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CASH MANAGEMENT TECHNIQUES AND THE RELATIONSHIP BETWEEN CASH MANAGEMENT AND PROFITABILITY OF MICROFINANCE INSTITUTIONS

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Abstract
Cash Management techniques are reviewed to enlighten on proper cash management in Microfinance Institutions (MFIs) and the relationship between cash management and profitability is measured with the use of correlation analysis to exist positively. The examination of cash management techniques applicable in MFIs is significant, without (sufficient) cash, an institution would struggle in surviving and eventually collapse. A 10 % proponents doubted cash to be the only influencer of profitability but other factors such as; management and staff quality, effective procurement and supply chain processes, acceptable banking ethics by staff, the richness of the customer base, MFI policies, procedures and license, the period of existence and the size (branch network) of the MFI could help improve profitability.

Keywords: Cash, Liquidity, Cash Management, Cash budgeting and Forecasting, Profitability

INTRODUCTION

In the late 1980s, authors made a great contribution in the concept of cash management explaining that cash management involve three steps;1)Determine the appropriate target cash balance, 2) Collecting and disbursing cash efficiently 3)Investing the excess cash in marketable securities. Determining the appropriate cash target balance involves an assessment of trade-off between the benefits and the cost of liquidity. The benefit of holding cash is the convenience it gives the organisation. An organisation should increase its holding of cash until its present value for doing so is zero. The incremental liquid value of cash should decline as more of it is held.

After the optimal amount of liquidity is determined, the firm must establish procedures so that collections and disbursement of cash are done efficiently as possible. This usually reduces the dictum that, 'collect cash early and pay cash late'. Firms should reinvest provisionally any idle cash in short term marketable securities. These securities can be bought and sold in the money market. Money market securities have very little default rate, low risk and are highly marketable. Microfinance Institutions are just specialized firms. Every financial institution is required to meet up with their cash desirability by keeping enough cash whenever there is any possibility by the institution. Cash is any medium of exchange which is immediately negotiable. It must be free of restriction for any business purpose. Cash have to meet the prime requirement of acceptability and availability for instant use and use in purchasing and payment of debts. Acceptability to a bank or any financial institution for deposits isa common phrase applied to cash items. To attain a sound management and cautious cash position, all financial institutions must have a certain proportion of active elements, assets conserve in excellent quality and securities which can easily be transformed into cash without great losses. Cash is essential for all financial institutions to compensate for expected and unexpected balance sheet fluctuation and to provide fund for growth. The recent cash crisis faced by financial institutions which has led to the closure of some microfinance institutions (MFIs) in Cameroon such as Access Finance, COMECI, COFINEST and FIFFA has brought to the forefront the need to review existing cash management techniques, policies, practices and procedures for Microfinance Institutions (MFIs) in Cameroon and the world. Cash crisis in MFIs can be justified by a mismanagement of cash; cash management is not limited to receipt and disbursements of cash and cash related instruments and securities. Generally cash management is to ensure the company's liquidity. Proper cash management is a necessary condition for resistance or for business growth. Business growth is measured by the profitability or the profit the firm generates. So in tough economic times where operating funds become increasingly limited interest rates and other cash pricing factors and hence profit are subject to frequent changes. With this background, this work review Cash Management Techniques and the Relationship between Cash Management and Profitability of Microfinance Institutions.

Problem Statement

Nso (2016) pointed that Finance is considered as the lifeblood of any business and similar to; the livewire that supply electricity in a house and it is similar to that fuel that needs a car to keep moving. In traditional Banking, Finance and Accounting books it`s common sense that high profit does not mean high cash and vice versa. In simple and plain language cash is not profit no matter the degree of relationship that exists between them, as such it is imperative to

examine the techniques of cash management to ensure the survival of any business. The key to the survival of any microfinance is cash flow, because if cash does not flow into the institution at appropriate timing to maintain a level of working capital, then the company will struggle to survive irrespectively of the level of profit. Institutions with insufficient cash cannot pay bills on time. The cash position of any business is a reflection of its cash management techniques. If cash flow is poorly managed, the institution might likely go bankrupt. Financial institutions that want to grow must first ensure that, they have adequate cash to facilitate expansion strategy and should have suitable systems in place to monitor and control cash flow such that lending operations should not be affected and a further pressure on profitability. Financial institutions used varying strategies to maximise profit, and proper cash management can be used as a tool to increase the profitability of MFIs since a relationship excess between cash and profitability.

