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The Effect of Mobile Money Transfer on Working Capital Management: A Case of Debt Collection at NAWASSCO.

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Abstract
Adequate working capital is essential for smooth running of an enterprise. The way organizations manage their accounts receivable has significant implications on their financial health. Developments in information technology have permitted alternative functionalities for mobile handsets beyond the original communication function. Mobile money transfer is a key driver in the innovative landscape of management of accounts receivables. Despite the simplicity of this innovation, empirical evidence detailing the impact of MMT on management of accounts receivables and specifically debts is lacking. This is a case study that targeted household clients of NAWASSCO. The study involved analyzing the effect of M-pesa on debtor collection period for a period of four years (July 2007–December 2011) with the following objectives; to determine the debtor collection period for the periods of the study, to ascertain the trend of debtor collection period at NAWASSCO, and to assess the relationship between M-pesa payment ratio and debtor collection period at NAWASSCO. Both descriptive and inferential statistics have been used in data analysis. Under descriptive statistics the means and standard deviation for the period were analyzed. Under inferential statistics correlation analysis was used. The findings of the study were as follows: There was a reduction in Debtor collection period from 53.6 days during pre M-pesa period to 27.7 days during the post M-pesa period. There is an upward trend in the usage of M-pesa in settlement of water bills throughout the study period. The correlation coefficient was (r= 0.008) meaning that there is a random, nonlinear relationship between the two variables .i.e. use of MMT for bill payment and Debt collection at NAWASSCO. Other moderating variables were MMT Regulation by government, Service Providers Efficiency, Accounts payables and inventory as other entities of working capital. Coefficient of determination (R^2) of 0.56 (56%) implied that M-pesa usage for bill payment had 56% influence on reduced debtor collection period at NAWASSCO. The remaining 44% is attributed to other components of working capital i.e. inventory and accounts payable. The coefficient of determination, r^2, is useful because it gives the proportion of the variance (fluctuation) of one variable that is predictable from the other variable. M-pesa payment ratio was the independent variable while debtor collection was dependent variable.
Keywords: Mobile Money Transfer (MMT), M-pesa, NAWASSCO, Debt collection

1. Introduction

Mobile money transfer is the process of using mobile telephone applications to undertake actual banking activities. This involves depositing, withdrawing, transfer and saving money in one's account. This type of service allows users to purchase and sell goods and services in different kinds of business settings. In addition, users are able to settle their bills through their mobile phones. The main idea behind the emergence of using information technology to facilitate money transfers via mobile phones was to create financial awareness to the poorer populations in developing countries, who either had no access to formal banks or could not afford to have a bank account due to expensive rates levied by the banks (Mwangi & Njuguna 2009).

The main objective of financial management is to maximize shareholders wealth. The cash flows generated from firm's operations are dependent on sales volume and impacts on the firm's profitability. Goods and services can be sold on cash or credit terms. Since there is a time lag between sales and realization of sales proceeds there is a need for sufficient working capital management to deal with any problem that may arise due to lack of immediate realization of cash against goods sold on credit. The operating cycle length differs from firm to firm. If a firm has

lengthy production process or a firm has liberal credit policy the length of operating cycle will be longer. On the other hand, if a firm does not extent credit or the firm is not a manufacturing concern i.e. where cash is converted into inventory directly, then the length of operating cycle will be reduced to a greater extent.

Bill payments via MMT have been implemented by a number of deployments in different parts of the world with a view of reducing the firm's operation cycle, in Thailand's they have True Money, Pakistan's has Easy Paisa, and Ghana has MTN Mobile Money. Safaricom's M-pesa in Kenya has already partnered with several organizations to provide effective and efficient bill payment services. One of these organizations is NAWASSCO. The water company has been encouraging its customers to use M-pesa to clear the water bills since the year 2009. Besides M-pesa, other mobile money transfer services exist in Kenya, these include: Airtel's Zap (now airtel money), Yu Cash, Orange Telkom's & Equity Bank's Iko & Pesa, and Family Bank's Pesa Pap service. These mobile money transfer services appear to meet the needs of many customers in terms of safety and efficiency (Hope et al, 2011).

