



University of Groningen

Determinants of the Performance of Microfinance Institutions

Hermes, Cornelis; Hudon, M.

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2018

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Hermes, C., & Hudon, M. (2018). Determinants of the Performance of Microfinance Institutions: A Systematic Review. (SOM Research Reports; Vol. 2018, No. 008). Groningen: University of Groningen, SOM research school.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.



university of
 groningen

faculty of economics
 and business

2018008-EEF

**Determinants of the Performance of
 Microfinance Institutions: A
 Systematic Review**

June 2018

Niels Hermes
 Marek Hudon



SOM is the research institute of the Faculty of Economics & Business at the University of Groningen. SOM has six programmes:

- Economics, Econometrics and Finance
- Global Economics & Management
- Innovation & Organization
- Marketing
- Operations Management & Operations Research
- Organizational Behaviour

Research Institute SOM
Faculty of Economics & Business
University of Groningen

Visiting address:
Nettelbosje 2
9747 AE Groningen
The Netherlands

Postal address:
P.O. Box 800
9700 AV Groningen
The Netherlands

T +31 50 363 7068/3815

www.rug.nl/feb/research



Determinants of the Performance of Microfinance Institutions: A Systematic Review

Niels Hermes

University of Groningen, Faculty of Economics and Business, Department of Economics,
 Econometrics

c.l.m.hermes@rug.nl

Marek Hudon

CEB/CERMi, SBS-EM, Université Libre de Bruxelles (ULB), Belgium

Determinants of the Performance of Microfinance Institutions:

A Systematic Review

Niels Hermes
Faculty of Economics and Business
University of Groningen
Groningen, the Netherlands

Marek Hudon
CEB/CERMi, SBS-EM
Université Libre de Bruxelles (ULB)
Brussels, Belgium

Abstract

Microfinance institutions (MFIs) generally aim at improving the access of the poor to financial services while at the same time being financially sustainable. But what do we know about how MFIs reach and combine these two goals? We carry out a systematic review of close to 170 articles discussing the determinants of the financial and social performance of MFIs. The review shows that the most important determinants addressed in the literature are MFI characteristics (size, age, type of organization), their funding sources, the quality of organizational governance and the MFIs' external context such as macroeconomic, institutional and political conditions. The evidence on these issues is rather mixed. Moreover, the direction of the relationship between these drivers and MFI performance depends on the context, particularly the country-specific context. Finally, there is a lack of consensus in the literature on the measurement of financial and social performance. Due to the complexity of the concept, we argue that social performance should only be assessed by using a multidimensional perspective. This can be done either by applying recent and holistic social performance measures such as the SPI4, or at least by using a combination of proxies, such as outreach, gender and rural measures.

Acknowledgements

We thank Lina Frank for her very helpful research assistance.

1. Introduction

Research has shown that having access to financial services is crucial for the poor as this helps them to smooth their consumption, generate business opportunities, and improve their inclusion in the formal economy in the long run (Collins et al., 2009). Yet, a substantial part of the very poor population (and especially women) in emerging economies is excluded from access to the formal financial system. According to Demirgüç-Kunt et al. (2015) in 2014 around 2 billion adults worldwide were still unbanked, that is, they did not have an account with or access to credit from a formal financial institution, such as a bank.

Since the late 1970s, the poor in emerging economies have increasingly gained access to financial services offered by so-called microfinance institutions (MFIs). These MFIs have shown significant growth rates in providing financial services to poor households. Whereas in 1997 these MFIs had around 10 million clients, in 2010 this number had grown to over 200 million (Reed, 2015). These MFIs focus on reaching out to the poor, while at the same time being financially sustainable. In the literature, this has been referred to as the microfinance promise (Morduch, 1999).

One important question is whether microfinance really contributes to improving the well-being of the poor. Several studies have looked into this issue by reviewing the results from impact studies. Examples of these review studies are Bauchet and Morduch (2011), Duvendack et al. (2011), Van Rooyen et al. (2012), Awaworyi (2014), Gopaldaswamy et al. (2016) and Maitrot and Niño-Zarazúa (2017). These studies refer to the demand side of microfinance. Yet, until now, no study has systematically evaluated the potential of microfinance to reducing poverty from the supply side. That is, what is the performance of MFIs in reaching out to the poor by providing services poor households need, also referred to as *social* performance, and what determines their success (or failure) in reaching this goal? Moreover, how do MFIs *perform financially*, that is, to

what extent are they able to reach out to the poor while at the same time being financially sustainable? Only two review papers have dealt with these issues, but they look at specific topics when evaluating the financial and social performance of MFIs (Reichert, 2018; Chakravarty and Pylyviv, 2017).

In this review article, we focus on the literature that discusses the performance of MFIs. In particular, we provide a systematic overview of research that analyzes the determinants of the financial and social performance of MFIs. Research in this field deals with three main topics, that is, the determinants of MFI performance related to outreach, financial sustainability, and the relationship between the two types of performance.

Reviewing this literature is important. First, in order for MFIs to make a significant and long-term contribution to improving the access of the poor and make them financially inclusive, we need to know more about factors that may help these institutions reaching their financial and social goals. Aiming at maximizing outreach under the condition of being financially sustainable is certainly important, as many MFIs nowadays are still dependent on subsidies from governments, NGOs, etc. In 2010, roughly only 20 to 25 per cent of MFIs reported not having used subsidies to carry out their activities (D'Espallier et al., 2013a). Having MFIs being dependent on subsidies is not a sustainable long-term business model. The outcomes of a review of the determinants of the performance of MFIs can be an important input for policy advice as to how microfinance can contribute to reducing poverty in a financially sustainable way. Secondly, the research on MFI performance is still in its infancy (Mersland and Strøm, 2014). Although quite a number of papers have been published on this topic since the early 1990s (our systematic review resulted in a list of around 170 articles published in academic journals), there is still controversy about the measurement of MFI performance and the interpretation and importance of outcomes reported in these studies. This is a clear indication of a research gap on this topic.

The remainder of this review is structured as follows. Section 2 briefly summarizes the debate about what MFI performance entails. This section goes into discussing and defining the two main goals of MFIs, that is, being financially as well as socially sustainable. Section 3 provides an overview of how performance of MFIs has been measured in the literature. This is followed by a brief discussion in section 4 of the methodology we followed by systematically reviewing the existing literature. In section 5 we summarize the main findings with respect to specific categories of determinants of MFI financial and social performance. In particular, we find that the majority of the articles focus on determinants related to MFI characteristics, financing sources for MFIs, organizational governance, the MFIs' external context and the trade-off between financial and social performance. The review ends with discussing a number of research challenges for future research and conclusions.

2. MFI performance: The debate

The main business model of MFIs is providing financial services to poor households who are excluded from the formal financial system. This is generally seen as their main (social) mission and is referred to as MFIs' outreach (Morduch, 1999). Reaching out to the poor is usually relatively expensive as compared to the supply of financial services by regular commercial banks, which focus on servicing more wealthy clients. Poor clients may live in rural areas, which makes it usually more costly to supply them with financial services due to higher transaction costs. Moreover, in many cases they do not have collateral to pledge when obtaining a loan, which may increase the risks, and therefore the costs for the banks. Offering deposit accounts and other savings products is costly, because the amount poor clients can save is very small while the costs of offering these services for the banks are fixed. Servicing poor clients may also be more costly, because information about their repayment capacity is generally more opaque than for richer

clients. This makes the process of screening and monitoring of clients more expensive. Although MFIs have developed methods to reduce these costs (e.g. by offering group loans, making borrowers jointly responsible for the repayment of individual loans)¹, lending to the poor on average is still more expensive and more risky than offering loans to wealthier clients who have a regular income.

The next question is how MFIs finance their activities. As reaching out to the poor is costly, MFIs need a financial strategy enabling them to cover these costs. Given that they have a social mission, donor funding may be one of the sources, next to external commercial funding such as equity and loans, and resources generated through offering savings accounts. The relative importance of these resources may depend on the formal status (or type) of the MFIs. MFIs can be either not-for-profit non-governmental organizations (NGOs), cooperatives, non-banking financial institutions or (for-profit) shareholder-based financial institutions. The amount of financial resources MFIs have access to, in combination with the way these resources are used to offer financial services, ultimately determine the performance of their operations.

Discussing the performance of MFIs is an important issue when evaluating the contribution microfinance can make in reducing poverty and increasing the financial inclusion of the poorest. Financial inclusion refers to individuals, households and firms having access to financial products and services that help them to make transactions, payments, collect savings and pension funds, and obtain credit and insurance (World Bank, 2018). MFIs can make a valuable contribution to increase the financial inclusion of especially the poor by offering products and services that are useful and affordable to them and that are delivered in a

¹ See Ghatak and Guinnane (1999) and Armendariz and Morduch (2010) for overviews of the literature on the economics of group lending.

responsible and sustainable way.² The more efficient MFIs are in turning financial resources they obtain into financial products and services delivered to poor households, the bigger their potential impact can be on increasing financial inclusion of the poor. This may help these poor households to cope with the hardship they experience due to the mismatch between their low, highly fluctuating and uncertain income on the one hand, and their daily basic needs on the other (Collins et al., 2009).

What are the choices MFIs make when deciding on how to organize their operations? Should the focus be on outreach to the poor (i.e. *social performance*), given the financial sources available? Or should they focus on generating returns on financial resources (i.e. *financial performance*), given a certain level of outreach? Of course, MFIs can choose various combinations of levels of these two types of performance. Ultimately, answering the above questions is about how to turn (real and financial) resources into the provision of services. In practice, the choice for a particular combination of financial and social performance levels may be linked to the type of MFI. Whereas NGOs may be more inclined to focus on their social mission and prioritize social performance at the cost of reaching financial performance, for-profit microfinance banks on average will most likely attempt to emphasize financial performance, which may result in putting less effort in reaching out to the poor.

The choice MFIs make regarding combinations of financial and social performance and the consequences this has for their operations, has been subject of fierce debate in the microfinance literature and has become known as the *trade-off* discussion. The debate is about whether or not MFIs can stick to their main social mission of outreach and provide services to poor households (i.e. being socially sustainable), while at the same time being financially

² Definition of financial inclusion is taken from the World Bank, see : <http://www.worldbank.org/en/topic/financialinclusion/overview> (accessed June 9, 2018)

sustainable. That is, they should be able to reach out to poor clients without making net losses and/or without being dependent on subsidies over the medium- to long-term. The reason is that, if MFIs provide services to the poor, while making losses at the same time, their business model will not be sustainable in the long-term. The same holds for the dependence on subsidies, because even if subsidies are available, it is recognized that these resources are limited and may decrease in the future. Therefore, in the microfinance literature people refer to the so-called *double bottom line mission* of improving the lives of the poor while being independent of donor support in the long run (Armendariz and Labie, 2011).

Until the late 1990s, the role of the microfinance business as being focused on providing financial services to the poor was dominant in the thinking about the main mission of MFIs. Since the early 2000s, however, the debate has moved into the direction of emphasizing the importance of developing financially sustainable MFIs. Nowadays, the importance of striving for financial sustainability has been embraced by most parties in the microfinance debate. Donors, policy makers and other financiers of microfinance have recently made a shift from subsidizing MFIs institutions towards an increased focus on financial efficiency of these institutions.

Shifting the focus from social to financial performance coincided with a number of important developments the microfinance business was confronted with, especially since the early 2000s. One important development was the apparent success of the microfinance model. MFIs showed high success rates in reaching the poor, while at the same time reporting low levels of repayment problems. Reported loan recovery rates of 95 per cent or higher were no exception. Microfinance thus appeared to be a thriving, sustainable business model. This triggered the attention of investors, looking for socially responsible investment opportunities. Even commercial banks became interested as they saw providing financial services to the poor as a way to create new markets for their activities. These developments contributed to a fast-growing

microfinance sector. During 2000-2005, average annual growth rates in terms of the number of clients served by MFIs amounted to 50 per cent; during 2006-2008 growth rates rose further to 70-100 per year (Sinah, 2010; Assefa et al., 2013). The financial crisis contributed to a substantial reduction in microfinance growth (Wagner and Winkler, 2013). Since 2010, growth has revived albeit not at the pace that was observed before the crisis.

The almost unprecedented growth of the microfinance business also contributed to an increased competition and *commercialization*, revealing itself in private, profit-seeking funding sources entering the business model of MFIs. As the number of MFIs grew fast and they all tried to survive, the pressure to sell financial services led to saturation of markets and over-indebtedness of clients in some countries and regions. Competition and commercialization thus contributed to an increased focus on profit making. In the literature, the recent trend of MFIs shifting their focus from social performance towards a stronger focus on profitability has been referred to as *mission drift* (Copestake, 2007; Armendariz and Szafarz, 2011; Mersland and Strøm, 2010).

At the same time, however, there remains variety in MFIs in terms of their financial sustainability. According to Cull et al. (2016), only half of the MFIs listed in the so-called MIX Market dataset are financially sustainable.³ The number of financially sustainable MFI is probably even smaller since the existing dataset may be biased towards more profitable and established MFIs. In most cases, these are larger, mature, regulated and relatively well-known MFIs (Deutsche Bank, 2007). The non-profit NGOs are still the main type of MFIs, representing almost half of the total number of MFIs (D'Espallier et al., 2017). The median level of financial

³ The MIX market is a global web-based microfinance information platform. It provides financial data, organizational data and profiles of more than 2,000 MFIs located in over 100 countries around the world. See the following webpage: www.mixmarket.org

sustainability does not differ much between non-profit and/or non-governmental organizations on the one hand and for-profit or microfinance banks on the other hand (Cull et al., 2016). The remaining group of MFIs consist of smaller, start-up organizations, which are still far from being financially sustainable and are therefore (heavily) dependent on subsidies. D’Espallier et al. (2013a) show that only 20 to 25 per cent of MFIs do not receive any donations.

Overall then, during the past three decades, the dominant view regarding the mission of microfinance has shifted from an almost exclusive focus on outreach to the poor, towards an increased focus on profit-making and an emphasis on financial performance. This is at least how thinking among practitioners evolved, making decisions based on their own experience and beliefs, and influenced by the changes that occurred in the microfinance landscape in terms of the financing of MFIs activities and the role played by donors and commercial investors. Yet, what can research tell us about the possible determinants and consequences of both financial and social performance and the potential for a trade-off between these two? Our knowledge on these issues remains scattered, as there is no comprehensive overview of what we know about the performance of MFIs and its determinants. There is thus much room for expanding our knowledge on this topic. The remaining part of this article is devoted to reviewing the academic literature investigating this question. Before going deeper into this literature, we first discuss how financial and social performance has been measured in microfinance research.

3. Measuring MFI financial and social performance

In the literature MFI *financial* performance has been measured in various ways. In most cases, researchers use traditional financial ratios such as the return on equity (ROE) or the return on assets (ROA). These measures are also used in the more general banking literature. ROE is calculated as net operating income divided by the value of outstanding equity; ROA is measured

as the ratio of net operating income to the value of total assets of the MFI. In some cases, researchers use other measures of financial performance they borrow from the banking literature, such as loans at risk (a measure of the riskiness of the loan portfolio) or the yield ratio, measured as the total income from interest and fees on the outstanding loan portfolio. However, since detailed, high-quality financial information is usually rather difficult to obtain for MFIs researchers mostly fall back on using ROA or ROE as a measure of financial performance

Next to traditional measures, financial performance is also evaluated by using indicators that are more specific to microfinance. These indicators include measures such as the so-called operational self-sufficiency and financial self-sufficiency. Operational self-sufficiency provides information with respect to the ability of MFIs to cover costs with revenues, that is, it shows to what extent an MFI is able to break even on its operations. It can be assessed by dividing total operating revenues by the sum of total financial expenses on attracting funding, which includes interest paid to depositors and interest and fees on loans from funds or other financial institutions as well as bondholders, and expenses on loan loss reserves and operations. In some cases, a simpler measure of operational self-sufficiency is used, taking the ratio of operating revenues to operating expenses net of loan loss provision expenses and operating expenses.

