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Performance of Asian MFIs: The Role of Capital Structure and Macro-Institutional Quality

ADNAN HABIB and SHAHRIAR KABIR

We draw on the capital structure theory and examine whether Modigliani & Miller's capital leveraging ideology improves the performance of microfinance institutions (MFIs) under different macro-institutional quality. We develop and test a framework of the combined effect of capital structure and macro-institutional quality on both financial and social performance, which is a novel contribution. We collect data on 75 MFIs in Asia from 2009 to 2018 and applied Hausman-Taylor test.

We find that when operating in countries whose institutions are relatively weak, MFIs can better perform both socially and financially by using equity funding instead of debt or donation. As supported by the Market Failure Solution theory of institutions, MFIs perform better socially in weaker institutional quality as they can fill up the gap in the market left by traditional banks. As this gap narrows down with the improvement of institutional factors, MFIs face stronger competition from traditional banks. Such competition transposes MFI's focus toward financial performance (profit-seeking behaviour) and drifts away from social performance (objective of poverty alleviation). Furthermore, under any institutional condition, MFIs with debt or donation impose less control over capital utilisation compared to equity funding. Thus, despite initiation with a major goal of social performance, MFIs suffer from mission drift even with the support of debts and donations when operating in countries with relatively stronger institutions.

Previous literature, mostly focusing on capital structure theory and often ignoring the institutional factors, appears inconclusive in developing a framework on the issue to explain mission drift for MFIs. We contribute to this endeavor by empirically showing that the Modigliani & Miller capital structure theory (improvement of performance by leveraging the firm through external capital) cannot be applied to MFIs, and the Market Failure Solution theory of institutions is a reasonable explanation to avoid the mission drift problem.

Keywords: Microfinance, Capital Structure, Institutional Quality, Social Performance, Financial Sustainability, Mission Drift

1. INTRODUCTION

Since the emergence of Microfinance Institutions (MFIs) as the primary tool for achieving the first Sustainable Development Goal (SDG), it has gained a lot of focus in academic research. In the field, it was observed that there are vast differences in performance among MFIs. Hence, development literature primarily focused on finding the determinants of the performance of MFIs (Bogan, 2012; Gul, Podder & Shahriar, 2017). Some of these papers concluded that capital structure is the key determinant of

Adnan Habib <adnan.habib@northsouth.edu> is affiliated with the North South University (NSU), Bangladesh. Shahriar Kabir is Associate Professor and Head, Department of Economics, Independent University Bangladesh (IUB), Bangladesh.

MFI performance (Bogan, 2012; Tchuigoua, 2014; Khachatryan, Hartarska, & Grigoryan, 2017). The capital structure of any lending institution has been a matter of interest for both academics and practitioners since the global financial crisis in 2008. Several studies such as Cebenoyan & Strahan (2004) and Koziol & Lawrenz (2009) have established the importance of capital structure decisions on the performances of traditional banks and similar financial institutions. But MFIs are vastly different from traditional banks or profit-maximising firms in terms of their capital structure as well as organisational goals. Their capital structure does not only depend on traditional debt and equity capital but also on grants and subsidies from the government and other public investors. Although past research addressed this issue, they failed to recommend a proper guideline to MFIs for obtaining an optimal capital structure. This paper adds to the literature by developing a holistic framework for capital structure decisions based on varying levels of macro-institutional quality.

Along with capital structure, institutions and the macroeconomic environment of the country in which the MFI operates are suggested in the literature as determinants of MFI performance (Tchuigoua, 2015; Ahlin, Lin & Maio, 2011). The level of formalisation of a country's institutions has an immense impact on the performance of lending institutions within that country (An, Li, & Yu, 2016; Alimukhamedova, n.d.). However, since MFIs are different from traditional lending institutions, the traditional institutional theories may not be directly applicable to MFIs in solving such institutional matters. For example, the contract theory of institutions claims that weak institutions may lead to non-enforcement of contracts and thus induce poor performance of firms and banks (Chakraborty, 2016). MFIs, instead, use innovative ways of contract enforcement that work best in countries with weak institutional quality. A possible reason is that socially motivated MFIs perform better in relationship-based environments, where rule of law is weak. The majority of the studies are yet to reach a consensus on the relationship between capital structure and the performance of MFI (Bharti & Malik, 2021; Khan & Gulati, 2021). In addition, some studies completely reject the idea of a trade-off between social and financial performance (Quayes & Joseph, 2021). Moreover, most research ignores the combined effect of institutional quality and capital structure on the performance of MFIs, rather assessed the relation of performance separately to the role of capital or to countries' institutions.

To explore the link between optimal capital structure and the performance of MFIs at different levels of institutional quality, we combine the two determinants, capital structure, and institutional quality, in a common framework to develop a capital structure guideline that can shed light on the issue of trade-off between social and financial performance of MFIs. Thus, the study attempts to answer a contemporary question on MFIs, how does donation/equity/debt funding affect the social and financial performance of MFIs within varying levels of institutional quality? We collect 10 years data for 75 MFIs in Asia and apply the Hausman & Taylor model of panel data estimation. We find that the capital structure only affects financial performance but has no significant impact on social performance. Both donation and debt reduce the financial performance suggesting that in contrast to MM theory, there is no additional advantage for MFIs by leveraging the firms with external debt capital. On the other hand, equity funding increases financial performance indicating that MFIs should prefer equity over debt or

donation in their capital structuring. Institutional quality influences social performance irrespective of capital selection but has no significant impact on financial performance. MFIs that are operating in countries with weaker institutions tend to socially perform better, suggesting that the market failure solution theory of Vanroose & D'Espalliar (2013) is a reasonable explanation for the relationship between institutional quality and the performance of MFIs.

Our findings indicate that taking account of both capital structure and institutional quality in the strategic decision-making for MFIs is necessary to avoid mission drift and to simultaneously achieve high social and financial performance. In particular, if MFIs plan to operate in countries with relatively weaker institutions, and rely more on equity funding, the probability of maintaining a high level of both social and financial performance would increase. Past studies only focused on either of the two determinants, capital structure (Bogan, 2012) or institutional quality (Barry & Tacneng, 2014), separately as their independent variable and financial performance as the dependent variable ignoring the social performance (Bogan, 2012; Tchuigoua, 2015). This study, instead, extends that of Bogan (2012) and Barry & Tacneng (2014) by designing a combined framework of capital structure and institutional quality and accommodating both social and financial performance in a common MFI model. The study also supports and explains the claim of Alimukhamedova (n.d.) that microfinance shows a concave response function to the broader economy starting from poor institutions through moderate to developed institutions. This way the study brings a holistic approach to developing a solution for the trade-off problem between the social and financial performance of MFIs.

The remainder of this research paper proceeds as follows. Section 2 develops a theoretical framework and related testable hypotheses based on the findings of the past literature. Section 3 describes the data being used and lays out the details of the methods that are used to test the hypotheses. Section 4 presents the estimated results followed by a discussion on the results and the implications of the findings on theory and industry in Section 5. Finally, Section 6 presents the concluding remarks and future research direction.

2. THEORETICAL FRAMEWORK & HYPOTHESIS DEVELOPMENT

This study investigates the combined effect of capital structure and institutional quality specifically on MFIs. The seminal theory of capital structure (M&M theory) by Modigliani & Miller (1958) suggests that firm performance can increase by leveraging external funding (debt) because of the tax advantage. This traditional capital structure theory can be misleading for Microfinance Institutions (MFIs). MFIs get tax exemption in most countries due to their non-profit status, thus making debt less advantageous for MFIs compared to commercial firms. Hence, the optimal capital structure for an MFI is different from profit-oriented firms and requires attention to the source of the fund, its distribution, and the use of the funds for maintaining social performance and financial performance simultaneously (Khavul, 2010).[1] Bogan (2012) empirically supported this

[1]As MFIs are not-for-profit organisation, they have dual mission to achieve; increasing both social performance and financial performance. Social performance increases when MFIs help poor people come out of poverty and financial performance increases when they earn enough profit to maintain a sustainable business (Yunus, 2010)

significant relation between the MFI's capital structure and the financial performance, although ignored the issue of social performance. However, the study gave an idea of the importance of capital structure as a contributing factor in affecting MFI performance.

