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Financial Performance of Microfinance Institutions: A Comparative Analysis between Pakistan and India

Farah Naz[1]* Khadija Mansoor[2¥] Ather Azim Khan[3†]
Tooba Lutfullah[4§] Veera Salman[5Δ]

Abstract: *This study aims to identify the key factors influencing the financial performance of microfinance institutions in Pakistan and India. Secondary data for both countries has been extracted from 2010 to 2019 from the firms' annual reports and MIX Market. Generalized least squares regression has been employed to analyze the data. The results of multiple regression models suggest that in Pakistan, MFI performance is significantly influenced by age, size, and yield. In contrast, age, GDP, and yield significantly impact MFI performance in India. These results emphasize the need for both governments to enhance operational efficiency and effectiveness within their respective microfinance sectors, expanding financial services to rural and urban areas to increase the financial inclusion rate and reduce poverty. We have limited our study to 2019 to exclude the uncertainty caused by the COVID-19 pandemic. This prompts further research in this area, which can deepen the understanding of the microfinance industry's impact on socio-economic development. Our analysis not only provides significant insights to practitioners as to which factors are crucial to MFIs' performance in both countries. But also adds to the extant literature by providing a comparative analysis of the two economies. As the literature lacks a comparative analysis involving India and Pakistan, the present study aims to bridge that gap.*

Keywords: *Microfinance Institutions; Financial Performance; OSS; PM; ROA; Pakistan; India.*

Introduction

Microfinance Institutions (MFIs) are defined as those entities that specialize in providing financial assistance to small businesses and individuals who lack

[1]*Kinnaird College for Women, Lahore, Pakistan. Email: farah.naz@kinnaird.edu.pk
[2¥] Kinnaird College for Women, Lahore, Pakistan. Email: djaymansoor@gmail.com
[3†] University of Sialkot, Sialkot. Email: ather.azim@uskt.edu.pk
[4§] Kinnaird College for Women, Lahore, Pakistan. Email: tooba.lutfullah@gmail.com
[5Δ] Kinnaird College for Women, Lahore, Pakistan. Email: veerasalman242@gmail.com

easy access to commercial banks. MFIs are one of the most suitable financial service providers for households as they facilitate them with tailored and flexible savings plans, thereby leading to an increase in savings (Shkodra, 2019). Henceforth, it not only boosts the financial sustainability in the low-income sector but also contributes to economic development. Unlike commercial banks, microfinance institutions particularly aim to provide financial aid to the lower and less privileged segments of the economy. Those countries that have higher microfinance institutions experience, appear to have lower poverty levels (Abdulai & Tewari, 2016).

MFIs as defined by Saad et al. (2017) possess a dual nature, i.e., social, as well as profitable. The mission of microfinance institutions, which themselves are in their development phase, is to provide financial aid to marginalized populations. Microfinance institutions are considered stable and have enough resources to meet their clients' daily. They are said to be self-sufficient if they do not earn profits or earn but keep them undisclosed. They attain sustainability only if they provide services autonomously rather than relying on external grants and subsidies (Ashraf & Ghani, 2005). CDA, which stands for Committee of Donor Agencies, elaborates sustainability in two aspects: financial and operational self-sufficiency. Particularly, Operational Self-sufficiency is defined as covering all the administrative costs from its operating income (Al-Haidi, 2009).

For poverty alleviation and socio-economic development, microfinance institutions are considered preferable sources. In Pakistan and India, two types of institutions that facilitate poor societies through microfinance services include: a) non-governmental microfinance institutions, including Non-Governmental Organizations (NGOs), Non-Profit Organizations (NPOs), and rural support programs, and b) formal Microfinance Banks (MFBs) or Non-Bank Financial Companies (NBFCs). They offer a variety of financial services to micro-enterprises.

Pakistan has significant development in several microfinance banks due to their unique proposal mechanism and outreach in remote and distant regions. The more the microfinance institutions are involved in lending, particularly in the rural areas, the more the customer base improves, which leads to increased profitability. As of 2019, thirty-seven microfinance institutions and eleven microfinance banks are working in Pakistan. Out of the total clientele of

microfinance institutions, 53 percent comprised the rural clients, indicating their dominance (Basharat. et al., 2019). Based on a report by the United Nations Development Programme (UNDP), 39% of people in Pakistan are living below the poverty line. One of the solutions to this problem is the microfinance institutions (Hartarska & Nadolnyak, 2007). It is evident from the fact that the number of active microfinance borrowers increased to 7.4 million in 2019 from 3.6 million in 2015, implying its importance and acknowledgment (Basharat et al., 2019). In 1961, an agricultural development bank (now called Zarai Taraqiati Bank) was established to alleviate insufficiency through loans to farmers (Alshebami & Khandare, 2014). During 1980-1990, many rural support programs were introduced to improve the poverty level, including the Orangi Pilot Project (1987), National Rural Support Programme, Sarhad Rural Support Programme (1989), and First Microfinance Bank (Ahmad, 2011). According to the *Pakistan Microfinance Review* (2020), fifty microfinance institutions are mainly categorized as microfinance banks, NGOs, and non-bank financing companies. FINCA Bank, Akhuwat National Rural Support Programme Bank, and Apna Microfinance Bank are some prominent names among the microfinance institutions in Pakistan. Eventually, international donors are developing their interest in promoting microfinance institutions and financing huge amounts for the development and alleviation of poverty in the country. Another step taken by the government of Pakistan was the Pakistan Poverty Alleviation Fund (PPAF). Many donors have donated to PPAF with the mission to develop these microfinance institutions for the alleviation of poverty from both the public and private sectors.

