SSRG International Journal of Economics and Management Studies
ISSN: 2393 – 9125 / https://doi.org/10.14445/23939125/IJEMS-V8I8P111

Volume 8 Issue 8, 62-73, Aug, 2021

Original article

The Influence of Internal Credit Risk Management Tools on the Performance of Cameroonian Microfinance Institutions

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Received Date: 16 July 2021
Revised Date: 17 August 2021
Accepted Date: 28 August 2021

Abstract *- This work was designed to analyse the impact of internal credit risk management tools on the performance of microfinance institutions in Cameroon. To achieve this objective, a binary logistic regression was applied to a sample of 75 institutions. The results reveal that the real collateral received from clients prior to the granting of credit impacts social performance when measured by the number of active borrowers. In addition, consensual scheduling of repayments and consideration of borrower debt levels also affect social performance when measured by the priority given to women. Collateral, the use of loan officers and the frequency of repayments affect financial performance when measured by the economic rate of return. However, group lending, the overall effective rate applied to microcredits, as well as prior savings and the provision of non-financial services do not affect either financial or social performance of institutions.*

Keywords *- Internal credit risk management, Financial performance, Social performance*

I. INTRODUCTION

The first microcredit summit held in Washington in 1997 aimed to publicize the effectiveness of this tool in the fight against poverty and its appearance was considered a "financial revolution" and even a historic turning point for humanity (Guérin, 2015). The emergence and development of the microfinance sector in recent years and the hope that this sector has generated led the United Nations to declare 2005 the "Year of Microcredit". The Nobel Peace Prize was awarded to Muhammad Yunus, founder of the Grameen Bank, following the implementation of microcredit in 2006. However, the effects of microfinance practices on populations are increasingly controversial (Guérin, 2015). In contrast to the traditional financial system, the objective of most microfinance institutions (MFIs) is to achieve the best possible performance by reconciling social performance (SP), which aims to serve the categories of populations excluded from traditional systems, and financial performance (FP), which aims to ensure sustainable profitability (Messomo, 2017).

However, Cameroonian MFIs remain precarious and their sustainable development still raises questions (Messomo, 2017). Indeed, according to the Ministry of Finance (2017), the weighted outstanding debts in Cameroon were around 106.40 billion CFA francs at the end of 2017. These statistics show that overdue loans represent about 23 % of the credit portfolio granted. This portfolio in an MFI sometimes constitutes more than 70 % of assets. This explains the particular attention that these institutions should pay to credit risk management (Nzongang et al., 2011). Faced with various risks, MFIs try to reduce the probability of losses through risk management. Knowing that the most important of these risks being linked to the granting of loans, the main activities of these entities, it seems appropriate to analyze the effects of risk management practices on the performance of these institutions.

To the best of our knowledge, few research studies have focused on internal and external credit risk management tools on the financial and social performance of MFIs in Cameroon. Tuedem et al (2016) highlighted the mechanisms of ex ante credit risk management, which focuses on only one dimension of opportunism, adverse selection on so-called overall performance. Their research not only fails to assess the influence of ex-post credit risk management tools, the preferred field of moral hazard in credit, but also to analyse the influence of management tools on specific types of performance. Messomo (2017) seeks to determine determine the tools that explain the performance of MFIs in Cameroon, but this was limited to the types of activities financed and microcredits granted.

The present research questions the contribution of credit risk management tools on the improvement of the performance of MFIs in Cameroon. It is organized in three sections. After this introduction, the first section deals with the literature review. The second section deals with the research methodology and the third with the presentation of the results.

II. LITERATURE REVIEW

In the microfinance field, where risk management is considered as a lever for FP and SP, the MFI must, before committing to a loan, make the best use of the tools at its disposal in order to reduce the problems of uncertainty and information asymmetry, which are very difficult to manage in the granting of small loans. The granting of such loans brings out the agency relationship, where the lender (principal) makes funds available to the beneficiaries (agents), based on their contractually defined repayment commitment. This contract is likely to generate conflicts that give rise to agency costs related to monitoring and incentive expenses, obligation costs and residual loss. At the root of these opportunistic behaviours is the information asymmetry characterized by an exchange in which some participants have information that others do not. This information gap is exacerbated in the microfinance sector, which is characterized by the opacity of client activities. Moreover, MFIs are supposed to support people in situations of economic and social insecurity (Dardour et al., 2015). Therefore, the social contract theory developed by Macneil (1978, 1980), which is based on the idea that not everything in interpersonal and inter-organizational relations can be anticipated and formalized, helps to explain their functioning.

