GO Green Research and Education

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

ESG and Financial Performance of Microfinance Institutions in South and Southeast Asia: Does Financial Development Matter?

Anum Rashid*
Ph.D. Scholar Management Sciences Department Comsats University Islamabad, Pakistan at-anumqadir5@gmail.com
Dr. Muhammad Aftab
Assistant Professor Management Sciences Department Comsats University Islamabad, Pakistan at-maftab@comsats.edu.pk

Abstract

This research empirically explores the moderating role of financial development on the relationship between ESG activities and the financial performance of microfinance institutions. The study employs a sample of seventy MFIs in the South and Southeast Asian region. The results find that financial development plays a detrimental role, and negatively moderates the relationship between sustainable activities and the financial performance of MFIs. The findings also show the substitution effect of financial development. The results reveal that the main effect of financial development is positive and enhances the MFI's financial performance, whereas financial development assuages the effect of ESG engagement on the MFI's financial performance. The research contributes to the burgeoning literature by providing new evidence on the moderating role of financial development on ESG engagement and MFI's financial performance.

Keywords: ESG; Sustainable finance; financial development; Microfinance Institutions.

1. Introduction

Financial development is an imperative dimension that needs investigation and affects the sustainability and performance of MFI's. There are arguments related to the financial development's positive impact on the MFI's performance. Financial development is about enhanced financial services and activities that stimulate competition for borrowers among lenders. This motivates MFIs to enhance their operations and reduce costs by enhancing the quality of the services to retain clients (Abrar et al., 2021). MFIs diversify their financial products because of the competitive pressure from the banks. In a developed financial system, commercial banks are indulged in offering microloans. The

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
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nomenclature of downscaling is used for this process which eventually enhances the competition for the MFIs. The development of commercial banks channelizes positive spillover, as they adopted efficient and modern techniques that are new for MFIs and can be copied by them which helps in improving their performance (Hermes et al., 2009). On the contrary, there are negative repercussions of financial development on MFI's performance. The well-developed financial markets and the large number of commercial banks offering numerous services encourage borrowers to substitute their loans rather than availing from the MFIs because of multifarious reasons that include lower borrowing costs, large borrowed amounts, and flexible borrowing options. The substitution effect declined the MFI's service demand and nosedived its performance (Vanroose & D'Espallier, 2013).

The extant literature evaluates the effect of financial development on the performance of MFIs. Kendo & Tchakounte (2022) identify the influence of financial development on the financial integration of MFIs, and the results reveal its positive impact on the MFI's financial integration. Afrifa et al. (2019) evaluate the role of financial development, and its influence on the MFI's performance in the South African region and find its positive impact on the MFI's performance. Memon et al. (2022) analyze the MFI's performance in South Asia by considering external and internal factors. The findings reveal that financial and human development negatively influence the MFI's financial performance. The impact of financial development on the nexus of ESG-financial performance is not lucid. However, this research extends the line of inquiry by examining the moderating impact of financial development on the linkage of ESG engagement and financial performance in MFIs. We structure the remainder of the article as follows: The section 2 presents a literature review linking financial development with ESG activities and MFIs financial performance. The section 3 depicts research methodology. Section 4 explains the results. Section 5 concludes the paper.

2. Literature Review

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
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A financial system is categorized broadly into two components namely financial institutions and financial markets. Each component plays a very imperative role in facilitating lenders, investors, and borrowers by providing various financial services. Svirydzenka (2016) points out that banks play a very crucial role in meeting financial needs being the largest segment of financial institutions, the role of other financial institutions includes investment banks, insurance companies, mutual funds, and pension funds gaining momentum and importance in the contemporary world. The other imperative component of the financial system is the financial markets which entails bond and stock markets providing opportunities for businesses and individuals in enhancing financial capital and diversifying their portfolios. Thus financial system keeps a record of financial activities, mobilizes the funds between the surplus and deficit households, and assists the funds accumulation process (Fase and Abma, 2003).