Likewise, the Indian government also took steps to combat poverty through its microfinance institutions. In India, the facility of microfinance is provided through commercial banks, SHGs, cooperatives, society institutions, non-bank financial institutions (microfinance institutions), and NGOs. The number of active accounts in the microfinance sector almost doubled from 2015, reaching a total of 91 million in 2019 (*India Microfinance Review*, 2021). In India, the origin of microfinance institutions can be traced to self-help/support groups (SHG) and bank connection programs, which took place as a pilot project in 1992. Many NBFCs and microfinance institutions in India are working on an institutional approach, and they do not rely on government supplies to support poor individuals.

Since microfinance institutions are growing in both countries and playing a crucial role in the economy to eradicate poverty, MFIS must perform well. Financial performance is defined as a measurement of goals, policies, and achievements of the organizations based on monetary terms. Financial performance can be measured as a comparison between similar firms in the same industry to measure financial health (Ayele, 2015). The financial performance of a company, as it is one of the main characteristics, defines the capabilities and profitable benefits of the company's operation and trustworthiness of current or in the future (Abdi, 2010). From the microfinance institutions' perspective, having a good financial performance means having the ability to achieve their microfinance objective without external help.

With the aforementioned undeniable surge in users of MFIs, it is crucial to examine the factors that could affect the financial performance of microfinance institutions. The present study undertakes a comparative analysis of the financial performance of microfinance institutions in India and Pakistan measured by Operational Self-Sufficiency (OSS), Return on Assets (ROA), and Profit Margin (PM). As ROA shows institutions' ability to earn through their assets, OSS allows the microfinance institutions with freedom from grants, which results in more availability to outreach to populations who need financial assistance, along with gaining profit. OSS is described as the institution's ability to cover its expenses through its operating income (Remer & Kattilakoski, 2021).

The objective of this research is to identify whether age (working years of MFIs), size (total assets of MFIs), GDP growth rate, inflation, yield (nominal interest rate), or category (type of MFIs) act as determinants of MFIs' financial performance. The particular focus on comparing the financial performance of MFIs of Pakistan and India does not reside in their being neighboring countries, but differences at the economic, regulatory, and institutional levels. While in both countries, the MFIs are regulated by their respective central bank, the difference is in their models. India's well-established microfinance regulations, broader outreach, and support from institutions like the RBI provide a different operating context than Pakistan's evolving regulatory structure under the SBP. These distinctions offer valuable insights into how institutional environments influence MFI performance across developing economies.

The scope of this study covers all the categories of microfinance institutions in Pakistan and India. This research contributes to the literature in two ways. Firstly, it aims to identify the factors that can influence the performance of microfinance institutions. Secondly, its purpose is to determine which countries, Pakistan and India, have better microfinance institutions and depict better performance than the other. This study is significant for future research on the performance of microfinance institutions in two countries. It has implications for owners of microfinance institutions to have a clear picture of what factors are important for their better performance. The results of this study will help them to make necessary amendments to reach their objectives. The information about the factors that influence the financial performance of microfinance institutions is important to make decisions accordingly.

Despite swift microfinance growth, MFIs in Pakistan and India encounter consistent performance gaps. Recent industry reports emphasize problems like low portfolio yield, high operational costs, and irregular outreach. Though limited comparative evidence exists on performance drivers across both countries, accentuating the requirement for this study is required to advise policy and practice.

Literature Review

Poverty is a crucial matter for humankind (Azam Khan, 2024). Research highlights that various facilities such as monetary services, savings insurance, and funds transfer should be provided to poor people because the limitation in providing credit facilities is the main reason for poverty (Onuka, 2021; Tehulu, 2013). In the past, marginalized populations of the economy could not access credit facilities due to insufficient assets/money to cover the securities against credit (Reille & Ivatury, 2004). Before microfinance institutions, only financial institutions provided finances to the new companies, capable of providing securities against credit, for their business expansion. Now, microfinance institutions contribute significantly by providing access to finance (Alshebami & Khandare, 2014; Chikwira et al., 2022; Manos & Yaron, 2009). Hence, this support serves as a major source of reducing poverty (Khan et al., 2021), leading to economic growth, because expansion can only be attained by the financial development of the deprived (Rahman, 2011).

