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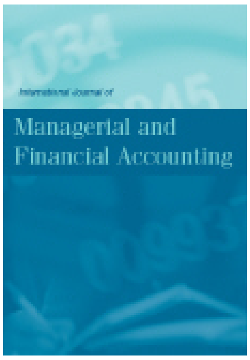

International Journal of Managerial and Financial Accounting

ISSN online: 1753-6723 - ISSN print: 1753-6715
https://www.inderscience.com/ijmfa

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DOI: 10.1504/IJMFA.2022.10046522

Article History:

Received:	06 July 2021
Accepted:	03 March 2022
Published online:	07 December 2022

Impact of stakeholders as board members on sustainability and social outreach of microfinance institutions in developing markets

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Abstract: The purpose of this study is to explore how stakeholders on the board contribute to sustainability and outreach of microfinance institutions (MFI). Stakeholders as board members can influence the social outreach and sustainability of microfinance institutions (MFIs). By applying a multi-theoretical approach to a longitudinal dataset from a developing country perspective, this study analyses stakeholder involvement on the MFI board and its impact on double-bottom-line performance. The results suggest that independent directors on the board have significantly positive effects on achieving microfinance institutions' dual missions: sustainability and outreach. However, some stakeholders have produced mixed results. Employees, donors, and female board members play significant roles, although their impacts are moderated by the age and size of MFIs. CEO duality contributes to MFI sustainability but inversely affects outreach. The results support the stakeholder, stewardship, and resource dependence theories. This study recommends the appointment of an independent board member as a social director to widen the range of stakeholders' involvement in the boards of MFIs and contribute to achieving its objectives in a developing market context.

Keywords: governance; microfinance institutions; MFIs; stakeholders.

Reference to this paper should be made as follows: Hussain, M.D., Muhammad, M., Ahmed, I. and Bin Hossain, M.T. (2023) 'Impact of stakeholders as board members on sustainability and social outreach of microfinance institutions in developing markets', *Int. J. Managerial and Financial Accounting*, Vol. 15, No. 1, pp.26–49.

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This paper is a revised and expanded version of a paper entitled ''Stakeholders on board': impact on microfinance sustainability and social outreach' presented at 2021 Financial Markets and Corporate Governance Conference (FMCG 2021), La Trobe Business School, Melbourne, Australia, 7–10 April 2021, Virtual.

1 Introduction

Research on corporate governance (CG) has increasingly explored stakeholder participation and ownership structures (Hussain and Ahmed, 2020; Strøm et al., 2014). CG refers to a wide range of practices and policies through which board members ensure the well-functioning of the organisation; short-term and long-term; protect the interests of stakeholders and develop the missions and the visions of the organisation (Thrikawala et al., 2016). Since the mid-1980s, studies have been growing on stakeholders' participation on boards as a mechanism to maintain good governance (Freeman, 1984; Rahman et al., 2019). Advocates of these approaches claim that an organisation should consider the interests of all parties involved in its composition, either directly or indirectly. Thus, the interrelations of investors, employees, clients, and broader society become the dynamic force behind the organisation (Kujala et al., 2019). This study has adopted a multi-theoretical approach integrating agency theory along with stewardship, stakeholder, and resource dependency theories to recognise diverse characteristics of MFIs' stakeholders.

MFIs have distinct objectives, operating environments, clients, donors, operations, and organisational structures; depending on the market and target client groups (Parvin et al., 2020). MFIs offer collateral-free group-based financial services to micro-entrepreneurs (Ashta, 2019). Microfinance service delivery practices are generally based on extremely decentralised dealings, which rely on transparency for stakeholder involvement. This is because MFIs provide loans, take deposits, monitor, and assist micro-entrepreneurial ventures undertaken by low-skilled, mostly female, micro-entrepreneurs in rural areas for poverty alleviation (Rahman et al., 2019). Therefore, they have higher operational expenditures to monitor and offer customised support services. This program has been supported by donors and socially responsible investors (SRIs) but has been increasingly moving towards commercial borrowing as the former source of funds is depleting. MFIs operate mostly as non-governmental organisations (NGOs), cooperative banks, and specialised windows of classic banks for poor communities (Zamore et al., 2019) but increasingly facing need of operating by following market principles. Given these special modes of operations, MFIs need to engage their stakeholders (Khurram et al., 2019) and in consequence, governance mechanisms to achieve organisational viability and outreach to the most needy clients that they want to serve. MFIs must maintain a twofold mission, such as preserving institutional sustainability and outreach to the poor (Dato et al., 2019; Kar, 2013; Parvin et al., 2020). Previous studies have identified a mission drift due to a lack of proper governance practices in MFIs (Ibrahim et al., 2018). Given their role in governance, board members are the key promoters and guarantors of this dual mission (Dato et al., 2019). In addition to ensuring the dual mission, board members also play the role of a whistleblower when mission drift occurs.

The current study aims to extend the existing body of knowledge, which tends to be grounded in Mori and Mersland (2014), yet aims to further investigate the impact of CG in the most matured and comprehensive micro-finance market, namely, Bangladesh. The purpose of this study is to examine the effect of six types of stakeholders: independent directors, employees, donors, clients, women, and internal auditors. Therefore, this study departs from previous studies in considering stakeholders on boards from diverse origins including rural female members beyond the stockholders of MFIs in a developing country context where institutional voids are prevalent.

The remainder of this paper is organised into four sections. Section 2 reviews the relevant literature and presents the hypotheses. The hypotheses are based on existing theoretical propositions and the governance literature on MFIs. Section 3 discusses sampling techniques for data collection, and defines and justifies the variables. The empirical findings are discussed in Section 4. Section 5 presents conclusions based on the empirical results and provide future research directions.

