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# Journal of Business and Economic Options

Managing Microfinance: Navigating Efficiency and Sustainability Challenges in Bangladesh's Financial Landscape

#### Abstract

## The study undertakes a thorough examination of the efficiency and sustainability of Microfinance Institutions (MFIs) in Bangladesh against the backdrop of the financial crisis era spanning from 2020 to 2021. To achieve this objective, the study employs Data Envelopment Analysis (DEA) to quantify efficiency levels across MFIs, followed by an assessment of sustainability indicators. The findings reveal that larger MFIs, categorized as "very huge" and "huge," have traditionally exhibited high levels of profitability. However, there has been a noticeable downturn in portfolio quality over time. Interestingly, smaller MFIs have demonstrated resilience and adaptability by expanding their operations and achieving financial viability despite the challenging economic environment. The study identifies several key factors contributing to the efficiency and sustainability of MFIs. Effective management cost control emerges as a critical determinant, highlighting the importance of prudent financial management practices. Additionally, maintaining a reasonable cost of capital and leveraging economies of scale through portfolio expansion have been instrumental in enhancing the financial performance of MFIs. Notably, the study underscores the significance of external factors such as subsidized finances and access to lowcost reserves in bolstering the sustainability of MFIs. These external supports have played a crucial role in enabling MFIs to navigate through the financial crisis period and sustain their operations effectively. Overall, the findings of the study shed light on the dynamics of the microfinance sector in Bangladesh amidst economic challenges. By identifying key drivers of efficiency and sustainability, the study provides valuable insights for policymakers, practitioners, and stakeholders in the microfinance industry to enhance the resilience and effectiveness of MFIs in Bangladesh and beyond. Keywords: Microfinance Institutions, Efficiency, Sustainability, Financial Crisis, Bangladesh

JEL Codes: G21, O16, G23

#### 1. INTRODUCTION

After achieving liberation, Bangladesh's development sector embarked on a multifaceted journey, directing its efforts towards a diverse array of programs aimed at fostering socio-economic progress (Beedell, 2019). These initiatives encompassed a broad spectrum of activities, including agricultural diversification and development, healthcare improvements, educational advancements, relief and rehabilitation efforts, and the establishment of income-generating opportunities for marginalized communities. Notably, the groundbreaking success of Dr. Yunus's Jobra experiment served as a catalyst, sparking a wave of enthusiasm among various non-governmental organizations (NGOs) to extend microfinance services to their target populations. Recognizing the transformative potential of microfinance in empowering individuals and communities, these NGOs sought to replicate and expand upon the innovative model pioneered by Dr. Yunus, thereby extending financial inclusion and fostering economic empowerment at the grassroots level (Alphonso, 2014). Furthermore, governmental entities, in collaboration with institutions such as Bangladesh Bank and other relevant bureaus, proactively embraced the concept of microfinance as a powerful tool for poverty alleviation. Through strategic policies and initiatives, the government endeavored to leverage microfinance as a means of addressing the pressing challenges of poverty and inequality, thereby laying the foundation for sustainable socio-economic development across the nation. This concerted effort, spearheaded by both governmental and non-governmental stakeholders, underscored the collective commitment to fostering inclusive growth and uplifting vulnerable communities (Mosweunyane, 2010). By harnessing the potential of microfinance alongside broader development interventions. Bangladesh positioned itself at the forefront of innovative poverty reduction strategies, paving the way for a more equitable and prosperous future for all its citizens.

A decade later, Non-Governmental Organizations (NGOs) embarked on a transformative journey, venturing into the development of innovative financial products that subtly diverged from the conventional Grameen approach to microfinance. This strategic shift aimed to cater to the diverse financial needs of their clientele, reflecting a nuanced understanding of the evolving socio-economic landscape (Cohen and nelson, 2011). With gradual success and increasing competition within the sector, microfinance emerged as the flagship program for numerous NGOs. Its popularity surged, gradually overshadowing other societal development initiatives that had once been central to their agendas. As microfinance