Forms of microfinance institutions can include: non-profit organizations, non-governmental organizations, banks, non-banking financial institutions, credit

unions, and banks (Dirse & Japee, 2024). These institutions are different because of their nature and the goal of their business. Microfinance institutions have a bifocal mission (Lassoued, 2023). In their mission, the first goal is to participate in development by reaching out to the underprivileged, hence classified as the social performance goal (Nanayakkara, 2012). In contrast, the second goal is financial sustainability through better financial performance (Navin & Sinha, 2021). However, it is still debated whether MFIs consider it a trade-off or synergy of the goals while choosing between the two (Umba et al., 2024). This research is focused on the financial performance and the factors influencing it.

Financial Performance of Microfinance Institutions

Maintaining their financial performance is the main concern of microfinance institutions, as it is what they stand on while fulfilling their social commitments (Remer & Kattilakoski, 2021). One of the key measures of MFIs' financial performance is financial sustainability, which is considered crucial for the going concern of MFIs based on whether they can sustain without having aid from donors (Kinde, 2012). It is often measured using operational self-sufficiency, which is a tool widely employed by many researchers (Nurmakhanova et al., 2015). It allows a clearer picture of how finances can be used to cover the operational costs of microfinance institutions (Das et al., 2025).

Another measure for MFIs' financial performance is return on assets (ROA) is considered the most essential ratio as it examines the ability of a company to manage its investments in assets and generate profit through them (Jørgensen, 2011; Memon et al., 2022). As ROA reflects on an institution's ability to earn through its assets, OSS allows the microfinance institutions with freedom from grants, which results in more availability to outreach to populations who need financial assistance, along with gaining profit. OSS instead of FSS is more related to the basic profitability definition of revenues minus expenses. Besides, OSS elaborates on whether microfinance institutions under study can cover all the cost that occurs from their own business. For examining through FSS, some additional information is required as the adjusted cost of capital and inflation rate, which are not easily available, especially if microfinance institutions included in the study are from

developing countries. Profit margin also acts as a measure of MFIs' financial performance (Navin & Sinha, 2021).

The research investigates the influence of firm-level factors, yield, size, age, and category of MFI, along with macroeconomic variables, i.e., GDP and inflation, on the financial performance of microfinance institutions. The conceptual model received theoretical support from the following theories. The resource-based theory provides a foundation for investigating the factors affecting the financial performance of the microfinance institutions (Barney, 2001). Additionally, the influence of factors on profit margin and return on assets stems from the profit motive concept by Adam Smith, which states that profit maximization is the ultimate, if not only, goal of any organization (Hamid et al., 2024). This is supported by another theory called the profit incentive theory, according to which the profits incentivize the social work by MFIs (Maeenuddin et al., 2024).

The role of yield is supported by profit incentive theory because microfinance institutions charge interest rate, which serves as their yield and help ensure the financial sustainability and profitability in the long run (Tehulu, 2022). The influence of MFI size on financial performance is supported by the resource-based view. While small MFIs might lack resources such as human and organizational capital, larger ones have the edge that leads to better financial performance. The concept of economies of scale validates it because the profitability of large-sized MFIs is better as fixed costs are spread over more total assets (Githaiga et al., 2023). The impact of MFI age is based on the Organizational Life Cycle Model, which reflects five stages in the life of any firm. When a firm moves from the stage of existence to survival, it seeks to grow, and if it expands enough to sustain, it achieves success and renewal till it declines (Lester et al., 2003).

The effect of macroeconomic variables, i.e., GDP and Inflation, on the financial performance of microfinance institutions. Economic growth theories suggest that an economy not only earns but also sustains a certain level of gross domestic product, which brings happiness and peace (Stefan, 2012). This ensures that the borrowers' ability to repay increases and MFIs earn from it. With the reduction in purchasing power of individuals due to a rise in price levels, explained by the Quantity Theory of Money (Fisher, 2006), the borrowers' ability to repay also decreases, ultimately affects the profitability and financial sustainability of MFIs.

Factors Influencing Financial Performance of Microfinance Institutions

Researchers have found that the interest rate charged by the microfinance institution is more as compared to that of banks. The reason behind such a difference stems from the high credit risks resulting in huge overhead expenses contributing to operational costs (Uddin et al., 2024). The only way to sustain their business is to get rid of these costs, hence higher interest rate charges (Gul et al., 2017). This portion of the total loan price serves as yield for the MFIs, and its use ensures better operational self-sustainability (Shkodra, 2019). Hence, the purpose of charging a high interest rate is not to make a profit but to reduce operational costs (Wondirad, 2022). They further specified that a fair and affordable level of interest rate charged to the borrowers ensures the financial sustainability of MFIs. Based on the prior literature, we proposed the following hypothesis:

H_1: Yield has a significant positive impact on the financial performance of microfinance institutions.