Financial development explains the country's financial system characteristics over time. A financial system comprises financial institutions that include development and commercial banks, insurance companies, and financial markets and their contribution to efficiently improving the allocation of scarce resources (Hermes et al., 2009). Financial development enhances the performance of macroeconomic indicators, and it helps scarce financial sources allocate to the most efficient and viable investment projects (Afrifa et al., 2022). Thus the well-developed financial system provides a stimulating environment for growth. Financial development is the financial system's ability to efficiently allocate resources, mobilize private savings, increase the diversification of liquidity risk, reduce transaction costs and information symmetries, and provide alternative funds through undistributed corporate profits and individual household savings (Abrar et al., 2021).The financial system facilitates the process of fund accumulation and mobilizes the funds between surplus and deficit units by tracking the financial activities. Levin (2005) highlights the imperative five financial system functions. Firstly, the financial system gathers savings from surplus units. Second, it creates investment opportunities. Third, it

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ISSN:2958-5074 pISSN:2958-5066
Volume No:2 Issue No:2(2023)

provides an effective monitoring mechanism. Fourth, it plays a lot in risk sharing, and lastly financial development benefits goods and services exchange. All these functions highlight the importance of the financial system.

Poor masses around the globe don't have access to financial services and products because they cannot offer the collateral for the loans, and cannot endure the transaction and interest costs associated with the loan (CGAP, 2009). Informal lenders or markets provide financial services, as poor people prefer small-size financial services and products to cater to their basic needs, and they should be collateral-free (Ledgerwood, 2013).In developing countries, conventional banks evade poor households because they need diverse and different financial services (Beck et al.2007). There is also the viewpoint that MFIs complement the role of conventional banks, and contribute towards financial development. The income and asset base of low-income people escalates by providing low-income groups with basic credit facilities.MFIs are the substitute for conventional banking by absorbing the borrowers and lenders of traditional banking and providing them the similar financial services that include insurance, deposits, and money transfers at a very minimal cost (Armendariz and Morduch, 2005).

On the contrary, there are many explanations of the financial development influence on the MFI's performance. There are several arguments regarding the positive impact of financial development on MFI's performance. Firstly, financial development is about the increasing number of commercial services and banks. The commercial bank's growth and activities pave the way for increased competition for borrowers among lenders. The enhanced competition stimulates MFIs to enhance their operations and reduce costs by enhancing the quality of their services to hold clients. Furthermore, MFIs diversify their financial products, retain clients, and attract new ones because of the competitive pressure from the banks. Commercial banks engaged in offering microloans in established financial systems. In the literature nomenclature of "downscaling" is used

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ISSN:2958-5074 pISSN:2958-5066
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for this process. MFIs confront increased competition from borrowers (Hermes et al., 2009).

Secondly, the development of commercial banks leads to positive spillover. In particular, these banks use efficient and modern techniques that are novel for MFIs. These techniques may be copied by MFIs which helps in improving their performance. Thirdly sophisticated supervision and regulation of financial institutions help in escalating the performance of MFIs. The massive financial system's role activates the government to enhance the prevailing supervisory and regulatory system, and this upgraded system includes MFIs and their practices. Consequently, the activities of MFIs improved because of increased supervision and regulation. Hermes et al. (2009) depict that established financial markets are associated with lower interest rate margins, cost, and default rates, thus helping in lowering the operating cost of MFIs, and hence performance of MFIs escalates. Moreover, the traditional banking sector reinforces microfinance development by providing opportunities for MFIs to expand their activities with the help of necessary external funding (Vanroose and D'Espallier, 2013).

On the contrary, there are arguments regarding the negative influence of financial development on the MFI's performance. The main argument between the developed financial markets and the MFI's performance focuses on the competition and implies that established financial markets have enhanced the number of commercial banks, and numerous services offered by the bank include loans to microfinance businesses. The commercial bank's presence encourages borrowers for their loan substitution, instead of taking from MFIs because of multifarious reasons that include flexible borrowing options, lower borrowing costs, and large borrowed amounts. The substitution effect lessens MFI services demand, which eventually reduces its performance. Moreover, the commercial bank's enhanced competition harms MFI borrowers' repayment, as they are taking multiple loans from financial institutions. The decreased repayment rates have adverse consequences for the performance of MFIs (Hermes et al., 2009).

