Board structure-performance relationship in microfinance institutions (MFIs) in an emerging economy

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Abstract

Purpose – *The purpose of this paper is to investigate the relationship between board structure, financial performance and outreach of microfinance institutions (MFIs) in Sri Lanka, using unbalanced panel data for 300 MFI-year observations for the period 2007 to 2012.*

Design/methodology/approach – *Empirical research relating to governance practices in MFIs is still in its infancy, and further studies are needed to determine how improved governance practices may enhance sustainability and outreach of MFIs, especially in emerging economies. The authors use regression techniques to examine whether board structure has an influence on MFI performance.*

Findings – *After controlling for internal corporate governance variables, regulatory status, size, age, leverage and year effects, the authors report that board structure does contribute to the financial performance and outreach of MFIs in Sri Lanka.*

Research limitations/implications – *The availability of data in the public domain captures the major MFIs but does constrain the generalisability of findings.*

Practical implications – *This study enables individual MFIs to evaluate potential restructuring of their boards to promote a dual mission and achieve a more accelerated economic development.*

Social implications – *The findings may encourage policy makers to promulgate policy guidelines to deepen MFI outreach to the poorest people.*

Originality/value – *Inconsistent findings in prior studies and a general lack of empirical results for the microfinance industry have led to an unclear message regarding corporate governance and MFI performance. This study fills the research gap, contributing to the existing corporate governance literature in the microfinance sector and providing evidence from an emerging economy.*

Keywords *Sri Lanka, Financial performance, Outreach, Panel data, Board structure, Microfinance institutions (MFIs)*

Paper type *Research paper*

Introduction

This study analyses the relationship between board structure and performance of microfinance institutions (MFIs) in Sri Lanka. The microfinance literature emphasises the importance of enhancing the viability of the industry in developing countries through better governance (Hartarska, 2005; Mersland, 2011; Mersland and Strøm, 2009). It is also widely recognised by microfinance practitioners that improved governance practices can lead to improved performance (Bassem, 2009; Cull *et al.*, 2007; Hartarska, 2009; Hartarska and Nadolnyak, 2007; Mersland, 2009).

However, only a scant number of studies that exist test the impact of board governance on performance of MFIs. Furthermore, studies that examine the nexus between board structure and performance report inconclusive and conflicting evidence relating to different contextual settings (Abdullah, 2004; Dalton *et al.*, 1998; Kiel and Nicholson, 2003; Weir *et al.*, 2002). Therefore, it has been argued that governance practices are very much country specific, relating to history, the nature of the MFIs and the importance they have within a country (Wijesiri *et al.* 2015).

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Our motivation to study the relationship between board structure and performance of MFIs in Sri Lanka stems from a belief that research can contribute to better outcomes in practice. A study of corporate governance and microfinance performance in Sri Lanka is significantly important, as microfinance plays a significant role in the growth of that country's economy (CBSL, 2012; Wijesiri *et al.*, 2015). Following the tsunami devastation, which struck Sri Lanka in 2004, an influx of foreign aid was channelled into the microfinance sector, and it triggered the emergence of many non-governmental MFIs (NGO-MFIs). A recent study, conducted by Wijesiri *et al.* (2015), finds that MFIs in Sri Lanka do not perform well financially or socially.

This study finds that financial performance of MFIs in Sri Lanka improves when there is a female CEO, a female chair or a client representative on an MFI board. The empirical results also show a statistically significantly negative relationship between female directors, non-executive directors, international/donor representation on boards and the financial performance of MFIs in Sri Lanka. Proportion of female directors and female chairs on MFI boards shows inconclusive evidence in relation to outreach. International/donor representation on MFI boards improves outreach, whereas client representation on boards is negatively correlated with MFI outreach.

The findings of this study contribute to the existing literature relating to governance practices in MFIs in several ways. This study uses Sri Lankan MFI data which are more country specific, richer, timely and not previously examined. It provides evidence of what aspects of board governance need to be strengthened and how much impact each individual component has on MFI financial performance and outreach. The findings may enable individual MFIs to restructure their boards and may promulgate policy guidelines to build better outcomes. Finally, potential changes signalled as likely to have positive results may, if promoted, accelerate economic development in a country recovering from 30 years of terrorism.

The remainder of this paper is structured as follows. Section 2 provides a brief introduction to MFIs in Sri Lanka, and Section 3 provides a review of the literature relating to board structure and the development of hypotheses. Data collection and research methods are described in Section 4. Finally, findings are discussed and the paper concludes with implications of the study.

Microfinance institutions in Sri Lanka

The financial system of Sri Lanka consists of a long list of formal financial institutions, including the Central Bank of Sri Lanka (CBSL), Licensed Commercial Banks, Licensed Specialised Banks (LSBs), Registered Finance Companies, Specialised Leasing Companies, Insurance Companies, unit trusts, merchant banks, venture capital companies, authorised primary dealers, stock brokers and dealers and contractual savings institutions such as the Employees' Provident Fund and the Employees' Trust Fund. However, most of the formal banking sector and capital market systems in Sri Lanka focus on people who already have wealth and are better established. Due to the lack of contribution to low-income people by the formal banking sector, MFIs have a great opportunity to play a significant role at the macro level to eradicate poverty in Sri Lanka.