Financial self-sufficiency is measured as the adjusted total financial revenue divided by the sum of adjusted financial expenses, loan loss provisions and operating expenses. Adjustments refer to correcting for the country-level inflation rate and the implicit and explicit subsidies. These subsidies include concessionary borrowings, cash donations, and in-kind subsidies. The financial self-sufficiency measure indicates the extent to which MFIs are able to operate without ongoing subsidies, including soft loans and grants (Cull et al., 2007).

In microfinance research, *social* performance is related to the social mission of MFIs, i.e. reaching out to the poor by lending to individuals, households and small firms having limited or

no access to finance. Studies on the social performance of MFIs mostly focus on two dimensions of outreach, that is, its breadth and depth (Schreiner, 2003). The breadth of outreach refers to the coverage of MFI and is generally measured by the number of clients served by the MFI. The depth of outreach refers to the type or profile of the clients served by the MFI. The two most widely used measures of the depth of outreach are the ratio of active female borrowers to the total number of active borrowers of an MFI and the average size of the loan divided by the GDP per capita of the country in which the MFI resides. The intuition behind the first measure is that female borrowers are generally considered as being among the poorest of the population and that they are most strongly excluded from taking out loans from formal banks. The second measure is a proxy of the average poverty level of clients taking out a loan from the MFI. The poor are expected to take out smaller loans (relative to their income); MFIs may also not be willing to lend larger sums to poorer clients because of the potential risk of non-repayment. Sometimes, measures related to outstanding (number and size of) deposit accounts are used. However, not all MFIs are offering deposit accounts due to regulatory barriers, meaning that the coverage of studies using these measures is generally lower. A minority of studies also use an indicator of the geographical dimension of outreach by taking the percentage of clients living in rural area. The assumption supporting this measure is that the majority of the poor usually live in rural areas.

A specific and growing branch of literature investigating performance focuses on measuring the efficiency of MFI operations. Studies related to this branch of literature analyze how organizations use resources and turn them into goods and/or services, that is, they try to capture the notion of organizational efficiency. This notion of organizational efficiency has been used in the literature discussing non-profit organizations more generally (Callen et al., 2003). The measurement of the efficiency of an organization relates to calculating the maximum level of outputs that can be generated given a certain quantity or costs of inputs. Alternatively, efficiency

can be measured by calculating the minimum quantity or costs of inputs to generate a certain output level. The closer the organization is to producing the maximum output level or to minimizing the costs of production, the higher its efficiency.

Most studies use data envelopment analysis (DEA)⁴ and/or stochastic frontier analysis (SFA)⁵ to measure cost efficiency.⁶ DEA and SFA allow for establishing how close the actual costs of the activities of an MFI are to what the costs of a best practice MFI would have been in case it produces identical output under the same conditions. In order to be able to know what the costs of a best practice MFI in producing its services are, a so-called efficient cost function or efficient cost frontier needs to be established. This frontier shows the combinations of output volumes and related minimum levels of inputs costs. Again, the microfinance literature borrows this approach from studies in banking where this approach has been used extensively.

If an MFI is cost efficient, it is located somewhere on the frontier. In this case, the MFI is said to be both technically efficient (meaning that it maximizes production given available inputs) as well as allocatively efficient (i.e. it uses the optimal mix of inputs given the relative price of each input). If an MFI is located somewhere below the efficient cost frontier, however, it is producing its services (technically and/or allocatively) inefficiently. The distance between the location below the frontier and the frontier is a measure of the extent to which the MFI is considered inefficient.

Both DEA and SFA use data on input prices and output of producing units as their information set. DEA determines the frontier as the curve linking output levels for which costs are minimized. SFA estimates the efficient cost frontier, rather than deterministically establish its

⁴ See Charnes et al. (1978) and Banker et al. (1984) for a detailed and more technical discussion of this methodology.

⁵ See Jondrow et al. (1982) for a detailed and more technical discussion of this methodology.

⁶ Next to cost efficiency, DEA and SFA can be used to estimate profit efficiency. While cost efficiency is related to the objective of cost minimization, profit efficiency captures profit maximization (Maudos et al., 2002).

position, as is the case for DEA. SFA allows for taking into account several factors that may determine the position of the cost frontier, next to output levels and input prices. It also allows for measurement errors in the underlying information set. DEA does not allow for measurement error and luck factors. These techniques attribute any deviation from the best-practice MFI to technical inefficiency.

Most studies on the measurement of the efficiency of MFIs focus on cost efficiency (Hermes et al., 2011). The main reason is that according to many observers microfinance's mission should be to reduce poverty. Thus, given the available financial resources MFIs should aim at maximizing their contribution to this goal. Reducing the costs of providing services may maximize their contribution to poverty reduction. Cost efficiency, that is, the extent to which MFIs are efficient in using resources and turning them into services, is closely linked to attaining their goal of making a long-term contribution to helping the poor. Studies using DEA and/or SFA to investigate MFI efficiency generally select measures of financial and social performance similar to the ones discussed above.

To conclude this brief overview, we note that there are several ways MFI performance has been measured in the literature. There seems to be no consensus with respect to what is the best way of measuring financial and social performance. Yet, consensus about the correct measurement of these concepts seems to be crucial in order to be able to come to academically founded conclusions about the drivers of MFI performance and to come up with policy relevant recommendations. Developing good and widely accepted measures of financial and social performance is therefore still a challenge.

4. Methodology and data description

4.1 Method of data collection

In this section, we first shortly discuss the method of data collection (that is, choice of data base to search journal articles, key words used, criteria for selecting articles to be included in the data set, etc.). As a first step, we established the topics we want to focus on when discussing the performance of MFIs and its determinants. In order to make this selection we took the so-called Banana skin reports. These reports are published bi-annually since 2008 and describe the most important challenges MFIs have to deal with based on surveys among representatives of rating agencies, MFI managers and investors asking them what the main challenges are MFIs are confronted with in a given year. A review of these reports shows that some of the most important challenges related to the efficiency of MFIs are the commercialization of and competition within the microfinance business, the governance of MFIs and the type of funding sources MFIs have access to.

Based upon this evaluation of the Banana skin reports we created a list of key words we used when searching for articles in databases. The list of key words consisted of the following terms:

- Efficiency, performance, productivity, trade-off (all related to the outcome variable in the studies, that is, measures of efficiency of MFIs);
- Funding, capital, subsidy, financing, grants, aid (all related to the funding sources of MFIs);
- Governance, boards, board characteristics, mission drift, transformation, ownership structure, transparency (all related to the governance of MFIs);
- Market evolution, market structure, commercialization, competition (all related to the market structure and conditions MFIs have to work in).

We used these key words to search in data bases of articles. We decided to only select peer-reviewed articles. This ensured that the articles ending up in our database had a minimum

level of quality. Moreover, it reduced the scope of the search.⁷ We chose using the EBSCO database, which is a widely used search machine for finding peer-reviewed journal articles. We also decided to select articles that were published since 1990. We chose starting the search from this year, because research focusing on the efficiency of MFIs started taking off from the early 1990s. Our article search stopped in August 2017. Finally, we only selected articles written in the English language.

Using the above described selection criteria we ended up having 306 articles in our initial sample. We then went through all these articles one-by-one and read the abstracts and introductions to determine what the research was focusing on. We filtered out review articles on microfinance, articles discussing methods of measuring efficiency (instead of reporting efficiency outcomes and their determinants), theoretical and conceptual articles, articles on lending methodologies (such as group lending or individual lending) and individual repayment performance, and articles in which the dependent variable was not MFI efficiency. After carefully evaluating the content of all articles in the database we ended up having 169 articles. This is the set of articles based on which we carry out the systematic review.

We acknowledge that our approach in selecting academic articles only may not provide the full picture of what has been published on MFI performance since the early 1990s. Yet, our survey is not intended to be exhaustive. Instead, it provides a solid sample of published articles, allowing us to describe the most important past developments in the research on MFI efficiency.⁸ In this way, our review is also helpful in showing where future research on this subject could, or perhaps even should, focus on, that is, it helps identifying research gaps.

⁷ Using the key words and carrying out a search in Pro-Quest, a database that includes articles, dissertations and theses, e-books, newspapers, periodicals, historical collections, governmental and cultural archives and other aggregated databases, returned almost 2,000 observations.

⁸ We follow Noussair and Tucker (2013) who took a similar approach in their review paper.

4.2 Description of the data

Table 1 provides an overview of some of the characteristics of the articles in our dataset. First, the table presents the number of articles published each year. Although we started searching from 1990, the first article analyzing the performance of MFIs was published only in 2001. While in the first twelve years after the first article on MFI performance was published the academic attention for the topic was moderate, from 2013 the research suddenly took off rapidly. Two thirds of the articles were published during 2013-2017. This supports the view that only recently MFI performance and its determinants have gained prominence in academic research. A substantial part of the research focuses on cross-country comparisons of performance and its determinants, as more than half of the articles use data from a worldwide sample of MFIs. At the same time, almost 40 per cent (64 articles) focus on country case studies. The majority of the case studies focus on Asian countries (56 per cent; 36 studies); MFIs in India receive the most attention (21 studies). One third of the country cases (21 studies) deals with MFIs in African countries.

<Insert table 1 here>

The majority of the articles (51 per cent; 87 studies) in our database analyze both financial and social performance and their determinants. As we will discuss later, in fact several studies discuss the potential trade-off between the two types of performance, as there is a hot debate among academics as well as practitioners about whether or not both these aims of MFIs are substitutes instead of complements. Most studies focus on financial performance when they deal with a single type of performance (33 per cent; 55 studies). Interestingly, attention for social

performance of MFIs only really starts from 2010. This may be surprising as the social aims of MFIs were at the forefront of discussions about MFIs, especially during the earlier years of the development of the microfinance movement. One reason why attention for social performance increased recently may be the criticism microfinance was confronted with after 2007. MFIs were criticized for their sometimes rather unethical practices, for example in India, and for their increased focus on financial instead of social performance. One example of this was the critique Compartamos was confronted with after their initial public offering in 2007 (Cull et al., 2009).

The vast majority of the studies use quantitative methods to analyze the performance of MFIs (83 per cent; 140 studies). In only 19 studies, qualitative approaches are used to assess MFI performance. With respect to the measurement of performance, most articles use a mix of traditional accounting variables to measure financial and social performance (85 per cent, 142 studies). Popular financial performance variables are, among others, return on assets (ROA), return on equity (ROE), operational self-sufficiency, financial self-sufficiency, etc. In more recent studies researchers started to use more sophisticated measures of performance measurement. Especially since 2012, several studies have used either DEA or SFA in order to measure financial efficiency of MFIs. Still, they account for a minority of all studies investigating the financial performance of MFIs (16 percent; 27 studies).

Regarding social performance measurement, the average loan size (relative to income of the target population), the number of borrowing clients, the number of loans and saving accounts, the number of branches established and the share of loans to female borrowers are used most often. These measures of social performance have been criticized in the literature (Schreiner, 2003; Manos and Yaron, 2009). They only very roughly and indirectly measure the extent to which MFIs reach their poverty goals. Moreover, they usually measure only one type of outreach, that is, the breadth or depth of reaching out to the poor. More sophisticated and complex

measures of social performance include the Social Performance Indicators Tool 4 (SPI4) developed by the Social Performance Taskforce (SPTF) and CERISE. This assessment tool provides MFIs the option to perform a detailed self-audit of the extent to which they implement social performance outcomes such as poverty reduction, rural support, reducing gender biases and/or green finance. The tool consists of a large set of standardized questions about the operations of an MFI. These questions are constantly updated, based on the feedback provided by users of the SPI4 tool. The tool was introduced in 2001; by April 2018, some 520 SPI4 audits had been completed covering MFIs in 88 countries (CERISE).⁹

Yet, data allowing for more sophisticated approaches of measuring social performance are often very hard to collect, especially for studies carrying out cross-country comparisons of performance (Hermes et al., 2011), which is why research in many cases relapses into using simpler measures.

Most studies use the MIX market data set as their main source for collecting information with respect to the performance of MFIs (60 per cent; 102 studies). Its extensive nature and easy accessibility makes it a very popular source of data. One potential shortcoming, however, is that it provides data for the larger and more developed MFIs only as it is based on self-reporting, that is, the inclusion of an MFI in the data set is voluntary. Several other studies (28 per cent; 48 studies), specifically those focusing on country case studies, use data from national sources. In a number of countries, regulating institutions and/or microfinance associations collect information about the profiles and performance of MFIs. Finally, some studies use data obtained from rating agencies (11 per cent; 19 studies). Specialized agencies such as MicroFinanza, MicroRate, M-CRIL and Planet Rating provide rating services to MFIs, which they need for attracting financial

⁹ Data are taken from the CERISE website ; see : <http://www.cerise-spi4.org/benchmarking/> (accessed June 9, 2018).

support from donors and investors as well as to regulators, donors and investors, who use the information to monitor their performance. For a substantial number of MFIs performance data overlap in the MIX Market and the data from rating agencies.

Finally, table 1 shows information about the outlets in which research on the performance of MFIs has been published. While most articles (53 per cent; 89 studies) are published in journals listed in the Web of Science data base (a data base that provides information on the impact of a journal using the Social Science Citation Index (SSCI))¹⁰, a substantial part is to be found in journals not covered by this index. A relatively large number of country case studies have been published in outlets outside the list of journals in the Web of Science database (47 per cent; 80 studies). Among the journals listed in the Web of Science data base *World Development* has been used relatively often as an outlet of research on the performance of MFIs (16 studies). Other popular outlets are *Journal of International Development* (8), *Journal of Business Ethics* (5), *Journal of Banking and Finance* (4) and *Applied Economics* (4). In a few cases, microfinance performance research has been published in top finance and economics journals such as *Journal of Finance*, *Review of Financial Studies*, *Review of Economics and Statistics*, *Economic Journal* (2 studies), *Journal of Economic Perspectives* and *Journal of Development Economics* (2).

5. Data analysis

This section discusses the content of the papers in our database. We discuss articles in various sub-sections based on the topics we have defined as being important in discussion about MFI performance. The discussion of each of these topics starts with an overview of the theory and arguments about how a topic has been related to MFI performance in the literature, that is, it

¹⁰ The impact factor of the SSCI is a widely accepted measure of the quality of a journal.

shortly describes the underlying reasoning of the hypotheses tested in these papers. The papers are then discussed with respect to what we they do and what they find.

5.1 MFI characteristics and performance

Several organizational characteristics have been examined in the empirical literature as to how they may impact the performance of microfinance institutions. In our database, 48 articles discuss the impact of MFI-specific characteristics on their performance. We focus on three key characteristics – the size of MFIs, its maturity or age, and institutional type – as they are discussed most frequently.