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Moreover, commercial banks offer loans at a lower rate in comparison to MFI, and their rates of interest are comparatively higher in comparison to commercial banks because of higher transaction costs higher credit risk; and this leads to the crowding out effect when MFI clients substitute commercial bank loan MFIs at lower interest rates (Vanroose and D'Espallier, 2013). This leads to the negative effect of financial sector development on the MFI's performance. Moreover, the traditional banking sector reinforces microfinance development by providing opportunities for MFIs to expand their activities with the help of external funding.

Yuxiang and Chen (2011) argue that financial development influences environmental activities by considering four areas namely capital, income, technology adoption, and regulation. Firstly company's financial constraints are a major impediment to the growth of business and require additional funding sources for expanding the operations. Financial constraints are the major obstacle in the growth of MFIs, and face acute shortages of finance because of high credit risk because the customers belong to the marginalized segment of society, and the propensity to return the loan is higher. In such a scenario the distribution functions and capital accumulation within the financial system facilitate fund allocation efficiently resulting in a lower cost of financial intermediation (Alam et al., 2015). The financial transaction's reasonable costs expand the investment opportunities, and thus high capital level is channeled to the borrowers. Access to finance at a reasonable cost facilitates investment in environmentally friendly projects, and thus financial deepening encourages the activities of environmental upgradation.

Secondly, financial development causes environmental effects through improvements in technology. Easy access to finance inspires firms to cogitate on research and development that facilitates scaling up green activities and putting forward innovative solutions for environmental hazards (Kumbaroğlu et al., 2008). Thirdly, the level of income is an important channel through which financial development enhances environmental engagement. The strong financial system performs a very imperative role

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ISSN:2958-5074 pISSN:2958-5066
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in the country's economic growth by fostering productivity growth. There is a viewpoint that a country with good economic growth, and a financial system attract foreign direct investment (FDI). The foreign firm's presence brings new methods and techniques of production that facilitate environment-intensive projects (Fung, 2009).

Financial development promotes social activities and offers a platform for non-government organizations and organizations to access finance for supporting innovative social activities. Access to finance escalates the income levels of individuals which helps in eradicating poverty-related problems. This seems edifying and sufficient to predict the positive repercussions of financial development on social well-being (Levin, 2009). Moreover, economic growth spurs the underlying mechanism between financial sector development and social mobility. Studies exhibit that financial sector development nurtures economic development that paves the way for social welfare. It brings about changes in the economy that have a profound impact on income inequality (Alam et al., 2015). The use and availability of funds by the institutions have direct effects that yield economic opportunities for the poor, and indirect effects focus on a higher nation's economic growth that creates job opportunities, thus financial sector development not only spurs economic growth but facilitates social activities engagement. Financial development improves a firm's governance. It is argued that financial institutions take protective measures such as monitoring projects, credit analysis, and strong corporate governance to enhance the quality of loan assets. Sound financial systems foster strong corporate governance, and escalate the transparency between borrowers and lenders (Ng et al., 2020).

The empirical studies review the financial development impact on the MFI's financial performance. Vanroose and D'Espallier (2009) investigate the effect of financial development on MFI performance and explain that microfinance institutions flourish more in outreach and profitability when the formal banking sectors fail and are not developed. This result corroborates the market failure hypothesis. Hermes et al. (2009)

