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Board Gender Diversity and the Social Performance of Microfinance Institutions

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Theoretical/Academic Implications: We contribute to the emerging research stream of women representation in the boardrooms of organizations supplying public goods. We build on upper echelons theory and resource dependence theory to explain that female directors can bring diverse experience, knowledge and value to the board and can help MFIs make long-term strategic decisions to meet a wider range of stakeholders' expectations on social and environmental performance.
Practitioner/Policy Implications: Our findings offer insights to policymakers and practitioners, e.g., funders, interested in the roles of women directors in shaping decision making in industries supplying public goods such as the microfinance industry. We show that these roles are better understood when considering the organization's type (for-profit versus non-profit) and the multidimensionality of MFIs' social performance which captures the more complex relationships of an MFI with the different stakeholders.

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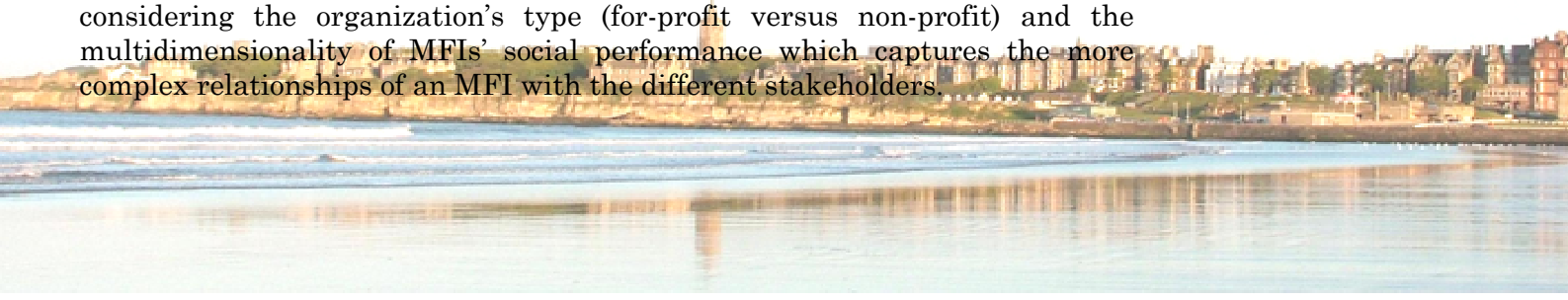

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KEYWORDS: Social Performance; Women Directors; Institutional Context; Microfinance; Sustainable Development Goals.

JEL Classification: G34, J16, M14

1. INTRODUCTION

The role of board gender diversity in decision-making of for-profit organizations, in particular publicly traded organizations, has attracted considerable attention in recent years from academics, practitioners and regulators (Grosvold and Brammer, 2011). For instance, the links between board gender diversity and financial performance (Erhardt, Werbel and Sharder, 2003) as well as social performance issues (Afzali et al., 2022; Liao, et al., 2021; Francoeur, et al., 2019; Byron and Post, 2016; Boulouta, 2013) have been studied extensively. This literature adopts a multidimensional conceptualization of social performance addressing different stakeholders. In contrast, the emerging research stream of women representation in the boardrooms of organizations supplying public goods such as Microfinance Institutions (MFIs) uses a specific conceptualization of social performance that focuses on a single stakeholder. Consequently, little is known about whether board gender diversity has consistent effect on the social performance of MFIs toward diverse stakeholders.

The business of microfinance institutions (MFIs) is the provision of financial services to economically active poor and low-income people (Callaghan, Gonzalez, Maurice, Novak, & Stanley, 2007). The primary objective (also referred to as the social goal or mission) of MFIs is the financial inclusion of such people excluded by traditional banks in order to improve their standard of living and economic prospects (Battilana & Dorado, 2010; Mersland & Strøm, 2009; Postelnicu & Hermes, 2018; Strøm, D'Espallier, & Mersland, 2014). In addition to the economic viability (measurement of financial performance), the measurement of social performance appears necessary to explore whether microfinance is fulfilling its social promises (Morduch, 2000). Although substantial progress has been made in constructing benchmarks and instruments for measuring MFIs' social performance, the debate on identifying the most adequate indicators is still ongoing.

We investigate whether female directors influence the *different* individual dimensions of the social performance of MFIs, specifically, the conceptualization and measurement of social performance in association with female directors. When examining the impact of female directors on MFIs' decision-making, the existing microfinance literature uses a specific conceptualization of social performance that focuses on a single stakeholder, namely the borrowers (i.e., customers) of MFIs. This specific conceptualization is measured as "outreach", e.g., the breadth of outreach (the number of clients) and the depth of outreach (the ratio of active female borrowers to the total number of active borrowers or the average loan size) (Schreiner, 2002). Some studies find a positive link between female leadership (e.g., female CEOs and female directors) and outreach (Boehe & Barin Cruz, 2013; Hartarska, 2005; Hartarska & Mersland, 2012; Périlleux & Szafarz, 2015; Strøm et al., 2014). However, we should be cautious when interpreting this finding as it could be affected by mission drift, social peer pressure and social ties mediating women group lending (Bert D'Espallier, Guérin, & Mersland, 2011; Mersland & Strøm, 2010).

We argue that the multidimensional conceptualization of social performance is important to better understand the impact of female directors on MFIs' strategic decision making. Focusing on a single stakeholder or dimension might provide an incomplete measure of the social performance of MFIs. For instance, the outreach measure is a narrow measure of MFIs' social performance that does not capture the more complex relationships with *different* stakeholders and does not reflect the overall social performance. Following Hermes and Hudon (2018: 1483), we adopt a multidimensional conceptualization of social performance in order to capture the more complex relationships of MFIs with the *different* stakeholders. This is operationalized using a new and wider measure of the social performance of MFIs that captures *different* stakeholders through five dimensions: social goals, governance and human resources, products & services, client protection, and environment.

Consistent with the predictions of resource dependence theory (Hillman & Dalziel, 2003; Pfeffer & Salancik, 1978) and upper echelons theory (Hambrick, 2007; Hambrick & Mason, 1984), we hypothesise that women directors will have a positive impact on the social performance of MFIs. The corporate governance literature has identified numerous arguments in favour of the recruitment of female board members to increase the diversity and independence of opinions on the board, provide a positive influence on strategic decision making, and promote a culture of social responsibility (Adams & Ferreira, 2009; Erhardt, Werbel, & Shrader, 2003; Harjoto, Laksmana, & Lee, 2014). For instance, women directors may "*provide non-business perspectives on issues, problems, and ideas as well as expertise about and influence with powerful groups in the community*" (Hillman, Cannella, & Harris, 2002, p. 749). In line with resource dependence theory, there is a positive link between board gender diversity and the level of organizational innovation, which may increase the quality of products & services (Torchia, Calabrò, & Huse, 2011). Female directors may bring unique values (Selby, 2000), understanding, and proficiency (Eagly, 2005; Hillman et al., 2002) to boards, and female directors have been shown to be more concerned about environmental issues (Liu, 2018) and play a key role on corporate boards in promoting renewable energy consumption (Atif, Hossain, Alam, & Goergen, 2020).

We next explore the factors that might condition or moderate the influence of women directors on the social performance of MFIs: MFI status or type, i.e., whether the MFI is not-for-profit or profit-oriented, cultural gender values and institutional strength. We expect the impact to be stronger for not-for-profit MFIs relative to profit-oriented MFIs because of the well-documented fundamental differences between the two types of MFIs, such as the governance structure, managerial incentives, and funding sources (Cull, Demirgüç-Kunt, & Morduch, 2009, 2014; Galema, Lensink, & Mersland, 2012; Servin, Lensink, & van den Berg, 2012; Strøm et al., 2014). We also expect cultural gender values, i.e., leading societal logics,

traditions and beliefs, to condition the impact of female board members on the social performance of MFIs (Cobb, Wry, & Zhao, 2016; Drori, Manos, Santacreu-Vasut, & Shoham, 2020; Golesorkhi, Mersland, Piekkari, Pishchulov, & Randøy, 2019; Zhao & Wry, 2016). Similarly, we expect nation-level institutions to influence the role of female board members by influencing the incentives and, consequently, their socioeconomic opportunities, e.g., being recruited as board directors and making their voices heard (Ault, 2016; Boehe & Barin Cruz, 2013; Hermes & Hudon, 2018).

To test our hypotheses, we use unbalanced panel data on 2,293 MFIs during the sample period 2010-2018 and control for MFI and country-specific factors. We find that board gender diversity has a positive impact on the overall measure of the social performance of MFIs. Female directors have significant and positive impacts on two specific dimensions of social performance: *products & services* and *environment*. We also find that the positive impact of female directors depends on the MFI type as well as factors related to culture and institutional strength. In particular, the positive effect is stronger for not-for-profit MFIs, and the level of gender marking and institutional strength are higher. Our result suggests that female directors might have a positive impact on specific dimensions of the social performance of MFIs, and that this impact is constrained by specific conditions that should be met first.

This paper contributes to the existing microfinance literature on board gender roles in several ways. First, the social performance of MFIs is a multi-dimensional concept (Hermes & Hudon, 2018), and as such, it is crucial to distinguish between the measurement of social performance in aggregate and individual dimensions which are related to different stakeholders. For instance, some studies focus on the environmental aspect of MFIs (Allet, 2014; Allet & Hudon, 2015), and more recent work has started recognising the importance of exploring different dimensions of social performance other than the single dimension measure of outreach (Beisland, Djan, Mersland, & Randøy, 2021; B. D'Espallier & Goedecke, 2019). B.

D'Espallier and Goedecke (2019) argue that social performance is a complex and multidimensional concept that is perceived very differently by researchers and practitioners. Our study adds to this literature by examining the role of board gender diversity in shaping *different* dimensions of MFIs' social performance.

Second, we contribute to the literature on the impact of organization type or status on the role of female leadership in decision making and outcomes (e.g. Galema et al., 2012; Strøm et al., 2014). As the literature mostly focuses on the role of board gender diversity in for-profit organizations, we investigate how the MFI type or status (not-for-profit vs. profit-oriented MFIs) affects the role of female directors in shaping social performance. Our findings show that female directors have a positive impact on specific dimensions of social performance, particularly in not-for-profit MFIs. These findings are of broad interest to scholars and policymakers interested in the roles of female leadership in shaping decision making in industries supplying public goods, such as the microfinance industry.

Finally, we also add new insights to the literature on the role of the formal and informal institutional context in shaping the impact of gender diversity on social performance. To complement studies linking country-level factors to social performance (e.g., Drori et al., 2020; Golesorkhi et al., 2019; Ioannou & Serafeim, 2012), we examine the effects of cultural gender values and institutional strength that could affect the impact of women directors on the MFIs' social performance.

The rest of the paper is organised as follows. The second section summarises the prior literature and develops our hypotheses. The third section describes the sample and research methodology. The fourth section provides our main results and robustness checks. Finally, the last section concludes.

2. THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

2.1 Social performance of MFIs – a multi-dimensional concept

The concept of social performance, defined as the *principles, processes, programs and outcomes that relate to an organization's societal relationships* (Wood, 1991), has triggered significant interest in light of the growing attention regarding the potential impact of businesses on society (Ghoul, Gueddhami, & Kim, 2017; Ioannou & Serafeim, 2012). However, the measurement of social performance has proven to be challenging, particularly for MFIs. The social objective (also referred to as the social goal or mission) of MFIs is the financial inclusion, through the provision of financial services, of economically active poor and low-income people (Hermes & Hudon, 2018; Mersland & Strøm, 2009; Postelnicu & Hermes, 2018). Accordingly, most of the literature uses "outreach" to measure the social performance of MFIs: the number of clients and the ratio of active female borrowers to the total number of active borrowers or the average loan size (Schreiner, 2002).

Clearly, the outreach measure is motivated by the "stated" social mission of MFIs and is measured only relative to a single and crucial stakeholder, namely customers. There is at least one problem with this approach. Focusing on a single stakeholder or dimension might provide an incomplete measure of the social performance of MFIs. For instance, in addition to outreach, the information on the treatment of clients is missing (e.g., transparency, fair and respectful treatment of clients, privacy of client data, mechanisms for complaints resolution and prevention of over-indebtedness). Furthermore, do managers and employees meet the level of commitment to the MFIs' social mission? Are MFIs' employees treated responsibly (e.g., work environment, employee satisfaction and turnover)?

Given the complex nature of MFIs' social performance, Hermes and Hudon (2018: 1483) suggest that "*social performance should only be assessed by using a multi-dimensional*

perspective". As such, we argue that the measure of outreach does not capture the comprehensive relationships with the diverse range of stakeholders and does not accurately reflect the overall social performance. One could argue that all MFIs should not be evaluated with the same set of performance measures as they may have different mission statements. For example, Mersland, Nyarko, and Szafarz (2019) argue that the mission statements of MFIs are trustworthy as they find coherence between what MFIs say in their mission statements and their outreach performance. They conclude that mission drift is not a serious concern, which is good news for capital providers, and that MFIs should only be judged relative to what is mentioned in their mission statements. If the objective is to check the existence and importance of mission drift, then focusing only on outreach should be enough. However, regulators as well as capital providers are increasingly interested in understanding the social performance of MFIs beyond those mentioned in their mission statements (i.e., social mission or goals). Nevertheless, we don't know much about the other dimensions of social performance and which factors affect these dimensions or how.

More recent work started recognising the importance of social performance measurement, which is less studied in the microfinance literature (Beisland et al., 2021; B. D'Espallier & Goedecke, 2019). B. D'Espallier and Goedecke (2019) suggest that social performance is a complex and multi-dimensional concept that is perceived very differently by researchers and practitioners. We argue that this multidimensional conceptualization of social performance should be using a wider range of dimensions (e.g. client protection, the natural environment; see the detailed discussion on measurements in Section 3.2) that captures additional stakeholders apart from customers. The next section discusses the role of board gender diversity in shaping the *different* dimensions of MFIs' social performance.

2.2 Women on board and social performance of MFIs

The social performance of an organization is the outcome of strategic decisions and actions made at the top management level. Indeed, the board of directors, through its monitoring role, can have a strong influence on these decisions and actions. Board gender diversity or the role of women directors and their potential positive influence on board functioning and governance more generally have been discussed in the corporate governance literature (See e.g., Adams & Ferreira, 2009). Female board members have been associated with an increased diversity of opinions on the board and a positive influence on both strategic decision-making and the leadership style of the organization. These benefits could be achieved through better-quality relationships with stakeholder groups as well as better advice and more effective monitoring of the board, which might improve overall organizational performance (Adams & Ferreira, 2009; Erhardt et al., 2003; Harjoto et al., 2014).

As noted before, MFIs provide a unique setting to study the influence of female directors in shaping the strategic decisions and actions of MFIs. Previous research has examined two general topics: 1) the impact of governance mechanisms on MFIs' financial performance and outreach; 2) the impact of female leadership on governance and performance (both financial and outreach) in MFIs. Some studies find evidence that having female CEOs and/or directors is associated with better financial performance but weaker governance performance (Augustine, Wheat, Jones, Baraldi, & Malgwi, 2016; Mersland & Strøm, 2009; Chakrabarty and Bass, 2014; Strøm et al., 2014;). For instance, Chakrabarty and Bass (2014) find that boards with female representation could help lower MFI's costs of operating. Strøm et al. (2014) find that board meetings are fewer, internal audits less common, and CEO duality more common when women hold leadership positions. Most previous studies used outreach as a proxy for social performance. Some of these studies report a positive link between female leadership and outreach (Cozarenco & Szafarz, 2015; Hartarska, Nadolnyak, & Mersland, 2014; Mori, Golesorkhi, Randøy, & Hermes, 2015).

The role of female directors in shaping the social performance of MFIs can be explained using theoretical arguments provided by resource dependence theory (Hillman & Dalziel, 2003; Pfeffer & Salancik, 1978) and upper echelons theory (hereafter UET) (Hambrick, 2007; Hambrick & Mason, 1984). While the corporate governance literature focuses on the monitoring role, resource dependence theory adds a provisioning role (Hillman & Dalziel, 2003); that is, board members provide access to resources that are critical to the organization's performance (Pfeffer & Salancik, 1978). These resources encompass different activities, including providing expertise, advice and counsel, building relationships with stakeholders (e.g., legitimacy and reputation), and helping in strategy formulation and decision making (Hillman & Dalziel, 2003). The provision of resources role is a function of *board capital*, which includes two elements: human capital (expertise, experience, knowledge, reputation, skills) and relational or social capital (network of ties and relationships) (Hillman & Dalziel, 2003). The corporate governance literature and resource dependence theory show that board members are heterogeneous in their ability to monitor and provide resources provision. Notably, the individual characteristics of board members, such as gender, can influence their ability to monitor and provide access to resources (Adams & Ferreira, 2009; Hillman et al., 2002; Mersland & Strøm, 2009; Strøm et al., 2014). Studying the association between female directors and the social performance of MFIs provides a unique setting to examine this heterogeneity. For instance, female board members of MFIs have unique competencies and knowledge with respect to the specific needs of female customers (Mersland & Strøm, 2009).

Upper echelons theory (UET) also helps to explain why and how women directors can influence the social performance of MFIs. UET suggests that directors' cognitive frames – due to their prior knowledge, experiences, and values – enlighten strategic decision-making and corporate strategy (Byron & Post, 2016). UET suggests that the cognitive frame composition of a board is determined, in part, by its gender composition, based on evidence suggesting that

women and men tend to bring different knowledge, experiences, and values to the boardroom (Byron & Post, 2016). Therefore, we expect the social performance of MFIs to vary based on their boards' gender composition.

In addition to the above, psychology research shows gender differences in values (Schwartz & Rubel, 2005) suggesting that women directors' values are more aligned with social performance due to differences in ethical attitude, moral reasoning and orientation. For example, women feel a higher responsibility for others' well-being and for averting harm (Gilligan, 1982), tend to be more concerned about social performance issues (Backhaus, Stone, & Heiner, 2002), and are systematically more benevolent and inclusive than their male counterparts (Adams and Funk (2012). Moreover, strategic management research shows that female directors bring different experiences and knowledge to the board regarding the implications of strategic decisions for a wider range of stakeholders. For example, female directors may "*provide non-business perspectives on issues, problems, and ideas as well as expertise about and influence with powerful groups in the community*" (Hillman et al., 2002: 749). Previous studies have shown that female directors are more interested in philanthropic and community service activities, and are more likely to be community influencers than male directors (Hillman et al., 2002; Singh, Terjesen, & Vinnicombe, 2008). As women directors have been shown to be more concerned about societal and environmental issues (Atif et al., 2020; Liu, 2018; McCright & Xiao, 2014; Shaukat, Qiu, & Trojanowski, 2015), we expect them to play a key role on MFIs' boards in promoting social performance. Therefore, we expect female board members to be positively associated with the social performance of MFIs. Based on the above discussion, we propose the following hypothesis:

Hypothesis 1a: The proportion of female board members is positively associated with the social performance of MFIs.

It is worthwhile noting that the social performance of MFIs is a multi-dimensional concept as the overall social performance is the combination of different individual dimensions that capture the complex relationships with different stakeholders. The complexity stems from the difficulty of determining the appropriate performance indicators that are measurable, achievable, and relevant for each dimension (Székely & Knirsch, 2005). The development of the Universal Standards for Social Performance[1] constitutes an important step toward a more comprehensive social performance assessment. Beisland et al. (2021) find a significant positive relationship between all six Universal Standards and the social performance scores measured by the rating agencies. However, the significance levels vary among the dimensions. For example, treating employees responsibly appears to be less important than the other dimensions. They also note that the rating agencies attach different weights to the different standards.

In line with this argument, we assume that the influence of women directors on the different dimensions of social performance might not be uniform across all dimensions. Several studies show that women directors encourage addressing major stakeholders' concerns (Zhang, Zhu, & Ding, 2013). The social performance dimensions mostly linked with the stakeholders' concerns and women's expertise are expected to be aligned. In line with resource dependence theory, we argue that women can add unique viewpoints, skills and working styles compared to their male counterparts (Huse, Broadbridge, & Grethe Solberg, 2006). Consistent with this argument, there is a positive link between board gender diversity and the level of organizational innovation, which may increase the quality of products & services (Torchia et al., 2011). Board

[1] The universal standards model has six dimensions. The first dimension measures the extent to which the MFI defines and monitors social goals; the second dimension measures the extent to which the MFI ensures board, management, and staff commitment to its social goals; the third dimension measures the extent to which clients' needs and preferences are met by the MFI's products, services, and delivery; the fourth dimension measures the extent to which the MFI treats clients responsibly; the fifth dimension measures the extent to which the MFI treats employees responsibly; the sixth dimension measures the extent to which the MFI balances social performance and financial performance.

gender diversity might enhance the level of innovation by delivering a broad range of perspectives, increasing the search for information, enhancing the quality of brainstormed ideas, facilitating creativity, and generating more strategic alternatives (Erhardt et al., 2003). Female directors may bring unique values (Selby, 2000), understanding, and proficiency (Eagly, 2005; Hillman et al., 2002) to boards.

Female directors have also been shown to be more concerned about social issues such as environmental concerns (Liu, 2018). Microfinance rating agencies have started assessing the environmental performance of microfinance institutions, especially larger MFIs, in light of the growing interest of donors and investors (Allet & Hudon, 2015). As the firm's level of consumption of renewable energy is a strategic decision normally taken by the firm's governance body (Borghesi, Houston, & Naranjo, 2014; Prado-Lorenzo & Garcia-Sanchez, 2010), and based on UET, we expect that female directors may play a key role on corporate boards in promoting renewable energy consumption. For instance, Atif et al. (2020) find that renewable energy consumption is related to a higher percentage of women on the board. They also find a positive effect of the interaction of board gender diversity and renewable energy consumption on firm financial performance. Similarly, Shoham, Almor, Lee, and Ahammad (2017) find a positive relationship between women on boards of directors and an organization's attitude towards environmental sustainability. They argue that women directors can encourage, and provide new perspectives and ideas to, the board of directors of an organization to adopt environmental sustainability actions. Recent research suggests that female leadership is more likely to support environmental protection and promote the adoption of pro-active environmental practices such as the move toward energy efficiency, green buildings, and the enactment of climate change policies (McCright & Xiao, 2014; Shaukat et al., 2015).