2 Literature review and hypothesis development

The governance approach depends on the business ecosystem and local context and there is no universal model (Hussain and Ahmed, 2020). Organisational dimensions are embedded in governance paradigms, where stakeholders' relationships are framed by stewardship, stakeholder, and resource dependence perspectives (Brennan and Solomon, 2008; Christopher, 2010). The underlying literature suggests that the governance process needs to comply with the interests of multiple stakeholders through the management of strategic decisions, where the board of directors is the principal strategic decision-maker (Zagorchev and Gao, 2015). Research suggests that board effectiveness is influenced mostly by the number of members or size. In the case of MFIs, the size of the board is generally not specified. Studies suggest that larger boards are desirable for non-profit sectors as a means of ensuring the broad objectives that they would like to achieve, including social outreach (Dato et al., 2019; Hussain and Ahmed, 2020). Larger boards have more scope for fundraising (Hartarska and Mersland, 2012). However, agency theory contradicts this assertion and claims that larger boards are inefficient, more prone to free-riding by board members, and waste resources (Mori and Mersland, 2014). Therefore, a larger board may negatively impact sustainability (Mersland and Strøm, 2013). Hartarska and Mersland (2012) proposed that eight to nine members are the most suitable size for a microfinance institution's (MFI's) board. MFIs in developing countries have started within the institutional voids and governance mechanisms have been largely absent (Khanam et al., 2018). Therefore, it is necessary to investigate this notion in context of a developing market. Having the diverse board members from the different stakeholder group can ensure better functioning of the MFIs. They can be from public, and private sectors, civil society and donors, as well as the target group, and the society as a whole. Therefore, we propose the following hypotheses:

Hypothesis 1 Board size has significant impact on MFIs performance.

Agency theory claims that shareholders' benefits are safeguarded when the ownership and management of the firm is separated and the boards hold the management responsible to well-functioning of the organisation. Having the CEO also as the board chairman can contribute to the effective management of the organisation (Davis, 2005) as he or she has access to all the information and knows the organisation better. Stewardship theory claims that the CEO is the key person who takes effective action to maximise shareholder returns (Donaldson, 1990). Scholars are still split on the circumstances in which CEOs as custodians are driven by providing the most value to shareholders (Christopher, 2010). Previous studies have noted the frequency of CEO duality (Rashid, 2013) and in MFIs, it is quite common for founder members to become CEOs while retaining founder-directorships as board chairperson (Malikov et al., 2019). Various microfinance practitioners claim that CEO duality has a noteworthy impact on performance, portfolio yields, and most importantly, client service (Galema et al., 2012a; Pascal et al., 2017). Therefore, we propose the following hypothesis:

Hypothesis 2 CEO duality has significant impact on performances of MFIs.

On a corporate board, there are a variety of mechanisms and each group of board members like to ensure on achieving interest of their own group. In stakeholder theory, an organisation must deal with multiple interested parties with conflicting interests (Freeman, 2010). MFIs deal with many stakeholders such as clients, creditors, donors, employees, founding members, unaffiliated directors, civil society, government officials, auditors, and rating agencies (Beisland et al., 2020). Previous studies have claimed that an independent director may raise voice on behalf of other interested parties with relatively less representation such as rural women and other vulnerable groups rather than maintaining insider interests (Ahmad and Omar, 2016; Balachandran and Faff, 2015). Scholars have advocated the mandatory participation of unaffiliated directors on MFI boards (Dato et al., 2019; Hasan et al., 2019). Thus, we propose Hypothesis 3:

Hypothesis 3 Independent directors can ensure good governance and contribute to the performance of MFIs.

The presence of employees in the board may significantly affect the MFI performance. Hartarska and Mersland (2012) demonstrated that MFIs with employees on the board are less efficient. Employees on boards can be compromised because they are monitored by CEOs and may not speak up on issues not liked by their bosses (Biswas, 2015; Rashid, 2011). However, Mori and Mersland (2014) argued that staff members are good at providing internal information to the board. They also claim that personnel, specifically credit officers, are the focal point of most operations. Representatives of employees on the board might provide practical information that may be acquired from the field. They sometimes have more up-to-date operational knowledge than managers (Zollinger, 2009). Employees' previous experiences, along with distinctive interests, might bring predisposed information, which might direct the board in making effective decisions (Hartarska et al., 2013a; Varottil, 2014). This study supposes that employees are reliable sources of information for monitoring and field-level information roles; therefore, we propose Hypothesis 4:

Hypothesis 4 Employee participation on the board can improve internal functioning and has significant effects on performance of MFIs.

Donors may also be significant players in the governance of MFIs and contribute to achieving two-fold goals (Hartarska, 2009; Mori and Mersland, 2014). The literature shows that donors provide capital, evaluate progress, and ensure virtuous practices with technical assistance (Bassem, 2009; Reynolds, 2014). As significant fund providers, donors monitor MFI operations to ensure that their subsidised funds reach the rural poor people they want to support (Thrikawala et al., 2013). The presence of donors on the board can improve monitoring and provide impartial guidance. For MFI performance, it appears that donors would offer increased support for social outreach and help avoid a narrow focus on the poor. Previous investigations have suggested that the presence of donors on boards enhances social outreach (Hussain et al., 2021; Khurram et al., 2019). Thus, we propose the following hypotheses:

Hypothesis 5 Donor's participation on board can improve the governance and has significant effects on MFIs performance.

Microfinance practitioners assert that clients representation on boards may not be effective because they are less educated and lack knowledge about how modern organisations function (Mori and Mersland, 2014). Indeed, MFIs are increasingly moving towards more customer-driven and far from product-driven approaches (Mersland and Strøm, 2013). MFIs face challenges with multiple borrowings by the same clients; therefore, a stronger customer focus is adopted to counter this phenomenon. Academic scholars contend that clients help improve MFI performance and provide valuable information (Hartarska et al., 2013b). Clients have the first-hand experience from the field. Moreover, clients of MFIs are also the depositor of the same organisation and own collectively important percentage of share of the firm. Previous studies have also found that clients in the boards improve financial performance (Hartarska, 2005; Mori and Mersland, 2014). This study, therefore, propose the following hypothesis:

Hypothesis 6 The clients' participation on the board can ensure depth and outreach of MFIs and has significant effects on the performances of MFIs.

While the core mission of MFIs is to deliver financial services to the poor (Strøm et al., 2014), female borrowers are the lion share (i.e., more than 95%) of the client base (Parvin et al., 2020). It has huge trickle-down effects on socio-economic arenas, including women's empowerment, family health care, and children's education. Strøm et al. (2015) claimed that women can effectively connect with the board, run the business, return loans on time, and perform better than men. They are more effective at connecting and approaching female customers. In addition, having a female CEO and a female executive on the board can have a better understanding of the activities of MFIs with a female-dominated client base and can contribute to MFI performance (Im and Sun, 2015). Considering the resource dependence theory, and this study proposes:

Hypothesis 7 The women's participation on the board can ensure female clients' interests and has significant effects on MFIs performance.