Organizational maturity

The relationship between organizational maturity and performance is not unidirectional. On the one hand, life cycle theory suggests that performance may evolve with the maturity of the organization. More mature MFIs may improve their performance thanks to their accumulated experience (that is, they profit from a learning curve effect). These MFIs may also benefit from a first-mover advantage, being able to preempt competitors from accessing resources or valuable market niches, but also create long-lasting cost advantages (Suarez and Lanzolla, 2007). On the other hand, however, young organizations may benefit from recent technologies or innovations when they start their operations, that is, they have the advantage of backwardness. More mature organizations may be stuck in older and less efficient processes that make them comparatively less efficient. Younger MFIs, for example, may more easily adopt new management information systems and develop mobile banking platforms.

Many articles in our database include the age of the MFI in their empirical analysis. In most cases, however, age is used as a control variable. Most cross-country studies find a positive

relationship between the age of the MFI and its financial performance (Ayayi and Senne, 2010; Cull et al., 2007). One exception is Cull et al. (2015) who study Greenfield MFIs and find that they show financial performance comparable to those of the best performing (older) MFIs.

Country studies offer a more mixed picture, however. A few papers study the association between age and the performance of Indian MFIs. Narwal and Yadav (2014) find a negative impact of age on both profitability and outreach. Rai (2015) shows that young Indian MFIs grow faster and hold higher-quality assets. Other studies using Indian data find that age positively influences productivity (Rashid and Twaha, 2013) or efficiency (Wu et al., 2016). Wijesri et al. (2015) find that age positively influences financial and social efficiency in Sri Lanka while Wijesri and Meoli (2015) suggest a negative influence on productivity in Kenya. This result may be due to the dynamic and competitive nature of the microfinance sector in this country.

Results are also mixed regarding the influence of age on social performance (D'Espallier et al., 2017) and more specifically environmental performance (frequently considered as a sub-category of social performance). The evidence on environmental performance depends on the geographical context. Allet and Hudon (2015) show that more mature MFIs perform better environmentally in developing countries. Forcella and Hudon (2016) find no significant impact in a sample of European MFIs.

Size

The size of MFIs (measured in terms of their total assets or the value of their loan portfolios) may matter for performance as larger MFIs benefit from economies of scale and scope in providing financial services. Scale and scope economies allow larger organizations to be more efficient, resulting in better financial performance. Larger MFIs may also reach out to the poorer clients, thus increasing the depth of their outreach, once they decide to cross-subsidize such activities by

using revenues generated through economies of scale (Armendàriz and Szafarz, 2011). At the same time, however, larger MFIs may also generate portfolio growth due to the targeting of less poor clients. This phenomenon is generally referred to as *mission drift* and is associated with lower social performance.

A few articles specifically address the impact of the size of the MFI on their performance. These articles suggest a positive relationship between the size and the efficiency and/or financial performance of the MFI (Cull et al., 2007; Caudill et al., 2009). A few country studies confirm that larger MFIs are more efficient and/or have better financial performance (Gregpore and Tuya, 2006; Rashid and Twaha, 2013; Bartni and Chitnis, 2016; Gohar and Batool, 2015).

Evidence is more mixed with respect to the relationship between size and social performance. While Kar (2013) finds that larger MFIs have better social performance, Gutierrez-Goira et al. (2016) report no significant relationship and both Narwal and Yadav (2014) and Rao and Reda (2015) find that larger MFIs have lower social performance respectively in India and Ethiopia. Both surveys on the environmental performance of MFIs suggest that larger MFIs have better environmental performance (Allet and Hudon, 2015; Forcella and Hudon, 2016).

To sum up the above overview, the size or scale of operations has a clear and positive impact on the financial and environmental performance of MFIs but not always on their social performance.

Institutional type

Various institutional types are to be found among MFIs. First of all, MFIs may be classified as not-for profit, non-governmental organizations (NGOs). NGOs do not have a bank license, which means they are not allowed to take voluntary deposits. Owners of these MFIs may consist of a variety of stakeholders such as donors, investors, staff and customers. Second, MFIs also include

for-profit shareholder companies such as commercial banks and non-banking financial institutions. Finally, MFIs include credit and savings cooperatives, which are owned by their members. The type of organization may impact MFIs' performance. NGOs are expected to have better social performance than for-profit, commercial organizations since social performance is at the core of their existence and mission (Morduch, 1999). The same holds for cooperatives, which are owned by their members. In contrast, NGOs will have lower financial performance as compared to commercially driven organizations.

Several articles analyze the impact of the type of organization on the performance. Most of them use multi-country data confirm that NGOs show lower financial performance but perform better when it comes to social performance as compare to their for-profit counterparts (Gutierrez-Nieto et al., 2007; Cull et al., 2009; Gutierrez-Nieto et al., 2009; Servin et al., 2012; D'Espallier et al., 2013b; Guérin et al., 2015; Gutierrez-Goiria et al., 2016). These results are corroborated in a number of country studies showing that for-profit MFIs have lower social performance (Annim, 2012; Gohar and Batool, 2015). In contrast, however, Mersland and Strøm (2009) and Louis and Baesens (2013) find no significant differences between the two types of MFIs in terms of financial performance. Tchakoute-Tchigoua (2010) reports that for-profit MFIs have even better social performance than NGOs. Barry and Tacneng (2014), finally, show stronger financial and social performance for NGOs using data from MFIs in a number of Sub-Saharan African countries.

A number of studies focus specifically on the performance of cooperatives. One interesting result is that financial cooperatives are frequently found to be more efficient (Abate et al., 2014; Aboagye, 2009; Marwa and Aziakpono, 2015; Tchakoute-Tchigoua, 2010). Chidambaranathan and Premchander (2013) show that member-owned MFIs provide better

financial and social returns to their members. Kendo (2017) argues that an increase in size can help cooperatives to reduce their costs.

One specific topic discussed in the literature on the type of MFI is the regulation and transformation process from being an unregulated NGO status to a regulated for-profit shareholder organization. Some studies, such as Hartarska and Nadolnyak (2007), Pati (2012) and Pati (2015), compared regulated and non-regulated MFIs and find no significant difference in financial performance and outreach. More recently, instead of comparing different types of MFIs, studies track the evolution of MFIs after transformation. Chahine and Tannir (2010) find that transformation improves financial performance but hinders poverty outreach, which is suggestive evidence for mission drift taking place. D’Espallier et al. (2017) also find that operational efficiency increases after transformation.

Our summary of the above results suggests that the relationship between MFI-specific characteristics and financial and social performance may not be unidirectional, but may actually depend on contextual variables. In particular, the country-level context seems to matter as outcomes from country-specific studies provide contrasting results. Future research may dig deeper in the role of country-level contextual variables, such as macroeconomic conditions and formal and informal institutions, to better understand the relationship between MFI-specific characteristics and performance.

5.2 MFI performance and financing sources

The financial and social performance of MFIs may be associated with the financing sources to which they have access. In our database 23 studies address the impact of the type of financing source on the performance of MFIs. MFIs may fund their operations by using debt, deposits, equity and/or various sources of subsidies (Bogan, 2012).

Historically, subsidies were the main sources of financing for microfinance. Many MFIs received large amounts of subsidies to cover their start-up costs. Donors paid for expenses that are particularly difficult to finance for newly created institutions. Several MFIs also received subsidies on a more continuous basis to finance their social mission of poverty reduction (Cull et al., 2009). In particular, it was long assumed that subsidies would always be necessary because of the high transaction costs related to very small loan size and the frequent field visits of loan officers to monitor clients (Armendariz and Morduch, 2010). Microfinance pioneers mainly relied on these subsidies. Thus, donor funding could be used to finance costs that cannot be priced by the market and/or that are hard for the MFIs to self-finance.

There is however a risk of excessive subsidization that may generate inefficiency and thus be detrimental and even counter-productive for the efficient operation of MFIs. Excessive subsidization may be related to the notion of soft budget constraints. With excessively high levels of subsidies “...the exact relationship between expenditures and earning has been relaxed because excessive expenditure over earnings will be paid by some other institution, typically the State” (Kornai, 1986, p. 4). Access to cheap financing allows inefficient microfinance managers to be bailed out (Morduch, 2000) and decreases the incentive to be efficient.

In trying to reconcile these different views on the role and impact of subsidies, Armendariz and Morduch (2010) suggest the development of so-called smart subsidies in microfinance. Smart subsidies maximize the social performance of MFIs while at the same time minimizing potential market distortions.

Given the prominence and longstanding focus on subsidies as the main source of finance of MFIs, it may not come as a surprise that most studies on the impact of the sources of financing on MFI performance focus on subsidies. The literature suggests a mixed impact of subsidized funding on financial performance. Several articles support the negative association between

subsidies and financial performance. Using the MIX data, Bogan (2012) finds that increased use of grants by large MFIs decreases operational self-sufficiency. Caudill et al. (2009) find that MFIs receiving lower subsidies operate more cost effectively over time. Other articles derive opposite conclusions and show that there is a positive relationship between obtaining subsidies and financial performance. Lebovics et al. (2016) explain that subsidies help MFIs to achieve high financial efficiency in Vietnam. This result is corroborated in a study by Tahir and Tarim (2013) on the efficiency of Vietnamese MFIs. Tchakouté-Tchigoua (2017) also finds that subsidies enhance financial performance. Other authors argue that it is the level of subsidies rather than the simple fact of subsidization that matters. Hudon and Traça (2013) argue that the relationship between productivity and subsidy depends on the level of subsidies: they positively impact productivity until a certain threshold level of subsidies. Mukherjee (2013) reports a similar result. This study shows that excessive subsidies drive out poor borrowers serviced by MFIs in India.

Several articles on subsidized funding address the link with the social performance of MFIs. Most of them find a positive impact. Cull et al. (2009) argue that many subsidized MFIs have a strong social mission and serve the poorest customers. In their view, subsidized MFIs may be needed to serve the poorest segment of the market. D'Espallier et al. (2013) find that the lack of subsidies worsens social performance. Lebovics et al. (2016) conclude that subsidies allow Vietnamese MFIs increasing their social efficiency. Forcella and Hudon (2016) find that MFIs with better environmental performance also benefit from more donor interest. One exception is Bogan (2012) who finds that there is no relationship between subsidies or any of the other financing variables and the (breath of) outreach of an MFI.

The strong focus on subsidies is accompanied by a lack of studies on the importance of other funding sources, such as deposits, equity and commercial debt for MFI performance. One

obvious reason may be that MFIs receiving a large amount of subsidies may not be tempted or pushed to turn to other sources of funding. Subsidies may, for instance, crowd-out savings since MFIs have little incentive to take deposits (Cozarenco et al., 2015). Yet, favoring the use of subsidies instead of deposits as a funding source also has consequences for the social performance of MFIs. Offering savings is a potentially important instrument to help the poor to get out of poverty or deal with uncertainty, perhaps even more than microcredit (Dupas and Robinson, 2013). Offering savings could thus be related to better social performance. Yet, regulatory restrictions limit deposit collection by MFIs, which negatively affects their financial performance (Bayai and Ikhide, 2016). In a similar vein, Caudill et al. (2009) find that larger MFIs offering deposits operate more cost effectively over time. Savings mobilization can also help MFIs sustain in times of crisis, such as the Indonesian BRI during the East Asian crisis (Patten et al., 2001).

A few studies focus on the relationship between debt finance and MFI performance. The evidence for this relationship is mixed. Gregoire and Tuya (2006) find that financial leverage is negatively associated with cost efficiency for Peruvian MFIs. Hamada (2010) shows that taking more bank loans is positively related to financial performance among People Credit Banks in Indonesia. Hartarska and Nadolnyak (2007) in a cross-country analysis report that less leveraged MFIs perform better with respect to their financial and social performance. Mersland and Urgeghe (2013) find that commercial lending to MFIs is positively related to financial performance while subsidized lending is related to better social performance, confirming the general conclusion that subsidies are mainly positive in terms of social performance. Bayai and Ikhide (2016) find that low cost financing sources in terms of equity of Southern African MFIs support their financial sustainability. According to Daher and Le Saout (2015) the most profitable MFIs are also well-capitalized and have low costs. Annim (2012) studies the financing of

Ghanaian MFIs and shows that when they use more of their own funding (equity) they also tend to target non-poor clients more, thus reducing their social performance. Finally, some studies look at the determinants of the costs of financing. Garmais and Natividad (2013) find that being rated strongly cuts the cost of financing, particularly for commercial lenders. Rated MFIs also lend more efficiently.

It may seem surprising that, although microfinance has become more commercial over time, the emphasis of the literature on the funding sources of MFIs and the relationship to their performance is still on subsidies. The increased commercialization of the sector also has opened opportunities to diversify their sources of funding. The few papers on savings suggest that the offer of savings seems a promising avenue to improve both financial and social performance of microfinance. Future research therefore could delve deeper into the consequences of a diversification of funding for the financial and social performance of MFIs.

5.3 MFI performance and governance

One important MFI-specific characteristic that has been discussed quite extensively in the literature dealing with the performance of MFIs is the importance of their governance structure. Governance refers to how the rights/claims and obligations are divided among the stakeholders of the institution. It deals with who owns the institution and who is responsible for the daily management of the institution, and what (internal as well as external) mechanisms are in place to make sure that the interests of the stakeholders are taken care of by the management of the institution. According to the Banana Skins reports, published by the Centre of study for Financial

Innovation (CSFI)¹¹, governance is one of the main concerns MFIs have to deal with when offering financial services to the poor.

Governance has been discussed extensively in the context of publicly listed as well as non-listed private for-profit companies. In this context, researchers refer to corporate governance. The governance of for-profit companies is different from non-profit organizations to which the majority of MFIs belong. Governance of these organizations may be perceived differently as compared to the for-profit corporate sector as non-profit organizations explicitly deal with multiple aims or goals, that is, they may have more than one mission. Whereas for-profit corporations usually mainly focus on shareholder interests such as profits and value maximization (e.g. they apply the shareholder model of governance), non-profit organizations have to balance between social and financial performance when taking decisions. This also holds for MFIs. The main challenge for the MFI's management and board is to take into account the interests of different stakeholders when taking decisions. The governance of the organization is an important determinant of how management will be able to deal with this challenge. Consequently, governance may influence MFI performance.

In total 19 papers in our database discuss aspects of governance and their impact on MFI performance. These papers discuss various aspects such as the role of top management teams and boards in decision-making, the importance of transparency and disclosure in providing information to support screening and monitoring efforts, and the importance of the external regulatory context as a determinant of the performance of MFIs. Most papers discuss the role of

¹¹ The Banana Skins reports have been published since 2008 by CSFI. In these reports CSFI ranks the most important challenges MFIs have to deal with, based on surveys among various participants in the microfinance business (e.g. practitioners, investors, regulators, etc.).

boards as determinants of performance. Very few papers concentrate on the importance of transparency and disclosure. A few papers discuss other aspects of governance.

Boards

The discussion of boards focuses on the role of board structure and board demographic characteristics, and their impact on MFI performance. One important board characteristic studies focus on is the diversity of board members. In particular, gender and nationality of board members are discussed. According to agency theory diverse boards are better able to monitor management because a more diverse board is, at least potentially, also more independent from management, allowing for higher quality of monitoring and better organizational performance. According to the resource-based theory, diverse boards may also contribute to better outcomes because they consist of members with different backgrounds and networks, leading to a larger knowledge base and to more ideas to discuss proposals and solve problems.