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analyze the relationship between financial sector development and MFI performance and find its positive impact on MFI's operation. Annim (2012) investigates the impact of environmental externalities including credit information, financial development, and property rights on the MFI's performance, and reveals that financial development adversely affects the social outreach and financial performance of MFIs. Ahlin et al. (2011) investigate the performance of microfinance institutions in the context of the macro institution environment in which the firm operates and find that MFIs are financially deepened in financially developed countries. Abrar et al. (2021) analyze the importance of MFIs in enhancing the efficiency of commercial banks and financial development and depict that MFI participation enhances total bank deposits and credit allocation in the economy. Memon et al. (2022) analyze the MFI's performance in South Asia by considering external and internal factors. The findings reveal that financial and human development negatively influence the MFI's financial performance. Kendo and Tchakounte (2022) identify the financial development effect on the MFI's financial integration, and the results reveal its positive impact on financial integration. Afrifa et al. (2019) explore the financial development impact on the MFI's performance in the South African region and find a positive effect of financial development on MFIs performance. Proponents of the positive influence of financial sector development argue that the developed financial sector delivers a favorable environment that nurtures the profitability and efficiency of MFIs.The spillover effect of modern banking techniques provokes MFIs to improve quality, reduce costs, and increase supervision and regulation of financial institutions (Aboagye and Otieku, 2010).The extant study analyzes the moderating impact on the ESG-performance relationship nexus. There are scant studies that examine the interaction effect of financial development and ESG engagement on the financial performance in the microfinance industry, so this study puts forward the following hypothesis.

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H1*: Financial Development moderates the relationship between ESG engagement and financial performance.*

3. Research Methodology

3.1. Data

The data comprise a sample of seventy MFIs from South and Southeast Asia. The countries in the sample are Pakistan, India, Bangladesh, Sri Lanka, Philippines, Cambodia, Indonesia, Myanmar, and Vietnam. The microfinance information exchange market reports MFI data in diamond categories that range from 1 to 5, based on the reliability and quality of the information. A diamond rating of 1 or 2 shows unreliable and poor quality data, whereas a diamond rating of 4 or 5 reveals reliable and high quality data. The study considers MFIs that have a diamond ratings of 4 or 5, as they have audited financial reports that is a reasonable limit for reliable and comparable data. The study gathers the annual reports from MFIs websites for measuring the ESG activities. We conduct the analysis from 2013 to 2020.The data for measuring the financial performance of MFIs, financial development, and the control variables are retrieved from microfinance information exchange (MIX), International Monetary Fund (IMF), and world development indicators (WDI).Table 3.1 describes the variables ,their measurement and sources.

3.2. Measurement of Variables

3.2.1 Design of ESG Index

In order to assess the contribution of MFIs to the promotion of sustainable practices in South and Southeast Asia, we have created a thorough ESG involvement index. We take into account eleven social, environmental, and governance elements when building the index. Since our sample consists of banks, non-banking financial institutions, and non-governmental organizations, we modify the ESG dimensions based on the Bair et al. (2020) vocabulary of ESG and include those common to all legal categories of microfinance organizations. Ten main elements are included in our index, which is divided into three categories: governance, social, and environmental activities.

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First, the research uses an ESG vocabulary to assess social, environmental, and governance engagements (Baier et al., 2020).The Multi-Criteria Decision Making (MCDM) technique is then used to build the ESG index by combining individual ESG indicators into a composite index. The most popular MCDM method for creating a composite index from individual indicator scores is TOPSIS (Hwang & Yoon, 1981).Based on the established criteria, microfinance institutions are ranked using TOPSIS.

3.2.2 Financial Performance

Based on the existing research, the study employs various financial performance proxies (Mersland and Storm, 2009; Zamore, 2018; Quayes, 2019). However, the return on assets (ROA), profit margin (PM), and yield on the gross loan portfolio (YOGLP) are the metrics that are most frequently employed in the literature to assess the performance of MFIs.The ratio of net income to average assets of MFI is known as return on assets (ROA) (Assefa et al.,2013; Afrifa et al., 2019). The net operational margin to financial revenue ratio is used to calculate profit margin (PM) (Nasrin et al., 2018). The microfinance institution's interest income on the portfolio is measured by the yield on the gross loan portfolio (YOGLP) (Meyer, 2019).

