
**THE EFFECT OF ELECTRONIC MONEY TRANSFER SYSTEMS ON THE
FINANCIAL PERFORMANCE OF FINANCIAL INSTITUTIONS IN KENYA
(CASE STUDY OF SUMAC DEPOSIT TAKING MICROFINANCE LTD)**

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ABSTRACT

This research paper sought to identify the various EMT systems in Kenya, their effects on the profitability, liquidity and the business net worth of financial institutions in Kenya. For the purposes of this study, Sumac DTM being a financial institution was studied. Data was collected primarily by use of both questionnaires and secondary data. The questionnaires consisted of both open and closed questions and were sent to the various respondents who were key employees in the institution under study. Data was analyzed and presented using tables, pie charts and graphs. The study also revealed various benefits of using the EMT services which include speed, profitability and convenience. The main challenge was found to be security issues such as money laundering and identity theft especially due to more sophisticated technology. From these findings, it was recommended that EMT systems need more regulation and monitoring in order to protect the users from losing their hard earned money and also the government from losing revenue through money laundering which could have greater repercussions on the economy such as increasing inflation. A tighter regulatory framework would also help in overseeing an efficient, transparent and effective EMT system hence a stable financial environment. It was also recommended that since the individual EMT services are very broad and tailored to meet the individual need of the institution, there is need for an in depth study on each EMT service due to time constraint.

Key Words: *Electronic Money Transfer Systems, Financial Performance*

INTRODUCTION

The development of the EMTS was linked to the growth in trade and commerce and hence the onset of industrial revolution in the country. Electronic money transfer was a recent phenomenon in Kenya whose use has increased over the years mainly due to the increased globalization of financial institutions and need for a more efficient way of making payments. This growth has to a large extent attributed to the rapid technological progress and financial market development. Transactions made using electronic money accounts for an increasing proportion of the volume and value of domestic and cross-border retail payments. There are mainly two broad categories of these innovative payment products. The first category includes reloadable electronic money instruments in form of stored value cards and electronic tokens stored in computer memory. Good examples being single purpose cards such as mobile phone scratch cards. The second category is payments through the internet and mobile phones such as M-pesa (BIS, 2004). Electronic money can be defined as monetary value charged and stored on an electronic support, in the form of a smart card or incorporated into the memory of a computer (Batalla, 2001). The European Union Directive on Electronic Money defines it as Monetary value represented by a claim on the issuer which is; stored on an electronic device; issued on receipt of funds of an amount not less in the value than the monetary value issued; accepted as a means of payment by undertakings other than the issuer.

Electronic money transfer systems have had both positive and negative impact on the financial sector in Kenya. The positive effect is that it has led to increase in banking activities in terms of the number of transactions. The negative effect being that the services are mostly used in the urban areas where there is a high concentration of commercial banks, post banks, international money transfer centers(e.g. western Union),M PESA and Airtel Money agents. But even in urban areas the financial institutions concentrate on the large businesses and high income individuals leaving out the majority who cannot participate due to high costs of opening bank accounts, high minimum balance requirement and bank charges (CBK, 2006).

In Kenya, commercial banks and other financial institutions are the main formal providers of money transfer and payment services (Payment systems in Kenya by CBK, September 2003).

Electronic money transfer systems especially those related to cell phones have led to the growth of mobile banking. Mobile banking means conducting formal financial transactions using a mobile phone. Mobile banking has evolved in two phases, first is where one can access their bank account details like account balance and even make payments like buying air time and paying utility bills, secondly many people especially M-PESA and Airtel Money users have turned this to be like a bank where they can deposit money and make payments.

Statement of the Problem

Recently, the use of electronic money transfer has taken different forms such as debit cards, credit cards, smart cards, master cards and single purpose cards such as scratch cards, fuel cards, automated teller machines and direct deposits.

The impact of electronic technology in the service sector has been difficult to measure due to the growth and competition of the EMTS in different banks and financial institutions. The use of cheques, stamps, envelopes and paper bills are obsolete. According to Dundore, the present stage of developments of EFT mechanisms primarily with the impact on the administration of business to business payments, but the corporate financial policy must occupy itself with problems of other parts of the emerging electronic systems. The handling techniques have improved steadily but the business community has been isolated due to the ill effects of temporary congestion and the growing sense of competitive self-interest among financial service institutions (Dundore, 1974).

