Université Libre de Bruxelles – Solvay Business School – Centre Emile Bernheim
ULB CP145/1 50, Av. F.D. Roosevelt 1050 Bruxelles - BELGIUM

Solvay Business School

Centre Emile Bernheim

Research Institute in Management Sciences

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Subsidies and financial performances of the microfinance institutions: Does management matter?

Marek Hudon*
Université Libre de Bruxelles (ULB)
mhudon@ulb.ac.be

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* Marek Hudon is a FNRS Research Fellow, in the Centre Emile Bernheim, Solvay Business School, Université Libre de Bruxelles, 50 avenue F.D. Roosevelt, CP 145/1, 1050 Bruxelles, Belgium. Phone: +32.(0)2.650.65.69. E-mail: mhudon@ulb.ac.be.

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Abstract:

This paper uses a unique database from a leading microfinance rating agency to assess the impact of the management of microfinance institutions (MFIs) on their financial performances and the amount of subsidies they have received. The results show that the main management attributes influencing the return on assets are the technical, organisational and communication competences of the top managers. For-profit and non-profit institutions reach similar performances, but cooperatives exhibit worse results. Finally, while the board members' personnel involvement and professional competences is correlated to the amount of subsidies received by the institutions, the well-managed MFIs do not seem to have previously received significantly more subsidies than others.

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1. Introduction

While formal financial institutions are well-known and active for decades in the whole world, they have neglected a large part of the population in most developing countries. For instance, in the Democratic Republic of Congo, only around 35,000 formal bank accounts are open for a population of 60 millions (OECD, 2005). Considered as too risky, the poor are left behind without any access to financial services. Microfinance has therefore been promoted as a new form of decentralized development tool aiming at serving people excluded from the formal banking system (Morduch, 1999).

Financial performances of the microfinance institutions (MFIs) have been largely highlighted by the international community (Armendariz de Aghion, 1999; Christen, 2000; Woller, 2000; Tucker, 2001). However, few researches have focused on the management policies and their implications (Mc Guire, 1999). The impact of some governance issues on development performances has been assessed, but mostly at the macro-level (Campos and Nugent, 1999).

This paper addresses the micro side of these issues. Based on a unique dataset coming from one of the leading microfinance rating agencies, PlaNet Rating, it analyses the impact of management through the four management indicators provided by the rating agency.

Results indicate that the *Top management*, understood here as the leadership skills and technical, organisational and communication abilities of the top managers, significantly influences the MFI financial results. However, some nuances must be brought according to the organisational structure of the MFI, particularly for the cooperatives. Undoubtedly, the cooperative status negatively influences the impact of the management variable on the return on assets (ROA). A third finding is that the amount of received subsidies explains best the quality of *decision making process* of the MFI. Specifically, an efficient and actively involved board could therefore be the major explanatory factor for the quantity of subsidies obtained. On the other hand, the well-managed MFIs do not seem to have previously received significantly more subsidies than others

The rest of the paper is organized as follows. Section 2 presents the management and governance issue in microfinance, and summarizes the three questions addressed in the paper. The database is described in Section 3. Section 4 discusses the empirical results of the management impact. Section 5 analyses the results according to the organisational structure of

the MFI. Section 6 determines which management dimension best explains the amount of subsidies. The final section deals with specific recommendations, and final conclusions.

2. Management and governance issue in microfinance

Most microfinance institutions still depend on donors' subsidies. The recent emergence of structural problems has emphasized the importance of the MFI management and governance issues. Indeed, the microfinance community has experienced major failures, for which the inadequacy of governance was to blame (Labie, 2001).

Until now, human resource management and corporate governance have been often neglected in the MFI sector. While many practitioners have long thought that high interest rates would be enough to reach sustainability, Morduch (2004) argues that the key has as much to do with managing expenses as with raising revenues. Consequently, since MFIs salaries make up a large fraction of overall costs, human resources require careful attention.

Furthermore, the MFI size certainly matters. The March 2005 issue of the *MicroBanking Bulletin* reports that for the institutions classified as 'large' the operational expenses represent, on average, 18% of the loans outstanding. For the "small" MFIs, the personnel represent more than 60% of the operational expenses.

Human resource management is therefore becoming a new challenge for the microfinance sector. Staff incentive schemes are relatively recent and have spread rapidly during the past five years. A large-scale research undertaken by the NGO *MicroSave* and the *MicroFinance Network* has found that the design and effectiveness of the staff incentive schemes are influenced by the organizational culture of the MFI.

The few academic publications on the management and governance issues in microfinance mostly focus on corporate governance principles application (Hartarska, 2005; Labie, 2001; Campion, 1998; Rock et al., 1998), while little attention has been devoted to internal governance and management issues (Barr et al., 2005). Following Clarkson and Deck's (1997) definition, we consider governance as a system of checks and balances whereby a board is established to manage the managers, while management, on the other hand, is involved in the daily operations of putting the vision into action.