The size of MFIs is another factor often studied in combination with other factors to understand its influence on the financial performance. Among other factors, a study conducted in MFIs of Kosovo from 2007 to 2016 found that size has a positive and significant impact on operational self-sufficiency, ROA, and profit margin (Shkodra, 2019). Similarly, another research was conducted in MFIs of Ethiopia from 2010 to 2018, and the results showed a positive relationship between the size and financial performance (Amanu & Gebissa, 2021). Building on the previous literature, for our comparative study, we propose that:

H_2: Size has a significant positive impact on the financial performance of microfinance institutions.

Another factor that has been found to play a contributing role towards the financial performance of microfinance institutions is age. Research has shown that the financial performance of mature firms is better as compared to that of new entrants (Navin & Sinha, 2021). Another study found that the number of years of experience being a microfinance institution significantly and positively influences its financial performance (Shkodra, 2019). Similar results were reported by another study that found a significant positive effect

of age on ROA (Ertiro & Mohammed, 2022). Based on the existing literature, we state the following hypothesis:

H_3: Age has a significant positive impact on the financial performance of microfinance institutions.

GDP and inflation are important macroeconomic factors for the analysis of the financial performance of microfinance institutions (Nurmakhanova et al., 2015), especially when a comparative analysis is under consideration. Research conducted in MFIs of Zimbabwe found that while gross domestic product positively influences the financial performance, the impact was negative in the case of inflation (Hlupo et al., 2022). Another study catering to the South Asian MFIs reported the positive impact of GDP and the negative role of inflation on their financial performance (Memon et al., 2022). Based on the literature, we formulate the following hypotheses:

H_4: Inflation has a significant negative impact on the financial performance of microfinance institutions.

H_5: GDP has a significant positive impact on the financial performance of microfinance institutions.

MFIs can be formed on different ownership structures that reflect their type of category. The major categories include MFIs with social orientation, such as NGOs, NPOs, or credit unions; and MFIs with commercial orientation, i.e., banks or non-banking financial institutions (Gupta & Mirchandani, 2020). A study found that the type of MFI can significantly influence its financial performance (Mumi et al., 2020). We propose the following hypothesis:

H_6: Category has a significant impact on the financial performance of microfinance institutions.

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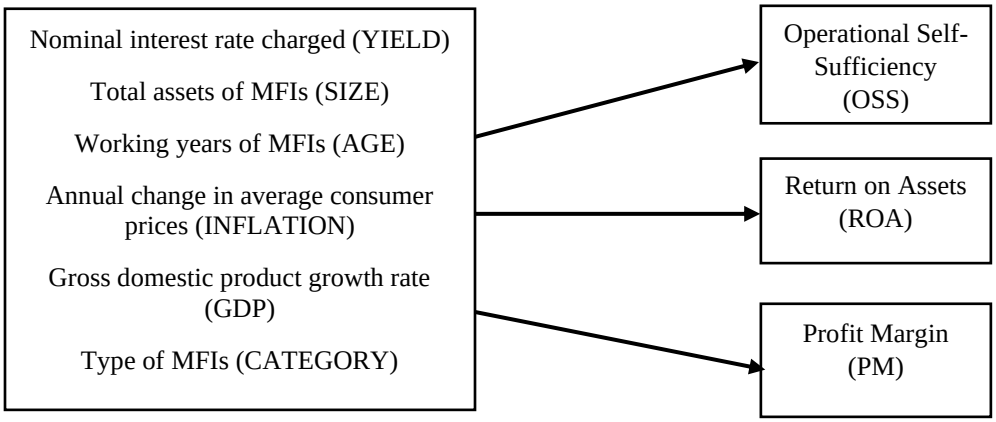
Presents the conceptual framework of our study:



Conceptual Framework

Methodology

The data used in this study were extracted from a secondary, publicly available source, i.e., (*MIX Market*, 2020) and also through annual reports for ten years from 2010 to 2019. The population consisted of the microfinance companies of Pakistan and India. For the sample, 60% of the total population was used for Pakistan, i.e., the sample consisted of 35 companies. Furthermore, the same strategy was applied to India to select 180 companies out of a total of 297 companies. The unavailability of data for some firms prompted their omission from this analysis. Since the data was not collected from human participants, hence consent form was not applicable. However, despite the secondary nature of data, ethical practices were strictly adhered to by making sure that it was handled with integrity and confidentiality. SPSS and STATA 16 were used, and generalized least squares panel regression analysis was employed.