This study aimed at determining the debtor collection period for the periods of the study, ascertain the trend of debtor collection period at NAWASSCO and to assess the relationship that exists between M-pesa payment ratio and debtor collection period. It is estimated that one in five water bills in urban Africa remain unpaid (AICD 2010). In view of such a trend there is a danger that African countries may not be able to achieve the millennium development goals. High transaction costs incurred by customers by way of transport to payment points and burdensome paper-based billing processes from water service providers has become an obstacle to efficient and secure revenue collection. Efficient revenue collection is seen as one of several measures required to improve the financial position of urban water service providers that can enable them render services to their stakeholders (Water Services Board, 2011). With the advent of mobile money transfers as a mode of paying bills, most organizations have welcomed and embraced this new innovation water boards not being exceptional. This study was seeking to analyze the effect of mobile money transfers on debt collection a case of M-pesa at NAWASSCO.
For smooth running of an enterprise, adequate working capital is very essential and can be achieved through efficient collection of debt/accounts receivable. Efficient management of working capital can help the firm assure itself long-term success and achieve the overall goal of maximization of the shareholders' wealth. The way organizations manage their accounts receivable has significant implications on their financial health. This creates an imperative in organizations to ensure that the management of receivables is both efficient and effective. Effective management of accounts receivable presents important opportunities for organizations to achieve financial advantage thereby enabling them invest in the available positive NPV projects, and improved cash management processes which enables them achieve a substantial reduction in debt collection period and increase amount of debt collected thereof. Developments in technology have permitted alternative functionalities for mobile handsets beyond the original function of communication. Among these functions is Mobile Money Transfer. Mobile money is a key driver in the innovative landscape of management of accounts receivables since it has created a platform for utility bills payment. The main objective of the study was to analyze the effect of mobile money transfer on working capital management case of debt collection at NAWASSCO. However it intended to achieve the following specific objectives; to determine the effect of debtor collection period on working capital at NAWASSCO,
To ascertain the effect of the trend of debtor collection period on working capital at NAWASSCO and to assess the relationship that exists between M-pesa payment ratio and debtor collection period and their effects on working capital at NAWASSCO.
The study begged to answer the following questions: is there a difference between debtor collection period in pre and post M-pesa period at NAWASSCO, what is the effect of M-pesa usage for water bills payment on debtor collection period at NAWASSCO and is there any significant relationship between M-pesa payment ratio is and debtor collection period at NAWASSCO.

2. 0 Management of Accounts Receivables

Accounts receivable is a component of working capital. Methods for managing accounts receivable differ as widely as business types; however, the processes should achieve three objectives: Create a daily record of sales and receipts, generate invoices and statements on a recurring basis, and track current and overdue balances on customer accounts.