The market failure hypothesis of Vanroose & D'Espalliar (2013) claims that MFIs fill up the gap left in the economy by the traditional banking sector. A country with poorer institutional quality loses the confidence of traditional banking sectors and thus has more unbanked poor people. That is where socially motivated MFIs play a role by capturing the markets that are left over by the traditional banks. However, when the impact of institutional quality, like government effectiveness, is taken into consideration, the socially motivated MFIs do not have any advantage over other forms of MFIs. The government gives confidence to the financially motivated MFIs and caters to poorer clients. Political interference also influences financially motivated MFIs to reduce their social outreach. Thus, the social motivation of MFIs is often discouraged under strong institutions. This perception of the relationship between institutional factors and MFI performance has been further extended to female literacy rate and property rights (Boehe & Cruz, 2013; Barry & Tacneng, 2014).

Past studies lead to the idea that MFIs fail if they rely on donations, especially in countries that have strong institutional quality. This is because they have to compete with commercial banks and have low accountability toward their donors. When institutional quality is strong, commercial banks can rely on the protection of creditor rights and broaden their market towards poorer clients, thus increasing competition with MFIs (Vanroose & D'Espalliar, 2013). So both the social and financial performances of MFIs reduce. Although donations tend to reduce both social and financial performance, but if the MFI operates in weaker institutions then they can improve social performance. This is because MFIs are more suited to a relationship-based environment that happens when institutional quality is weak (Barry & Tacneng, 2014). So, it can be deduced that institutional quality is one of the deciding factors that influence social performance, giving rise to the first hypothesis.

Hypothesis-1 (H1): Institutional quality is negatively associated with social performance for MFIs that rely mainly on donation in their capital structure.

MFI may eventually become financially unsustainable as donations influence financial performance negatively. Bogan (2012) states that reliance on public funds such as donations and grants can reduce the financial performance of MFIs due to a lower degree of accountability and a higher possibility to create moral hazard. As such, the amount of available donation may become a deciding factor for financial performance regardless of the strength of institutional quality higher donation is expected to reduce financial performance. This assumption guided by Bogan (2012) leads to the following hypothesis.

Hypothesis-2 (H2): The proportion of donation in the capital structure is negatively associated with financial performance.

Previous studies suggest that the use of equity as a funding source leads MFIs towards mission drift regardless of the strength of institutional quality. MFI equity generally refers to the Initial Public Offerings (IPO), although a lot of MFIs also use private equity funds from angel investors. Shareholders push the MFIs to achieve a healthy return from investment. Hence, equity financing creates pressure on MFIs for profit maximisation, thus increasing financial performance (Hartarska & Nadolnyak, 2007). There is no evidence of equity having any significant effect on the social performance of MFIs in the literature. However, as mentioned in Vanroose & D'Espalliar (2013), strong institutional quality is not favourable for MFI performance. So, MFIs with equity funds and operating in a strong institutional quality would have high financial performance and low social performance. On the other hand, weak institutional quality increases the social and financial performance of MFIs since in those countries they have a larger target market and are not in competition with commercial banks (Barry & Tacneng, 2014; Vanroose & D'Espallier, 2013). In this situation, if MFIs use equity funding then their financial performance gets a further boost and MFIs can get carried away with this and start focusing only on profit-maximisation. This situation was seen in the Andhra Pradesh (AP) crisis.[2] Therefore, equity funding has more influence on social and financial performance compared to institutional quality. High equity is expected to reduce social performance and increase financial performance regardless of the level of institutional quality. Two more hypotheses can be developed from the literature findings.

Hypothesis-3 (H3): The proportion of equity in the capital structure is negatively associated with social performance.

Hypothesis-4 (H4): The proportion of equity in the capital structure is positively associated with financial performance.

According to Tchuigoua (2015), debt funding, like bank loans or bonds, ensures that MFIs have higher social performance. Commercial debt is considered to enhance social performance due to the high level of accountability towards the lending institution but reduces financial performance as the cost of debt increases (Tchuigoua, 2015; Hartarska & Nadolnyak, 2007). Debt restrains managers of MFI to engage in earnings management, thus reducing the financial performance (Lassoued, 2021). Furthermore, Fersi & Boujelbène (2021) finds that leverage can moderate the effect of risk-taking behaviour on the social efficiency of Islamic MFIs; while it can moderate the effect of credit risk-taking on the financial efficiency of conventional MFIs. Within strong institutional quality, the financial performance reduces even more due to the competition with commercial banks. Although institutional quality is strong, it will not be able to reduce social performance if debt funding is used. This means MFIs with a large

[2]In 2010, many random suicide incidents occurred in the Andhra Pradesh state of India which were reported by Biswas (2010) in BBC news (this event will henceforth be identified as "AP crisis"). While investigating it was alleged that these suicides took place due to abusive recovery practices taken by the Microfinance Institutions (Galema, Lensink, & Mersland, 2012). The MFIs in Andhra Pradesh mass-marketed their lending products and tried to achieve maximum corporate-type growth instead of building the social capital. (Haldar & Stiglitz, 2016).

proportion of debt are expected to have high social performance regardless of the strength of institutional quality.

Hartarska & Nadolnyak (2007) also support that less leveraged MFIs (i.e. holding more commercial equity) financially perform better. Equity reduces the risk of default and hence the cost of debt becomes lower, which can enhance financial performance. Tchuigoua (2015) compliments the findings of Hartarska & Nadolnyak (2007) by suggesting that regulated MFI have a positive relation with commercial debt funding but negative relation with donations. However, MFIs being regulated may have an indirect and positive influence on social performance; but no significant relation to financial performance (Hartarska & Nadolnyak, 2007). This complements the findings of Nyanzu, et al. (2018) that regulation helps improve sustainability and breadth of outreach for MFIs. The combined implication of these studies is that commercial debt funding might increase social performance, while equity funding should improve financial performance. This gives rise to our next hypothesis.

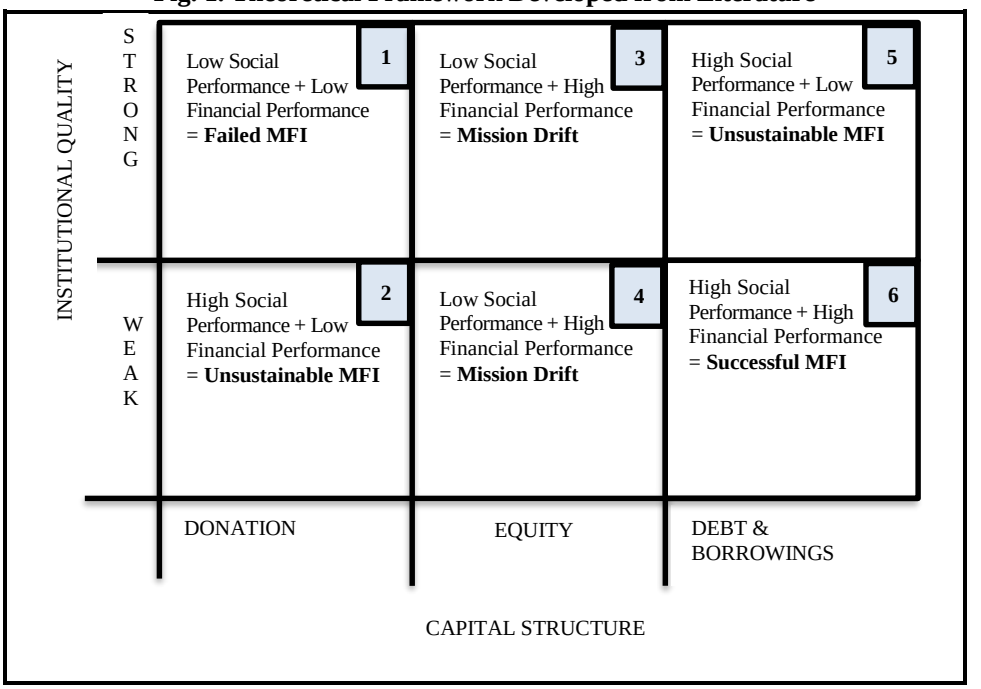
Hypothesis-5 (H5): The proportion of debt in the capital structure is positively associated with social performance.

The literature suggests that most ideal situation for an MFI is when the MFIs operate in a country with weak institutional quality and finance their operation with commercial debt. MFIs perform better, financially, in an environment with weak institutional quality (Barry & Tacneng, 2014). In this case, even if MFIs have a high proportion of debt in their capital structure the financial performance will not fall as a weak institutional environment will pull it up. As such a final hypothesis is developed below:

Hyopthesis-6 (H6): Institutional quality is negatively associated with financial performance for MFIs that rely mainly on debt in their capital structure.