Internal auditors assess the internal activities and advise the management on how to move forward with adequate control within governance processes (Fan and Wong, 2005). Internal auditor services identify critical issues and avoid major breakdowns. The auditor independently appraises the suitability and viability of the organisation's internal governance structure (Bassem, 2009). If internal auditors report directly to the board, they can retain independence and ensure transparency in the firm (Mersland and Strøm, 2009). Instead, if internal auditors report to the CEO, financial amalgamation may occur (Hartarska et al., 2013b). The CEO may manipulate board accounts or stakeholder representations. This study considers the internal auditor as a CG mechanism to enhance MFI performance. Therefore, we propose the following hypotheses:

Hypothesis 8 The internal auditor's report directly to the board can ensure transparency and has significant effects on MFIs performances.

Table 1 Dependent variables and measurement

Variables	*Acronyms*	*Description*
Institutional sustainability		
Operational self-sufficiency	OSS	Operative incomes are fractionated/divided by financial expenses plus the provision of loan losses along with operational expenditure. It shows in what manner the MFIs shield its outlays through operating revenues. It is conveyed in a percentage form and reflects the ability of returns generated from the loan (Bassem, 2009; Hartarska, 2005).
Financial self-sufficiency	FSS	It comes out of the adjustments to OSS. The operating revenue adjusted to inflation, also financial expenses, loan loss provision, and operating expenses are adjusted based on the provisional result. It demonstrates the degree to which operational revenue covers adjusted operational expenses (Cull et al., 2007).
Return on assets	ROA	Considers accounting ratios where net income is divided by total assets. It come from the return on assets. It is an indicator of how profitable a company is relative to its total assets. It provides an idea to the investor or donor about the efficiency of MFIs by utilising its assets to generate earnings (Hartarska, 2005; Mersland and Strøm, 2009).
Outreach to the poor		
Breadth of outreach	Breadth	The current scenario of the borrowers, whether active or not. It shows the present discourse in terms of active clients reached by the MFIs or the numeral of clients that may have outstanding loans (Kyereboah-Coleman and Osei, 2008).
Depth of outreach	Depth	MFIs are bound to provide loans to poorer borrowers. Through this calculation, it shows whether MFIs provide loans to richer or poorer borrowers, where the number of present clients is divided by GDP per capita. Higher values show that the MFIs providing loans to richer borrowers (Im and Sun, 2015; Mersland and Strøm, 2009).

3 Empirical approach

3.1 Variable selection and measurement

Previous empirical investigations have revealed that MFI governance systems are rarely studied. However, a few studies, such as Dato et al. (2019), Mori and Mersland (2014), and Thrikawala et al. (2016), have used governance frameworks to choose MFI boards of directors that address the dual roles of MFIs. It is also important to think about how the governance framework affects MFI performance from a multi-theoretical perspective (Rahman et al., 2019). Twofold MFI performance will be treated as a dependent variable, and board of directors' participation will be considered as an independent variable, in order to achieve the goals of this study. Stakeholder participation on MFI boards, according to the research approach, has a significant impact on MFI dual performance. operational self-sufficiency (OSS), financial self-sufficiency (FSS), and return on assets (ROA) were used to assess the sustainability of MFIs. Likewise, the breadth (current status of the borrowers) and depth of outreach to the impoverished were measured (loans provided to the poorer borrower). Accounting data underpins the treatment of all variables.

As discussed in Section 2, this study used a multi-theoretical approach to look at eight independent variables that influence the two-fold performance of MFIs in Bangladesh: board size, CEO duality, independent directors, employees, donors, clients, women, and internal auditor participation on the board. Table 2 shows the results of the variables' measurements.

Table 2 Independent variables and measurement

Variables	*Acronyms*	*Descriptions*
Board size	BoD1	The actual numeral of board associates (Chen and Huang, 2014)
CEO duality	BoD2	A dummy being '1' if the CEO and the Chairman is a similar person or '0' otherwise (Hussain et al., 2019; Rashid, 2010)
Independent directors	BoD3	Percentage of panel members who do not have any relationship with MFIs (Sharif and Wei, 2014)
Employees	BoD4	Proportion of panel affiliates along with emolument relationship with MFI (Randøy et al., 2015)
Donor	BoD5	Agent of the grant-givers who does not have an affiliation with MFI (Mori and Mersland, 2014)
Clients	BoD6	The representatives of the loan receivers on the microfinance board (Mori and Mersland, 2014)
Women	BoD7	The percentage of female board members (Strøm et al., 2014)
Internal board auditor	BoD8	Dummy equals to '1' if MFI allow internal auditor reporting directly to the board or '0' otherwise (Jones, 2008)

Table 3 Control and moderator variables and measurement

Variables	*Acronyms*	*Descriptions*
Control variables		
Portfolio risk @ 30 days	CV1	30 days of loan outstanding plus renegotiated portfolio divided by adjusted gross loan portfolio (Balachandran and Faff, 2015)
Risk coverage	CV2	Loan loss divided by the portfolio at risk (Schneider and Scherer, 2015)
Rating	CV3	Rating index of the MFIs from the mix-market rating reports (Halouani and Boujelbène, 2015)
Regulated	CV4	Dummy equals to '1' when MFIs are regulated by government regulatory agency or '0' otherwise (Galema et al., 2012b)
International affiliations	CV5	Dummy equals to one if MFIs have a global affiliation or zero otherwise (Hossain, 2013)
Control variables with moderating effects		
MFIs age	CVM1	Number of years since its inception (Im and Sun, 2015; Rashid, 2015a)
MFIs size	CVM2	The total amount of assets of the MFI's (Hasan et al., 2019; Rashid, 2010)

Portfolios at risk in the first 30 days of operation, risk coverage ratio, rated by the rating agency, regulated by government regulation, international affiliation, and MFI age and size were all chosen as control variables in this study. The age and size of MFIs are two of them that have moderating impacts on the explanatory variables. In a large organisation, employees, donors, and women on the board of MFIs may be accommodated, but in small MFIs, stakeholders' representation on the board is almost non-existent. As a result, the age and size of MFIs were evaluated as moderating factors in this investigation. Table 3 lists the descriptions of the control variables.