Internal credit risk management is the set of initiatives deliberately taken and implemented within the institution to avoid the occurrence of this risk and minimise its impact should it occur. This type of management is defined as opposed to external management, characterized by the influence of external entities on the operation of institutions. In the microfinance sector, internal credit risk management (ICRM) tools are methodological innovations that promote the FP of MFIs through the reduction of transaction costs and the increase of repayment rates of microcredits granted Messomo (2017). These are mainly group lending which allows MFIs to reduce transaction costs and increase turnover and consequently operational self-sufficiency and economic profitability (Messomo, 2017). The group lending contract is thus one of the devices that allow MFIs to minimize the risks of anti-selection and moral hazard in the credit relationship (Stiglitz, 1990). They have been used to secure contracts by MFIs and avoid financial exclusion. However, the phenomenon of anti-selection is not theoretically excluded. If strict validation and strong deterrence rules are not implemented by the institution, individuals may form a coalition (the number of members in a group has an effect on the lender's performance because the probability of collusion increases as the number of members decreases) knowing in advance that they will not repay (Lanha, 2011). Thus, Montalieu (2007) finds this form of financing rather disastrous for financial performance as it produces high costs when there is collusion and heterogeneity among members.

Adair et al (2011) showed in a sample of 49 MFIs in 9 MENA countries that group lending negatively affects FP as measured by financial self-sufficiency (FSS) and return on assets (ROA). They argue that group lending reduces the average loan amount per borrower to meet the needs of group members, which imposes additional administrative burdens on MFIs and negatively affects FP. Beyond the financial innovation of the microfinance sector, MFIs implement in-house measures borrowed from the classic system but adapted to their specificity (interest rate practice, repayment schedule, provision of non-financial services, social guarantees, study of the level of indebtedness of potential beneficiaries) to reduce credit risk.

Analysis of the evolution of microcredit over time shows the desire of its promoters to integrate the poor into the circuits of this financing and to combat usurious practices (Lelart, 2005) cited by Messomo (2017). However, MFIs legitimately claim to have a financial performance and all maneuvers are put in place to show good financial results, which would risk distancing the institution from the poor (its purpose) by making an overly rigorous selection of clients (Laila, 2016). As for the risk management strategy based on guarantees, these are supposed to reduce the institution's loss in case of risk realization. Boubacar (2006), moreover, believes that a positive relationship can be expected between real guarantees and default. These guarantees could allow the lender to cope with an excess of credit demand and also constitute a means of selecting the best risks (Stiglitz and Weiss, 1981), which does not necessarily guarantee financial inclusion. Indeed, some individuals, even when willing to bear the rather high interest rates, are more often than not forced to abandon the process because of the high collateral requirements (Avom et al., 2013). In relation to the interest rates charged on loans, the institutionalist approach requires them to be high enough to ensure financial autonomy (De Briey, 2005). This practice is justified by the costs associated with small amounts of credit that are also considered high (Acclassato, 2008). However, the high interest rate level reduces the profit of micro-entrepreneurs, depleting their capital and ultimately weakening their business (Acclassato, 2008). It also reduces the possibility of access to credit for micro-projects whose break-even point is below the interest rate charged, thus affecting the number of beneficiaries and limiting the scope of credit granted. It is thus clear that a consensus is far from being reached on the relationship between the effects of internal credit risk management initiatives and the performance of MFIs.

In Cameroon, the majority of MFIs, whether cooperatives or limited companies, have adopted a commercial approach in the provision of services to their clients, which has led to the exclusion of the poor and microenterprises from micro-financial services, even though they constitute the primary reservoir of clients and SP for MFIs (Djoufouet et Nzongang, 2020). Referring to the theoretical and practical discrepancies in the effects of internal credit risk management mechanisms on the target population of microfinance and on the profitability of the institutions themselves, two following hypotheses are formulated:

H1: Internal credit risk management tools influence the financial performance of microfinance institutions in Cameroon.

H2: Internal credit risk management tools influence the social performance of microfinance institutions in Cameroon.

Each of the two hypotheses is divided into three sub-hypotheses, respectively from the financial performance and social performance angles.

III. METHODOLOGY AND MEASUREMENT OF VARIABLES

A. Data and Sample

To achieve the objective of this paper, data was collected by questionnaire from 75 MFIs from three Cameroonian regions (Centre, Littoral and West) were selected. These regions account for 58 % of Cameroonian MFIs (MINFI, 2018). A flat sorting carried out for the descriptive analysis of this sample shows that the majority of establishments surveyed are in the second (54.7 %) and first (44) categories. With 70 % of the MFIs being more than 10 years old, according to the Micro Banking Bulletin (2008), they are considered mature (age exceeding 8 years). The managers have thus acquired enough routine to decide on the determinants for granting credit to their clients, which determinants constitute a special means for credit risk management. The managerial profile of the managers of these institutions (82.4 %) is a proof of their mastery of the often considered esoteric concepts of finance used in the questionnaire addressed to them, which certainly increases the reliability of the information.

