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By Jean Bosco Harelimana

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Keywords: *electronic payment, financial performance.*

GJMBR-C Classification: *JEL Code: C58*



THE ROLE OF ELECTRONIC PAYMENT SYSTEM ON THE FINANCIAL PERFORMANCE OF FINANCIAL INSTITUTIONS IN RWANDA

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Keywords: *electronic payment, financial performance.*

1. INTRODUCTION

Many organizations have been using the information system which can be viewed essentially as a social system with some technological elements. This indicates a shift from an

initial techno-centric focus to a more integrated technology, management, organization and social focus. It also emphasizes the application of technology and the interactions between people and organizations and the technology. In the wake of recent development information and communication technologies majority of banking operations have been computerized by most of banking institutions in public as well as in private sector, especially in the last two decades and the process is still on for extension and up gradation of computerization of financial services in banking industry (Mutombo,2006).

The computerization is done for front-office operations involving interface with customers as well as back office operations involving internal house-keeping/accounting, and books balancing, external accounting and settlement with other branches and bank institutions domestically and internationally (Chapma,2016).

Electronic banking provides a bouquet of new channels like internet banking, telephone banking and ATM –which are different from traditional, telephone banking and ATM –which are different from traditional brick and motors branches banking and which have made it possible "anywhere and anytime" banking. It contributed to speed, accuracy and confidentiality of customer's transactions while enhancing customer convenience. Funds transfers, checks clearing and collection of bill of exchange are also done electronically with accuracy, speed and safety (Kaufman, 2007).

According Kaufman (2007) Internal housekeeping is done accurately and much faster through programmed packages /software at the branch and also at centralized platform different operation internationally (cross-banking, foreign banking).

In order to properly place themselves in favorable positions for competitions and be one of those corporations to be reckoned with the new century, banks are making use of internet to execute mobile banking, this developed from bringing PCS together to form local and wide area networks through ugh client/server technology(Richard, 1987).

Many banks have installed modern computer inter-connectivity backbone that would enable them achieve communications of data and multimedia over internets, intranet and Extranets. They also realize that they have to achieve not only management/staff wide

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computer literacy but what could be called information literacy for example knowing how to locate, analyze, store and use information. All staff and managers in a modern bank need to be able to search and gather data from several types of sources analyze them, select relevant ones and organize them in such a manner to allow them make decisions based on the organized data (Kaufman, 2007).

The above sound the same as EQUITY BANK Ltd. Its mission is to offer inclusive, customer focused financial services that socially and economically empower our clients and other stakeholders, while providing a competitive return to its shareholders and contribute to the overall development effort of the region. A company has the latest technology, and possesses all the financial backing it needs even the most talented workers but if the employees are not properly motivated or satisfied with their job all the above factors will not be able to work together and make the company successfully attain its goals. This is true whether the organization is privately or publicly owned. Organization management will be better served by studying the organization as a system. Employers demand results. Without results the organization will not survive. Managing electronic payment is a requirement for productivity.

In this contemporary corporate world, every organization aims to get the best possible performance from technology via internet. Electronic payment system is of a big importance in the management decision making in banking because electronic payment system must meet certain objectives to keep your business running efficiently (Gallati, 2003).

The technological changes that are occurring in business environment, normal bank working hours tend to become very short as people would wish to operate twenty four hours in order to cope with those changes. There a strong need for electronic payments systems within which customers may do banking transactions without having to stand on long queue waiting to pay bills, deposit or retrieve their money.

The usual method of banking such as cash payment, checks, payment order and bank transfer is very costly and time consuming as customers have to wait to the bank for long hours, yet they are limited by bank closing hours.

Electronic system is so important in promoting investments not only in Rwanda but also in other countries. The card that is mostly used is domestic debit card that is used only by account holders E-banking has been used by many banking institutions, rather they have used other forms of information technology (IT) in order to enhance their efficiency and effectiveness through speeding up their activities. However, the extent to which IT services are used is not sufficient and fully embraced whereby in many banks you find long lines of bank customers on the floors

waiting for banking services. This has created some problems like time wasting, loss of customer's reputations, thereby unconvincing and hindering the international travelers such as tourists (Gallati, 2003).