Objective of the study

This work is focused on two main objectives;

1. To examine cash management techniques applicable by Microfinance Institutions
2. To assess the relationship between cash management and profitability

LITERATURE REVIEW

Cash Management Techniques

Cash Budgeting and Forecasting

Cash forecasting and budgeting is very important because it enables the firm to maintain short term liquidity. After preparing cash budgets and matching the actual and the budgeted cash balances, any excess available cash could be reinvested productively into short term marketable securities or short term investments. This enables the firm to earn interest income out of the excess cash which otherwise would have remained idle. And idle cash is wasteful if not costly to the institution. If there is a shortage in cash during any particular month, the firm can arrange for short term funds in advance and thus maintain short term liquidity always. Anticipating short term cash needs make the institution not rush to expensive borrowings and costly acquisitions of deposits from depositors who are always willing and eager to profit from high interest rate on deposits.

Cash Collection

In managing cash efficiently, the cash inflow process should be accelerated through systematic planning and refined techniques. The two main approaches would be to; encourage customers

to pay quickly as possible and to convert the payment made by customers into cash as early as possible.

Encourage Prompt Payment by Customers

In conventional firms this is be done by offering them cash discounts for early payments. Most of the customers may get attracted to this discount offer; as otherwise, the opportunity cost of not taking the discount would work out more than the benefits of holding the funds with them. In specialised firms such as MFIs a better incentive to pay quickly is, a promise to reduce interest rate and quick loan decision in next loan contact.

Early Conversion of Money into cash

Once the customer makes the payment by issuing a cheque, the collection can be effected by prompt encashment of the cheque. There is a lag between the time the cheque is prepared and sent by the customer and the time the funds are included in the cash reservoir of the firm. The early conversion of payment into cash as a technique to speed up collection of account receivable is done to reduce the time lag between posting of the cheque and realisation of money by the firm.An important cash management technique is to reduce the deposit float (which is the funds dispatched that is not yet in a form that can be used by the payee). If the firm adopts decentralized collections, deposit float can be reduced. The principal methods of establishing a decentralized collection network are;

Concentration Banking

This is a useful technique to accelerate the collection of account receivables by reducing the mailing time. By e-mailing, time is saved both in respect of sending the bill to the customer as well as in receipts of payment.

Lock-Box system

Under this system, the firm hires a post office lock-box at important collection centres where the customer remits payments. The local banks are authorised to open the box and pick up the cheques received from the customers. Thus there is some savings in mailing time compared to concentration banking.

Electronic Funds Transfers (EFTs)

The transfer of funds from banks to another electronically saves a lot of time and efforts. But such transfer can be used only for significant amounts because wire transfer fees are heavy to both the originating and receiving banks. But yet, it is used widely due to its advantages.

Slow Payment and Disbursement

This is another effective cash management technique that can be achieved through;

- Avoidance of early payments of non-banking operations and related expenses
- Centralized disbursement of expenses and procurement activities
- Cheque-kiting(which is a method of consciously anticipating the resulting float associated with the payment process using it to keep funds in an interest earning form for as long as possible).
- Paying from a distant bank

Quantitative Technique to Cash Management

The quantitative aspect is based on factual information available from the financial statements, the past records of the firm etc. preparation of aging schedule for debtors, ratio analysis from financial statements of customers and trend analysis will help to reveal financial strength of customer.

Qualitative Technique to Cash Management

References from other suppliers, bank references and specialist bureau would give an idea about the credit worthiness of the customer.

