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DOES MICROFINANCE OUTREACH INDONESIAN MICRO AND SMALL ENTERPRISES?

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ABSTRACT

Background: Micro and Small Enterprises (MSEs) played role in Indonesia's economy. However, Indonesian MSEs still faced various challenges in obtaining external financing. Microfinance had emerged as a prominent tool for reducing the credit constraints experienced by MSEs. However, the literature on the effectiveness of microfinance in improving MSE performance still had empirical gaps in terms of mixed results.
Purpose: This study examines the impact of microfinance on the asset growth of micro and small enterprises (MSEs) in Indonesia using data from the fifth wave of the Indonesia Family Life Survey (IFLS).
Design/methodology/approach: The analysis encompassed a cross-sectional dataset of 6,363 MSEs across 16 business categories and employs Ordinary Least Squares regression to measure the effects of exogenous variations in microfinance access on total assets.
Finding/Result: Regression analyses reveal that microfinance significantly increases MSEs' total assets by 19%-25%, with smaller firms showing stronger effects. Alternative measures of microfinance, such as awareness of institutions and loan values, also demonstrate a positive impact on firm outcomes, whereas financing from informal institutions is associated with negative effects. Additional findings highlight the positive influence of microfinance on non-equipment assets, revenue, and expenses, although its effect on equipment assets is weaker. Robustness checks across subsamples confirm the results, indicating diminishing returns for larger firms than smaller firms.
Conclusions: These findings underscore the critical role of microfinance in enhancing the growth and sustainability of MSEs, particularly smaller, vulnerable enterprises. This study emphasizes the need for tailored microfinance interventions and suggests further exploration of long-term impacts and integrated support mechanisms. This study provides valuable insights for policymakers to optimize microfinance programs, contributing to poverty alleviation and economic empowerment in Indonesia.
Originality/value: The existing literature has not sufficiently examined how microfinance can alleviate these financial pressures and enhance MSE resilience and performance. This study aims to address this gap by evaluating the impact of microfinance on the performance of MSEs in Indonesia, providing a comprehensive understanding of how improved access to microfinance can support MSEs in overcoming financial barriers and sustaining growth despite experiencing adverse shocks.

Keywords: microfinance, micro and small enterprise, asset growth, Indonesian family life survey

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INTRODUCTION

Micro and small enterprises (MSEs) were widely acknowledged as critical drivers of innovation, competitiveness, and economic development in developing countries due to their capacity to generate employment, foster entrepreneurship, and enhance productivity (OECD, 2004). Empirical studies showed that MSEs contributed significantly to GDP and employment across various income groups, providing more than 55% of GDP and over 65% of total employment in high-income countries, over 60% of GDP and 70% of total employment in low-income countries, and more than 95% of total employment and 70% of GDP in middle-income countries.

These enterprises also played a key role in integrating with global value chains, adapting rapidly to changes in competition and innovation brought by globalization, and participating in dynamic networks that strengthened local and regional economies (Porter, 1996; Schmitz, 1995; Scott & Storper, 1990) Furthermore, MSEs enhanced the competitiveness and innovative capacities of developing nations by serving as foundational elements in clusters, production systems, and other proximity-based frameworks that reinforced the linkages between firms, local economies, and global markets (Porter, 2000, 2003). Consequently, the strategic support and development of MSEs remained central to achieving sustainable economic growth, job creation, and improved social cohesion in the developing world.

Micro and small enterprises (MSEs) served as a crucial backbone of the Indonesian economy by providing the majority of employment opportunities, especially for low-income households, women, and young workers, while also fostering early-stage entrepreneurship development (Tambunan, 2008). They accounted for over 90% of all non-agricultural firms, offered livelihoods to more than 90% of the workforce, and remained vital contributors to rural economies. Although Indonesian MSEs were not yet as technologically advanced as those in other Asia-Pacific economies, they played an essential role in driving domestic economic activity, exporting non-oil and gas products, and contributing to more than half of the country's GDP. As these enterprises adapted and upgraded over time, they showed potential for enhanced productivity, competitiveness, and sustainable entrepreneurship growth.