3.2.3 Financial Development

The moderating variable, financial development, is widely used in the literature. Financial market depth (FID), financial market access (FMA), financial market efficiency (FME), financial institution efficiency (FIE), and financial institution depth (FID) are the six sub-indices used in this research, which is based on the work of Svirydzenka (2016) and Aluko & Ibrahim (2020).

3.3. Empirical Specification of Models

$$FP_{it} = \alpha + \beta_1 FP_{it-1} + \beta_2 MFIS.ESG_{it} + \beta_3 FD_{it} + \beta_4 FD_{it} * MFIS.ESG_{it} + \beta_5 CPB_{it} + \beta_6 CTA_{it} + \beta_7 PAR90_{it} + \beta_8 Assets_{it} + \beta_9 GDPgrowth_{it} + \beta_{10} Inflation_{it} + \varepsilon_{it}$$

The model mentioned above tests the moderating impact of financial development on the linkage between ESG engagement and performance. The notions i and t indicate the

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ISSN:2958-5074 pISSN:2958-5066
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microfinance institution and time. FP_{it} is the MFI's financial performance. ESG_{it} describes the environmental, social, and governance engagement.FP_{it-1}show one period lag of the dependent variable. CPB_{it} is the cost per borrower, CTA_{it} is the capital to total assets, and $PAR90_{it}$ is the portfolio at risk that is an arrear over 90 days.FD_{it} represents the country-level financial development. $FD_{it} * MFIS.ESG_{it}$ represents the interaction term for analyzing the moderating impact of financial development. The MFI-specific control variables include assets, portfolio at risk, cost per borrower, and capital-to-asset ratio. MAC specifies macroeconomic control variables: GDP growth and inflation.

Table 3.1
Description of Variables

Variable Name	Variable Definition	Source
ESG Index	Development of Microfinance Institutions' Environmental, Social, and Governance Engagement Index	Self-constructed , Annual reports that were downloaded from websites, textual analysis, and the TOPSIS method
Financial Development Index	The index evaluates the performance of the financial institutions and the market in terms of depth, efficiency, and accessibility.	IMF
Private Sector Credit	Bank credit to the private sector as a percentage(%) of GDP	WDI
Financial system Deposits	Deposits in the financial system as a proportion (%) of GDP	IMF

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Return on Assets(ROA)	Divide net income by total assets.	MIX
Yield on gross portfolio (real) (%)	(nominal Yield on Gross Portfolio - Rate of Inflation) / (1 + Rate of Inflation)	MIX
Profit Margin(PM)	The ratio of operating income to financial revenue	MIX
MFI Specific Control Variables		
Cost per borrower(CPB)	Operating Costs divided by the number of current borrowers	MIX
Capital to total asset ratio(CAR)	Total capital divided by total asset	MIX
Portfolio at risk (PAR90)	The percentage of the whole loan portfolio that is past due by more than 90 days	MIX
Total Assets(TA)	Sum of all the assets account	MIX
Macroeconomic specific control variables		
GDP growth	The growth rate of GDP per capita of the country	WDI
Inflation	Rate of Inflation (Consumer Price Index)	WDI

Note: MIX denotes Microfinance Information Exchange, WDI denotes World Development Indicators, IMF denotes international Monetary Fund

4. Empirical Results and Discussions

Table 4.1 elucidates the findings of ESG engagement and financial performance with the financial development interacting impact. The lagged dependent variables are significant revealing the persistent impact in the ROA, PM, and YOGLP, and justifying the use of

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ISSN:2958-5074 pISSN:2958-5066
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panel settings. The insignificant sargan test shows the instrument's validity. This reveals that all models are correctly specified and free from over-identification.

Table 4.1.