Based on the above discussion, we expect that the impact of women directors on the different individual dimensions of social performance will not be uniform. In particular, we expect that

women directors will have a stronger influence on specific dimensions such as *product & services* and *environment*. This leads to our second hypothesis:

Hypothesis 1b: The role of women directors will be stronger in shaping the dimensions of products & services and environment.

2.3 Moderating role of an internal factor – MFI's status

We argue in this section that an MFI's status, i.e., whether the MFI is structured as non-profit or profit-oriented, will condition the impact of female board members on its social performance. Many microfinance studies do not control for such an important difference between the two types of MFIs. This distinction is crucial in our case as we expect the impact of female board members on the social performance of MFIs to differ between these two types of MFIs. In particular, we expect the impact to be stronger for not-for-profit MFIs relative to profit-oriented MFIs.

Cull, Demirgüç-Kunt, & Morduch (2009, 2014) explain the differences in terms of practices and outcomes between the two types of MFIs. For-profit MFIs are more likely to be commercially oriented MFIs and to employ an individual lending method, with larger loans, fewer women customers, lower costs per dollar lent, higher costs per borrower, and greater profitability. In contrast, not-for-profit MFIs are more likely to be cooperatives/credit unions and NGOs, relying on group lending methods that entail smaller loans, more female clients, greater reliance on subsidized funding, higher costs per dollar lent, and less profitability. Strøm et al. (2014) find that the female proportion of top executives and directors in MFIs is high, in particular when the MFI is a not-for-profit (such as cooperative or an NGO) and has more female clientele. This may suggest that the impact of female executives on MFI's strategic decisions is likely to be stronger in not-for-profit MFIs. Galema et al. (2012) argue that managerial discretion is higher for not-for-profit MFIs as compared to for-profit MFIs. For

example, the internal governance of not-for-profit MFIs is not tied to ownership, whereas it is tied to ownership for commercially oriented MFIs. Moreover, dual objectives (social and financial) are important for not-for-profit MFIs, whereas financial objectives dominate commercially oriented MFIs.

Servin et al. (2012) find that different MFI types use different technologies and have different efficiencies. Not-for-profit MFIs have much lower technical efficiencies than for-profit MFIs because of their stronger focus on social goals and their more severe funding constraints. For instance, the type of financing is a fundamental difference between not-for-profit and for-profit MFIs (Goodell, Goyal, & Hasan, 2020). Not-for-profit MFIs rely more on relationship financing with private donors (organizations and individuals) as well as public funding (government agencies). However, for-profit MFIs have more financing options in the form of market financing (i.e., the issue of bonds or equity) as well as relationship financing through banks. This implies that the funding sources of not-for-profit MFIs cannot be easily substituted as financing is privately done based on relationships with donors (Goodell et al., 2020). Due to the different funding structure, we can argue that social performance seems more important for non-for-profit MFIs, while financial performance seems more important for profit-oriented MFIs.

The microfinance literature documents a significant link between MFI type and the composition of the board as well as their impact on MFI practices and outcomes. Mori and Mersland (2014) show that MFI type influences the board structure (e.g., board size and CEO duality) and performance of MFIs. They find that the presence of donors on boards is associated with small boards, non-CEO-duality and higher outreach (a unidimensional proxy of social performance). Given the fundamental differences in incentives, technologies used and funding structure inherent to their status or type, we expect different impacts of female board members

on the social performance between not-for-profit and for-profit MFIs. Based on the above discussion, we propose the following hypothesis:

Hypothesis 2: The impact of female board members on the social performance of MFIs is stronger for not-for-profit MFIs.

2.4 Moderating role of external factors

External factors representing the external environment in which MFIs operate might also moderate the relationship between female board members and the social performance of MFIs. Explicitly, we focus on two external factors: cultural gender values and institutional strength.

2.4.1 The role of cultural gender values

The impact of female board members on the social performance of MFIs is expected to be influenced by the local cultural values toward women and women's role in society. The previous literature regarding for-profit corporations shows that culture shapes women directors' influence in the boardroom and their ability to affect social performance (Chizema, Kamuriwo, & Shinozawa, 2015). For instance, in a society promoting gender equality, women directors can make their voices heard in the boardroom due to their prestige, expertise, and power (Byron & Post, 2016). Bazel-Shoham, Lee, Rivera, and Shoham (2020) show that the presence of female directors reduces cross-border M&A activity, and this negative effect is moderated by the linguistic gender marking gap between home and host countries.

MFI literature also highlights the important role played by culture, i.e., leading societal logics, traditions and beliefs, in shaping MFIs' practices and outcomes (Cobb et al., 2016; Drori et al., 2020; Golesorkhi et al., 2019; Zhao & Wry, 2016). Zhao and Wry (2016) argue that the microfinance industry's targeting strategy responds to the leading societal logics, traditions and

beliefs, regardless of MFI affiliation (e.g., international or local). Thus, factors related to gender role, e.g., attitude toward female participation in a given culture, will condition the influence of female directors on the social performance of MFIs.

Much organizational behaviour occurs in response to the social pressures arising from the symbolic environment created by other organizations (e.g. Drori et al., 2020; Golesorkhi et al., 2019). In particular, a country's informal institutions, e.g., culture, influence MFIs' access to female customers and ability to attract female employees and managers (Armendáriz & Morduch, 2010; Ault, 2016; Boehe & Barin Cruz, 2013; Cobb et al., 2016; Cull, Demirgüç-Kunt, & Morduch, 2007; Drori et al., 2020; Golesorkhi et al., 2019; Hermes & Hudon, 2018; Zhao & Wry, 2016). Drori et al. (2020) show that the female targeting strategy of an MFI (i.e., outreach to women) depends on local cultural traits relating to gender, as proxied by the country-level *Gender Intensity Index* (GII), which is based on the aggregation of four grammatical rules referring to gender: number of genders; sex base; gender assignment rule; and gender pronouns. They find that the gender discrimination culture in which MFIs operate creates a contingency for MFIs' choice of women. MFIs are contingent on local needs and the associated cultural constraints, whereby social performance in the microfinance industry needs to be evaluated in terms of the strategy of MFIs, which itself depends on the local discriminatory environment.

We extend the above literature by examining whether local cultural values toward women and women's role in society (e.g., gender-based grammatical distinctions in language) influence the role of female directors in shaping the social performance of MFIs. Alternatively, we investigate whether the impact of female board members on the social performance of MFIs is higher under higher gender marking (gender discrimination in culture). Based on the above discussion, we hypothesise the following:

Hypothesis 3: ***The impact of female board members on the social performance of MFIs is stronger when MFIs are located in cultures where women are more likely to experience gender discrimination and financial inequality.***

2.4.2 The role of country-level institutional strength

The impact of female board members on the social performance of MFIs is expected to be influenced by country-level institutions, e.g., rule of law, political system, government effectiveness and political stability. This is because country-level institutions shape the socioeconomic opportunities and capabilities of economic actors, e.g., managerial and relationship capabilities (Boehe and Barin Cruz (2013). For instance, Ault (2016) finds that country-level institutions influence the number of MFIs in a particular location as well as the social impact of their strategies and actions.

Several studies documented how country-level institutions shape women directors' representation and role in decision making (Byron & Post, 2016; Chizema et al., 2015; Grosvold & Brammer, 2011). Grosvold and Brammer (2011) find that national institutional systems, in particular legal institutions, are significant determinants of women directors' representation. Chizema et al. (2015) argue that the political system (e.g., women in parliament and government) might help and encourage women to apply or be recruited for board seats. Similar to women directors, women in politics are elected or appointed based on their knowledge, skills and experience. Thams, Bendell, and Terjesen (2018) show that sub-national institutions also shape the board gender diversity of US firms. They find higher women on the board representation in firms headquartered in states with gender-specific state-level policies, e.g., protecting women from discrimination, access to emergency contraception and public funding for abortions. Grosvold, Rayton, and Brammer (2016) confirm that governmental

institutions and economic systems are significant determinants of women on the board representation and role in decision making.

Byron and Post (2016) argue that country-level institutions influence the impact of women directors on firm outcomes such as social performance. This influence is positive and higher in countries with stronger shareholder protections. Byron and Post (2016) draw on UET and argue that shareholder protections enhance board behavioural integration, i.e., directors are motivated to consider and integrate different views, e.g., those from women directors, in decision making. Nadeem, Zaman, and Saleem (2017) find a significant positive relationship between the presence of women directors and the social performance of Australian firms after the implementation of a regulatory change concerning increasing board diversity and social performance practices and reporting.

We extend the above literature by examining whether country-level institutions influence the role of female directors in shaping the social performance of MFIs. Alternatively, we investigate whether the impact of female board members on the social performance of MFIs is higher when country-level governance is higher. Based on the above discussion, we hypothesise the following:

Hypothesis 4: ***The impact of female board members on the social performance of MFIs is stronger when MFIs are located in countries with more effective governance mechanisms.***

3. DATA AND METHODS

3.1 Data

The data on microfinance institutions (MFIs) is obtained from the MIX Market database, which is the leading global data resource for extensive coverage of indicators related to the financial, operational, and social performance of MFIs. Although the financial and operational performance data from MIX Market have been widely used in prior studies (Ault, 2016; Drori et al., 2020; Liñares-Zegarra & Wilson, 2018; Malikov & Hartarska, 2018; Postelnicu & Hermes, 2018), the data on the multi-dimensional social performance have not yet been explored. The initial sample collected from Mix Market includes 2993 MFIs from 123 countries that have year of incorporation and country information available from 2000 to 2018. The average lifespan of MFIs in our sample is 6.67 years. The full initial sample has 19,945 observations. Since the focus of this paper is mainly on the social performance of MFIs and the social performance data is only available from 2010, the final sample includes 10,081 observations corresponding to 2293 MFIs from 116 countries (see the distribution of MFIs across countries in Appendix A). We collect country-level data from three main sources: the World Bank, the World Atlas of Language Structure (WALS) and the International Energy Agency (IEA). Table 1 provides the definitions, descriptive statistics and data sources for the variables used in the analyses.

Insert Table 1 about here

Table 2a shows the pairwise correlations of all the variables used in the regression analysis. The selected independent variables and control variables are not highly correlated, suggesting that multicollinearity is not an issue. Table 2b shows the pairwise correlations of all the social performance variables used in the regression analysis. It is not surprising that the social performance variables are highly correlated, although the environment dimension presents the lowest correlations with the other dimensions of social performance.