Sri Lanka is currently recovering from 30 years of devastating war and terrorism, only enjoying peace and harmony since May 2009. It is imperative for Sri Lanka to lift economic development, and the enhancement of microfinance activities has become a major economic development goal (CBSL, 2012) because MFIs represent a considerable proportion of the financial sector in Sri Lanka. At present, various types of MFIs in Sri Lanka operate with the objective of providing loans to poor people (GTZ-ProMiS, 2010) under different regulation and ownership structures, such as commercial banks, finance companies, guaranteed companies, co-operative societies and NGO-MFIs. The precise number of MFIs in Sri Lanka cannot be readily determined due to the diverse legal forms in the microfinance sector. The number of informal service providers, such as

moneylenders, thrift and saving societies, cannot be identified due to their informality. According to the Lanka Microfinance Practitioners' Association (LMFPA), there were 43 ordinary members and 25 associate members registered in 2015 as microfinance providers in Sri Lanka.

The Government of Sri Lanka is playing a key role in strengthening the regulatory and supervisory framework for financial services and in the delivery of microfinance services to low-income people. Various government initiatives in the microfinance sector have been implemented from time to time. Approximately, 65 per cent of microcredit in Sri Lanka is provided through the government. The Samurdhi Development Programme, which was introduced in 1995, replacing the previous Janasaviya Programme, is the largest microfinance programme in Sri Lanka (Modoran and Grashof, 2009) and is the government's poverty alleviation programme, targeting the low-income population.

However, there is no specific regulatory and supervisory authority that regulates and/or monitors microfinance activities in Sri Lanka. As a consequence, some MFIs are regulated by many authorities, and some may not be regulated at all. Formal MFIs are regulated by the banking and non-banking regulations. But this does not apply to semi-formal institutions, especially the NGO-MFIs, which receive substantial donor support for their operations. Even though these institutions are regulated to a certain extent, unlike the formal financial institutions (commercial banks and LSBs), these regulations are not compulsory. For example, an NGO's registration under a Financial Act is optional.

Although MFIs have matured over decades in Sri Lanka, most are not sustainable. The absence of a cohesive regulatory and supervisory system for the microfinance sector has, in recent years, become a barrier to growth of the sector (Modoran and Grashof, 2009). Modoran and Grashof (2009) argue that the growth of the microfinance industry in Sri Lanka can be improved by adopting best practice guidelines and having a supporting regulatory environment. Therefore, it is important to have a sensible regulatory framework for MFIs in Sri Lanka, similar to the banking industry. As a result, in June 2015, LMFPA introduced a new draft legal framework for the regulation and supervision of MFIs in Sri Lanka.

Presumably, the formal sector regulations are more effective than those of the semi-formal and informal sectors, in terms of internal controls, governance and ownership structure (Haq *et al.*, 2008). To attract support from investors and donors and to compete successfully with other worthy causes for donor funds, MFIs need to run their micro financing activities more transparently (Caudill *et al.*, 2009). Investors are also turning their attention to the characteristics and quality of MFIs' governing bodies (Otero, 2005). Unappealing governance practices may damage an MFI's reputation and increase the challenge faced in attaining a sustainable position in the microfinance industry (Caudill *et al.*, 2009; Hartarska and Nadolnyak, 2007; Lapenu and Pierret, 2006; Sinclair, 2012). The findings of this study are of significance for the analysis of policy implications of the microfinance sector in this recovering country.

Literature review

Unlike other sectors, MFIs have unique characteristics, which complicate board governance studies (Hartarska, 2005). These institutions have to accomplish both financial performance and outreach to the poor. Also, there are different organisational settings for MFIs which are often registered and supervised by one or more regulatory bodies. This study investigates the relationship between board structure, financial performance and outreach performance of MFIs in Sri Lanka. The structure of the board is one of the key elements in corporate governance studies and represents the formal organisation of the board of directors. Board structure, its membership and the directors' performance are important issues that are being debated in on-going reviews and in circumstances where a key change in legislation or new codes of best practice are proposed. Scholars have identified that boards of directors and their structure in a

firm are an internal governance mechanism that helps to monitor and, if necessary, control management behaviour on behalf of the stakeholders of the firm (Cornforth and Edwards, 1999; Dalton *et al.*, 1998; Huse, 2007). In this study, we use the following measures in our analysis of the relationship between board structure and MFI performance in Sri Lanka.

Proportion of female directors on boards

Proportion of female directors on board (*FemDir*) is based on the number of female directors divided by the total number of board members (Arena *et al.*, 2015). In recent articles on gender diversity, female representation on boards has attracted attention as part of advocacy initiatives for women's equal rights. It is suggested that female directors on boards are more efficient and are more active monitors than male directors (Adams and Ferreira, 2009). Liu *et al.* (2014) find that corporate boards with three or more female directors have a strong impact on firm performance when compared with those with fewer. Deschênes *et al.* (2015) reveal that corporate social responsibility (CSR) scores are positively linked to the percentages of women in Canada's largest publicly traded firms. In 2012, in the European Union, 211 publicly listed construction companies from 28 different countries showed that women's "critical mass" rather than their single presence had a positive effect on firm performance (Arena *et al.*, 2015). Darko *et al.* (2016) also find positive link between female representatives on board and firm performance. However, female representation on corporate boards is very low, and various efforts have been undertaken to increase their number on corporate boards (Adams and Ferreira, 2009).