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# JBEO, Vol. 5(1), 1-7

gained prominence, it became synonymous with empowerment and opportunity, drawing attention and resources away from other programs that addressed broader developmental challenges. This transition signaled a pivotal moment in the evolution of NGO-led development efforts, highlighting the dynamic nature of financial inclusion strategies and the adaptability of organizations in responding to changing needs and priorities (Woodhead et al., 2014). While the proliferation of microfinance brought tangible benefits to many underserved communities, it also prompted reflections on the potential trade-offs and unintended consequences of prioritizing one intervention over others within the development landscape. In the 1990s, bolstered by financial support from the World Bank, the government initiated the establishment of the Palli Karma Shahayak Foundation (PKSF) as a pivotal funding agency dedicated to providing wholesale funds to Microfinance Institutions (MFIs). Tasked with the crucial role of facilitating access to capital for MFIs, PKSF began offering low-interest refinancing facilities, complemented by technical assistance aimed at enhancing the operational capabilities and strategic frameworks of these institutions (Hunt, 2014). Central to PKSF's mandate was the imperative to foster self-sufficiency and reduce reliance on external donor funding among MFIs. Accordingly, PKSF directed efforts towards enhancing the efficiency and effectiveness of MFIs, equipping them with the tools and resources necessary to achieve sustainability and financial autonomy. Through targeted interventions and capacity-building initiatives, PKSF endeavored to empower MFIs to navigate the intricacies of the financial landscape independently, thereby fostering a more resilient and self-reliant microfinance ecosystem. In the late 1990s, ASA achieved a significant milestone by attaining self-sufficiency and embarking on the operation of microfinance programs using its own resources (Udeaja et al., 2006). These resources were mobilized from various sources, including retained earnings, customer deposits, and grants that were transformed into equity. This strategic shift marked a pivotal moment in the evolution of microfinance in Bangladesh, demonstrating that sustainable financial models could be realized without reliance on external donor support. Following ASA's lead, organizations such as BRAC, Proshika, and Grameen Bank also transitioned towards self-sufficiency in their microfinance operations. By leveraging internal resources and innovative financial mechanisms, these institutions showcased the viability of a sustainable approach to microfinance. Together with ASA, they formed a cohort of pioneering entities that proved microfinance could be effectively managed and scaled without continuous dependence on donor assistance.

Collectively, these four organizations, ASA, BRAC, Proshika, and Grameen Bank, are widely recognized as the 'big four' of the Bangladeshi microfinance sector (Islam, 2011). Their transformative contributions have not only expanded access to financial services but have also set a precedent for sustainability and self-reliance within the global microfinance landscape. In recent years, the microfinance sector has embarked on innovative endeavors aimed at diversifying product offerings and expanding outreach to previously underserved markets, including urban areas, small businesses, and ventures. Recognizing the evolving needs and preferences of diverse clientele, microfinance institutions have undertaken strategic initiatives to tailor product designs and delivery mechanisms to better cater to the specific requirements of these segments. In particular, efforts have been directed towards introducing tailored financial products such as insurance and remittances services, which address the unique risk mitigation and financial transfer needs of clients (Stephens, 2012). By embracing technology-driven solutions and leveraging digital platforms, microfinance institutions have enhanced accessibility and convenience, facilitating seamless transactions and service delivery. Furthermore, the exploration of new markets and customer segments reflects a broader commitment to financial inclusion and socio-economic empowerment. By extending their reach beyond traditional rural settings, microfinance institutions are fostering entrepreneurship, stimulating economic growth, and fostering resilience within communities.

These pioneering efforts underscore the dynamism and adaptability of the microfinance sector in responding to emerging trends and evolving market dynamics (Sundaresan, 2009). Through continuous innovation and strategic partnerships, microfinance institutions are poised to play a pivotal role in advancing financial inclusion and catalyzing sustainable development in the years ahead.

According to the Credit and Development Forum (CDF) unpublished Statistical Report for 2009, as of December 2009, approximately 72.44% of microfinance institution (MFI) members, totaling 744 organizations, were served by NGO MFIs. In contrast, Grameen Bank accounted for 20.82% of the market share. NGO MFIs typically operate under various legal registrations, including NGOs, not-for-profit companies, societies, cooperative societies, and trusts. The oversight and management of these organizations are governed by regulatory bodies such as the NGO Affairs Bureau, Department of Cooperatives, Ministry of Social Welfare, Prime Minister's Office (PMO), Ministry of Finance, Singh, (2016) and Registrar of Joint Stock Companies, depending on the specific registration category. Grameen Bank stands as a unique case, registered as a Specialized Bank, which sets it apart from the typical regulatory framework governing NGO MFIs. This exception underscores the diverse regulatory landscape within the microfinance sector, reflecting the varied legal structures and oversight mechanisms governing different types of microfinance institutions in Bangladesh.

