intermediation theory in particular which deals with the main function of financial institutions which is intermediating between the surplus and the deficit units for sustained economic development. It also reviews the classical economics theory which holds that for a business to make returns, it has to obey the modern economics.

Methodology: Simple random sampling method was used in this research. 10 representative banks were obtained from a population of 42 banks listed by the central bank of Kenya. In essence the method of statistical enumeration allows all members of the population to be studied. A population refers to the set of all observations under concern.

A descriptive research design was used. The design allows us, according to Best et al (2003), to capture all relevant aspects of a situation when hiring a research and investigation team. Similarly, Namusonge (2010) states that this approach is best suited to gather detailed information where, by

direct request, the researcher will reach all the population. Data for this case was majorly quantitative since it is readily available from the bank records for example the financial statements, publications, transactions. Secondary data is easy model of extracting data especially for quantitative research and this prompted the researcher to utilize it as the immediate tool for data collection. Panel data analysis was applied. This was done using the E-views panel data software.

Findings: The results showed that there was a partial positive and statistically significant correlation between volume of banks trade and Mobile banking transactions (r= 2.854, p=0.000), Automatic Teller Machines (r=2.314, p=0.000) and usage of internet banking transactions (r=2.442, p=0.000). However, findings also revealed that electronic funds transfer (r=-0.5075, p= 0.000) has no significant influence on banks volume of trade. The null hypothesis H_{o1}: Mobile banking transactions has no significant influence banks volume of trade was rejected. The null hypothesis H_{O2}: Automatic Teller Machines transactions have no significant influence on the banks volume of trade was rejected. The null hypothesis H_{O3}: electronic funds transfer has no significant influence on banks volume of trade was true and thus was not rejected. Similarly, Null hypothesis H_{O4}: internet banking transactions do not have a significant influence on project performance was not true and thus rejected.

Unique Contribution to Theory and Practice: The findings of this study will be absolutely relevant to the stakeholders in the banking industry, government regulatory authorities and monetary policy frameworks implementation and monitoring. Banking institutions as well can be able to make decisions on the key areas they will need to improve transactions by customers in order to boost the volume of trade.

Keywords: *Cash Deposits, Funds Transfers, Withdrawals, Commercial Banks***,** *Volume of Trade*

INTRODUCTION

With the introduction of electronic banking, the way banks operated has transformed and redefined. Technology is now considered to be the main influence on the triumph of organizations and their core skills. Therefore, both domestic and foreign banks invest more in providing new technologies to their clients' electronic banking (Sumra, 2011). Electronic banking has been a crucial driver for global business, helping countries exchange goods and technologies, making products cheaper than domestically. In our commercial banks, embracing e-banking has enhanced international banking by supplying business bases worldwide through electronic transfer modules. Business transactions were enriched by the cross transaction. Many variables such as physical and societal factors (PESTEL), pricing and advertising, as well as risks such as organizational and economic risk, must be taken into account in order to ensure success. In 2003, E-Banking in Finland authorized services such as account balance checks, transfer of funds and payment of bills, stock transactions, portfolio management and insurance purchases.

By the year 2014, Tanzania had exceeded Kenya in the comparative amount of the population using electronic money accounts, as shown in the illustration below. With this, Tanzania now is considered as one of the world leaders in electronic money transfers. According to the Monetary Policy Statement (2018) of the Bank of Tanzania, the use of electronic money services increased by 104.7 percent and the volume increased by 78.9 percent compared to the same period between 2016 and 2017, Whereas in Kenya, one of four MFS providers increased by 74 per cent by 2013: M-PESA, Airtel Money, YuCash, and Orange Money (Chale & Mbamba, 2015)

Electronic banking growth in Kenya coincided with the introduction of services by banks that could be accessed via the mobile phone. These facilities were designed to enable customers to access their account information. Amid developments, the popularity of electronic banking continues to grow. E-banking takes several dimensions of execution, all of which represent a new channel of distribution that allows financial institutions and other business actors to offer financial services outside traditional bank premises (Ashta, 2017).

This study therefore seeks to fill some knowledge gap in the research literature especially in Kenya where the major banks have not been examined and their electronic fund systems evaluated on whether there is any role they play in influencing the volume of trade of those banks positively or negatively.

SIGNIFICANCE OF THE STUDY

The results of this study will be of great significance to several categories of beneficiaries.

Commercial Banks Managers and Shareholders

The findings of the study will be important for the commercial banks who are generally the managers of electronic banking services platform. They are the people who ensure this service is sustained through owning them and running it.