3.2 Sampling

Bangladesh has the longest history and largest number of MFIs, and has now expanded around the globe with massive growth over the last three decades (The World Bank, 2019). According to the Microcredit Regulatory Authority (MRA) as of June 2019, there are 724 MFIs holding government licenses in Bangladesh (MRA, 2019). To select an illustrative sample, this study follows certain benchmarks:

1 at least one decade of microfinance experience

2 having capital of at least $100 million

3 having financial and social performance-related data inputs no less than ten years before 2019.

As a result, a non-probabilistic purposive sampling process was performed based on the following studies: Barry and Tacneng (2014), Beisland et al. (2014), Halouani and Boujelbène (2015), Hartarska and Mersland (2012), Kyereboah-Coleman and Osei (2008) and Mersland and Strøm (2009). Newly incepted MFIs were excluded from the sample because of a lack of significant information on governance practices. Studies show that MFIs that have more than one decade of experience providing micro-finance services have added time for actualising governance practices as they move their focus beyond financial performance alone (Brennan and Solomon, 2008). The sample selection was also determined by the accessibility of performance-related data on stakeholder involvement on MFI boards. During data collection, 80 Bangladeshi MFIs with capital of no less than USD100 million were identified. Eighty MFIs operated in both rural and urban areas. The performance of urban and rural MFIs has also been rationalised accordingly (Mohiuddin et al., 2020). Performance, in terms of financial, social, and boardroom stakeholder participation, and data for the associated control variables for 2006–2018 were obtained from individual MFI Annual Reports and the database of the microfinance information exchange (MIX) market. The reports were also cross-checked with the archives of the MRA, Palli Karma-Sahayak Foundation (PKSF), Institute for Inclusive Finance and Development (InM), and Credit and Development Forum (CDF) for authenticity and accuracy.

3.3 Estimation techniques

As the data were longitudinal, a variety of panel data econometric approaches were employed in the analysis. The dataset was strongly balanced, and the model was developed based on previous empirical studies (D'Espallier et al., 2017; Halouani and Boujelbène, 2015; Hartarska, 2005; Kar, 2013; Mersland and Strøm, 2009; Mori and Mersland, 2014; Quayes, 2012). This study used the following estimation model:

- Institutional sustainability:

$$\begin{aligned} OSS_{i,t} &= \alpha + \beta_1' BoD1_{i,t} + \beta_2' BoD2_{i,t} + \beta_3' BoD3_{i,t} + \beta_4' BoD4_{i,t} + \beta_5' BoD5_{i,t} \\ &+ \beta_6' BoD6_{i,t} + \beta_7' BoD7_{i,t} + \beta_8' BoD8_{i,t} + \beta_9' CV1_{i,t} + \beta_{10}' CV2_{i,t} + \beta_{11}' CV3_{i,t} \\ &+ \beta_{12}' CV4_{i,t} + \beta_{13}' CV5f_{i,t} + \beta_{14}' CVM1_{i,t} + \beta_{15}' CVM2_{i,t} + \mu_{i,t} \end{aligned} \tag{1}$$

$$\begin{aligned} FSS_{i,t} &= \alpha + \beta_1' BoD1_{i,t} + \beta_2' BoD2_{i,t} + \beta_3' BoD3_{i,t} + \beta_4' BoD4_{i,t} + \beta_5' BoD5_{i,t} \\ &+ \beta_6' BoD6_{i,t} + \beta_7' BoD7_{i,t} + \beta_8' BoD8_{i,t} + \beta_9' CV1_{i,t} + \beta_{10}' CV2_{i,t} + \beta_{11}' CV3_{i,t} \\ &+ \beta_{12}' CV4_{i,t} + \beta_{13}' CV5f_{i,t} + \beta_{14}' CVM1_{i,t} + \beta_{15}' CVM2_{i,t} + \mu_{i,t} \end{aligned} \tag{2}$$

$$\begin{aligned} ROA_{i,t} &= \alpha + \beta_1' BoD1_{i,t} + \beta_2' BoD2_{i,t} + \beta_3' BoD3_{i,t} + \beta_4' BoD4_{i,t} + \beta_5' BoD5_{i,t} \\ &+ \beta_6' BoD6_{i,t} + \beta_7' BoD7_{i,t} + \beta_8' BoD8_{i,t} + \beta_9' CV1_{i,t} + \beta_{10}' CV2_{i,t} + \beta_{11}' CV3_{i,t} \\ &+ \beta_{12}' CV4_{i,t} + \beta_{13}' CV5f_{i,t} + \beta_{14}' CVM1_{i,t} + \beta_{15}' CVM2_{i,t} + \mu_{i,t} \end{aligned} \tag{3}$$

- Outreach:

$$\begin{aligned} Breadth_{i,t} &= \alpha + \beta_1' BoD1_{i,t} + \beta_2' BoD2_{i,t} + \beta_3' BoD3_{i,t} + \beta_4' BoD4_{i,t} + \beta_5' BoD5_{i,t} \\ &+ \beta_6' BoD6_{i,t} + \beta_7' BoD7_{i,t} + \beta_8' BoD8_{i,t} + \beta_9' CV1_{i,t} + \beta_{10}' CV2_{i,t} \\ &+ \beta_{11}' CV3_{i,t} + \beta_{12}' CV4_{i,t} + \beta_{13}' CV5f_{i,t} + \beta_{14}' CVM1_{i,t} \\ &+ \beta_{15}' CVM2_{i,t} + \mu_{i,t} \end{aligned} \tag{4}$$

$$\begin{aligned} Depth_{i,t} &= \alpha + \beta_1' BoD1_{i,t} + \beta_2' BoD2_{i,t} + \beta_3' BoD3_{i,t} + \beta_4' BoD4_{i,t} + \beta_5' BoD5_{i,t} \\ &+ \beta_6' BoD6_{i,t} + \beta_7' BoD7_{i,t} + \beta_8' BoD8_{i,t} + \beta_9' CV1_{i,t} + \beta_{10}' CV2_{i,t} \\ &+ \beta_{11}' CV3_{i,t} + \beta_{12}' CV4_{i,t} + \beta_{13}' CV5f_{i,t} + \beta_{14}' CVM1_{i,t} \\ &+ \beta_{15}' CVM2_{i,t} + \mu_{i,t} \end{aligned} \tag{5}$$

The dependent variables such as *OSS*, *FSS*, and *ROA* represent institutional sustainability performance, while two other dependent variables; breadth (i.e., number of active borrowers) and depth (i.e., depth of outreach) represent outreach performance where $i = 1, \ldots, N$ (number of MFIs) and $t = 1, \ldots, T$ (periods). The independent variables include *BoD*1 = board size, *BoD*2 = CEO duality, *BoD*3 = independent director, *BoD*4 = employees, *BoD*5 = donors, *BoD*6 = clients, *BoD*7 = women, and *BoD*8 = internal auditor on boards. The control variables are *CV*1 = portfolio risk at 30 days, *CV*2 = risk coverage, *CV*3 = rating, *CV*4 = regulated, and *CV*5 = affiliation. *CVM*1 = MFIs age and *CVM*2 = MFIs size are control and moderating variables. Finally, α is a constant, $\mu_{i,t}$ is the error term, and β' is the intercept.