Several papers in our database exclusively deal with the impact of having female board members. As microfinance is a business model in which the focus is on lending to the poor who in many cases happen to be women, this may be a potentially important topic. Augustine et al. (2016), Bassem (2009), Chakrabarty and Bass (2014), Mersland and Strøm (2009), Strøm et al. (2014) and Vishwakarma (2017) find evidence that having female board members is associated with better financial performance. Gohar and Batool (2015), Hartarska et al. (2015), Mori et al. (2015) and Périlleux and Szafarz (2015) find similar results when focusing on social performance of MFIs. Having women on board thus has positive impact on both financial and social performance! A few studies investigate the importance of independent boards (Kyereboah-Coleman and Osei, 2008; Mori et al., 2015) and find that more independent boards improve both

financial and social performance. Similar results are also reported for boards with international board members (Mersland et al., 2011; Mori et al., 2011).

Only a few articles focus on characteristics of the CEO of the institution, e.g. whether or not he/she is also the chair of the board (i.e. CEO duality) and whether or not he/she is the founder/owner. Moreover, a few studies deal with the remuneration of the management and CEOs in particular. In the literature on corporate governance, CEO duality is generally associated with reduced organizational performance, as it provides CEOs with power to divert resources and use them for their personal benefit. With respect to CEOs being the founder/owner of the organization, evidence from studies on listed companies has shown that the link with performance is non-linear. During the early years, the founder/owner may contribute to improved performance, because as founder/owner the CEO will use his/her expertise and his/her involvement in the success of the organization. Yet, if the founder/owner is CEO for too long, this may be associated with lower performance, since he/she may become too involved and may obstruct necessary changes.

Two studies have looked into the consequences of CEO duality (Gohar and Batool, 2015; Kyereboah-Coleman and Osei, 2008) and find that this negatively affects financial and social performance of MFIs. One study (Mersland et al., 2015) investigates the contribution of the CEO being the founder/owner of the institution, showing that this positively contributes to financial and social performance.

To conclude our discussion on boards, it seems that empirical studies on the role of boards in explaining MFI performance find results similar to studies focusing on the role of boards in listed companies. This suggests that boards of MFIs and the roles they perform within the organization do not differ much from those of corporate organizations.

Disclosure and transparency

Disclosure and transparency are important topics in governance, also in the context of microfinance. They are particularly relevant when taking an agency perspective regarding governance and its impact on organizational decisions and outcomes. Disclosing information reduces the information asymmetry between management and stakeholders of the organization. This may positively affect organizational performance.

Perhaps surprisingly, only two studies in the microfinance literature have dealt with the importance of disclosure and transparency. Augustine (2012) finds that higher transparency has a positive impact on MFI performance irrespective of the ownership structure or the institutional environment. This result is confirmed in a study by Quayes and Hasan (2014). These studies confirm the general claim in the corporate governance literature about the importance of transparency and disclosure for organizational performance.

Given the potential importance of transparency and disclosure for MFI performance, more research seems desirable. For example, studies may look into the type of information disclosure is particularly relevant for MFI financial versus social performance.

Other governance topics

A number of papers take a broader perspective when investigating the relationship between governance and MFI performance, i.e. they investigate not only ownership, board structure or transparency, but also other governance characteristics. In particular, some studies focus on the remuneration of management, as this is an important topic in the governance literature. In line with agency theory, remuneration can be used to align incentives of management and owners. In particular, performance-based remuneration is used to incentivize management to focus on maximizing organizational performance. Two studies analyze remuneration policies (among

other governance mechanisms) and find no relationship with MFI performance (Bassem, 2009; Hartarska, 2005). This may suggest that either performance-based pay is not used extensively in the microfinance business, or that this governance instrument does not work in the context of microfinance.

Finally, a number of studies address the relationship between what they call external governance and MFI performance. These studies focus on the role of financial market regulations, rating agencies and general institutional quality (such as the rule of law, the quality of country-level governance, etc.). We discuss these studies when summarizing the literature on the relationship between external conditions and MFI performance (see section 5.4).

To conclude, the literature on the relationship between governance and performance is huge and many governance aspects that may also be relevant for MFIs have until now hardly been touched upon in research. Examples are CEO remuneration, board dynamics (i.e. the interaction between board members, as well as between boards and management, when taking decisions), the importance of transparency and disclosure, the role of activism and collective action among stakeholders in influencing decision making, etc. These and other topics may receive more attention in future research as governance seems an important aspect determining organizational outcomes, also for MFIs.

5.4 MFI performance and the external context

In the previous sub-sections we discussed MFI-specific (or internal) factors that may influence their efficiency. Several studies have investigated whether and to what extent the external (that is country) context has an impact on the performance of MFIs. In our database 45 studies discuss the relationship between MFI performance and the country context. This may signal that the country context is seen as a potentially important factor. Among other things, these studies focus

on macro-economic conditions, the domestic financial system, the institutional environment and the political context as potential determinants of MFIs performance. Macroeconomic conditions, and especially the country's institutional environment, receive by far the most attention.

Macroeconomic conditions

The macroeconomic context may affect MFI performance in several ways (Ahlin et al., 2011). A growing economy may increase incentives of small-scale entrepreneurs to invest and/or extend existing projects and business opportunities resulting in higher demand for MFI services and/or improving repayment performance of MFI borrowers. In both cases, MFI performance may be positively affected. At the same time, however, a growing economy may also reduce demand for services from MFIs as households and entrepreneurs are able to finance projects from profits and/or are able to access finance from formal channels, such as banks. Consequently, MFIs' financial performance may be negatively affected.

In case the economy is stagnating or experiencing crisis, demand for MFI services may rise as poor households and micro-entrepreneurs lose their jobs in the formal economy and have to rely more on their activities in the informal economy. A stagnating or even declining economy may also lead to deteriorating incomes, however, leading to less demand for savings accounts and loans, as business opportunities are scarce. Moreover, with deteriorating incomes accompanying a crisis, borrowers may have more difficulties to repay their loans to the MFI. Finally, MFI performance may also be unrelated to the macroeconomic context. This is the case if most clients of MFIs concentrate their activities in the informal economy and the formal and informal economy are unrelated.

The study by Ahlin et al. (2011) is by far the most extensive in terms of analyzing the consequences of the macroeconomic environment on MFI performance. It shows that the

macroeconomic context matters for the success of microfinance, but the relationship very much depends on the country-specific macroeconomic context. One finding is that MFIs do better in terms of financial performance in times of economic growth, because this reduces defaults. Yet, another finding suggests that MFIs' growth in social performance is slower whenever a country's labor force participation is higher and/or the manufacturing sector is stronger. Under these macroeconomic conditions, demand for microfinance is lower. A few other studies also look at the impact of the macroeconomic environment, but in most cases this is not their main focus. The results of their findings are mixed. Whereas Ashta and Fall (2012), Sainz-Fernandez et al. (2015) and Xu et al. (2016) find a positive association between the macroeconomic environment and the financial performance of MFIs, Campbell and Rogers (2012) find the opposite.

Several other studies focus on the impact of financial and economic crises on MFI performance. The topics addressed in these studies are quite diverse. Daher and Le Saout (2015) find that financial performance of MFIs declined due to the international financial crisis of 2007-2009. Wagner and Winkler (2013) report similar findings. Monroy and Huerga (2013) add to these findings by showing that listed MFIs seemed to have performed during the financial crisis. Patten et al. (2001) find that Indonesian MFIs did financially relatively well during the Asian crisis of the late 1990s thanks to the design of their financial products, which were focused on the ability and willingness to repay of their clients. In addition, as many of these microloan borrowers were active in rural areas, they were also more insulated from the crisis as compared to the corporate loan borrowers in the urban areas. In contrast, Marconi and Mosley (2006), reviewing Bolivian MFIs during the economic crisis of 1998-2004, show that adverse macroeconomic conditions adversely affected their financial performance. This was partly due to their focus on lending to the services sector, which was hit hardest by the crisis, as well as due to

the fact the government bailed out MFIs that had debt repayment problems, thereby creating moral hazard behavior.

The domestic financial system

MFI performance may be positively associated with the level of development of the financial system of a country. First, in a more developed financial system commercial banks may become engaged in offering financial services for the poor, especially if these activities have been shown to be profitable for MFIs. This leads to increased competitive pressure, forcing MFIs to reduce costs. Second, the presence of commercial banks may lead to positive spillover effects as MFIs may copy modern and more efficient banking techniques. Third, a more developed domestic financial system allows MFIs having better access to financial services themselves.

MFI performance may also be negatively associated with financial system development. First, the presence of commercial banks may lead borrowers substituting their financial services from MFIs for services from commercial banks, because of lower costs, more choice and more flexibility. Second, competition may have an adverse effect on the repayment performance of MFI borrowers, if they take up multiple loans from different financial institutions (McIntosh et al., 2005). This increases costs and thus lowers financial performance of MFIs. Finally, if formal financial markets are weakly developed, this may increase demand for financial services from MFIs, which help increase the performance of MFIs.

Only a few studies have looked into the relationship between the development of the domestic financial system and MFI performance. The evidence seems mixed. Ahlin et al. (2011) argue that MFIs in countries with more developed financial systems show better financial performance. This is corroborated by the findings of Xu et al. (2016). These studies suggest that the formal financial and microfinance sector are complements rather substitutes. In contrast,

Vanroose and D'Espallier (2013) find that the financial and social performance of MFIs is higher when the country's financial system is weaker, suggesting substitution, rather than a complementarity between the two. Cull et al. (2013) draw a similar conclusion. They show that MFIs have stronger social performance when the financial system is more developed.

An issue related to the role of financial system development is the impact of competition in microfinance on their performance. A few studies have investigated this issue. McIntosh et al. (2005) show that increased competition reduces financial performance, because clients take out multiple loans. Assefa et al. (2013) provide evidence that competition among MFIs is negatively associated with their outreach and repayment performance. This suggests that competition may have a detrimental rather than a positive effect on MFI performance. McIntosh et al. (2005) argue this may be due to lacking institutional frameworks, such as credit bureaus that may help MFIs sharing information about delinquent borrowers. In contrast, Halouani and Boujelbène (2015) find that competition boosts financial performance, but has no impact on social performance of MFIs. Their study is based on a one-country case, i.e. South Africa.

The institutional context

The country's institutional environment has received a lot of attention as one of the determinants of MFI performance. MFI performance may, at least partly, be driven by formal institutions, such as laws, regulations, and market structures, as well as by informal institutions, such as norms, values and cultural beliefs. In particular, the institutional environment may determine the possibilities and/or restraints entrepreneurs are confronted with when operating existing or starting new business activities. This also may have consequences for the performance of MFIs. On the one hand, well-developed institutions such as clear property rights, strong rule of law and an effective government that is able to formulate business-friendly policies and that contributes to

reducing corruption may be important prerequisites for successful small-scale businesses. In such an environment the demand for financial services of MFIs may rise, contributing to their overall performance.

On the other hand, however, well-developed institutions may also make doing business more difficult. In particular, an effective government may also mean a large amount of rules and regulations, leading to higher costs for small-scale entrepreneurs, reducing their demand for financial services. Moreover, effectively reducing corruption means reducing possibilities for small-scale business to avoid all kinds of costly government rules and tax payments and/or may make it more difficult to get access to government services that are difficult to obtain without paying bribes. Once again, this may reduce their demand for financial services of MFIs, thus lowering their performance.

The empirical evidence on the association between the external environment and MFI performance is rather mixed. Several studies focus on the regulatory environment of a country. They refer to the existence and quality of financial regulation for MFIs, as well as to the existence of rating agencies and/or credit bureaus that also target MFIs. Most of these studies find that the regulatory environment has either no or a negative impact, especially on social performance (Ahlin et al., 2011; Anku-Tsedde, 2014; Halouani and Boujelbène, 2015; Hartarska and Nadolnyak, 2007; Pati, 2012; Pati, 2015; Bakker et al., 2014; Mersland and Strøm, 2009; Estapé-Dubreuil and Torreguitart-Mirada, 2015). This indicates that regulation of MFI may actually hamper rather than help them in providing their financial services to the poor in a cost efficient way. A few studies, however, also point at positive associations between financial regulation and MFI performance. Arsyad (2005), Bassem (2009), Boehe and Cruz (2013) and Gohar and Batool (2015) find that financial regulation is associated with better social performance; Bassem (2009) and Emeni (2008) claim this positive association also holds for

financial performance. Cull et al. (2011) shows that the link between regulation and performance may depend on the type of the MFI. They claim that, whereas profit-oriented microfinance institutions respond to supervision by maintaining profit rates and curtailing outreach to women and customers that are costly to reach, NGOs reduce profitability but maintain outreach. With respect to the existence of rating agencies and/or credit bureaus, studies generally find positive effects on both financial (Bassem, 2009; McIntosh et al., 2010; Saenz-Fernandez et al., 2015) and social performance (Annim, 2012; Bumacov et al., 2014).

A few studies focus on the role of informal institutions as determinants of MFI performance. Some show that MFIs with a religious background have a better social performance (Casselmann et al., 2005), but underperform on financial performance, although their funding costs are generally lower than those for profit-oriented MFIs (Mersland, et al., 2013). Other studies investigate the role of culture, trust, norms and values, and social capital. Burzynska and Berggren (2015) show that MFIs in countries with higher levels of trust and a more collectivist culture have better financial performance. Arsyad (2005), Churchill (2017) and Postelnicu and Hermes (2016) provide evidence that high social capital is associated with better financial and social performance.

Several studies investigate the importance of the quality of the country's institutional context in a broader context (sometimes referred to as good governance), taking into account the rule of law, the efficiency of governmental institutions and the control of corruption. In particular, they look at the type of law system, the quality (i.e. independence and enforcement) of the law system, the extent to which the government uses financial markets to obtain policy goals, the extent of bureaucratic burden and red tape, etc. Ashta and Fall (2012) find a positive correlation between measures of good governance and the growth of MFIs. Silva and Chávez (2015) make a similar claim by pointing out that MFIs in countries with better governance are

affected less by the global financial crisis of 2007-2008. In particular, they point at the importance of a strong rule of law. Quayes and Joseph (2017) corroborate this result. On a closely related issue, Daher and Le Sahout (2015) stress the importance of strong property rights and low levels of government interference in financial markets. Chikalipa (2017) finds a positive relationship between the lack of rules constraining business and MFI performance in sub-Saharan Africa. Finally, Barry and Tacneng (2014) argue that the link between institutional quality and MFI performance depends on the type of MFI. While a weak rule of law results in NGO superiority, stronger institutional quality may encourage banks to cater to more borrowers.

A few studies address a country's political system as part of the institutional context that may influence MFI performance. Two dimensions of a political system are potentially important for the performance of MFIs. First, if politicians can be held accountable, this may lead to policies that are supportive to doing business in general, leading to higher demand for MFI services. In contrast, if the political system is less transparent, economic actors may turn to the informal sector, which increases demand for microfinance. Second, the stability of the system matters for the performance of MFIs. In politically instable environments, doing business becomes more difficult, which may decrease demand for services from MFIs. At the same time, however, political instability may also stimulate economic activity in the informal sector, which increases demand for MFI services.

Only two papers address the importance of the political context for MFI performance. According to Ault and Spicer (2014) NGOs have better social performance than commercial MFIs in weak states. Sainz-Fernandez et al. (2015) show that political stability reduces the likelihood of financial crises for MFIs. They investigate this as part of a broader analysis of the importance of the external environment. Since many MFIs are active in countries with politically

weak systems, it seems that more research on the relationship between political factors and MFI performance is definitely needed.