These hypotheses, if proven to be true, can be used to logically determine how a combined effect of capital structure and institutional quality will influence performance, both socially and financially. Figure 1 shows the theoretical framework of the combined effect constructed based on the fundamentals of the preceding discussion. The figure is a matrix where the x-axis denotes the funding sources listed according to the degree of accountability. Debt funding forces the maximum level of accountability for any firm. The lending institutions ensure that they get back their money along with interest and hence they continue to monitor the borrower activities even after the fund has been distributed. On the contrary, donors usually consider providing funds as a one-time philanthropic activity whereby a follow-up is unnecessary. Hence donation funds have the least amount of accountability for MFIs. Although shareholders do not intervene in the activities of the company as much as the lending institutions, but they look for regular profit and hence establish some level of accountability for the firm against the equity capital. Hence, equity-based MFIs are more accountable compare to donations-based MFIs and less accountable compare to leveraged MFIs. The x-axis of Figure 1 has been organised accordingly.

Fig. 1. Theoretical Framework Developed from Literature



Notes:

Box#1 (Strong Institutional quality + Funded by Donation):

Strong institutional quality reduces both social and financial performance (Barry & Tacneng, 2014; Boehe & Cruz, 2013). Donation further reduces financial performance (Bogan, 2012). Therefore, there is low social and financial performance leading to a failed MFI.

Box#2 (Weak Institutional quality + Funded by Donation):

Weak institutional quality increases both social and financial performance (Barry & Tacneng, 2014; Boehe & Cruz, 2013). Donation funding reduces financial performance (Bogan, 2012). Therefore, there is high social performance but low financial performance leading to an unsustainable MFI.

Box#3 (Strong Institutional quality + Funded by Equity Funds):

Strong institutional quality reduces both social and financial performance (Barry & Tacneng, 2014; Boehe & Cruz, 2013). Equity funding increases financial performance (Bogan, 2012). Therefore, there is low social performance but high financial performance leading to mission drift.

Box#4 (Weak Institutional quality + Funded by Equity Funds):

Weak institutional quality increases both social and financial performance (Barry & Tacneng, 2014; Boehe & Cruz, 2013). Equity funding further increases financial performance (Bogan, 2012). MFI tend to get carried away with the boost in financial performance and start ignoring social performance as seen in AP crisis in India. Therefore, there is low social performance but high financial performance leading to mission drift.

Box#5 (Strong Institutional quality + Funded by Debt Funds):

Strong institutional quality reduces both social and financial performance (Barry & Tacneng, 2014; Boehe & Cruz, 2013). Regulated MFIs attract higher debt funding (Tchuigoua, 2015). Regulated MFIs indirectly increase social performance, through deposits (Hartarska & Nadolnyak, 2007). So, debt funding increases social performance. Therefore, there is high social performance but low financial performance leading to an unsustainable MFI.

Box#6 (Weak Institutional quality + Funded by Debt Funds):

Weak institutional quality increases both social and financial performance (Barry & Tacneng, 2014; Boehe & Cruz, 2013). Debt funding further increases social performance, through deposit facilities (Tchuigoua, 2015; Hartarska & Nadolnyak, 2007). Therefore, there is high social performance and high financial performance leading to a successful MFI.

The y-axis of the matrix in Figure 1 denotes the strength of institutional quality. Countries with effective government and judicial systems, less political intervention and corruption as well as strong property and creditor rights are considered to have strong institutional quality. Based on the hypotheses, six different combinations of funding sources and institutional quality are categorised as shown by the six numbered boxes in the matrix.

A single MFI can be in any of the six numbered boxes at a given point in time based on its capital structure decision and the institutional quality of the country in which it operates. That does not necessarily mean that the MFI will remain in that box throughout its lifetime. If the capital structure decision changes or even if the country's institutional quality varies then the MFI can shift to another box accordingly. Also, the shift of the MFI from one box to the other is not necessarily going to be in accordance with the sequence of the framework.

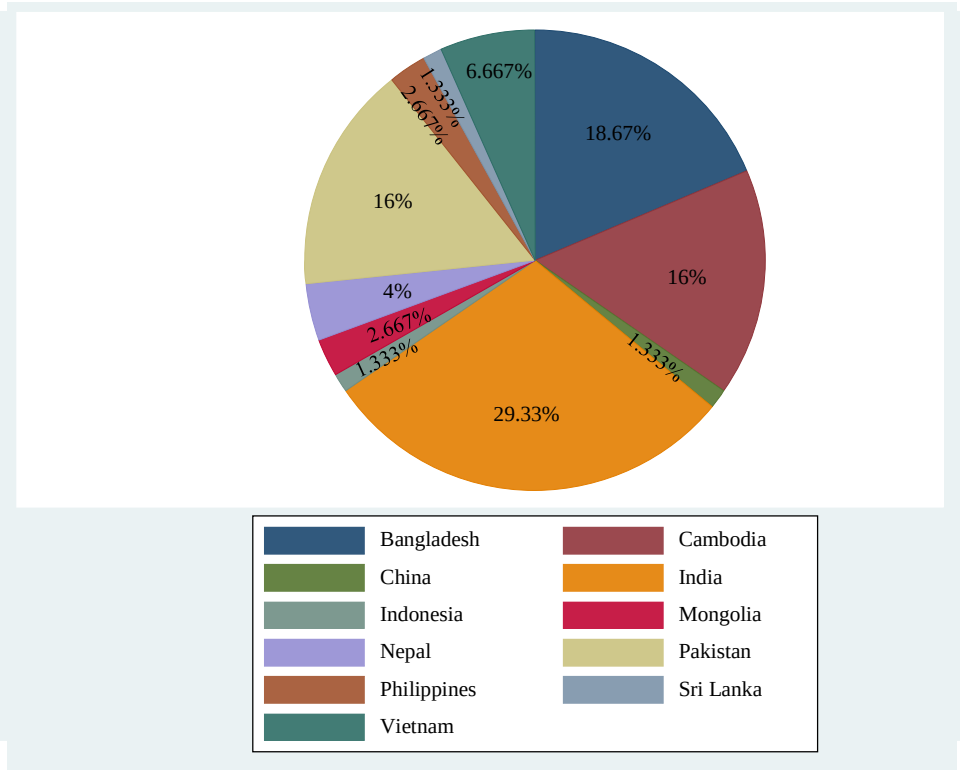
3. METHODOLOGY

With the implementation of the Hausman & Taylor model on a panel data sample of 75 MFIs in Asia, this study tests the hypotheses and justifies the framework that has been developed in the preceding section. The study attempts to identify if the combined effect of capital structure and institutional quality is necessary for MFIs to avoid mission drift and simultaneously achieve high social and high financial performance. Past studies only focused on either of the two determinants, capital structure (Bogan, 2012) or institutional quality (Barry & Tacneng, 2014), separately as their independent variable. The previous literature also focused mostly on financial performance (Bogan, 2012; Tchuigoua, 2015), as their dependent variable. Therefore, this study is the first, to the best of the author's knowledge, to bring a holistic approach to developing a solution for the trade-off problem between the social and financial performance of MFIs. This way the study sheds light on the implementation of traditional theories of capital structure on socially motivated lending institutions like MFIs.

3.1. Data and Variables

This study is conducted on Microfinance Institutions (MFIs) selected from the Asian region since the borrower concentration of MFIs is the highest in this area. According to Microfinance Market Outlook 2016, the Asia Pacific region has got the biggest market share of about 30 percent of the world (ResponsAbility Investment AG, 2017). Moreover, the MFIs from Asian countries (for example, SKS Microfinance in India and Bank Rakyat in Indonesia) are accused of mission drift. Hence, analysing a random sample from the Asia Pacific region provides some insights into the mission drift. The sample has data from 75 different MFIs from eleven countries. The period of the data is of 10 years from 2009 to 2018 providing a total of 750 observations. The distribution of country-based observations is provided in Figure 2.

Fig. 2. Country-wise Frequency Percentage Distribution of Sample



As can be seen most of the MFIs in the sample comes from South Asian countries with India, Bangladesh, and Pakistan together comprise of around 64 percent of the sample. China, Indonesia, and Sri Lanka each has only 1 MFI in the sample due to the unavailability of data. The largest percentage of East Asian MFIs comes from Cambodia and Vietnam comprising 22.67 percent together. This sample is expected to be adequate to provide valuable findings on the population.

There can be some sample selection bias in this study. The sample is designed with only the MFIs whose complete 10 years of financial data are available. Hence, those MFIs which did not survive for 10 years are not part of the sample causing survivor biases in the sampling. Since long-term financial sustainability is a variable that is estimated in this study choosing only those MFIs who have survived for a long period might produce skewed results. There are also a lot of MFIs who have data missing within their 10-year financial statements and those MFIs with missing data are not chosen in this sample. This is done to keep the panel balanced.

