THE EFFECTS OF REAL TIME GROSS SETTLEMENT ON FINANCIAL PERFORMANCE OF MICROFINANCE INSTITUTIONS IN NAIROBI COUNTY, KENYA

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Abstract

Companies that do not innovate run the risk of being surpassed by rivals. The financial sector has been impacted by globalization and technological advancement. The banking sector is utilizing these developments to enhance client service and guarantee profits on these investments. The study's objective and purpose was to determine the effects of real time gross settlement on financial performance of Microfinance institutions in Nairobi County, diffusion theory anchored the research. Many researches have been carried out to understand the connection between process improvements and financial performance. However, few of the reviewed research have determined the effect of real time gross settlement on financial performance of microfinance institutions in Nairobi County Kenya. Thus the current study aimed to fill in this knowledge gap. Cross-sectional survey research approach was used with a sample of 12 management staff. A pilot study was conducted in Kilifi County to check on reliability and validity of data collection instruments with the used of SPSS to analyse data. Mean and standard deviation were used to determine descriptive analysis, whereas model brief, ANOVA, and coefficients of regression were used to determine regression analysis. Outcomes were presented using frequency tables. According to the correlation analysis, real-time gross settlement positively correlated with financial performance. The study concludes that the processes of the Microfinance banks have been automated to improve MFIs operations. The study concludes that the Microfinance bank uses Real time gross settlement to minimize risk related to high value payment settlements. Recommendations is that in addition to automating core processes, the Microfinance banks should make it possible for the clients to open accounts remotely and operate those accounts remotely as well.

Key Words: *Real Time Gross Settlement, Financial Performance, Microfinance Institutions*

INTRODUCTION

Establishments have experienced intense pressure to adapt to new developments during the past ten years because of market rivalry, advancements in computer technologies, and varying employee demographics (Omwanza & Jagongo 2019). Companies that do not innovate run the risk of being surpassed by rivals. The financial sector has been impacted by globalization and

technological advancement. The banking sector is utilizing these developments to enhance client service and guarantee profits on these investments. Asfaw (2018) asserts that innovation is the continuing adoption of new practices, including the development of new goods and procedures from those already in use as well as the revision of institutional and commercial norms. Agreeing to Mwai (2019), organizations that wish to achieve their goals and accelerate their development short- and long-term plans must be ready to implement innovative methods in their processes, products, markets, and institutions.

Microfinance institutions offer financial services to low-income people and families that traditional banks have declined to do (Monya et.al 2016). They provide health training and instruction, as well as advice on insurance, businesses, and investments, in addition to financial assistance (Kaloki, 2018). It was created with the intention of reducing poverty, increasing economic development, and reducing unemployment (Wieneke, 2016). It is supervised by the Kenyan Central Bank, the Microfinance Act of 2006, and the Microfinance Regulation of 2008. Since MFBs use deposits from consumers to raise money for independent lending, they are not completely recognized as banks (Muhindi & Ngaba 2018). The processes, goods, and markets of the financial system changed along with the business environment (Muhindi & Ngaba 2018). Information technology advancements have led to updated, upgraded, or new product designs as well as improved customer service and pleasure (Chipeta & Muthinja 2018). In terms of creativity, dynamism, and the variety of services and items it offers, microfinance has increased (Muigai & Gitau 2018). Since 2015, the financial performance of Kenyan MFBs has declined. this could be explained by a decline in net income brought on by rising operating costs (Ndirangu et al., 2022). Three MFBs have exceeded the minimal core capital required by legislation to create a microfinance organization due to poor financial performance (Kenya Bankers Association [KBA] 2020). Additionally, Choice MFB fell short of the mandated minimum liquidity ratio of 20%. Additionally, it has caused marketing offices and branches to close (Abdelsalam et al., 2020).

Process innovations require giving a business's service operations new features. The introduction of unique or significant improvements to production or service delivery systems is also included in the innovation process (Kiveu, Namusonge & Muathe, 2017). Financial performance is improved by process innovations like Pesa-link, mobile banking apps, and digital field applications that lower the cost per unit of money service delivery. According to Rosli & Sidek (2013), the innovations may include adjustments to tools, processes, or a service or production structure. Process innovations seek to increase the company's capability and knowledge. Adoption of process innovations lowers the cost of providing financial services while having no impact on the goods. Successful application of process innovations decreases product costs and prices as well (Kaloki, 2018). According to Asfaw (2018), innovation is a process that involves applying new information or skills that may be unique to a local location in order to improve the creation of commodities and the delivery of services. Process origination is the adoption of a very new enhanced production or delivery system. This includes significant changes to events, equipment, and/or software. Process enhancements can be done to increase productivity, develop wholly new or meaningfully better products, or lower the cost per unit of making or distribution. Not simply new or considerably enhanced procedures, instruments, and software are included in process innovations; they also include ancillary support tasks like buying, keeping track of, computing, and maintenance. According to Oguda (2021), new product development concepts have resulted from organizational structure and procedure advancements in microfinance institutions.