Rwanda is growing up with a vision of being a business country, knowing that the Bank is very useful to the majority of Rwanda and this is a gate of economic growth of Rwandan citizens (www.dbs.com, private bank assessed on 25th July 2014). In the past few years the banking institutions were experiencing a problem of ineffectiveness and inefficiency of using electronic payment system. This has led to poor performance of the banking sector as very high proportion of fund as locked up into no – performing assets which deprives the economy of continuous flow of funds that would be used to finance investment projects(BNR,2007).

According to Sundharam and Varshney (2002), said that the most profitable activity of finance institutions is lending and every institution strives to optimize its net profit by employing its surplus cash into different activities. However, non-performing loans impair the finance institution profitability rendering it unable to meet obligations of customers and they may end up losing their reputations in the market.

II. OBJECTIVES

The general objective of this study is to assess the role of electronic payment on financial performance in banking institutions in Rwanda. Specifically:

1. To assess the determinants of electronic payment in Equity Bank Ltd.
2. To analyze the level of financial performance in Equity Bank Ltd.
3. To establish the relationship between determinants of electronic payment and level of financial performance in Equity Bank Ltd.

III. LITERATURE REVIEW

Different definition has been given to what is called electronic payment. According to Chapma (1996), electronic payment is an important part of business or an organization. Electronic payment system is a form of inter-organizational information system for monetary exchange, linking many organizations and individual users. This may require complex interactions between the stakeholders, the technology and the environment. Electronic payment is also referred to us as a financial exchange that takes place online between buyers and sellers (William, 1997). The content of this exchange is usually some form of digital financial instrument (such as encrypted credit card numbers, electronic cheques or digital cash) that is backed by a bank or an intermediary, or by a legal tender.

Before defining financial performance, a deep understanding of performance is needed. Performance is defined as an approach determining the extent to

which set objectives of an organization are achieved in a particular period of time. The objectives or goals can be in financial or non-financial terms. Performance may be determined by macro and micro-factors. According to Oliver (2000) macro-economic factors are those pertinent to a broad economy at the regional or national level and affect a large population rather than a few select individuals. Macro factors include GDP growth, inflation, unemployment, interest rates, exchange rate and level of competition. Micro factors include individual risk exposure, operating strategies and degree of management strategies. According to Cooper (1992), factors which influence business performance are experience, education, occupation of parents, gender, race, age and entrepreneurial goals. Lerner and Hisrich (1997) conducted a study on Israel women entrepreneurs and found that their performance was influenced by factors that he grouped in 5 perspectives: motivation and goals, social learning theory (entrepreneurial socialization), network affiliation (contacts and membership in organization); human capital (level of education and skills) and environmental influences (location, sector participation and social political variables).

Thus according to Rieva (2000) a company financial performance is directly influenced by its market position. Profitability can be split into its main components; net turnover and net profit margin. Ross, Westerfield and Jatte (1996) argue that both components influence profitability. High turnover means better use of assets owned by the company and therefore better efficiency while a higher profit margin means that the entity has a substantial market power. Electronic and growth influences a firm's financial performance. Since market value is conditioned by company's results, the level of using electronic payment system can cause changes in its market value. High electronic payment system should have high returns. Economic growth helps a firm to achieve a better position on the financial markets, because market value also takes into consideration expected future profits.

The study was conducted on the role of electronic payment system on financial performance in banking institutions. The main objective was assessing the determinants of electronic payment system and analyzing the indicators of financial performance of banking sector where it highlights important findings from many researchers. The last have examined the relationship between determinants of electronic payment system and indicators of financial performance.