Although MSEs were widely recognized for their substantial contributions to employment, GDP growth, and overall economic development in developing countries, numerous studies highlight their significant challenges, particularly in securing financing (Beck, 2007; Levy, 1993; Pissarides, 1999). For instance, research showed that MSEs often struggled to access external financial resources due to underdeveloped capital markets, stated lending biases, and stringented collateral requirements, which could severely hamper their growth potential (Avery et al.1998; Pissarides et al.2003). Even when other constraints such as regulatory burdens, limited managerial skills, and inadequate infrastructure were acknowledged, persistent difficulties in obtaining formal financing remain a prominent issue, influencing not only the survival of young and small firms but also restricting the emergence of high-growth enterprises (Brush et al.2009; Lee, 2014).

The lack of access to external financing significantly worsened the challenges faced by Micro and Small Enterprises (MSEs) when they encountered shocks such as family deaths, illnesses, or natural disasters, as these events directly strained the internal resources upon which these firms heavily depended. Parinduri (2014) demonstrated that such shocks could lead to a depletion of labor and internal finance, given that many MSEs relied on family members as both workers and sources of funding. For example, the death of a family member reduced available labor and impacts the productivity of family-run firms, while simultaneously imposing financial burdens on the owner's household, which further constrained the firm's capital. The absence of adequate access to external finance compounded these challenges, leaving MSEs with few alternatives to absorb the shock or sustain their operations (Beck, 2007; Carpenter & Petersen, 2002). This vulnerability to shocks underscored the critical need for improved financial mechanisms to support MSEs in maintaining resilience and growth.

Despite being a prominent tool aimed at alleviating credit constraints among MSEs, research on the effectiveness of microfinance in promoting MSE growth still had empirical gaps. Previous empirical studies had found mixed results on whether microfinance effectively improved financial outcomes and growth of MSEs (Ribeiro et al.2022). Banerjee et al. (2015) conducted a randomized controlled trial in India and found minimal impact on small businesses. In terms of business

activities, most businesses that obtained microfinance did not experience an increase in profitability. They argued that this was due to the nature of the businesses run by the target group: less productive (the majority were self-run and thus have no employees), not profitable, and difficult to expand. A similar result was obtained by Angelucci et al. (2015) and Tarozzi & Johnson (2014). They found that households that obtained microfinances mainly used the funds for investment and risk management purposes. However, the effects on business size were small; thus, the effects on household income, consumption, and subjective well-being were minimal.

On the other hand, Crépon et al. (2015) contrasting results and argued that the effects of microfinance depended on the characteristics of the borrower. They found that, among households with higher abilities to borrow, microfinance led to a significant rise in the investment of assets and profits. Similarly, Ngo & Wahhaj (2012) found that microfinance positively affected the small business growth and the welfare of women. However, these effects depended on whether the women invest the funds into profitable ventures and whether the household spent most of their budget on public goods e.g. food, rent, and children's education.

Bruhn & Love (2013) supported this with their findings that showed microfinance increases business investments and led to higher income. This was particularly true for households with worse pre-existing conditions i.e. lower bank penetration and lower incomes. Arouri et al. (2015) found that microfinance could help small businesses withstand the negative effects of natural disasters. On the other hand, Buera et al. (2012) found that, while microfinance increased business profits, they did decrease overall asset growth. Schicks (2014) emphasized the influence of the borrower on the outcomes. They found that over-indebtedness was more likely among men and households with lower levels of debt literacy.

Mixed results was also found among research on the effectiveness of microfinance in Indonesia. Fianto et al. (2018) studied 548 household businesses in East Java that were clients of Islamic microfinance institutions in Indonesia. They found that Islamic microfinance, especially in the form of equity financing, improved the incomes of rural households. Yaumidin et al. (2017) studied 24 households in south Bandung and found that microfinance improved the welfare of Indonesian households, especially for women in the households. Farida et al. (2016) used propensity score matching to study 332 household entrepreneurs and found that microfinance had a positive impact on their profits, total revenues, number of employees, and asset ownerships. Sabiti & Effendi (2017) studied 90 micro businesses in Bogor Regency and found a positive relationship between microfinance and business revenue and profits.