Insert Tables 2a and 2b about here

3.2 Dependent variable

MFIs' Social Performance

The Social Performance Task Force (SPTF), a not-for-profit organization with over 4,400 members from all over the world, started developing methods to measure social performance in microfinance in 2005 and later developed the "Universal Standards for Social Performance Management". SPTF has developed six dimensions of the universal standards of social performance for MFIs: 1) Define and monitor social goals; 2) Ensure board, management, and employee commitment to social goals; 3) Design products, services, delivery models, and channels that meet clients' needs and preferences; 4) Treat clients responsibly; 5) Treat employees responsibly; and 6) Balance financial and social performance.

In line with SPTF's "Universal Standards for Social Performance Management", MIX Market started pilot sets to collect data on social performance in 2008, and the data began to provide good coverage of MFIs in 2010. There are over 120 sub-indicators of social performance provided by Mix Market. We aggregate the social performance score based on the sub-indicators of MFIs' social performance, covering five dimensions: 1) social goals, 2) governance and human resources (HR), 3) products & services, 4) client protection, and 5) environment.[2] The first four dimensions are closely in line with the SPTF's standards; however,

[2] The Mix Market data used in this study provides information about five separate individual dimensions of MFIs' social performance, namely social goals, governance and human resources, products & services, client protection, and the natural environment. Examples of items related to social goals include: Target market (e.g., women, rural areas); Development goals (e.g., housing; access to water; poverty reduction); Poverty targets (e.g., poor & low-income); and Measuring client poverty (i.e., data collection). Examples of items related to governance & human resources include: Board orientation on

the environment dimension is a newly presented dimension that can be considered important and relevant for microfinance institutions.

Using the "social goals" dimension as an example, Appendix B shows the sub-indicators included in this dimension and how we aggregate the equally weighted social performance index to construct the dependent variable MFIs' "social performance". Each indicator is a dummy variable where 1 represents "Yes" and 0 otherwise. Appendix B shows that there are 28 indicators for the "social goals" dimension. If a company answers "yes" to all 28 indicators, the company's index score for "social goal" will be 28. We rank the aggregated scores from high to low each year and divide the sample into 4 groups, where 4 to 1 represent the high to low "Social Goals" index score. When MFIs do not report social performance data in a given year, the social performance rating is given a zero score. We find that the annually aggregated social performance score ranges from 2 to 80 for the full sample period. After calculating the scores for all five dimensions, we then rank the total social performance score from high to low in each year and divide the sample into four groups on a yearly basis. Each group of MFIs is assigned a score ranging from 1 to 4, whereby higher-ranked scores represent superior social performance. We also calculate an alternative index in the robustness test where missing data

social mission and goals; SP committee on board; Board member with SP education/work experience; Bases for staff incentives; Human resource policies (social protection, safety, non-discrimination policy). Examples of items related to products & services include: Credit product offering (non-income & income generating loans); Savings product offering; Insurance products; Other financial services (payment services); Nonfinancial services (improving the entrepreneurial skills of clients or performance of their enterprises, women's empowerment services: leadership training for women, education services/financial literacy). Examples of items related to client protection include: Disclosure of cost information; Clear debt collection practices; Complaint mechanism; Interest rate calculation method; Privacy data clause in loan contracts; Over-indebtedness prevention. Examples of items related to environment include: Environmental policies and initiatives, e.g., conducting activities related to raising awareness of environmental impacts, including clauses in loan contracts that require clients to improve environmental practices/mitigate environmental risks, using specific tools to evaluate the environmental risks of clients' activities, and offering specific loans linked to environmentally friendly products and/or practices.

is removed, i.e., not replaced by zeros (see Appendix C). We apply the same method to the five individual dimensions of MFIs' social performance.

As most prior studies focus on the breadth of outreach (measured as the number of poor clients) and depth of outreach (the poverty level of the poor clients) as the traditional standard of social performance, we are the first empirical study to specifically explore the individual and comprehensive dimensions of social performance using Mix Market. The only similar study is Beisland et al. (2021), who also examine the individual dimensions of social performance following the SPTF's standard; however, their study explores a global dataset of 204 socially rated MFIs using data from rating agencies provided by MicroRate, MicroFinanza Rating, and Planet Rating.

3.3 Independent variables

Board gender diversity

Following Strøm et al. (2014), we use the percentage of female board members as a proxy for ***board gender diversity***. We argue that the percentage measure of board gender diversity is more precise than a dummy variable that cannot distinguish MFIs with different levels of diversity; that is, our measure better captures the heterogeneity provided by different levels of diversity and allows us to test the extent to which board gender diversity affects the social performance of MFIs.

Ownership

Following the ownership categories presented by Liñares-Zegarra and Wilson (2018), we separate MFIs' status into for-profit and not-for-profit organizations based on commercial orientation. We construct a dummy variable for the ***ownership*** variable. We use 1 to represent for-profit MFIs, including both micro-banks and non-bank financial institutions (NBFIs). We

use 0 to represent not-for-profit MFIs, including cooperatives/credit unions and NGOs. This division has been widely accepted in microfinance studies (Goodell et al., 2020). In our sample, 26.1% of MFIs are for-profit MFIs and 73.9% of MFIs are not-for-profit MFIs.

Cultural gender values

We follow previous literature by using the Gender Intensity Index (GII) to measure ***cultural gender values*** at the national level (e.g. Drori et al., 2020). The GII incorporates the four gender-related grammatical properties into a single index to provide a single measure of grammatical gender marking in a language, i.e., the presence and intensity of female–male distinctions in the grammatical rules of a language (Drori et al., 2018). The four gender-related grammatical properties include the following: 1) the number of genders; 2) the sex base; 3) the gender assignment rule; and 4) gender pronouns. A higher value of the GII index represents languages with higher gender marking, i.e., a gender discrimination environment (Drori et al., 2020). The GII has been used and validated in many papers (Drori et al., 2020; Santacreu-Vasut, Shoham, & Gay, 2013). The GII is a good predictor of gender roles, and is not affected by the current socio-economic conditions (Shoham, 2019).

Country-level institutional strength

We use the average value of the six dimensions of the Worldwide Governance Index (WGI) as a proxy for national-level institutional strength. Goodell et al. (2020) find that better national-level institutions, proxied by WGI, enhance the role of for-profit status in promoting the transparency of MFIs. The World Bank provides the definitions of the six dimensions comprising the WGI: 1) Control of corruption; 2) Political stability; 3) Government effectiveness; 4) Regulatory quality; 5) Rule of law; and 6) Voice and accountability. The variable ***WGI*** is calculated as the average value of these six dimensions, which ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance.

3.4 Control variables

Following previous studies (e.g. Liñares-Zegarra & Wilson, 2018), we control in our analysis for MFI characteristics that influence their social performance. These characteristics are financial performance, proxied by the return on assets ***(ROA),*** portfolio risk, proxied by the variable ***PaR30***, operational cost, proxied by the variable ***Cost per loan***, and size of the MFI, proxied by the ***logarithm of total assets***. In addition, we include ***GDP*** as a country-level control variable. The GDP data are collected from the World Development Indicators (WDIs) published by the World Bank. The definitions of these variables are included in Table 1.

3.5 Model

As the dependent variable is a categorical variable, we adopt panel data, random-effects ordered probit regressions using the econometric equation (1) below. We also use random-effects ordered logistic regressions in the robustness tests (see Appendix D).

$$SocialPerformance_{i,t} = \alpha + \alpha_1 femaleboard_{i,t} + \alpha_2 ownership_{i,t} + \alpha_3 GII_{i,t} + \alpha_4 WGI_{i,t} + \sum_{k=1}^{6} \theta_k CONTROL_{k,i,t} + \mu_t + \mu_c + \varepsilon \qquad \text{Eq. (1)}$$

Where *i* indexes MFIs, *t* indexes years, and the dependent variable *SocialPerformance* is the MFIs' social performance, which is a categorical variable with values ranging from 0 to 4. We replace the *SocialPerformance* variable with the sub-dimensions of social performance for additional analysis, while the independent variables and control variables remain the same. *Femaleboard* is the percentage of female board members. *Ownership*, *GII* and *WGI* are the independent variables MFI's status, cultural gender values and country-level institutional strength, respectively. CONTROL includes MFIs-level control variables (including return on asset (ROA), PaR30, total assets) and a country-level control variable (GDP). μ_t denotes year

fixed effects and μ_c denotes country fixed effects. The time-and country-fixed effects are used to control for time-varying country-level effects which absorb effects such as the varying impact of *Femaleboard* on *SocialPerformance* in a particular country, at a particular time. ε is the error term. Robust standard errors are clustered at the MFI level.

4. RESULTS

4.1 Women on board and social performance of MFIs

In Table 3, the ordered probit models (1) - (6) show the regression results of the effect of women on board on social performance and the five dimensions of social performance as specified in Hypotheses 1a and 1b. As *social performance* is an ordinal variable (0, 1, 2, 3 or 4), the coefficient 0.570 associated with the variable *per_femaleboard* in model (1) indicates that a one-unit increase in the percentage of female board members results in a 0.570 unit increase in the ordered log-odds of being in a higher social performance ranking category while the other variables are held constant in the model. The results support Hypothesis 1a that the percentage of female board members in MFIs is positively associated with the social performance of the MFIs. The findings regarding female board members in MFIs are consistent with the prediction of upper echelons theory as well as resource dependence theory, suggesting that internal governance enhances social performance for MFIs. This is also consistent with empirical findings showing that female-dominated boards are more socially oriented and align their strategy with boards' preferences (e.g. Périlleux & Szafarz, 2015).

For the impact of female directors on the individual dimensions of MFIs' social performance, the reported results show that women on the board are positively and significantly associated with two dimensions of social performance: product & services, and environment. Although

positive, the coefficient associated with the dimension "social goals" is only marginally significant (at the 10% level). Also, when we test the regressions using ordered logistic regressions, the significance level of the "social goals" dimension is insignificant (see Appendix D). The results support Hypothesis 1b, suggesting that the role of women on the board in shaping the different dimensions of social performance is not uniform.

As we use GII to represent the culture system and WGI to represent the institutional (political) system, our results are broadly in line with those reported in the previous literature for corporations (i.e., for-profit companies). For example, Ioannou and Serafeim (2012) find that a stronger cultural system (measured by individualism and the power distance index) is positively associated with corporate social performance, while a stronger political system is negatively associated with corporate social performance. Similarly, Ghoul et al. (2017) find that the greater strategic value of corporate social responsibility (CSR) is associated with countries having weaker market-supporting institutions.

Insert Table 3 about here

4.2 Sub-sample analysis based on MFIs' status, cultural gender values and country-level institutional strength

In Table 4, we report the results of two sub-samples constructed by dividing the sample into for-profit and not-for-profit microfinance institutions. The results support Hypothesis 3, suggesting that the overall impact of female board members on MFIs' social performance is stronger when MFIs are not-for-profit organizations. This finding could be explained by the fundamental differences between the two types of MFIs. For instance, in contrast to for-profit MFIs, the governance of not-for-profit MFIs is not tied to ownership, leading to higher

managerial discretion (Galema et al., 2012). The female proportion of top executives and directors is higher for non-profit MFIs (Strøm et al., 2014), suggesting that their impact on MFI's strategic decisions is likely to be stronger. Social (financial) performance seems more important for not-for-profit (for-profit) MFIs due to the different incentives, technologies used and funding structures inherent to their status or type (Cull et al., 2009, 2014; Servin et al., 2012). Not-for-profit MFIs have more severe funding constraints as they rely more on relationship financing with private donors and public funding, i.e., subsidised funding. The funding sources of not-for-profit MFIs cannot be substituted easily (Goodell et al., 2020), and donors are associated with higher social performance due to their social agenda (Mori & Mersland, 2014).