3.2. Data Source and Description

3.2.1. *Country-level Data: Institutional Quality and GDP Growth Rate*

This study follows the Heritage Foundation's Index of Economic Freedom score as the institutional quality measure. The index is available on the foundation's open

database website. This index uses variables of both economic freedom and institutional measures. Heritage Foundation primarily calculates the index based on four key aspects: rule of law, government size, regulatory efficiency, and market openness. In assessing these four categories, the index measures twelve specific institutional components on a scale from 0 to 100 (Heritage Foundation, 2017).[3] Scores of these twelve components of economic freedom are equally weighted and averaged to produce the overall economic freedom score for each economy. Zhao & Lounsbury (2016) uses the variable market logic as a measure of economic freedom that is primarily under market openness; however, this study uses the total index measure as suggested by Billmeier & Massa (2009). For the countries selected in this study, only ten out of the twelve institutions' data are available and have been used for the calculation of the final score. Although other papers have used various sources like World Bank (Tchuigoua, 2014) or Doing Busines (Barry & Tacneng, 2014) for individual institutional data at the national level, Heritage Foundation's index gives a more comprehensive measure as they accommodate data from all those sources into a single score. The foundation categorises the countries' economic freedom into five categories based on the final score, which are "free" (80-100 score), "mostly free" (70-79.9 score), "moderately free" (60-69.9 score), "mostly unfree" (50-59.9 score) and "repressed" (score equal or below 49.9).

Table 1

Descriptive Statistics of the Raw Data

	Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Outreachbreadth	750	478.00	8166287.00	539051.6797	1340299.17134	3.784	13.778
Outreachdepth	750	34.56	7923.00	403.8892	841.46176	5.113	30.614
OSS	750	–.10	6.67	1.1804	.34922	5.132	83.035
Debt	750	.01	1.33	.7690	.16984	–1.842	4.906
Equity	750	–.92	.99	.1876	.17206	.996	8.734
Donation	750	.00	1.49	.0428	.12044	5.466	43.470
Institutionalquality	750	44.2	63.6	54.321	3.0829	–.711	1.802
Size	750	44819.00	6612000000.00	208937839.6125	670491942.89272	6.191	45.046
GDP	750	–1.27	17.29	6.3239	2.37227	.041	1.401

Table 1 shows the descriptive statistics of the raw data of the sample. The institutional quality measure (i.e. Heritage Foundation's Index of Economic Freedom score) has a mean of 54.321 percent which falls under the "mostly unfree" category. Hence, we can see that most MFIs in the sample operate in economies that have weak institutions and are mostly not free for investments. The moderately negative skewness and very low standard deviation suggest that there is little tendency for improvement. The other country-level variable is the annual GDP growth rate which is collected from the World Bank's database. This variable is a country-level macroeconomic control variable. The annual GDP growth rate has been on average 6.32 percent with a skewness value that suggests that the GDP rates are mostly symmetrical around the mean shown in Table 1.

[3]The Heritage Foundation Index measures the following twelve institutions: property rights, government integrity, judicial effectiveness, government spending, tax burden, fiscal health, business freedom, labour freedom, monetary freedom, trade freedom, investment freedom, and financial freedom.

3.2.2. *Firm-level Data*

The firm level, MFI-specific variables include breadth of outreach, depth of outreach, operational self-sufficiency (OSS), the proportion of debt capital, proportion of equity capital, proportion of donated capital, and size of MFI. Studies have shown that outreach measures are the appropriate indicator of social performance for MFIs (Bibi, Balli, Matthews, & Tripe, 2018). All firm-level data are collected from the MIX Market database. According to Chakravarty & Pylypiv (2015), MIX Market is the largest data source on microfinance covering approximately 2000 MFIs globally. These MFIs have more than 80 percent of the entire client base of MFIs in the world. In MIX the data is self-reported by the MFIs themselves but are reviewed by the experts at MIX against audits or other qualified sources. The data are also standardised by MIX specialists according to worldwide acceptable accounting standards IFRS guidelines as suggested by the World Bank. Chakravarty & Pylypiv (2015) states that the database review system of MIX conducts more than 135 quality checks to ensure the accuracy of the submitted data. MIX also ranks the MFIs on a scale of one to five on the diamond system based on the reliability of the information; higher diamonds imply that the data are more reliable.

Except for OSS, Debt, and Equity, other MFI-specific variables have a higher standard deviation than the mean value as seen in Table 1. Both the social performance measures, breadth of outreach (i.e. number of active borrowers) and depth of outreach (i.e. average loan size per borrower), show very high positive values of skewness with a very high standard deviation value compared to their mean. This means that most MFIs have higher than average values of breadth and depth of outreach. The mean value for OSS is above 1 meaning that most of the MFIs in this sample are financially sustainable throughout the ten years. All three funding sources are expressed as a percentage of total assets. The MFIs have a very high percentage of debt funding on average of 76.9 percent throughout the ten years. This suggests that most of the firms are dependent on borrowings. Equity funding has a mean value of 18.76 percent which is quite low compared to debt. The standard deviation is higher with a moderately positive skewness suggesting that a good number of MFIs lie above the average equity rate. This is ensured by the maximum equity value of 99 percent. Among the capital structure variables, donation has the lowest mean value of 4.28 percent suggesting that MFIs within this sample has limited access to donations. These are determined by the "donated equity" account head from the balance sheet of MFIs. The standard deviation of donation is quite high compared to its mean suggesting there are some outliers. However, those outliers are more at the upper end since skewness is highly positive. The size of MFIs also shows a large positive skewness with very high variability suggesting that very large MFIs have been chosen in this sample. This is implied by the average total asset value in the sample which is $208,937,839.61.

3.3. Models and Estimation

Six models are constructed in this study to test the six hypotheses that are developed in the preceding section. The models are as follows:

$$Model\#1: SocPer_{it} = a_0 + Donation_{it} + a_2 InsQual_{it} + a_3 \sum Controls_{it} + \varepsilon_{it} \quad \dots \quad (1)$$

$$Model\#2: FinPer_{it} = \beta_0 + \beta_1 Donation_{it} + \beta_2 InsQual_{it} + \beta_3 \sum Controls_{it} + \mu_{it} \dots \quad (2)$$

$$Model\#3: SocPer_{it} = y_0 + y_1 Equity_{it} + y_2 InsQual_{it} + y_3 \sum Controls_{it} + \xi_{it} \quad \ldots \quad (3)$$

$$Model\#4: FinPer_{it} = \lambda_0 + \lambda_1 Equity_{it} + \lambda_2 InsQual_{it} + \lambda_3 \sum Controls_{it} + \tau_{it} \quad \ldots \quad (4)$$

$$Model\#5: SocPer_{it} = \omega_0 + \omega_1 Debt_{it} + \omega_3 InsQual_{it} + \omega_3 \sum Control_{it} + \chi_{it} \quad \ldots \quad (5)$$

$$Model\#6: FinPer_{it} = \eta_0 + \eta_1 Debt_{it} + \eta_2 InsQual_{it} + \eta_3 \sum Controls_{it} + \Omega_{it} \quad \ldots \quad (6)$$

Here, $SocPer_{it}$ is social performance measured by outreach and transformed in the log values for normality. $FinPer_{it}$ is financial performance measured as the OSS value of the MFIs. $Donation_{it}$, $Equity_{it}$, and $Debt_{it}$ are each the percentage of funds from the respective capital sources on total assets. $InsQual_{it}$ is the institutional quality measure of the Heritage Foundation Index of Economic Freedom score in decimals of the country in which the MFI operates. $\sum Controls_i$ are the group of control variables comprising of the size of MFI (taken as log value of the total asset for normality), type of MFI (bank, non-bank financial institution, non-governmental organisation), and percentage increase of national Gross Domestic Product (GDP).

