



EFFECT OF REAL TIME GROSS SETTLEMENT ON FINANCIAL PERFORMANCE OF PUBLIC UNIVERSITIES IN KENYA

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ABSTRACT

Due to the increasing systemic risk inherent to deferred net settlement systems, Universities are under pressures to deliver timely financial obligations as it falls due. Adoption of real-time gross settlement (RTGS) systems was recommended. The purpose of this study was to establish the effect of RTGS on financial performance of Public Universities in Kenya. A descriptive survey design was used with a sample of 11 staff from three functional areas. Questionnaires were used as research instruments while data analysis was done through regression and descriptive statistics. The study findings showed that there was no significant difference between the effects of RTGS on financial performance of Public Universities. We also established a strong positive relationship (0.690) between shortening of funds transfer period cost of transfer. Also a negative correlation (-0.633) was observed between shortening of funds transfer and low maintenance. Hence use of RTGS is more efficient.

Key words: RTGS, financial performance, Public Universities, innovations

1.0 Introduction

Real Time Gross Settlement (RTGS) is a service offered by the reserve banks of countries to process high value cash transactions safely between two accounts (Rodrigo Andrés de Souza Peñaloza, 2011). According to Kenya banker topnotch wordpress.com site (2013) Real time gross settlement systems (RTGS) is a funds transfer systems whereby money or securities are transferred from one bank to another on a real time and on gross basis. Settlement on real time means there is no waiting period and the payment is considered as final and irrevocable. Gross settlement transaction is settled on one to one basis without batching or netting with any other transaction. Once processed, payments are final and irrevocable. An RTGS system can thus be characterized as a funds transfer system that is able to provide continuous intraday finality for individual transfers. CIB, (1997) Real Time Gross Settlement system is one in which interbank transfers are settled on a gross basis as they arrive at the Central Bank.

RTGS is in fact the fastest possible money transfer system through the banking networks and is offered by the reserve banks of countries to process high value cash transactions safely between two accounts. In RTGS systems payments are, as described above, settled individually and immediately after the payment instruction, provided that the remitter has cover for the payment in question. Payments in RTGS systems are typically credit transactions, i.e. payments initiated by the remitter (debtor). Participants obtain liquidity via monetary-policy loans from the central bank, i.e. loans with maturity of minimum one day, or by borrowing from other participants in the money market. RTGS is an emerging innovation in the banking sector.

1.1 Research problem

Increasing systemic risk inherent to deferred net settlement systems, Real Time Gross Settlement was adopted to solve the problem of delayed payments. Most scholars have done research on the effect of different types of innovation on the financial performance however they did not establish the effect of RTGS on financial performance in public Universities hence forming a research gap. The study fills the gap by establishing whether Real Time Gross Settlement affects the financial performance of Universities in Kenya

1.2 Objective

The objective of this study was to establish the effect of Real Time Gross Settlement on financial performance of higher learning institutions in Kenya.

1.3 Research Hypotheses

The study sought to address the following pertinent research hypotheses;

HO₁Real Time Gross Settlement has no effect on financial performance of Higher Learning Institution

2.0 Related Studies

Innovation is the creative ideas within an organization that reduce costs and risks and provide service that meets particular needs of financial systems. Innovation consists of firms developing new products or new production processes to better perform their operations, in which case the new products could be based on the new processes (Lawrence, 2010). In the financial services industry, innovation is viewed as the act of creating and popularizing new financial instruments, technologies, institutions and markets, which facilitate access to information, trading and means of payment (Solans, 2003). According to Nofie (2011), innovations in the finance sector is the arrival of a new or better product and/or a process that lowers the cost of producing existing financial services. Batiz-Lazo and Woldeesenbet (2006)

summarize the reasons for the growth of modern bank innovation as reduction in bankruptcy costs, tax advantages, and reduction in moral hazard, reduced regulatory costs, transparency and customization. Bank innovation includes; mobile banking, internet banking, Point of Sale Terminal, credit and debit cards, electronic funds transfer and real time gross settlement. The institution that doesn't impress these innovations loses its competitive advantage and market share to the competitors (Apolot S., Sserwanga A., & Muhammed N, 2012). The above scholars researched on various variables of innovation however they did little on RTGS therefore this study **is** fills the gap by looking at the effect of Real Time Gross Settlement systems on Universities financial performance in Kenya.