This research uses return on assets, operational self-sufficiency, and profit margin as dependent variables to examine the financial performance of the microfinance institutions in Pakistan's economy, along with the Indian economy, while the independent variables are Yield, Size, Age, Inflation, and GDP, as listed in Table 1**:**

Table 1
Variables Measurements

Variables	Proxy	Measurements
Dependent variables:		
Operational self-sufficiency	OSS	It is calculated by dividing Financial Revenue by Financial Expenditure + Damage Losses on Loans + Operational Expense
Return on assets	ROA	The remaining income after tax is divided by the total assets of the company.
Profit margin	PM	Total Operating income divided by financial income.
Independent variables:		
Interest rate charged	YIELD	Divide the financial revenue from the loan portfolio by the gross loan portfolio.
Total assets	SIZE	It is calculated as the natural logarithm of total assets at the end of the period.
Number of years working as MFI	AGE	No. of years active or since worked as a microfinance institution.
Purchasing power of currency	INFLATION	Annually change in consumer prices.
Gross Domestic Product	GDP	Annually, progress in the total outputs of services and goods within the country
Nature/type of MFI	CATEGORY	Types of Microfinance Institutions as NPO, NGO, NBFC, MFB.

(Meyer, 2002) explained ways of measuring financial performance, which are financial self-sufficiency and operational self-sufficiency. Operational Self-Sufficiency ratios (OSS) of microfinance institutions show how well microfinance institutions are capable of managing their expenses from their own generated operating income. The second dependent variable used in this study is the return on assets (ROA), which shows how well the microfinance institutions consume their operational revenues and total assets to manage their costs and generate income. It is a widely used proxy. The third dependent variable in this study is Profit Margin (PM), which is the profit ratio of that specific microfinance institution in a specific year.

Nominal gross portfolio yield is selected as an independent variable, that is, the charged interest rate by microfinance institutions on their clients. Matrix coefficient β_2 is the size used to show its effect on financial performance. The coefficient matrix β3 is the Age of the Microfinance institutions, which is the natural logarithm of the working years of microfinance institutions. Moreover, the β4 coefficient matrix is the category of the microfinance institutions, which elaborates whether the nature or category of microfinance institutions influences their financial performance. The coefficient matrix β5 defines inflation, and β6 indicates GDP, which are considered macroeconomic variables. These are applied to control financial sustainability since the environment and economic situation of countries are different from each other. For investigating the financial performance of microfinance institutions, the following regression models were developed;

$$OSS_{it} = \alpha + \beta_1 yield_{it} + \beta_2 size_{it} + \beta_3 Age_{it} + \beta_4 Inflation_{it} + \beta_5 GDP_{it} + \beta_6 category_{it} u_{it} \quad \textbf{Equation 1}$$

$$ROA_{it} = \alpha + \beta_1 yield_{it} + \beta_2 size_{it} + \beta_3 Age_{it} + \beta_4 Inflation_{it} + \beta_5 GDP_{it} + \beta_6 category_{it} u_{it} \quad \textbf{Equation 2}$$

$$PM_{it} = \alpha + \beta_1 yield_{it} + \beta_2 size_{it} + \beta_3 Age_{it} + \beta_4 Inflation_{it} + \beta_5 GDP_{it} + \beta_6 category_{it} u_{it} \quad \textbf{Equation 3}$$

In the above-mentioned models, 'i' reflects the firm, and 't' is the particular year.

Results and Discussion

Table 2

Descriptive Statistics

Variables	Obs	Min	Max	Mean	Standard Deviation
Panel A: Descriptive statistics of Pakistani firms					
OSS	263	0.00	285.000	109.70	42.01
ROA	263	-60.30	137.200	6.87	29.13
PM	263	-91601.40	298.650	-3502.40	56482.60
YIELD	263	0.00	132.600	30.43	15.64
SIZE	263	0.00	4.479	4.09	7.00
AGE	263	1.00	32.000	14.71	8.17
INFLATION	263	2.86	13.660	7.33	3.37
GDP	263	0.99	5.840	3.94	1.60
CATEGORY	263	1.00	4.000	2.41	1.10
Panel B: Descriptive statistics of Indian firms					
OSS	912	-12.21	258.23	112.600	30.03
ROA	912	-72.82	26.40	0.932	7.70
PM	912	-3992.30	3478.50	-1.350	209.60
YIELD	912	-3.87	145.97	21.210	10.08
SIZE	912	0.00	8.10	1.090	4.55
AGE	912	1.00	69.00	13.940	11.11
INFLATION	912	3.33	11.99	6.880	3.03
GDP	912	4.40	8.50	6.660	1.36
CATEGORY	912	1.00	5.00	1.760	1.06