We will now turn to the four governance and management indicators offered by PlaNet Rating in our database. PlaNet Rating is a specialized microfinance rating agency which has conducted 145 missions in over 35 countries[2]. PlaNet Rating has been officially accredited as a leading rating agency by the Inter-American Development Bank (IDB) and the Consultative Group to Assist the Poor[3] (CGAP) rating fund. The four governance and management indicators are:

1. *Decision Making:* Board governance competences

This indicator assesses the effectiveness and inclusiveness of the decision making process. Ratings are attributed through the analysis of the structure of the MFI and the competence (e.g., knowledge of the market), responsibilities (e.g., topics discussed during the meetings) and involvement (e.g., frequency of meetings, feeling of responsibility on MFIs performances) of the governing bodies' members.

2. *Accounting and control:* Planning, budgeting and reporting competences

Relevant strategic and budgetary plans enable the institution to monitor implementation of the strategy set by the governance bodies. The relevance, coherence and depth of the planning and its achievability according to the financial and human resources are therefore studied. While for-profit institutions start their planning with financial indicators, non-profit institutions start with the accomplishment of their mission (Drucker, 1989). This indicator is referred as 'Planning' in PlaNet Rating methodology.

3. *Top management:* Competences of the top managers

The management team, here mostly identified as the executive director and the managers of the main departments, has the task of translating the strategic directions established by the governance bodies into concrete operational actions. This ratio tackles the technical, organisational and communication competences of the top managers. The key points assessed in this indicator are therefore the management team skills (e.g., technical and leadership skills, experience in microfinance, knowledge of the MFI's operations and market), the organizational clarity (e.g., definition of the managers' role, separation of tasks) and the

2 From www.planetrating.org (November 2005)
3 The Consultative Group to Assist the Poor (CGAP) is a consortium of 29 bilateral and multilateral donor agencies and private foundations that support microfinance.

communication flow among the team. This indicator is referred as 'Management team' in PlaNet Rating methodology.

4. *Human Resource (HR):* Competences of the HR Management

Recruitment, staff incentives, training and evaluation procedures of the MFIs are here assessed by the raters. According to the common wisdom, the non-profit institutions successes are attributable to their people, their commitment, enthusiasm, intelligence and drive. The forth indicator is meant to take into account the vision of the role of HR management workers and the quality and pertinence of the HR procedures.

This study will address three issues.

First issue: *Do these four rated management dimensions actually impact the financial performances of the MFIs?*

The four dimensions of management to be examined are those identified in the PlaNet Rating methodology. Assessing the impact of specific management procedures on MFIs performances is not an easy task because the conventional performance measures of traditional banks may not be suitable in the microfinance context (Gutiérrez-Nieto *et al.*, 2005).

Ex ante, each of the four management dimensions considered in this paper could explain financial performances in some way. It has been claimed in the literature that each of them may be the key one to be considered.

For instance, *the decision making* is seen as a dominant factor in a survey of 44 non-profit institutions by Stone (1991) who shows that the characteristics of the governing boards and the use of a formal planning represent fundamental issues within organizations. However, in a recent survey on Central and Eastern Europe and the Newly Independent States, Hartarska (2005) finds that only auditing has a positive effect on outreach, while all other governance mechanisms are ineffective for control. According to her study, board diversity is the best tool for improving MFIs sustainability.

T*he accounting and control* is also crucial for MFIs for several reasons. First, the successful and profitable MFIs often exhibit impressive growth rates, like 30% per year, mostly to benefit from economies of scale and cover high transaction costs. With a limited access to commercial funds, the MFIs thus need rigorous business planning and treasury management. Stone (1991) argues that an organisation that has never planned or has abandoned planning is more likely to appear as a collection of individual interests than a group with a clear common mission. Second, most MFIs deliver progressive loans in order to test their clients (Gosh and Ray, 1997). They start with small loans, and steadily increase the amounts after each repayment.

In the non-profit sector, the staff is mainly motivated by its social mission. The *Top management* of a non-profit organisation must therefore specifically focus on a double bottom line: financial and social performances. In a study of 43 major firms, Peters and Waterman (1982) find out that one of the major characteristics of performing firms is the hands-on value-driven style of management. In a case study of an Indian non-profit MFI, Thiagarajan (2004) lists four success factors in management for a MFI: presence of a powerful mission, commitment to the mission, motivation from within, and team cohesiveness in service to a common cause. Since the management team is meant to enhance the common mission, it may largely drive financial performances.

Finally, the *HR Management* departments must provide the necessary training to reach the productivity objectives of the MFIs. Staff incentives are increasingly promoted to this end (Armendariz and Morduch, 2005; Bazoberry, 2001). Incentive schemes may include cash premium, special awards, and public recognition. Furthermore, in the field of microfinance, new systems like the one put forward by the Grameen Bank, so-called Grameen II, do profoundly modify the role of the field officers, providing them with higher responsibilities[4]. Therefore, the HR management becomes even more important as far as financial performances are concerned.