Researchers and scholars

This is because it will add to their knowledge and enable them to be more informed in future research areas of electronic banking services performance. This is mainly so because the study aims at highlighting factors influencing electronic banking services effective performance. They will also be able to identify further gaps and areas of research.

THEORETICAL FRAMEWORK

The researcher modeled theories that support this research. It comprises of the theories leading the performance of commercial banks in their operations and precisely in the field of Electronic banking. The section evaluates the financial intermediation theory in particular which deals with the main function of financial institutions which in intermediating between the surplus and the deficit units for sustained economic development.

Financial Intermediation Theory of Banking

Kashyap et al (2002) holds that banks are pure financial intermediaries, presenting a model of banking in which a bank purchases asset with funds it had acquired in the form of deposits or the issuance of equity or bonds. The authors seem to be envisaging a cash-based economy, whereby deposits constitute amounts of cash paid in:

Diamond and Dybvig (1983) noted that the financial intermediation model shows how banks' mix of liquid assets especially deposits, withdrawals and liabilities may give rise self-fulfilling panics among depositors. They have pointed out that business investment often requires expenditures in the present to obtain returns in the future. In their model identical investors or depositors are risk averse and indefinite about the timing of their future consumption need without an intermediary all investors are locked into illiquid long-term investments that yield high pay offs to those who consume later.

In the words of recent authors, "Banks create liquidity by borrowing short and lending long" (Dewatripont, Rochet, & Tirole, 2010), meaning that banks borrow from depositors with short maturities and lend to borrowers at longer maturities.

This approach was developed by Guttentag and Lindsay (1968). Financial intermediation is a progression which entails surplus units depositing funds with financial institutions who then loan to deficit units. Guttentag and Lindsay (1968) recognized that financial mediators can be illustrated by four criteria. First, their major groups of liabilities or deposits are definite for a fixed sum which is not linked to the performance of a portfolio. Second, the deposits are of a much shorter term than their assets. Third, a great proportion of their liabilities are cheque-able which can be retrieved on demand and fourthly, their liabilities and assets cannot be transferable. The most significant contribution of intermediaries is a stable flow of funds from extra to deficit units.

The creating specialized financial commodity is viewed as one role of the financial intermediary. These are produced whenever an intermediary discovers that it can sell them for prices which are anticipated to cover all costs of their production, both opportunity and direct costs. Financial intermediaries exist due to market inadequacies. As such, in a 'perfect' market situation, with no transaction or information costs, financial intermediaries would not be. An informational difference between sellers and buyers is one of the ways to characterize numerous markets. In financial markets, information asymmetries are pronounced (Audretsch et al, 2016). The following are the requirements of Electronic banking segment; a solid monetary and fiscal advancement, monitoring of financial centered individuals is essential, and the effect of moderation of cash related mediation, focusing on part of the Central Bank in the control. This theory helps with sorting out the exchange behaviors of business banks, and impacts on cash related execution as related to mobile banking loans and savings deposits.

THE IMPACT OF MOBILE BANKING TRANSACTIONS ON THE VOLUME OF TRADE OF COMMERCIAL BANKS IN KENYA.

Most financial service providers in Kenya are joining mobile money platforms as a channel for their clients to make deposits and withdrawals from bank accounts and other financial products. Other transactions will include payment of bills. This is done using an electronic device via a telecommunication network. Account opening, balance enquiry are among other services available on this platform. This has greatly impacted on the volume of trade of commercial banks and increased economic stability

METHODOLOGY

A descriptive research design was adopted for this study. This design allows us, according to Kelley (2003), to capture all relevant aspects of a situation when hiring a research and investigation team. Similarly, Namusonge (2012) states that this approach is best suited to gather detailed information where, by direct request, the researcher will reach all the population. As at the time of conducting this research, the study population consisted of all 42 listed commercial banks operating in Kenya. Simple random sampling technique was used to obtain the 10 banks where every 4^{th} bank had equal chance of representation. Since most of the data to be collected was secondary and available, the researcher requested for bank financial statements.

The scope of secondary data obtained traced back to a period of five financial years. Data for this case was majorly quantitative since it was readily available from the bank records for example the financial statements, publications, transactions. Secondary data is easy model of extracting data especially for quantitative research and this prompted the researcher to utilize it as the immediate tool for data collection. As noted by Nguku et al., (2007) as well, the use of secondary data helps the researcher in easily designing the research approach in line with the research main goal and target. This means that the promptness with which data was collected was tailored to what the researcher was specifically aiming at elucidating. Similarly, secondary enhances easy data analysis

and formulation of the binary regression models to establish the correlation of the dependent and independent variables.