In the microfinance industry, women's leadership grasps more attention than traditional firms do, as women borrowers are a specially targeted clientele by MFIs, and they are very successful in serving women clients (Aggarwal *et al.*, 2015; Strøm *et al.*, 2014). As a result, these institutions are frequently operated by women employees, and the female proportion of directors is much higher than the corresponding figures in other industries. For example, Strøm *et al.* (2014) state that around 29 per cent of the all-board seats are held by women in MFIs, which is a reasonably high number when compared to other types of firms. Therefore, this study uses the *FemDir* variable to identify its impact on MFI performance.

In the MFI context, Bassem (2009) and Chakrabarty and Bass (2014) note that board diversity with a higher percentage of women enhances MFI performance by lowering operating costs. After a study of 240 The Young Men's Christian Association (YMCA) organisations, Siciliano (1996) highlights that gender diversity has a positive impact on social performance, but a negative impact on the amount of funds received.

Aligning with prior studies on gender diversity, we will test the following relationship propositions:

H1. There is a positive relationship between female directors on the board and performance of MFIs in Sri Lanka.

Female CEOs

A potentially important variable of MFI governance studies is female leadership. To a great extent, microfinance is a business for women, run by women. Strøm *et al.* (2014) state that 27 per cent of CEOs in their sample are females. It is suggested that women leaders are a good communication channel to connect with their female customers and women in the labour force due to their different life experiences and perspectives (Liu *et al.*, 2014). Furthermore, prior research points out that the firms with female executives make better decisions and create better value for their shareholders than their male counterparts (Huang and Kisgen, 2013).

Liu *et al.* (2014) state that female executive directors have a strong positive effect on firm performance. Investors also react more favourably to major corporate finance decisions made by firms with female executives (Huang and Kisgen, 2013, p. 835). Female

leadership is an important determinant of stock market performance. Ayadi *et al.* (2015) find that the appointment of women to management positions of the Nigerian Stock Exchange is associated with better performance. Similarly, in the MFI industry, Strøm *et al.* (2014) and Mersland and Strøm (2009) find a positive relationship between female CEO and MFI performance. Therefore, it is important to include the female CEO (*FemCEO*) variable for governance studies in the microfinance sector, and the following is our second hypothesis:

H2. There is a positive relationship between a female CEO on the board and performance of MFIs in Sri Lanka.

Female chairpersons

Female chairperson (*FemChair*) highlights whether a female director chairs the board. From a panel of more than 2,000 Chinese listed firms for the period 1999-2011, Liu *et al.* (2014) find that 4.1 per cent of board chairpersons are females. This situation differs in the microfinance sector. A global panel of 329 MFIs in 73 countries indicates that 23 per cent of MFIs have a female as chair (Strøm *et al.*, 2014). Furthermore, they reveal that a female chair is positively related to MFI performance. It is import to know whether a female chair can improve the performance of MFIs in Sri Lanka. *FemChair* variable is used to find the relationship between board structure and performance of MFIs in Sri Lanka, by using the following hypothesis:

H3. There is a positive relationship between a female chairperson on the board and performance of MFIs in Sri Lanka.

International/donor representatives on boards

International/donor agencies are key stakeholders of MFIs, as MFIs are highly dependent on the international donors' funds (CGAP, 2006). Most non-profit MFIs are mainly promoted by international donor organisations, and so it is common for MFIs to have international/donor representatives on their boards. This variable has been recognised by prior studies in the MFI sector (Hartarska, 2005; Mersland and Strøm, 2009). International directors on the board increase managerial expertise, creativity and innovation of boards (García-Meca *et al.*, 2015). Non-profit MFIs are mainly promoted by international/donor organisations, as they devote significant resources to microfinance activities, and they represent the vertical dimension of the firm network (Mersland, 2009). Large donors in non-profit organisations act in a way similar to blockholders in for-profit organisations by ensuring that the organisation's resources are used in an effective manner (de Andrés-Alonso *et al.*, 2006). Frumkin and Kim (2001) state that large donors act like efficient monitors with their skill and power by demanding detailed plans, budgets and information for each project, even though these investments may offer minimum returns but have a social value. However, Mersland and Strøm (2009) report that when boards comprise international directors, MFI performance can still fall. Hartarska (2005) illustrates how MFIs with more donor representatives have better outreach but worse financial performance, as they strongly focus on increasing outreach to the under-served people at their own cost (fund). Therefore, it is important to examine the impact of international/donor agency representatives (*IndorDir*) on MFI performance for evidence as to whether diversity of board structure improves performance. Our fourth hypothesis is as follows:

H4. MFI performance will be positively related to international directors and/or directors representing donors/fund providers on the board.