Second issue: *Do the management characteristics impact performance in a different way for cooperatives, for-profit and non-profit MFIs?*

[4] Along this model, staff members can deliver flexible loans in case of repayment problems. These loans have their own rules in order to allow the client to repay slower consistently with their situation.

MFIs are financial institutions. However, they all have a specific historical or ideological background, such as the participative management of cooperatives, or the well-known emergence of grassroots NGOs in Asia. The microfinance sector offers a wonderful ground for analysing the interaction of non-profit and for-profit agents acting on the same market. Even if for-profit and non-profit institutions have both boards of directors, trustees and chair people who meet in periodic meetings, and so forth; governance of non-profit organizations is very different from the governance of for-profit businesses in several critical areas, including the definition of the mission, measurement of results, and criteria for board composition (Herman and Renz, 1999; McFarlan, 1999).

Fama and Jensen (1983) argue that separation of decision management and residual risk bearing is a characteristic of non-profit organisations. In addition, non-profit MFIs often have to fulfil a stronger social and outreach mission than for-profit institutions, and their governing bodies have divergent working principles. For instance, according to Jepson (2005), non-profit institutions should engage public constituencies in informed discussion on values, issues and strategy.

Moreover, their governing boards should account to society for the continued relevance, integrity and impact of their activities, which legitimates their willingness to play a role in the shaping of policy and delivery of services.

Non-profit institutions cannot afford the financial enticements provided by for-profit institutions, but they can offer more fulfilling work (Wilbur, 2000). Using data envelopment analysis (DEA) and principle component analysis (PCA) with a database of 30 Latin-American institutions, Gutiérrez-Nieto *et al.* (2005) found some evidence that NGOs tend to make a large number of loans ,operate as cheaply as possible and try to keep costs down. This is in line with Stephens' (2005) who found that institutions are becoming sustainable primarily through cost reduction. In contrast, non-NGOs institutions rely on more specialised staff to build profitable portfolio of loans, and provide financial incentives to their staff to attain this objective.

The analysis will thus elaborate on Gutiérrez-Nieto *et al.* (2005) findings and analyse what exactly matters in management for each type of organisational structure (cooperative, for profit and NGO). The management indicators studied in our first analysis will now be tested in order to assess their impact according to the MFIs organisational structure.

Third issue: *Are subsidies awarded to the best managed MFIs?*

Through our database, we will test whether the subsidies[5] are awarded to the well-managed MFIs, and, more generally, which, if any, among the four considered dimensions of management significantly explain the amount of subsidies awarded.

The sustainability[6] of MFIs relies on subsidies, making them dependent on the donors' generosity. In many cases, this phenomenon seems inevitable since, as a matter of fact, very few MFIs have been created without subsidies and most donors still agree that there remains a need for subsidies to fund start-up MFIs or encourage products innovations, for instance. It is, however, less consensual that all MFIs, without any considerations on their clientele or target groups, must become fully financially sustainable. The period required to reach independence depends on the MFI's environment. One might therefore question the donors' choice of their partner institutions and the impact of subsidies on the MFI's management. On the one hand, subsidies might create a moral hazard situation, and lessen the incentive to ameliorate the management procedures. On the other hand, in order to be efficient, subsidies should be awarded to MFIs benefiting from the required capacity of absorption, and preferably with pre-existing good governance and management mechanisms.

Appraisal of how subsidies impact microfinance programmes is particularly harsh. As explained by Armendariz de Aghion and Morduch (2005), microlenders can keep interest rates lower with more subsidies. As a result, removing subsidies will not only put upward pressure on fees charged to clients but will also, for instance, influence how staff are hired and treated.

3. The Data

The management characteristics of the MFIs are measured through the four management dimensions evaluated by PlaNet Rating. Three financial indicators will be used as dependent variables.

[5] Subsidies awarded and analysed in this database come from public and private donors
[6] Sustainability can be viewed as the ability to repeat performance through time (Schreiner, 2000)

The ratings have been produced between end 2002 and 2005. For MFIs rated more than one time, only the last rating has been kept. Rating in microfinance differs from traditional rating by combining fiduciary and credit risk with performance. The mainstream finance rating process evaluates the credit risk corresponding to a probability of default over a specified time frame (Negre and Maguire, 2002). In microfinance, the rating agency must adjust the criteria to deal with specific accounting methods and subsidies. Adjustments are made on the accounting methods used for loan loss provisions, loan write-offs, amortization/ depreciation of fixed assets, inflation adjustments and the accounting basis (Negre and Maguire, 2002).

The four management indicators have been rated on a scale from 0 to 5, with half-grades. Formal documents such as institutional statutes and official texts, national legislation, internal regulations, procedure manuals, job descriptions, etc., were collected by the raters who also interviewed the members of the different boards and review meetings minutes[7]. The final ratings awarded take into account quantitative (e.g. number of years of experience) and qualitative (e.g. quality of the training) data.