There has been development between saving banks, commercial banks and the Federal Reserve for the control of the EFT system. Banks may see the quantity and dollar volume of payments passing within the institution but there is more concern with the earning potential of the business payments (Arthur, 1974). In this research, the study looked at the various effects EMTS has on the financial performances of the microfinance institution which are; the liquidity ratio, the profitability ratios and business net worth.

Literature Review

Effects of EMTS on profitability of the institution

The proliferation and penetration of internet opened new horizons and scenarios for the banking industry. The retail banks are now providing their products and services through the electronic medium-banking (Khurram, 2007). E-banking is considered to have a substantial impact on banks' performance. The aim of this paper is to examine the impact of e-banking on the profitability of Kenyan banks.

The study was qualitative in nature and examined different objectives that determine the performance of financial institutions mainly in terms of profitability. It also discussed the effect of customers' literacy on provision of services from banks' perspective. It also discussed the basic motive of banks to adopt e-banking services. The results show that e-banking has increased the profitability of banks. It has enabled the banks to meet their costs and earn profits even in the short span of time.

The illiteracy of customers is not regarded as a major impediment in provision of their products and services. For banks, the main motive to adopt e-banking was to increase their clientage and to retain their customers. The profitability of banks has augmented in transitioning to e-banking medium. The banks benefited from the technologies offered by today's world while building up their financial intermediation infrastructure. These technologies are provided through electronic banking. Allen (2002) gave the definition of E-finance as the provision of financial services and markets using electronic communication and computation.

EMTS benefited the financial sector development in the country by lowering costs, increasing the breadth and quality and widening access to financial services. Birch and Young (1997) analyzed the consumer side for e-banking and the results showed that consumers basically seek for transactional efficiency, choice for core and non-core banking products and access to competitive prices and returns.

By the initiation of e banking, the efficiency of banks has increased, the labor costs have decreased as now, less number of employees are required to deliver the services because of electronic means, the accuracy of transactions and maintenance has been also supplemented as computer has taken the place of humans hence, decreasing human errors, the procedures, processes and services are now fast and reliable which saves time, efforts and costs. The customers are more satisfied with the services, their accuracy and timeliness. This has in turn augmented the efficiency of banks; decreasing the costs and increasing profits.

Electronic money transfers have enabled banks to increase their clientage and to retain their customers through improved efficiency in service delivery leading to more revenue hence increase profitability of the banks (Hadler, 2006)

Effects of EMTS on the liquidity of the institution

Research on the determinants of bank liquidity has focused on both the returns on bank assets and equity, and net interest rate margins. It has traditionally explored the impact on bank performance of bank-specific factors, such as risk, market power, and regulatory costs. More recently, research has focused on the impact of macroeconomic factors on bank performance.

Using accounting decompositions, as well as panel regressions, Al-Haschimi (2007) studies the determinants of bank net interest rate margins in different countries. He finds that credit risk and operating inefficiencies (which signal market power) explain most of the variation in net interest margins across the region. Macroeconomic risk has only limited effects on net interest margins in the study. Using bank level data for banks in the 1988–95 periods (Demirgüç-Kunt and Huizinga, 1998) analyze how bank characteristics and the overall banking environment affect both interest rate margins and bank returns. In considering both measures, his study provides a decomposition of the income effects of a number of determinants that affect depositor and borrower behavior, as opposed to that of shareholders. Results suggest that macroeconomic and regulatory conditions have a pronounced impact on margins and profitability. Lower market concentration ratios lead to lower margins and profits, while the effect of foreign ownership varies between industrialized and developing countries. In particular, foreign banks have higher margins and profits compared to domestic banks in developing countries, while the opposite holds in developed countries. (Gelos, 2006) studies the determinants of bank interest margins using bank and country level data. He finds that spreads are large because of relatively high interest rates (which in the study is a proxy for high macroeconomic risk, including inflation), less efficient banks, and higher reserve requirements.

In a study of United States banks for the period 1989–93, (Angbazo, 1997) finds that net interest margins reflect primarily credit and macroeconomic risk premium. In addition, there is evidence that net interest margins are positively related to core capital, non-interest bearing reserves, and management quality, but negatively related to liquidity risk. Saunders and Schumacher (2000) apply the model of Ho and Saunders (1981) to analyze the determinants of interest margins in six countries of the European Union and the US during the period 1988–95. They find that macroeconomic volatility and regulations have

a significant impact on bank interest rate margins. Their results also suggest an important trade-off between ensuring bank solvency, as defined by high capital to asset ratios, and lowering the cost of financial services to consumers, as measured by low interest rate margins.