The descriptive statistics in Table 2 provide valuable insights into the characteristics of independent and dependent variables. The mean values of OSS, 109.7 and 112.6 for Pakistan and India, respectively, show that, as compared to Pakistan, Indian MFIs are more sustainable as their mean value for operational self-sufficiency is higher. But simultaneously, the variation in Pakistani MFIs is higher than that of Indians, depicting that some might be performing well while others could be struggling. The mean value of ROA for Pakistani MFIs is 6.87, showing low returns on assets but still, but it outperforms Indian MFIs. Both countries depict negative profit margins, but the deviation is higher in the case of Pakistani MFIs. The mean value of yield for Pakistan is higher, but again with higher variation in the sector overall. Indian MFIS' firm size is smaller as compared to that of Pakistani. The mean

age of Pakistani MFIs is 14.71 years, while that of Indians is 13.94, so as a comparison, Pakistani institutions are closer to maturity. (Ibrahim et al., 2018) elaborated on their research on Asian countries, including India and Bangladesh, that Microfinance institutions below the age of 10 are new microfinance institutions, and ages between 15 years are considered young microfinance institutions, whereas microfinance institutions above 15 years are mature. Mean inflation in Pakistani MFIs is higher than that of India, with higher variation. With a mean value of 36.66 for GDP, India outperformed Pakistan for that period. The mean value of the category is slightly low for Indian MFIs, i.e., 1.76, which denotes that there are not many categories as compared to Pakistan.

Table 3

VIF

Variables	NOSS		NROA		NPM	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
Panel A: VIF test results for Pakistani firms						
GDP	1.7	0.58653	1.7	0.58656	1.73	0.57774
INFLATION	1.68	0.59762	1.68	0.59618	1.7	0.58836
category	1.41	0.70923	1.41	0.71095	1.41	0.71101
AGE	1.22	0.81797	1.22	0.81805	1.22	0.81697
SIZE	1.16	0.8651	1.16	0.68055	1.17	0.85825
YIELD	1.15	0.87252	1.15	0.87237	1.15	0.8724
Mean VIF	1.38		1.39		1.4	
Panel B: VIF test results for Indian firms						
CATEGORY	1.08	0.92922	1.08	0.92986	1.08	0.929
SIZE	1.07	0.93241	1.07	0.93306	1.07	0.93237
AGE	1.03	0.97322	1.03	0.97306	1.03	0.97311
INFLATION	1.02	0.98265	1.02	0.98289	1.02	0.98227
YIELD	1.01	0.98642	1.01	0.98636	1.01	0.98635
GDP	1.01	0.98701	1.01	0.98701	1.01	0.98656
Mean VIF	1.04		1.04		1.04	

Table 3 is of VIF (Variance Inflation Factor) that shows that there is no multicollinearity among the independent variables of Panels A and B, i.e., the independent variables are uncorrelated. According to theoretical evidence, if VIF lies between 1 and 5, it means that the variables are not moderately correlated (Ibrahim et al., 2018).

Table 4

Panel A: Matrix of correlations of independent variables of Pakistani firms

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) NOSS	1.000								
(2) NROA	0.769	1.000							
(3) NPM	0.786	0.933	1.000						
(4) YIELD	0.103	0.025	0.021	1.000					
(5) SIZE	0.174	0.088	0.093	0.120	1.000				
(6) AGE	0.167	0.267	0.227	-0.233	-0.160	1.000			
(7) INFLATION	-0.059	-0.041	-0.036	-0.062	-0.052	0.019	1.000		
(8) GDP	-0.004	-0.005	-0.010	0.069	-0.063	-0.106	-0.623	1.000	
(9) category	0.012	0.116	0.096	-0.338	-0.340	0.396	0.008	-0.035	1.000

Table 5

Panel B: matrix of correlations of independent variables of Indian firms

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) NOSS	1.000								
(2) NROA	0.831	1.000							
(3) NPM	0.938	0.839	1.000						
(4) YIELD	0.074	0.190	0.056	1.000					
(5) SIZE	0.125	0.073	0.123	-0.038	1.000				
(6) AGE	0.086	0.113	0.089	-0.103	-0.045	1.000			
(7) INFLATION	-0.082	-0.081	-0.070	-0.010	-0.035	-0.048	1.000		
(8) GDP	0.041	0.047	0.039	0.023	-0.003	0.007	0.108	1.000	
(9) category	0.011	0.003	0.010	-0.003	0.242	0.089	0.017	0.005	1.000

Table 4 and Table 5 show the matrices of correlations among the independent variables of Panel A (Pakistani MFIs) and Panel B (Indian MFIs). Based on the range of -1 to +1, all our variables are weakly correlated, as the correlation coefficients for all independent variables are closer to 0. In the case of Pakistan, Age shows a negative association with yield and size, implying that mature firms have lower yields and a smaller number of assets. Inflation depicts a negative relationship with all variables except age, indicating that inflation increases over time, and so does the firms' age. Category showed a negative association with yield and size. In comparison, Indian MFIs showed a negative association of age with yield and size, having the same implications as those of Pakistan. Inflation had an inverse relationship with all other variables, while GDP growth rate was negatively associated with size.