The database includes 52 ratings produced by PlaNet Rating. Rated MFIs are from Latin America (17), Africa (12), Central Asia and NIS (12), North-Africa and the Middle-East (9), and Asia (2). Out of these 52 MFIs, 31 are non-profit institutions and NGOs, 11 are for-profit institutions and 10 are cooperatives that are thus different from non-profit institutions.

Despite the fact that it is a unique dataset, one need to keep in mind the huge diversity observed in MFIs. Only a few of them share their financial indicators and follow a rating process. Therefore, this analysis is only a preliminary investigation of the MFIs sector.

The dependent variables consist of three financial indicators: The return on assets (ROA), the adjusted return on assets (AROA), and the financial self-sufficiency (FSS) (see Table 1).

5. *ROA*

The ROA is a common measure of performance, even for MFIs (CGAP et al., 2003). More precisely, the net ROA will be exploited, and not the gross one (before interest and tax).

[7] Source : PlaNet Rating internal documents

The ROA may be split in two components: The profit margin and the asset turnover. MFIs can therefore increase their ROA by increasing one or the other (Ross *et al.*, 1996). However, the ROA is self-reported and does not incorporate the value of donations, in-kind subsidies and inflation (Hartarska, 2005).

6. *AROA*

The AROA measures how well the institution utilizes its assets and generates earnings with a given asset base. Unlike the adjusted return on equity, this indicator is independent from the level of leverage or debt financing (Saltzman and Salinger, 1998). Adjustments are made by the financial specialists, in order to enable a better comparison between countries. Therefore, analysts from different rating agencies can use different adjustment methods, for their own equally valid purposes (Manchini and Nègre, 2005; CGAP et al., 2003). Nevertheless, all these ratings come from the same agency that follows strict guidelines for its adjustments.

7. *FSS indicator*

In microfinance, financial self-sufficiency (FSS) is the non-profit equivalent of profitability (see Table 1 for the definition) (Woller and Schreiner, forthcoming). An old, but still ongoing, debate opposes the users of the operational self-sufficiency (OSS) to those of the FSS. The difference lies thus in the adjustments that are done for the FSS. For instance, Khandker et al. (1995) establish that Grameen Bank, in Bangladesh, was operationally self-sufficient by 1993, but Morduch's (1999) precise analysis of the Grameen's financial structure shown that Grameen was short of covering its operating costs if implicit subsidies through soft loans were valued. As a matter of fact, the FSS is more conservative than the OSS.

Table 1: Definitions of the financial indicators:

Financial indicators	
Variables	Definitions
Return on assets (ROA)	Net operating income before donations / Average assets
Adjusted return on assets (AROA)	Adjusted net operating income before donations / Average assets
Financial self-sufficiency (FSS)	Revenue from operations / (Financial expense + Loan loss expense + Operating expense + Adjustments)

Table 2[8] summarizes the descriptive statistics for the seven variables of interest (three dependent variables, four explanatory variables). It indicates that the mean values of the four management indicators are similar (around 3). Their respective standard deviations (around 1) are large enough to warranty dispersion in the dataset.

For two financial variables, the FSS and the AROA, the statistics are incomplete because some relevant information is lacking to perform correct adjustments[9]. More generally, the dataset suffers from several limitations due to the fact that it is limited to one year of data for most MFIs. Indeed, the microfinance industry is relatively young and institutions having followed multiple rating processes are still very few.

It is very difficult to gauge the representativeness of this sample of MFIs. However, since this sample includes only institutions able to bear the costs of a rating process, one might suspect the presence of a bias overweighting the largest MFIs and thus, an underweighting of the smaller Asian MFIs. Another potential bias follows from the will to be rated. Indeed, the MFIs with bad financial track records have little incentive in applying for a rating. This bias probably favours for-profit institutions which represent 20% of the sample[10]. Nevertheless, out of her survey in the NIS countries, Hartarska (2005) finds that rating by an independent agency does not have an effect on any of the performance measures, while auditing, another external governance mechanism, clearly affects outreach.

Table 3 provides the correlations between the management variables. As expected, these correlations are quite high, particularly between the *Top management* and the *HR management* variables. Therefore, in order to avoid multicollinearity problems, variables will be first taken together and then individually included. Table 4 shows that the three financial indicators are also highly positively correlated.

4. Impact of management on MFIs financial performances

[8] The tables are given in the Appendix

[9] Two MFI's ratings have not been taken into account for the ROA and AROA ratios, because of the specificities of these institutions and their macro-economic situation.

[10] Nevertheless, Mix Market portfolio partly validates our proportion. On December, 8, 2005, the MIX Market contented 602 MFIs. 60 are banks, 98 cooperatives or credit unions, 114 non-banking financial institutions, 282 NGOs, 15 rural banks while the remaining 33 MFIs had other organisational structures.