On the other hand, Atmadja et al. (2017) found contrary evidence. They studied 100 women-owned micro enterprises in Surabaya and found a negative relationship between microfinance and business performance. Furthermore, Takahashi et al. (2010) studied 447 households in Gresik and found that, although microfinance increased business sales and size, it did not significantly affect household income and business profits.

Despite the promises of microfinance, previous literature shows conflicting results on its effectiveness. The effects of microfinance is largely determined by development settings. This can be seen from studies in Indonesia where previous literature studied distinct regions and yielded different results. Acknowledging this gap, research on the effectiveness of microfinance on MSE performance in Indonesia is still a fruitful field of research.

In line with the General Theory of Entrepreneurship proposed by Shane (2004), we hypothesize that microfinance exhibits a positive effect on MSE total assets. The theory states that the process of entrepreneurship involves three aspects: the discovery of opportunity, the evaluation of opportunity, and the exploitation of opportunity. Access to microfinance can provide MSEs with the discovery of opportunity i.e. the reduction of credit constraints and access to financing can cause new MSEs to form or cause MSEs to expand their business. Business expansion process, including the act of acquiring equipment or stock directly influences the MSEs level of assets. This process of opportunity discovery and business expansion may not happen previously if MSEs did not have access to microfinance and were experiencing credit constraints.

Our study utilizes the Indonesia Family Life Survey (IFLS) that encompasses more than six thousand MSEs across Indonesia. By employing this large dataset and studying the effects of microfinance on MSE assets, sales, and expenses, we aim to obtain a holistic measure of the relationship.

METHODS

This paper utilizes the Indonesia Family Life Survey (IFLS) dataset published by the RAND Corporation. IFLS is a longitudinal household survey of Indonesian households first conducted in 1993, with new waves published every 7 years. It includes a representative sample of approximately 83% of the Indonesian population, encompassing over 30,000 individuals residing in 23 provinces (13 provinces in the first wave). This study employed the fifth wave of IFLS (IFLS-5) which surveyed between October 2-14 until April 2015.

The key variable of interest, microfinance, is derived from the IFLS-5 data, which includes information regarding a household's borrowing history. The sample for this analysis is drawn from the Non-Farm Business module of IFLS-5, encompassing approximately 6,300 businesses owned by approximately 4,400 households, most of which are micro-enterprises. Micro and small firms are classified according to Law 20/2008 on Micro, Small, and Medium Enterprises, where a micro firm has net tangible assets (excluding land and buildings) of less than IDR50 million or annual sales under IDR300 million. and a small firm has assets of IDR50-500 million or annual sales of IDR300 to IDR2.5 billion.

In the primary specifications, microfinance is defined as a binary variable, taking the value of one if the household that manages a micro or small firm has ever applied for microfinance in the last 12 months, and zero otherwise. An alternative definition is a binary variable that takes a value of one if the household has been successful in obtaining microfinance in the last 12 months, and zero otherwise. However, this alternative is not desirable as it limits the variation within the sample; from 2,250 firms that applied for microfinance, 2,170 were successful in obtaining a loan, whilst only a mere 80 firms were unsuccessful. On the other hand, of 5,750 firms that are aware of a microfinance institution, 2,250 have applied for microfinance, whilst 3,500 have not.

For robustness checks, we employ alternative measures of microfinance, such as whether a firm knows of a microfinance institution and a continuous variable representing the value of microfinance obtained. Additionally, we employ subsampling to analyze the impacts of microfinance on firms of different sizes, including models that are without smaller firms and larger firms.

Control variables include various firm characteristics from the Non-Farm Business module of IFLS-5, such as ownership and management types, business fields, establishment year, and location at the district level. The analysis also links firm owners with household characteristics, including household size, the age and education of the household head and spouse, and indicators for ethnic groups and religions.