B. Measurement of Variables

a) Internal Credit Risk Management Variables

One of the most important innovations in the microfinance sector is the practice of group lending, which substitutes mutual supervision for physical and/or financial guarantees. The role of these guarantees is to cushion the adverse effect of default risk on the lender's financial resources by allowing the lender to sell the collateral (Messomo, 2017). The group lending strategy is said to be a double win since, by allowing the poor to access credit, it prevents MFIs from being handicapped by poor repayment rates (Honlonkou et al., 2006). The use and decision-making power of loan officers is a key feature of microfinance and determines the level of decentralization of the latter (Tuedem et al., 2016).

The usual measures adapted to the microfinance sector for credit risk management include prior studies of over indebtedness characterized by the holding of several loans in parallel. The interest rate applied to microcredit, which integrates the cost of the resource, the institution's margin and the risk premium (Nar Diop, 2019), is not left out. MFIs incorporate in these interest rates a margin whose value depends on the level of perceived risk. As a result of the microfinance target, credit risk can be reduced by taking collateral and personal guarantees. For Armendáriz de Aghion and Morduch (2000) some of the processes to reduce the arrears of low-income borrowers are the establishment of small regular payments (The joint setting of repayment schedules is not missing. Indeed, logic would suggest that it is the amount of the loan invested that generates the income to repay it. However, the short repayment period may imply that the capital has not taken sufficient time to generate income) and the provision of complementary non-financial services (strengthening the capacity of borrowers to develop sustainable income-generating activities). Other MFIs condition access to credit by building up compulsory/forced savings. This may be a deposit account held by the MFI or an 'intermediary' savings account maintained outside the MFI (CGAP et al., 2003). Table I presents the operationalization of internal credit risk management tools observed in MFIs.

Table 1. Operationalization of variables related to internal credit risk management in MFIs

Code	Title	Reference authors
GRP L	Group lending	Tchakoute et *al.* (2012) ; Djoutsa et *al*. (2015) ; Tuedem et *al*. (2016) ; Tchakoute et *al.* (2018) ; Asmae et *al.* (2019)
COLLAT	Commercial value of collateral (material and/or financial) in relation to the value of the credit	Tchakoute et *al.* (2012) ; Fall et *al.* (2013) ; Chi (2018).
DECI THRESHOLD	Existence of a threshold for the delegation of the credit decision	Marsal (2011) ; Tuedem et *al*. (2016).
CRE GRAN	Credit granted by delegation of the decision in relation to the total credit outstanding	Tuedem et *al.* (2016) ; Tchakoute et *al.* (2012) ; Tchakoute (2012).
OEIRL	Overall effective interest rate on loans	Parent (2009) ; Fall et *al.* (2013) ; Nar Diop (2019).

FREQ REP	Frequency with which repayments are required	Lanha (2003).
REP CAL	Jointly agreed reimbursement schedule	Lapenu et *al.* (2004) ; Lanha (2010) ; Dardour et *al.*(2012 Tchakoute (2012) ; Kouakou (2018).
PRIOR SAV	Requirement of (prior savings) from borrowers	Tchakoute et *al.* (2012) ; Mayoukou et *al.* (2015) ; Adair et *al.* (2010) ; Guérin (2015) ; Kouakou (2018).
DEBT LEVEL	Study of the credit applicant's level of indebtedness	Armendáriz de Aghion et Morduch (2000) ; CGAP (2011) ; Chi (2018).
NF SERV	Provision of non-financial services	Morduch (2000) ; Armendáriz de Aghion et Lapenu et *al.* (2005) ; Lanao et Serres (2009) ; Tchakoute et *al.* (2012) ; Tchakoute et *al.* (2012).
N LOM	Number of loan officers mobilised by the MFI	Dardour (2012) ; Chikalipah (2018) ; Tchakoute et *al.* (2018).

Source: Author from the literature

b) MFI Performance Variables

The FP of an MNE is defined as its capacity to cover all its expenses by its revenues, and to generate a margin to finance its growth and to sustain itself (Tuedem et al., 2016). It is therefore a measure of the MFI's ability to create value. This performance is measured by accounting indicators as MFIs are generally not listed on the stock exchange. The empirical literature on the determinants of profitability, performance or efficiency of financial institutions offers a range of variables measuring their profitability. The rate of Return on Assets (ROA), which is a general measure of profitability reflecting both the profit margin and the efficiency of the institution, is used in this article. Since the credit portfolio is the main asset of an MFI producing financial returns that constitute its main income, the portfolio at risk over 30 days is also retained. In addition to these two variables, turnover is used to assess the ability of an MFI to generate an impressive margin from its activities. Table II summarizes the FP variables.