Based on the theoretical considerations we have described, the empirical model used to test the hypotheses is:

$$(1)\quad \begin{aligned} Financial_Indicator_i &= \alpha_i + \beta_{1i} \times Decision_Making_i + \beta_{2i} \times Accounting_and_Control_i \\ &+ \beta_{3i} Top_Management_i + \beta_{4i} \times HR_Management_i + \varepsilon_i \end{aligned}$$

where $Financial_Indicator_i$ refers to the ROA, the AROA and the FSS for MFI *I* and $Decision_Making_i$, $Accounting_and_control_i$, $Top_management_i$ and $HR_Management_i$ the rating attributed to the MFI *i* on their decision making, Accounting and control, top management and HR management procedures.

This model is used to test all four management indicators taken simultaneously. Little significance can be found for the three regressions (Cfr. Table 5). Only the *Top Management* variable is to some extent statistically significant for the ROA. This can be explained by the relatively high correlations[11] of the four management variables (Cfr Table 3).

The three financial indicators are then successively explained by one management indicator in order to avoid the multicollinearity problem[12]. The individual influence of each management variable on each financial indicator is estimated by OLS:

$$(2)\quad Financial_Indicator_i = \alpha_i + \beta_i \times Management_Indicator_i + \varepsilon_i$$

where $Financial_Indicator_i$ refers to the ROA, the AROA and the FSS for MFI *i*. $Management_Indicator_i$ refers to $Decision_Making_i$, $Accounting_and_control_i$, $Top_management_i$ and $HR_Management_i$ the rating attributed to the MFI *i* on their decision making, Accounting and control, top management and HR management procedures. A fifth indicator, *Management ratio,* averaging the grades received on the four management indicators, provides a global view on the impact of management on the financial performances. This indicator is the unweighted mean of the four management indicators.

Table 6 provides the results of the individual regressions. The *t*-statistics and R^2 are reported. As expected, all management variables have a *positive* influence on all financial

[11] Since adding new variables to the regression does not improve adjusted-R^2, and the t-values are particularly low, one can infer that there is a lot of multicollinearity between the variables.
[12] Exceptionally, the sample size may vary across the equations because some data are lacking.

indicators. Nevertheless, the regressions exhibit low R^2. Almost all indicators show significance at the 1% level for ROA and AROA. For FSS, the significance is milder. *Decision making* is not significant, *Accounting and control* is significant at 10% and the two others are significant at 5%. One hypothesis to explain this finding is that board might impact primarily the results affecting directly their assets rather than the profitability of the MFIs.

In the ROA regressions, the estimated coefficient of *Top management* is the highest ones, almost two times bigger than the other ones and the three other have comparable values. This means that a MFI receiving an extra grade, out of five, in *Top management* is likely to exhibit an approximately 5% higher ROA. The regression involving the *Management ratio* provides a lower coefficient and R^2 than *Top management*, but higher than the three other indicators.

For the AROA, *Top management* still exhibits the highest but the difference with the other indicators is less compelling. In this case, the regression involving the *Management ratio* provides the highest coefficient and R^2.

With respect to the FSS, the evaluation of the strength of the coefficients shows that *Top management* indicator is still the best performer. It is estimated to be approximately 1.5 times bigger than *HR management* and two times bigger than *Accounting and Control*. Similarly to ROA, the regression involving the *Management ratio* provides a lower coefficient and R^2 than *Top management*, but higher than the three other indicators.

Nevertheless, the high correlation between the management indicators (Cfr Table 3) prevents from disentangling the specificities of each variable. Therefore, in order to check the robustness of *Top management* predominance, a principal component analysis (PCA) is performed (Koutsoyiannis, 1991). This analysis is based on the construction of variables *(P_i)*, named principal components, that are linear combinations of the explanatory variables X_j's (j=1,2 ..n).

(3) $P_k = a_{1k} Decision_Making + a_{2k} Accounting_control + a_{3k} Top_management + a_{4k} HR$, k=1,…,4.

The principal components explain respectively 76.3%, 12.02%, 7.68% and 4%. The decomposition of the first component, P_1, provides additional information on the information captured by the four management indicators. This first component is given by:

$$P_1 = -0.487 \times Decision_Making_i + 0.490 \times Accounting_control_i + 0.722 \times Top_management_i + 0.014 \times HR_i$$

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This result shows that the *Top management* variable drives the other ones. The correlation between the first component P_1 and the *Management ratio*, the arithmetic mean of the four management indicators, confirms that this last variable captures most information. However, the coefficient of *Top management* in P_1 remains overweighted in the regression with the four management variables (Cfr Table 7).

Our results are in line with Hartarska (2005) indicating that the experience of the top managers matters to explain the operational self-sufficiency.

In summary, after having reviewed the multiple possible interactions, we find that *Top management* is still the most important management variable, on the basis of a high statistically significant coefficient with other variables. Interestingly, even if all procedures, strategic visions definitely matter, it is still the leadership of the management team that implies the best financial performances. This result is not entirely surprisingly since the most successful MFIs worldwide are administered by well-experienced and charismatic leaders, such as Prodem's Director Eduardo Bazoberry or Grameen's founder Muhammad Yunus.