Yield is negatively correlated with size and category. A positive association exists among all variables for both countries, from which several points can be deduced. Firstly, when a microfinance institution charges higher interest rates, its financial performance increases. Secondly, the total assets owned reflect the performance, so the larger the size, the better the profits. Thirdly, the performance of microfinance institutions increases over time as they reach maturity. Fourthly, if the inflation rate in the economy is high, it will impede the financial performance of the microfinance institutions. Fifthly, a higher GDP leads to better performance of Indian MFIs, but the reverse happens in Pakistani MFIs, possibly due to increased competition or due to a reduction in demand for their services. Lastly, financial performance shows a positive association with its category for both countries. This implies that some MFIs target niche markets, while others receive donations and grants. Hence, such factors determine the profitability of MFIs in India and Pakistan.

A detailed assessment of regression assumptions was carried out, and the issues were dealt with.

Table 6

Regression Results

VARIABLES	NPM	NOSS	PROA
Panel A: Regression results of Pakistani firms			
YIELD	197.4	0.260*	0.0467
	(200.9)	(0.153)	(0.0444)
SIZE	0.000163***	1.47e-07***	1.98e-8*
	(5.48e-05)	(4.09e-08)	(1.19e-8)
AGE	3,649***	2.184***	0.620***
	(735.6)	(0.529)	(0.152)
INFLATION	-904.4	-0.439	-0.128
	(985.0)	(0.744)	(0.218)
GDP	885.0	1.259	0.470
	(2,049)	(1.541)	(0.451)
Category	-5,672	-1.873	-0.0501
	(7,095)	(4.927)	(1.408)
Constant	-51,821**	67.03***	-11.26**
	(25,288)	(18.30)	(5.294)
Observations	262	262	263
Number of company code	35	35	35
Panel B: Regression results of Indian firms			
	NPM	NOSS	PROA
YIELD	1.678***	0.322***	0.191***
	(0.627)	(0.0910)	(0.0238)
SIZE	1.64e-08	2.16e-09	6.30e-10
	(1.60e-08)	(2.32e-09)	(6.04e-0)
AGE	3.799***	0.567***	0.169***
	(1.060)	(0.150)	(0.0363)
INFLATION	-4.088**	-0.648**	-0.150**
	(1.877)	(0.273)	(0.0719)
GDP	7.230*	1.073*	0.308**
	(4.037)	(0.588)	(0.155)
Category	2.993	0.205	-0.0861
	(12.06)	(1.701)	(0.407)
Constant	-118.0***	94.45***	-6.505***
	(41.86)	(6.005)	(1.519)
Observations	910	910	911
Number of company code	148	148	148

Standard errors in parentheses

*** p < 0.01, ** p < 0.05, * p < 0.1

Table 6 summarizes the regression results of Generalized Least Squares regression. Panel A of Table 6 shows regression results of Pakistani firms in which the independent variable SIZE showed a positive and significant impact among all three variables, i.e., OSS, ROA, and PM. It implies that the amount of fixed assets owned by MFIs has a positive impact on their financial performance in Pakistan, which is in line with the existing findings (Shkodra, 2019). Moreover, a significant impact of YIELD on OSS was found, but not on ROA and PM. However, it can be implied that the interest charged on the loans granted to the public, that interest is added to the profit of a company; thus, it has a significant impact on microfinance institutions' performance in Pakistan, which conforms with the literature findings (Wondirad, 2022). The variable AGE has a significant impact on all three dependent variables, which shows that the more mature the MFIs are, the better their performance (Navin & Sinha, 2021) in the case of Pakistan's MFIs. The macroeconomic indicators, INFLATION and GDP, both show insignificant results on all three indicators, which do not conform with the literature studied (Memon et al., 2022). This implies that the performance of microfinance institutions is not significantly affected by the prevalent inflation in the country or the gross domestic product. The CATEGORY of the microfinance institution does not affect the financial performance, as it shows insignificant results, which is also opposite to what the literature reflects (Mumi et al., 2020). Hence, irrespective of the category or type in which a particular microfinance institution falls, microfinance institutions can perform well. From the above results, we can conclude that the interest rate has a direct impact on the expense-covering strategy of microfinance institutions, whereas the age and size of the fixed assets have a statistically significant impact on all three indicators, conforming with the results of (Kipesha, 2013).

Panel B of Table 6 above outlines the regression results for Indian MFIs. Yield has a statistically significant effect on the performance of microfinance institutions in India. It implies that when microfinance institutions charge higher interest rates on their loans, their operational self-sufficiency, profit margin, and return on assets increase. Thereby, it ensures that the operational costs are met, profits are generated, and assets are being efficiently utilized. Results also highlight that Indian microfinance institutions have exhibited financial revenue by assets and yield on gross loan portfolio, but still could not cover the total expenses. Moreover, the AGE of microfinance institutions