One of the examples for William (1997) who argues electronic is inherent in every economic activity and every organization has to manage it according to its size and nature of operation because without electronic payment system no organization can survive in the long run. This is because remittance today are faced with far greater challenges than before due to the fact that

economical, technological and legal interdependence are becoming more prevalent and pronounced. It would be assumed that electronic payment system and internal control systems will vary from remittance to remittance based on their size. It is therefore logical to assume that every bank has put in place a strong electronic payment system structure and internal control systems to help achieve its goals. These are fundamental to the successful operation and day-to-day running of a remittance and assist a bank in achieving its objectives. On the basis of the findings of this research paper, it could be concluded that electronic payment system has a significant effect on organizational effectiveness among the construction of bank institutions. The study found that good management of electronic payment system enhances performance of banking institutions. The study also found that electronic payment system leads to good financial reports and also leading to better decision-making of the investors.

In the study entitled the contribution of electronic payment system to the growth of financial institutions was carried out. The purpose of the study was to analyze electronic payment system of customers in day per day activities banking in order to reduce long line in bank and other different organizational. Ken (2013) exposed that because of the many clients that are borrowers with computerized accounting System more importantly its ability to produce and present relevant and faithful representative financial reports to end users, the government of Rwanda is assisting microfinance to transfer into a common computerized Accounting System. This is going to serve as a platform in which all the rural microfinance in the country are going to be networked to each other to facilitate faster and efficient banking. He concluded that electronic payment system is necessary to identifying, analyzing, assessing, treating, monitoring and communicating of organization. Electronic payment system therefore plays five main functions in an organization. The first requirement of control is to devise a system of measuring the contributions made by each teller. In addition, electronic payment system helps banking institution to identify, analyze, assess, treat, monitor and communicate by each participant and distribute the needed information. Furthermore, electronic payment system identify the borrower and market factors that enter into the credit decision to find replacements for borrower who did not paid the loan. Finally, electronic payment system makes some information available in the form of common knowledge to help reduce conflict among borrowers at the time they negotiate their contracts (Ken, 2013).

Narwal and Jindal (2015) examined the impact of corporate governance on the profitability of Indian textile sectors. They collected data from annual reports of textiles companies for the period of five year ranging

of 2009 to 2014. The profitability has been taken as dependent variable and board size, audit committee members, board meetings, non-executive directors, directors remunerations as independent variables. Correlation and OLS was used for data analysis. A strong positive association was observed between director's remuneration and profitability. The Audit Committee members was observed negative associated with the profitability and then concluded board size, board meeting and non-executive directors do not significantly associated with the profitability.

Contrary, Ojulari (2014) explores the relationships that exist between corporate governance and the profitability of financial institutions. He selected twenty five companies listed in the Nigerian stock exchange. The results show that the two variables (i.e. corporate governance and financial profitability) are more positively related on an individual proxy basis than on an overall proxy basis. The overall impact of corporate governance on the profitability is also negative so also are the result of the regression models. This result shows that although there is a relationship between the two variables, the predictive power of corporate governance on companies' profitability is too low to be meaningful. Therefore, based on the literature, the researcher decided to conduct a study the role of electronic payment system on the financial performance of financial institutions in Rwanda in order to come up with a reasonable reason of exploit.

IV. METHODOLOGY

In this section tools, techniques and methods was used to achieve the research objectives where both primary and secondary data were collected then analyzed so that the correlation and strength between variables can be determined.

a) Data Analysis

The research is analytical and empirical in nature and makes use of primary and secondary data. The population is the staffs and the clients from Equity Bank Ltd. The data has been sourced from documents, observations, questionnaires and interviews that were availed to the targeted population. The sample period undertaken for the objective is from 2012 to 2016.

b) The sample and the sample frame

Douglas (2006) defined a sampling frame as a list or other device used to define a researcher's population of interest. The sample frame in this study is all staffs and clients at Equity Bank 253 represented by 155 respondents.

c) Research Instruments

Primary data and second data collection had been used in order to achieve the research purpose. A questionnaire and interview were developed to a

number of 155 respondents at Equity Bank Ltd obtained using Yamane (1967) formula. References have been made to textbooks, journals, newspapers and other published literature, electronic journal and the internet provide as valuable sources of data. Archival method was important for this research. It consisted to gather data from written resources concerning research topic in order to understand the present situation. The literature review bought about comprehensive review involving the collection of both academic theories and research directly related to the study.