Panel data analysis model was utilized. Panel data also referred to as pooled cross sectional time series data was collected through secondary data involving the research variables. This was done over time since the introduction of the new models of banking. A period of 5 years was used by the researcher to help obtain secondary data on financial performance of the banks.

The panel model equation used was:

$$Y_{it}=\beta_1 X_{1it}+\beta_2 X_{2it}+\beta_3 X_{3it}+\beta_4 X_{4it}+e_{it}$$

Where i=bank, t=time where in this study, the researcher used time as 5years.

X_1- *Mobile banking transactions*

X_2- *Automatic Teller Machines*

X_3- *Electronic Fund transfer-EFT*

X_4- *Online/internet banking activities and* ***Y****-Volume of trade of commercial banks in Kenya*

RESULTS

Data collection from the sampled 10 banks was done. The response rate was 100 percent. Required financial data for 5 years from the 10 banks was cleaned, coded and analyzed for the researcher's ease of discussion and to help generate conclusions. The response rate reflected a strong representation of the target banks and hence the researcher found it satisfactory for analyzing the objectives of the study. To determine the reliability of the findings, Cronbach's alpha correlation coefficient was computed at 95% C.I for all the variables under study. It was found to be 0.782, which indicated that the level of internal consistency for the items was 78.2 percent. As noted by Fraenkel and Wallen (2000), items are considered reliable if they yield a reliability coefficient of 0.70 and above. Consequently, the pilot study results showed the existence of satisfactory level of inter-item reliability. At equity bank, the researcher noted that the highest transactions and volume of trade involved online/internet banking. This could be attributed to equity bank dynamist in the use of new technology and operations spread across different countries. However, electronic funds transfer and ATMS transactions were all through the five years lowest as compared to the other parameters under study.

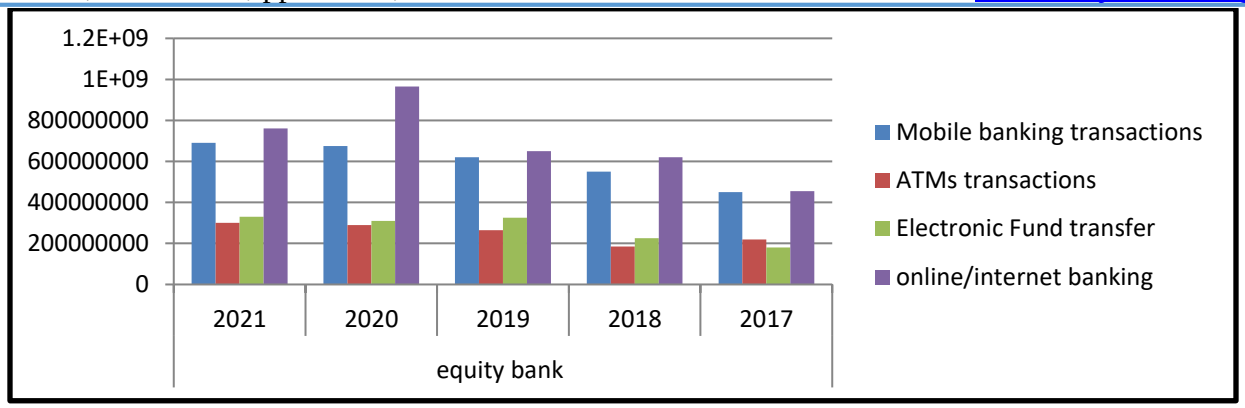

Figure 1.0 Equity Bank volume of trade achieved between 2017 and 2021.

PANEL REGRESSION MODEL ANALYSIS

The data summary was as below:

Balanced panel data-all the firms had the same number of observations, and over the same period of time (5 years)

Number of purposively selected banks-10; Number of years longitudinally used-5years

Type of data-annual financial data; Sample size (n) =10*5=50 total observations

Table 1: Eviews panel data analysis template.