Statement of the Problem

The MFIs struggle to thrive because they operate in such a fiercely competitive environment. This suggests that in order for the majority of them to remain competitive and grow against their primary rivals: commercial banks, they must develop novel techniques. Given that even network providers like Safaricom have developed microcredit services, people may now access financial services while relaxing in their own homes, innovations have become quite active (World Economic Forum, 2018). Kenyan microfinance organizations have kept making significant expenditures in technological developments. For instance, KWFT microfinance reports that more than 100,000 of its transactions—or 97 percent—take place through its mobile banking app rather than at physical locations. 75% of Faulu microfinance transactions are aided by digital technology (CBK, 2020). Moreover, the effectiveness of microfinance organizations has been declining. For instance, in 2019 customer deposits decreased to KSh 623 -13824 from KSh 713 billion, while market share for microfinance institutions and other small banks decreased to 17.10% from 21.22% (CBK supervision report, 2020). The outstanding loan portfolio for all MFIs registered in Nairobi stood at KSh 13,985,020,632.42 as of the AMFI report (2021), which indicates that the financial performance of MFIs is on a downward trajectory and calls for further research into the impact of process innovation on MFI performance.

Many researches have been carried out to understand the connection between process improvements and financial performance. In Pakistan, Iqbal et al., (2018) examined the impact of self-service technology on service quality and behavioral intention. Yet, the study's aim variable was service quality rather than financial performance, presenting a contextual gap. Financial innovations in commercial banks were the focus of studies by Hussain (2019). The study by Anwer (2023) focused only on credit cards. However, none of the reviewed research has examined process innovation and its impact on the financial performance of microfinance organizations from a comprehensive perspective (MFIs). The current study aimed to fill in the knowledge gaps left by these studies in the area of process innovations, particularly in Kenya's microfinance institutions (MFIs) by filling in the gap on the effects of real time gross settlement on financial performance of Microfinance institutions in Nairobi County, Kenya.

Hypothesis

H_0: There is no significant effect of real time gross settlement on financial performance of Microfinance institutions in Nairobi County, Kenya.

LITERATURE REVIEW

Diffusion Innovation Theory

The research is anchored on diffusion innovation theory which clarifies how economic breakthroughs and concepts propagate among society's populations (Oguda, 2010). Innovations spread from one individual or group to another through a process called diffusion. Because of this, people frequently adopt new concepts in a bid to make good decisions. Innovations are essential to achieving development and sustainability, thus businesses should adopt them to improve their financial performance. The network effect and technical advancement allow new financial innovations to spread to rival businesses (Tidd, 2020). The adoption of innovation increases when a product's network impact increases, and the number of competing products in an industry decreases. This would result in lower costs, greater profitability, and so better financial performance. The adoption of digital cards by bank customers can be explained by the diffusion of innovation theory since its success or failure affects the financial performance of commercial banks.

Real-time order-by-order settlement

Real-time order-by-order settlement of funds without netting is known as real-time gross settlement (RTGS). Muhoro and Mungai (2018) looked into how Real Time Gross Settlement affected Kenyan banks' financial performance. A census study was conducted on all Kenyan banks that were subject to CBK regulation. The study made use of secondary data from 43 prosperous Kenyan banks. Both descriptive and inferential statistics were employed in the study. Heteroscedasticity and normality tests were used as diagnostic procedures. Using SPSS, the data was coded and sorted to provide descriptive statistics that were displayed as tables. According to the study, ROA is significantly affected by RTGS at 0.022, and ROA is increased by 0.7985% for every 1% increase in RTGS volume.

Real-time gross settlement (RTGS) is a payment system used by central banks and financial institutions to facilitate large-value and time-sensitive transactions. RTGS systems provide instantaneous and final settlement of transactions, on a one-to-one basis, in real-time. Here are some key characteristics and benefits of RTGS systems provide immediate and irrevocable settlement of transactions. This means that once a transaction is processed, the funds are transferred and settled instantly without any delay, ensuring immediate availability of funds to the recipient. RTGS systems are primarily designed for processing high-value transactions, typically above a certain threshold. Since these transactions involve large sums of money, the immediate settlement offered by RTGS systems reduces the risk associated with delayed settlement (Waweru, 2012). RTGS systems provide a high level of security by employing robust authentication mechanisms, encryption protocols, and strict compliance with regulatory requirements. This helps minimize the risk of fraud, unauthorized access, and counterparty credit risk. RTGS systems enable efficient management of liquidity for financial institutions. The immediate settlement of funds ensures that liquidity positions are accurately reflected, allowing financial institutions to effectively manage and optimize their cash flows and reserves (Kariuki, 2015).