To determine which model is most appropriate, this study applied each model separately and identified possible mixed outcomes, along with any analytical problems. Generally, in panel datasets, two types of problems are common: heteroskedasticity for cross-sectional data and serial correlation for time-series data (Baltagi, 2008; Greene, 2003; Gujarati, 2004; Wooldridge, 2010). Therefore, this study utilised the modified Wald test to check for heteroskedasticity as the null hypothesis of homoscedasticity. For every equation in the study, the test yielded a p-value of 0.0000. Hence, heteroscedasticity in the model can be ruled out for every equation. Likewise, the Pasaran CD test yielded p-values of 0.0102, 0.1019, 0.1480, 0.0000, and 0.0000 for equations (1) to (5). These values indicate cross-sectional dependence for every variable, except ROA.

This study also confirms Wooldridge tests for autocorrelation in the panel data, whereas the null hypothesis has no serial correlation and yields probabilities of $F = 0.121$, 0.122, 0.193, 0.000, and 0.000 for equations 1 to 5. It shows that the data do not have first-order autocorrelation except in breadth and depth.

The above calculations suggest that we need to consider an alternative method for testing this hypothesis. Therefore, it is necessary to consider the cross-section dependence (OLS) model based on robust standard errors. This method is applied to the problem of cross-sectional dependence and heterogeneity in the analysis of panel data models (Baltagi and Pesaran, 2007). Tests were applied to identify a unit root in the alteration. Two transformed asymptotic approaches are considered. First, it deliberates a robust version of the Dickey-Fuller *t*-statistic under contemporaneously correlated errors. Second, the GLS *t*-statistic, which is based on the *t*-statistic of the transformed model, is considered. The test procedure was further generalised to accommodate individual-specific intercepts and linear time trends. The Monte Carlo simulations show that the robust OLS *t*-statistic performs well with respect to the independent variables along with control variables, whereas the GLS *t*-statistic may suffer from severe size distortions in moderate sample sizes.

4 Results

4.1 Descriptive analysis

As indicated in Table 4, the OSS and FSS averages are 1.314 and 1.215, respectively, with standard deviations of 0.381 and 0.353, respectively, which are more than one. This result shows that MFIs in Bangladesh function effectively and concurs with the findings of Hasan et al. (2019), Mersland and Strøm (2014) and Mia and Chandran (2016). The average ROA is 4.30%, which is much lower than the average ROA of other developing countries. Barry and Tacneng (2014) revealed an ROA of 9.40% for NGO-MFIs based on 200 samples from Sub-Saharan African countries. In terms of ROA, Bangladeshi MFIs are more vulnerable than sub-Saharan African MFIs are. However, the average number of active borrowers indicates that the breadth of outreach is approximately 300,700, with a standard deviation of 0.779. In Bangladesh, the smallest loan coverage is only 501 borrowers, whereas the maximum is 7.99 million. Thrikawala et al. (2016) in their exploration of Sri Lankan perspectives found that breadth of outreach was 29,144, much lower than for the Bangladeshi MFIs. In this study, the depth of outreach was 3.804, which indicates that MFIs provide loans to the poorest borrowers, in line with Bassem (2009) and Hartarska (2005). Because of the enormous dispersion in the breadth and depth of the sample, this study used natural logarithm transformation to condense the dispersion.

The results for the independent variables show that a typical board has eight members, supporting Hartarska and Mersland’s (2012) observations. However, CEO duality was relatively uncommon, with chairpersons playing chief executive roles in only nine percent of MFIs. This finding is consistent with the stewardship perspective (Donaldson and Davis, 1991). The proportion of unaffiliated directors was approximately 48.6%, ranging from 30% to 71.4%. These findings are impartially less than 80% (Rashid, 2015b). The average stakeholder participation on microfinance boards was employees (23.5%), donors (11.3%), clients (17.5%), women (30.5%), and internal board auditors (13.1%). This finding is a new contribution based on stakeholder theory in the context of MFIs in Bangladesh, where the average experiences is 26.67 years. The average size of an MFI is BDT 6.7 million in asset value. Portfolios at risk in 30 days (PAR), as well as risk coverage ratios, are 0.064 and 1.284 respectively. Rated by a rating organisation is 2.395 on average, regulated by government authority is 57.5% and internationally affiliated is 56.3% of MFIs in Bangladesh are internationally affiliated.

Table 4 Descriptive statistics

Variables	*Acronyms*	*Obs.*	*Mean*	*Std. dev.*	*Min*	*Max*
Institutional sustainability						
Operational self-sufficiency	OSS	1,040	1.314	0.381	0.346	2.984
Financial self-sufficiency	FSS	1,040	1.215	0.353	0.320	2.760
Return on assets	ROA	1,040	0.043	0.095	–0.792	0.895
Outreach to the poor						
Number of active borrowers	Breadth	1,040	4.613	0.779	2.699	6.903
Depth	Depth	1,040	3.804	0.779	1.856	6.092
Independent variables: stakeholders participation on boards						
Board size	BSize	1,040	8.023	1.435	7	13
CEO duality	CEODu	1,040	0.909	0.287	0	1
Independent	Ind	1,040	0.486	0.089	0.30	0.714
Employees	Emp	1,040	0.235	0.089	0.10	0.428
Donor	Dor	1,040	0.113	0.044	0	0.143
Clients	Cli	1,040	0.175	0.064	0.077	0.285
Women	Wom	1,040	0.305	0.142	0.125	0.818
Internal audit	InA	1,040	0.131	0.337	0	1
Control variables						
Portfolio risk @ 30 days	PoR	1,040	0.064	0.064	–0.002	0.476
Risk coverage	RiC	1,040	1.284	1.269	–0.004	11.888
Rating	Rat	1,040	2.395	1.185	1	5
Regulated	Reg	1,040	0.575	0.495	0	1
Affiliation	Aff	1,040	0.563	0.496	0	1
Control and moderating variables						
MFI age	Age	1,040	26.697	8.781	4	51
MFI size	lnSize	1,040	6.722	0.838	4.714	9.414