Models# 1, 3, and 5 are each separated into two models; as such $SocPer_{it}$ in models# 1a, 3a, and 5a, are represented by the breadth of outreach while $SocPer_{it}$ in models# 1b, 3b, and 5b are represented by the depth of outreach. Hence there are nine models in total as follows:

$$Model\#1a: Breadth_{it} = \alpha_0 + \alpha_1 Donation_{it} + \alpha_2 InsQual_{it} + \alpha_3 \sum Controls_{it} + \varepsilon_{it} \quad \ldots \quad (7)$$

$$Model\#1b: Depth_{it} = \theta_0 + \theta_1 Donation_{it} + \theta_2 InsQual_{it} + \theta_3 \sum Controls_{it} + \delta_{it} \quad \ldots \quad (8)$$

$$Model\#2: OSS_{it} = \beta_0 + \beta_1 Donation_{it} + \beta_2 InsQual_{it} + \beta_3 \sum Controls_{it} + \mu_{it} \quad \ldots \quad (9)$$

$$Model\#3a: Breadth_{it} = \gamma_0 + \gamma_1 Equity_{it} + \gamma_2 InsQual_{it} + \gamma_3 \sum Controls_{it} + \xi_{it} \quad \ldots \quad (10)$$

$$Model\#3b: Depth_{it} = \kappa_0 + \kappa_1 Equity_{it} + \kappa_2 InsQual_{it} + \kappa_3 \sum Controls_{it} + \varphi_{it} \quad \ldots \quad (11)$$

$$Model\#4: OSS_{it} = \lambda_0 + \lambda_1 Equity_{it} + \lambda_2 InsQual_{it} + \lambda_3 \sum Controls_{it} + \tau_{it} \quad \ldots \quad (12)$$

$$Model\#5a: Breadth_{it} = \omega_0 + \omega_1 Debt_{it} + \omega_2 InsQual_{it} + \omega_3 \sum Controls_{it} + \chi_{it} \quad \ldots \quad (13)$$

$$Model\#5b: Depth_{it} = \sigma_0 + \sigma_1 Debt_{it} + \sigma_2 InsQual_{it} + \sigma_3 \sum Controls_{it} + o_{it} \quad \ldots \quad (14)$$

$$Model\#6: OSS_{it} = \eta_0 + \eta_1 Debt_{it} + \eta_2 InsQual_{it} + \eta_3 \sum Controls_{it} + \Omega_{it} \quad \ldots \quad \ldots \quad (15)$$

The data collected for this particular study are in the longitudinal form and hence panel estimation approach is implemented. According to Young & Johnson (2015), panel data allow for stronger inferences about change processes and more control of unmeasured differences between individuals that can bias study findings. The two most common linear panel estimation methods are fixed effect and random effect estimations. Both methods take the unobserved heterogeneity of individual institutions or firms into consideration. Under fixed effect the heterogeneity is considered fixed over time and correlated with the explanatory variables while in random effect it is considered random over time and uncorrelated with each explanatory variable (Wooldridge, 2013). Mundalk (1978) argued that the random effect model assumes the exogeneity of all the regressors and the random individual effects, while the fixed effect model assumes the endogeneity of all the regressors and the individual effects.

In contrast to these, Hausman & Taylor's (1981) panel data estimator allows for some of the explanatory variables' endogeneity while the others remain exogenous.

According to Baltagi & Liu (2012), the Hausman & Taylor model (HT model) is more suitable than either fixed effect or random effect because of two reasons; it considers the endogenous character of a few of the explanatory variables, and it estimates the effect of time-invariant variables. This study faces the risk of endogeneity of the capital structure variables. For example, Tchuigoua (2014) found a significant relation between regulated MFIs and their funding source. Also, Zhao & Lounsbury (2016) found a significant association between religious diversity and capital structure. Hence, there is a possibility that some of these variables will be embedded in the residuals causing endogeneity with the capital structure variables. Furthermore, for most models in this study, the Hausman specification test result prefers Fixed Effect estimation. However, the fixed effect removes the dummy variable for legal status which is an important control variable for the study. Hence Hausman & Taylor's estimation is used in this study to curb the effect of the endogeneity of the capital structure variables and to effectively control for the legal status control variable.

4. RESULTS

The results are presented in Table 2 based on the Hausman & Taylor estimation. Overall the results suggest the importance of considering both capital structure and institutional quality together in determining the performance of MFIs. All three capital structure variables, donation, equity, and debt are significantly associated with financial performance but show statistically insignificant relation with social performance. Both donation and debt have negative associations with financial performance; however, the level of significance for debt is 10 percent which is weaker in comparison to the 1 percent level of significance for donation. Equity is the only capital component that showed a positive relation with financial performance, significant at 1 percent level. In addition, institutional quality significantly negatively influences social performance, both in breadth and depth of outreach, but has no relation with financial performance. This indicates that in order to maintain high performance in terms of both social and financial sustainability, it is important to make appropriate capital structure decisions as well as to consider the quality of the national institution.

Among the control variables, the size of MFIs shows a significant positive association with social performance through the breadth of outreach and financial performance at 1 percent level but has a significant negative association with social performance through the depth of outreach at 1 percent level. GDP growth is significant and negatively related to social performance measures, through both breadth and depth of outreach, while shows a positive and significant relationship with the financial performance of MFIs. The dummy variable for bank MFIs shows a significant negative association with both social and financial performance. NBFI type of MFIs shows negative relation with the breadth of outreach, significant at a 10 percent level, only when donation or debt is used as a funding source. The $\text{dummy}_{\text{nbfi}}$ variable has no significant relation with financial performance. Due to multicollinearity, the dummy variable for NGO is omitted by the estimator in all the models. Overall the results suggest that in countries with weak institutions and low GDP growth rates, a large MFI funded primarily with equity tends to have high social and high financial performance.

4.1. Robustness Checks

4.1.1. *Fixed and Random Effect*

Although the Hausman and Taylor estimation is the most appropriate method for this study, nonetheless the fixed effect and random effect were also estimated for each model to see if there are any major variations in the results. Table 3 shows the results of the fixed effect and Table 4 shows the result of the random effect. As expected, the fixed effect omits all three legal status dummy variables. However, the significance and relation of the other independent variables with the dependent variables did not change from that of the Hausman and Taylor (HT) estimation. Similar results are seen in table 4 for the random effects model. The Hausman specification test determines for all the models that fixed effect is more suitable than random effect. However, this study follows the suggestion of Egger (2002) which is to verify fixed and random effect estimation using the HT method. This is due to the fact that time-invariant dummy variables were not considered in the fixed effect model and also some variables' exogenous nature were also ignored in the fixed effect. A similar methodology was confirmed in Kabir, Block & Salim (2018). Hence it can be said that the results of HT methods are more robust than either fixed effect or random effect.

4.1.2. *Country-fixed Effect*

This is a regional study focusing on MFIs from eleven Asian countries. Hence, the MFIs are expected to be mostly homogenous in nature. However, there can still be some specific cultural, political, or environmental differences between countries. Hence, the models are re-estimated using dummy variables to control for the country's fixed effects. The results from the country fixed effect regressions do not differ much from the Hausman & Taylor results, except for model# 3-a where the coefficient of equity is positive; however, the relation remains insignificant. Since the significance level and values of all the time-variant factors remain similar to the previous results, it can be stated that the original results are robust.

Some major changes, however, occur in the legal status dummy variables when country-fixed effects are considered. In models with number of active borrowers (NAB) as the dependent variable (models# 1-a, 3-a, and 5-a), the bank and NBFI dummy variables become insignificant after controlling for country-fixed effects. Whereas, in the models with average loan size per borrower (ALSB) as the dependent variable (models# 1-b, 3-b, 5-b) the relation with the bank dummy has reversed from positive to negative as well as remaining insignificant. The NBFI dummies in those models become insignificant with no change in the sign of the coefficient. It can be suggested from this change in results, that the country-fixed effects were mostly embedded within the legal status dummy variables and hence the coefficients of the legal status control variables are biased in those estimations. Most of the country dummy variables significantly associated with the legal status variables, suggesting that specific cultural and political differences between the countries may affect the legal status of MFIs. However, presence of the country-specific differences does not influence the performance measure.