Interbank transfers are financial transactions that occur between two different banks or financial institutions. These transfers involve the movement of funds from one bank to another, enabling the transfer of money between accounts held at different institutions. Here are some key aspects of interbank transfers: Interbank transfers can be settled using various mechanisms, including real-time gross settlement (RTGS) systems, automated clearinghouse (ACH) networks, or correspondent banking relationships. Settlement mechanisms determine the speed, cost, and finality of the transfer. Interbank transfers undergo a clearing and settlement process, which involves the validation, processing, and transfer of funds between banks. This process ensures that the transfer is executed accurately and securely, with a record of the transaction maintained by both the sending and receiving banks. Interbank transfers require the exchange of payment messages between the sending and receiving banks (Kibugo, 2017). Common protocols used for interbank transfers include SWIFT (Society for Worldwide Interbank Financial Telecommunication) and ISO 20022, which ensure standardized and secure communication between participating banks. To initiate an interbank transfer, the sending bank must authenticate the transaction by obtaining the necessary approvals and verifying the identity and authorization of the account holder. This helps prevent unauthorized transfers and ensures compliance with regulatory requirements. Fees and Charges: Depending on the banks involved and the type of transfer, interbank transfers may incur fees and charges. These fees can be fixed, percentage-based, or a combination of both. Banks may charge fees for processing the transfer, currency conversion (if applicable), and other services related to the transaction (Omondi, 2015).

A study on the impact of process innovation techniques on the performance of tier one commercial banks in Kenya in 2021. A descriptive survey research design was used for the investigation 494 senior, middle, and lower management staff from the eight Tier One Commercial Banks made up the target group. Using the stratified random sampling technique, a sample size of 221 was obtained. Structured questionnaires that were given to the management teams of the top commercial banks in Nairobi were used to gather primary data. On the other side, secondary data was gathered during a five-year period, from 2014 to 2019, from published financial statements and periodicals. Tables were used to present the data. The study discovered that increased queuing, electronic funds transfers, and the quantity and dispersion of ATMs had significantly improved the banks' financial performance (Ogutu 2018).

In the context of microfinance banks, high-value payment settlement refers to the process of settling large-sum financial transactions within these institutions. While microfinance banks primarily focus on serving low-income individuals and small businesses, there may still be occasions where high-value transactions need to be settled. According to Muotolu & Nwadialor (2019) conducted research on the real-time gross settlement and financial performance of Kenya's public universities in 2016. The research used a descriptive survey approach. 11 employees from three different functional areas made up the sample. As research tools, questionnaires were used, and regression and descriptive statistics were used for data analysis. The results of the study demonstrated that there was no discernible difference between how RTGS affected the financial performance of Public Universities. In addition, a strong positive correlation between the cost of transfer and the lengthening of the funds transfer duration was observed (0.690).

Financial Performance

Microfinance banks in Kenya are regulated by the Central Bank of Kenya (CBK) and are required to adhere to specific reporting and regulatory standards. The financial performance of microfinance banks in Kenya can vary depending on various factors such as the size of the institution, its business model, target market, loan portfolio quality, operational efficiency, and overall economic conditions. Generally, microfinance banks aim to provide financial services to underserved populations, including low-income individuals, micro-enterprises, and small businesses. Their objectives often include promoting financial inclusion, poverty reduction, and economic empowerment. To assess the financial performance of microfinance banks, key indicators to consider include: ability of the microfinance bank to generate profits from its operations (Shkodra 2019). Key indicators to evaluate asset quality include non-performing loans (NPLs) ratio, loan loss provision ratio, and portfolio-at-risk (PAR) ratio. The liquidity position of a microfinance bank indicates its ability to meet its short-term obligations. It is important for the bank to maintain sufficient liquid assets to fund withdrawals and disbursements. Microfinance banks are required to maintain adequate capital to absorb losses and support their business operations. Capital adequacy ratios, such as the capital adequacy ratio (CAR) and tier 1 capital ratio, assess the bank's capital position in relation to its risk-weighted assets. It is worth noting that financial performance can vary significantly among different microfinance banks in Kenya, as they differ in size, business strategies, geographic focus, and clientele (Wijesiri 2017).