Our dataset comprises 6,363 firms, which are divided into 16 business categories. These include agriculture, mining, utilities, construction, transportation and communication, finance, restaurants and food stalls, trading, three groups of manufacturing, and five groups of services. The distribution for restaurants, food stalls, and trading businesses still resembles the distribution in IFL3 revealed by Parinduri (2014) approximately 57% are in this business field. As for services and manufacturing, firms in this field represent around 18% and 13% of the sample, respectively. Lastly, agriculture, construction, and transportation represent 2%, 4%, and 6% of the sample.

The identification method used in this study hinged on exogenous variations in access to microfinance experienced by firm owners. Within the representative sample, some owners received microfinance support, while others did not. Similarly, some firms had access to microloans or financial training, while others did not. These financial resources could significantly impact both household and firm growth. For instance, firms that received microfinance support, particularly those with limited initial capital, were able to use the funds to invest in raw materials, and new equipment, or to expand their operations—investments that might have been otherwise unattainable. Although these firms might have faced challenges in securing traditional bank loans, microfinance provided a crucial alternative source of funding. This suggested that firms with access to microfinance experienced faster growth compared to those without such access. A positive disparity in the total assets of firms that received microfinance versus those that did not indicates that accesses to microfinance contributed to faster growth in these businesses.

The following regression equation was employed to estimate the impact of family hardship on the total assets of firms:

$$y_i = \alpha + \beta D_i + \sum_j \gamma_j Firm_{ij} + \sum_k \delta_k Owner_{ik} + \varepsilon_i$$

Here: y_i represented the logarithm of the total assets of micro or small firm i_i, D_i is a binary variable indicating whether the firm had ever applied for microfinance in the last 12 months, Firm was a vector of firm characteristics, Owner was a vector of owner characteristics, and ε_i represented the error term.

Owner characteristics were included to ensure the randomness of the likelihood of applying for microfinance by a firm. For instance, the education of the firm owner was likely to influence their choice to apply for microfinance. Therefore, the model controlled for variables such as household size, the average years of schooling completed by the household head and spouse, the average age of the head and spouse, the number of school-aged children, the number of mature children, and a set of ethnic and religious group dummies.

Firm characteristics were introduced to account for potential differences between firms that applied for microfinance and those that did not. For example, larger and older firms including these characteristics also increased the precision of the estimate for the coefficient for microfinance. The firm characteristics controlled for include a sole-ownership dummy, whether shares were held by household members, whether the firm is managed by the household head or spouse, whether the firm operated outside the home, the business sector, the year of establishment, the firm's district-level location, and whether it was in an urban area. The research framework and variables used are outlined in Figure 1.

After controlling for these characteristics, it was argued that the likelihood of a firm applying for microfinance was fairly random. Therefore, an ordinary least squares (OLS) estimate was applied to equation (1) to examine the effect of family hardship on firms' total assets. Huber-White heteroscedastic robust standard errors were used to address potential biases in standard error estimation. Additionally, errors were clustered by the firms' district-level locations, allowing for unrestricted correlation of residuals among firms within the same district.

The expected outcome was that the coefficient of microfinance would be positive, indicating that microfinance leads to asset growth or is associated with higher assets. These positive effects demonstrated that microfinance aided firms in investing in assets such as equipment, inventory, or infrastructure, as well as opportunities to expand their operations.