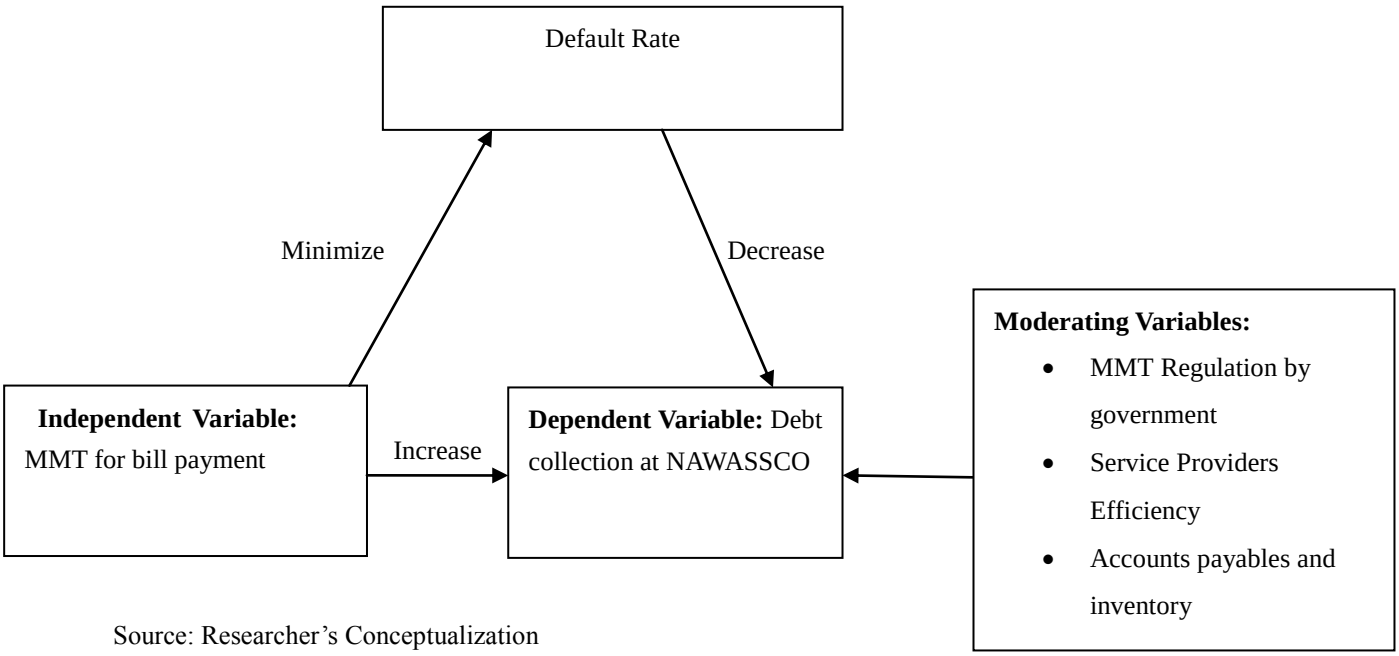
Setting up accounts receivable process encompasses the following significant issues:
Credit policies: Establishing a credit policy and sticking to it. Defining the conditions under which the firm will extend credit, how much credit the firm will give, and to which clients. Choice of preferred methods of payment, criteria of determination of credit worthiness for new customers, requirements for deposits, and interest charges on late accounts.

Billing policies: The frequency with which a firm bills dictates the frequency with which it will receive payments. Policies to be formulated include choosing invoicing intervals, clearly communicating billing terms to customers, and considering offering discounts for early paying customers.
Monthly statements: Statements serve more than one purpose. If sent early, they are a proactive step. They remind customers, and they serve as documentation in instances when an account falls due for collection.
Aging accounts: Regular review of customers' accounts, categorizing them as either current, or past due 30, 60, or 90 days or more. A firm should have policies in place to handle servicing of aging accounts (Bounie et al, 2009).