5.5 Trade-off between financial and social performance

Several studies addressing the performance of MFIs focus on the potential trade-off between financial and social performance. Debates on the trade-off between social and financial performance are not recent and became prominent in the 2000s with the commercialization of the microfinance business. There may be several reasons for assuming a trade-off between financial and social performance of MFIs. First, serving very poor people may be costly because of higher operating expenses or more expensive delivery mechanisms to reach them when they live in more remote areas. Second, very poor clients may not be able to cope with expensive financial services or require smaller loans that carry higher unit costs. Therefore, financial sustainability ultimately goes against the goal of serving large groups of poor borrowers. This approach stresses that serving the very poor is not compatible with a focus on financial performance, that is financial and social performance are substitutes. In contrast, however, it has been argued that improved financial performance may go hand in hand with better social performance. The central argument is that reaching a large number of customers allows MFIs to benefit from economies of scale, thus improving their financial performance. Moreover, MFIs showing financial sustainability are better able to attract funding from the private investor, which may be used to improve their outreach.

Results from the literature on the existence of a trade-off between financial and social performance provide a mixed picture. On the one hand, a number of studies suggest a negative relationship between outreach and financial performance (Cull et al., 2007; Hermes et al., 2011; Annim, 2012; Zerai and Rani, 2012; Hartarska et al., 2013; Louis and Baesens, 2013, Abate et

al., 2013; Pedrini and Ferri, 2016; Abdullai and Tewari, 2017). On the other hand, however, several studies find no evidence for a trade-off. In some cases, studies even report a positive relationship between financial and social performance (Gutierrez-Nieto et al., 2009; Gutierrez-Nieto et al., 2011; Louis et al., 2013; Kar, 2011; Kar, 2013; Adhikary and Papachristou, 2014; Gakhar and Meetu (2014); Kaur, 2016).

Some studies stress that the presence of a trade-off depends on context-specific factors. Hartarska (2005) suggests that the existence of a tradeoff between outreach and financial performance depends whether or not stakeholders are represented on the board of the MFI. Bassem (2009) suggests that the existence of a trade-off depends on the size of the board and on the proportion of unaffiliated directors. Hartarska et al. (2014) claim that gender diversity in the board is an important contextual variable that may lead to a trade-off. These studies indicate that governance, and especially the board, is an important driving mechanism. Ultimately, the board is responsible for deciding on whether the focus will be on financial or social performance, or a combination of both aims. Other contextual factors are found by Tchakoute-Tchigoua (2012) who shows it may depend on the loan methodology used. Piot-Lepetit and Nzongang (2014) find evidence for the existence of a trade-off, but only for a minority of MFIs in Cameroon.

Reichert (2018) performs a meta-analysis of the literature on the trade-off between financial and social performance. He synthesizes 623 regression outcomes. His main finding is that the presence of trade-off strongly depends on the measurement of performance used in the empirical analysis. Aggregating all outcomes, he finds that a trade-off is more likely to be reported in studies that use measures of the cost efficiency of MFIs and/or when they focus on the depth and cost of outreach and that there is no evidence for a trade-off when measures of profitability and financial risk are used. This outcome corroborates the observation we made

earlier in section 3, that is, that the measurement of financial and social performance is crucial, but also still challenging in the literature on the performance of MFIs.

6. Challenges and conclusions

The performance of microfinance institutions is a hot topic in the development and finance literature. While most systematic reviews or research reviews tackle microfinance from the demand side and analyze the impact of microfinance on clients, this study offers a review of the literature based on the supply side, focusing on the performance of microfinance institutions. The empirical literature on the performance of MFIs is rather extensive. Using a systematic review approach, we ended up having a data base of close to 170 studies investigating the determinants of MFI performance.

Compared to other types of social enterprises and hybrid organizations, MFI performance has received much more attention. This may be related to the fact that the role microfinance can play in achieving poverty reduction has been at the forefront of discussions in development aid debates at least since the late 1990s. One clear manifestation of this is the fact that in 2006 Grameen Bank and Muhammad Yunus, founder of Grameen Bank, were awarded the Nobel Peace Prize for their efforts to help reducing poverty by developing microfinance solutions. It may also have to with the availability of data available from sources such as the MIX Market platform and rating agencies specializing in analyzing MFIs. Thanks to these data sources, performance measurement of MFIs has been carried out using various performance measures and methodologies.

At the same time, however, although many studies have looked into performance measurement and determinants of MFI performance have been published, there is still controversy about how financial and social performance of these institutions can best be

measured. As discussed, in many cases standard measures have been borrowed from the finance and banking literature. Measures of financial performance include simple accounting ratios and measures of cost effectiveness. Some more advanced techniques, such as DEA and SFA, are used more recently, relying on measures of efficiency of operations. These techniques have also been borrowed from the banking literature. Given the heterogeneity of measures used and the lack of consensus about how performance should be measured, there is much room for more research on developing measures that particularly apply to the microfinance business.

There is also a need for improving our measurement of social performance. Most of the measures that are currently used in research are no more than rough proxies (D'Espallier et al., 2017). Some researchers suggest developing new performance measures that may better capture social performance of MFIs. Yaron (1992), for example, suggests a composite index, “the outreach index”, which takes into account several dimensions of social performance such as the average loan, the number of clients reached etc., and convert them into one number.

Given the complexity of the concept, we suggest that analyses of social performance should not be restricted to using a single dimension. Instead, social performance should be appraised by using a multidimensional perspective. Analyses of social performance should therefore include a variety of indicators or proxies related to the different groups of clientele of MFIs. Such an approach stresses the need to use various measures of social performance such as measures of outreach, gender and geographical location of poor clients. The recent and holistic methodologies developed by the Social Performance Taskforce (SPTF) in collaboration with CERISE, such as the Social Performance Indicators 4 (SPI4), represents a new opportunity for researchers to improve the analysis of social performance. Yet, we acknowledge it may take time to have comparable datasets that could replace the very extensive databases provided by the MIX Market and rating agencies.

For the future of the research on the financial and social performance of MFIs it is absolutely crucial that there is consensus about the correct measurement of these concepts. Only then we can come to conclusions about the drivers of MFI performance that may also help designing policy relevant recommendations. Developing good and widely accepted measures of financial and social performance is one of the major future challenges for researchers in the field of development finance.

Our systematic review summarized the main findings of studies looking into the determinants of financial and social performance of MFIs. One conclusion from this summary is that MFI-specific characteristics such as maturity, size and type of organization, the type funding sources available (and in particular subsidies), governance structures and conditions external to the MFIs are the main drivers of financial as well as social performance. Another conclusion is that the direction of the relationship between these drivers and MFI performance very much depends on the context. In particular, the various outcomes from country-specific and multi-country analyses clearly indicate that country-contextual factors may play a significant role in determining whether the link between the various drivers and MFI performance is positive, negative or non-existent. Future research may dig deeper into developing contextual analyses of MFI performance as most studies until now are one-dimensional, that is, they focus on one variable determining MFI performance, without taking into account the possibility of interaction effects with other (contextual) variables and/or carrying out sub-sample analyses.

The review also showed that a substantial number of studies on the performance of MFIs is related to discussing the trade-off between financial and social performance. Results on the presence of such a trade-off are mixed, suggesting that there is no straightforward answer to the question whether or not a trade-off actually exists. One reason explaining the diversity of results may be the multiplicity of measures and techniques used to assess financial and social

performance. As discussed, a recent meta-analysis shows that evidence concerning the existence of a trade-off depends on the measures used for financial and social performance. Moreover, the literature suggests that the diversity of results on the presence of a trade-off may depend on context-specific factors, such as the MFIs' governance structure, lending methodology used, etc.

Finally, our research review revealed several areas and issues that have been studied less in the literature. In particular, we highlighted research gaps with respect to the consequences of the diversification of funding available to MFIs for their financial and social performance. Moreover, we pointed at the importance of governance related factors. Examples are the use of incentive-based pay for loan officers, CEO remuneration, board dynamics (i.e. the interaction between board members when taking decisions), the importance of transparency and disclosure, the role of activism and collective action among stakeholders in influencing decision making, etc. Finally, we suggested more research on the role of the political system and stability for MFI performance as many MFIs are active in countries with politically weak systems. These topics deserve more attention in future research as they are potentially important drivers of MFI performance.

As a final remark, one key conclusion of our review is also that MFIs focusing on outreach and MFIs with a focus on maximizing profits may co-exist in the market, that is, there is room for both types of MFIs in the market. While some MFIs are very profitable and tend to compete with traditional financial institutions, others still try to maximize outreach and focus on the very poor clients.

Table 1: Characteristics of the articles in the data base

<i>Year</i>	<i>Methodology</i>			<i>Geographical</i>			<i>Journal quality</i>	<i>Type of performance</i>			<i>Type</i>
	<i>DEA</i>	<i>SFA</i>	<i>Other</i>	<i>Country</i>	<i>Regional</i>	<i>World</i>	<i>(I=Scopus)</i>	<i>Financial</i>	<i>Social</i>	<i>Both</i>	<i>Mix</i>
2001			1	1			1	1			
2003			1	1			1			1	
2004			1	1			1			1	
2005			4	2	1	1	4	1	1	2	1
2006		1		1			1	1			
2007	1		4	1		4	5	2		3	2
2008			4	3		1	4	1		3	
2009	1		7	3	2	3	7	3		5	3
2010			12	4		8	12	6	1	5	5
2011		1	7	3		5	8	3	1	4	3
2012	1	1	11	5	1	7	11	4	3	6	11
2013	2	1	24	6	3	18	24	10	5	12	18
2014	2	1	20	9	2	12	19	7	3	13	13
2015	5	1	24	13	2	15	27	8	6	16	20
2016	7		14	10	4	7	16	6	5	10	16
2017		2	8	1	3	6	8	3	1	6	10
Total	19	8	142	64	18	87	149	56	26	87	102

References:

- Abate, G., Borzaga, C., & Getnet, K. (2014). Cost-efficiency and outreach of microfinance institutions: Trade-offs and the role of ownership. *Journal of International Development*, 26, 923-932.
- Abdullah, S., & Quayes, S. (2016). Do women borrowers augment financial performance of MFIs?. *Applied Economics*, 48(57), 5593-5604.
- Abdullai, A., & Tewari, D.D. (2017). Determinants of microfinance outreach in SSA: A panel approach. *Acta Commercii*, 17(1), a414.
- Abdullai, A., & Tewari, D.D. (2016). Efficiency of MFIs in SSA: An SFA approach. *Ghana Journal of Development Studies*, 13(2), 117-139.
- Aboagye, A. (2009). A baseline study of Ghanaian microfinance institutions. *Journal of African Business*, 10(2), 163-181.
- Adhikary, S., & Papachristou, G. (2014). Is there a trade-off between financial performance and outreach in South-Asian microfinance institutions?. *Journal of Developing Areas*, 48(4), 381-402.
- Aggarwal, R., Goodell, J.W., & Selleck, L.J. (2015). Lending to women in microfinance: Role of social trust. *International Business Review*, 24(1), 55-65.
- Ahlin, C., Lin, J., & Maio, M. (2010). Where does microfinance flourish? Microfinance institution performance in macroeconomic context. *Journal of Development Economics*, 95, 105-120.
- Alinsunurin, M. (2014). Efficiency of microfinance institutions in the Philippines. *Enterprise Development and Microfinance*, 25(4), 1755-1978.
- Allet, M., & Hudon, M. (2015). Green microfinance: Characteristics of microfinance institutions involved in environmental management. *Journal of Business Ethics*, 126, 395-414.
- Amersdorffer, F., Buchenrieder, G., Bokusheva, R., & Wolz, A. (2015). Efficiency in microfinance: Financial and social performance of agricultural credit cooperatives in Bulgaria. *Journal of the Operational Research Society*, 66, 57-65.
- Anku-Tsedee, O. (2014). Microfinance intermediation: Regulation of financial NGOs in Ghana. *International Journal of Law and Management*, 56(4), 274-301.
- Annim, S. (2012). Microfinance efficiency: Trade-offs and complementarities between the objectives of microfinance institutions and their performance perspective. *European Journal of Development Research*, 24, 788-80.
- Annim, S. (2012). Targeting the poor versus financial sustainability and external funding: Evidence of microfinance institutions in Ghana. *Journal of Developmental Entrepreneurship*, 17(3), 1-19.
- Arrassen, W. (2017). The determinants of MFIs' social and financial performances in sub-Saharan Africa: Has mission drift occurred?. *Annals of Finance*, 13(2), 205-235.
- Armendáriz, B., & Morduch, J. (2010). *The economics of microfinance*. MIT Press, Boston.
- Armendáriz, B., & Labie, M. (2011). *The handbook of microfinance*. World scientific, Singapore.

- Arsyad, L. (2005). An assessment of microfinance institution performance - the importance of institutional environment. *Gadjah Mada International Journal of Business*, 7(3), 391-427.
- Aseffa, E., Hermes, N., & Meesters, A. (2013). Competition and the performance of microfinance institutions. *Applied Financial Economics*, 23(9-10), 767-782.
- Ashta, A., & Fall, S. (2012). Institutional analysis to understand the growth of microfinance institutions in West African economic and monetary union. *Corporate Governance*, 12(4), 441-459.
- Ashta, A. & Hudon, M. (2012). The Compartamos microfinance IPO: Mission conflicts in hybrid institutions with diverse shareholding. *Strategic Change*, 21, 331-341.
- Augustine, D. (2012). Good practice in corporate governance: Transparency, trust, and performance in the microfinance industry. *Business & Society*, 51(4), 659-676.
- Augustine, D., Wheat, C., Jones, K., Baraldi, M., & Malgwi, C. (2016). Gender diversity within the workforce in the microfinance industry in Africa: Economic performance and sustainability. *Canadian Journal of Administrative Sciences*, 33, 227-241.
- Ault, J., & Spicer, A. (2014). The institutional context of poverty: State fragility as a predictor of cross-national variation in commercial microfinance lending. *Strategic Management Journal*, 35, 1818-1838.
- Awaworyi, S. (2014). The Impact of Microfinance Interventions: A Meta-analysis. Monash University Department of Economics Working Paper Series, 03-14.
- Ayayi, A., & Sene, M. (2010). What drives microfinance institutions' financial sustainability. *Journal of Developing Areas*, 44(1), 303-324.
- Ayele, G. (2015). Microfinance institutions in Ethiopia, Kenya and Uganda: Loan outreach to the poor and the quest for financial viability. *African Development Review*, 27(2), 117-129.
- Azad, M., Munisamy, S., Masum, A., & Wanke, P. (2016). Do African microfinance institutions need efficiency for financial stability and social outreach?. *South African Journal of Science*, 112(9-10), 76-83.
- Bakker, A., Schaveling, J., & Nijhof, A. (2014). Governance and microfinance institutions. *Corporate Governance*, 14(5), 637-652.
- Balammal, A., Madhumathi, R., & Ganesh, M. (2016). Pentagon performance model of Indian MFIs: A study of institutional enablers. *Paradigm*, 20(1), 1-13.
- Banker, R. D., Charnes, A., & Cooper, W. W. (1984). Some models for estimating technical and scale inefficiencies in data envelopment analysis. *Management science*, 30(9), 1078-1092.
- Barry, T., & Tacneng, R. (2014). The impact of governance and institutional quality on MFI outreach and financial performance in Sub-Saharan Africa. *World Development*, 58, 1-20.
- Bassem, B. (2009). Governance and performance of microfinance institutions in Mediterranean countries. *Journal of Business Economics and Management*, 10(1), 31-43.