d) Models and Techniques

The multiple regression models were used to determine the relationship between the variables of the study. In doing so, the regression model below was used:

$$y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \epsilon.$$

where y = dependent variable (Financial Performance) such as Net profit margin, return on asset, return on equity, sustainable growth rate and risk management; $\beta_0 - \beta_4$ = model parameters or coefficients; $x_1 - x_4$ = independent variables (Electronic payment system) like Electronic Card Banking, Mobile banking (azzy24/7), Internet Banking, Online remittance and ϵ = error term.

The relationship between electronic payment system and financial performance of Equity bank Ltd. multiple regression analysis was used to determine this relationship. The SPSS program 16.0 version was used to analyze the data. Correlation and regression analysis were utilized to the role of electronic payment system on financial performance of Equity bank Ltd.

V. FINDINGS AND RESULTS

a) Electronic Payment in Equity Bank Ltd

Electronic payment system shows us individuals to obtain financial services, including credit, deposit, payment, insurance, and other risk management services. Those who involuntarily have no or only limited access to financial services are referred to as the unbanked or under banked, respectively.

The most customers specialized in a number of using electronic payment as found; 52.9 % of Equity Bank Ltd in the study used electronic card banking respectively 21.9 % used Mobile banking, 13.6% used Internet banking and also 11.6 % used Online remittance. The most of customers of Equity Bank Ltd uses electronic payment system by electronic card banking.

✓ *Electronic Payment sought:* The result shows that more than half of the respondents (34.2%) sought for electronic fund transfer from the equity bank Ltd. This finding is in line with other studies that have shown that equity bank Ltd has different type of electronic payment but all most customers use

Electronic Fund Transfer. 14.8% of respondents used Electronic cash, 20% of respondents used payments cards, 29.7% of respondents used electronic wallets.

- ✓ *Challenges of accessing electronic payment by customers in Equity Bank Ltd:* Many customers in the study applied for electronic payment but not all of them were successful in getting it. The results indicate 1.3 % of respondents had never sought electronic wallets. Only 28.4 % of those who applied for electronic payment failed to get it was lack of internet, this is followed closely by the fact that the customers are lack of knowledge (26.5%) and have insufficient information (20.6%). Other reasons why some customers never sought electronic payment were that they lack experience (13.5%); they could not meet requirement while some of them was not give their reasons (11. It is in that framework the researcher formulated questions to manager and customers operating in Equity bank ltd to assess the role of electronic payment on the level of financial performance.
- ✓ *Preparation of financial information inequity bank Ltd:* Findings show 37.4 % of the respondents indicated that they prepare financial information in the form of income statement, statement of financial position, statement of cash flow, variance analysis or financial ratios. However, majority of the employees and customers of Equity Bank Ltd in the study 25.8 percent did not prepare any form of financial information while 36.8 percent did not give answers to the requested question. This result has not good perspective on accessing finance as the financial information affect accessing to finance.
- ✓ *Financial information prepared by Equity Bank Ltd:* In supporting equity bank ltd decisions respondents proposed that Customers use electronic payment because they realized that electronic payment help them in the way of saving time. The findings from the above table, shows that statement of financial position is the used with 41.2 % and it followed by income statement and business plan with 22.6 % and cash flow statement 19.6% and Financial ration 5.2% respectively. The two financial information classified as the least was financial ratios and cash flow statement with 19.6% and 5.2% respectively. The reason may be because customers and employees do not Known if Equity bank uses the financial information.

b) *Analysis of the level of electronic payment to financial performance*

Based on the findings the first factor influencing access to electronic payment was Simple application procedures for loan with 33.5 %. This was followed by low collateral requirements with 20 % low costs of accessing finance with 20 % and low interest rates

which had 4.5 %. Guarantee from government with a 22 % was the least factor that influencing customer's access to electronic payment. This shows that all determinants of electronic payment were considered relevant by respondents in accessing electronic payment system.