Client representatives on boards

There is a discussion in the microfinance industry about whether MFI boards should have client representatives (*ClientDir*), as evidence suggests that board structure impacts firm performance (García-Meca *et al.*, 2015; Hartarska, 2005). Proponents argue that client representatives on MFI boards help to provide precise information on the target market. Mersland (2009) argues that it is important to have client representation on MFI boards, as they

are also one of the major stakeholders. Incorporation of client representatives, who represent the horizontal dimension of the MFI network, to the MFI board increases board diversity and is also valuable for MFI performance. Research has identified that diversified boards tend to produce unique information sets for management and reduce any information asymmetry, which results in more effective and efficient decisions (Carter *et al.*, 2010; García-Meca *et al.*, 2015). Client representatives on MFI boards tend to give more precise information on market behaviour and its demand for MFI loan products. Therefore, it is important to evaluate the role of these directors on MFI boards to see whether a mix of board member skills can affect the efficiency of board decisions and, ultimately, firm performance:

H5. MFI performance will be positively related with directors representing clients/ borrowers.

Outside directors on boards

Fama and Jensen (1983) suggest that firm boards need to consist of inside and outside directors. Outside directors provide a more effective monitoring of management than inside directors. Agency theory suggests that boards of directors should be configured largely, if not exclusively, of independent directors, outside of management, to achieve better performance (Muth and Donaldson, 1998). Lorsch and MacIver (1989, p. 17) state that:

> [. . .] there has been a growing predominance of outside directors who are there not only to provide a new perspective to top management's thinking, but also to provide the necessary oversight only possible from an outsider.

The proportion of independent directors is an important characteristic for board governance, as it helps MFIs with effective monitoring. In an MFI context, Hartarska (2005) uses rated and unrated MFIs in Eastern Europe to investigate the relationship between corporate governance and MFI success. Her analysis indicates that more independent directors provide a better return on assets, whereas lower financial performance and outreach show when executive directors operate MFIs. Similarly, Kyereboah-Coleman and Osei (2008) observe that MFI boards with independent directors have a positive impact both on profitability and outreach. Canada's 60 largest public firms present evidence of a positive association between independent directors and social performance (Deschênes *et al.*, 2015). In line with agency theory and the findings of prior studies relating to MFIs, the proposed hypothesis connecting to outside directors (*IndDir*) and firm performance is:

H6. There is a positive relationship between outside/independent directors on the board and performance of MFIs in Sri Lanka.

Data, model and estimation methods

Data collection

The MFIs considered in this study encompass the formal and semi-formal institutions, conducting their microfinance activities under regulations, which includes 54 MFIs for Sri Lanka. This study collects data from the MFIs that are registered with the Microfinance Information Exchange market and LMFPA, which is the Sri Lankan microfinance network. Some information is collected from the individual institutions through their websites and by direct contact to address missing observations.

MFI performance is divided into financial performance and outreach. Four measures assess financial performance: operational self-sufficiency, return on assets, yield on gross loan portfolio and capital asset ratio. Operational self-sufficiency is the most widely used variable in any organisation to measure institutional performance, and it is a major indicator for MFI sustainability compared with other financial performance variables. Return on assets measures the ability of the MFI to use its total assets to generate returns (Microfinance Consensus Guidelines, 2003). Yield on gross portfolio is an indicator of the loan portfolio's ability to

generate financial revenue from interest, fees and commissions (Microfinance Consensus Guidelines, 2003). Capital asset ratio measures the risk that the institution has due to insufficient capital to continue its operations. MFI's outreach is measured in terms of number of clients served (breadth of outreach) and percentage of female borrowers on active borrowers. The definitions of variables used in the study are presented in Table I.