Table 2

Results of All Nine Regression Models using Hausman & Taylor Estimation

	Donation			Equity			Debt		
Independent Variables	Model#1-a (breadth)	Model#1-b (-depth)	Model#2 (OSS)	Model#3-a (breadth)	Model#3-b (-depth)	Model#4 (OSS)	Model#5-a (breadth)	Model#5-b (-depth)	Model#6 (OSS)
Capital Structure	–0.0637529	–0.0615638	–0.4207755***	0.009915	–0.1035505	0.4711907***	0.0578162	0.1650146	–0.2725326*
	(0.2868413)	(0.2191666)	(0.1345796)	(0.2097887)	(0.1317878)	(0.1366693)	(0.2140664)	(0.1650081)	(0.1573623)
InsQual	–2.101268***	2.656914***	0.4159069	–2.114428***	2.736248***	0.0670374	–2.055208***	2.800891***	0.2511485
	(0.7965411)	(0.8218501)	(0.9549838)	(0.7853549)	(0.8042519)	(0.9667523)	(0.7957442)	(0.8342917)	(0.9832699)
Ln(size)	0.6578397***	0.3399344***	0.0271581**	0.6601736***	0.3424648***	0.0419546***	0.6583183***	0.3367743***	0.0492947***
	(0.0386108)	(0.0346393)	(0.0129396)	(0.0364623)	(0.0323574)	(0.0123903)	(0.0370113)	(0.0334786)	(0.0131609)
GDPgrowth	–1.239777***	1.547464***	1.494269***	–1.269097***	1.461732***	1.551075***	–1.274699***	1.511736***	1.328951***
	(0.4658102)	(0.4975484)	(0.4801764)	(0.468624)	(0.4970892)	(0.4869143)	(0.4474457)	(0.4762313)	(0.5021261)
dummybank	–0.6546872**	0.358836	–0.1596242**	–0.6551836**	0.361261	–0.1765425**	–0.6532656**	0.3632923	–0.1682985**
	(0.2807559)	(0.2456305)	(0.0633071)	(0.2810144)	(0.2462096)	(0.0771278)	(0.2791647)	(0.2445843)	(0.0718658)
dummynbfi	–0.3280866*	0.3748638**	–0.0488589	–0.325906	0.3811068**	–0.051106	–0.3256974*	0.3768242**	–0.034438
	(0.1944231)	(0.183708)	(0.0459749)	(0.1930648)	(0.1826692)	(0.0430768)	(0.1912711)	(0.18293)	(0.0428562)
dummyngo	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)
constant	1.839857***	–2.336226***	0.4593706	1.803009***	–2.404118***	0.2867983	1.760255***	–2.488726***	0.3629189
	(0.7097973)	(0.684748)	(0.566406)	(0.6820654)	(0.6634633)	(0.5390583)	(0.6881722)	(0.6594742)	(0.5741071)

This table shows nine regression results of the nine models with three MFI performance indicators as dependent variables: breadth of outreach, depth of outreach and OSS. The main independent variables are donation (for models#1-a, 1-b, 2), equity (for models#3-a, 3-b, 4), debt (for models#5-a, 5-b, 6), and Institutional quality (in all models). The remaining variables are all MFI-specific and macroeconomic control variables.

* Significant at 10 percent.

** Significant at 5 percent.

*** Significant at 1 percent.

Table 3

Results of All Nine Regression Models using Fixed Effect Estimation

	Donation			Equity			Debt		
Independent Variables	Model#1-a (breadth)	Model#1-b (-depth)	Model#2 (OSS)	Model#3-a (breadth)	Model#3-b (-depth)	Model#4 (OSS)	Model#5-a (breadth)	Model#5-b (-depth)	Model#6 (OSS)
Capital Structure	–0.0867254	–0.0402922	–0.3871507***	0.0164772	–0.1091613	0.4523272***	0.0665401	0.1565275	–0.042609845
	(0.2929915)	(0.2232405)	(0.1328168)	(0.2134957)	(0.133123)	(0.1292487)	(0.2148809)	(0.1659025)	
InsQual	–1.65864***	2.314491***	–0.1462412	–1.679906**	2.402053***	–0.557102	–1.604192*	2.456774***	–0.4385255
	(0.8282585)	(0.8513454)	(1.171185)	(0.8169143)	(0.8340223)	(1.173853)	(0.8282915)	(0.8666631)	(1.200006)
Ln(size)	0.6449893***	0.3500152***	0.0579872***	0.6481975***	0.3517946***	0.0713723***	0.6460176***	0.3463009***	0.0817613***
	(0.040268)	(0.0360235)	(0.0181546)	(0.0381871)	(0.0337756)	(0.0166005)	(0.0387008)	(0.0349867)	(0.0167094)
GDPgrowth	–1.314582**	1.56046***	1.907608***	–1.353164**	1.483743***	1.925991***	–1.36218***	1.536979***	1.701382***
	(0.4527514)	(0.4908954)	(0.4965241)	(0.4515621)	(0.4885713)	(0.4949166)	(0.4296017)	(0.4663178)	(0.5103222)
dummybank	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)
dummynbfi	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)
dummyngo	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)
constant	1.561053***	–2.094549***	0.1521449	1.512689***	–2.149314***	0.0409487	1.461781***	–2.228174***	0.1094137
	(0.7248441)	(0.7012568)	(0.663937)	(0.7042908)	(0.6853006)	(0.6377809)	(0.7151754)	(0.685485)	(0.6753751)

This table shows nine regression results of the nine models with three MFI performance indicators as dependent variables: breadth of outreach, depth of outreach and OSS. The main independent variables are donation (for models#1-a, 1-b, 2), equity (for models#3-a, 3-b, 4), debt (for models#5-a, 5-b, 6), and Institutional quality (in all models). The remaining variables are all MFI-specific and macroeconomic control variables.

* Significant at 10 percent.

** Significant at 5 percent.

*** Significant at 1 percent.

Table 4

Results of All Nine Regression Models Using Random Effect Estimation

	Donation			Equity			Debt		
Independent Variables	Model#1-a (breadth)	Model#1-b (-depth)	Model#2 (OSS)	Model#3-a (breadth)	Model#3-b (-depth)	Model#4 (OSS)	Model#5-a (breadth)	Model#5-b (-depth)	Model#6 (OSS)
Capital Structure	–0.0690751	–0.0576281	–0.39529***	–0.0244536	–0.0875735	0.4048013***	0.1037313	0.1414818	–0.2308504*
	(0.2757055)	(0.2111572)	(0.1456737)	(0.2067059)	(0.1327963)	(0.1379575)	(0.2086115)	(0.1642893)	(0.1335535)
InsQual	–2.279012***	2.761671***	0.4764639	–2.290085***	2.832141***	0.1994533	–2.23865***	2.892194***	0.3757854
	(0.7874761)	(0.8146822)	(0.9319527)	(0.7778742)	(0.7957083)	(0.9347785)	(0.7868482)	(0.8242071)	(0.9365577)
Ln(size)	0.6623899***	0.3372679***	0.0248312*	0.66566***	0.3394895***	0.0382103***	0.6627543***	0.3345154***	0.0435643***
	(0.0380711)	(0.0342966)	(0.0127545)	(0.035899)	(0.0320202)	(0.0122294)	(0.0363076)	(0.0330508)	(0.0129498)
GDPgrowth	–1.203452**	1.53928***	1.425922***	–1.248209***	1.463435***	1.462137***	–1.233625***	1.505344***	1.269475**
	(0.4703701)	(0.4979519)	(0.4869091)	(0.4736082)	(0.4967954)	(0.5016421)	(0.4571254)	(0.47966)	(0.5096883)
dummybank	–0.6583865**	0.3611027	–0.1557325**	–0.658607**	0.3632445	–0.1700501**	–0.6566947**	0.3650984	–0.1618035**
	(0.278734)	(0.2443142)	(0.0626684)	(0.2780601)	(0.244916)	(0.073919)	(0.2760122)	(0.2433788)	(0.0698163)
dummynbfi	–0.062581408	0.3726749**	–0.0488625	–0.3203976*	0.3780901**	–0.0500782	–0.3211361*	0.3743827**	–0.0361468
		(0.1826952)	(0.0457272)	(0.1911262)	(0.1816054)	(0.0431233)	(0.1894202)	(0.1820069)	(0.0426757)
dummyngo	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)	(omitted)
constant	1.854732***	–2.346079***	0.4692612	1.806791***	–2.406849***	0.2961074	1.743827***	–2.479975***	0.3656614
	(0.7001864)	(0.6778372)	(0.5577744)	(0.6738958)	(0.6576907)	(0.5240513)	(0.6796793)	(0.6542833)	(0.5411662)

This table shows nine regression results of the nine models with three MFI performance indicators as dependent variables: breadth of outreach, depth of outreach and OSS. The main independent variables are donation (for models#1-a, 1-b, 2), equity (for models#3-a, 3-b, 4), debt (for models#5-a, 5-b, 6), and Institutional quality (in all models). The remaining variables are all MFI-specific and macroeconomic control variables.

* Significant at 10 percent.

** Significant at 5 percent.

*** Significant at 1 percent.

4.1.3. *Combined Funding Models*

Taking a single funding source as the capital structure variable may not be able to capture the correlation with the other sources of funds. To control for possible correlation between the funding sources, three new models are developed by combining all the funding sources. These models are mentioned as "combined models" henceforth. In each of the combined models, one of the three (NAB, ALSB, and OSS) performance measures is used as the dependent variable.