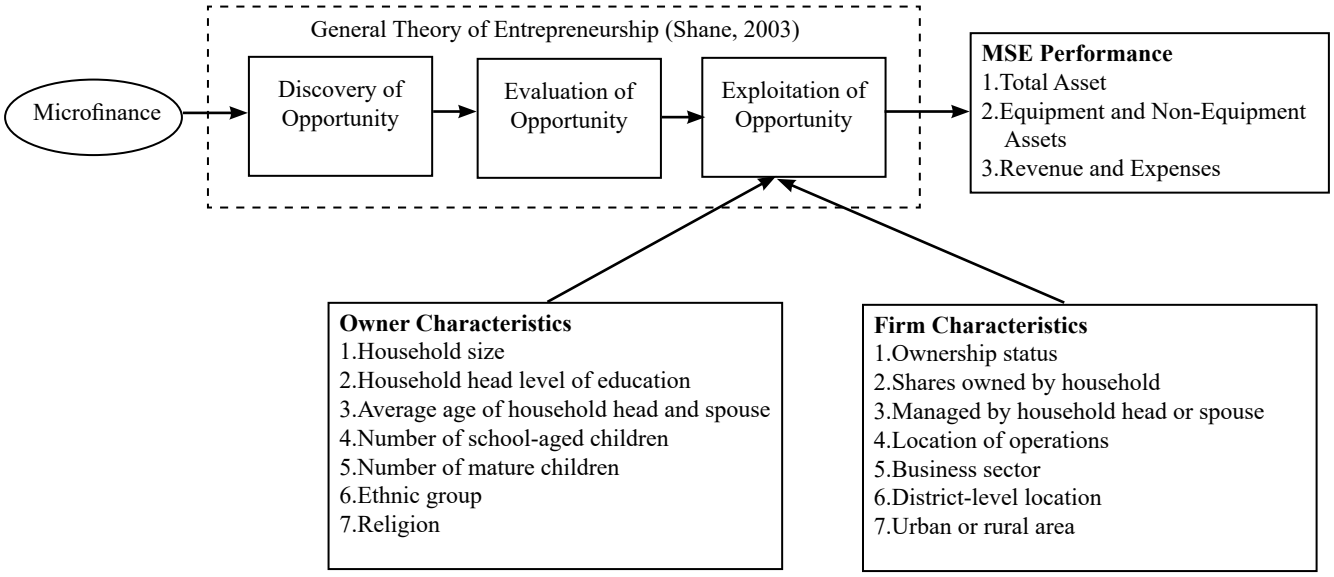

Figure 1. Research framework

RESULTS

Microfinance and Total Assets

Table 1 presents the baseline findings of this study. Each column presents the results for different specifications of the model explained in the previous section, determined by the control variables used. All the models are estimated using OLS, where the dependent variable is the logarithm of total assets and the independent variable is a dummy variable that indicates whether a business has ever applied for microfinance.

Column 1 shows the results for the model without any control variables. It shows that microfinance is associated with an MSE having 21% higher total assets. This result is significant at the 5% significance level. In column 2, control variables related to ownership and management characteristics of the MSEs are added. The findings are still consistent with the first specification, but with a larger coefficient and a higher significance level. At the 1% significance level, microfinance is associated with an MSE having 23% higher total assets. In column 3, we further add control variables describing firm characteristics in terms of business sector, age, and location at the district level. Results remain consistent. At the 1% significance level, having applied for microfinance is associated with 25% higher total assets among MSEs. Lastly, in the fourth column, control variables regarding owner characteristics such as age, level of education, ethnicity, and religion are added. Results show that after controlling for firm and owner characteristics, microfinance still has a positive and significant effect on total assets among MSEs. At the 5% significance level, microfinance is associated with an MSE having 19% higher total assets.

After controlling for owner and firm characteristics, we find a positive and significant relationship between access to microfinance and MSE assets. These findings are consistent with our hypothesis that microfinance provides opportunities for discovering and exploiting entrepreneurial activities. Microfinance reduces credit constraints for MSEs and enables them to conduct or expand business activities. Ultimately leading to better business performance in terms of asset growth. These results support the findings of Crepon et al. (2015) that found microfinance leads to an increase in the asset investments used for entrepreneurial activities. These results also support the findings of Bruhn and Love (2014) that microfinance stimulates increases in business investments of MSEs, especially in areas with lower levels of bank penetration. This condition is particularly relevant for Indonesia where banking access is relatively low, especially for those outside of Java. In addition, MSEs are often excluded from the conventional banking system due to the lack of collateral or formal business operations.