Table 2 . Summary of financial performance variables in MFIs

Acronyms	Title of the variable	Reference Authors	Formula
PàR30	The portfolio at risk over 30 days	MicroRate (2003, 2014) Messomo (2017) ; Bauwin et *al.* (2019) ; Tlili (2019)	The PàR measures the quality of the portfolio. It shows the part of the credit portfolio that is contaminated by delinquencies et therefore presents a risk of not being repaid. The PàR 30= Outstanding loans with more than 30 days past due + renegotiated loans / total outstanding loans
TURN OVER	Turnover	Onomo (2014) ; Ajzen et *al.* (2014) .	All revenues (operating and non-operating) of the MFI in a given period (1 year in the context of this research)

ROA	Return on assets	MicroRate (2003) ; Tchakoute (2010); Ajzen et *al.* (2014) ; Messomo (2017) ; Fall (2018); Bauwin et *al*., (2019) ; Tlili (2019)	Net income/average asset value Return on Assets is calculated by dividing the net income (after tax and excluding any donations) by the average assets for the period It measures the MFI's ability to use its assets to generate a return

Source: Author from the literature

Social performance is defined as the effective translation of an institution's social objectives into practice, in line with recognized social values (Koloma, 2010). These objectives include serving a growing number of poor and excluded people in a sustainable manner, improving the quality and adequacy of financial services, improving the economic and social situation of clients, and ensuring social responsibility towards clients, employees and the community served. The understanding of the indicators for measuring SP is far from unanimous. The Social Performance Task Force's Universal Social Performance Management Standards and the Social Performance Indicators 4th generation tool emphasize that the two main ways of understanding the concept of SP are to look not only at outcomes, but also at the internal management processes that organizations put in place to be able to achieve their mission and social goals (Bauwin et al., 2019). This paper focuses on the customer-related aspects of SP (Table III), which follows Wardle's (2017) approach. According to this approach, the inclusive finance sector has realized after decades of growth and experimentation that in order to achieve financial inclusion and contribute to improving the lives of their clients, financial service providers should adopt a customer centric approach. Following this logic, Adair et al (2011) state that MFIs need to serve a growing number of poor people on a sustainable basis through geographical (rural) and socio-economic (women) "degree of outreach" targeting tools.

Table 3. Social performance variables

Code	Title	Authors	Formula/hypothesis
WOM BOR	Women borrowers	Adair et *al*. (2011) ; Messomo (2017) ; Fall (2018) ; Chikalipah (2018), Asmae et *al*. (2019) ; Bauwin et *al.*, (2019) ;	Percentage of women in the MFI's client portfolio (The assumption is that the more the MFI lends to women, the closer it is to the target)
CUS RA	Customers in rural areas	Lapenu et *al.* (2004) Koloma (2010) ; Asmae et *al*. (2019) ; Bauwin et *al.* (2019).	Outstanding loans allocated to the rural area / Total outstanding loans or Number of clients in rural area / Total clients of the MFI (The assumption is that the more the MFI deserts the rural area, the more it tends towards the target)
NAB	The number of active borrowers	CGAP et *al*. (2003) ; Adair et *al*. (2011) ; Tchakoute (2013) ; Messomo (2017) ; Baromètre de la microfinance (2018) ; Fall (2018) ;	Number of Borrowers at the end of the period / (Number of Borrowers at the beginning of the period + Number of New Borrowers during the period) Number of people who have obtained a loan from the MFI for which there is still a balance to pay. (The assumption is that the MFI that provides loans to a large number of borrowers plays an important role in poverty reduction). If NAB > 30000, strong outreach. If 10000 ≤ NAB ≤ 30000, medium outreach. If NAB < 10000, low outreach (Tchakoute, 2013).

Source: Author from the literature

C. Model

Since each of the dependent variables in this research is qualitative (binary), a binary logistic regression model was used. This regression assumes that the evolution of the observed variable is explained by a set of explanatory variables and allows for an analysis of the extent to which these variables contribute to the formation of the variable of interest. The functional form of this model is as follows.

Logit (Performance) = f (tools for internal credit risk management tools), i.e. $Y_i = \alpha_i + X_i\beta_i + \varepsilon_i$

Avec

α_i: the constant term

Y_i: the matrix of variables to be explained of the MFI_i;

X_i : the matrix of explanatory variables of the MFI_i;

ε_i: the vector of random terms;

β_i: the vector of coefficients of the explanatory variables.

According to this model, the null hypothesis means that the coefficient of the term is equal to zero, proving that there is no association between the term and the response. For a given value of p, and a significance level α, if $p \leq \alpha$, one can conclude that there is a significant association between the response variable and the term. On the other hand, if $p > \alpha$, it cannot be concluded that there is a significant association between these two variables.

IV. RESULTS

A. Results of the Univariate Analysis

a) Results of the Descriptive Analysis of the Dependent Variables

A two-dimensional approach to performance was chosen and refers to FP (Table IV) and SP (Table V). Since the performance variables are categorical (variables with a limited number of distinct categories), they are described with the frequencies (or occurrences or proportions) obtained in each cell of the cross-tabulation.