The Relationship between Cash Management and Profitability

This refers to how the proper management of cash brings about profitability in an organisation

Granting of Short term loans

Members or clients of MFIs are in need of finance for investments, consumption, school fees for their children, for day to day running of life and other purposes. Generally short term loans are profitable and less risky to both the institution and the borrower than long term loans. Further move because of the small amount of the loans they are easier and lighter to be repaid than long term loans.

Cash Management Models

These are a number of mathematical model developed to assist in the financial management and utilisation of company's funds to provide a maximum return (profit) to the company.

i) The Inventory Theoretical Approach

This model was developed by Professor William Baumol. The model can be used to determine the optimum amount of cash for a company to hold under conditions of uncertainty. The objective is to minimize the sum of the fixed costs of transactions and the opportunity cost of holding cash balances that yield no return the resulting effect will be that if financial cost is minimise and save, profit could go up. This model is useful in planning, budgeting and forecasting cash needs and freeing up cash from self-maturing securities

ii) Miller-Or-Model

When cash payments are uncertain, the Miller-Or-Model can be used. This model places upper and lower limits on cash balances. When the upper limit is reached, a transfer of cash to marketable securities is made. As long as the cash balance stays within the limits, no transaction cost occurs. The various factors in the model are fixed cost of securities transaction (F) which is assumed to be the same for buying and selling securities, the daily interest rate on marketable securities (I) and variance of the daily net cash flows, represented by (σ2). This model assumes that cash flows are random. The control limits in the model are (d) FCFA as an upper limit and zero FCFA at the lower limit. When the cash balance reaches the upper level, d is less, z FCFA of securities are bought, and the new balance becomes z FCFA. When the cash balance equals zero, z francs of securities are sold and the new balance again reaches z. according to this model, the optimal cash balance z is computed as follows;

$Z = \sqrt[3]{3F\sigma 2)/4I}$

The optimal value d is computed as 3z

Average cash balance (approx.) = (z + d)/3

Example: given the following:

Fixed cost of securities transaction = 5F

Variance of daily net cash flows = + 25F

Daily interest rate on securities = 0.0003 (10% per annum, that is 10%/360days = 0.0003 daily)

Optimal cash balance $= \sqrt[3]{(3x5x25)/(4x0.0003)}$ => 67.86F

Or 68F rounded up

Upper limit, d = 3z = 3 x 68F = 204F

Average cash balance = (68 + 204)/3 => 90.67F

So, when the upper limit of 204F is reached, 136F (204-68) will be purchased. When the lower limit of zero francs is reached, 68F of securities will be sold to again bring it to the optimal balance of cash calculated as 68F approximately.

iii) Orgler's Model

According to this model, the optimal cash management strategy can be determined through the use of a multiple linear programming model, it is a model that provides for integration of cash management with production and other aspects of the firm. The construction of this model comprises three sections namely; Selection of appropriate planning horizon, Selection of appropriate decision variables and the formulation of the Cash Management Strategy

The Formulation of the Cash Management Strategy

This model uses one year planning horizon with twelve monthly periods because of its simplicity. It has four basic sets of decision variables which influences cash management of a firm and which must be incorporated into the linear programming model of the firm. These are; Payment schedule, Short-term financing, Purchase and sales of marketable securities and Cash balance. The familiarity of all the above models provides the financial managers an insight into the normative framework as to how cash management should be conducted.

METHODOLOGY

The area of study is Cameroon. Cameroon has over 500 licensed MFIs. Polit and Hungler (1999) refer to the population as an aggregate or totality of all the objects, subjects or members that conform to a set of specifications. In the study, the population is the staff (both administrative and management staff) of MFIs in Cameroon. The research design adopted in this study was a case study design. The study was both qualitative and quantitative (Creswell, 2003) asserts that a mixed method design is useful to capture the best of both quantitative and qualitative approaches. Qualitative techniques helps researchers to come out with conclusions on variables that are not measured quantitatively while quantitative techniques facilitated the establishment of values attached to numerical variables. According to (William G. Cochran, 1997: 126,) a sample is a part of a population which is deliberately selected for the purpose of investigation. For this work the sample size is 30 employees of MFIs in Cameroon. This is because employees are well placed to provide relevant information on cash management techniques and the relationship between cash management and profitability. The sampling technique adopted for the study is convenient sampling. De Vos (1998:199), as well as LoBiondo-Wood and Haber (1998:253) describe a convenience sample as the use of readily accessible persons in a study. Any case, which happens to cross the researcher's path, and