Other Measures of Microfinance and Formality of Microfinance

This section presents the results of regression analyses examining the effects of microfinance on micro and small firms' total assets. The analysis considers different definitions of microfinance and the formality of the institutions providing it (Table 2). In panel A, two different definitions related to microfinance are explored: whether a business knows a microfinance institution and the value of microfinance obtained by the business. In column (1), the coefficient is 0.694, which is statistically significant at the 1% level, indicating that businesses that are aware of a microfinance institution tend to have a positive and significant relationship with the dependent variable. This suggests that simply knowing about the existence of microfinance institutions can have a substantial positive impact on the firm's outcome, likely due to increased financial literacy or access to financial resources. In column (2), when additional control variables are included, the coefficient decreases to 0.382 but remains statistically significant at the 1% level. This reduction in the coefficient suggests that other factors might also be contributing to the firm's outcome, but the positive effect of knowing a microfinance institution is still robust.

The value of microfinance obtained by the firm shows a positive impact on the dependent variable, with a coefficient of 0.494 in column (1), which is also statistically significant at the 1% level. This indicates that higher amounts of microfinance obtained by the firm lead to better outcomes, likely because the firm can invest more in assets, operations, or expansion. In column (2), after adding more control variables, the coefficient slightly decreases to 0.462 but remains highly significant. This suggests that the effect of the value of microfinance on firm performance is strong and consistent, even when accounting for other factors. Thus, access to microfinance, when measured by the awareness of MSEs to the existence of microfinance or the value of loans they receive, significantly increases the assets of MSEs.

Panel B examines the effect of the formality of the microfinance institution on the value of microfinance obtained and its impact on the dependent variable. In column (1), the coefficient is 0.467 and significant at the 1% level, reinforcing the positive impact of the value of microfinance obtained on firm performance. This result is consistent with the findings in Panel A. In column (2), the coefficient slightly decreases to 0.441 but remains statistically significant, confirming that the positive effect of microfinance value on firm performance persists even with additional controls.

The coefficient for informal microfinance institutions is -0.564 in column (1) and -0.459 in column (2), both statistically significant at the 1% level. This negative coefficient indicates that obtaining microfinance from informal institutions is associated with worse outcomes for the firm compared to formal institutions. The significant negative effect suggests that informal microfinance might be less reliable or beneficial, possibly due to higher interest rates, less favorable terms, or a lack of legal protections and support services that formal institutions might offer.

The results indicate that access to microfinance, especially from formal institutions, has a significant positive impact on firm performance and total assets. Firms that know about microfinance institutions or obtain more substantial amounts of microfinance tend to perform better. However, the benefits of microfinance are less pronounced, or even negative, when the financing is sourced from informal institutions. This underscores the importance of formal, structured microfinance institutions in supporting the growth and sustainability of small businesses.

Table 1. Microfinance on total assets

	(1)	(2)	(3)	(4)
Microfinance	0.21**	0.23***	0.25***	0.19**
	(0.081)	(0.080)	(0.085)	(0.080)
Controls				
Ownership and Management		Yes	Yes	Yes
Business Field, Age, and Location			Yes	Yes
Owner Characteristics				Yes
Observations	5161	5161	5089	4712
R^2	0.00	0.06	0.19	0.26

Standard errors in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01

Table 2. Other definitions and types of microfinance institutions

		(1)	(2)
A. Other Definitions			
Business knows a microfinance institution	(1)	0.694***	0.382***
		(0.126)	(0.131)
Value of microfinance obtained	(2)	0.494***	0.462***
		(0.029)	(0.032)
B. Effect of Microfinance Institution Formality			
Value of microfinance obtained	(3)	0.467***	0.441***
		(0.030)	(0.034)
Informal		-0.564***	-0.459***
		(0.170)	(0.200)
Firm Characteristics		Yes	Yes
Owner Characteristics			Yes

Standard errors in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01

These results support the findings of Ayyagari et al. (1993) regarding formal and informal finance institutions. They found that small businesses that uses formal finance experienced faster growth compared to ones that uses informal finance. Financing from informal institutions are smaller in size and hence are mostly used as working capital rather than financing growth (Fanta, 2012). Additionally, informal finance institutions tend to charge unreasonably higher interest rates. This lowers the profits of small firms and reduces the opportunities for growth (Bolnick, 1992).