Data Output	
dependent variable: VOT	
Method: Panel least squares	
Date:18/05/2022	Time:11:35
Sample:2017 2021	
Periods included	5
cross sections included:10	
Total panel (balanced) observations: 50	

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Bank 10	298.0100	104.2556	3.659870	0.0000
Bank1	2861.429	150.6900	18.98884	0.0000
Bank 2	884.0100	127.7024	6.922807	0.0000
Bank 3	1786.300	92.04401	19.41587	0.0000
Bank 4	445.6700	86.39680	5.151180	0.0000
Bank 5	237.0300	100.6140	2.355886	0.0195
Bank 6	249.4300	85.50048	2.917353*	0.0040
Bank 7	108.6600	91.24665	1.190958	0.0025
Bank 8	526.0000	85.28947	6.176259	0.0000
Bank 9	300.1700	90.82506	3.304959	0.0011
X_1	2.854500	0.307512	9.287902	0.0000
X_2	2.314000	0.412250	6.258900	0.0000
X_3	-0.50750	0.140370	-3.61816	0.0004
X_4	2.442000	0.356250	4.564500	0.0010
C	65.12000	60.09320	1.083800	0.2798

From our analysis, the Akaike info criterion is $z = 14.08$, the corrected statistics for Shwarz criterion and Hannan-Quinn criterion are $z = 14.28$ and $z = 14.16$ respectively, or rather, all present $Pr > z = 0.000$. In other words, the results of the correction continue to allow, in this case, that we state that the panel regression model is the most fit/ appropriate for this study. The panel regression equation obtained was $\mathbf{Y_{it}=2.854X_{1it}} + e_{it}$, where x_1 is mobile banking transactions.

Correlation of influence of Mobile banking transactions (withdrawals and deposits) on banks volume of trade

The influence of Mobile banking transactions (withdrawals and deposits) correlated with the banks volume of trade has a computed Correlation coefficient of 2.854 against (pr) 0.000. The interpretation of correlation coefficient shows that Mobile banking transactions (withdrawals and deposits) has a positive influence on banks volume of trade. This implies that any increase in the mobile banking deposits and withdrawals, the more the volume of trade transacted and furthermore, the higher the profits earned by the banks.

Table 2: Coefficient of Determination (R^2)

R-squared	0.960514	Mean dependent var	1081.681
Adjusted R-squared	0.958203	S.D dependent var	1314.47
S.E of regression	268.7333	Akaike info criterion	14.08344
Sum squared resid	13576904	Schwarz criterion	14.28134
Log likelihood	-1396.344	Hannan-Quinn criter.	14.16352
F-statistic	415.7404	Durbin-Watson stat	1.411933
Prob (F-statistic)	0.000000		

R-squared (R^2) is a statistical measure that represents the proportion of the variance for a dependent variable that's explained by an independent variable or variables in a regression model. The value of R^2=96.0514%. This indicates that the volume of trade for the banks could be explained by the study variables namely; $\mathbf{X_1}$-Mobile banking transactions, $\mathbf{X_2}$- Automatic Teller Machines, $\mathbf{X_3}$- Electronic Fund transfer-EFT and $\mathbf{X_4}$- Online/internet banking activities. There thus exist other factors that explain/ contribute to the remaining 3.9486%.

HYPOTHESIS TESTING

Ho1: Mobile banking transactions (deposits, withdrawals, bills payments) do not have any significant economic impact on the volume of trade of commercial banks in Kenya. Analyzed data showed that the influence of Mobile banking transactions (withdrawals and deposits) correlated with the banks volume of trade has a computed Correlation coefficient of 2.854 against (pr) 0.000. This means that the mobile banking transactions have a positive significant influence on the volume of trade and thus null hypothesis should be rejected since the alternative hypothesis is true.

CONCLUSION AND RECOMMENDATION

The main objective of this study was to determine the impact of electronic banking transactions on the volume of trade of commercial banks in Kenya. The results showed that there was a partial

positive and statistically significant correlation between volume of banks trade and Mobile banking transactions (r= 2.854, p=0.000), Automatic Teller Machines (r=2.314, p=0.000) and usage of internet banking transactions (r=2.442, p=0.000).There is need to release the findings of this study for further scholarly research by other researchers in other countries. From the findings of this study, it's noble to recommend that more efforts should be done to boost the negative role of electronic funds transfers in the contribution of financial returns earned by the banks. When queried through the semi structured questionnaire, most of the respondents argued that most EFT transactions are only financially viable after two to three years after inception as compared to the others. The number of customers using the Electronic funds transfers in large amounts is also limited especially in bank branches located in most rural towns. Similar study on other factors influencing banks volume of trade in various counties needs to be done in an environment where the selected factors in this study have been actively practiced for a period of time. This will help in ascertaining the validity of the findings obtained in this research. Similarly, different models apart from panel regression analysis and Pierson correlation coefficients need to be applied to further in-depth understanding of the relationships between the variables being studied.

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