meets the inclusive criteria set for the study, gets included in a convenience sample. In convenience sampling, each of the samples can be selected in the ease of access. Data was collected with the help of observations, questionnaire and a review of the MFIs annual reports, journal and other documents. The data collected was presented and analysed using tables, percentages and a correlation coefficient method was applied on the average scores of the two distinct variables to assess the relationship between cash management and profitability.

$r = \frac{\delta xy}{\delta x \delta y}$ Where; $\delta x = \sqrt{\frac{\sum x^2}{n} - (\frac{\sum x}{n})^2}$, $\delta y = \sqrt{\frac{\sum y^2}{n} - (\frac{\sum y}{n})^2}$ $\delta xy = \frac{\sum xy}{n} - (\frac{\sum x}{n})(\frac{\sum y}{n})$

Mean $x=(\frac{\sum x}{n})$ Mean $y=(\frac{\sum y}{n})$

Using the least square regression line $\frac{y}{x}$ where;

X = independent variable (Yearend Cash Balance or Position),

Y = dependent variable (Yearend profit position)

Where;δXY is the covariance of the independent variable x and dependent variable y.

δXδY is the standard deviation of x and y

r is the correlation coefficient

ANALYSIS

Cash management techniques in MFIs

Table 1: Please indicate which of the following cash management techniques are used by your MFI

Technique	Strongly agreed	Agreed	Disagree	Strongly disagree	Not sure
Speedy cash collection	20 (67%)	6(20%)	4(13%)	00	00
Use of accounts receivable data base	21(70%)	3(10%)	00	6(20%)	00
Tracking of expenses	18(60%)	9(30%)	3(10%)	00	00
Use of credit policy	18(60%)	3(10%)	00	6(20%)	3(10%)
Cash collection and disbursement	15(50%)	9(30%)	3(10%)	00	3(10%)
Maintenance of optimal cash balance	6(20%)	15(50%)	6(20%)	00	3(10%)
Use of cash projections	6(20%)	15(50%)	3(10%)	3(10%)	3(10%)
Using pre-authorised debt	9(30%)	15(50%)	3(10%)	00	3910%)
Other Please Specify	00	00	00	00	00

On the usage of cash management techniques;

1) Speedy cash collections: 67% strongly agreed, 20% agreed to the idea that speedy cash collections is use for cash management with only 13% disagreed.

2) Use of account receivable database:70% strongly agreed, 10% agreed to the idea that account receivables database could be used as a cash management with20% strongly disagreed.
3) Tracking of expenses and Credit Policy: there is a significant agreement on the use of tracking of expenses and credit policy to manage cash in MFIs with 60% of the respondents agreeing strongly in both cases.
4) Cash Collection and Disbursement: a good number of respondents strongly agreed that cash collection and disbursement could be utilised to manage cash in MFIs
5) Maintenance of optimal cash balance, cash projections and pre-authorised debt recorded varying disparity in the level of agreement by the respondents.

Relationship between Cash Management and Profitability

Table 2: Please complete the yearend Cash Position (Balance) and Profit in the table below for any 5 years of operations.