Service efficiency is an important aspect of financial performance for microfinance banks in Kenya. High service efficiency ensures that customers' needs are effectively met, transactions are processed efficiently, and operational costs are managed effectively. Give outstanding customer service is crucial for microfinance banks. This includes addressing customer inquiries and concerns in a timely manner, offering personalized assistance, and ensuring overall customer

satisfaction. Prompt and efficient customer service can contribute to customer retention and positive word-of-mouth, ultimately affecting the bank's financial performance. Smooth and efficient transaction processing is critical for microfinance banks. This involves timely processing of deposits, withdrawals, loan disbursements, and repayments. Automating processes, leveraging technology, and streamlining workflows can help enhance transaction processing efficiency and reduce operational costs (Lind et al., 2018).

Embracing technology plays a crucial role in improving service efficiency in microfinance banks. Implementing robust and secure banking systems, digital channels for transactions, online banking platforms, and mobile banking applications can enhance accessibility, convenience, and efficiency for customers. Additionally, digitizing back-office functions can help streamline operations and reduce manual errors. By streamlining processes, reducing manual intervention, and leveraging technology, microfinance banks can improve operational efficiency and reduce costs associated with customer service, transaction processing, and administration. A well-trained and skilled workforce is essential for providing efficient services. Microfinance banks invest in continuous training and development programs to enhance employees' knowledge, skills, and capabilities. This helps ensure efficient service delivery and customer satisfaction. Efficient service delivery not only contributes to customer satisfaction but also improves the operational performance of microfinance banks. Operational costs in microfinance banks in Kenya consist of various expenses incurred in running the day-to-day operations of the institution. These costs have an impact on the overall financial performance of the banks (Ashta & Herrmann 2021).

Microfinance banks must adhere to regulatory requirements, reporting standards, and compliance measures set by the Central Bank of Kenya. This involves costs associated with compliance monitoring, audit fees, regulatory filings, and legal expenses. This category covers various day-to-day operational costs, such as office supplies, stationery, insurance premiums, professional fees, transportation, and other administrative expenses required for smooth operations. Managing operational costs effectively is crucial for microfinance banks to achieve profitability and financial sustainability. Cost optimization strategies, such as process automation, technology adoption, efficient resource allocation, and operational streamlining, can help microfinance banks minimize unnecessary expenses and enhance overall financial performance. It's important to note that specific operational costs may vary among different microfinance banks based on their size, scope, business model, and operational scale (Moeuf 2018).

Return on assets (ROA) is a financial performance ratio that measures the profitability of a business in relation to its total assets. In the context of microfinance banks in Kenya, ROA indicates the effectiveness of utilizing assets to generate profits. To calculate ROA, its average total assets divide the net income of the microfinance bank over a specific period. ROA = (Net Income / Average Total Assets) x 100 (Secinaro 2020).

The resulting ratio is expressed as a percentage, representing the profitability of the bank relative to its asset base. A higher ROA indicates better profitability in relation to the size of the assets, whereas a lower ROA suggests lower profitability or inefficient asset utilization. It's important to note that the ROA can vary across microfinance banks based on factors such as business strategies, risk management practices, operational efficiency, interest rate spreads, loan portfolio quality, and overall economic conditions. Additionally, the size and scale of the microfinance bank can also affect the ROA, as larger institutions may benefit from economies of scale. To obtain specific and accurate information about the ROA of microfinance banks in Kenya, it is advisable to refer to the published financial statements, annual reports, or consult industry

reports and expert analysis on the subject. These sources will provide the most up-to-date and comprehensive information regarding the financial performance of microfinance banks in Kenya, including their ROA. The researcher conducted a pilot test with eight respondents to assess face and content validity as well as reliability. In Kilifi County, the pilot research involved eight microfinance institutions. Participants in the pilot trial were excluded from the final analysis (Dube & Kwenda 2023).

METHODOLOGY

Cross-sectional survey research was used for the research. Descriptive cross-sectional methodologies were used to sample a sizable population. The sample population was 12 licensed Micro finance banks in Nairobi, according to the Association of Microfinance Institutions report from 2022. A structured questionnaire was utilized in this study to collect the respondents' primary data. The research adopted the Yamane statistical formula to calculate the sample proportion. The researcher targeted 44 respondents where questionnaires were administered. Out of this, 41 responses were obtained giving a response rate of 93.2% which according to Creswell (2015) is excellent. Informed consent was sought from the sampled respondents, and confidentiality and anonymity was observed. Further, inviolability of data was maintained.