Table 5 presents the multicollinearity effects among the explanatory variables. The results showed that there was no strong correlation between the variables. The highest correlation exists between employees and clients, at 0.531, which is not greater than 0.80. According to Kennedy (2008), there is no multicollinearity indication if the correlation value between variables is less than 0.80. Additionally, this study computed the variance inflation factor (VIF) to recognise severe multicollinearity for the explanatory variables. The VIFs ranged from 1 to 10, and none of the variables was greater than 10. The mean VIF was 1.82, ranging from 1.26 to 3.18, where all variables except ratings (which has a VIF equal to 3.18) and the rest of the VIF values were below 2.5. This suggests that there is no high level of multicollinearity.

Table 5 Correlation matrix for explanatory variables

	BSize	*CEODu*	*Ind*	*Emp*	*Dor*	*Cli*	*Wom*	*InA*	*PoR*	*RiC*	*Rat*	*Reg*	*Aff*	*Age*	*lnSize*
BSize	1														
CEODu	–0.018	1													
Ind	–0.331	0.130	1												
Emp	–0.262	–0.236	0.490	1											
Dor	–0.288	0.225	–0.214	–0.112	1										
Cli	–0.201	0.043	0.434	0.531	0.219	1									
Wom	0.031	0.126	0.251	0.130	–0.141	–0.019	1								
InA	0.033	0.032	0.151	0.193	–0.191	–0.072	0.162	1							
PoR	0.108	0.023	–0.147	–0.086	0.107	0.062	–0.022	–0.122	1						
RiC	0.116	–0.046	–0.005	–0.138	–0.047	–0.054	–0.079	–0.099	–0.321	1					
Rat	0.324	0.178	–0.120	–0.120	0.085	0.025	0.431	0.200	–0.104	0.053	1				
Reg	–0.014	0.013	–0.151	0.032	0.156	0.034	0.249	0.125	–0.006	–0.051	0.457	1			
Aff	0.089	–0.074	–0.071	0.073	0.031	–0.015	0.336	0.249	0.075	–0.087	0.327	0.427	1		
Age	0.136	0.044	–0.096	–0.039	0.201	0.100	0.085	–0.027	0.201	0.014	0.098	0.139	0.249	1	
lnSize	0.261	0.118	–0.079	–0.095	0.125	0.099	0.263	0.176	0.015	–0.062	0.697	0.392	0.399	0.357	1

Table 6 Relationships among stakeholders on boards and MFI performance in Bangladesh (*before moderation by MFI, age, and size*)

Variables	*Equation (1)*	*Equation (2)*	*Equation (3)*	*Equation (4)*	*Equation (5)*
	Institutional sustainability			*Outreach*	
	OSS	*FSS*	*ROA*	*Breadth*	*Depth*
Board size	0.067*** (3.46)	0.062*** (3.46)	0.040* (1.56)	–0.040*** (–4.51)	–0.091*** (–4.02)
CEO duality	0.152*** (2.30)	0.141*** (2.51)	0.038*** (3.37)	–0.159*** (–4.10)	–0.158*** (–4.16)
Independent	0.673*** (3.69)	0.640*** (3.69)	0.055 (1.16)	0.839*** (5.18)	0.922*** (5.58)
Employees	–0.186 (–1.02)	–0.173 (–1.02)	–0.099 (–0.20)	0.552*** (3.50)	–0.954*** (–3.63)
Donor	–0.023 (–0.07)	–0.021 (–0.07)	–0.074 (–0.86)	0.826*** (2.85)	0.891*** (3.02)
Clients	0.352 (1.41)	0.326 (1.41)	0.160*** (2.50)	1.768*** 8.16	1.742*** (7.89)
Women	–0.391*** (–3.83)	–0.362*** (–3.83)	0.025 (0.97)	–0.429*** (–4.86)	–0.471*** (–2.49)
Internal audit	0.079** (2.15)	0.073** (2.15)	0.018 (1.24)	–0.258*** (–8.01)	–0.277*** (–7.33)
Portfolio risk	–0.627*** (–3.16)	–0.580*** (–3.16)	–0.283*** (–5.57)	0.543*** (3.17)	0.491*** (2.81)
Risk coverage	–0.032*** (–3.32)	–0.030*** (–3.32)	0.013 (0.05)	0.041 (0.52)	0.015 (0.18)
Rating	–0.029* (–1.74)	–0.027* (–1.74)	–0.017*** (–2.51)	0.106*** (7.37)	0.115*** (7.51)
Regulated	0.049 (0.02)	0.046 (0.02)	0.024*** (3.33)	–0.143*** (–5.91)	–0.138*** (–5.60)
Affiliation	–0.034 (–1.24)	–0.032 (–1.24)	–0.029*** (–4.13)	0.115*** (4.77)	0.118*** (4.84)
MFIs age	0.089*** (5.99)	0.083*** (5.99)	0.018*** (4.71)	0.053*** (4.16)	0.045*** (3.39)
MFIs size	1.310** (2.15)	1.21** (2.17)	–0.088* (–1.62)	0.801*** (9.30)	0.494*** (3.43)
Constant	0.746*** (4.29)	0.689*** (4.29)	0.033** (1.74)	–0.879*** (–5.85)	–1.71*** (–11.15)
Number of observations	1,040	1,040	1,040	1,040	1,040
F (27, 12)	3,037.52	3,037.52	987,383.80	9,094.22	118,434.12
Prob. > *F*	0.0000	0.0000	0.0000	0.0000	0.0000
R-squared	0.1693	0.1693	0.1263	0.8587	0.8782
Root MSE	0.3522	0.3258	0.0905	4.0e+05	0.2758

Notes: The breadth and MFIs age variable is in natural logs. The *t*-tests are presented in parentheses, and ***$p < 0.01$, **$p < 0.05$, and *$p < 0.1$ represent statistically significant values.