5. Impact of management of for-profit and non-profit or cooperatives: is there a difference?

The analysis of the influence of the organisational structure or legal status of MFIs (for-profit, non-profit and cooperatives) on the financial performance exhibit some specific results for each type of MFI.

Logically, the for-profit status is significant and with a very positive sign to explain the ROA and AROA (Cfr Table 8). This simply means that for-profit MFIs achieve better ROA and AROA. This can be explained by the fact that for-profit institutions are much more sensitive to the variation of their share values than non-profit institutions. Interestingly, there is no significance of the for-profit status on the financial self-sustainability ratio. No difference can be inferred for this ratio, which means that the for-profit institutions do not keep their comparative advantage when FSS is used as financial indicator.

The same analysis for the management indicators (Cfr Table 9) shows some significance for for-profit institutions, except the *Accounting and control* dimension, and a positive coefficient for all management indicators, the most striking being *decision making*.

On the other hand, McKim and Hughart (2005) found that there were no significant differences in the magnitude of incentives between bank and non-bank financial institutions and NGOs. These results suggest that the small differences in *HR management* evaluation could be due to other elements such as the recruitment or the identification of the staff needs.

We can provide two explanations for the better management results of the for-profit MFIs. Firstly, for-profit MFIs may simply be better managed than the other one. Since for-profit institutions are very recent in microfinance, one could argue that the few for-profit institutions must have carefully analysed their markets and are among the best prepared and skilled to manage microfinance products. Moreover, many managers of for-profit institutions often have a banking background where management and human resources procedures are often more advanced than by NGOs. Secondly, in a young industry such as the microfinance one, for-profit institutions may have incorporated more rapidly good management and governance practices and procedures that are rewarded by rating agencies.

For cooperatives the most significant results are negative achievements for the ROA and AROA (Cfr Table 10). The coefficients are significant and very strong. On the other hand, in the same way to the for-profit institutions, the regressions of management indicators to explain FSS do not give any significance. To differentiate among organisation structures, only the ROA and AROA are relevant while the FSS is not. While many articles don't differentiate these two dimensions of the financial results, most of our results confirm the relevance of this differentiation.

Next we analyse the impact of each management indicator on financial results for each organisational structure. Clearly, the cooperative status influences the impact of the management variable on the ROA (Cfr Table 11). Results are less evident for the AROA. On the other hand, nothing can be inferred about the FSS. For all significant results, the biggest coefficient can be found be the *decision making* element. The decision making mechanisms and skills can be described as the balance between the operational realities and an overall strategic vision. This balance is certainly more difficult for cooperatives where the inclusive decision making is the main particularity. In short, cooperatives get worse management results than other types of MFIs, which impact their ROA and AROA.

Even if for-profit always exhibit better coefficients, no significance has been found when non-profit and for-profit are separated in a new group. Nothing can be inferred on the impact of management on their financial results, for any of the types of organisations.

6. Are the better-managed MFIs the ones that have received the more donors' subsidies?

This last part will determine if good management is explained by the subsidies that the MFIs have received. The total stock of subsidies used here is the sum of two items in the MFIs balance sheets: the 'donated equity' and the 'donations of fixed assets'. The subsidies are therefore determined before the rating on the management competences. Donors do not have these data when they decide to fund the MFI.

One could think that subsidies are awarded to the more experienced MFIs. Therefore, additionally to the absolute value of subsidies, and to enable the comparison among institutions of different maturity, the amount of subsidies is also divided by the number of years of operations. This second indicator estimates the average amount of subsidies received per year.

The correlation matrix (Cfr Table 12) shows that the two subsidies indicators are mostly correlated to the *Decision making*, while the correlations with the three other indicators is very low. This could be interpreted as the sign that it is mostly MFIs with highly-qualified board members that attract subsidies while there is no relationship for the daily management competence of the top managers, accountants or planners or human resource managers. Nevertheless most of the subsidies received chronologically precede the management evaluation, which prevents to test this causality. We can however test the impact of subsidies on every management indicator.

The following model is estimated by OLS:

(4) $Management_Indicator_i = \alpha_i + \beta_i \times Subsidies_i + \varepsilon_i$

where $Management_Indicator_i$ refers to $Decision_Making_i$, $Accounting_and_control_i$, $Top_management_i$ and $HR_Management_i$ the rating attributed to the MFI i on their decision making, Accounting and control, top management and HR management procedures. *Subsidies* refer to the total stock of subsidies and the stock divided by the number of year of operations.

Table 13 shows that the absolute value of subsidies and the average yearly subsidies explain the *Decision making*, which assesses the board and governance competences. Best funded MFIs have more skilled, efficient and involved boards. One can assume that donors' that award subsidies positively impact the governance, and the average skills of a board member.