Table I Summary statistics

Variables	*Acronyms*	*Mean*	*Median*	*SD*	*Minimum*	*Maximum*	*Definition*
Financial performance variables							
Operational self-sufficiency	*OSS*	0.99	0.99	0.34	0.01	2.27	Operational self-sufficiency is the total financial revenue divided by the financial expenses, loan loss provision expenses and operating expenses
Return on assets	*ROA*	0.01	0.01	0.055	−0.24	0.27	Return on assets is the net income after tax and before donations divided by the total assets
Yield on gross loan portfolio	*YOGLP*	0.25	0.22	0.15	0.02	0.95	Yield on gross loan portfolio is the interest on loan portfolio and fees and commissions on loan portfolio divided by the gross loan portfolio
Capital asset ratio	*CA*	0.31	0.23	0.25	−0.1	1	Capital to asset is the total capital divided by the total assets
Outreach variables							
Number of active borrowers		29144	2205	92911	25	881353	
Breadth of outreach [LN(Active borrower)]	*Breadth*	8.16	7.70	2.03	3.22	13.7	The natural logarithm of the number of active borrowers in the MFI
Female borrowers on active borrowers (%)	*FemBorr*	0.81	0.88	0.19	0.30	1	The ratio of female borrowers to total number of active borrowers
Independent variables							
Female directors on board (%)	*FemDir*	0.43	0.33	0.33	0	1	The ratio of female directors to total number of directors on the board
Female CEO	*FemCEO*	0.34	0	0.47	0	1	Dummy explanatory variable that takes a value of one if the CEO of the firm in a female
Female chairperson	*FemChair*	0.4	0	0.49	0	1	Dummy explanatory variable that takes a value of one if the chairperson of the firm in a female
International directors/donor representatives on board (%)	*IntDorDir*	0.07	0	0.21	0	1	Dummy explanatory variable that takes a value of one if the firm has at least one international and/or donor director on its board
Client/borrower representatives on board (%)	*ClientDir*	0.07	0	0.16	0	0.8	Dummy explanatory variable that takes a value of one if the firm has at least one director representing clients/borrowers of the firm
Non-executive directors on board (%)	*IndDir*	0.67	0.71	0.22	0	1	The ratio of non-executive directors on the board to total number of directors on the board
Other governance variables							
Duality	*Duality*	0.26	0	0.44	0	1	Dummy explanatory variable that takes a value of one if the firm's CEO and chairperson are same
Board size (No. of board members)	*Bsize*	8.47	8	4.44	1	30	The total number of directors on the board
Internal audit function	*IntAudit*	0.31	0	0.46	0	1	Dummy explanatory variable that takes a value of one if the firm has an internal auditor reporting to the board
Control variables							
Regulated by banking authority	*Regbank*	0.13	0	0.34	0	1	Dummy variable that takes a value of one if the firm regulated by banking authority in the country
Firm age (No. of years)	*Fage*	12.8	12	8.05	1	41	The natural logarithm of the number of years from the date of establishment as an MFI
Firm size [LN(Total assets)]	*Fsize*	18.1	17.7	2.41	12.7	25	The natural logarithm of the firm's total assets
Leverage	*Lev*	0.69	0.77	0.25	0	1.1	The ratio of the firm's total debt to its total assets

Note: For interpretation purposes, number of active borrowers, international directors/donor representatives on board, client representatives on board and board size are calculated on the basis of levels instead of dummy and logarithm form. Only firm size is calculated based on logarithmic forms

According to Table I, the mean (median) of the *OSS* is 0.99 (0.99) and it is below one. This indicates that MFIs in Sri Lanka are not operating effectively, and this figure is similar to the mean *OSS* (0.92) obtained for MFIs operating in Central and Eastern Europe and newly independent states (Hartarska, 2005). Similar to the findings reported by Mersland and Strøm (2009) and Galema *et al.* (2012), the average *ROA* of MFIs in Sri Lanka is 1.3 per cent. This 1.3 per cent of *ROA* value is also obtained by half of the MFIs in Sri Lanka during 2007 to 2012. The average *YOGLP* of Sri Lankan MFIs is 25 per cent which is lower than an average portfolio yield for 379 MFIs from 73 countries reported by Mori and Mersland (2014) as 33 per cent. *CA* of Sri Lankan MFIs averages 31 per cent, which is much higher than African MFIs at 26 per cent (Lafourcade *et al.*, 2006).

In this study, the average number of active clients is approximately 29,000, where the median is 2,205, the minimum is 25 and the maximum is 881,353. Tchakoute-Tchuigoua's (2010) study results show that the average number of active borrowers for a world data set is 28,897 which is similar to the Sri Lankan situation. Due to the huge dispersion in the number of active clients (*Breadth*) in the sample, this study used natural logarithm transformation to condense the dispersion. In Sri Lanka, *FemBorr* represents 81 per cent of the total number of credit clients. The median value of 88 per cent indicates that 50 per cent of MFIs have less than 12 per cent male borrowers. A study conducted by Mersland and Strøm (2009) highlighted that 73 per cent of MFI customers around the world were females, which is a comparatively high proposition.

FemDir on the board is approximately 43 per cent, which is higher than the value obtained by Hewa-Wellalage *et al.* (2012) for listed companies in Sri Lanka (7.4 per cent). However, in the microfinance sector, Bassem (2009) and Kyereboah-Coleman (2006) highlight that on average, 40 per cent of boards are made up of women in euro-Mediterranean countries. MFIs with *FemCEO* are 34 per cent in Sri Lanka. Similarly, Mersland and Strøm (2009) and Galema *et al.* (2012) find in their study of around 280 MFIs in 60 countries that 23-25 per cent of CEOs are females. Findings of this study show that in Sri Lanka, 40 per cent of MFIs have a *FemChair* which is almost double the 22 per cent in a global panel of 379 microbanks in 73 countries (Strøm *et al.*, 2014).

Sri Lankan MFI boards have around 7.4 per cent of directors who represent *IntDorDir*, which is a very insignificant representation when compared with the literature (Galema *et al.*, 2012; Mersland and Strøm, 2009). Similar to the findings reported by Hartarska (2005) and Mersland and Strøm (2009), Sri Lankan MFIs have a smaller number of directors (7 per cent) on their boards who represent the *ClientDir*. Around 67 per cent of board members in Sri Lankan MFIs are *IndDir*. This average value is consistent with the findings of Hewa-Wellalage and Locke (2011) for Sri Lankan listed companies (61 per cent) because the new listing rule requires one-third of board members to be non-executive directors.