- Bauchet, J., & Morduch, J. (2013). Is micro too small? Microcredit vs. SME finance. *World Development*, 43, 288-297.
- Baumann, T. (2004). Pro-poor microcredit in South Africa: Cost-efficiency and productivity of South African pro-poor microfinance institutions. *Development Southern Africa*, 21(5), 785-796.
- Bayai, I., & Ikhide, S. (2016). Life cycle theory and financial sustainability of selected SADC microfinance institutions. *Journal of Developing Areas*, 50(6), 121-132.
- Bhanot, D., & Bapat, V. (2015). Sustainability index of microfinance institutions (MFIs) and contributory factors. *International Journal of Social Economics*, 42(4), 387-403.
- Bharti, N., & Chitnis, A. (2016). Size and efficiency of MFIs: A data envelopment analysis of Indian MFIs. *Enterprise Development and Microfinance*, 27(4), 255-272.
- Blanco-Oliver, A., Irimia-Diequez, A., & Reguera-Alvarado, N. (2016). Prediction-oriented PLS path modeling in microfinance research. *Journal of Business Research*, 69, 4643-4649.
- Boehe, D. & Cruz, L. (2013). Gender and microfinance performance: Why does the institutional context matter?. *World Development*, 47, 121-135.
- Bogan, V. (2012). Capital structure and sustainability: An empirical study of microfinance institutions. *The Review of Economics and Statistics*, 94(4), 1045-1058.
- Bolli, T., & Vo Thi, A. (2013). Regional differences in the production processes of financial and social outputs of microfinance institutions. *Economics of Transition*, 22(3), 461-495.
- Borden, K. (2009). Microenterprise lending at the Grameen Bank: Effective lending rates on a sample loan portfolio. *B-Quest*, , 1-27.
- Bos, J., & Millone, M. (2015). Practice what you preach: Microfinance business models and operational efficiency. *World Development*, 70, 28-42.
- Bumacov, V., Ashta, A., & Singh, P. (2014). The use of credit scoring in microfinance institutions and their outreach. *Strategic Change*, 23, 401-413.
- Burzynska, K., & Berggren, O. (2015). The impact of social beliefs on microfinance performance. *Journal of International Development*, 27, 1074-1097.
- Caballero, K., Melgarejo, M., & Ogliastri, E. (2016). Banco Solidario S.A.: The recovery strategy, 2000–2004. *Journal of Business Research*, 69, 4454-4468.
- Callen, J. L., Klein, A., & Tinkelman, D. (2003). Board composition, committees, and organizational efficiency: The case of nonprofits. *Nonprofit and voluntary sector quarterly*, 32(4), 493-520.
- Campbell, N., & Rogers, N. (2012). Microfinance institutions: A profitable investment alternative?. *Journal of Developmental Entrepreneurship*, 17(4), online.
- Casselmann, R., Sama, L., & Stefanidis, A. (2005). Differential social performance of religiously-affiliated microfinance institutions (MFIs) in Base of Pyramid (BoP) markets. *Journal of Business Ethics*, 132, 539-552.

- Caudill, S., Gropper, D., & Hartarska, V. (2009). Which microfinance institutions are becoming more cost effective with time? Evidence from a mixture model. *Journal of Money, Credit and Banking*, 41(4), 651-672.
- Chahine, S., & Tannir, L. (2010). On the social and financial effects of the transformation of microfinance NGOs. *Voluntas*, 21, 440-461.
- Chakrabarty, S., & Bass, E. (2014). Corporate governance in microfinance institutions: Board composition and the ability to face institutional voids. *Corporate Governance: An International Review*, 22(5), 367-386.
- Charnes, A., Cooper, W. W., & Rhodes, E. (1978). Measuring the efficiency of decision making units. *European Journal of Operational Research*, 2(6), 429-444.
- Chidambaranathan, M., & Premchander, S. (2013). Community-based microfinance: The potential and challenges of self-reliant, self-help group cooperatives. *Enterprise Development and Microfinance*, 24(2), 134.
- Chikalipah, S. (2017). Institutional environment and microfinance performance in Sub-Saharan Africa. *African Development Review*, 29(1), 16-27.
- Churchill, S. (2017). Microfinance and ethnic diversity. *Economic Record*, 93(300), 112-141.
- Collins, D., Morduch, J., Rutherford, S., and Ruthven, O. (2009). *Portfolios of the Poor: How the World's Poor Live on \$2 a Day*. Princeton University Press.
- Copestake, J. (2007). Mainstreaming microfinance: Social performance management or mission drift?. *World Development*, 35(10), 1721-1738.
- Cornée, S., & Thenet, G. (2016). Efficience des institutions de microfinance en Bolivie et au Pérou: Une approche data envelopment analysis en deux étapes. *Finance Contrôle Stratégie*, 19(1).
- Cull, R., Demirgüç-Kunt, A., & Morduch, J. (2009). Microfinance meets the market. *Journal of Economic Perspectives*, 23(1), 167-192.
- Cull, R., Demirgüç-Kunt, A., & Morduch, J. (2013). Banks and microbanks. *Journal of Financial Services Research*, 46, 1-53.
- Cull, R., Demirgüç-Kunt, A., & Morduch, J. (2007). Financial performance and outreach: A global analysis of leading microbanks. *The Economic Journal*, 117, 107-133.
- Cull, R., Demirgüç-Kunt, A., & Morduch, J. (2011). Does regulatory supervision curtail microfinance profitability and outreach?. *World Development*, 39(6), 949-965.
- Cull, R., Harten, S., Nishida, I., Rusu, A., & Bull, G. (2015). Benchmarking the financial performance, growth, and outreach of greenfield MFIs in Africa. *Emerging Markets Review*, 25, 92-124.
- Daher, L., & Le Saout, E. (2013). Microfinance and financial performance. *Strategic Change*, 22, 31-45.
- Daher, L., & Le Saout, E. (2015). The determinants of the financial performance of microfinance institutions: Impact of the global financial crisis. *Strategic Change*, 24, 131-148.

- de Crombrughe, A., Tenikue, M., & Sureda, J. (2008). Performance analysis for a sample of microfinance institutions in India. *Annals of Public and Cooperative Economics*, 79(2), 269-299.
- de Janvry, A., McIntosh, C., & Sadoulet, E. (2010). The supply- and demand-side impacts of credit market information. *Journal of Development Economics*, 93, 173-188.
- Deb, J., & Kar, S. (2016). Financial performance of microfinance institutions in North-East India. *Pranjana: The Journal of Management Awareness*, 19(2), 47-57.
- Deb, J., & Purkayastha, M. (2014). Branch-level efficiency and decomposition of Assam Gramin Vikash Bank: An indicative DEA approach. *The IUP Journal of Marketing Management*, 15(4), 34-44.
- Delgado, M., Parmeter, C., Hartarska, V., & Mersland, R. (2015). Should all microfinance institutions mobilize microsavings? Evidence from economies of scope. *Empirical Economics*, 48, 193-225.
- Demirguc-Kunt, A., Klapper, L., Singer, D., & Van Oudheusden, P. (2015). The Global Findex database 2014: Measuring financial inclusion around the world. Policy Research Working Paper No. WPS 7255. Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/187761468179367706/The-Global-Findex-Database-2014-measuring-financial-inclusion-around-the-world>
- D'Espallier, B., Goedecke, J., Hudon, M., & Mersland, R. (2017). From NGOs to banks: Does institutional transformation alter the business model of microfinance institutions?. *World Development*, 89, 19-33.
- D'Espallier, B., Hudon, M., & Szafarz, A. (2013). Unsubsidized microfinance institutions. *Economic Letters*, 120, 174-176.
- D'Espallier, B., Guerin, I., & Mersland, R. (2013). Focus on women in microfinance institutions. *Journal of Development Studies*, 49(5), 589-608.
- D'Espallier, B., Hudon, M., & Szafarz, A. (2017). Aid volatility and social performance in microfinance. *Nonprofit and Voluntary Sector Quarterly*, 46(1), 116-140.
- Dutta, P., & Das, D. (2014). Indian MFI at crossroads: Sustainability perspective. *Corporate Governance*, 14(5), 728-748.
- Duvendack, M., Palmer-Jones, R., Copestake, J. G., Hooper, L., Loke, Y., & Rao, N. 2011. What is the evidence of the impact of microfinance on the well-being of poor people? London: EPPI-Centre, University of London.
- Emeni, F. (2008). Microfinance institutions in Nigeria: Problems and prospects. *Journal of Financial Management and Analysis*, 21(1), 69-76.
- Epstein, M., & Yuthas, K. (2013). Rural microfinance and client retention: Evidence from Malawi. *Journal of Developmental Entrepreneurship*, 18(1).
- Etapé-Dubreuil, G., & Torreguitart-Mirada, C. (2015). Governance mechanisms, social performance disclosure and performance in microfinance: Does legal status matter?. *Annals of Public and Cooperative Economics*, 86(1), 137-155.

- Forcella, D., & Hudon, M. (2016). Green microfinance in Europe. *Journal of Business Ethics*, 135, 445-459.
- Gakhar, K., & Meetu (2016). Social and financial performance of microfinance institutions: Is there a trade-off?. *Avesha*, 9(1), 36-44.
- Gakhar, K., & Meetu (2013). Financial performance and outreach of microfinance institutions: Is there a trade-off? An empirical study of the Indian economy. *Sona Global Management Review*, 7(4).
- Garmaise, M., & Natividad, G. (2013). Cheap credit, lending operations and international politics: The case of global microfinance. *The Journal of Finance*, 68(4), 1551-1576.
- Garmaise, M., & Natividad, G. (2010). Information, the cost of credit and operational efficiency: An empirical study of microfinance. *The Review of Financial Studies*, 23(6), 2560-2590.
- Ghatak, M., & Guinnane, T. W. (1999). The economics of lending with joint liability: Theory and practice1. *Journal of Development Economics*, 60(1), 195-228.
- Gohar, R., & Batool, A. (2015). Effects of corporate governance on performance of microfinance institutions: A case from Pakistan. *Emerging Markets Finance & Trade*, 51, 94-106.
- Gopaldaswamy AK, Babu MS, Dash U (2016) Systematic review of quantitative evidence on the impact of microfinance on the poor in South Asia. London: EPPI-Centre, Social Science Research Unit, UCL Institute of Education, University College London.
- Gregoire, J., & Tuya, O. (2006). Cost-efficiency of microfinance institutions in Peru: A stochastic frontier approach. *Latin American Business Review*, 7(2), 41-70.
- Gutierrez-Goiria, J., San-Jose, L., & Retolaza, J. (2016). Social efficiency in microfinance institutions: Identifying how to improve it. *Journal of International Development*, 29, 259-280.
- Gutiérrez-Nieto, B., & Serrano-Cinca, C. (2010). Factors influencing funder loyalty to microfinance institutions. *Nonprofit and Voluntary Sector Quarterly*, 39(2), 302-320.
- Gutiérrez-Nieto, B., Serrano-Cinca, C., & Molinero, C. (2007). Microfinance institutions and efficiency. *Omega*, 35, 131-142.
- Gutiérrez-Nieto, B., Serrano-Cinca, C., & Molinero, C. (2009). Social efficiency in microfinance institutions. *The Journal of the Operational Research Society*, 60, 104-119.
- Halouani, N., & Boujelbène, Y. (2015). External governance and dual mission in the African MFIs. *Strategic Change*, 24, 243-265.
- Hamada, M. (2010). Commercialization of microfinance in Indonesia: The shortage of funds and the linkage program. *The Developing Economies*, 48(1), 156-176.
- Hartarska, V. (2005). Governance and performance of microfinance institutions in Central and Eastern Europe and the Newly Independent States. *World Development*, 33(10), 1627-1643.
- Hartarska, V., Nadolnyak, D., & Mersland, R. (2014). Are women better bankers to the poor? Evidence from rural microfinance institutions. *American Journal of Agricultural Economy*, 96(5), 1291-1306.

- Hartarska, V., & Nadolnyak, D. (2007). Do regulated microfinance institutions achieve better sustainability and outreach? Cross-country evidence. *Applied Economics*, 39, 1207-1222.
- Hartarska, V., Shen, X., & Mersland, R. (2013). Scale economies and input price elasticities in microfinance institutions. *Journal of Banking & Finance*, 37, 118-131.
- Houghton, J., Khandker, S., & Rukumnuaykit, P. (2014). Microcredit on a large scale: Appraising the Thailand village fund. *Asian Economic Journal*, 28-29(4), 363-388.
- Hermes, N., Lensink, R., & Meesters, A. (2011). Outreach and efficiency of microfinance institutions. *World Development*, 39(6), 938-948.
- Hollis, A., & Sweetman, A. (2007). The role of local depositors in controlling expenses in small-scale financial intermediation: an empirical analysis. *Economica*, 74, 713-735.
- Hudon, M. (2010). Management of microfinance institutions: Do subsidies matter?. *Journal of International Development*, 22, 890-905.
- Hudon, M., & Traça, D. (2011). On the efficiency effects of subsidies in microfinance: An empirical inquiry. *World Development*, 39(6), 966-973.
- Hup Chan, S. (2010). The influence of leadership expertise and experience on organizational performance: A study of Amanah Ikhtiar Malaysia. *Asia Pacific Business Review*, 16(1-2), 59-77.
- Janda, K., & Turbat, B. (2013). Determinants of the financial performance of microfinance institutions in Central Asia. *Post-Communist Economies*, 25(4), 558-569.
- Jayashankar, P., & Goedegebuure, R. (2011). Marketing strategies and social performance outcomes: A field study on MFI clients. *The IUP Journal of Marketing Management*, 10(2), 7-32.
- Jia, X., Cull, R., Guo, P., & Ma, T. (2016). Commercialization and mission drift: Evidence from a large Chinese microfinance institution. *China Economic Review*, 40, 17-32.
- Jondrow, J., Lovell, C. K., Materov, I. S., & Schmidt, P. (1982). On the estimation of technical inefficiency in the stochastic frontier production function model. *Journal of Econometrics*, 19(2-3), 233-238.
- Kar, A. (2012). Does capital and financing structure have any relevance to the performance of microfinance institutions?. *International Review of Applied Economics*, 26(3), 329-348.
- Kar, A. (2013). Mission drift in microfinance: Are the concerns really worrying? Recent cross-country results. *International Review of Applied Economics*, 27(1), 44-60.
- Kar, A. (2011). Microfinance institutions: A cross-country empirical investigation of outreach and sustainability. *Journal of Small Business & Entrepreneurship*, 24(3), 427-446.
- Kar, A. (2013). Double bottom lines in microfinance: are they mutually exclusive?. *Journal of Small Business & Entrepreneurship*, 26(1), 87-107.
- Kar, A., & Swain, R. (2014). Interest rates and financial performance of microfinance institutions: Recent global evidence. *European Journal of Development Research*, 26, 87-106.
- Kaur, P. (2016). Efficiency of microfinance institutions in India: Are they reaching the poorest of the poor?. *Vision*, 20(1), 54-65.

