Effect of Debit Cards on Financial Performance of Listed Commercial Banks in Kenya

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Abstract— **Financial institutions have been in the process of significant transformation. Despite this transformation, even though there's a richness of information on the nature and scope of electronic banking, via debit card, there is a scarcity of evidence about its contribution among banks. The changing dynamics of banking means that banks' performance is no longer solely dependent on sales. The adoption of debit card by commercial banks is expected to have an effect on their financial performance asconsumers assess the safety of payment instruments and payment choices.The study was grounded on the theory of information production and contemporary banking theory, Innovation diffusion theory. The study adopted descriptive research design utilizing panel data covering the period from 2009-2019.The population comprised of eleven listed commercial banks operating in Kenya. This study primarily adopted the use of secondary data to collect information from published annual financial statements of the listed commercial banks. Data analysis was done using SPSS, while data was analyzed using descriptive and inferential statistics obtained from panel linear regression analysis. Regression statistics was used to determine the significance of the relationship between variables. The results showed that increased in debit card usage enhance the profitability of banking industry in form of ROA over the period of 2009 to 2019 quarterly. The results also showed that increased usage of debit cards significantly reduced transaction costs and enhanced convenience among credit and debit card users. This thus attracted prospective customers leading to increased sales and profitability. Thestudy recommended that commercial banks should reduce transaction costs of payment channels to increase adoption. This will have a positive impact on the financial performance commercial banks in the country. The study also recommends that commercial banks should understand the mechanism of safety perception and payment behavior which might further help policymakers and central bankers preserve consumers' confidence in the safety of the payment system.**

Index Terms— **Debit Card, Listed Commercial Banks, Performance.**

I. INTRODUCTION

The Kenyan banking industry has been embracing the new technology in order to fulfill the dreams of their customers and to create healthy competition. The new banking environment is about differentiating banking products, increased choices, security and accessibility. The ability of financial Institution to deliverproducts and services in the most efficient and effective manner, would therefore be the key to performance and relevance. A debit card or a plastic card is a payment card issued to consumers as a safe system of paymentwhere funds are immediately transferred directly from the cardholder's bank account. Debit cards usually allow instant withdrawal of cashoften with daily limits on the amount of cash that can be withdrawn.Debit card use and adoption has led to efficiency and flexibility to commercial Bank customers. Bank Customers can still access their bank accounts and other details without necessarily visiting the banking halls. This has attracted more customers since they enjoy banking services that are convenient and flexible.

Kenyan commercial banks are classified into three groups using a weighted composite index that comprises assets, deposits, capital, number of deposit accounts and loan accounts. A bank with a weighted composite index of 5 percent and above is classified as a large bank, a medium bank has a weighted composite index of between 1 percent and 5 percent while a small bank has a weighted composite index of less than 1 percent. (CBK Supervision report 2017).

Commercial banks financial performance can also be evaluated in terms of how they achieve their set goals and objectives. Financial performance of Banks can be obtained by critically examining their Audited financial reports.The main recommended measures for financial analysis include profitability, liquidity and solvency (Zenioset 1999). Commercial Banks performance can be measured and evaluated by the four profitability ratios which include, Return on Assets (ROA), Return on Equity (ROE), Operating Profit Margin (OPM) and Net Income (NI).

A. Statement of the Problem

In the past, studies have addressed conceptual issues and conducted general performance issues not withstanding use of Return on Asset and Return on Equity. There is little research on effects of adoption of cashless payments or debit cards in Kenya.Based on the previous researches that have been done it is realized there is mixed evidence about the effects of Debit Card on the financial performance of commercial banks. It is therefore, important for bankers, bank regulators, supervisors and researchers to understand how Debit Card affects the performance of banks. Hence the main aim of this research was to fill this significant gap by providing analysis of the Effect of Debit Cards on Financial Performance of Listed Commercial Banks in Kenya.

B. Specific Objectives

To determine the effect of debit cards on financial performance of listed commercial banks in Kenya

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C. Research Hypothesis

H0₃: There is no statistically significant effect of debit cards onfinancial performance of listed commercial banks in Kenya.

II. LITERATURE REVIEW

A. Theoretical Framework

A theory is a set of assumptions, propositions, or accepted facts that attempts to provide a plausible or rational explanation of cause-and-effect (causal) relationships among a group of observed phenomena.

Innovation diffusion theory

Innovation is defined as any idea, object or practice that is perceived as new by members of the social system and diffusion of innovation is defined as the process by which the innovation is communicated through certain channels over time among members of social system (Rodgers,1995). Diffusion research centers on the conditions that increase or decrease the likelihood that a new idea, product, or practice would be adopted by members of a given culture. Diffusion of innovation theory predicts that media as well as interpersonal contacts provide information and influence opinion and judgment. Studying how innovation occurs, Rogers (1995) argued that it consists of four stages: invention, diffusion (or communication) through the social system, time and consequences. Diffusion of innovation theory attempts to explain and describe the mechanisms of how new inventions in this case internet and mobile banking is adopted and becomes successful. Rogers (1995) identified five critical attributes that greatly influence the rate of adoption. These include relative advantage, compatibility, complexity, triability and observability.