Insert Tables 4, 5, 6 about here

In Table 5, we divide the sample into higher and lower levels of gender markings. As predicted by Hypothesis 3, the overall impact of female board members is stronger when the gender marking (gender discrimination) level is higher. We argue that an environment of gender inequality would increase women directors' ability to assert themselves and influence decision-making, such as by raising awareness about social and environmental issues as well as proposing different ways to address these issues. The results are consistent with those reported by Drori et al. (2020) who argue that culturally inherited gender values have a significant effect on MFIs' strategy of targeting more women clients and declaring gender equality and women's empowerment as its social goals.

In Table 6, we report the results of two sub-samples constructed by dividing the sample into higher and lower-ranked institutional strength based on the median value. For higher-ranked institutional strength, the percentage of female directors is significantly related to the overall

social performance, *products & services* and *environment*. For lower-ranked institutional strength, the percentage of female directors is only significantly related to the *environment*. The results generally support Hypothesis 4, suggesting that the impact of female board members on the social performance of MFIs is stronger when MFIs are located in countries with more effective governance and institutional mechanisms. As political structures and economic systems have a major influence in determining women's board participation and decision-making roles (Grosvold et al., 2016), different regulatory systems will result in different approaches to social responsibility and different societal expectations.

4.3 Robustness checks

Restricted sample selection

In Table 7, we report the robustness results based on restricted sample selection to remove concerns of sample selection bias. Specifically, we remove countries with fewer than 50 observations (Appendix A provides the observations of each country). This process removed 43 countries and 661 observations. We also removed companies with less than three years of social performance data available. In this step, the sample was reduced to 1,459 firms from 73 countries, with 8,817 observations. The results reported in Table 7 are qualitatively similar to those reported in Table 3.

Insert Tables 7, 8, 9 about here

Placebo test for female directors

In Table 8, we replace the independent variable of female directors with female managers. The variable ***Female managers*** is measured as the percentage of females in the management team of the MFI. The results show that female managers do not have any impact on MFIs' social

performance. These findings suggest that female directors, instead of female managers, play a more important role in MFIs' social performance.

Addressing endogeneity concerns using system GMM

To address endogeneity concerns, we conduct robustness tests using the two-step system generalised method of moments (SGMM) outlined by Arellano and Bover (1995) and fully developed by Blundell and Bond (1998). This method is suitable for dynamic "small-T, large-N" panels, which is in line with the characteristics of our dataset. This model corrects endogeneity by introducing more instruments to dramatically improve efficiency and transforming the instruments to make them uncorrelated (exogenous) with the fixed effects. In Table 9, we consider *per_femaleboard* as an endogenous variable. The results are largely in line with the base findings, although the impact of female directors on the environment dimension becomes insignificant.

We also conduct additional robustness tests, but the results are not reported. Following Goodell et al. (2020), we calculate the first principal component score of the *WGI* variable based on the six dimensions of governance scores. We find that using an average score and a principal component score yields similar results. In addition, instead of using categorical data for the dependent variable *social performance*, we calculate the log-transformed *social performance* score and confirm that the results remain unchanged.

5. DISCUSSION AND CONCLUSION

Applying the framework proposed by the recent and holistic social performance measures and new social performance data of MFIs, we investigate how gender roles and institutional context influenced MFIs' multi-dimensional social performance worldwide from 2010 to 2018. We

show that women's empowerment in the internal governance enhances the MFIs' social performance in two specific dimensions: *products & services* and *environment*. More importantly, we find that the impact is stronger for not-for-profit MFIs and when MFIs are located in environments with a higher gender marking level and stronger institutional mechanisms. Female directors are more active when external factors like formal institutional support strengthen within country-level governance. On the other hand, for the informal country-level institutional context, like gender discrimination environmental context, when women have a voice on the board in strategic decisions, they enhance social performance. Although the focus of this research is MFIs which are mostly not-for-profit organizations (73.9% of MFIs in this study are not-for-profit), the findings on nation-level institutions are in line with Ioannou and Serafieim's (2012) article on CSR, strong individualism and power distance.

This study contributes to the literature on the impact of gender diversity on MFIs' social performance and the conditions under which this impact is more effective. Traditionally, studies have investigated the link between female roles and the breadth and depth of outreach (e.g. Boehe & Barin Cruz, 2013; Hartarska, 2005; Hartarska & Mersland, 2012; Mori et al., 2015; Périlleux & Szafarz, 2015). However, we argue that outreach only touches on a narrow dimension of social performance, and it is crucial to understand the wider lens of MFIs' social performance. We extend the upper echelons theory and resource dependence theory by elaborating on MFIs' social mission and less profit-oriented nature. We suggest that female directors bring diverse experience, knowledge and value to the board and can help MFIs make long-term strategic decisions to meet a wider range of stakeholders' expectations on social and environmental performance. We demonstrate that these responsibilities are better understood by taking into account the type of organisation (profit versus non-profit) and the

multidimensionality of MFIs' social performance, which captures the more intricate interactions that an MFI has with the diverse range of stakeholders.

We extend the literature (Byron and Post, 2016; Drori et al., 2020; Zaman, and Saleem, 2017) by examining whether the external factors influence the role of female directors in shaping the social performance of MFIs, including gender discrimination in culture as the cultural element, six dimensions of governance index measures as the political element. Our research suggests that the strategy employed by MFIs to attract more female clients and declare gender equality and women's empowerment as their social aims is significantly impacted by culturally ingrained gender ideals. When MFIs are based in countries with more effective institutional and governance structures, the influence of female board members on the social performance of MFIs is stronger. Therefore, different governance frameworks will lead to different social responsibility philosophies and public expectations.

We also provide practical implications for MFIs' core objective of women empowerment in a discriminating world. Our findings suggest that MFIs have a broader impact on social performance which is not limited to traditionally addressing poverty issues. For instance, the female leadership could provide stronger support on environmental issues and give priority to more environment friendly practices and projects. MFIs women's contribution to environmental risk could be a milestone for the developing world to contribute to the Sustainable Development Goals (SDG). Our findings also provide implications for MFIs, funders and policymakers regarding the role of female leadership in shaping the social performance of MFIs. The findings of this study could benefit both academics interested in a more sophisticated investigation into the multidimensionality of MFIs' social performance and policymakers interested in the sustainable development of the microfinance industry.

There are a few promising paths for future research. For instance, researchers could consider other factors, such as education and labour, that might also influence the impact of female directors on MFIs' social performance. Future work could also re-examine the relationship between MFIs' social performance and financial performance. Several studies have examined the trade-off between outreach and financial performance (e.g. Cull, Demirgüç-Kunt, & Morduch, 2011; Bert D'Espallier et al., 2011). Examining this trade-off between the different dimensions of social performance and financial performance would be insightful.

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Table 1 Descriptive statistics

variable	N	mean	sd	p5	p50	p95	min	max	Definition	Source
social_performance	10,081	0.948	1.467	0	0	4	0	4	Categorical variable of MFIs' social performance (score from 0 to 4).	Mix Market
per_femaleboard	5,928	0.309	0.249	0	0.267	0.857	0	1	Percentage of female board members	As above
per_femalemanagers	6,337	0.354	0.3	0	0.308	1	0	1	Percentage of female managers	As above
ROA	7,966	0.012	0.141	-0.116	0.019	0.111	-7.464	2.089	Return on assets (ROA) = Net income/total assets	As above
PaR30	7,828	0.075	0.154	0	0.04	0.256	0	7.114	Portfolio risk (PaR30) = Outstanding balance on arrears over 30 days + total gross outstanding refinanced (restructured) portfolio)/total gross portfolio	As above
cost_loan	6,990	4.775	1.322	2.565	5.03	6.687	0	10.377	Cost per loan (logged value)	As above
totalassets	5,149	16.523	2.451	12.497	16.602	20.48	5.917	24.468	Deposits/Deposits to total assets	As above
ownership	10,081	0.261	0.439	0	0	1	0	1	Dummy variable of MFIs' ownership status (for-profit: 1; not-for-profit: 0)	As above
GDP	9,328	1.309	4	-4.59	1.45	6.52	-36.83	22.55	Annual growth rate of real GDP per capita (%)	World Bank
GII	5,812	2.983	1.409	0	4	4	0	4	Gender intensity index from The World Atlas of Language Structure (WALS) (https://wals.info/).	WALS
WGI	10,076	0.216	0.931	-1.234	0.425	1.51	-1.742	1.857	The average value of the six dimensions of The Worldwide Governance Index (WGI): http://info.worldbank.org/governance/wgi/Home/Documents	World Bank

Notes: Table 1 presents the number of observations (N), mean, standard deviation (sd), the fifth (p5), fiftieth (p50), ninety-fifth percentile (p95), minimum, maximum values for each variable used in the regression analysis. The sample includes 10,081 observations corresponding to 2293 MFIs from 116 countries from 2010 to 2018.

Table 2a Correlation coefficients (main variables)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
social_performance	(1)	1										
per_femaleboard	(2)	0.0178	1									
per_femalemanagers	(3)	-0.0542*	0.3306*	1								
ROA	(4)	0.0158	0.0381	0.0221	1							
PaR30	(5)	-0.0755*	-0.0311	-0.0135	-0.1262*	1						
cost_loan	(6)	-0.1024*	-0.0289	0.1774*	-0.1186*	0.0674*	1					
totalassets	(7)	0.1372*	-0.2112*	-0.2153*	0.1107*	-0.0944*	0.2983*	1				
ownership	(8)	0.0504*	-0.1431*	-0.1259*	-0.0264	0.0572*	-0.1163*	0.1807*				
GDP	(9)	0.0081	-0.003	0.0121	-0.0363	0.0562*	-0.0693*	-0.0498	1			
GII	(10)	-0.0269	-0.0403	-0.1033*	-0.0623*	0.0658*	0.2059*	0.1884*	-0.0811*	0.2503*	1	
WGI	(11)	0.0346	0.0106	-0.0557*	0.0086	-0.0686*	-0.2261*	0.1267*	0.0815*	0.3512*	-0.004	1

Notes: Table 2a shows the pairwise correlations of all the variables in the regression analysis (* indicates significance at 5% level)

Table 2b Correlation coefficients (social performance variables)

	Social Performance	Social Goals	Governance & HR	Products & Services	Client Protection	Environment
Social Performance	1					
Social Goals	0.9308*	1				
Governance & HR	0.8967*	0.8413*	1			
Products & Services	0.9425*	0.8633*	0.8344*	1		
Client Protection	0.8961*	0.8627*	0.9075*	0.8459*	1	
Environment	0.7326*	0.6553*	0.6819*	0.6854*	0.6818*	1

Notes: Table 2b shows the pairwise correlations of all the social performance variables in the regression analysis (* indicates significance at 5% level).