4.2 Inferential analysis

Table 6 presents the inferential relationships that board size has a significant positive impact on profitability and operational efficiency. However, it has a significant negative impact on social outreach.

Table 7 Relationship among stakeholders on board and MFIs performances in Bangladesh (*after moderation of MFIs' age and size*)

Variables	*Equation (1)*	*Equation (2)*	*Equation (3)*	*Equation (4)*	*Equation (5)*
	Institutional sustainability			*Outreach*	
	OSS	*FSS*	*ROA*	*Breadth*	*Depth*
Board size	0.067*** (3.46)	0.062*** (3.46)	0.040* (1.56)	–0.040*** (–4.51)	–0.091*** (–4.02)
CEO duality	0.152*** (2.30)	0.141*** (2.51)	0.038*** (3.37)	–0.159*** (–4.10)	–0.158*** (–4.16)
Independent	0.673*** (3.69)	0.640*** (3.69)	0.055 (1.16)	0.839*** (5.18)	0.922*** (5.58)
Employees	–0.186 (–1.02)	–0.173 (–1.02)	–0.099 (–0.20)	0.552*** (3.50)	–0.954*** (–3.63)
Employees * size	0.304* (1.83)	0.282* 1.83	0.569 (0.80)	0.660*** (6.13)	0.464*** (3.39)
Employees * age	0.136 (0.62)	0.015 (0.62)	0.079 (1.03)	0.034*** (9.24)	0.038*** (7.54)
Donor	–0.023 (–0.07)	–0.021 (–0.07)	–0.074 (–0.86)	0.826*** (2.85)	0.891*** (3.02)
Donor * size	0.659*** (5.39)	0.460*** 3.39	0.241 (1.05)	0.059 (0.90)	0.911*** (2.02)
Donor * age	0.145*** (3.64)	0.134*** (3.64)	0.022** (2.48)	0.425*** (8.09)	0.423*** (8.14)
Clients	0.352 (1.41)	0.326 (1.41)	0.160*** (2.50)	1.768*** 8.16	1.742*** (7.89)
Women	–0.391*** (–3.83)	–0.362*** (–3.83)	–0.025 (–0.97)	–0.429*** (–4.86)	–0.471*** (–2.49)
Women * size	0.079 (0.75)	0.073 (0.75)	0.284 (0.57)	0.082 (1.67)	0.295*** (2.27)
Women * age	0.021* (1.99)	0.019* (1.92)	0.018 (0.44)	0.013** (2.87)	0.137** (2.60)
Internal audit	0.079** (2.15)	0.073** (2.15)	0.018 (1.24)	–0.258*** (–8.01)	–0.277*** (–7.33)
Portfolio risk	–0.627*** (–3.16)	–0.580*** (–3.16)	–0.283*** (–5.57)	0.543*** (3.17)	0.491*** (2.81)
Risk coverage	–0.032*** (–3.32)	–0.030*** (–3.32)	0.013 (0.05)	0.041 (0.52)	0.015 (0.18)
Rating	–0.029* (–1.74)	–0.027* (–1.74)	–0.017*** (–2.51)	0.106*** (7.37)	0.115*** (7.51)

Notes: The breadth and MFI age variables are presented in natural logs. The *t*-tests are presented in parentheses, and ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$ represent statistically significant values.

Table 7 Relationship among stakeholders on board and MFIs performances in Bangladesh (*after moderation of MFIs' age and size*) (continued)

Variables	*Equation (1)*	*Equation (2)*	*Equation (3)*	*Equation (4)*	*Equation (5)*
	Institutional sustainability			*Outreach*	
	OSS	*FSS*	*ROA*	*Breadth*	*Depth*
Regulated	0.049 (0.02)	0.046 (0.02)	0.024*** (3.33)	–0.143*** (–5.91)	–0.138*** (–5.60)
Affiliation	–0.034 (–1.24)	–0.032 (–1.24)	–0.029*** (–4.13)	0.115*** (4.77)	0.118*** (4.84)
MFIs age	0.089*** (5.99)	0.083*** (5.99)	0.018*** (4.71)	0.053*** (4.16)	0.045*** (3.39)
MFIs size	1.310** (2.15)	1.21** (2.17)	–0.088* (–1.62)	0.801*** (9.30)	0.494*** (3.43)
Constant	0.746*** (4.29)	0.689*** (4.29)	0.033** (1.74)	–0.879*** (–5.85)	–1.71*** (–11.15)
Number of observations	1,040	1,040	1,040	1,040	1,040
F (27, 12)	3,037.52	3,037.52	987,383.80	9,094.22	118,434.12
Prob. > F	0.0000	0.0000	0.0000	0.0000	0.0000
R-squared	0.1693	0.1693	0.1263	0.8587	0.8782
Root MSE	0.3522	0.3258	0.0905	4.0e+05	0.2758

Notes: The breadth and MFI age variables are presented in natural logs. The t-tests are presented in parentheses, and ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$ represent statistically significant values.

Considering the moderating effects of size and age presented in Table 7, it has been identified that MFIs with more experience and valuable assets can more effectively engage donor representatives' participation in the boards.

5 Discussion

Our findings align with the view of Hartarska and Mersland (2012), where the board size of up to eight or nine members have significant effects on microfinance performance. The results also concord with the outcomes of CG studies (Fama and Jensen, 1983; Herdhayinta, 2014; Jensen and Meckling, 1976; Mori and Mersland, 2014; Rashid et al., 2010). CEO duality has a significant impact on microfinance sustainability; however, it is a barrier to outreach. This outcome is consistent with existing banking literature on the linear impact of CEO dualism (John et al., 2007; Lai and Choi, 2014; Lanka, 2013). The findings amplify the recommendation of Jensen and Meckling (1976) and Shleifer and Vishny (1997) that CEO duality improves value and increases organisational performance. It partially supports stewardship and stakeholder propositions (Zollinger, 2009). Stewardship theory claims that a motivated agent maximises and protects owners' wealth (Davis et al., 1997). Likewise, stakeholder theory encourages board members to maximise stakeholders' interests rather than the organisation's interests (Freeman, 2010).

In contrast, agency theory claims that the owner's interests may differ from the manager's interests (Dey, 2008). These findings support stewardship and stakeholder tenets but reject agency tenets. One of the explanations of this finding is that the founders of MFIs are motivated by their social contributions to poverty alleviation and prioritise social implications than personal benefits which differ from the classic business ventures (Mohiuddin et al., 2013).