According to Rogers (1995), the rate of adoption of new innovations would depend on how an organization perceives its reliance complexity. If an organization in Kenya observes the benefits of mobile and internet banking, they would adopt these innovations given other factors such as the availability of the required tools. Adoption of such innovations would be faster in organizations that have internet access and information technology departments than in organizations without.

Theory of information production and contemporary banking theory

Independent Variable

This theory argues that economic agents may find it important to produce information about possible investment opportunities if this information is not free; for instance surplus units could incur substantial search costs if they were to seek out borrowers directly. There would be duplication of information production costs if there were no banks as surplus units would incur considerable expenses in seeking out the relevant information before they commit funds to a borrower.

Bhattacharya and Thakur (1993) contemporary banking theory suggests that banks, together with other financial intermediaries are essential in the allocation of capital in the economy. This theory is centered on information asymmetry, an assumption that "different economic agents possess different pieces of information on relevant economic variables, in that agents would use this information for their own profit.

Banks enjoy economies of scale and have expertise in processing information related to deficit units (borrowers). They may obtain information upon first contact with borrowers but in real sense it's more likely to be learned over time through repeated dealings with the borrower. As they develop this information they develop a credit rating and become experts in processing information. As a result they have an information advantage and depositors are willing to place funds with a bank knowing that this would be directed to the appropriate borrowers without the former having to incur information costs.

B. Conceptual framework

A conceptual framework is a research tool intended to assist a researcher to develop awareness and understanding of the situation under scrutiny and to communicate it. When clearly articulated, a conceptual framework has potential usefulness as a tool to assist a researcher to make meaning of subsequent findings. It forms part of the agenda for negotiation to be scrutinized, tested, reviewed and reformed as a result of investigation and it explains the possible connections between the variables (Smyth, 2004).

The conceptual framework shows the interplay of the primary variables of the study. The conceptual framework exemplifies the association of dependent and explanatory variable of the study. In this particular study, the independent variable was electronic banking (debit cards), the dependent variable was the financial performance of listed commercial banks in Kenya
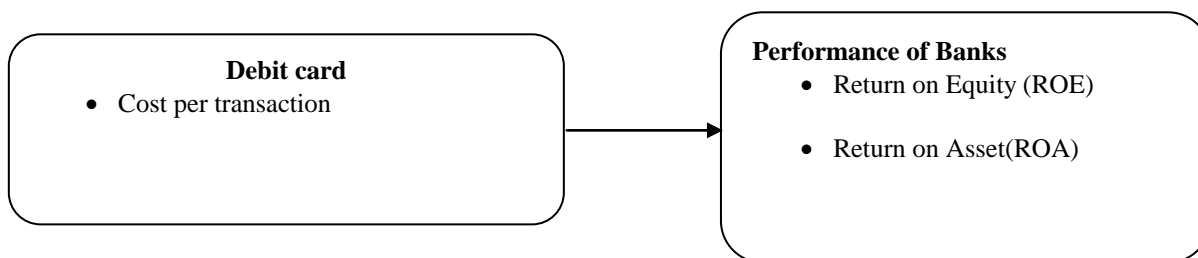
Dependent Variable

Fig 1: Conceptual Framework

III. .RESEARCH METHODOLOGY

A. Research design

This study used a descriptive and exploratory research design. According to Cooper and Schindler (2006) in descriptive design, either the entire population, or a subset thereof is selected, and from these individuals, data are collected to help answer research questions and describe the current situation of the variables at the time of data collection. The study used data for a period of 10 years (2009-2019) in order to establish the contributions of electronic banking on the financial performance of commercial banks.

B. Target population

According to Creswell (2009), population is the total collection of elements about which we wish to make inferences. Target population is that population which the researcher wants to generalize the results of the study.According to Zikmund, Babin, Carr, and Griffin (2012), a population refers to a collection of all items in any field of inquiry where a sample is drawn and is also known as the universe. The target population refers to the unit of observation, that is the entire group of people or objects of interest that the study wishes to investigate (Sekaran, 2010). Mugenda (2003) defines target population as the entire group of individuals, items, objects or things with common observable attributes that specifically fit for being sources of data required to address the research problem.The target population of the study was the 11listed Commercial Banks in Nairobicity in Kenya.