Table 4. Descriptive statistics for financial performance variables

Variables	Category	Number of observations	Percentage	Cumulative percentage
	Upwards	47	62,7	62,7
PàR 30	Downward	28	37,3	100,0
	Total	74	100,0	
	Upwards	59	78,7	78,7
TURN OVER	Downward	16	21,3	100,0
	Total	74	100,0	
	Upwards	50	66,7	66,7
ROA	Downward	25	33,3	100,0
	Total	75	100,0	

Source: Author from stata

The univariate analysis of the FP indicators shows that, apart from the 30-day portfolio at risk, which shows an unfavourable trend (62.7 % upward) for MFIs, all the other FP indicators show a favourable trend frequency, as the number of upward trends is higher than the number of downward trends. The number of upward trends is higher than the number of downward trends. This is the case for the TURN OVER , which has the highest frequency (78.7 %), followed by the ROA (66.7 %). The evolution of the TURN OVER can be explained by the fact that the latter is a gross income where the expenses are not yet deducted. It should be noted, however, that this development does not systematically mean the achievement of a profit insofar as the expenses may follow it to reduce the final result. The evolution of the ROA can be understood by the fact that the ROA takes into account the profitability of all the production assets and the net result which intervenes in its formula takes into account the expenses of the exercise.

Table 5. Descriptive statistics for social performance variables

Variables	Category	Number of observations	Percentage	Cumulative percentage
	Yes	35	46,7	46,7
WOM BOR	No	40	53,3	100
	Total	75	100	
	Yes	33	44	44
CUS RA	No	42	56	100
	Total	75	100,0	
	Upwards	28	37,3	37,3
NAB	Downward	47	62,7	100,0
	Total	75	100,0	

Source: Author from stata

Table V presents a description of our SP variables. It shows that 53.3 % of MFIs treat gender indifferently, thus inhibiting the ability to reach people whose social situation is initially disadvantaged (depth of outreach). This practice can result in further discrimination by operating exclusively with men, which increases the poverty of women who were previously identified as the gender most affected by poverty. This table also shows that only 44 % of MFIs give priority to clients in rural areas and 56 % operate in total indifference, thus following the usual practices of traditional banks. About 63 % of institutions show a downward trend in the number of active borrowers, which is an obstacle to the MFI's ability to reach the greatest number during a given period of time (breadth of outreach).

b) Descriptive Analysis of Internal Credit Risk Management Tools

In the framework of this article, we have, following the literature, identified the credit risk management variables that are either innovated by the microfinance sector or adapted to its specificity compared to other institutions. Table VI presents a descriptive analysis of these variables.

Table 6. Descriptive analysis of internal management variables

Acronym of the variable	Category	Number of observations	Percentage	Cumulative percentage
	Do not know	10	13,3	13,3
	Zero	25	33,3	46,7
CRE GP	Less than de 10 %	28	37,3	84,0
	Between 10 and 50%	12	16,0	100,0
	Total	75	100,0	
	Do not know	9	12,0	12,0
	Between 0 à 50%	9	12,0	24,0
COLLAT	Between 50 and 100%	20	26,7	50,7
	More than 100%	37	49,3	100,0
	Total	75	100,0	
	Yes	38	50,7	50,7
DECI THRESHOLD	No	37	49,3	100,0
	Total	75	100,0	
	Between à 10%	34	45,3	45,3
	Between 10 and 25%	27	36,0	81,3
CRE GRAN	Between 25 and 50%	5	6,7	88,0
	More than 50 %	9	12,0	100,0
	Total	75	100,0	
	Between 10 and 15%	19	25,3	25,3
	Between 15 and 20%	21	28,0	53,3
EOIRL	Between 20 and 25%	28	37,3	90,7
	More than de 25%	7	9,3	100,0
	Total	75	100,0	
	Per day	13	17,3	17,3
FREQ REP	Per month	60	80,0	97,3

	Per year	2	2,7	100,0
	Total	75	100,0	
	Very often	44	58,7	58,7
	Often	18	24,0	82,7
REP CAL	Rarely	6	8,0	90,7
	Never	7	9,3	100,0
	Total	75	100,0	
	Very often	19	25,3	25,3
	Often	29	38,7	64,0
PRIOR SAV	Rarely	18	24,0	88,0
	Never	9	12,0	100,0
	Total	75	100,0	
	Very often	53	70,7	70,7
	Often	11	14,7	85,3
DEBT LEVEL	Rarely	6	8,0	93,3
	Never	5	6,7	100,0
	Total	75	100,0	
	Very often	20	26,7	26,7
	Often	23	30,7	57,3
NF SERV	Rarely	24	32,0	89,3
	Never	8	10,7	100,0
	Total	75	100,0	

Source: Author from stata

Table 7. Descriptive statistics of the quantitative variable

	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
N LOM	75	0	40	5,61	8,457
Effectif	75				

Source: Author from stata

Table VI shows that less than 13 % of the loans granted by the MFIs in the sample are made on a group credit basis. About 50 % of the loans granted are made on the basis of the presentation of collateral whose value is much higher than that of the loan. According to the field data, these collaterals reach in some cases 300 % of the credit value. As for the strategy related to the requirement of savings prior to the acquisition of a loan, only 12 % of MFIs claim not to require such savings, which is totally out of step with the original basis of microfinance.