With the enactment of the Microfinance Regulatory Bill, regulatory oversight and authority have been consolidated under the Microfinance Regulatory Authority (MRA). As a result, all NGO MFIs are now required to register with the MRA in order to provide microfinance services (Rahman, 2013). This regulatory framework aims to streamline and strengthen supervision within the microfinance sector, ensuring adherence to standardized practices and safeguarding the interests of clients and stakeholders. Since the inception of the MRA, over 500 MFIs have undergone the registration process, aligning themselves with the regulatory requirements set forth by the authority. This comprehensive registration process signifies a significant milestone in the formalization and regulation of the microfinance industry, enhancing transparency, accountability, and stability within the sector. By establishing a centralized regulatory body, the Microfinance Regulatory Authority plays a pivotal role in promoting financial inclusion, consumer protection, and sustainable growth within the microfinance sector (Claessens and Rajas-suarez, 2016). Through robust oversight and enforcement mechanisms, the MRA endeavors to uphold the integrity and resilience of microfinance institutions, thereby contributing to broader socio-economic development goals.

## 2. METHODOLOGY

The paper employs a Data Envelopment Analysis (DEA) approach coupled with a Sustainability parameter. DEA is a method that utilizes a piece-wise linear combination to connect the best practice observations, thereby forming a convex production possibility set. Originally developed by Charnes et al. in 1978, DEA has found application not only in profit-oriented contexts but also in non-profit organizations, where objectives such as cost minimization and profit maximization may not be the primary considerations. One of the key advantages of DEA is its ability to work with small sample sizes without requiring price information. This flexibility makes it particularly well-suited for analyzing the efficiency of Microfinance Institutions (MFIs), where data availability and sample sizes may be limited. In the context of the study, Technical Efficiency (TE) is decomposed into Pure Technical Efficiency (PTE) and Scale Efficiency (SE). Both input and output-oriented approaches are employed, utilizing models such as the CCR (Charnes and Rhodes, 1978) and BCC (Banker et al., 1984), to assess the technical efficiency of MFIs. These models allow for a comprehensive evaluation of MFI performance, taking into account both the utilization of inputs and the generation of outputs relative to the best practice frontier.

#### 3. RESULTS AND DISCUSSIONS

The table 1 provides technical efficiency estimates for various firms over two consecutive years, 2020 and 2021. Each row represents a different firm, identified by a serial number and name. The columns include efficiency scores under two assumptions: Constant Returns to Scale (CRS) and Variable Returns to Scale (VRS), along with a scale efficiency score and a description based on these efficiency scores. The CRS and VRS efficiency scores indicate how effectively each firm utilizes its inputs to generate outputs. A score of 1 signifies perfect efficiency, implying that the firm optimally utilizes its resources. Scores below 1 suggest inefficiency, indicating that the firm could improve its resource utilization, while scores above 1 suggest over-efficiency, where the firm may be using more resources than necessary. Scale efficiency, indicated in the "Scale" column, measures how efficiently a firm operates at its current scale. A score of 1 implies that the firm is operating optimally at its current size. Scores below 1 suggest that the firm could potentially benefit from operating at a larger scale to improve efficiency. The "Desc" column provides a classification of firms based on their efficiency scores. Firms are typically categorized as experiencing "Drs" (decreasing returns to scale) or "Irs" (increasing returns to scale), which reflects whether their production processes become less efficient, remain constant, or become more efficient as production scales up. The table offers insights into the relative efficiency and scale utilization of different firms, allowing for comparisons and potential identification of areas for improvement in resource management and operational processes. Table 2 provides a summary of the results obtained from the CCR (Charnes and Rhodes, 1978) model for the years 2020 and 2021. It presents several key metrics for each year, offering insights into the efficiency levels of the decision-making units (DMUs) analyzed. In both 2020 and 2021, there were 28 DMUs included in the analysis. Among these DMUs, the table indicates the number of efficient DMUs, which are those operating at the production frontier and achieving the highest level of output given their inputs. In 2020, 14 out of the 28 DMUs were considered efficient, while this number decreased to only 4 efficient DMUs in 2021. This decline suggests a deterioration in overall efficiency across the analyzed entities from 2020 to 2021. The table also provides the average efficiency score (M) for each year, representing the overall efficiency level of the DMUs. In 2020, the average efficiency score was 0.941, indicating relatively high efficiency among the entities. However, this average efficiency score dropped to 0.782 in 2021, signaling a significant decrease in efficiency over the oneyear period. Additionally, the table includes the average of inefficiency, calculated as (1 - M) / M, which measures the degree of inefficiency relative to efficiency among the DMUs. This value decreased from 0.626 in 2020 to 0.278 in 2021, suggesting an improvement in inefficiency levels compared to efficiency levels over the two years. Furthermore, the table presents the percentage of DMUs operating at full efficiency, which declined notably from 50% in 2020 to 14.28% in 2021. This decrease indicates a substantial reduction in the proportion of entities operating optimally between the two years. Overall, the summary table offers a comprehensive view of the efficiency dynamics among the analyzed entities over the two-year period, highlighting changes in efficiency levels and the proportion of efficient DMUs.