Table 3 The impact of female board on the dimensions of MFIs' social performance

VARIABLES	(1) Social Performance	(2) Social Goals	(3) Governance & HR	(4) Products & Services	(5) Client Protection	(6) Environment
per_femaleboard	0.570**	0.406*	0.276	0.640***	0.317	0.871***
	(0.232)	(0.239)	(0.199)	(0.227)	(0.238)	(0.233)
ROA	-0.698**	-0.882***	-1.055***	-0.647**	-0.426	-0.588
	(0.284)	(0.271)	(0.365)	(0.310)	(0.278)	(0.494)
PaR30	-0.684	-0.742	-1.100***	-0.234	-0.761	-0.031
	(0.500)	(0.549)	(0.419)	(0.522)	(0.519)	(0.594)
cost_loan	-0.214***	-0.194***	-0.208**	-0.159*	-0.155*	-0.264***
	(0.078)	(0.074)	(0.083)	(0.081)	(0.087)	(0.083)
totalassets	0.142***	0.103***	0.091***	0.138***	0.073**	0.189***
	(0.034)	(0.037)	(0.033)	(0.034)	(0.035)	(0.036)
ownership	0.124	0.078	0.098	0.142	0.179	0.054
	(0.136)	(0.155)	(0.137)	(0.135)	(0.141)	(0.141)
GII	0.456***	0.365***	0.250**	0.383***	0.342***	0.598***
	(0.114)	(0.122)	(0.107)	(0.115)	(0.116)	(0.117)
WGI	-1.682***	-1.283**	-1.926***	-1.733***	-2.020***	-1.051**
	(0.609)	(0.583)	(0.623)	(0.617)	(0.637)	(0.529)
GDP	0.014	0.018	0.025	0.011	0.036**	0.008
	(0.019)	(0.019)	(0.016)	(0.017)	(0.017)	(0.017)
Observations	1,155	1,155	1,155	1,155	1,155	1,155
Year FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.150	0.164	0.145	0.148	0.171	0.195

Notes: Table 3 reports estimated coefficients using the regression Eq (1) as specified in Section 3.5. Time- and country-fixed effects are included in the regression. Constant, year/country dummies are not reported. It is common that Microfinance data has missing values in the selected variables. By default, Stata omits all observations with missing values. For this reason, the number of observations in the regression analysis is significantly lower than the number of observations shown in Table 1. For example, if we remove the variables "totalassets" and "GII" which have the lowest number of observations in the model, the number of observations for model 1 in Table 3 can be increased to 4283. If we only include two independent variable "ownership" and "governance" which have the highest number of observations in the model, the number of observations for model 1 in Table 3 can be increased to 10,076. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4 The comparison of status: not-for-profit and for-profit MFIs

	Not-for-profit						For-profit					
VARIABLES	(1) Social Performance	(2) Social Goals	(3) Governance & HR	(4) Products & Services	(5) Client Protection	(6) Environment	(7) Social Performance	(8) Social Goals	(9) Governance & HR	(10) Products & Services	(11) Client Protection	(12) Environment
per_femaleboard	0.736**	0.482	0.356	0.858***	0.556*	0.965***	0.271	0.284	-0.019	0.261	-0.097	0.648*
	(0.322)	(0.332)	(0.275)	(0.313)	(0.314)	(0.311)	(0.350)	(0.354)	(0.317)	(0.355)	(0.396)	(0.382)
ROA	-0.946***	-1.283***	-1.515***	-0.604**	-0.702**	-0.617	-0.855	-0.315	-1.036	-1.593	-1.008	-0.920
	(0.322)	(0.301)	(0.474)	(0.282)	(0.285)	(0.476)	(0.960)	(0.950)	(0.915)	(1.089)	(0.882)	(1.257)
PaR30	-0.987	-1.020	-1.792**	-0.369	-1.456*	-0.393	-0.953	-0.899	-1.130*	-0.653	-0.861	0.350
	(0.823)	(0.837)	(0.718)	(0.728)	(0.869)	(0.963)	(0.777)	(0.930)	(0.618)	(0.808)	(0.856)	(0.763)
cost_loan	-0.163	-0.175	-0.192*	-0.101	-0.109	-0.250*	-0.359***	-0.306***	-0.361***	-0.322**	-0.337**	-0.368***
	(0.113)	(0.108)	(0.114)	(0.111)	(0.111)	(0.128)	(0.120)	(0.110)	(0.134)	(0.140)	(0.157)	(0.132)
totalassets	0.181***	0.140**	0.129**	0.154***	0.101*	0.223***	0.112*	0.075	0.094*	0.128*	0.061	0.144**
	(0.051)	(0.056)	(0.051)	(0.049)	(0.052)	(0.051)	(0.066)	(0.067)	(0.053)	(0.067)	(0.060)	(0.073)
GII	0.332**	0.253	0.159	0.243*	0.262*	0.457***	0.197	0.421	-0.156	0.135	0.051	-0.483*
	(0.151)	(0.158)	(0.151)	(0.144)	(0.149)	(0.151)	(0.319)	(0.333)	(0.298)	(0.341)	(0.344)	(0.269)
WGI	-3.616***	-2.630***	-3.571***	-3.838***	-3.888***	-2.489**	-0.359	-0.017	-0.709	-0.414	-0.531	-0.050
	(1.002)	(0.967)	(1.112)	(0.972)	(1.002)	(0.978)	(0.815)	(0.806)	(0.815)	(0.892)	(0.864)	(0.712)
GDP	0.016	0.019	0.030	0.010	0.026	-0.003	-0.040	-0.028	-0.052	-0.025	0.020	0.029
	(0.022)	(0.021)	(0.018)	(0.019)	(0.017)	(0.016)	(0.051)	(0.050)	(0.051)	(0.051)	(0.055)	(0.056)
Observations	757	757	757	757	757	757	398	398	398	398	398	398
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.168	0.182	0.164	0.174	0.182	0.194	0.168	0.183	0.183	0.158	0.211	0.243

Notes: Compared to Table 3, this table shows the results of two sub-samples constructed by dividing the sample into for-profit and not-for-profit microfinance institutions. For-profit MFIs include both micro-banks and non-bank financial institutions (NBFIs). Not-for-profit MFIs include cooperatives/credit unions and NGOs. Time- and country-fixed effects are included in the regression. Constant, year/country dummies are not reported. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5 Cultural gender values: High and low gender intensity index

	High Gender Intensity Index (GII)						Low Gender Intensity Index (GII)					
VARIABLES	(1) Social Performance	(2) Social Goals	(3) Governance & HR	(4) Products & Services	(5) Client Protection	(6) Environment	(7) Social Performance	(8) Social Goals	(9) Governance & HR	(10) Products & Services	(11) Client Protection	(12) Environment
per_femaleboard	0.515**	0.488**	0.282	0.424*	0.266	0.541**	0.361	0.203	0.089	0.449*	0.151	0.553**
	(0.227)	(0.228)	(0.199)	(0.222)	(0.222)	(0.233)	(0.251)	(0.271)	(0.234)	(0.258)	(0.280)	(0.268)
ROA	-0.618***	-1.082***	-1.006***	-0.312	-0.621***	0.093	-1.237	-0.742	-1.298	-1.582*	-0.555	-1.778*
	(0.223)	(0.236)	(0.324)	(0.230)	(0.232)	(0.494)	(0.867)	(0.845)	(0.883)	(0.832)	(0.895)	(0.957)
PaR30	-0.010	-0.111	-0.441	0.320	-0.525	-0.841*	-0.670	-0.625	-1.177**	-0.280	-0.576	-0.045
	(0.425)	(0.497)	(0.373)	(0.433)	(0.420)	(0.475)	(0.524)	(0.580)	(0.464)	(0.534)	(0.529)	(0.644)
cost_loan	-0.193***	-0.216***	-0.144**	-0.154**	-0.153**	-0.165**	-0.213**	-0.159*	-0.186**	-0.146	-0.120	-0.282***
	(0.068)	(0.069)	(0.070)	(0.069)	(0.070)	(0.074)	(0.087)	(0.084)	(0.091)	(0.094)	(0.101)	(0.097)
totalassets	0.157***	0.119***	0.140***	0.151***	0.116***	0.160***	0.121***	0.089**	0.062*	0.132***	0.056	0.178***
	(0.035)	(0.036)	(0.035)	(0.036)	(0.035)	(0.045)	(0.040)	(0.045)	(0.035)	(0.039)	(0.041)	(0.042)
ownership	-0.023	0.054	-0.036	-0.106	0.037	-0.040	0.151	0.073	0.090	0.221	0.210	0.075
	(0.157)	(0.156)	(0.153)	(0.160)	(0.160)	(0.190)	(0.160)	(0.189)	(0.159)	(0.162)	(0.174)	(0.184)
WGI	-1.568***	-1.667***	-1.393***	-1.509***	-1.532***	-0.904**	0.694	0.941	0.543	0.544	0.129	0.115
	(0.376)	(0.379)	(0.381)	(0.385)	(0.370)	(0.369)	(0.667)	(0.670)	(0.674)	(0.608)	(0.592)	(0.594)
GDP	0.009	0.009	0.017*	0.008	0.017*	0.009	0.009	0.014	0.032	0.012	0.046	0.021
	(0.010)	(0.011)	(0.010)	(0.010)	(0.010)	(0.010)	(0.027)	(0.028)	(0.030)	(0.028)	(0.031)	(0.033)
Observations	1,506	1,506	1,506	1,506	1,506	1,506	584	584	584	584	584	584
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.161	0.179	0.150	0.162	0.170	0.171	0.147	0.151	0.154	0.145	0.165	0.201

Notes: Compared to Table 3, this table shows the sub-sample results by dividing the sample into higher and lower levels of gender markings. High GII represents high gender markings (gender discrimination). Further details about the GII variable are provided in Section 3.3. Time- and country-fixed effects are included in the regression. Constant, year/country dummies are not reported. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6 Country-level institutional strength: High and low worldwide governance index