2.1 Status of Mobile Payments in Kenya

In Kenya, the seven WSPs offering mobile payments provide piped services to over 60 percent of the country's urban population with piped water access. Safaricom's M-PESA is the mobile payment service most available in all WSPs. In Kiamumbi, Nairobi, 76 percent of bills are paid by mobile money, which is by far the highest uptake of all WSPs reviewed. In comparison, only 8 percent of water users in Kisumu pay bills with M-PESA, 4 percent in Nairobi, and 1 percent in Nanyuki. Mobile payments are also offered by utilities in Nakuru, Eldoret and Nzoia. Of all the WSPs accepting mobile payments, Nairobi City WSC drives the highest transaction volumes with more than USD 120,000 worth of water bills transferred via M-PESA every month. Airtel Money has recently launched a free mobile water payment service for Nairobi City WSC's customers – though it remains too early to assess the success of this free service or Safaricom's response to this competition. Further findings reveal low mobile water payments adoption ratios with only one water service provider achieving over 10 per cent uptake from its consumer base. Key barriers to adoption include delayed reconciliation of billing systems, limited customer awareness, lack of physical proof of payment, high transaction tariffs, and convenience of alternative pay points. All these barriers can be overcome as exemplified by one small and privately-run scheme in Kenya where 76 per cent of customers have adopted the mobile bill payment option. Despite a compelling value proposition for a range of actors, technological, behavioral and structural constraints currently hinder greater customer uptake of mobile water payments throughout the region. Where these constraints are released mobile paying customers enjoy considerable savings in the time and money costs usually incurred when settling water bills at physical pay points. Water service providers strengthen their financial base through timelier bill payments, higher collection efficiencies and lower administrative costs. Mobile network operators are rewarded with direct revenue and customer churn reduction. Key determinants which shape the distribution of these costs and benefits include transaction tariff structure, regulatory position, and competition amongst mobile money providers. Besides M-PESA, other mobile money transfer services include Airtel's Zap (now airtel money), Yu Cash, Orange Telkom's & Equity Bank's Iko& Pesa, and Family Bank's Pesa Pap service. These mobile money transfer services appear to meet the needs of many customers in terms of safety and efficiency (Hope et al, 2011).

Conceptual Framework



Source: Researcher's Conceptualization

The conceptual framework above shows the relationship between the independent variables, moderating variables and the dependent variables. The independent variable is MMT usage for bill payment since it affects debt collection (dependent variable). This factor is influenced by the moderating variables shown above as MMT regulation by the government, MMT service provider efficiency and other components of working capital (accounts payable and inventory) which further determined whether debt collection in post M-pesa period increased or decreased as compared to debt collection in the pre M-pesa period at NAWASSCO LTD.

Research gaps

Most studies in this area have been conducted in developed countries and major cities. This may not reflect an overall success or failure given the difference in business environments particularly in Kenya where MMT is in its initial development phase and Kenya being a developing country. The study aimed at filling this information gap.

3. Data Analysis and Presentation

Data collected was coded and analyzed with the aid of Statistical Package for Social Sciences (SPSS) to facilitate addressing the research questions. This was done using quantitative statistics. The quantitative data obtained was analyzed using descriptive statistics such as frequencies, percentages and measures of central tendencies and also inferential statistics such as correlation analysis. Charts and tables were used to present the analyzed data.

Correlation coefficient was used to establish relationship and its direction and determine the exact influence independent variable (M-pesa) had on dependent variable (debt collection). A coefficient of determination was calculated to show the degree of influence M-pesa had on debtor collection at NAWASSCO.

Debtor Collection Period indicates the average time taken to collect trade debts. In other words, a reducing period of time is an indicator of increasing efficiency. It enables the enterprise to compare the real collection period with the granted/theoretical credit period (Peavler, 2010). Debtor Collection Period indicates the average time taken to collect trade debts i.e. a reducing period of time is an indicator of increasing efficiency. It enables the enterprise to compare the real collection period with the granted or theoretical credit period. This was calculated using the formulae; Debtor Collection Period = (Average Debtors / Credit Sales) x 365. This was calculated yearly during the two sub periods of the study.