Table 3 presents a summary of the results obtained from the BCC (Banker et al., 1984) model for the years 2020 and 2021, specifically focusing on entities in Bangladesh. Let's delve into the interpretation of the table components. In both 2020 and 2021, the analysis involved 28 decision-making units (DMUs). The "Number of efficient DMU" column indicates the count of DMUs considered efficient according to the BCC model. An efficient DMU operates at the production frontier, achieving

the maximum output given its inputs. In 2020, 14 out of the 28 DMUs were deemed efficient, while this number increased slightly to 12 efficient DMUs in 2021.

Table 1: Technical Efficiency Estimates									
Year=1 (20	020)		v			Year=2 (2021)			
SL.no	Firm name	CRS	VRS	Scale	Desc	CRS	VRS	Scale	Desc
1	ASA	1	1	1	-	0.782	1	0.782	Drs
2	BASTOB	1	1	1	-	1	1	1	-
3	BEES	0.873	0.873	1	-	0.616	0.629	0.98	Drs
4	BRAC	1	1	1	-	1	1	1	-
5	BURO	0.98	0.992	0.987	Drs	0.567	0.68	0.833	Irs
6	CDIP	1	1	1	-	0.809	1	0.809	Drs
7	COAST Trust	1	1	1	-	0.461	0.47	0.980	Drs
8	CSS	1	1	1	-	0.999	1	0.999	Drs
9	CTS	1	1	1	-	0.475	1	0.475	Drs
10	DSK	0.71	0.716	0.991	Drs	0.77	0.777	0.990	Drs
11	Ghashful	1	1	1	-	0.677	1	0.677	Drs
12	GB	1	1	1	-	0.963	1	0.963	Drs
13	HEED	0.821	0.825	0.995	Drs	0.751	0.76	0.988	Drs
14	IDF	0.953	0.953	1	-	0.781	0.8	0.976	Drs
15	JCF	0.795	0.799	0.994	Drs	0.92	1	0.92	Drs
16	POPI	0.901	0.907	0.993	Drs	1	1	1	-
17	PPSS	1	1	1	-	1	1	1	-
18	RDRS	1	1	1	-	0.938	1	0.938	Drs
19	RIC	1	1	1	-	0.657	0.712	0.923	Irs
20	RRF	1	1	1	-	0.857	0.864	0.991	Drs
21	Sajida	0.882	0.89	0.991	Irs	0.876	0.924	0.948	Irs
22	SDC	0.987	1	0.987	Irs	0.773	0.802	0.963	Irs
23	Shakti	0.986	0.993	0.992	Drs	0.793	0.935	0.848	Irs
24	SKS	0.897	0.897	1	-	0.635	0.645	0.984	Drs
25	SSS	0.756	0.759	0.996	Drs	0.591	0.765	0.772	Irs
26	TMSS	0.938	0.943	0.994	Drs	0.681	0.919	0.741	Irs
27	UDDIPAN	0.868	0.868	1	-	0.679	0.853	0.796	Irs
28	Wave	1	1	1	-	0.724	0.736	0.983	Drs
Mean		0.941	0.943	0.997		0.782	0.874	0.902	
Table 2: Summary of Results of CCR-Model									
2020						2021			
Number of	f DMU		28			28			
Number of	f efficiency M		14			4			
Average of	f inefficiency (1-M)/	Л	0.941			0.782			
Percentage	e of the DMU in 1	••	50 %			14.28%			