C. Data Collection Instrument and Procedure

For the purpose of this study, only secondary data was used. Secondary data was collected from the websites of the 11 listed commercial banks as well as that of the CBK. The secondary data collected included the financial performance (ROE) of the commercial banks for a period of the past 10 years.Secondary data involves the use of data from congregated from a previous study to explore new relationship (Polit& Beck, 2003). They also urge that secondary data is efficient and economical as data collection is typically the most time-consuming and expensive part of a research. In this study Secondary data was collected through documentary analysis of financial statements and financial reports of different sampled commercial banks branches and central bank of Kenya annual reports. The secondary data was collected on ROA and ROE as the indicators of performance.

D. Validity and Reliability

Secondary data included published summaries with packaged facts' reputation built from decades of quality, trustworthy analysis. Validity was indicated by the extent to which it was confirmed and echoed in other works. A source could be valid if it's confirmed and echoed in other works. That meant other works on the same topic having been cited in lots of other researches then that means that it's a pretty valid source. Reliability in the research meant that the source must consistently support research point to be reliable and not give any other options.

E. Data Analysis and Presentation

Data analysis involve reducing accumulated data to a manageable size, developing summaries, looking for patterns, and applying statistical techniques. Data preparation include editing, coding, and data entry and is the activity that ensures the accuracy of the data and their conversion from raw form to reduced and classified forms that are more appropriate for analysis. Editing detect errors and omissions, correct them where possible, and certify that maximum data quality standards are achieved. Coding involved assigning numbers or other symbols to answers so that the responses can be grouped into a limited number of categories (Cooper & Schindler, 2011). The independent variable was examined in determining its importance in affecting the dependent variable. Thus, the study determined Debit cards had an effect in the listed commercial banks performance.

Data entry converted information gathered by secondary methods to a medium for viewing and manipulation.International Business Machines (IBM) Statistical Package for Social Sciences (SPSS) was used as a tool to analyze the data. Statistical coefficients were measured in order to establish the contributions of electronic banking on the financial performance of commercial banks in Kenya.

Panel data analysis helps the researcher to control unobservable heterogeneity and provides enough data points that helps reduces the possibility of biasness in estimation because of its ability to have both cross-sectional and time series dimension (Gujarati & porter, 2009). A panel regression model was used to establish the relationship between credit risk and financial performance outlined below:

$ROE_{it} = \beta_0 + \beta_1 DCit + \varepsilon t$……………Equation (3.1)
$ROAit = \beta 0 + \beta_1 DCit + \varepsilon t$ ……… Equation (3.2)

Where; ROE_{it} = Return on Equity of listed commercial banks i at time t

ROA_{it} = Return on Asset of listed commercial banks i at time t

β_0 = Constant β_1, = Explanatory variable's coefficient's

DCit = Debit Cards of listed commercial bank i at time t

t = 2009………..2019

i = Individually listed commercial bank

ε = Error term

F. Ethical Considerations

Due to sensitivity of some information collected, the researcher holds a moral obligation to treat the information with utmost propriety. The researcher sought consent from the authorities. The respondents were also assured that all the information collected in the study was for academic purposes only, was used to improve the financial sustainability, and was not to be used to victimize them in any way. They were also assured of confidentiality of the information disclosed and the privacy of each respective respondents. The researcher used simple language that was easily understood by the respondents

IV. RESEARCH FINDINGS, INTERPRETATION AND DISCUSSIONS

A. *Descriptive Statistics*

The descriptive statistics results on the contributionofDebit Card (specifically listed banks) on the financial performance (ROE and ROA) of listed commercial banks in Kenya.The independent variable (Debit Card) was examined in

determining its importance in affecting the dependent variable (Financial performance).

4.1.1 Ratio Analysis ofFinancialPerformance
Return on Assets (ROA) and Return on Equity (ROE) was used to measure the financial performance of the listed commercial banks in Kenya. ROA is computed as follows:
ROA=Net Income/Average Total Assets

Table 1. Descriptive statistics for Return on Assets

YEAR	N	MIN ROA	MAX ROA	MEAN	STD DEV
2009	11	0.61	6.18	2.175	1.47478812
2010	11	-11.65	6.83	1.94682	1.39528427
2011	11	-11.75	8.79	2.64614	1.62669492
2012	11	0.78	10.73	3.08841	1.75738701
2013	11	-2.46	11.64	3.56727	1.88872251
2014	11	0.43	11.87	3.75433	1.92122457
2015	11	-11.60	12.01	3.85431	2.01678432
2016	11	0.88	12.35	3.93459	2.16025675
2017	11	0.45	12.89	4.12118	2.37893421
2018	11	0.75	13.33	4.37169	2.49556432
2019	11	0.33	13.54	4.52932	2.60213544

The findings as depicted shows the lowest value for ROA as -11.75 in year 2011 and the highest as 13.54 in 2019. In addition a low standard deviation is a sign of lower variation in financial performance of the listed commercial banks in Kenya. The steady rise in ROA values over the 10-year period indicates that the financial performance of the commercial banks has been on the increase over the last 10 years. On the other hand, the standard deviation indicates variation in the financial performance between various commercial banks. The findings revealed that there was a significant variation in ROA during the ten-year period.