Athanasoglou, (2006) conducted a study on the profitability behavior of the south eastern European banking industry over the period 1998–02. The empirical results suggest that the enhancement of bank profitability in those countries requires new standards in risk management and operating efficiency, which, according to the evidence presented in the paper, crucially affect profits. A key result is that the effect of market concentration is positive, while the picture regarding macroeconomic variables is mixed. Athanasoglou, et al. (2006) apply a dynamic panel data model to study the performance of banks over the period 1985–2001, and find some profit persistence, a result that signals that the market structure is not perfectly competitive. The results also show that the profitability of Greek banks is shaped by bank-specific factors and macroeconomic control variables, which are not under the direct control of bank management. Industry structure does not seem to significantly affect profitability.

More recently, a number of studies have emphasized the relation between macroeconomic variables and bank risk. Saunders and Allen (2004) survey the literature on pro-cyclicality in operational, credit, and market risk exposures. Such cyclical effects mainly result from systematic risk emanating from common macroeconomic influences or from interdependencies across firms as financial markets and institutions consolidate internationally. They may ultimately exacerbate business cycle fluctuations due to adverse effects on bank lending capacity. Using equity returns data over the period 1973–2003, Allen and Bali (2004) examine the catastrophic risk of financial institutions. Results suggest evidence of pro-cyclicality in both catastrophic and operational risk measurements, implying that macroeconomic, systematic, and environmental factors play a considerable role in determining the risk and returns of financial institutions.

Effects on the business net worth of the institution

Financial market imperfections may influence macroeconomic outcomes through different mechanisms. In studying the outcomes of financial-real interactions and assessing policy options, many researchers model a particular financial market imperfection regardless of its relevance to the data or to a particular case study, and rule out the alternative sources of financial frictions. Despite providing an ease for modeling, this method raises a crucial question: how critical is the assumption on the underlying financial friction to the conclusions drawn in this type of a model? The central goal of this paper is to address this question. Existing dynamic models with credit market frictions mostly assume ex-post asymmetric information between lenders and borrowers. Especially monitoring costs, which are tractable and simple to implement, but empirically too small to initiate financial distress (Bernanke and Gertler (1990), have been widely used to motivate agency costs associated with unsecured lending. However, in a world of heterogeneous borrowers with private information, costs of ex-ante information acquisition constitute a primary source of friction in credit markets (Wang and

Williamson, 1998), especially in unsecured lending. For the lenders, these costs are primarily associated with the screening of loan applicants. This paper studies an RBC model featuring ex-ante asymmetric information and costly screening of loan applicants in credit markets. It examines how aggregate shocks are amplified and propagated through net worth effects compared to a standard RBC model with ex-post monitoring costs. The aim is to figure out the role of underlying financial friction in credit markets in shaping macro-economic outcomes and evaluating screening costs as an alternative mechanism to empirically implausible monitoring costs to motivate agency costs in unsecured lending.

A seminal work on monitoring costs and net worth effects is Bernanke and Gertler (1989). Models with monitoring costs study Townsend's (1979) costly state verification problem in unsecured lending, in which borrowers tend to hide project outcomes absent monitoring. Aggregate shocks redistribute wealth between lenders and borrowers, which in turn leads to endogenous changes in monitoring costs that affect external financing, propagating the initial shocks. More recently, building on the work of Bernanke and Gertler (1989), constructed calibrated, computable general equilibrium models that analyze quantitatively the effects that Bernanke and Gertler (1989) analyzed qualitatively. As an alternative to monitoring costs, Kiyotaki and Moore (1997) motivates agency costs by enforcement problems and studies secured lending as borrowers cannot be forced to repay unless the debt is secured. Thus, borrowers collateralize their assets to acquire external funding, but productivity shocks affect the value of these assets, which limits borrowing and investment. In turn, limited investment feeds back into asset values, both amplifying and propagating the initial shocks. However, regardless of the loans being secured or unsecured, both Kiyotaki and Moore and CF/BGG type models disregard the fact that there are diverse types of loan applicants, who are screened and thus charged individual specific loan rates and amounts by the lenders. Besides many loan applicants are credit rationed or simply denied a loan. This paper studies an ex ante information acquisition problem in credit markets as opposed to ex post verification or enforcement problems as a source for creating net worth effects. The aim is to obtain screening of loan applicants as an equilibrium outcome, which results in multiple loan rates and credit rationing. Entrepreneurs with privately observed investment projects, which may be of high or low quality in terms of profitability, apply for unsecured loans to finance their projects as a supplement to their net worth. Moreover, investment projects yield a risky outcome. In this setup, there are three kinds of information problems.