The proximity finance that microfinance can boast of and which can be appreciated by the setting up of loan officers, is called into question. Indeed, against all expectations, there are MFIs that do not use this type of intermediary, and some that solicit them but do not give them enough leeway to fully fulfil their roles. Moreover, 34 % of MFIs claim to grant less than 10 % of their credit by delegation. MFIs incorporate the risk premium into the cost of customer services. Thus, more than 35 % of establishments have OEIRL that are around 25 %. Others claim to apply 36 % OEIRL on loans. These rates are in any case exorbitant, even close to the usury rates set at 27 % per year for MFIs and 18 % per year for banks according to Acclssato (2008), but the poor, for lack of other alternatives, have no choice and are forced to subscribe.

The staggering of the financial benefits of the activity carried out can, if it is consistent with the repayment schedule, facilitate its implementation (Lanha, 2003). Its consensual fixing would therefore reduce the default rate of borrowers. Curiously, 9 % of MFIs impose this schedule on lenders, which certainly results in high default rates, as opposed to 59% who very often set these deadlines in agreement with the lender.

The current research is carried out in a space characterized by the absence of a credit bureau (Chi, 2018). There is therefore little information on the history of each borrower in relation to other lending institutions. Thus, 85 % of MFIs resort very often and frequently to the study of the level of indebtedness of potential borrowers even though they claim to have limited means for effective verification. But the concern is that MFIs are not concerned about the over-indebtedness of their clients. This may be justified by the cunning of some institutions which, given the value of the guarantees required, would like the borrower to default in order to confiscate this guarantee.

In addition to the above strategies, MFIs can develop (in addition to their traditional products) non-financial services such as vocational training, technical assistance, agricultural or health education in order to improve performance (Serres et al., 2009). These types of services are implemented by 57 % of the institutions compared to

11 % who hardly do so and who deplore the high cost of these services in the short term. Furthermore, Table VII shows that some MFIs do not use loan officers at all, while others use no less than 40 in total, with an average of 5.61 per MFI.

B. Results of Explanatory Analyses and Discussions

a) Effect of Internal Credit Risk Management Tools on FP

The regression models on the FP of MFIs (Table VIII) are globally significant, respectively at the 5 %, 1 % and 1 % level depending on the variables (PàR30, TURN OVER and ROA).

Table 8. Results of the logistic regression between internal management tools and FP

Statistiques	**PàR30**		**TURN OVER**		**ROA**	
Number of observations	75		75		75	
-2 Log likelihood	90,397		68,321		76,635	
Cox & Snell R Square	0,410		0,68		0,222	
Nagelkerke R Square	0,550		0,723		0,309	
Sig.	0,030		0,000		0,005	
Variables	**Coef.**	**Sign.**	**Coef.**	**Sign.**	**Coef.**	**Sign.**
GRP L	0,172	0,574	-0,158	0,664	-0,238	0,503
COLLAT	-0,140	0,610	-0,515	0,192	-0,957	0,025
DECI THRESHOLD	0,428	0,452	-0,554	0,429	-0,690	0,290
CRE GRAN	0,498	0,109	-0,176	0,617	0,187	0,549
OEIRL	0,240	0,472	0,197	0,620	0,314	0,382
FREQ REP	-0,145	0,142	-0,064	0,603	-0,188	0,056
PER CAL	-0,067	0,925	1,372	0,099	0,142	0,862
PRIOR SAV	0,574	0,117	0,278	0,537	1,204	0,015
DEBT LEVEL	-0,335	0,278	0,006	0,988	0,049	0,889
NF SERV	0,145	0,666	-0,193	0,594	-0,001	0,999
N LOM	-0,029	0,918	-0,380	0,280	-0,134	0,674
Constant	-1,484	0,559	2,390	0,433	2,829	0,349
Hypothesis number	H.1.1.		H.1.2.		H.1.3.	
Decision	Verified		Verified		Verified	

Source: Author from stata

The three FP models each have a Nagelkerke R^2 greater than 20 %, proof that the explanatory power of the predictors is not negligible according to Greene (2005) cited by Tchakoute et al. (2012). The observation of the deviations (-2 Log likelihood) of these three models shows that the model on the TURN OVER is the best, followed by the model on the ROA and finally the model on the PàR30. The specific regression on the PàR30 reveals a globally significant model (Sig =0.03). With a Nagelkerke R^2 of 0.55, these ICRM tools explain 55 % of the PàR30. The overall significance of the model at the 5 % level indicates that these tools have a significant impact on the PàR30. The hypothesis H.3.1. that the ICRM tools have an influence on PàR30 is thus verified.