	High Worldwide Governance Index (WGI)						Low Worldwide Governance Index (WGI)					
VARIABLES	(1) Social Performance	(2) Social Goals	(3) Governance & HR	(4) Products & Services	(5) Client Protection	(6) Environment	(7) Social Performance	(8) Social Goals	(9) Governance & HR	(10) Products & Services	(11) Client Protection	(12) Environment
per_femaleboard	0.719***	0.448	0.435**	0.723***	0.421	0.744***	0.300	0.292	0.028	0.464	0.070	1.117**
	(0.256)	(0.278)	(0.222)	(0.245)	(0.282)	(0.254)	(0.438)	(0.428)	(0.373)	(0.444)	(0.415)	(0.435)
ROA	-0.651	-0.021	-1.152	-1.331	-0.699	-1.143	-0.467	-0.933***	-0.905**	-0.228	-0.097	-0.221
	(0.852)	(0.860)	(0.734)	(0.982)	(0.765)	(1.225)	(0.317)	(0.296)	(0.428)	(0.305)	(0.331)	(0.491)
PaR30	-0.203	-0.163	-1.083**	0.236	-0.333	0.115	-1.438*	-1.226	-0.960	-1.259	-1.558*	-0.563
	(0.677)	(0.728)	(0.545)	(0.680)	(0.678)	(0.745)	(0.764)	(0.827)	(0.804)	(0.800)	(0.835)	(0.660)
cost_loan	-0.258**	-0.230**	-0.190*	-0.183	-0.233*	-0.326***	-0.174	-0.166	-0.243**	-0.165	-0.092	-0.224*
	(0.110)	(0.105)	(0.112)	(0.124)	(0.129)	(0.122)	(0.115)	(0.105)	(0.123)	(0.110)	(0.127)	(0.114)
totalassets	0.183***	0.136***	0.124***	0.179***	0.110***	0.235***	0.077	0.049	0.038	0.074	0.008	0.110*
	(0.041)	(0.045)	(0.036)	(0.040)	(0.040)	(0.044)	(0.061)	(0.065)	(0.066)	(0.057)	(0.064)	(0.059)
ownership	0.151	0.070	0.066	0.195	0.265	-0.008	0.134	0.141	0.178	0.103	0.124	0.234
	(0.175)	(0.202)	(0.177)	(0.175)	(0.185)	(0.181)	(0.227)	(0.250)	(0.229)	(0.226)	(0.230)	(0.213)
GII	0.741***	0.582***	0.569***	0.623***	0.660***	0.788***	1.757***	1.936***	1.619***	1.830***	1.785***	1.397***
	(0.110)	(0.123)	(0.094)	(0.103)	(0.103)	(0.127)	(0.131)	(0.179)	(0.116)	(0.136)	(0.156)	(0.137)
GDP	0.055*	0.051	0.065**	0.047*	0.082***	0.044	0.009	0.012	0.019	0.007	0.033*	0.004
	(0.030)	(0.033)	(0.026)	(0.026)	(0.031)	(0.027)	(0.020)	(0.020)	(0.016)	(0.020)	(0.017)	(0.018)
Observations	590	590	590	590	590	590	565	565	565	565	565	565
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.123	0.132	0.119	0.118	0.136	0.157	0.188	0.210	0.178	0.194	0.224	0.258

Notes: Compared to Table 3, this table shows the results of two sub-samples constructed by dividing the sample into higher and lower ranked institutional strength based on median value. High Worldwide Governance Index (WGI) represents higher level of institutional strength. Further details about the WGI variable are provided in Section 3.3. Time- and country-fixed effects are included in the regression. Constant, year/country dummies are not reported. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

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Table 7 Robustness test – restricted sample selection

VARIABLES	(1) Social Performance	(2) Social Goals	(3) Governance & HR	(4) Products & Services	(5) Client Protection	(6) Environment
per_femaleboard	0.607**	0.446*	0.307	0.686***	0.334	0.886***
	(0.244)	(0.251)	(0.208)	(0.240)	(0.252)	(0.241)
ROA	-0.963	-0.458	-0.783	-1.280	-0.226	-1.395
	(0.863)	(0.824)	(0.904)	(0.804)	(0.908)	(0.973)
PaR30	-0.861*	-0.761	-1.007**	-0.405	-0.814	-0.439
	(0.511)	(0.560)	(0.476)	(0.526)	(0.559)	(0.609)
cost_loan	-0.213***	-0.184**	-0.198**	-0.160*	-0.140	-0.281***
	(0.081)	(0.077)	(0.085)	(0.084)	(0.091)	(0.086)
totalassets	0.140***	0.098**	0.088**	0.136***	0.070**	0.184***
	(0.035)	(0.038)	(0.034)	(0.034)	(0.035)	(0.036)
ownership	0.057	0.021	0.032	0.075	0.115	-0.005
	(0.142)	(0.163)	(0.144)	(0.143)	(0.147)	(0.144)
GII	0.446***	0.367***	0.236**	0.358***	0.346***	0.575***
	(0.116)	(0.125)	(0.108)	(0.117)	(0.117)	(0.121)
WGI	-1.394**	-0.950	-1.670***	-1.453**	-1.702***	-0.876*
	(0.607)	(0.585)	(0.622)	(0.617)	(0.629)	(0.530)
GDP	0.007	0.010	0.018	0.003	0.031*	0.006
	(0.019)	(0.020)	(0.015)	(0.018)	(0.017)	(0.018)
Observations	1,101	1,101	1,101	1,101	1,101	1,101
Year FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.152	0.169	0.144	0.151	0.170	0.197

Notes: Table 7 reports the robustness results based on restricted sample selection to remove the concerns on sample selection bias. Compared to Table 3. we removed countries with fewer than 50 observations and also removed companies with less than three years of social performance data available. Time- and country-fixed effects are included in the regression. Constant, year/country dummies are not reported. Robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8 Robustness test – placebo test for female directors

VARIABLES	(1) Social Performance	(2) Social Goals	(3) Governance & HR	(4) Products & Services	(5) Client Protection	(6) Environment
per_femalemanagers	0.292	0.132	0.311*	0.310	0.214	0.317
	(0.199)	(0.200)	(0.184)	(0.208)	(0.216)	(0.238)
ROA	-0.838***	-0.964***	-1.209***	-0.774***	-0.575**	-0.592
	(0.258)	(0.261)	(0.337)	(0.265)	(0.265)	(0.457)
PaR30	-0.726	-0.759	-1.071***	-0.277	-0.769	-0.074
	(0.517)	(0.549)	(0.412)	(0.535)	(0.507)	(0.611)
cost_loan	-0.212***	-0.209***	-0.207**	-0.144*	-0.144*	-0.270***
	(0.077)	(0.073)	(0.082)	(0.081)	(0.087)	(0.080)
totalassets	0.137***	0.097***	0.096***	0.133***	0.077**	0.163***
	(0.032)	(0.035)	(0.031)	(0.031)	(0.033)	(0.034)
ownership	0.076	0.040	0.084	0.116	0.151	0.032
	(0.129)	(0.146)	(0.129)	(0.130)	(0.134)	(0.134)
GII	0.419***	0.343***	0.234**	0.321***	0.321***	0.519***
	(0.106)	(0.111)	(0.099)	(0.112)	(0.109)	(0.116)
WGI	-1.685***	-1.283**	-2.032***	-1.796***	-2.234***	-0.969*
	(0.571)	(0.554)	(0.588)	(0.585)	(0.613)	(0.509)
GDP	0.007	0.010	0.015	0.001	0.027	0.016
	(0.019)	(0.020)	(0.018)	(0.018)	(0.019)	(0.018)
Observations	1,250	1,250	1,250	1,250	1,250	1,250
Year FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.152	0.168	0.150	0.150	0.176	0.186

Notes: Compared to Table 3, we replaced the independent variable “female directors” with “female managers” as a placebo test. The variable "female mangers” is measured as the percentage of females in the management team of the MFI. Time- and country-fixed effects are included in the regression. Constant, year/country dummies are not reported. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 9 Robustness test – addressing endogeneity using system GMM

VARIABLES	(1) Social Performance	(2) Social Goals	(3) Governance & HR	(4) Products & Services	(5) Client Protection	(6) Environment
L.social_performance	0.481***					
	(0.140)					
L.social_goals		0.377***				
		(0.108)				
L.governance_HR			0.654***			
			(0.113)			
L.products_services				0.463***		
				(0.140)		
L.client_protection					0.562***	
					(0.129)	
L.environment						0.614***
						(0.139)
per_femaleboard	5.671**	4.620**	2.911	5.841**	5.999*	-0.101
	(2.782)	(2.232)	(2.174)	(2.586)	(3.123)	(1.600)
ROA	-1.028	-1.040*	-0.626	-1.051	-0.964	0.059
	(0.655)	(0.628)	(0.541)	(0.670)	(0.745)	(0.267)
PaR30	-0.425	-0.490	-0.699	-0.213	0.282	0.107
	(0.841)	(0.839)	(0.577)	(0.987)	(0.970)	(0.323)
cost_loan	0.077	0.037	0.030	0.126	0.122	-0.026
	(0.094)	(0.095)	(0.078)	(0.099)	(0.116)	(0.047)
totalassets	0.274**	0.232**	0.116	0.302***	0.242*	0.036
	(0.129)	(0.102)	(0.094)	(0.116)	(0.128)	(0.066)
ownership	0.336*	0.251	0.298**	0.304	0.327*	0.114
	(0.184)	(0.175)	(0.133)	(0.197)	(0.197)	(0.070)
GDP	-0.002	-0.021	0.030	-0.016	0.033	0.011
	(0.029)	(0.028)	(0.026)	(0.029)	(0.035)	(0.019)
year	-0.214	-0.326**	-0.041	-0.330**	-0.176	-0.008
	(0.131)	(0.138)	(0.095)	(0.131)	(0.136)	(0.065)
country	0.004	0.007	-0.000	0.007	-0.000	0.002
	(0.008)	(0.008)	(0.007)	(0.009)	(0.009)	(0.004)
Constant	424.504	651.450**	79.973	657.057**	347.315	16.147
	(261.883)	(276.299)	(190.130)	(261.892)	(272.028)	(129.528)
Observations	1,011	1,011	1,011	1,011	1,011	1,011
Year FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
# of instruments	23	23	23	23	23	23
AR(1) p-value	0.000	0.000	0.000	0.000	0.000	0.003
AR(2) p-value	0.421	0.347	0.414	0.722	0.461	0.741
Hansen test p-value	0.030	0.010	0.013	0.036	0.026	0.619

Notes: To address endogeneity concerns, table 9 presents the results of robustness tests using the two-step system generalised method of moments (SGMM). Further details of SGMM are provided in Section 4.3. Time- and country-fixed effects are included in the regression. Year/country dummies are not reported. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix A

Table 10 The distribution of MFIs across countries (2010–2018)