- Kemonou, R., & Anjugam, M. (2013). Measuring the efficiency of sub-Saharan Africa's microfinance institutions and its drivers. *Annals of Public and Cooperative Economics*, 84(4), 399-422.
- Kendo, S. (2017). Do decision variables improve microfinance efficiency? A stochastic frontier analysis for African countries. *Strategic Change*, 26, 159-174.
- Khafagi, A. (2013). Towards reasonably priced microcredit: Analyzing Egyptian NGO-MFIs' cost structure and financial performance. *Enterprise Development and Microfinance*, 24(4), 1755-1978.
- Kneidig, C., & Tracey, P. (2009). Towards a performance measurement framework for community development finance institutions in the UK. *Journal of Business Ethics*, 86, 327-345.
- Kornai, J. (1986). The soft budget constraint. *Kyklos*, 39(1), 3-30.
- Kusuma, S., & Jaya, W. (2015). The relationship between product diversity and the performance of credit unions and Badan Usaha Kredit Pedesaan in Yogyakarta special province. *Journal of Indonesian Economy and Business*, 30(1), 1-16.
- Kyereboah-Coleman, A., & Osei, K. (2008). Outreach and profitability of microfinance institutions: The role of governance. *Journal of Economic Studies*, 35(3), 236-248.
- Labie M., Méon, P., Mersland, R., & Szafarz, A. (2015). Discrimination by microcredit officers: Theory and evidence on disability in Uganda. *The Quarterly Review of Economics and Finance*, 58, 44-55.
- Lebovics, M., Hermes, N., & Hudon, M. (2016). Are financial and social efficiency mutually exclusive? A case study of Vietnamese microfinance institutions. *Annals of Public and Cooperative Economics*, 87(1), 55-77.
- Lønborg, J., & Rasmussen, O. (2014). Can microfinance reach the poorest: Evidence from a community-managed microfinance intervention. *World Development*, 64, 460-472.
- Louis, P., & Baesens, B. (2013). Do for-profit microfinance institutions achieve better financial efficiency and social impact? A generalised estimating equations panel data approach. *Journal of Development Effectiveness*, 5(3), 359-380.
- Louis, P., Seret, A., & Baesens, B. (2013). Financial efficiency and social impact of microfinance institutions. *World Development*, 46, 197-210.
- Majumder, M., Gopinath, M., & Ramudu, P. (2016). Indian MFIs pattern: Analytical model building. *SCMS Journal of Indian Management*, 13(1), 57-66.
- Makarfi, A.M., & Olukosi, J.O. (2011). MFIs as vehicles for sustainable credit access by the poor in Kano State, Nigeria. *European Journal of Finance and Banking Research*, 4(4), 34-48.
- Maître, M., & Niño-Zarazúa, M. (2017). Poverty and well-being impacts of microfinance: What do we know?. SSRN.
- Manos, R., & Yaron, J. (2009). Key issues in assessing the performance of microfinance institutions. *Canadian Journal of Development Studies*, 29(1-2), 101-122.

- Marr, A., & Tubaro, P. (2011). Crisis in Indian microfinance and a way forward: Governance reforms and the Tamil Nadu model. *Journal of International Development*, 23, 996-1003.
- Marwa, N., & Aziakpono, M. (2015). Financial sustainability of Tanzanian saving and credit cooperatives. *International Journal of Social Economics*, 42(10), 870-887.
- Maudos, J., Pastor, J. M., Pérez, F., & Quesada, J. (2002). Cost and profit efficiency in European banks. *Journal of International Financial Markets, Institutions and Money*, 12(1), 33-58.
- McIntosh, C., de Janvry, A., & Sadoulet, E. (2005). How rising competition among microfinance institutions affects incumbent lenders. *The Economic Journal*, 115, 987-1004.
- McIntosh, M. (2014). Microfinancing in a commercial bank: impact on firm metrics and mission. *Journal of Management Policy and Practice*, 15(5), 65-81.
- Mersland, R., D'Espallier, B., & Supphellen, M. (2013). The effects of religion on development efforts: evidence from the microfinance industry and research agenda. *World Development*, 41, 145-156.
- Mersland, R., Randøy, T., & Strøm, R. (2015). The impact of entrepreneur-CEOs in microfinance institutions: A global survey. *Entrepreneurship: Theory & Practice*, 39(4), 927-953.
- Mersland, R., Randøy, T., & Strøm, R. (2011). The impact of international influence on microbanks' performance: A global survey. *International Business Review*, 20, 163-176.
- Mersland, R., & Strøm, R. (2009). Performance and governance in microfinance institutions. *Journal of Banking & Finance*, 33, 662-669.
- Mersland, R., & Strøm, R. (2008). Performance and trade-offs in microfinance organisations: Does ownership matter?. *Journal of International Development*, 20, 598-612.
- Mersland, R., & Strøm, R. (2010). Microfinance mission drift?. *World Development*, 38(1), 28-36.
- Mersland, R., & Urgeghe, L. (2013). International debt financing and performance of microfinance institutions. *Strategic Change*, 22, 17-29.
- Mia, A., & Chandran, V. (2015). Measuring financial and social outreach productivity of microfinance institutions in Bangladesh. *Social Indicator Research*, 127, 505-527.
- Monroy, C., & Huerga, A. (2013). International for-profit investments in microfinance institutions equity. *Journal of Industrial Engineering and Management*, 6(3), 709-722.
- Morduch, J. (1999). The microfinance promise. *Journal of Economic Literature*, 37(4), 1569-1614.
- Morduch, J. (2000). The microfinance schism. *World development*, 28(4), 617-629.
- Mori, N., Golesorkhi, S., Randøy, T., & Hermes, N. (2015). Board composition and outreach performance of microfinance institutions: Evidence from East Africa. *Strategic Change*, 24, 99-113.
- Mori, N., & Mersland, R. (2014). Boards in microfinance institutions: how do stakeholders matter?. *Journal of Management Governance*, 18, 285-313.

- Mukherjee, A. (2013). Microfinance and credit to the ultra-poor. *International Journal of Social Economics*, 41(10), 975-993.
- Musa, A.S.M., & Khan, M.S.R (2010). Benefits and limitations of technology in MFIs. *Journal of Electronic Commerce Organization*, 8(2), 54-65.
- Nanayakkara, G., & Iselin, E. (2012). An explanatory study of the performance of microfinancing institutions using the Balanced Scorecard Approach. *International Journal of Business and Information*, 7(2), 165-204.
- Narwal, K., & Yadav, M. (2014). Impact of characteristics on outreach and profitability of microfinance institution in India. *International Journal of Financial Management*, 4(3), 50-57.
- Nkundabanyanga, S., Opiso, J., Balunywa, W., & Nkote, I. (2015). Financial service outreach correlates. *International Journal of Social Economics*, 42(4), 404-442.
- Noussair, C. N., & Tucker, S. (2013). Experimental research on asset pricing. *Journal of Economic Surveys*, 27(3), 554-569.
- Pati, A. (2015). Are regulatory microfinance institutions of India better off than non-regulatory ones? A comparison of performance and sustainability. *Paradigm*, 19(1), 21-36.
- Pati, A. (2012). Regulation versus outreach and sustainability: A study of the performance of microfinance institutions in India. *The IUP Journal of Marketing Management*, 11(4), 41-56.
- Patten, R., Rosengard, J., & Johnston, D. (2001). Microfinance success amidst macroeconomic failure: The experience of Bank Rakyat Indonesia during the East Asian crisis. *World Development*, 29(6), 1057-1069.
- Pedrini, M., & Ferri, L. (2016). Doing well by returning to the origin. Mission drift, outreach and financial performance of microfinance institutions. *Voluntas*, 27, 2576-2594.
- Périlleux, A., & Szafarz, A. (2015). Women leaders and social performance: Evidence from financial cooperatives in Senegal. *World Development*, 74, 437-452.
- Piot-Lepetit, I., & Nzongang, J. (2014). Financial sustainability and poverty outreach within a network of village banks in Cameroon: A multi-DEA approach. *European Journal of Operational Research*, 234, 319-330.
- Postelnicu, L., & Hermes, N. (2016). Microfinance Performance and Social Capital: A Cross-Country Analysis. *Journal of Business Ethics*, 1-19.
- Quayes, S. (2015). Outreach and performance of microfinance institutions: A panel analysis. *Applied Economics*, 47(18), 1909-1925.
- Quayes, S., & Hasan, T. (2014). Financial disclosure and performance of microfinance institutions. *Journal of Accounting & Organizational Change*, 10(3), 314-337.
- Quayes, S., & Joseph, G. (2017). Legal systems and performance of microfinance institutions. *International Review of Applied Economics*, 31(3), 304-317.
- Rai, A. (2015). Indian microfinance institutions: Performance of young and old institutions. *Vision*, 19(3), 189-199.

- Rao, K., & Reda, T. (2015). The determinants of outreach of microfinance institutions in Ethiopia. *International Journal of Business Insights and Transformation*, 8(1), 8-16.
- Rashid, A., & Twaha, K. (2013). Exploring the determinants of the productivity of Indian microfinance institutions . *Theoretical and Applied Economics*, 20(12), 83-96.
- Reed, L. (2015). State of the microcredit summit campaign report 2015. Washington D.C.: Microcredit Summit.
- Reichert, P. (2018). A meta-analysis examining the nature of trade-offs in microfinance. *Oxford Development Studies*, 20, 1-23.
- Roberts, P. (2013). The profit orientation of microfinance institutions and effective interest rates. *World Development*, 41, 120-131.
- Sainz-Fernandez, I., Torre-Olmo, B., Lopez-Gutierrez, C., & Sanfilippo-Azofra, S. (2015). Crisis in microfinance institutions: Identifying problems. *Journal of International Development*, 27, 1058-1073.
- Schreiner, M. (2003). A cost-effectiveness analysis of the Grameen Bank of Bangladesh. *Development Policy Review*, 21(3), 357-382.
- Serrano-Cinca, C., & Gutiérrez-Nieto, B. (2014). Microfinance, the long tail and mission drift. *International Business Review*, 23, 181-194.
- Servin, R., Lensink, R., & Berg, M. (2012). Ownership and technical efficiency of microfinance institutions: Empirical evidence from Latin America. *Journal of Banking & Finance*, 36, 2136-2144.
- Silva, A., & Chávez, G. (2015). Microfinance, country governance and the global financial crisis. *Venture Capital*, 17(1-2), 191-213.
- Sinah, S. (2010). How to calm the charging bull—an agenda for CGAP in the decade of the ‘teenies’. *Microfinance Focus*, 15.
- Strøm, R., D'Espallier, B., & Mersland, R. (2014). Female leadership, performance, and governance in microfinance institutions. *Journal of Banking & Finance*, 42, 60-75.
- Suarez, F. F., & Lanzolla, G. (2007). The role of environmental dynamics in building a first mover advantage theory. *Academy of Management Review*, 32(2), 377-392.
- Tahir, I., & Che Tarim, S. (2013). Efficiency analysis of microfinance institutions in ASEAN: A DEA approach. *Business Management Dynamics*, 3(4), 13-23.
- Tchakoute-Tchuigoua, H. (2010). Is there a difference in performance by the legal status of microfinance institutions?. *The Quarterly Review of Economics and Finance*, 50, 436-442.
- Tchakoute-Tchuigoua, H. (2012). Active risk management and loan contract terms: Evidence from rated microfinance institutions. *The Quarterly Review of Economics and Finance*, 52, 427-437.
- Tchakoute-Tchuigoua, H. (2014). Performance of microfinance institutions: Do board activity and governance ratings matter?. *Finance*, 35(3), 7-52.

- Tchakoute-Tchuigoua, H., Durrieu, F., & Kouao, G. (2017). Funding strategy and performance of microfinance institutions: An exploratory study. *Strategic Change*, 26, 133-143.
- Vanroose, A., & D'Espallier, B. (2013). Do microfinance institutions accomplish their mission? Evidence from the relationship between traditional financial sector development and microfinance institutions' outreach and performance. *Applied Economics*, 45, 1965-1982.
- Van Rooyen, C., Stewart, R., & De Wet, T. (2012). The impact of microfinance in sub-Saharan Africa: a systematic review of the evidence. *World Development*, 40(11), 2249-2262.
- Vishwakarma, R. (2017). Women on board and its impact on microfinance: Evidence from microfinance sector. *Indian Journal of Corporate Governance*, 10(1), 58-73.
- Wagner, C., & Winkler, A. (2013). The vulnerability of microfinance to financial turmoil—evidence from the global financial crisis. *World Development*, 51, 71-90.
- Widiarto, I., & Emrouznejad, A (2015). Social and financial efficiency of Islamic microfinance institutions: A Data Envelopment Analysis application. *Socio-Economic Planning Sciences*, 50, 1-17.
- Wijesri, M., & Meoli, M. (2015). Productivity change of microfinance institutions in Kenya: A bootstrap Malmquist approach. *Journal of Retailing and Consumer Services*, 25, 115-121.
- Wijesri, M., Viganò, L., & Meoli, M. (2015). Efficiency of microfinance institutions in Sri Lanka: A two-stage double bootstrap DEA approach. *Economic Modelling*, 47, 74-83.
- World Bank (2018), Financial Inclusion, World Bank Website. <http://www.worldbank.org/en/topic/financialinclusion/overview> (accessed June 9, 2018)
- Wu, Y., Escalante, C., & Xiaofei, L. (2016). Technical efficiency and business maturity: Evidence from Chinese and Indian microfinance institutions. *Enterprise Development and Microfinance*, 27(2), 97-114.
- Xu, S., Copestake, J., & Peng, X. (2016). Microfinance institutions' mission drift in a macroeconomic context. *Journal of International Development*, 28-29, 1123-1137.
- Yaron, J. (1992). *Assessing Development Finance Institutions; A Public Interest Analysis* (No. 174). World Bank.
- Zerai, B. & Rani, L. (2012). Technical efficiency and its determinants of MFIs in Ethiopia: An SFA approach. *African Journal of Accounting, Economics, Finance and Banking research*, 8(8), 1-19.