Model

Following Hartarska (2005), Kyereboah-Coleman and Osei (2008), Mersland and Strøm (2009) and others, this study has also used the panel data estimation methodology. The panel comprises 300 firm-year observations over the period 2007 to 2012. We use the following panel regression model to estimate the relationship between board structure and performance of MFIs in Sri Lanka:

$$\begin{aligned} Performance_{it} = {} & \alpha + \beta_1 FemDir_{it} + \beta_2 FemCEO_{it} + \beta_3 FemChair_{it} + \beta_4 IntDorDir_{it} \\ & + \beta_5 ClientDir_{it} + \beta_6 IndDir_{it} + \beta_7 Duality_{it} + \beta_8 Bsize_{it} + \beta_9 IntAudit_{it} \\ & + \beta_{10} Regbank_{it} + \beta_{11} Fage_{it} + \beta_{12} Fsize_{it} + \beta_{13} Lev_{it} + year\ dummies \\ & + organisation\ type\ dummies + \varepsilon_{it} \end{aligned}$$

where, *i* indexes firm observations which takes 1-n, *t* indexes time which takes the values of 2007 to 2012, α denotes the intercept of the straight line and β denotes the slope of the regression line.

Method

An ordinary least squares (OLS) model was considered for estimating the unknown parameters for a multiple linear regression formulation. Due to the simultaneous causality and unobserved heterogeneity, the explanatory variables may be endogenous and correlated with the residuals (ε) in the regression model, offending requirements for using an OLS model where all the independent variables should be exogenous (De-Min, 1973). To overcome this problem, the two methods, fixed-effect and random-effect, are used normally to diagnose the unobserved factors in panel model. In a fixed-effect model, the parameter estimation of the dummy variable is a part of an intercept, and it allows the unobserved individual effect to be correlated with other variables in the model (Greene, 2012). A major weakness in the fixed-effect model is that it cannot accommodate variables which are time invariant, such as regulatory status, which is fixed for a span of time (Hartarska and Nadolnyak, 2007). Whereas the random-effect model explores the differences in error term across the individual firm and period. Parameter estimation of the dummy variable is a part of the error term and treats individual effects as uncorrelated with the other regressors (Greene, 2012). However, the random-effect model also assumes that the explanatory variables are uncorrelated with the unobserved MFI heterogeneity term, that is u_i (Hartarska and Nadolnyak, 2007). This is a very powerful assumption, and it can be tested by using the Hausman test (Hartarska and Nadolnyak, 2007; Hausman and Taylor, 1981).

The Hausman test is used to choose between fixed-effect and random-effect models, as it tests for orthogonality of the common effects and the regressors (Greene, 2012). It examines whether the individual effects are uncorrelated with other regressors in the model. Under the null hypothesis that individual effects are random, these estimators should be similar as both are consistent (Cameron and Trivedi, 2010, p. 266). If the Hausman test fails to reject the null hypothesis, then the random-effect model is more appropriate for the study.

Empirical results

Empirical results of the multiple regression analysis are shown in Table II after controlling for unobserved heterogeneity in the context of the panel data model. The sign of coefficients are as expected, but only a few are statistically significant in relation to the performance of MFIs in Sri Lanka, which is also predominantly aligned with prior studies (Arora and Sharma, 2016). Only statistically significant results are discussed below.

Board structure and financial performance

FemDir on the board is significantly negatively correlated ($t = -2.17$, $p = 0.05$) only with *OSS*, and it is similar to the studies conducted by Hewa-Wellalage and Locke (2013) for Sri Lankan listed companies, and Adams and Ferreira (2009) for the US market. This suggests that MFIs have better financial performance if they have fewer female representatives on their boards. A rationale posited for the negative impact of women directors on MFI performance flows from their domestic responsibilities which are an outcome of their commitment to the family and communities (Boehe and Cruz, 2013). Cultural differences may also impact women's managerial activities, as they develop in synchronisation with the culture. Normally when there is a male-dominant society, women are subordinate to men and often silent and inactive representatives on boards (Hewa-Wellalage and Locke, 2013). As a result, their impact on financial performance is likely to be minimal. Arena *et al.* (2015) find that the presence of women directors does not positively relate with firm performance due to the sense of inferiority and skill underestimation in a masculine industry, and preventing women's contribution to firm value creation. It is therefore likely to infer from this study that further research is necessary to clarify the relationship between female directors on MFI boards and MFI financial performance in Sri Lanka.