As regards the regression of the ICRM tools on the TURN OVER, the model is globally significant (Sig =0.000). The Nagelkerke R^2 of 0.723 indicates that the predictors explain the TURN OVER at more than 72%. Some predictors influence negatively (GRP L, COLLAT, DECI THRESHOLD, CRE GRAN, N LOM , DEBT LEVEL , NF SERV), and others positively (OEIRL, PRIOR SAV , REP CAL , PRIOR SAV) but generally insignificantly with the exception of PRIOR SAV which has a negative and significant influence at the 10 % threshold. The overall significance of the present model states that the hypothesis H.1.2. that the ICRM tools have an influence on TURN OVER is verified.

As for the influence of the ICRM tools on ROA, the results reveal an overall significant model (Sig =0.005) and an estimated explanatory power of these tools of about 31 %. Some predictors (GRP L , COLLAT, DECI THRESHOLD, N LOM, DEBT LEVEL, NF SERV) have a negative influence and others a positive one (CRE GRAN, OEIRL , PRIOR SAV, PRIOR SAV, REP CAL). Only (COLLAT , N LOM and REP CAL) have a significant influence at the 5%, 10% and 5% thresholds respectively. The overall significance of the present model allows us to affirm the hypothesis H.3.3. according to which the ICRM tools have an influence on the ROA.

The above results indicate that the ICRM tools deployed in the present work influence FP of Cameroonian MFIs. These results corroborate that of Messomo (2017) for whom microcredit models (granted according to lending methodologies) explain the financial performance of MFIs in Cameroon. This result is also similar to that of

Stefano and al. (2013) who in a sample of 200 firms, belonging to both financial and non-financial industries find that the risk culture implemented in the institution has an impact on FP measured by ROE (rate of return on equity) and GOS (gross operating surplus). However, these results are contrary to that of Roslida Ramlee and Normah Ahmad (2015), for whom, the adoption of an Enterprise Risk Management system does not have an impact on the financial performance of an organization. It is also contrary to Mellios (2003), who argues that corporate financial decisions, including risk management, do not affect the value of an organization.

b) Effect of Internal Credit Risk Management Tools on the SP of MFIs

Among the three regression models concerned with the influence of ICRM tools on the SP of Cameroonian MFIs, two are insignificant. These are the model on the WOM BOR and on the CUS RA while the model on the NAB is significant at the 5 % level. The Nagelkerke R^2 presented by two (WOM BOR and NAB) of the three models are higher than 20 % while the model on CUS RA presents a negligible explanatory power of the predictors. The observation of the deviations (-2 Log likelihood) of the three internal management models on SP shows that the smallest value (83.8) is attributed to the NAB model, which remains the only significant one (Table IX).

Table 9. Logistic regression results between SP and internal management tools

Statistiques	**WOM BOR**		**CUS RA**		**NAB**	
Number of observations	75		75		75	
-2 Log likelihood	85,081		91,724		83,825	
Cox & Snell R Square	0,219		0,138		0,172	
Nagelkerke R Square	0,293		0,185		0,236	
Sig.	0,564		0,300		0,017	
Variables	**Coef.**	**Sign.**	**Coef.**	**Sign.**	**Coef.**	**Sign.**
GRP L	- 0,156	0,630	- 0,299	0,349	0,014	0,965
COLLAT	- 0,261	0,360	- 0,002	0,994	0,640	0,044
DECI THRESHOLD	-0,108	0,855	0,178	0,759	1,195	0,050
CRE GRAN	-0,232	0,469	-0,049	0,873	-0,208	0,532
OEIRL	-0,028	0,936	0,323	0,334	-0,083	0,805
FREQ REP	-0,077	0,434	0,034	0,645	-0,134	0,421
PER CAL	1,399	0,089	0,720	0,312	-0,303	0,694
PRIOR SAV	0,015	0,969	-0,398	0,246	-0,282	0,438
DEBT LEVEL	0,154	0,622	-0,413	0,190	0,037	0,914
NF SERV	0,789	0,038	0,676	0,052	0,044	0,896
N LOM	0,104	0,710	0,311	0,271	0,116	0,693
Constant	-1,758	0,508	-1,246	0,628	-3,099	0,248
Hypothesis number	H.2.1.		H.2.2.		H.2.3.	
Decision	Not verified		Not verified		Verified	