2.1 Theoretical framework

A theory is a systematic explanation of the relationship among phenomena and provides a generalized explanation to an occurrence (Dawson, 2009). In the literature of financial innovation, there is a wide range of theories that have been developed by various scholars. These theories include; Schumpeter Theory of Innovation was advanced by Schumpeter (1934) who argued that new products and processes developed by a firm are protected from limitation for a certain period. A successful innovation thus generates a proprietary competitive position that bestows on the firm a competitive advantage and superior performance (Lyons, Chatman & Joyce, 2007). The criticism to this theory is that it did not consider organizational learning process during innovation since it assumes that the entrepreneurs' thinking capacity is excellent and it therefore needs no time to think, learn and implement (Apolot S., Sserwanga A., Muhammed N., 2012). Transaction Cost Innovation was advanced by Hicks & Niehans (1983) advanced the transaction cost innovation theory in the research on innovation. They thought that the dominant factor of financial innovation is the reduction of transaction cost, and in fact, financial innovation is the response of the advance in technology which caused the transaction cost to reduce. The reduction of transaction cost can stimulate financial innovation and improvement in financial services. The criticism to the theory is that it does not consider the purchase and installation costs of innovation it only considers the operating costs which it concludes could be reduced. **In real sense initial costs are too huge with hope future returns (I.M Pandey, 2010).**

2.2 Conceptual framework

This paper presents Real Time Gross Settlement (RTGS) as an independent variable and financial performance as a dependent variable. The framework postulates that a change in Real Time Gross Settlement may lead to an improvement in financial performance. The framework is assumes there no moderating variables. This study establishes the effect of the RTGS on financial performance of the Universities in Kenya.

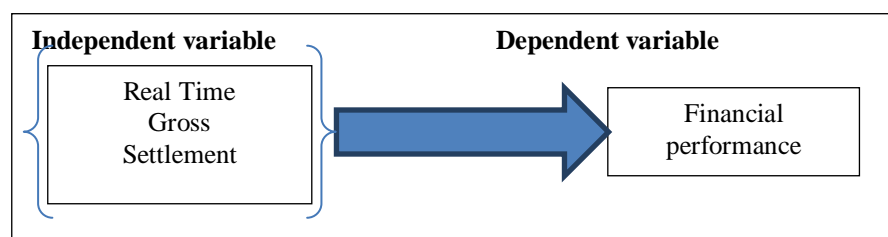


Fig. 1.1 conceptual framework

3.0 Research Methodology

The study adopted descriptive and correlational survey designs. Descriptive design describes the present behavior or characteristics of a particular population and it permits explanation of phenomena as they naturally transpire and without intervention from the researcher (Kombo & Tromp, 2006). In effect, the use of Real Time Gross Settlement practices being experienced by public Universities in Kenya were described as they naturally occurred. To enable such a description of RTGS practices, frequency and percentage distributions, along with means and standard deviations were used (Teddie and Tashakkori, 2008). In addition to being descriptive, the study was also used correlational design because it also established the relationship between the RTGS and financial performance in Universities. Correlational research design aims to ascertain if there are significant associations between two variables (Reid, 1987). Gay (1981) defines descriptive research as a process of collecting data in order to test hypotheses or to answer questions concerning the current status of the subjects in the study.

The target population of this study was Kibabii University staff from functional areas thus finance, Information Communication Technology and auditing. The personnel record indicated that there was ten (10) finance staff, five (5) ICT staff and two (2) internal audit staff making a total of seventeen staff (17). Borg and Crall (2009) alleged that target population is a universal set of study of all members of real or hypothetical set of people, events or objects to which an investigator generalized the result. Mugenda (2002) target population is the total population that the researcher specifies in his or her research.