unveiled statistically significant results implying that the working years of a microfinance institution affect its performance. The reason could be that when a microfinance institution is in its initial years, it faces multiple challenges related to establishing the trust of its client base and covering all the costs related to the startup. However, once they optimize their operations, which comes with time, they can achieve economies of scale, thereby increasing their performance. The macroeconomic factors, GDP and INFLATION, show significant results, but inflation depicted a negative impact on the performance of microfinance institutions, implying that in a high inflationary period, the performance of microfinance institutions decreases. This is because the purchasing power of its clients decreases, and loan repayment becomes difficult. The independent variable size has no significant effect on the performance of microfinance institutions as compared to the microfinance banks in India. The study concluded that there are mixed results regarding the effect of size on the profitability and performance of microfinance institutions. The variable AGE also depicted a positive and significant impact on financial performance, even though most of the microfinance institutions are not very mature. But those near to maturity perform well compared to those in their initial years. Lastly, the performance of MFIs is not determined by the Category of MFIs in India.

Conclusion

This study was performed to examine the financial performance of microfinance institutions in Pakistan and India. The study used ten years of panel data from 2010-2019, which continues to show its relevance as the number of users continues to increase. The current study used a random effects model to analyze the data. Furthermore, correlation and regression analyses were conducted, while generalized least squares panel regression analysis was employed for the latter.

It can be concluded from the results that the performance of MFIs in Pakistan is dependent on the number of working years, total assets owned, and interest rate charged. With institutions near maturity, owning a large number of fixed assets, and charging higher interest rates, any type of MFI can be operationally self-sufficient, earning higher returns on assets and having better profit margins irrespective of the prevalent gross domestic product (GDP) and inflation.

From the results of MFIs' performance in India, their performance is determined by yield, age, inflation, and GDP. It can be inferred that firms near maturity, charging higher interest rates, with the overall economy flourishing, lead to better performance depicted through operational self-sufficiency, higher return on assets, and larger profit margins. However, if inflation is high, the reverse happens. The results are dissimilar between the two countries, possibly due to differences in the population size, cultures, economy, and political situation of the country, etc.

Concerning financial inclusion, this research has practical implications for practitioners and policymakers who can foster better strategies based on these results, as they serve as the foundation for future strategies. It can be deduced that the more people are approached by microfinance institutions, the higher the financial inclusion rate will become, ultimately leading to overall poverty reduction and thus economic growth. We recommend that regulatory bodies and policymakers encourage MFIs to extend their services. With an understanding of the factors that affect the performance of MFIs, such entities can take advantage of and mitigate any risk that could hinder their sustainability. These institutions target marginalized sectors of the economy and offer them micro-credits and tailored savings plans, thereby building their resilience, which ultimately plays a crucial role in eradicating poverty. Hence, microfinance institutions act as the catalyst in driving financial inclusion.

The findings suggest significant insights into the determinants of MFI performance in Pakistan and India, dealing with the research questions on age, yield, macroeconomic factors, and institutional characteristics. The strangely large coefficients replicate the strong impact of institutional maturity and financial setting, which we understand in light of scale advantages and operational productivity. While robustness checks could not be achieved due to data limitations, the reliability across models improves confidence in the results. Theoretically, this study contributes to comparative microfinance literature. Socially, it upholds policy reforms that inspire sustainable financial inclusion over targeted institutional solidification and macroeconomic stability measures in both countries.

Recommendations and Practical Implications

The findings of this study offer both theoretical and practical implications. Theoretically, the study contributes to comparative microfinance literature by categorizing country-specific efficiency drivers, such as age, size, and yield in Pakistan, and age, GDP, and yield in India. The results advise policymakers and MFI managers. In Pakistan, initiatives should emphasize intensifying outreach to low-income populations and sponsoring long-term lending for sustainable returns. In India, cultivating financial performance necessitates effective cost, asset, and yield administration. These insights offer a basis for targeted governing frameworks and organized strategies to support MFI sustainability and improve financial inclusion in both countries.

Limitations and Future Directions

Firstly, this study exclusively focused on the determinants of microfinance institutions' performance in Pakistan and India. It provides a detailed snapshot of the dynamics of these two nations only which narrows the scope but serves as a comparative analysis. Hence, the results are specific to these countries and cannot be generalized to other nations. Secondly, some companies were omitted from our analysis pertaining to the unavailability of data for certain years. Lastly, the time considered in this study ranges from 2010-2019, which helped establish a foundation to understand historical trajectories in the realm of microfinance institutions. We have thereby limited our study to 2019 to exclude the uncertainty and crisis caused by the COVID-19 pandemic, which limited the ability of individuals to save.

For more widespread research, a multi-country comparative analysis can be conducted that will help generalize the results to the maximum population. Moreover, it is suggested to explore other determinants of microfinance institutions' performance to have a comprehensive analysis. Furthermore, qualitative research can be conducted to have an in-depth understanding of microfinance clients' perceptions through focus group discussions and interviews. Future research can be conducted, accounting for the effects of the pandemic on the performance of microfinance institutions to understand their resilience when faced with a crisis.

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