First, entrepreneurs are better informed about the productivity of their projects ex ante, and low quality project holders have an incentive to pretend having a high quality project in order to borrow at a lower rate. Second, entrepreneurs are better informed about the outcome of their risky projects ex post, and successful entrepreneurs have an incentive to pretend going bankrupt in order not to pay back their debt. Third, entrepreneurs may deviate from investing the loan on their contracted project ex-post and simply use the loan for another purpose, consumption for instance. CF/BGG type models incorporate the second problem. However, as the costs that appear to be most important for real world

financial intermediaries are not ex post verification costs (i.e., auditing costs) but ex ante costs of information acquisition (Wang and Williamson, 1998), this paper motivates agency costs in unsecured lending by costly screening of loan applicants. In order to analyze the effects of this particular information problem per se on business cycle dynamics, we shut down all ex-post information problems, namely the verification and enforcement problems and the moral hazard problem of misusing the loan, and focus only on costly screening of loan applicants with different quality of investment projects.

Methodology

The study was generally descriptive in nature. This study captured Sumac Deposit Taking Microfinance Institution. The head office was chosen because of its proximity to the institution of learning and it was easier to obtain the relevant data since it was in a central location. The target population was the staff in the accounts and finance department and the finance manager of the bank who happened to be the key personnel for data collection. The research stratified random sampling techniques where the population was divided into strata. The study relied on both primary data collected through the use of structured questionnaire and secondary data on various publications both on various websites of the institutions and on books, journals and other relevant literature. The data collected was edited for the purposes of accuracy, consistency and completeness in the final analysis using Microsoft excel. There was analysis of the close end questions (specified answers mostly with agree and disagree responses) while responses from the open ended (no limitations) questions were listed and percentages obtained appropriately. Tables and charts were also used to present the data.

RESULTS

The use of EMTS on profits

As indicated in table 1, the question being responded to was to whether the bank had increased its profits of products .25% of the sample strongly agreed that the profit of bank products has increased as a result of a rise in client numbers. Those who strongly disagreed constituted 25% and only 50% of them agreed to this.

Table 1: Increase in Profits

Increase in profits	Frequency	Percentage
Strongly Agree	2	25%
Agree	4	50%
Disagree	0	0.00%
Strongly Disagree	2	25%
Total	8	100.00%

The increase and retention of clients

Of the answered questionnaires, 25% strongly agreed that there was an increase and retention of clients and 50% agreed with 25% strongly disagreeing.

Table 2: Introduction of New Credit Services

Introduction of new credit services	Frequency	Percentage
Strongly Agree	2	25%
Agree	4	50%
Strongly Disagree	2	25%
Disagree	0	0.00%
Total	8	100.00%

Table 3 shows that 62.5% of the sample staff strongly agreed that increase in bank's efficiency has led to decrease in labor cost. 25% indicated that the efficiency was greatly seen. Only 12.5% disagreed to this. The improvement of bank services by the introduction of EMT system has decreased labor costs.

Table 3: Policy adopted

Efficiency	Frequency	Percentage
Strongly Agree	5	62.5%
Agree	2	25%
Strongly Disagree	1	12.5%
Total	8	100.00%

EMTS and net interest margins in the institution

Table 4: Effects of EMTS on the net interest margin

Effects of EMTS	Frequency	Percentage
Strongly Agree	6	75%
Agree	0	0%
Strongly Disagree	2	25%
Disagree	0	0%
Total	8	100.00%

Table 4 shows that 75% of the respondents were for the opinion that EMTS affects the variation in the net interest margin.

EMTS and bank returns

Table 5: Effects on the bank returns

Effects on the bank returns	Frequency	Percentage
Strongly Agree	3	37.5%
Agree	4	50%
Strongly Disagree	1	12.5%
Disagree	0	0.00%
Total	8	100.00%

Table 5 shows that 50% of the respondents agreed that EMTS affects the interest rates hence increase in the bank returns leading to increase in profits. 37.5% strongly agreed and only 12.5% of those respondents strongly disagreed to this.