List of research reports

13001-EEF: Kuper, G.H. and M. Mulder, Cross-border infrastructure constraints, regulatory measures and economic integration of the Dutch – German gas market

13002-EEF: Klein Goldewijk, G.M. and J.P.A.M. Jacobs, The relation between stature and long bone length in the Roman Empire

13003-EEF: Mulder, M. and L. Schoonbeek, Decomposing changes in competition in the Dutch electricity market through the Residual Supply Index

13004-EEF: Kuper, G.H. and M. Mulder, Cross-border constraints, institutional changes and integration of the Dutch – German gas market

13005-EEF: Wiese, R., Do political or economic factors drive healthcare financing privatisations? Empirical evidence from OECD countries

13006-EEF: Elhorst, J.P., P. Heijnen, A. Samarina and J.P.A.M. Jacobs, State transfers at different moments in time: A spatial probit approach

13007-EEF: Mierau, J.O., The activity and lethality of militant groups: Ideology, capacity, and environment

13008-EEF: Dijkstra, P.T., M.A. Haan and M. Mulder, The effect of industry structure and yardstick design on strategic behavior with yardstick competition: an experimental study

13009-GEM: Hoorn, A.A.J. van, Values of financial services professionals and the global financial crisis as a crisis of ethics

13010-EEF: Boonman, T.M., Sovereign defaults, business cycles and economic growth in Latin America, 1870-2012

13011-EEF: He, X., J.P.A.M Jacobs, G.H. Kuper and J.E. Ligthart, On the impact of the global financial crisis on the euro area

13012-GEM: Hoorn, A.A.J. van, Generational shifts in managerial values and the coming of a global business culture

13013-EEF: Samarina, A. and J.E. Sturm, Factors leading to inflation targeting – The impact of adoption

13014-EEF: Allers, M.A. and E. Merkus, Soft budget constraint but no moral hazard? The Dutch local government bailout puzzle

13015-GEM: Hoorn, A.A.J. van, Trust and management: Explaining cross-national differences in work autonomy

13016-EEF: Boonman, T.M., J.P.A.M. Jacobs and G.H. Kuper, Sovereign debt crises in Latin America: A market pressure approach



13017-GEM: Oosterhaven, J., M.C. Bouwmeester and M. Nozaki, The impact of production and infrastructure shocks: A non-linear input-output programming approach, tested on an hypothetical economy

13018-EEF: Cavapozzi, D., W. Han and R. Miniaci, Alternative weighting structures for multidimensional poverty assessment

14001-OPERA: Germs, R. and N.D. van Foreest, Optimal control of production-inventory systems with constant and compound poisson demand

14002-EEF: Bao, T. and J. Duffy, Adaptive vs. educative learning: Theory and evidence

14003-OPERA: Syntetos, A.A. and R.H. Teunter, On the calculation of safety stocks

14004-EEF: Bouwmeester, M.C., J. Oosterhaven and J.M. Rueda-Cantuche, Measuring the EU value added embodied in EU foreign exports by consolidating 27 national supply and use tables for 2000-2007

14005-OPERA: Prak, D.R.J., R.H. Teunter and J. Riezebos, Periodic review and continuous ordering

14006-EEF: Reijnders, L.S.M., The college gender gap reversal: Insights from a life-cycle perspective

14007-EEF: Reijnders, L.S.M., Child care subsidies with endogenous education and fertility

14008-EEF: Otter, P.W., J.P.A.M. Jacobs and A.H.J. den Reijer, A criterion for the number of factors in a data-rich environment

14009-EEF: Mierau, J.O. and E. Suari Andreu, Fiscal rules and government size in the European Union

14010-EEF: Dijkstra, P.T., M.A. Haan and M. Mulder, Industry structure and collusion with uniform yardstick competition: theory and experiments

14011-EEF: Huizingh, E. and M. Mulder, Effectiveness of regulatory interventions on firm behavior: a randomized field experiment with e-commerce firms

14012-GEM: Bressand, A., Proving the old spell wrong: New African hydrocarbon producers and the 'resource curse'

14013-EEF: Dijkstra P.T., Price leadership and unequal market sharing: Collusion in experimental markets

14014-EEF: Angelini, V., M. Bertoni, and L. Corazzini, Unpacking the determinants of life satisfaction: A survey experiment

14015-EEF: Heijdra, B.J., J.O. Mierau, and T. Trimborn, Stimulating annuity markets

14016-GEM: Bezemer, D., M. Grydaki, and L. Zhang, Is financial development bad for growth?



14017-EEF: De Cao, E. and C. Lutz, Sensitive survey questions: measuring attitudes regarding female circumcision through a list experiment

14018-EEF: De Cao, E., The height production function from birth to maturity

14019-EEF: Allers, M.A. and J.B. Geertsema, The effects of local government amalgamation on public spending and service levels. Evidence from 15 years of municipal boundary reform

14020-EEF: Kuper, G.H. and J.H. Veurink, Central bank independence and political pressure in the Greenspan era

14021-GEM: Samarina, A. and D. Bezemer, Do Capital Flows Change Domestic Credit Allocation?

14022-EEF: Soetevent, A.R. and L. Zhou, Loss Modification Incentives for Insurers Under Expected Utility and Loss Aversion

14023-EEF: Allers, M.A. and W. Vermeulen, Fiscal Equalization, Capitalization and the Flypaper Effect.

14024-GEM: Hoorn, A.A.J. van, Trust, Workplace Organization, and Comparative Economic Development.

14025-GEM: Bezemer, D., and L. Zhang, From Boom to Bust in de Credit Cycle: The Role of Mortgage Credit.

14026-GEM: Zhang, L., and D. Bezemer, How the Credit Cycle Affects Growth: The Role of Bank Balance Sheets.

14027-EEF: Bružikas, T., and A.R. Soetevent, Detailed Data and Changes in Market Structure: The Move to Unmanned Gasoline Service Stations.

14028-EEF: Bouwmeester, M.C., and B. Scholtens, Cross-border Spillovers from European Gas Infrastructure Investments.

14029-EEF: Lestano, and G.H. Kuper, Correlation Dynamics in East Asian Financial Markets.

14030-GEM: Bezemer, D.J., and M. Grydaki, Nonfinancial Sectors Debt and the U.S. Great Moderation.

14031-EEF: Hermes, N., and R. Lensink, Financial Liberalization and Capital Flight: Evidence from the African Continent.

14032-OPERA: Blok, C. de, A. Seepma, I. Roukema, D.P. van Donk, B. Keulen, and R. Otte, Digitalisering in Strafrechtketens: Ervaringen in Denemarken, Engeland, Oostenrijk en Estland vanuit een Supply Chain Perspectief.

14033-OPERA: Olde Keizer, M.C.A., and R.H. Teunter, Opportunistic condition-based maintenance and aperiodic inspections for a two-unit series system.

14034-EEF: Kuper, G.H., G. Sierksma, and F.C.R. Spieksma, Using Tennis Rankings to Predict Performance in Upcoming Tournaments



- 15001-EEF: Bao, T., X. Tian, X. Yu, Dictator Game with Indivisibility of Money
- 15002-GEM: Chen, Q., E. Dietzenbacher, and B. Los, The Effects of Ageing and Urbanization on China's Future Population and Labor Force
- 15003-EEF: Allers, M., B. van Ommeren, and B. Geertsema, Does intermunicipal cooperation create inefficiency? A comparison of interest rates paid by intermunicipal organizations, amalgamated municipalities and not recently amalgamated municipalities
- 15004-EEF: Dijkstra, P.T., M.A. Haan, and M. Mulder, Design of Yardstick Competition and Consumer Prices: Experimental Evidence
- 15005-EEF: Dijkstra, P.T., Price Leadership and Unequal Market Sharing: Collusion in Experimental Markets
- 15006-EEF: Anufriev, M., T. Bao, A. Sutin, and J. Tuinstra, Fee Structure, Return Chasing and Mutual Fund Choice: An Experiment
- 15007-EEF: Lamers, M., Depositor Discipline and Bank Failures in Local Markets During the Financial Crisis
- 15008-EEF: Oosterhaven, J., On de Doubtful Usability of the Inoperability IO Model
- 15009-GEM: Zhang, L. and D. Bezemer, A Global House of Debt Effect? Mortgages and Post-Crisis Recessions in Fifty Economies
- 15010-I&O: Hooghiemstra, R., N. Hermes, L. Oxelheim, and T. Randøy, The Impact of Board Internationalization on Earnings Management
- 15011-EEF: Haan, M.A., and W.H. Siekman, Winning Back the Unfaithful while Exploiting the Loyal: Retention Offers and Heterogeneous Switching Costs
- 15012-EEF: Haan, M.A., J.L. Moraga-González, and V. Petrikaite, Price and Match-Value Advertising with Directed Consumer Search
- 15013-EEF: Wiese, R., and S. Eriksen, Do Healthcare Financing Privatisations Curb Total Healthcare Expenditures? Evidence from OECD Countries
- 15014-EEF: Siekman, W.H., Directed Consumer Search
- 15015-GEM: Hoorn, A.A.J. van, Organizational Culture in the Financial Sector: Evidence from a Cross-Industry Analysis of Employee Personal Values and Career Success
- 15016-EEF: Te Bao, and C. Hommes, When Speculators Meet Constructors: Positive and Negative Feedback in Experimental Housing Markets
- 15017-EEF: Te Bao, and Xiaohua Yu, Memory and Discounting: Theory and Evidence
- 15018-EEF: Suari-Andreu, E., The Effect of House Price Changes on Household Saving Behaviour: A Theoretical and Empirical Study of the Dutch Case



15019-EEF: Bijlsma, M., J. Boone, and G. Zwart, Community Rating in Health Insurance: Trade-off between Coverage and Selection

15020-EEF: Mulder, M., and B. Scholtens, A Plant-level Analysis of the Spill-over Effects of the German *Energiewende*

15021-GEM: Samarina, A., L. Zhang, and D. Bezemer, Mortgages and Credit Cycle Divergence in Eurozone Economies

16001-GEM: Hoorn, A. van, How Are Migrant Employees Managed? An Integrated Analysis

16002-EEF: Soetevent, A.R., Te Bao, A.L. Schippers, A Commercial Gift for Charity

16003-GEM: Bouwmeester, M.C., and J. Oosterhaven, Economic Impacts of Natural Gas Flow Disruptions

16004-MARK: Holtrop, N., J.E. Wieringa, M.J. Gijzenberg, and P. Stern, Competitive Reactions to Personal Selling: The Difference between Strategic and Tactical Actions

16005-EEF: Plantinga, A. and B. Scholtens, The Financial Impact of Divestment from Fossil Fuels

16006-GEM: Hoorn, A. van, Trust and Signals in Workplace Organization: Evidence from Job Autonomy Differentials between Immigrant Groups

16007-EEF: Willems, B. and G. Zwart, Regulatory Holidays and Optimal Network Expansion

16008-GEF: Hoorn, A. van, Reliability and Validity of the Happiness Approach to Measuring Preferences

16009-EEF: Hinloopen, J., and A.R. Soetevent, (Non-)Insurance Markets, Loss Size Manipulation and Competition: Experimental Evidence

16010-EEF: Bekker, P.A., A Generalized Dynamic Arbitrage Free Yield Model

16011-EEF: Mierau, J.A., and M. Mink, A Descriptive Model of Banking and Aggregate Demand

16012-EEF: Mulder, M. and B. Willems, Competition in Retail Electricity Markets: An Assessment of Ten Year Dutch Experience

16013-GEM: Rozite, K., D.J. Bezemer, and J.P.A.M. Jacobs, Towards a Financial Cycle for the US, 1873-2014

16014-EEF: Neuteleers, S., M. Mulder, and F. Hindriks, Assessing Fairness of Dynamic Grid Tariffs

16015-EEF: Soetevent, A.R., and T. Bružikas, Risk and Loss Aversion, Price Uncertainty and the Implications for Consumer Search



16016-HRM&OB: Meer, P.H. van der, and R. Wielers, Happiness, Unemployment and Self-esteem

16017-EEF: Mulder, M., and M. Pangan, Influence of Environmental Policy and Market Forces on Coal-fired Power Plants: Evidence on the Dutch Market over 2006-2014

16018-EEF: Zeng, Y., and M. Mulder, Exploring Interaction Effects of Climate Policies: A Model Analysis of the Power Market

16019-EEF: Ma, Yiqun, Demand Response Potential of Electricity End-users Facing Real Time Pricing

16020-GEM: Bezemer, D., and A. Samarina, Debt Shift, Financial Development and Income Inequality in Europe

16021-EEF: Elkhuizen, L, N. Hermes, and J. Jacobs, Financial Development, Financial Liberalization and Social Capital

16022-GEM: Gerritse, M., Does Trade Cause Institutional Change? Evidence from Countries South of the Suez Canal

16023-EEF: Rook, M., and M. Mulder, Implicit Premiums in Renewable-Energy Support Schemes

17001-EEF: Trinks, A., B. Scholtens, M. Mulder, and L. Dam, Divesting Fossil Fuels: The Implications for Investment Portfolios

17002-EEF: Angelini, V., and J.O. Mierau, Late-life Health Effects of Teenage Motherhood

17003-EEF: Jong-A-Pin, R., M. Laméris, and H. Garretsen, Political Preferences of (Un)happy Voters: Evidence Based on New Ideological Measures

17004-EEF: Jiang, X., N. Hermes, and A. Meesters, Financial Liberalization, the Institutional Environment and Bank Efficiency

17005-EEF: Kwaak, C. van der, Financial Fragility and Unconventional Central Bank Lending Operations

17006-EEF: Postelnicu, L. and N. Hermes, The Economic Value of Social Capital

17007-EEF: Ommeren, B.J.F. van, M.A. Allers, and M.H. Vellekoop, Choosing the Optimal Moment to Arrange a Loan

17008-EEF: Bekker, P.A., and K.E. Bouwman, A Unified Approach to Dynamic Mean-Variance Analysis in Discrete and Continuous Time

17009-EEF: Bekker, P.A., Interpretable Parsimonious Arbitrage-free Modeling of the Yield Curve

17010-GEM: Schasfoort, J., A. Godin, D. Bezemer, A. Caiani, and S. Kinsella, Monetary Policy Transmission in a Macroeconomic Agent-Based Model



17011-I&O: Bogt, H. ter, Accountability, Transparency and Control of Outsourced Public Sector Activities

17012-GEM: Bezemer, D., A. Samarina, and L. Zhang, The Shift in Bank Credit Allocation: New Data and New Findings

17013-EEF: Boer, W.I.J. de, R.H. Koning, and J.O. Mierau, Ex-ante and Ex-post Willingness-to-pay for Hosting a Major Cycling Event

17014-OPERA: Laan, N. van der, W. Romeijnders, and M.H. van der Vlerk, Higher-order Total Variation Bounds for Expectations of Periodic Functions and Simple Integer Recourse Approximations

17015-GEM: Oosterhaven, J., Key Sector Analysis: A Note on the Other Side of the Coin

17016-EEF: Romensen, G.J., A.R. Soetevent: Tailored Feedback and Worker Green Behavior: Field Evidence from Bus Drivers

17017-EEF: Trinks, A., G. Ibikunle, M. Mulder, and B. Scholtens, Greenhouse Gas Emissions Intensity and the Cost of Capital

17018-GEM: Qian, X. and A. Steiner, The Reinforcement Effect of International Reserves for Financial Stability

17019-GEM/EEF: Klasing, M.J. and P. Millionis, The International Epidemiological Transition and the Education Gender Gap

2018001-EEF: Keller, J.T., G.H. Kuper, and M. Mulder, Mergers of Gas Markets Areas and Competition amongst Transmission System Operators: Evidence on Booking Behaviour in the German Markets

2018002-EEF: Soetevent, A.R. and S. Adikyan, The Impact of Short-Term Goals on Long-Term Objectives: Evidence from Running Data

2018003-MARK: Gijsenberg, M.J. and P.C. Verhoef, Moving Forward: The Role of Marketing in Fostering Public Transport Usage

2018004-MARK: Gijsenberg, M.J. and V.R. Nijs, Advertising Timing: In-Phase or Out-of-Phase with Competitors?

2018005-EEF: Hulshof, D., C. Jepma, and M. Mulder, Performance of Markets for European Renewable Energy Certificates

2018006-EEF: Fosgaard, T.R., and A.R. Soetevent, Promises Undone: How Committed Pledges Impact Donations to Charity

2018007-EEF: Durán, N. and J.P. Elhorst, A Spatio-temporal-similarity and Common Factor Approach of Individual Housing Prices: The Impact of Many Small Earthquakes in the North of Netherlands

2018008-EEF: Hermes, N., and M. Hudon, Determinants of the Performance of Microfinance Institutions: A Systematic Review



www.rug.nl/feb