From the research findings, it can also be noted that the year 2018 recorded the highest value for bank ROE shown by a mean value of 3.71 while the year 2016 recorded the lowest value for bank ROE as shown by a mean of 1.01. The findings revealed that bank ROE was low in 2016 because of the introduction of interest cap regulations to the commercial

banks in Kenya.

B. *Inferential statistics*
The study sought to test the relationship between Debit Cards and the financial performance. This was done through Correlation and regression analysis.

Correlation Analysis
Pearson correlation coefficient was used to test the presence of association between the variables. Values between 0 and 0.3 (0 and -0.3) indicate no correlation (variables not associated), 0.3 and 0.5 (-0.3 and -0.5) a weak positive (negative) linear association, Values between 0.5 and 0.7 (-0.5 and -0.7) indicate a moderate positive (negative) linear association and Values between 0.7 and 1.0 (- 0.7 and -1.0) indicate a strong positive (negative) linear association.

Table 2:Correlation Analysis

	ROE	ATM	Debit Card
ROE	1	.070	.238
ATM	.070	1	0.098
Debit card	.238	0.098	1

There was also a significant (0.238, p=0.00) positive moderate linear relationship between Debit Cards and Financial performance. The strength of this relationship was weak. The correlation analysis shows positive and significant association between Debit Cards and Financial performance

of listed commercial banks in Kenya.

Regression Analysis
To study the contributions of Debit Cardon the performance of the banks, the study run a linear multiple regression test to establish the contributions. Regression analysis was performed at 95 % confidence level to test the

statistical significance of the independent variable in explaining the dependent variable.In order to establish the goodness of fit of the regression model generated, a coefficient of determination R squared was generated. A model fits the data well if the differences between the observed values and the model's predicted value are small and unbiased. The R Squared measures the goodness of fit of a regression model and varies between 0 and 1.Avalue close to zero indicates that the model is not a good predictor over the mean model and one indicating perfect prediction.

Table 3: Model Summary

R	R Square	Adjusted R Square	Standard Error of the Estimate
.567a	.517	.422	.32098

The findings indicate the extent of variations on the financial performance, which are explained by the independent variables. The adjusted R square value is 0.422.

This means that the independent variables explain 42% of the variations in dependent variable. The rest 58% are explained by other factors.

Table 4: Analysis of Variance

	Sum of squares	df	Mean Square	F	Sig.
Regression	3.161	4	.791	4.457	0.021
Residual	1.948	11	.178		
Total	5.109	15			

The ANOVA results show that the independent variables are statistically significant in predicting the ROE of the banks.

The study established a significant value of $p=0.021$ showing a statistical significance relationship.

Table 5: Regression Coefficients

	Unstandardized	Coefficients	Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
(Constant)	5.486	.695		7.907	.000
Debit card	.657	.192	.782	3.436	0.007

The findings show the coefficients of the regression. According to the findings, use of debit card (P=0.007was significant in predicting the financial performance of the banks since the p values were less than 0.05.

The resulting regression equation was:
Y = 5.486 + 0.657DC
Where Y= ROE, DC= Debit Card,

The findings indicate that when all the factors are held constant the return on equity (ROE) would increase by 5.486 units. Similarly, a unit increase in the use of debit card holding other factors constant increases the ROE by 0.657 units. This shows that the use of debit card has had a great impact on the financial performance of thecommercial banks in terms of return on equity.

V. CONCLUSION AND RECOMMENDATION

A. Conclusion

The study found that commercial banks have highly implemented e-banking though the adoption of internet banking has been slow due to impaired unavailability of infrastructure and lack of supportive legislation for internet banking Based on the research results the study concludes that increased usage of debit cards significantly reduced transaction costs and enhanced convenience among credit and debit card users.

B. Recommendation

This study also recommends that commercial banks should expand their electronic services in a planned and well-articulated strategy for the long run, in order to have customer satisfaction and increase in banks profitability.The study recommended that commercial banks should reduce transaction costs of payment channels to increase adoption. This will have a positive impact on the financial performance commercial banks in the country. The study also recommends that commercial banks should understand the mechanism of safety perception and payment behavior which might further help policymakers and central bankers preserve consumers' confidence in the safety of the payment system.

C. Suggestions for further studies

Thus, this study suggests another study be carried out with predictor variables being different from the ones considered in this study. In addition, this study used secondary data and to this end, the study recommends a different study be carried out to agree or disagree the results of this study using primary data collection from the commercial banks.

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