- ✓ *Financial institutions factors of electronic payment Considered to provide financial services to customers of Equity bank ltd.*

Writings stated that because of uncertainty and risk financial institution before providing financial services to their clients they considered many factors. According to the table calculated above the first factors considered is financial management practices which encompasses 20.6 % followed by firm characteristics which encompasses 33.5% and finally by entrepreneur characteristics which encompasses 43.3%. The results further indicate that the most customers of equity bank ltd in operating well are the first one to attract financial services providers.

c) *Identification level of financial performance in Equity bank Ltd.*

Writings assert that firm's financial performance is measured by how better off the shareholder is at the end of a period, than he was at the beginning. The main objective of shareholders in investing in Equity bank is to increase their wealth. Thus the measurements of performance of Equity bank ltd are as follows:

- ✓ *Financial ratio analysis*

As argued by many literatures with ratios, financial statements can be interpreted and usefully applied to satisfy the needs of the reader. Financial ratio are involves to investigate, analyze financial information provided in the financial statement. The researcher used the financial information of equity bank ltd.

- ✓ *Return on Assets*

ROA is an indicator of how profitable an entity is relative to its total assets. ROA gives an idea as to how efficient management is at using its average assets to generate earnings. Calculated by dividing a company's annual earnings plus interest by its total assets, ROA is displayed as a percentage. Sometimes this is referred to as "return on investment".

$$\text{Return on assets (ROA)} = \frac{\text{Netincomeaftertax}}{\text{Averagetotalassets}} \times 100$$

Or
$$= \frac{\text{Netincomeaftertax}}{\text{Totalassets}} \times 100$$

Table 1: Return on Asset of equity bank ltd

Year	2012	2013	2014	2015	2016
Net income "kenya shillings"	10,997	12,642	5,213	7,761	11,470
Total assets " kenya shillings"	215,829	238,508	63,217,192	69,588	73,446
Ratio in %	5.1%	5.3%	0.008%	11.2%	15.6%

Source: financial statement of Equity bank ltd (2012-2016)

The table above shows the return on asset ratio during the covered period from 2012 up to 2016, the ratio on return on assets are 5.1%, 5.3% and 0.008%, 11.2% and 15.6% respectively. The above results shows that bank of equity bank ltd is profitable during the covered period because the standard ratio of return on asset is 0.008% may factors are the cause of that profitability but the quality service are the main cause of the increase of its profitability.

management is efficient in using its average equity to generate earnings. Using this ratio the profitability is measured in terms of the relationship between net profit and equity. It shows whether the equity sources are being properly utilized or not. The following formula shows how to calculate the return on equity.

$$\text{Return on equity (ROE)} = \frac{\text{Net income after tax}}{\text{Average total equity}} \times 100$$

$$\text{Or ROE} = \frac{\text{Net profit after tax}}{\text{Total equity}} \times 100$$

✓ Return on Equity

ROE is an indicator of how profitable an entity is relative to its total equity. ROA gives an idea as to how

Table 2: Return on Equity of Equity bank ltd

Year	2012	2013	2014	2015	2016
Net income "Kenya shillings"	10,997	12,642	5,213	7,761	11,470
Total Equity " kenya shillings"	42,671	50,686	62,313,580	66,964	70,887
Ratio in %	25.8%	24.9%	0.008%	11.5%	16.2%

d) The role of accessing electronic payment for financial performance in Equity bank ltd

In the literature, Equity bank ltd seek finance for several reasons such as a way of increasing the number of customers who will be; as a way of satisfying customers in effective way and as marketing strategy. Thus, to further ascertain the role of electronic payment for financial performance in equity bank ltd, respondents were asked to indicate the role of electronic payment system for customers and employees on financial performance.