Year	X (cash) (in 100,000	Y (profit) (in 100,000)	x^2	y^2	XY
2013	256	158	65536	24964	40488
2014	308	197	94864	38809	60676
2015	561	231	314721	53361	129591
2016	473	205	223729	42025	96965
2017	662	246	438244	60516	162852
Total	2260	1037	1137094	219675	490532

$r = \frac{\delta xy}{\delta x \delta y}$ Where; $\delta x = \sqrt{\frac{\sum x^2}{n} - (\frac{\sum x}{n})^2}$, $\delta y = \sqrt{\frac{\sum y^2}{n} - (\frac{\sum y}{n})^2}$ $\delta xy = \frac{\sum xy}{n} - (\frac{\sum x}{n})(\frac{\sum y}{n})$

Mean $x=(\frac{\sum x}{n})$ Mean $y=(\frac{\sum y}{n})$

$\delta xy = 4316.4$

$\delta x = 152.04$

$\delta y = 29.6$

$r = \frac{4316.4}{4506.4} = {}_{+}0.957$

With the help of correlation analysis, it was revealed that there is positive relationship between cash management and profitability as shown by r = + 0.096. This means that with proper cash management techniques in place, the profitability of MFIs will in turn increase. And if cash if poorly managed, profitability with be poor or low. This is because cash balances have an effect on profitability for example, if cash is well planned, budgeted and collected on time, financial

costs could be saved and the excess cash can be used to extend short term and small amount of loans that are profitable and the net effect will be that profitability will increase.

Table 3: Does cash management have an effect on the profitability of MFI?

Responses	Frequency	Percentage (%)
Yes	27	90
No	0	0
Not sure	3	10
Total	**30**	**100**

From Table 3 above, overwhelming majority of the respondents affirm favourably that cash management have an effect on the profitability of MFI, thus re-confirming the existence of a relationship between cash management and profitability with a 90% favourable respondent rate of the population sample.

FINDINGS AND DISCUSSION

Proper cash management increases liquidity and profitability position of MFIs and reduces losses. The study used a correlation analysis to re-affirm that there is a positive relationship between cash management and the level of profitability of MFIs with a correlation coefficient r score of + 0.096. This is possible because in well managed, planned and budgeted cash institutions, expensive and irregular borrowings could be avoided, idle cash minimise and the available cash is being used to extend low risk, short-term loans to qualified borrowers with sure, timely and prompt repayments history. The resulting effect will be that profitability will increase as bad and unpaid loans that are cash trapped will be unnecessarily avoided.

Despite an overwhelming majority and a favourably affirmation by 90% of the sample population that cash management have an effect on the profitability of MFI, thus re-confirming the existence of a relationship between cash management and profitability, there exist a 10% of doubters whether or not proper cash management can affect profitability. This could be true since cash is not the only institutional factor that can affect profitability. Like Nso (2016) pointed that Finance is considered as the lifeblood of any business and similar to; the livewire that supply electricity in a house and it is similar to that fuel that needs a car to keep moving. It could be that other non-cash factors such as management and staff quality, effective procurement and supply chain, acceptable banking ethics by staff, good governance, the quality and richness of the customer base could be the; car key, engine, gearbox, documents, car quality, life span and size, that need to support the car to keep moving. In essence cash alone could not be the only influencer of profitability but other factors such as; management and staff quality, effective

procurement and supply chain processes, acceptable banking ethics by staff, quality and the richness of the customer base, MFI policies, procedures and license, the period of existence and the size (branch network) of the MFI. On the other it is true that, without (sufficient) cash, an institution would struggle in surviving and eventually collapse, thus the examination of cash management techniques applicable in MFIs is significant and imperative to help enlighten on proper cash management to impact profitability positively. In a like manner proper cash management improves organisational coordination, save cost, reduce losses and stress to management and staff.

Ebben and Johnson (2011) investigated the relationship between cash conversion cycle and levels of liquidity, invested capital and performance in small firms over time. In a sample of eight hundred and seventy nine small U.S. manufacturing firms and eight hundred and thirty-three small U.S. retail firms each conversion cycle was found to be significantly related to all three of these aspects. Firms with more efficient cash conversion cycle where more liquid, required less debts and equity financing, and had higher returns. The result also indicated that small firm owners /managers may be reactive in managing cash conversion cycle. The study highlighted the significance of cash conversion cycle as a proactive management tool for small firm owners.