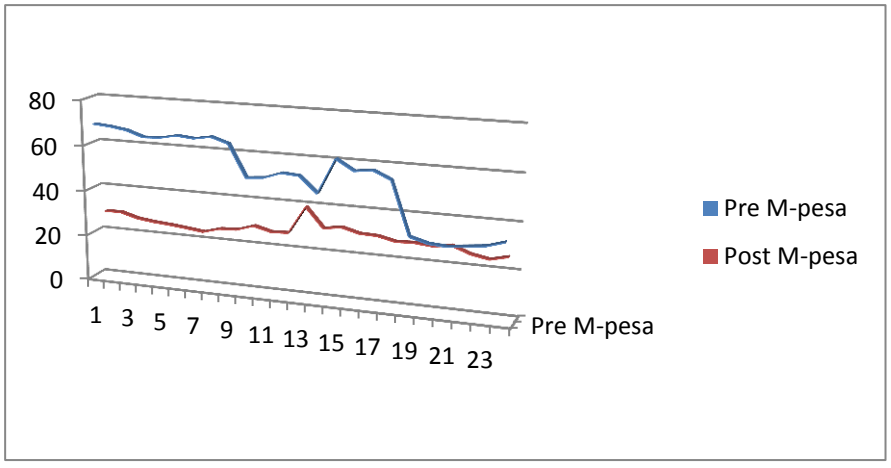
4.0 Research Findings

Table 1: Comparison between Debtor Collection Period in Pre and Post M-pesa period at NAWASSCO

Month	Debtor Collection in Pre M-pesa (DAYS)	Debtor Collection in Post M-pesa (DAYS)
1	69.37071412	28.84117336
2	68.74516243	28.79722369
3	67.64134481	26.76964817
4	65.19136408	25.85826737
5	65.4799839	25.30045694
6	66.99446221	24.52180239
7	66.27121267	23.63620953
8	67.57310544	25.75586282
9	65.22806567	26.1191546
10	51.31999593	28.5450456
11	51.97178478	26.64571733
12	54.62821735	26.95348081
13	54.0794511	39.07432761
14	47.23826715	30.42853427
15	62.44081532	31.68229877
16	57.95061608	29.67517157
17	58.92749758	29.4246248
18	55.57439746	27.72748085
19	32.69908116	28.06071973
20	30.64146295	27.36080406
21	30.11760832	28.47622918
22	31.03467693	25.61738326
23	31.90660752	24.17623147
24	34.31493128	26.09405823

The table above lists the debtor collection period in days. From these figures, it is clear that debtor collection period in post M-pesa period has decreased as compared to debtor collection in pre M-pesa period.

Fig 1: Line Graph showing Comparing Debtor Collection Period between the Pre and Post M-pesa



5. Recommendations

Usage analysis of M-pesa in bills settlement showed an upward trend throughout the study period. This means that bill payment through M-pesa increased over the entire period. The research hence forth recommends that more awareness through intensive marketing campaigns could make Mobile Money Transfer more popular and thus drive the usage higher.

Stringent credit policy should be adopted to reduce debtor collection period. For example reduction of 14 day grace period could lower debtor collection period at NAWASSCO.

The researcher recommends that other mobile money transfer systems apart from M-pesa should be made available for clients at NAWASSCO with a view of tapping the payments from non-Safaricom subscribers.

6. Conclusion and recommendations for further research

The study sought to determine the effect of mobile money transfer on working capital management at NAWASSCO. From the results of the line graphs, M-pesa payment usage was upward over the entire study period. Descriptive statistics results showed there was sufficient evidence to conclude that debtor collection period in the pre M-pesa period is greater than debtor collection period in the post M-pesa period. In general, the results reveal that the introduction of M-pesa at NAWASSCO has reduced debtor collection period of water bills; M-pesa has reduced debtor collection by 56%. This is beyond 50% mark after only two years in use.

Mobile water payment systems present a promising tool that can meet the needs of water users, WSPs and MNOs. This revenue collection mechanism can also assist WSPs in their efforts to achieve their twin goals of financial and operational sustainability. At the same time, MNOs can further their commercial objectives by driving revenues and retaining subscribers through proper management of debt and reduced water meter disconnections respectively. Work is now needed to improve the uptake of M-pesa water bill payment at NAWASSCO.

Suggested future works include developing a software package to facilitate the WOZIP data input and conversion processes, exploring the use of WOZIP in the other forms of labour-intensive manufacturing (e.g. flow-line production and work-cell assembly), and attaching a costing framework to determine the specific cost of each resource or to help minimise the aggregate cost of production.

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