Source: Author from stata

From the results in Table IX , it can be concluded that the hypothesis (H.2) that ICRM tools influence social performance is partially validated. Some predictors (GRP L , CRE GRAN, OEIRL , N LOM , REP CAL , PRIOR SAV and NFSERV) do not show any significant influence on each of the SP variables. This is a great curiosity in the context of microfinance where one would expect very important influences of these variables on SP. Indeed, the non-influence of group credit as it is the case calls into question the main financial innovation of the microfinance sector which, according to Yunus, would guarantee financial inclusion by compensating for the requirements of classical physical and/or material guarantees. The case of OEIRL proves that due to the lack of alternative sources of finance, those excluded from the banking system are willing to borrow at usury interest rates. This is in line with Acclassato's (2008) observation that the demand for credit is highly inelastic to the interest rate for previously rationed populations. Indeed, for the poor, access to credit is more important than the cost of credit (Peck and al., 2003). This curiosity is also illustrated by the non-influence of loan officers whose action in the field, by hypothesis, increases the adherence of a significant number of poor people to microfinance. In fact, these agents travel the perimeter of the MFIs' area of operation on a daily basis, even conveying messages in the vernacular and inserting themselves as much as possible into the cultural practices of the populations in order to convince them of the importance of financial matters.

The estimation of the model between WOM BOR and the ICRM tools reveals that the latter explain 29 % of the priority given to women and that the model is not globally significant (Sig =0.564) at the 10% threshold. On the other hand, when the coefficients of the predictors are studied in isolation, it is clear that they have an influence that is sometimes positive, sometimes negative but not significant, with the exception of (PRIOR SAV, and DEBT LEVEL) which each have a positive influence at the 10 % and 5 % thresholds respectively. It can thus be concluded that internal management tools do not influence the granting of priority to women in Cameroonian MFIs. The hypothesis H.2.1. according to which ICRM tools have an influence on the WOM BOR is therefore not validated. This result is similar to that of Tchakoute (2010) who finds no significant effect of internal mechanisms on the social efficiency of MFIs. But it is contrary to Adair et al (2011) who show that group lending has a positive effect on SP as measured by the percentage of women borrowers. It is also contrary to that of Messomo (2017) for whom, the types of microcredit granted have a strong influence on social sustainability measured by the average annual number of women beneficiaries of microcredit.

The estimation of the model on the granting of priority to rural clients reveals that this model is not globally significant (Sig =0.300) at the 10 % threshold. Some predictors have a positive influence and others a negative one, but generally not significantly, except for DEBT LEVEL which has a significant and positive influence on the granting of priority to CUS RA at the 10 % threshold. Thus, an MFI that seeks to verify the credit contracts established between its clients and the latter's other lenders in order to make the loan decision is likely to serve more clients in rural areas. However, this concern remains complex in the Cameroonian context characterized by the absence of a functional credit bureau (Chi, 2018). The non-significance at the 10% level of the overall CUS RA model shows that internal management tools do not influence the prioritization of rural clients in Cameroonian MFIs. Therefore, the hypothesis H.2.2. according to which ICRM tools have an influence on CUS RA is not verified.

As for the estimation of the model between ICRM tools and the evolution of NAB , the model is globally significant (Sig =0.017) at the 5 % threshold, with an explanatory power of the predictors of 24 %. Among these predictors, only the COLLAT and the DECI THRESHOLD are respectively and positively significant with significances of 0.044 and 0.050. Thus, the fact that the MFI emphasizes the share of the COLLAT required in relation to the value of the credit requested and sets the DECI THRESHOLD per decision-making body will allow it to modify the evolution of the NAB. In view of the above, hypothesis H.2.3. can be affirmed, which states that ICRM tools have an influence on the NAB. This result corroborates that of Adair et al. (2011) who show that group lending has a positive effect on SP as measured by the NAB. It is also similar to that of Messomo (2017) who finds that the types of microcredit granted by Cameroonian MFIs have a strong influence on social viability expressed in the average annual number of borrowing clients.

V. CONCLUSION AND IMPLICATIONS

The objective of this paper was to determine the extent to which ICRM tools influence the financial and social performance of Cameroonian MFIs. Data was collected using a questionnaire on a sample of 75 MFIs. The results reveal that the IRCM tools influence FP measured by the evolution of PàR30, TURN OVER and ROA. As for SP, the variables WOM BOR and CUS RA are not affected by these tools, whereas the evolution of NAB is significantly influenced. These results call into question the theoretical approach that makes financial innovation in microfinance a guarantee of performance. Indeed, group lending does not influence either the financial or social performance of Cameroonian MFIs. These results suggest that MFIs should simultaneously modify their financial and social performance in terms of social guarantees and the frequency of repayments required. This work can be improved by taking into account the legal status of MFIs and by including all 10 regions of the country in the sample.

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