ESG and financial performance with the interacting impact of financial development

Dependent Variable	**ROA**		**PM**		**YOGLP**	
	Coefficient	*t-Value*	*Coefficient*	*t-Value*	*Coefficient*	*t-Value*
Constant	-0.335	-0.47	0.759	1.34	1.328	1.30
ROA_{t-1}	0.535**	2.05				
PM_{t-1}			0.254**	2.25		
$YOGP_{t-1}$					0.388***	2.77
ESGIndex	0.509**	2.02	-0.011	-0.05	-0.004	-0.01
FD	1.672	1.55	0.785	0.63	2.657	1.19
ESGIndex*FD	-2.645*	-1.95	-1.085*	-1.86	-2.857**	-2.44
CPB	-0.002	-1.30	0.001	1.60	-0.000*	-0.35
CTA	-0.002	-0.99	0.000	0.15	-0.000	-0.10
PAR90	0.034	1.03	0.008	1.10	0.025	0.84
Assets	0.011	0.41	-0.025	-0.94	-0.011	-0.23
GDPGrowth	0.001	0.26	-0.019***	-3.83	-0.019	-1.50
Inflation	-0.013*	-0.63	-0.018	-1.46	-0.024	-0.68
Model fitness Results:						
AR(1)	0.081		0.000		0.001	
AR(2)	0.524		0.447		0.734	
Sargan test	0.934		0.832		0.755	

Note: ROA is Return on Assets, PM is the profit margin, YOGLP is Yield on Gross Loan Portfolio, ESG is environmental, social, and Governance activities, CTA is Capital to Total Assets, CPB is cost per borrower, PAR90 is Portfolio at Risk overdue after 90 days, GDP is gross domestic product, FD is financial development.*, **, and, ***depict significance at 10%, 5% and 1 % respectively.

The model has the interaction term ESGIndex*FD. The interaction term is significant and negative consistently. This shows that MFIs in countries with higher financial development perform poorly. Having strong financial development plays a detrimental

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role for the MFIs, where these MFIs face repercussions from the greater financial development, and tend to harm sustainable activities on the financial performance. The financial development adversely affects the MFI's engagement in ESG practices to impact the MFI's financial performance. The results are in line with Vanroose and D'Espallier (2013) who report a negative relationship between the development of the financial sector and MFIs performance. The basic argument for this negative relationship is that when financial system development is low MFIs cater to more clients, and eventually are more profitable.

Hermes et al. (2009) also explain the underlying rationale of the direct competition for the negative impact of financial development on the MFI's performance and development of the financial sector. This argument explains that when the financial sector is well-developed commercial banks take advantage of economies of scale and become more efficient. They can diversify themselves by serving a multitude of cohorts such as markets and clientele that are otherwise catered by MFIs in less developed financial sectors. Moreover, the high competition forces result in loan's higher default rates because MFIs cogitate on the unbanked market segment results consequently in MFI's lower performance (Vanroose & D'Espallier, 2013). Moreover, there is another argument for the financial development's negative impact on the financial performance of MFIs. They are the replacements for the conventional banking sector by serving the clients that are unserved by the banks. Therefore in places where there is a developed banking system, there is a less developed microfinance sector, and yields lower performance. Likewise in less developed financial countries, MFIs serve more clients revealing they are catering to the needs of the masses that are unserved by the banks. In countries with well-developed banking sectors, conventional banks cater to more clients, and MFI's potential to serve the market is monitored. Alternatively, countries with developed conventional banks capture the clients of MFIs very rapidly. This explains that banking sector competition has negative repercussions on the sustainable activities of MFIs that

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eventually affect their performance. There is also evidence that well-developed financial countries' competition makes it tedious for MFIs to meet the costs as they have to reduce the interest rates to compete with the banks.

The control variable results show that CPB has an insignificant negative impact on ROA and an insignificant positive effect on PM, with a significant negative impact on YOGLP.CTA has an insignificant negative impact on ROA and YOGLP, whereas a positive insignificant effect on YOGLP.PAR90 has a positive insignificant effect on ROA, PM, and YOGLP. Assets have a positive insignificant impact on ROA, whereas insignificant negative effect on PM, and YOGLP. GDPGrowth has an insignificant positive effect on ROA, a negative significant impact on PM, and an insignificant negative effect on YOGLP. Inflation has a significant negative effect on ROA and an insignificant negative impact on PM and YOGLP.