EMTS and share price

Table 6: Increase in share price

Increase in share price	Frequency	Percentage
Strongly Agree	5	62.5%
Agree	1	12.5%
Strongly Disagree	1	12.5%
Disagree	1	12.5%
Total	8	100.00%

A percentage of 12.5% agreed that when there is an increase in share price the financial performance of the bank increases. Those who strongly agreed are 62.5% and 12.5% of the clients disagreed. The introduction of EMTS has led to improvement of the banks financial performance hence an increment in the share price of the DTM.

Conclusion

EMTS has led to the increase in the clientage and the retention of clients which in turn has led to the increase in the banks profits. EMTS benefits the financial sector development in the country by lowering costs, increasing the breadth and quality and widening access to financial services. By the initiation of e banking, the efficiency of financial institutions has increased, the labor costs have now decreased, less number of employees are required to deliver the services because of electronic means, the accuracy of transactions and maintenance have been supplemented as computer has taken the place of human labor hence, decreasing human errors, the procedures, processes and services are now fast and reliable which saves time, efforts and costs.

Research on the determinants of the DTM's liquidity has focused on both the returns of assets and equity, and net interest rate margins. It has traditionally explored the impact on bank performance of bank-specific factors, such as risk, market power, and regulatory costs. More recently, research has focused on the impact of macroeconomic factors on bank performance.

Financial market imperfections may influence macroeconomic outcomes through different mechanisms. In studying the outcomes of financial-real interactions and assessing policy options, many researchers model a particular financial market imperfection regardless of its relevance to the data or to a particular case study, and rule out the alternative sources of financial frictions.

Cards in use are credit and debit cards, ATM cards, smartcards and single purpose cards. Prepaid cards such as mobile phone scratch cards, Kenya wildlife service's cards for tourists and fuel cards are gaining popularity in the country. Various large supermarkets have issued customers with their own cards for use in their outlets. The major firms involved include commercial banks and non-bank financial institutions, oil companies, mobile phone companies, the service industry among others.

Network/software based products involve use of bank cards such as ATMs with ability to store balances held by bank. The postal corporation provides the *Posta pay* payment

system. The point of sale service gadget is also increasingly being used in Kenya to receive, send and withdraw money or check their financial statements from their bank accounts. It was developed by Craft Silicon, a software company, which the DTM uses for its banking services like the bankers realm.

Internet and mobile payments: A number of financial institutions have developed online banking for corporate and high net worth customers through the internet. This includes wire transfers such as Western Union. Mobile phone service providers have also enabled transfer of payments through mobile phones. Examples include Safaricom M-pesa and MSHWARI and Airtel money by the Airtel Company.

EFTs is used for transferring value between banks on behalf of customers. Within Kenya interbank exchange arrangement, EFT system is used as a facility for processing payments electronically via the Automated Nairobi Clearing House between the Kenya Bankers Association member banks. Value is given on a same day basis while finality and irrevocability of the payment is guaranteed.

SWIFT is a cooperative owned by member banks in 199 countries worldwide. It has a track record of supplying secure, standardized financial messages securely since 1974. In Kenya 34 out of 43 commercial banks are members of SWIFT. The Central bank of Kenya is encouraging Banks to join SWIFT because of its robust secure network. Where the banks consider membership costly they are encouraged to consider joining it via a bureau. Currently 11 commercial banks in Kenya have joined SWIFT via the Fin-x Bureau in South Africa and 32 have joined the Kenya Exchange Service Bureau in Kenya.

Commercial banks in Kenya also provide other electronic banking services such as office-banking, home-banking, internet-banking or tele-banking etc. These are electronic services where the customers can instantly access their account balance and other information on an on-line basis using a telephone and a personal computer.

These transfer systems offer numerous advantages like authority, privacy, good acceptability, low transaction cost, convenience and good anonymity. But, this system of payment also has many limitations like poor mobility, poor transaction efficiency and high financial risk, as people are solely responsible for the loss.

The large scale users are government departments, NGOs, farm produce marketing agencies, corporations, and cooperatives who use the formal banking system for transfers of large amounts to meet payments of salaries and transfer operational funds, for instance. The small and medium scale users comprise individuals and entrepreneurs. They transfer funds to purchase items, pay school and examination fees, or to support family or the construction or maintenance of a home.

Recommendation

The research is not conclusive due to time constraints faced in investigating the various providers of Electronic Money Transfer services. We have concentrated on the formal providers of Electronic Money Transfer services. It should be noted that there are informal providers of money transfer services (courier or bus companies). Some of the EMT systems are very wide and there is need to study them individually in depth.

Due to technological advances and innovation there is need for further research on the impact of these on the future of EMT systems.

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