Nevertheless, none of the two subsidies indicators explain the three other management indicators. These three indicators are mostly targeting top managers' responsibilities while the board and governance analysis of the *decision making* mostly rates the board members' competences. Our results therefore mean that donors' funds were not particularly invested in the MFIs that are currently well-managed.

Some hypothesises could explain this lack of significance. First, subsidies may simply have been invested in operations that did not impact the management quality or improve it. Second, if we make the assumption that the MFIs were selected for their good management; donors' funds may have created a moral hazard problem and thus lead to a decrease of the quality of management. On the other hand, funds may have been invested in poorly managed MFIs that have remained not particularly well-managed.

Similar results are found for the stock of subsidies or the average yearly amount of subsidies. The absolute value of subsidies is not strongly correlated or significant to explain the MFIs' number of years of operations (Cfr Table 14). This can be explained by the fact that many donors decide to focus on one or two MFIs per country that must be able to absorb their funds, which can be seen in the high standard deviation of the database.

7. Conclusion

The purpose of this paper was to assess the influence of management processes on the performance of microfinance institutions. To this end, four management indicators were used to capture a maximum of information. The three goals were thus: (1) to study the relevance of the management issue in microfinance and propose a model to analyse the relationship between management mechanisms of a set of MFIs and their financial performances (2) to analyse the available data by type of organisational structure (3) to assess the relevance of subsidies to explain the ratings of the four management dimensions.

Management issues have become increasingly important in microfinance, with the growth and professionalisation of the sector and its MFIs. The study has shown that for-profit institutions still exhibit better management ratings. In contrast, cooperatives have exhibited very poor results in terms of management. It can be inferred that these poor results clearly impact the financial performances achieved by the MFIs.

The technical, organisational and communication competences of the top managers are the most important management dimensions to explain all financial results. Under this dimension of management, the professional skills of the top managers that must be emphasized. Additionally to the competences of the top management, the *HR management* also matters to explain the good profitability results under the FSS.

Finally, even if they have good boards and governance structure, the MFIs that receive most subsidies are not the better managed ones.

In conclusion, even if management mechanisms are certainly not everything in microfinance, undoubtedly the sector did not focus enough on this aspect. In a sector characterized by an impressive increase of the number of clients, growth must be progressively managed.

More research is needed to assess the long term impact of management. Research in human resource and organisation management would be welcome to understand which factor in the management team or leadership of the MFIs has the larger impact. While the current study compared three main types of organisational structure, introducing the distinction of a fourth type - a 'hybrid' structure such as the non-banking financial institutions - could help to better clarify the characteristics of each structure. Finally, a "longitudinal" study, taking into account the evolution over time of the amount of subsidies after the MFI's rating and the impact of management on the amount of subsidies would be of particular interest.

APPENDIX

Table 2: Descriptive statistics

Variable	No. of observations	Mean	Std. Dev.	Minimum	Maximum
Dec_Making (/5)	52	3.090	0.945	1.000	5.000
Accounting_control (/5)	52	3.098	0.906	1.000	5.000
Top_MNGM (/5)	52	3.310	0.702	1.000	5.000
HR (/5)	52	3.256	0.908	1.000	5.000
ROA (%)	50	5.470	5.2915	-4.000	16.300
AROA (%)	45	0.524	12.500	-17.100	6.853
FSS (%)	47	105.446	27.755	42.000	166.700
Type : For-Profit	52	0.212	0.412	0.000	1.000
Type : Non-Profit	52	0.596	0.495	0.000	1.000
Type : Cooperative	52	0.192	0.398	0.000	1.000

Table 3: Correlation matrix: management variables

	Decision Making	Accounting and control	Top management	HR Management
Decision Making	1.0000	0.6994	0.6788	0.6038
Accounting and control		1.0000	0.7189	0.5846
Top management			1.0000	0.8122
HR Management				1.0000

Table 4: Correlation matrix: financial performances

	ROA	AROA	FSS
ROA	1.0000	0.7813	0.7045
AROA		1.0000	0.9195
FSS			1.0000

Table 5: OLS regression results

Explanatory variable	Dependent Variable					
	ROA	Adj-R^2	AROA	Adj-R^2	FSS	Adj-R^2
Decision Making	0,483		0,889		-1,056	
	(0,654)		(0,597)		(-0,167)	
Accounting and control	0,657		1,451		0,244	
	(0,439)		(0,901)		(0,036)	
Top management	2,763*		0,191		1,199	
	(1,515)		(0,071)		(1,073)	
HR	0,501		1,262		2,703	
	(0,413)		(0,716)		(0,372)	
F-Stat	5,876		2,478		0,176	
		0,285		0,118		0,055