Bhutto, Abbas, Rehman and Shah, (2011) conducted an investigation on the relationship between cash conversion cycle with firm size, working capital approaches and firm's profitability in Pakistan. Secondary data were collected from financial statements of 157 non-financial companies comprising on 12 industrial groups listed on the Karachi stock exchange, Pakistan for the year 2009. The firm with negative equity and profitability were excluded from the study. Data analysis was carried out using Pearson correlation and analyses of variance (ANOVA). The result revealed that length of cash conversion cycle has a negative relationship with sales revenue; return on equity (ROE) and financial policies of the firms are financial policies of the firm and has a positive relationship with total assets. Cash management is usually measured by cash conversion cycle (CCC) calculated by the number of days between actual cash expenditures on purchase of raw materials and actual cash receipts from the sale of products or services (Eljelly, 2004).

Eljelly (2004) carried out an empirical investigation on the relationship between profitability and liquidity on a sample of joint stock companies in Saudi Arabia. Liquidity was measured by current ratio and cash gap (cash conversion cycle). Secondary data where obtained from the annual accounts of the selected companies. Using correlation and regression analysis, the study found significant negative relationship between the firm's profitability and liquidity level, as measured by current ratio. This relationship was more evident in firms with

high current ratios and longer cash conversion cycles. At the industrial level, however the study found that the cash conversion cycle or the cash gap was of more importance as a measure of liquidity than current ratio that affects profitability. The size variable was also found to have significant effect on profitability at the industrial level.

CONCLUSION

Proper cash management improves liquidity and profitability position of MFIs and reduces losses. The study used a correlation analysis to re-affirm that there is a positive relationship between cash management and the level of profitability of MFIs with a correlation coefficient r score of + 0.096. However cash alone could not be the only influencer of profitability but other factors such as; management and staff quality, effective procurement and supply chain processes, acceptable banking ethics by staff, the quality, the richness of the customer base, MFI policies, procedures and license, the period of existence and the size (branch network) of the MFI. On the other it is true that, without (sufficient) cash, an institution would struggle in surviving and eventually collapse, thus the examination of cash management techniques applicable in MFIs is significant and imperative to help enlighten on proper cash management to impact profitability positively. Proper cash management improves organisational coordination, save cost and reduce losses and stress to management and staff. Proper cash management should be an organisational culture and goal centered strategy.

LIMITATIONS OF THE STUDY

In this study, the respondents are not a representation of all the parts of Cameroon. If the respondents were from all the 10 provinces in Cameroon, the yearend cash and profit balances might have been different from those obtained. The reason for this is that in some rural areas savings are generally low and low profit too while in some rural areas savings are generally higher hence higher cash balances but because of lack of business initiatives, loan amounts are lower and hence profit. In the urban areas where most of the respondents are based, the cash balances and profit and totally different from those of the rural areas. This is evident in the large, wealthy and numerous MFIs spreading in the urban areas where economics and business activities are favourable.

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APPENDIX I

QUESTIONNAIRE

Dear Respondent,

The following questions are to help the researcher with answers on the topic: **"Cash Management Techniques and the Relationship between Cash Management and Profitability of Microfinance Institutions"** Please your kind responses are appreciated.

SECTION 1: Cash Management Techniques

A) Please indicate which of the following cash management techniques are used by your MFI?

Technique	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**	**Not sure**
Speedy cash collection					
Prompt payment					
Conversion of payments into cash					
Wire transfer					
Cash collection and disbursement					
Maintenance of optimal cash balance					
Use of cash projections					
Using accounts receivables					
Other (please specify)					

SECTION 2: Relationship between Cash Management and Profitability

B) Please complete the yearend Cash Position (Balance) and Profit in the table below for any 5 years of operations.

Year of Operations	Year-end Cash Balance (in Million)	Year-end Profit (in Million)
2013		
2014		
2015		
2016		
2017		

C) Does cash management have an effect on the profitability of MFI?

a) YES ☐ b) NO ☐ c) I don't know / Not Sure ☐

D) Based on your experience, what could be done to improve cash management in MFI?

.....

.....

E) State the effect of proper cash management techniques on the survival of MFIs

.....

.....

F) Based on your experience, what could be done to improve the profitability of MFIs?

.....

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Thank you