Findings reveals major reasons why customers sought electronic payment were as a way of increasing the number of customers who will be used electronic payment (33.5%) as a way of satisfying customers in effective way (9.7%), as marketing strategy (38.1%), 18.7% all the above are needed. Other reason why equity bank ltd sought electronic payment is to save time for customers and employees.

e) Analysis of the relationship between electronic payment and financial performance

Model Summary

Model	R	Rsquare	Adjusted Rsquare	Standard error of the estimate
1	.828 ^a	.686	.608	15.51109

Source: Researchers' computation from SPSS, October 2017

Table above shows a model summary and indicates the adjusted R square used as test for model fitness. The F-test was carried out to test the significance of the regression model in predicting the dependent variable (financial performance of equity bank ltd). From the results, it was found that the four independent variables (electronic card banking; Mobile banking, Internet banking and online remittance on the performance of Equity bank ltd (adjusted R

squared = .686). That means the model explains 68.6 % the variance in the financial performance of equity bank ltd; 41.2 % of variations are brought about by factors not captured in the objectives. Therefore, further research should be conducted to investigate the other factors (9.7 %) that affect financial performance of equity bank ltd. The regression equation appears to be very useful for making predictions since the value of R² is close to 1.

ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1. Regression	2102.958	1	2102.958	8.741	.042 ^a
Residual	962.375	4	240.594		
Total	3065.333	5			

Source: Researchers' computation from SPSS, October 2017

According to table 15 the findings shows that the null hypothesis was rejected because the linear regression *F*-test results (*F* = 8.741; and 5df) are significant at *p* < 0.05. Therefore, the null hypothesis (*H*₀) was rejected and concluded that the regression model linearly explains the performance of Equity bank ltd. Therefore, the study accepted the alternative hypothesis.

*H*_{a1}: There is a relationship between electronic card banking and the financial performance of equity bank ltd;

*H*_{a2}: There is a relationship between Mobile banking and the financial performance of equity bank ltd;

*H*_{a3}: There is a relationship between Internet banking for electronic and the financial performance of Equity bank ltd;

*H*_{a4}: There is a relationship between online remittance and the financial performance of equity bank ltd.

Regression model coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1. (Constant)	1.138	.3917		2.905	.000 ^a
X1	.258	.1304	.387	1.979	.003
X ₂	.367	.413	.188	1.987	.004
X ₃	.423	.1897	.609	2.229	.031
X4	.157	.0724	.238	2.169	.033
X5	.345	.222	.077	1.134	.001

a. Dependent Variable: Financial Performance of Equity bank ltd

Source: Researchers' computation from SPSS, October 2017

The study conducted a multiple regression analysis so as to determine the regression coefficients (β) which shows that $\beta_0 = 1.138$ and which means that all the independent variables low costs of accessing finance, low interest rates, simple application procedures for loan, simple collateral requirements, and guarantees from government have an a significant contribution to Equity bank ltd performance even if the *x* variable equal to zero means $Y = 1.138$ and according to table 23 the model equation become $Y = 1.138 + 0.258X_1 + 0.367X_2 + 0.423X_3 + .157X_4 + 0.345X_5$

The findings of the study was relevant due, use of electronic payment, are critical factors for financial performance as measured by ROA, ROE& Net income. It concluded that the interactions use of electronic payment of the factors create an impetus for financial performance as measured by ROA, ROE& Net income.

VI. RECOMMENDATIONS

It is suggested that Equity bank ltd should train all customers how to use electronic payment system such as Electronic fund transfer; mobile banking, internet banking and online remittance Because training

and experience of the customers were found to significantly impact access to electronic payment system, therefore the managers need to design short courses in the area of using electronic payment system in order of saving time and money particularly those with lower educational background as education is an important factor in accessing electronic payment system.

Firstly, further research could determine if the findings of this research are consistent across different banks. Since the study concentrated on equity bank ltd, a further research into other bank will throw more light on the findings of this study. In addition, there is the need to duplicate the research in other parts of Rwanda to confirm if the results of this research can be generalized across the whole country.

Though the study found relationship between the variables tested and electronic payment system the model in all cases was not able to give a 100% prediction. This means that there are other equally important variables that were not considered in this study. A further research to look at other variables not included in this study will be a useful exercise.

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