Table II The relationship between board structure and performance of MFIs in Sri Lanka

	Financial performance				Outreach	
Variables	*OSS* b/[t]	*ROA* b/[t]	*YOGLP* b/[t]	*CA* b/[t]	*Breadth* b/[t]	*FemBorr* b/[t]
FemDir	*−0.208***	−0.008	−0.155	0.017	*−0.376**	*0.086***
	[−2.172]	[−0.534]	[−1.631]	[0.431]	[−1.800]	[2.094]
FemCEO	*0.115***	0.003	−0.090	0.011	−0.003	0.010
	[2.237]	[0.399]	[−1.177]	[0.236]	[−0.028]	[0.495]
FemChair	−0.010	*0.014**	−0.005	−0.016	*0.253****	*−0.032**
	[−0.215]	[1.847]	[−0.103]	[−0.532]	[2.813]	[−1.795]
IntDorDir	0.034	*−0.017***	0.056	−0.015	−0.009	*0.047***
	[0.663]	[−2.029]	[0.995]	[−0.830]	[−0.093]	[2.394]
ClientDir	0.048	*0.025****	0.031	0.009	*−0.201**	0.034
	[0.888]	[2.895]	[0.572]	[0.518]	[−1.886]	[1.643]
IndDir	*−0.236**	−0.021	*−0.297**	*0.105***	−0.052	−0.028
	[−1.910]	[−1.106]	[−1.991]	[2.238]	[−0.191]	[−0.524]
Duality	−0.060	−0.000	0.085*	0.026	0.034	−0.026
	[−1.248]	[−0.006]	[1.718]	[1.069]	[0.352]	[−1.363]
Bsize	0.085	0.002	−0.018	−0.004	−0.099	−0.007
	[1.629]	[0.212]	[−0.224]	[−0.136]	[−0.874]	[−0.292]
IntAudit	0.143***	−0.001	0.131*	−0.018	−0.051	0.023
	[2.989]	[−0.076]	[1.806]	[−0.449]	[−0.581]	[1.302]
Regbank	0.063	0.001	–	–	−0.201	−0.018
	[0.259]	[0.031]	–	–	[−0.287]	[−0.121]
Fage	0.001	0.000	0.030*	0.013*	−0.001	0.005*
	[0.160]	[0.051]	[1.903]	[1.761]	[−0.100]	(0.086)
Fsize	−0.005	0.001	−0.106*	−0.117***	0.802***	0.024**
	[0.452]	[−0.280]	[−1.788]	[−3.109]	[15.980]	[2.321]
Lev	−0.295***	−0.033**	−0.065	–	0.237	0.037
	[−2.895]	[−2.212]	[−0.270]	–	[1.179]	[0.930]
Intercept	1.306***	0.020	0.314	2.198***	−6.062***	0.306*
	[3.709]	[0.375]	[0.316]	[3.319]	[−7.281]	[1.786]
Year dummies	yes	yes	yes	yes	yes	yes
Organisation type dummies	yes	yes	no	no	yes	yes
Firm fixed-effects	no	no	yes	yes	no	no
Number of observations	294	294	295	297	294	297
R^2	0.151	0.091	0.151	0.165	0.413	0.157
F-statistic			1.835*	1.961**		
Wald chi-squared statistic	65.32***	39.80**			651.71***	79.08***
Number of clusters			54	54		

Notes: Asterisks indicate significance at 10 (; *), 5 (; **) and 1% (; ***); *t*-Statistics are presented in brackets and based on robust standard errors corrected for potential heteroskedasticity and time-series autocorrelation within each firm; the notations are defined in Table I; year dummy 2007 and organisation-type dummy private companies are treated as the benchmark categories to avoid the dummy variable trap; year dummies and organisation-type dummies are unreported

However, *FemCEO* is statistically significantly positively correlated ($t = 2.24$, $p = 0.05$) with *OSS* of the firm, and it is consistent with the prior MFI research findings of Mersland and Strøm (2009) and Strøm *et al.* (2014). This study also finds that *FemChair* has a positive association ($t = 1.85$, $p = 0.10$) with *ROA*. These findings support the expected relationships that there is a positive relationship between female leadership and MFI performance. The evidence of this study on female leadership confirms the general propositions of Shrader *et al.* (1997), Smith *et al.* (2006), Kyereboah-Coleman (2006), Ayadi *et al.* (2015) and Welbourne (1999), that females in management have a positive impact on firm performance. However, this is not supported by women representatives on the board. Nevertheless, as discussed below, having women on MFI boards is significantly positively correlated with female client outreach in Sri Lanka.

Contrary to Oxelheim and Randøy (2003) but agreeing with Mersland and Strøm (2009), this study finds that *IntDorDir* on the board reduces ($t = -2.03$, $p = 0.05$) MFI financial performance through *ROA*, as independent/donor representatives are more concerned with improving firm outreach with less emphasis on profit-making ability. One of the main

objectives of international donor agencies that provide funds for MFI operations is to improve the living standards of poor people in developing countries. They are aware of the high risk in the industry and do not expect any direct financial returns from their funds/donations. On the other hand, this may also indicate international directors and donor agency representatives have less knowledge about local clients and may threaten the ongoing solvency of MFIs. This indicates that MFI boards improve their performance when they consist of local directors.

Furthermore, findings of this study reveal that *ClientDir* increases MFI financial performance, as it is statistically significantly positively associated with *ROA* ($t = 2.90$, $p = 0.01$). This supports the expected relationship between the two variables and is consistent with prior studies of Mori and Mersland (2014) and Hartarska (2005), who suggest that client representatives on boards improve MFI sustainability by having a better relationship with MFI clients.