In the combined model, the capital structure variables, i.e., equity, debt, and donation show a positive coefficient with NAB which contradicts the previous models. However, none of the coefficients are insignificantly associated with the number of active borrowers (NAB), suggesting that the correlation among the capital component does not affect the implication of the study. The coefficients of the institutional quality variable as well as all the control variables in the first combined model are not different in terms of statistical significance and relationship compared to the results of models# 1-a, 3-a, and 5-a. Similar results are observed for the case of average loan size per borrower (ALSB) in the second combined model and OSS in the third combined model.

5. DISCUSSION OF RESULTS

The results suggest that capital structure and institutional quality are important considerations for MFI's performance. In particular, funding sources show a significant impact on financial performance but not on social performance. This automatically rejects hypothesis 3 (H3) and hypothesis 5 (H5) which suggested significant relation between equity and debt respectively on social performance. On the other hand, the institutional quality of the host country shows a significant impact on social performance but not on financial performance. This selection analyses the results and relates the findings to the theory and practice**.**

5.1. Analysis of Institutional Quality

In Models# 1-a, 3-a, and 5-a, the coefficients of Institutional Quality come out to be significant at a 1 percent level and affect the number of active borrowers (NAB) negatively. NAB is an indicator of the breadth of outreach suggesting that when institutional quality is strong the breadth of outreach is low. Also in Models# 1-b, 3-b, and 5-b the coefficient of Institutional Quality comes out to be significant at a 1 percent level and affects average loan size per borrower (ALSB) positively. A lower ALSB indicates a higher depth of outreach suggesting that when institutional quality is weak, the depth of outreach is high. This means that even if a country's rule of law is not very strong, government size is relatively smaller, regulations are less efficiently implemented and markets are somewhat controlled, MFI tends to maintain reasonably high social performance. Thus, our results show that hypothesis 1 (H1) could not be rejected. This finding is contradictory to the conventional theories that link institutional quality to the performance of commercially driven financial institutions.

Kanagaretnam, Lim, & Lobo (2011) claims that stronger legal, extra-legal, and political institutions are associated with higher levels of earnings for commercial banks. This theory is further supported by the Contract Theory of institutions which claims that weak institutions may lead to non-enforcement of contracts and thus induce poor

performance of firms and banks (Chakraborty, 2016). However, MFIs do not entirely depend on institutional protection. Instead, they use innovative methods of contract enforcement such as group lending, close monitoring, and ensuring accountability. Hence the contract theory of institutions does not apply to socially motivated firms like MFIs. Instead, MFIs create credit networks in the informal sector and elude the high transaction costs that are present in the formal sector of an economy with weak institutional quality (Boehe & Cruz, 2013). Barry & Tacneng (2014) explains that weak institutions foster relationship-based transactions which are an expertise of the MFIs, unlike traditional banks which are better suited for a formal environment. Hence, MFIs perform well socially when operating in countries with weak institutional quality. The results of this study suggest that the traditional institutional theories may not be applicable to socially motivated firms like MFIs.

The tendency of MFIs to perform well in the relatively weaker institutional framework can be explained by the market failure solution theory of MFI as suggested by Vanroose & D'Espallier (2013). Profit-oriented traditional banks are particular about the lack of collateral and low repayment risk within a weak institutional economy and hence prefer not to enter in such markets (Boehe & Cruz, 2013). This creates a gap in the financial industry in countries with relatively weaker institutions and MFIs can fill up those gaps. In countries with strong institutions, the MFIs stand to be in direct competition with the traditional banks and hence their outreach is narrow. This idea is supported by the findings of Cull, Demirgüç-Kunt & Murdoch (2014) that MFIs narrow down their outreach and concentrate on a niche market in economies where there is greater penetration of commercial banks. As commercial banks preferably expand their operation when institutional quality is strong, the scope for MFIs to socially perform in such an environment shrinks (Boehe & Cruz, 2013). This study supports the idea that strong institutions may affect the social performance of MFIs.

Both Vanroose & D'Espallier (2013) and Barry & Tacneng (2014) observed significant negative relation between institutional quality and the financial performance of MFI which contradicts the results of this study. The estimated results suggest a positive but insignificant relation. This may happen due to the positive spillover effect of traditional banking sector development caused by improved institutional quality as suggested by Cull, et al. (2014). When institutional quality improves, commercial banks can extend their credit lines to MFIs. So, instead of competing directly with MFIs the traditional banking sector can reinforce the development of the microfinance sector by providing loans to MFIs. When such positive spillover happens MFIs' financial performance can increase, as they are open to more funds, even under stronger institutions. MFIs in Asian countries seem to rely on loans from commercial banks as can be seen in the high mean value of debt percentage in Table 1. This can be the reason for the positive relation between the institutional quality and financial performance of Asian MFIs. However, since all the countries within the sample have, on average, weak institutions (shown by the mean value of institutional quality index score in Table 4.1) it cannot be a certain claim that the increased debt funding is due to the substantial development in the traditional banking sector. Hence, the positive association is found statistically insignificant in this study. Thus, it is proven that hypothesis 6 (H6) is rejected since the institutional quality was found to have no effect on the financial performance of MFI using debt.

5.2. Analysis of Capital Structure

Capital structure does not significantly influence social performance. The coefficients of each of the three funding sources are statistically insignificant to the breadth of outreach in Models# 1-a, 3-a, and 5-a as well as to the depth of outreach in Models# 1-b, 3-b, and 5-b. These findings conform to that of Hartarska & Nadolnyak (2007) which implied that the outreach of MFI is not affected by leverage or capitalisation. Hence, hypothesis 3 (the relation between equity and social performance) and hypothesis 5 (the relation between debt and social performance) can be rejected. As such, the results of this study do not comply with the combined findings of Hartarska & Nadolnyak (2007) and Tchuigoua (2015). According to Hartarska & Nadolnayak (2007), regulated MFIs have high social performance while, as per Tchuigoua (2015), regulated MFIs attract more debt funds. Together, being regulated is the mediating factor for MFIs that rely on debt to have high social performance. The MFIs that do not collect deposits like NBFI and NGOs are usually less regulated compared to deposit-collecting MFIs like banks (Hartarska & Nadolnyak, 2007). The sample of this study includes the majority of the MFIs that are categorised as either NBFIs or NGOs which are largely unregulated (as shown in Table 5). Hence it leads to the insignificant relation between debt and social performance, indicating that among Asian MFIs highly leveraged MFIs do not necessarily have high social performance.

Table 5

Frequency Distribution of the Legal Status of MFIs within the Sample

Legal Status	Frequency	Percentage	Cumulative
Bank	140	18.67	18.67
NBFI	330	44.00	62.67
NGO	280	37.33	100.00
Total	750	100	

Contrarily, financial performance is significantly influenced by capital structure decisions. Donation and debt have a significant negative influence on financial performance, while equity has a positive and significant impact on financial performance. Bogan (2012) finds significant negative relation between donation and financial performance which correlates with this study. Donations do not require any return to be paid to the donors, which may have caused less accountability toward the donors and made the MFIs less focused on performance enhancement. Thus, MFIs that rely on donations have a tendency of low financial performance regardless of the level of institutional quality in which they operate. Hence hypothesis 2 (H2) cannot be rejected.

The positive relation between equity and financial performance suggests that when MFIs have Initial Public Offering (IPO) and increase their equity capital, their financial performance rises. This finding is supported by Hartarska & Nadolnyak (2007). Equity investors are more aware and involved within the operation of MFI than donors and hence there is a higher level of accountability. Many of the MFIs within the sample have private equity capital rather than public capital from IPOs. It is a known fact that private equity investors hold the firm more accountable than public investors. The MFI is

expected to provide a return, like any commercial bank, to the equity investors to keep them happy and invested. Hence MFIs pursue higher financial performance when funded with equity. The results show that MFIs operating in either strong or weak institutional quality, but funding their operation with equity, have high financial performance proving that Hypothesis 4 (H4) cannot be rejected.