Stratified sampling was used to group staff from the function areas into strata's and then judgmental sampling was used to pick on the specified stratas of finance department, internal audit and information and communication technology (ICT) because they were the departments that deal very closely with the system and therefore it was felt that they have all the required information for research purpose. The researcher then randomly selected eleven (11) samples from the total sample of seventeen (17) from the identified stratas. Random sampling enables each sample to have equal chances of being selected (Sekaran, 2011). The selected sample of eleven (11) represented 64% of the population target and Mugenda (2003) recommends the target population to be between 10-30%.

Primary data was obtained by use of the questionnaires because it is convenient tool and derives a lot of information within a short period of time (Kerlinger, 2004) the researcher used the questionnaires because the population was literate

and large and time for collecting data was limited. The structured (closed-ended) and unstructured (open-ended) was used so as to get the responses from respondents. The closed-ended questions provide a greater uniformity and more easily processed (China and Oteng'i, 2007). The structured questionnaires were accompanied by a list of all possible alternatives from which respondents selected the suitable answer that described their situation by simply ticking (Mugenda and Mugenda, 2003). The questionnaires were administered by the researchers so to avoid misinterpretation of questions by 'drop and pick' technique. Secondary data was obtained through study of available literature from relevant government agencies and other stakeholders (Banks and Universities). Relevant information about RTGS was found in the several articles written about financial and bank innovations and Central Bank Act. According to Lancaster (2002), if secondary data do not provide sufficient information to satisfy research objections, primary data must then be collected. Therefore primary data is necessary when a researcher cannot find the data needed in secondary sources.

The data was then coded and checked for any errors and omissions (Kothari, 2007). Frequency tables, percentages and means were used to present the findings. Responses in the questionnaires were tabulated, coded and processed by use of a computer Statistical Package for Social Science (SPSS v.20) programme to analyze the data (Andy, 2009). The researcher applied both regression and correlation to analyze the data. Correlation was used to establish if there was any relationship among the independent and the dependent variables while regression was used to find the significance of the relationship.

4.0 Research Findings

The study established the effect of RTGS on financial performance in higher learning institutions. Inferential analysis was used to analyze this relationship.

To compute the correlation between the dependent variables and independent variables the study conducted inferential analysis which involved Karl Pearson's coefficient of correlation, regression analysis, model summary and a multiple regression analysis. Pearson's coefficient of correlation (r) was used to show the relationship between the study variables and their findings. The findings showed a weak negative correlation between financial performance of public University and low maintenance cost of RTGS with a correlation of -0.311. Also there was a weak negative correlation between reduced cost of cheque leaves and financial performance of the public Universities with correlation of -0.179. Another negative correlation was observed between short transfer period and financial performance of the public Universities with correlation of -0.069. On the other hand there was a strong positive correlation between facilitating transfer of funds from one party to the other and financial performance of the institution with a correlation of 0.828. Besides, a strong positive correlation was observed between shortening of funds transfer period and having reduced costs of cheque leaves used by the University with a correlation of 0.690. Also a negative correlation coefficient was observed between shortening of funds transfer period and having low maintenance costs with a correlation of -0.633. Some variables were significant where their P-values were less than either 0.05 or 0.01 level while others were not significant since their values were more than 0.05 or 0.01

Table 1: Karl Pearson's coefficient of correlation

		Performanc e of institution	Reduced maintenanc e costs	Reduced cheque leaves	Facilitate transfer of funds	Period of funds transfer
Performance of inst.	Pearson Correlation Sig. (2-tailed)	1				
Low maintenance costs	Pearson Correlation Sig. (2-tailed)	-.311	1			
Reduced cost of cheques	Pearson Correlation Sig. (2-tailed)	-.179	-.311	1		
Facilitates transfer of funds	Pearson Correlation Sig. (2-tailed)	.828**	-.467	.069	1	
Short transfer period	Pearson Correlation Sig. (2-tailed)	-.069	-.633*	.690*	.100	1
		.840	.036	.019	.770	