[a] t-values in parentheses.
*Significant at the 15% level

Table 6: OLS regression results: Individual variables

Explanatory variable	Dependent Variable					
	ROA		AROA		FSS	
		R^2		R^2		R^2
Decision Making	2.622***	0.199	2.682**	0.122	6.799	0.034
	(3.639)		(2.671)		(1.624)	
Accounting and control	2.765***	0.202	2.913***	0.137	7.574*	0.045
	(3.663)		(2.827)		(1.788)	
Top management	4.307***	0.310	3.653***	0.126	14.09**	0.114
	(4.799)		(2.716)		(2.635)	
HR	2.901***	0.232	2.748***	0.123	9.658**	0.086
	(3.976)		(2.679)		(2.308)	
Management Ratio	4.135***	0.317	3.951***	0.173	12.266**	0.094
	(4.882)		(3.204)		(2.410)	

[a] t-values in parentheses.
*Significant at the 10% level
**Significant at the 5% level
***Significant at the 1% level

Table 7: Analysis of the First Principal Component

Variable	Coefficient	Percentage
Decision Making	52031183	21,90%
Accounting and control	54756018	23,05%
Top management	76003911	32,00%
HR Management	54753309	23,05%
Total	237544421	100,00%

Table 8: OLS regression results for financial indicators (with type of MFIs)

Dummy Explanatory variable	Dependent Variable		
	ROA	AROA	FSS
For-Profit	3.150*	3.156	8.781
	(1.782)	(1.339)	(0.885)
Non-Profit	0.325	0.843	1.192
	(0.212)	(0.404)	(0.141)

[a] t-values in parentheses.
*Significant at the 10% level
**Significant at the 5% level

Table 9: OLS regression results for management decision (with type of MFIs)

	Dependent Variable				
	Decision Making	Planning	Management Team	HR Management	Management Ratio
For-Profit	0.657**	0.279	0.414*	0.569*	0.482*
	(2.118)	(0.905)	(1.775)	(1.892)	(1.957)
Non-Profit	-0.303	0.084	-0.099	-0.170	-0.129
	(-1.140)	(0.327)	(-0.498)	(-0.658)	(-0.611)

[a] t-values in parentheses.
*Significant at the 10% level
**Significant at the 5% level

Table 10: OLS regression results: Cooperatives

	Dependent Variable		
	ROA	AROA	FSS
Cooperatives	-3.875**	-5.396**	-12.408
	(-2.146)	(-2.095)	(-1.156)

[a] t-values in parentheses.
*Significant at the 10% level
**Significant at the 5% level
+ Data from individual regressions

Table 11: OLS regression results: Interacts Cooperatives

	Dependent Variables					
	ROA		AROA		FSS	
		Adj-R^2		Adj-R^2		Adj-R^2
Decision Making	2.662***	0.267	2.705***	0.158	6.949*	0.023
	(3.861)		(2.751)		(1.649)	
Interact. DM-Coop	-1.228**		-1.363		-2.482	
	(-2.336)		(-1.690)		(-0.707)	
Accounting and control	2.755***	0.236	2.898***	0.146	7.571*	0.025
	(3.731)		(2.828)		(1.769)	
Interact. PLAN-Coop	-0.983*		-1.027		-0.970	
	(-1.774)		(-1.213)		(-0.266)	
Top management	4.306***	0.351	3.726***	0.163	14.219**	0.101
	(4.947)		(2.829)		(2.638)	
Interact. MNGM-Coop	-0.940*		-1.273*		-1.858	
	(-2.008)		(-1.695)		(-0.591)	
HR	2.863***	0.266	2.739**	0.174	9.696**	0.077
	(4.013)		(2.752)		(2.06)	
Interact. HR-Coop	-0.926*		-1.480*		-2.512	
	(-1.805)		(-1.913)		(-0.761)	

[a] t-values in parentheses.
*Significant at the 10% level
**Significant at the 5% level
***Significant at the 1% level

Table 12: Correlation matrix: Subsidies and management

	Subsidies	Subsidies/ Years of operation	Decision Making	Accounting and control	Top Management	HR Management
Subsidies	1,000	0,895	0,266	0,012	0,044	0,146
Subsidies/ Years of operation		1,000	0,251	0,063	0,064	0,165
Decision Making			1,000	0,676	0,660	0,635
Accounting and control				1,000	0,704	0,603
Top management					1,000	0,831
HR Management						1,000

Table 13: OLS regression results: Management and subsidies: Individual regression

Explanatory variable	Dependent Variable			
	Decision Making	Accounting and control	Top Management	HR Management
Subsidies	8.40E-08*	5.36E-09	1.15E-08	4.54E-08
	(1.904)	(0.122)	(0.338)	(1.044)
Subsidies/ Years of operations	6.56E-07*	1.61E-07	1.28E-07	4.38E-07
	(1.812)	(0.442)	(0.449)	(1.174)

[a] t-values in parentheses.
*Significant at the 10% level
+ Data from individual regressions

Table 14: Correlation & OLS regression results: Subsidies and number of years of operations

	# Years of Operation	
	Correlation	OLS Regression
Subsidies	0.011	6170441
		(0.078)

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