4.2. Robustness test (Alternate measures of financial development)

The research employs alternative proxies of financial development that include private sector credit by the banking sector as a GDP percentage, and financial system deposits as a GDP percentage. The results are consistent with the major findings when we employ the financial development index suggesting that our results are robust to different measures of financial development, and are not influenced by financial development measurement. Tables 4.2 and 4.3 reveal how alternate proxies of financial development affect the nexus of ESG engagement and the financial performance of MFIs. Table 4.2 depicts the findings when we employ the financial development proxy of private sector credit by the banking sector as a GDP percentage. ESGIndex*PSC is the interaction term in the model.

The findings show the substitution effect of financial development, and the estimated coefficient of the interaction term are all significant but with the opposite signs compared with those of the main effect of financial development. The results reveal that financial development enhances the MFI's financial performance, whereas financial development

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assuages the effect of ESG engagement on the MFI's financial performance. The findings show the significant and negative impact of the interaction term on the ROA and YOGLP, whereas the negative and insignificant effect on the PM. The findings confirm the main results and are not driven by the alternate proxy of financial development. This shows that MFIs' higher financial development mars the MFI's financial performance. Financial development has an unfavorable role for the MFIs, adversely impacts sustainable activities, and weakens financial performance. The financial development badly affects the MFI's engagement in sustainability practices to impact the performance.

CPB depicts a significant negative impact on ROA, whereas there is a positive significant effect on PM and an insignificant positive impact on YOGLP.CTA has a negative insignificant impact on the ROA, whereas insignificant positive influence on PM and YOGLP.PAR90 has a positive insignificant impact on ROA, PM, and an insignificant negative influence on YOGLP. Assets have an insignificant positive impact on ROA and a negative insignificant impact on PM and YOGLP. GDPGrowth has an insignificant positive impact on the ROA, a significant negative effect on PM, and an insignificant negative influence on YOGLP. Inflation has a negative insignificant effect on ROA and PM, whereas the effect is negative and significant on YOGLP.

Table 4.2.
Alternate measure of financial development (Private sector credit by the banking sector as a GDP percentage)

Dependent variable	**ROA**		**PM**		**YOGLP**	
	Coefficient	*t-Value*	*Coefficient*	*t-Value*	*Coefficient*	*t-Value*
Constant	-0.269	-0.77	0.240	0.33	18.134**	2.49
ROA_{t-1}	0.278*	1.82				
PM_{t-1}			0.347***	3.30		
$YOGP_{t-1}$					0.297**	2.21
ESGIndex	0.986*	1.81	0.538	1.05	-4.625	-1.06
PSC	0.006***	3.08	-0.002	-0.52	0.128	1.27

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ESGIndex*PSC	-0.022*	-1.80	-0.009	-0.79	-0.217***	-3.54
CPB	-0.002**	-2.48	0.001*	1.93	0.024	1.13
CTA	-0.001	-0.92	0.003	1.08	0.047	1.06
PAR90	0.006	0.53	0.008	0.83	-0.192	-0.68
Assets	0.008	0.56	-0.011	-0.34	-0.176	-0.52
GDPGrowth	0.003	0.80	-0.019***	-3.17	-0.047	-0.76
Inflation	-0.006	-0.56	-0.012	-0.77	-0.423**	-2.29
Model fitness Results:						
AR(1)	0.080		0.000		0.056	
AR(2)	0.196		0.379		0.601	
Sargan test	0.298		0.473		0.731	

Note: ROA is Return on Assets, PM is the profit margin, YOGLP is Yield on Gross Loan Portfolio, ESG is environmental, social, and Governance activities, CTA is Capital to Total Assets, CPB is cost per borrower, PAR90 is Portfolio at Risk overdue after 90 days, GDP is gross domestic product, PSC is private sector credit as a percentage of GDP.*, **, and, ***depict significance at 10%, 5% and 1 % respectively.