4.1 Coefficient of Determination

This was carried out to measure how well the statistical model was likely to predict future outcomes. The coefficient of determination, R^2 is the square of the sample correlation coefficient between outcomes and predicted values. As such it explains the contribution of the four independent variables (direct funds transfer to other accounts, shortening of transfer period, reduction of cheque leaves and low maintenance costs) to the dependent variable. As summarized on Table 2, of the four independent variables that were studied, only 74.8% of the financial performance of University was represented by the adjusted R^2 . This therefore means that other factors not studied in this research

contribute 25.2% of financial performance of Universities. Therefore, further research should be conducted to establish the other variables of (25.2%) of RTGS that affects financial performance of public Universities in Kenya

Table 2 Model Summary

Model	R	R Square	Adjusted R Square
.865 ^a		.748	.369

4.2 Multiple Regressions

Multiple regression analysis was undertaken to identify relationship of effects of RTGS on financial performance of Universities. The main purpose of multiple regressions is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable. The researcher applied the statistical package for social sciences (SPSS) to code, enter and compute the measurements of the multiple regressions for the study. As per the SPSS generated table 3, the regression line established was as follows: $(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \epsilon)$ becomes: $Y = -0.399 + 0.105X_1 + 0.098X_2 - 0.014X_3 + 0.207X_4 - 0.36X_5$

The regression equation above has established that taking all factors into account (direct funds transfer to other accounts, shortening of transfer period, reduction of cheque leaves and low maintenance costs) constant at zero, financial performance will be -.399. The findings presented on table 3 also show that taking all other independent variables at zero, a unit increase in reduced operation costs will lead to a 0.105 increase in financial performance; a unit increase in low maintenance costs will lead to a 0.098 increase in financial performance; a unit increase in reduced cheque leaves will lead to a 0.014 increase in financial performance and a unit increase in facilitation of funds transfer from one party to the other will lead to a 0.228 increase in financial performance; a unit increase in salary disbursements every month will lead to a 0.207 increase in financial performance; unit increase in shortened period of transfer will lead to a -0.36 reduction in financial performance. This infers that RTGS is not significant in explaining the variations in the financial performance of Universities performance this leads us to fail to reject the null hypothesis. These findings are supported by Hassan Schimiedel and song (2010) and De young (2005) in studies done in Italy and USA respectively. They concluded that investment in electronic technology example Electronic funds Transfer and internet were used as a complement than a substitute for physical branches. However they contradicted the findings of Ngumi (2013) who mentioned that electronic funds transfer affects financial performance of the institution. This shows that the use of RTGS in the Universities only facilitates the payment or settlement of the debts as they fall due but there exists other factors that affect financial performance of Universities in Kenya.

Table 4 Regression coefficients

	B	Std. Error	Beta		
(Constant)	-.399	1.268		-.314	.769
Reduced operation cost	.105	.139	.470	.758	.491
Low maintenance cost	.098	.077	.423	1.264	.275
Reduced cheque leaves	-.014	.108	-.063	-.134	.900
Facilitation of funds transfer	.228	.116	.913	1.967	.121
Facilitation of salary disbursement	.207	.139	.892	1.481	.213
Shortened period of funds transfer	-.036	.093	-.157	-.388	.718

5.0 Conclusions

The study aimed at establishing the effect of RTGS on financial performance of public Universities. Based on the findings, the study concludes that, the use of RTGs does not affect the financial performance of the University. It also establish that RTGS only ensured reduced cheque leaves when paying creditors, low accounts maintenance costs, and facilitating of funds transfer from one account to the other within a shorter period of time but there existed other factors that directly affected financial performance.

5.1 Recommendation

Basing on the above findings, the University should only use RTGS while electronically sending money from one place to the other but not as a tool in gaining competitive advantage over competitors. A further research is recommended to find other factors of innovation that affects financial performance of Public Universities. The research may incorporate moderating factors.

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