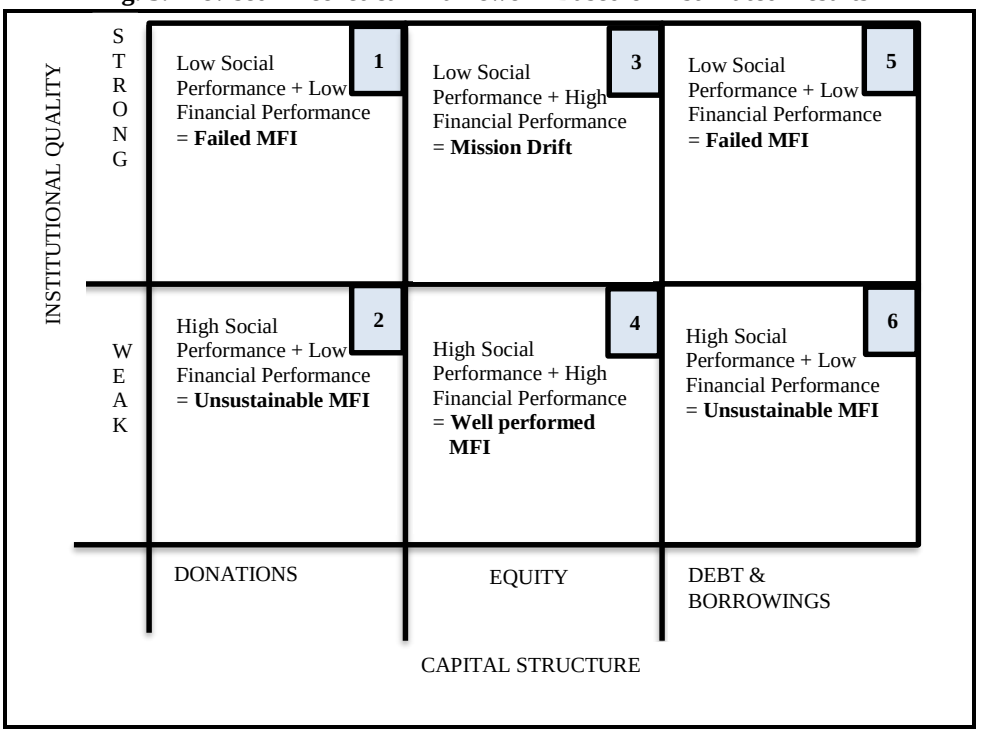
Debt funding shows a significant and negative impact on financial performance, but only at a 10 percent significance level. This is in line with the findings of Bogan (2012) that debt negatively affects financial performance. Lassoued (2021) also finds that debt exhibits a negative effect on earnings management for MFIs. According to Modigliani & Miller's (1958) theory of capital structure, traditional profit-oriented firms get a tax advantage when funded with debt and hence that can increase their financial performance. However, the M&M theory does not apply in the case of MFIs. MFIs get tax exemptions for their not-for-profit status in most Asian countries, thus lacking the tax advantage on leverage. On top of that, the cost of disbursing microloans is high (Cull, Demirgüç-Kunt, & Murdoch, 2009) and debt funding further increases the cost. Hence, debt has no advantage for MFIs that can lead to high financial performance; rather reduces such performance. Although Ndaki, et al. (2018) found a positive association between CEO tenure and debt proportions of MFIs but this is not reflected in the financial performance. Our hypothesis 6 (H6) suggests that financial performance for MFIs that rely on debt depends on institutional quality but our results show otherwise. Hence, MFIs that rely on debt had significantly low financial performance regardless of the level of institutional quality. So, the results indicate that Hypothesis 6 (H6) is rejected.

5.3. Implication of Results

The theoretical framework that is hypothesised in Figure 1 based on the past literature is only partially supported by the estimated results. The revised framework is presented in Figure 3. The results have some important theoretical implications. First, the conventional perception that donation-based MFIs are either failure (in relatively strong institution-based countries) or unsustainable (in relatively weak institution-based countries), and the equity-based MFIs operating in relatively strong institution-based countries are facing mission drift (as they tend to get carried away with a boost in financial performance) is supported by estimated data (Box 1, 2 and 3). Second, the conventional assumption that equity-based MFIs face mission drift even when operating in a weak institutional environment has been rejected (Box 4). The results suggest that equity funding increases financial performance whereas weak institutions increase social performance. Thus, equity-based MFIs operating in countries with relatively weaker institutions, tend to be both financially and socially successful. However, since institutional quality has no statistically significant effect on financial performance, there is no extra boost for financial performance through institutions. Finally, according to the past literature, the perception that debt increases social performance is not supported by the estimated data. The social performance of the Asian MFIs is not found to be significantly influenced by debt; however, debt has a negative impact on financial performance. Together with a strong institutional environment that reduces social performance, debt leads to the notion that MFIs are a failure instead of being

unsustainable (Box 5). A weaker institutional environment, nevertheless, increases the social performance of MFIs. Thus, together with the reduced financial performance due to the debt funding, the country's weaker institutions show the tendency to make the MFI unsustainable instead of being successful (Box 6).

Fig. 3. Revised Theoretical Framework Based on Estimated Results



Overall, MFIs can be well-performed with equity funding when operating in a relatively weak institutional environment. This happens due to higher accountability to the shareholders which forces the firms to enhance the utilisation of capital and to become financially successful, and due to less regulatory burden which enables firms to rely on informal lending and recovery techniques in being socially successful. This result contradicts the Modigliani & Miller's (1958) capital structure theory (MM theory) that firms do better when leveraged with debt funding. The underlying logic of MM theory is that firms can receive tax advantages when leveraging their capital with debt funding. However, most MFIs are tax exempted, thus missing out the advantage of tax benefits. Instead, debt increases costs, leading the MFIs to become financially less successful. The mystery that weaker institutions make MFIs more successful in social performance can be explained by the Market Failure Solution theory of Vanroose & D'Espalliar (2013) that MFIs fill in the gap of financial markets left by commercial banks and thus expand their breadth of outreach. If institutions are relatively weak, commercial lending institutions are too focused on collateral-based loans. Hence, a large gap exists in the market for collateral-free microfinancing. MFIs operate in this gap without facing much competition, and thus can concentrate on enhancing social performance. However, the

stronger the institutional environments, the smaller the space for microfinancing. Thus, MFIs face competition from commercial lending institutions in their lending domain. Such competition lead MFIs to concentrate more on sustainability and drifts away from the focus on social performance. Hence, MFIs prosper in a relationship-based informal environment which is prominent in countries with relatively weaker institutions as suggested by Barry & Tacneng (2014).

The findings have profound managerial implications as well. Instead of funding with donations or debt, MFIs should focus on equity funding. They should have shareholders or partners, not donors or creditors, as investors. This way MFIs can ensure financial sustainability. Most of the profit above the shareholders' dividends should be reinvested to expand and increase the size of the firm since a larger firm size boosts performance. If the MFIs rely more on debt or donation funding, they have the risk of either becoming unsustainable or being a failure. MFIs should seek to operate in countries with weaker institutions and low GDP growth rates to get a wider and deeper outreach leading to higher social performance. If the institutional quality and overall macroeconomic environment of a country improves then it can be assumed that a larger proportion of the population is coming out of poverty and/or becoming eligible to access the commercial banking system. Hence, the market for MFIs shrinks. Thus, it can be reasonably argued that MFIs do better - in terms of financial and social performance—with equity capital and operating in countries where institutions are relatively weaker.

6. CONCLUSION

The first Sustainable Development Goal, suggested by the United Nations, is to remove poverty, and Microfinance Institutions (MFIs) have become major players dedicated to achieving this goal. However, the recent controversies surrounding the MFIs have stemmed from the idea that MFIs cannot simultaneously perform socially and sustain financially. The MFIs may focus on social performance but eventually become financially unsustainable; or they may focus on financial performance and fail to perform socially, thus facing mission drift. Hence MFIS need to have a proper guidelines to maintain both social and financial performance within the environment in that they operate. This paper investigates the issue from the perspective of the capital structure of the MFI, i.e. funding sources; and institutional quality of the country in which the MFI operates. The past literature looked at the issue separately for capital structure or institutional quality. Adusei & Sarpong-Danquah (2021) have found that board gender diversity moderates the relationship between institutional quality and capital structure for MFIs. But our study combines both capital structure (at the firm level) and institutional quality (at the national level) and comes up with a holistic approach to finding the optimal capital structure of MFIs under the influence of the institutional quality of the host country. The results show that capital structure does not affect social performance, i.e., breadth of outreach or depth of outreach, but rather significantly affects financial performance. As opposed to the Modigliani and Miller (1958) theory of capital structure, equity is preferred over debt for socially motivated firms like MFIs. Furthermore, this study finds that institutional quality significantly affects the social performance but not the financial performance of MFIs, implying that both the capital structure decisions and

the institutional quality of the country are equally important for maintaining high social and financial performance. The result of this study is in line with the market failure solution theory of Vanroose & D'Espallier (2013).

The literature on Microfinance is still developing, and this study adds to the vast academic knowledge while opening doors to future developments. A future study that takes MFIs from all regions around the world will help to avoid survivorship biases and enrich the findings. A potential study could also find an accurate measure of social performance through an index created by principal component analysis. This new index can combine both breadth and depth of outreach and give a single value of social performance for an MFI. Such index creation, however, was beyond the capacity of this study.

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