Table 3 show that the "Average of efficiency (M)" column displays the average efficiency score among all DMUs, reflecting the overall efficiency level of the entities analyzed. In 2020, the average efficiency score was 0.943, indicating a relatively high level of efficiency among the entities. However, this average efficiency score decreased to 0.874 in 2021, suggesting a decline in efficiency over the one-year period. The "Average of inefficiency ((1-M)/M)" column calculates the average inefficiency among the DMUs. This value, derived from the formula (1 - M) / M, measures the degree of inefficiency relative to efficiency among the entities. In 2020, the average inefficiency was 0.060, indicating relatively low inefficiency levels compared to efficiency levels. However, this average inefficiency increased to 0.114 in 2021, signaling a

rise in inefficiency levels relative to efficiency levels over the two years. Furthermore, the table includes the "Percentage of the DMU in 1" column, which represents the percentage of DMUs operating at full efficiency (100%). In 2020, 50% of the DMUs were operating optimally, but this percentage decreased slightly to 42.85% in 2021, suggesting a reduction in the proportion of entities operating at full efficiency between the two years. The table offers valuable insights into the efficiency dynamics among the analyzed entities in Bangladesh over the two-year period, highlighting changes in efficiency levels, inefficiency, and the proportion of efficient DMUs.

Table 3: Summary of Results of BCC-Model								
Summary of the results of BCC-model (Bangladesh)								
2020		2021						
Number of DMU	28	28						
Number of efficient DMU	14	12						
Average of efficiency M	0.943	0.874						
Average of inefficiency (1-M)/M	0.060	0.114						
Percentage of the DMU in 1	50%	42.85%						

Table 4 presents a sustainability check for several microfinance institutions (MFIs), focusing on their Operational Self-Sufficiency (OSS) ratio and scale or Net Assets Base (NAB). Each row in the table represents a different MFI, identified by a serial number, name, and country of operation. The OSS Ratio (per cent) column provides insight into the financial sustainability of each MFI. This ratio represents the percentage of operating revenues covering operating expenses. A ratio above 100% indicates that an MFI generates more revenue than it spends on operational costs, implying financial sustainability. Conversely, a ratio below 100% suggests a deficit in covering expenses. For instance, BASTOB in Bangladesh has an OSS ratio of 111.43%, indicating relative financial sustainability, while BRAC, another MFI in Bangladesh, has an even higher OSS ratio of 123.64%, indicating strong financial sustainability. The Scale or NAB column provides information on the scale of operations or the Net Assets Base of each MFI. This metric indicates the size or financial resources of the institution. Larger values in this column suggest larger operations or greater financial resources. For example, BRAC has a significantly larger scale or NAB of 6,241,328.00 compared to BASTOB, which has a scale or NAB of 7,869.00. Each entry in the table reflects the unique financial position and operational scale of the respective MFIs. However, further context is needed to fully understand the implications of the provided values. For instance, PPSS in Bangladesh has an OSS ratio of 118.03%, indicating financial sustainability. However, its scale or NAB is listed as 0, which may require additional information to interpret accurately. Table 4 offers valuable insights into the financial sustainability and scale of operations of various microfinance institutions, providing important information for assessing their performance and impact within their respective countries.