Table 4.3 shows the alternate proxy of financial development results namely financial system deposits as a percentage of GDP. The results in the table show the interaction terms coefficients are significant and negative with the performance measure ROA and YOGLP, whereas the impact is negative and insignificant on PM. The results confirm the main findings and are not affected by the financial development alternate measures. It reveals that there is a negative influence of financial development on the nexus of ESG engagement and financial performance. The results confirm Vanroose and D'Espallier (2013) findings find financial development negative impact on the MFI's performance. The basic argument for this negative impact is that MFIs cater to massive clients, and are more profitable where conventional financial system development is weak.

The control variables results show that CPB has a negative and significant impact on the ROA and PM and an insignificant negative effect on YOGLP.CTA has an

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insignificant negative impact on ROA, whereas the impact is positive and insignificant on PM and YOGLP.PAR90 has an insignificant but positive impact on ROA, an insignificant negative effect on PM, and a positive significant influence on YOGLP. Assets have an insignificant positive impact on the ROA and PM, whereas the results are negative and insignificant on YOGLP. GDPGrowth has an insignificant positive impact on ROA, a significant positive effect on PM, and an insignificant negative influence on YOGLP. Inflation has a negative and insignificant impact on the ROA and PM, whereas the impact is positive and insignificant on YOGLP.

Table 4.3.

Alternate measure of financial development (Financial System deposits as a percentage of GDP)

Dependent Variable	**ROA**		**PM**		**YOGLP**	
	Coefficient	*t-Value*	*Coefficient*	*t-Value*	*Coefficient*	*t-Value*
Constant	-0.038	-0.11	-0.294	-0.71	3.179*	1.70
ROA_{t-1}	0.554***	4.32				
PM_{t-1}			0.209**	2.21		
$YOGP_{t-1}$					0.501***	2.73
ESGIndex	0.114	0.39	0.071	0.20	-1.923	-0.47
FSD	-0.002	-0.26	-0.004	-0.49	0.650	0.59
ESGIndex*FSD	-0.003*	-1.78	-0.003*	-1.90	-0.720*	-1.69
CPB	-0.001**	-2.02	-0.002***	-4.76	-0.003	-1.07
CTA	-0.001	-1.24	0.001	0.41	0.002	0.27
PAR90	0.006	0.72	-0.006	-0.94	0.053*	1.66
Assets	0.003	0.20	0.016	0.99	-0.004	-0.07
GDPGrowth	0.002	0.60	0.010**	2.50	-0.024	-1.50
Inflation	-0.014	-1.42	0.002	0.26	-0.041	-0.95
Model fitness Results:						
AR(1)	0.055		0.000		0.002	
AR (2)	0.517		0.294		0.214	

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Sargan test	0.432	0.249	0.674

Note: ROA is Return on Assets, PM is the profit margin, YOGLP is Yield on Gross Loan Portfolio, ESG is environmental, social, and Governance activities, CTA is Capital to Total Assets, CPB is cost per borrower, PAR90 is Portfolio at Risk overdue after 90 days, GDP is gross domestic product, FSD is financial system deposit,*, **, and, ***depict significance at 10%, 5% and 1 % respectively.

5. Conclusion

There is a massive interest in evaluating the MFI's performance on different parameters. This study provides new insights with a special focus on how financial development affects the nexus of ESG and the financial performance of MFIs. Our results put forward that financial development negatively moderates the relationship between ESG engagement and the financial performance of MFIs. The findings also show the substitution effect of financial development, and the estimated coefficient of the interaction term are all significant but with the opposite signs compared with those of the main effect of financial development. The results reveal that the main effect of financial development on the MFI's financial performance is positive, whereas financial development dampens the effect of ESG engagement on the MFI's financial performance. The results argue that MFIs face negative ramifications from the strong financial development, and negatively impact the sustainable activities that eventually impact the financial performance.

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