RESULTS AND DISCUSSION

The researcher targeted 44 respondents where questionnaires were administered. Out of this, 41 responses were obtained giving a response rate of 93.2% which according to Creswell (2015) is excellent.

Descriptive Statistics for Real Time Gross Settlement

Finding out how much real-time gross settlement impacts the financial performance of microfinance banks was the main goal of this study. Respondents were asked to rate how much they have adopted particular real-time gross settlement characteristics on a five-point Likert scale, with 1 denoting strongly disagree and 5 denoting strongly agree, in order to accomplish this goal.

Table 1 Real Time Gross Settlement

	Mean	Std. Deviation
The MFI uses RTGS to minimize risk related to high value payment settlements	4.52	.741
The actual period gross payment affects financial performance of Microfinance banks positively	4.54	.756

Respondents concurred that the MFI employs RTGS to reduce the risk associated with high value payment settlements (mean: 4.52) and that RTGS has a favorable impact on the financial health of microfinance institutions. (Mean: 4.54). The research supports that of Muhoro and Mungai (2018), who found that for every 1% rise in RTGS volume, Return on Assets increased by 0.7985%.

Correlation Analysis

Correlation analysis is adopted to determine whether there is any relationship between RTGs and financial performance. Correlation results are presented in Table 2.

Table 2 Correlation Results

n=41		Performance	RTGS
Financial Performance	Pearson Correlation	1	
	Sig. (2-tailed)		
RTGS	Pearson Correlation	.635[*]	1
	Sig. (2-tailed)	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Financial performance and real-time gross settlement were found to be strongly positively correlated (r =.635, p-value 0.05). This suggests that real-time gross settlement helps businesses perform financially better.

Regression Analysis

Regression was adopted to determine how adopted predictor variable (real time gross settlement) predict the dependent variable (financial performance). Findings for multiple regression analysis were presented in Table below.

Table 3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.635[a]	.404	.391	2.35159

a. Predictors: (Constant), Real time gross settlement

The corrected R-square value is 0.404, meaning that the model's predictor real-time gross settlement—explain 40.4% of financial performance. Analysis of variance (ANOVA) was used to evaluate the regression model's goodness of fit test.

Table 4 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1092.251	1	1092.251	26.482	.000[b]
	Residual	1608.563	39	41.245		
	Total	2700.814	40			

a. Dependent Variable: Financial performance

b. Predictors: (Constant), Real time gross settlement

The F-ratio at was 26.482. This showed the regression model's effect size, and the model was significant at the 95% level of confidence (p=0.000), indicating that it is possible to predict financial performance using real-time gross settlement. In order to determine beta, which was utilized to illustrate how much the independent variable affects the dependent variable, regression coefficient analysis was performed.

Table 5 Regression Coefficients

		Unstandardized Coefficients		Standardized Coefficients	F	Sig.
		B	Std. Error	Beta		
1	(Constant)	.696	1.317		.529	.017
	Real time gross settlement	.113	.073	.099	1.543	.004

a. Dependent Variable: Financial Performance

According to the regression model, the financial performance of microfinance banks would be 0.696 if the other variable were held constant at zero. Real-time gross settlement had a (= 0.113, p 0.05) favorable and substantial impact on financial performance. The null hypothesis, according to the findings, that real-time gross settlement has no substantial impact on the financial performance of microfinance institutions, was rejected. The research supports that of Muhoro and Mungai (2018), who found that for every 1% rise in RTGS volume, Return on Assets increased by 0.113%.

Conclusions

Examining the impact of real-time gross settlement on the financial results of microfinance banks in Nairobi County was the study's goal. According to descriptive data, the MFI offers interbank transfers and conducts interbank settlement. The findings demonstrated that the MFI

employs RTGS to reduce the risk associated with high value payment settlements and that the real-time gross settlement has a beneficial impact on the financial performance of microfinance banks. Real-time gross settlement has a moderately positive and significant association with financial performance, according to correlation data. Real-time gross settlement has a good and significant impact on the monetary presentation of microfinance organizations, rendering to regression data. The study concludes that the Microfinance bank uses Real time gross settlement to minimize risk related to high value payment settlements and that the real time gross settlement affects financial performance of Microfinance banks positively.

Recommendations

The management of Microfinance banks should offer inter-bank transfers with ease and also offer inter-bank settlement. This would make it possible for account holders of other banks to use banking services of the Microfinance bank hence benefit through transaction fees. The study recommends that the Microfinance bank should utilize real time gross settlement to minimize risk related to high value payment settlements.

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