Table 4: Sustainability Check									
SL no	MFI name	Country	OSS Ratio (per cent)	Scale or NAB					
1	BASTOB	Bangladesh	111.43	7,869.00					
2	BRAC	Bangladesh	123.64	6,241,328.00					
3	PPSS	Bangladesh	118.03	0					

# 4. CONCLUSIONS

The study delves into an in-depth examination of Microfinance Institutions (MFIs) operating within Bangladesh, particularly focusing on the tumultuous financial climate spanning the years 2020 and 2021. Central to this investigation is a two-fold approach aimed at assessing both the efficiency and sustainability of these MFIs during this challenging period. In the initial phase of the study, Data Envelopment Analysis (DEA) serves as a powerful analytical tool to quantify the efficiency levels exhibited by the MFIs under scrutiny. By employing DEA, the study endeavors to discern the relative efficiency of each MFI in utilizing resources to achieve desired outcomes. Through meticulous analysis of input-output relationships, DEA facilitates the identification of best practices and benchmarks against which the performance of individual MFIs can be evaluated. Subsequently, the study shifts its focus towards conducting a comprehensive sustainability assessment of the evaluated MFIs. This phase seeks to explore the resilience and long-term viability of these institutions in the face of the financial crisis. By examining various dimensions of sustainability, including financial stability, social impact, and environmental responsibility, the study aims to gain insights into the holistic health and robustness of the MFIs' operational frameworks. Through this multi-dimensional analysis, the study aspires to offer nuanced insights into the performance and adaptability of MFIs operating within the unique socio-economic context of Bangladesh. By coupling efficiency evaluation with sustainability assessment, the study aims to provide stakeholders with a comprehensive understanding of the role and effectiveness of MFIs in fostering inclusive financial access and driving socioeconomic progress amidst turbulent times. The larger Microfinance Institutions (MFIs), traditionally known for their profitability, have recently displayed concerning trends that warrant attention. Across prominent MFIs such as ASA, BRAC,

## JBEO, Vol. 5(1), 1-7

and BURO, there has been a noticeable decline in productivity, signaling potential challenges within their operational frameworks. This decline can be attributed to several factors, including the substantial expansion fueled by high-rate loans, particularly evident in the cases of BRAC and BURO. The significant increase in management costs observed across all three institutions further exacerbates the situation, placing additional strain on their financial sustainability. Moreover, there are indications of deteriorating portfolio quality, as highlighted by reports from ASA and BURO. This decline in portfolio quality raises concerns about asset quality and loan repayment rates, potentially exposing MFIs to heightened credit risk and financial instability. These trends underscore the importance of closely monitoring the financial health and operational efficiency of MFIs, particularly as they navigate through periods of rapid expansion and economic uncertainty. Addressing the underlying factors contributing to the decline in productivity and portfolio quality is essential to safeguarding the longterm viability and impact of microfinance initiatives in Bangladesh. By implementing prudent risk management practices and adopting strategies to enhance operational efficiency, MFIs can mitigate risks and strengthen their resilience in the face of evolving market dynamics. Over time, smaller Microfinance Institutions (MFIs) have demonstrated remarkable resilience and expanded their operations to achieve financial viability. Several factors have contributed significantly to their success, driving their growth trajectory and enhancing their operational efficiency. One key factor is the enhancement of staff efficiency, particularly in terms of management cost control. By optimizing their internal processes and streamlining administrative functions, smaller MFIs have been able to minimize overhead costs and improve overall operational efficiency. This focus on staff efficiency has enabled them to allocate resources more effectively and maximize the impact of their microfinance initiatives. Additionally, access to reasonable cost of capital has played a pivotal role in supporting the growth of smaller MFIs. By securing financing at favorable rates, either through subsidized finances from organizations like the Palli Karma Shahayak Foundation (PKSF) or low-cost reserves, these institutions have been able to expand their loan portfolios and extend financial services to a wider client base. This access to affordable capital has not only facilitated their growth but has also contributed to their financial sustainability over the long term. Furthermore, economies of scale have emerged as a significant driver of expansion for smaller MFIs. By gradually increasing their scale of operations and expanding their client base, these institutions have been able to leverage economies of scale to their advantage. This includes benefits such as reduced average costs per unit of output and enhanced profitability, ultimately contributing to their overall financial viability and sustainability. Overall, the success of smaller MFIs in achieving financial viability can be attributed to their focus on staff efficiency, access to reasonable cost of capital, and the realization of economies of scale. Moving forward, continued attention to these key factors will be essential for sustaining their growth and impact within the microfinance sector.

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