Country	# of MFIs	Percent	# of Obs.	Percent	Country	# of MFIs	Percent	# of Obs.	Percent
Afghanistan	20	0.87	69	0.68	Madagascar	15	0.65	71	0.7
Albania	7	0.31	27	0.27	Malawi	5	0.22	33	0.33
Angola	1	0.04	9	0.09	Malaysia	1	0.04	2	0.02
Argentina	16	0.7	74	0.73	Mali	13	0.57	47	0.47
Armenia	14	0.61	83	0.82	Mexico	103	4.49	578	5.73
Azerbaijan	40	1.74	192	1.9	Mongolia	14	0.61	59	0.59
Bangladesh	46	2.01	304	3.02	Montenegro	3	0.13	17	0.17
Belarus	2	0.09	7	0.07	Morocco	10	0.44	54	0.54
Belize	1	0.04	3	0.03	Mozambique	10	0.44	38	0.38
Benin	28	1.22	125	1.24	Myanmar	17	0.74	55	0.55
Bhutan	1	0.04	5	0.05	Namibia	1	0.04	3	0.03
Bolivia	26	1.13	187	1.85	Nepal	39	1.7	158	1.57
Bosnia and Herzegovina	14	0.61	69	0.68	Nicaragua	29	1.26	206	2.04
Brazil	39	1.7	193	1.91	Niger	20	0.87	67	0.66
Bulgaria	19	0.83	62	0.62	Nigeria	75	3.27	195	1.93
Burkina Faso	31	1.35	114	1.13	North Macedonia	4	0.17	29	0.29
Burundi	22	0.96	100	0.99	Pakistan	51	2.22	293	2.91
Cambodia	23	1	159	1.58	Panama	8	0.35	50	0.5
Cameroon	19	0.83	78	0.77	Papua New Guinea	9	0.39	60	0.6
Central African Republic	2	0.09	3	0.03	Paraguay	6	0.26	44	0.44
Chad	2	0.09	6	0.06	Peru	66	2.88	440	4.36
Chile	5	0.22	31	0.31	Philippines	79	3.45	300	2.98
China	78	3.4	208	2.06	Poland	3	0.13	10	0.1
Colombia	41	1.79	215	2.13	Republic of Moldova	11	0.48	40	0.4
Comoros	4	0.17	8	0.08	Romania	6	0.26	28	0.28
Congo	3	0.13	15	0.15	Russian Federation	64	2.79	208	2.06
Costa Rica	16	0.7	97	0.96	Rwanda	50	2.18	135	1.34
Cote d'Ivoire (Ivory Coast)	25	1.09	81	0.8	Saint Lucia	1	0.04	2	0.02
DR Congo	17	0.74	64	0.63	Samoa	1	0.04	8	0.08
Dominican Republic	18	0.78	98	0.97	Senegal	72	3.14	181	1.8
East Timor	2	0.09	18	0.18	Serbia	4	0.17	23	0.23
Ecuador	63	2.75	430	4.27	Sierra Leone	5	0.22	15	0.15
Egypt	12	0.52	61	0.61	Solomon Islands	1	0.04	5	0.05
El Salvador	16	0.7	80	0.79	South Africa	5	0.22	20	0.2
Ethiopia	25	1.09	47	0.47	South Sudan	5	0.22	15	0.15
Fiji	1	0.04	9	0.09	Sri Lanka	21	0.92	62	0.62
Gabon	1	0.04	1	0.01	State of Palestine	11	0.48	47	0.47
Gambia	3	0.13	7	0.07	Sudan	2	0.09	7	0.07
Georgia	17	0.74	77	0.76	Suriname	3	0.13	10	0.1
Ghana	47	2.05	129	1.28	Swaziland	1	0.04	3	0.03
Grenada	1	0.04	3	0.03	Syrian Arab Republic	3	0.13	18	0.18
Guatemala	25	1.09	136	1.35	Tajikistan	54	2.35	200	1.98
Guinea	3	0.13	5	0.05	Tanzania	18	0.78	77	0.76
Guyana	1	0.04	8	0.08	Thailand	1	0.04	2	0.02
Haiti	8	0.35	44	0.44	Togo	32	1.4	93	0.92
Honduras	27	1.18	188	1.86	Tonga	1	0.04	7	0.07
India	180	7.85	921	9.14	Trinidad and Tobago	2	0.09	4	0.04
Indonesia	27	1.18	81	0.8	Tunisia	1	0.04	9	0.09
Iraq	12	0.52	42	0.42	Turkey	2	0.09	7	0.07
Jamaica	7	0.31	27	0.27	Uganda	25	1.09	85	0.84
Jordan	9	0.39	46	0.46	Ukraine	2	0.09	10	0.1
Kazakhstan	29	1.26	91	0.9	Uruguay	1	0.04	4	0.04
Kenya	38	1.66	142	1.41	Uzbekistan	26	1.13	63	0.62
Kosovo	11	0.48	57	0.57	Venezuela	2	0.09	9	0.09
Kyrgyzstan	25	1.09	108	1.07	Vietnam	45	1.96	180	1.79
Laos	36	1.57	146	1.45	Yemen	10	0.44	30	0.3
Lebanon	6	0.26	22	0.22	Zambia	5	0.22	28	0.28
Liberia	4	0.17	16	0.16	Zimbabwe	3	0.13	9	0.09
					In total	2,293	100	10,081	100

Notes: Table 10 shows the distribution of MFIs across countries of the final sample used in the main analysis. There are 10,081 observations corresponding to 2293 MFIs from 116 countries. As some countries have a small number of observations, we removed countries with fewer than 50 observations as a robustness in Section 4.3.

Appendix B

Table 11 The indicators of "Social Goals" dimension included in the Mix Market's social performance data

Indicators
Social goals > Target market > Adolescents and youth (below 18)
Social goals > Target market > Clients living in urban areas
Social goals > Target market > Clients living in rural areas
Social goals > Development goals > Improvement of adult education
Social goals > Development goals > Youth opportunities
Social goals > Development goals > Children's schooling
Social goals > Development goals > Health improvement
Social goals > Development goals > Gender equality and women's empowerment
Social goals > Development goals > Access to water and sanitation
Social goals > Development goals > Housing
Social goals > Development goals > Increased access to financial services
Social goals > Development goals > Poverty reduction
Social goals > Development goals > Employment generation
Social goals > Development goals > Development of start-up enterprises
Social goals > Development goals > Growth of existing businesses
Social goals > Poverty targets > Very poor clients
Social goals > Poverty targets > Poor clients
Social goals > Poverty targets > Low income clients
Social goals > Measures client poverty > Yes
Social goals > Measures client poverty > Yes > Poverty measurement methods in use > Grameen Progress out of Poverty Index (PPI)
Social goals > Measures client poverty > Yes > Poverty measurement methods in use > IRIS/USAID Poverty Assessment Tool (PAT)
Social goals > Measures client poverty > Yes > Poverty measurement methods in use > Per capita household income
Social goals > Measures client poverty > Yes > Poverty measurement methods in use > Per capita household expenditure
Social goals > Measures client poverty > Yes > Poverty measurement methods in use > Participatory wealth ranking (PWR)
Social goals > Measures client poverty > Yes > Poverty measurement methods in use > Housing index
Social goals > Measures client poverty > Yes > Poverty measurement methods in use > Food security index
Social goals > Measures client poverty > Yes > Poverty measurement methods in use > Means test
Social goals > Measures client poverty > Yes > Poverty measurement methods in use > Own proxy poverty index

Notes: Table 11 provides an example of what indicators are included in the "Social Goals" dimension in the Mix Market's social performance data. Each indicator is a dummy variable where 1 represents "Yes" and 0 otherwise. There are 28 indicators for the Social Goals. If a company answers yes to all 28 indicators, the company's index score for "Social Goal" will be 28. We rank the aggregated scores from high to low each year and divide the sample into 4 groups where scores 4 to 1 to represent high to low "Social Goals" index score. When MFIs do not report social performance data in a given year, the social performance rating is given a zero score. We apply the same method for other dimensions of social performance. The data of for other dimensions are available by request.

Appendix C

Table 12 Robustness test – Alternative measure of the dependent variable

VARIABLES	(1) Social Performance	(2) Social Goals	(3) Governance & HR	(4) Products & Services	(5) Client Protection	(6) Environment
per_femaleboard	0.738**	0.273	-0.209	0.939**	0.363	1.058***
	(0.307)	(0.319)	(0.336)	(0.429)	(0.376)	(0.395)
ROA	-0.557	-0.783*	-0.725**	0.018	0.422	-2.341
	(0.390)	(0.456)	(0.313)	(0.439)	(0.321)	(1.436)
PaR30	-0.002	-0.705	-2.219***	1.119	-0.600	0.934
	(0.510)	(0.908)	(0.806)	(0.705)	(0.543)	(0.901)
cost_loan	-0.370***	-0.193	-0.228*	-0.184	-0.041	-0.309*
	(0.095)	(0.125)	(0.118)	(0.121)	(0.146)	(0.167)
totalassets	0.203***	0.151***	0.115**	0.258***	0.076	0.283***
	(0.036)	(0.057)	(0.049)	(0.054)	(0.048)	(0.081)
ownership	0.016	-0.195	-0.153	0.057	0.090	-0.041
	(0.166)	(0.239)	(0.215)	(0.247)	(0.215)	(0.270)
WGI	0.419	1.050	0.379	1.299	1.480	1.167
	(0.482)	(0.733)	(0.931)	(0.872)	(1.099)	(0.924)
GDP	-0.020	-0.022	0.012	-0.032*	0.035**	-0.015
	(0.015)	(0.020)	(0.016)	(0.019)	(0.017)	(0.016)
Observations	852	511	518	522	513	367
Year FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.177	0.0993	0.160	0.171	0.222	0.192

Notes: Table 12 reports the robustness results by using alternative measures for the dependent variable. For the dependent variable *social performance*, the scores of 0, 1, 2, 3, 4, respectively, have 6,771, 819, 90, 894, 607 observations in the sample. In this table, we treat the zero values as missing values so that the dependent variables are categorical variables ranging from 1 to 4. Time- and country-fixed effects are included in the regression. Constant and Year/country dummies are not reported. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix D

Table 13 Robustness test – results using ordered logit regressions

VARIABLES	(1) Social Performance	(2) Social Goals	(3) Governance & HR	(4) Products & Services	(5) Client Protection	(6) Environment
per_femaleboard	0.876**	0.699	0.397	0.988**	0.481	1.491***
	(0.433)	(0.432)	(0.358)	(0.416)	(0.432)	(0.425)
ROA	-1.022***	-1.424***	-1.575***	-0.939*	-0.650*	-0.710
	(0.389)	(0.375)	(0.510)	(0.506)	(0.379)	(0.888)
PaR30	-1.075	-1.283	-1.710**	-0.274	-1.105	-0.450
	(0.831)	(0.940)	(0.750)	(0.886)	(0.864)	(1.203)
cost_loan	-0.354**	-0.333**	-0.354**	-0.262*	-0.258	-0.464***
	(0.146)	(0.134)	(0.158)	(0.147)	(0.157)	(0.155)
totalassets	0.238***	0.172**	0.160***	0.229***	0.128**	0.330***
	(0.062)	(0.067)	(0.060)	(0.060)	(0.062)	(0.067)
ownership	0.212	0.161	0.194	0.218	0.316	0.115
	(0.245)	(0.282)	(0.251)	(0.241)	(0.250)	(0.266)
GII	0.753***	0.630***	0.420**	0.648***	0.509**	1.145***
	(0.206)	(0.218)	(0.197)	(0.202)	(0.212)	(0.213)
WGI	-2.751**	-2.164**	-3.032***	-2.752**	-3.602***	-1.701*
	(1.116)	(1.032)	(1.160)	(1.140)	(1.196)	(0.977)
GDP	0.023	0.032	0.039	0.022	0.057	0.012
	(0.038)	(0.035)	(0.029)	(0.032)	(0.035)	(0.033)
Observations	1,156	1,156	1,156	1,156	1,156	1,156
Year FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.155	0.166	0.152	0.152	0.176	0.198

Notes: For the main results, we adopt panel data, random-effects ordered probit regressions. As a comparison to Table 3, this table presents the results using random-effects ordered logistic regressions. Time- and country-fixed effects are included in the regression. Year/country dummies are not reported. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

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