Governance practices recognise that a corporate board performs better when it has independent director/s. They act fairly without bias and contribute to organisational performance. The findings suggest that the presence of unaffiliated directors significantly affects MFI sustainability and outreach performance (Beisland et al., 2020; Dato et al., 2019; Hussain et al., 2021; Rashid, 2015a; Thrikawala et al., 2016). Similar findings are consistent with the stakeholder principle (Christopher, 2010; Donaldson and Davis, 1994; Freeman, 2010; Osmani and Mahmud, 2015; Sharif and Wei, 2014; Zollinger, 2009; Mohiuddin et al., 2022). Stakeholders, such as clients, employees, female clients, donors, and internal auditors, have mixed outcomes. The presence of employees on the board has an inverse relationship with MFI financial sustainability; however, it has a significant positive relationship with the breadth of outreach. This result differs from the empirical findings of Benedetta et al. (2015), Hartarska (2005), Hartarska and Mersland (2012), Kar (2013) and Kyereboah-Coleman and Osei (2008). These studies claim that employees always support the view of organisational progress rather than that of social objectives. Therefore, this study considers MFI size and age as moderation variables and reveals that they have a positive association with MFI double bottom-line performances. Donor participation on the board of MFIs has a statistically significant and positive effect on the target and reach-out to poorer clients. There is greater moral pressure if the representative of the donor on the MFI board advocates social outreach to the poor. Chenuos et al. (2014), Gutiérrez-Goiria and Goitisoio (2011), Hermes and Lensink (2011) and Im and Sun (2015) recommended donor representative/s to include in the board of MFIs.

Clients' participation on the board is vital for ensuring outreach performance for MFIs. They found a significant positive relationship between the breadth and depth of outreach, concurring with previous studies (Beisland et al., 2020; Van Damme et al., 2016; Im and Sun, 2015; Mori and Mersland, 2014; Strøm et al., 2015). Internal auditor participation on boards yields more institutional transparency for its stakeholders, a positive effect on MFI sustainability, and a negative effect on outreach. This suggests that internal auditors tend to be biased towards management. Previous studies have suggested that internal auditor participation on boards may have negative effects; however, in the long run, it is beneficial for both institutional sustainability and outreach (Hussain et al., 2019; Jermias and Gani, 2014; Mori and Mersland, 2014; Singapurwoko, 2014; Thrikawala et al., 2016). Microfinance empowers women through financial inclusion. Studies have revealed that men have a wide range of sources from which to access credit, but most women receive their first loan from an MFI. This study considers female participation in boards as an important factor. It identified that women on the board have a significant negative relationship with MFIs' dual performance. Preliminary analysis in the literature review suggested that women on the board might have positive effects on outreach performance but negative effects on institutional sustainability performance (Estape-Dubreuil and Torreguitart-Mirada, 2015; Gutiérrez-Goiria and Goitisoio, 2011; Hartarska and Mersland, 2012; Hermes and Lensink, 2011; Strøm et al., 2014). Although it further considers MFI age and size may have moderating effects; experienced MFI with more asset value has a good opportunity to accommodate a more significant percentage of women on their boards, as has happened in organisations like BRAC and Grameen Bank (Khandker and Samad, 2014).

6 Conclusions

This study examined the effects of stakeholders on MFI boards, such as board size, CEO duality, independent directors, employees, donors, clients, women, and internal board auditors. It drew on a database of 80 MFIs with over 13 years of operations in Bangladesh. The research framework follows a multi-theoretical approach, which includes agency theory from economics, as well as three management theories: stewardship, stakeholder, and resource dependence theories. It applies a variety of quantitative approaches to analyse data and find meaningful outcomes. Descriptive statistical analytical tools were used to identify the outcomes for individual variables. The panel data regression model was applied to classify the inferential statistical results within and between variables.

The results indicate that the average board size of MFIs is eight members, and it has significant positive effects on institutional sustainability and negative effects on outreach performance. CEO duality has significant positive effects on sustainability, while demonstrating the opposite effect for outreach. This result supports stewardship theory, but not economics theory of agency. Stakeholder participation on boards has mixed results; however, it found a similar relationship from previous studies. It also utilised MFI age and size as moderating variables because employee, donor, and female participation on boards did not comply with the existing literature. After considering the age and size of MFIs as moderating variables, it complies with existing theories. It claims that MFIs that have experience with greater financial capabilities are capable of accommodating multiple stakeholders on their boards to ensure both sustainability and outreach, the two fundamental objectives of MFIs. Our research demonstrates that no single board member can ensure both objectives. Rather, we need to draw board members from across stakeholders both internally and externally to ensure achieving both the objectives of institutional sustainability and outreach. MFIs in general, and large and experienced MFIs in particular, need to have a diversified board where multiple objectives and ways to achieve them will be shared and assessed from different perspectives for future strategic directions of the organisation. Therefore, this study recommends that policymakers appoint an independent social director on board to ensure social outreach along with institutional (i.e., financial) sustainability. Due to increasing commercial source of capital of MFIs, the later focus increasingly on achieving financial performance. By including an independent social director, MFIs can ensure their fundamental raison d'être by protecting the interests of poorer target groups to ensure that MFIs adhere to their social objectives.

This study faced a variety of constraints, with the most significant being data availability due to institutional void and absence of culture of disclosure of organisational data. In Bangladesh, there are no centralised data sources for MFIs. Most of them operate as NGOs and have no obligation to disclose their reports publicly, thereby limiting or possibly limiting the data. This study utilises data from 2006 to 2018; thus, it offers a snapshot of the largest market of MFIs. To further ensure robust research on the topic, we believe that future researchers can embed qualitative research methodology along with quantitative approaches. Mixed methods can be more effective for explaining governance factors and their impact on MFIs' performance. Moreover, one limitation of this study is that it was based on only 80 MFIs in a single country. Future studies can target larger samples from several countries to test whether our findings remain valid or differ depending on the differences between markets or any other control variables.

Acknowledgements

We would like to express our gratitude to Thammasat Business School for supporting this research. Additionally, we thank all participants for providing valuable data. Furthermore, we thank the blind reviewers and editor for their constructive remarks, which helped us significantly improve our article.

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