According to good governance wisdom, a board is presumed to be better when it has outside/independent directors. Based on the findings in the study, this perspective is reflected with *CA*, as it is statistically significantly positively correlated ($t = 2.24$, $p = 0.05$) to *IndDir* but statistically significantly negatively correlated with *OSS* ($t = -1.91$, $p = 0.10$) and *YOGLP* ($t = -1.99$, $p = 0.10$). Arora and Sharma (2016) and Darko *et al.* (2016) also find a significant adverse relationship between outside directors and firm performance. Even though outside directors are important for improving capital structure, they do not assist MFIs to progress their key financial performance (*OSS* and *ROA*). This study suggests that MFI boards in Sri Lanka will be better off when they have more executive directors than non-executive directors, presumably because executive directors are highly conscious of the operational activities in the firm. Similarly, non-executive directors may lack knowledge about the firm and industry and play a token role without adding any value to the firm (Nguyen *et al.* 2014).

Board structure and outreach

Table II illustrates the empirical results of a multiple regression analysis of outreach variables in this study. *FemDir* on the board are statistically significantly negatively correlated ($t = -1.80$, $p = 0.10$) with *Breadth* of outreach, and significantly positively correlated ($t = 2.10$, $p = 0.05$) with *FemBorr* in Sri Lankan MFIs. Deschênes *et al.* (2015) also find that female directors have positive association with social performance. These findings indicate that female directors appear to concentrate on gender inequality in the countries in which they are based and promote microfinance loans to more female clients. Studies revealed that males have a wide range of sources from which to access credit, but most women receive their first loan from an MFI.

Even though Mersland and Strøm (2009) argue that *FemCEO* are better informed, which will result in greater outreach, they did not find significant coefficients for the relationship between female CEO and outreach. This study also finds no statistically significant relationship between those two variables.

The results for female directors on a board are opposite for a *FemChair* on a board. The female chairperson on a board is statistically significantly positively correlated ($t = 2.81$, $p = 0.01$) with *Breadth* of outreach, but statistically significantly negatively correlated ($t = -1.80$, $p = 0.10$) with *FemBorr* in MFIs in Sri Lanka. Even though they are female leaders, they appear to concentrate on increasing the number of active borrowers rather than increasing only women borrowers.

IntDorDir have a statistically significant positive ($t = 2.39$, $p = 0.05$) association with *FemBorr* which shows that directors who represent international and/or donor agencies are engaged in providing microcredit to women in Sri Lanka. This suggests that when international and/or donor representatives sit on MFI boards, they are able to provide better monitoring and advisory services to improve women's empowerment. However, the results

of this study show that *ClientDir* are statistically significantly negatively ($t = -1.88$, $p = 0.10$) associated with the *Breadth* in MFIs in Sri Lanka. This is not astonishing as similar results were obtained by Mori and Mersland (2014) and Hartarska (2005). It is likely to infer from this finding that the representatives of clients on boards improve MFI profitability at the expense of *Breadth* of outreach. Hartarska (2005, p. 1,639) explains that these stakeholder representatives on MFI boards "may have engaged in rent-seeking behaviour, by promoting lending to wealthier borrowers".

Conclusion

To understand the relevant relationship between board structure and performance of MFIs in an emerging economy, the study adopts an in-depth country-specific approach using Sri Lanka as a case. Many cross-country studies fail to capture the country-specific policies and institutional differences. This paper presents the first evidence on the relationship between the board structure and performance of Sri Lankan MFIs. Therefore, this study makes an advanced contribution to the literature by understanding the board governance practices in MFIs in Sir Lanka.

In relation to the board governance mechanisms, this study finds only a few variables that influence the key financial performance and outreach of MFIs. Even though most of the signs of the coefficients generated from the regression analysis are consistent prior studies, very few are statistically significant. Local directors, female CEOs, female chair and client representatives on the board are found to positively influence MFIs' financial performance, while international and donor directors are found to positively influence outreach of Sri Lankan MFIs. The relationship between outside directors and MFI financial performance is inconclusive. Similarly, there is conflicting evidence for female chair and outreach.

The results of this study show a statistically significantly negative relationship between female directors on a board, and financial performance and *Breadth* of outreach. It is noteworthy for MFIs to consider behavioural processes and dynamics in and around the boardroom to increase their involvement in improving financial performance and outreach of MFIs. However, women's success in the workplace is always shaped by an array of cultural expectations, domestic responsibilities and self-perception (Women's World Banking, 2013). Without development initiatives including mentoring/training, it is unlikely that the voice of more women will be heard around MFI board tables. In countries such as Sri Lanka, women are often kept busy with family responsibilities and commitments. As a result, their impact on MFI financial performance and outreach is likely to be minimal.

Although there are only a small number of statistically significant results, it does point towards the view that board structure does matter for the financial performance and outreach of MFIs. Moreover, the evidence presented in this study should encourage MFIs to consider further significant governance factors which will improve and sustain the industry. Also, it would have been more appropriate to have MFI governance studies in different countries to validate the findings of this study. This study points to the need for further empirical research for MFIs using a dynamic panel generalised method of moment estimator to strengthen the speculations found in this study.

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