Equipment and Non-Equipment Assets, Revenues, and Expenses

This section presents the results of regression analyses examining the effects of microfinance on various dependent variables: equipment assets, non-equipment assets, revenue, and expenses. The analysis is presented in Table 3 and is split into two panels, with Panel A focusing on assets and Panel B on revenue and expenses. Panel A examines how microfinance impacts different types of assets held by firms, specifically equipment assets and non-equipment assets. In column (1), the coefficient for equipment assets is 0.126, but it is only marginally significant, with a p-value greater than 0.05. This suggests a positive but weak relationship between access to microfinance and the firm's investment in equipment assets. In column (2), after controlling for owner characteristics, the coefficient decreases slightly to 0.096 and loses statistical significance. This implies that the positive effect of microfinance on equipment assets may not be robust when considering other factors.

The coefficient for non-equipment assets is 0.128 and is statistically significant at the 10% level, suggesting that microfinance positively affects the firm's investment in non-equipment assets, such as inventory, supplies, or perhaps intangible assets. In column (2), the coefficient remains relatively stable at 0.124 and retains its significance at the 10% level. This indicates that the positive relationship between microfinance and non-equipment assets is consistent, even when accounting for other variables.

This result is consistent with the findings of Cotler & Woodruff (2008) that found microfinance significantly increases investments in non-equipment assets such as vehicles, buildings, and land, alongside investments in inventories. They found that microfinance allow MSEs to free up their own funds to fund these non-equipment assets whilst using the credit to purchase inventory. Thus, microfinance allows MSEs to increase both types of assets.

Results also show a positive and significant impact of microfinance on firms' revenue. In column (1), the coefficient for revenue is 0.150 and statistically significant at the 1% level, suggesting a strong positive impact of microfinance on the firm's revenue. This indicates that firms with access to microfinance are likely to see a significant increase in their revenue, potentially due to enhanced operational capacity or expansion. In column (2), the coefficient decreases to 0.091 but remains statistically significant at the 5% level. This suggests that while the positive effect of microfinance on revenue is still strong, it is somewhat reduced when additional controls are introduced.

Table 3. Microfinance on stock of assets, sales, and expenses

		(1)	(2)
A. Equipment and Non-Equipment Assets			
Equipment Assets	(1)	0.126*	0.096
		(0.067)	(0.064)
Non-Equipment Assets	(2)	0.128*	0.124*
		(0.074)	(0.074)
B. Revenue and Expenses			
Revenue	(3)	0.150***	0.091**
		(0.044)	(0.042)
Expenses	(4)	0.142***	0.084*
		(0.047)	(0.044)
Firm Characteristics		Yes	Yes
Owner Characteristics			Yes

Standard errors in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01

Similarly, for expenses, column (1) shows that the coefficient for expenses is 0.142, significant at the 1% level, indicating that microfinance also leads to an increase in the firm's expenses. This could be due to higher operating costs associated with business expansion or investments made possible by microfinance. In column (2), the coefficient decreases to 0.084 and is significant at the 10% level. This reduction suggests that the impact of microfinance on expenses is somewhat lessened when additional variables are controlled for, but there is still a positive relationship.

The results suggest that access to microfinance has a positive impact on a firm's financial outcomes, though the effects vary across different types of assets and financial metrics. First, microfinance appears to positively influence the accumulation of both equipment and non-equipment assets, though the effect on equipment assets is less robust. The stable effect on non-equipment assets suggests that microfinance may be particularly useful for financing working capital or other non-equipment-related investments. Second, there is a clear and strong positive relationship between microfinance and firm revenue, indicating that firms with access to microfinance can leverage these funds to significantly boost their income, likely through business expansion or increased operational efficiency. Lastly, while microfinance also increases the firm's expenses, this is likely a consequence of the investments made possible by the additional funding. The increase in expenses is less pronounced when controlling for other factors, but it remains a notable outcome, suggesting that while firms spend more, this is part of a broader growth strategy facilitated by microfinance.

This result is consistent with the findings of Attefah et al. (2014) that microfinance increases both the revenues and expenses of small businesses. Credit facilities provided by microfinance institutions enable businesses to increase business activities by increasing inventory or expanding their operations by obtaining new equipment. This enables them to increase sales and stimulate business growth. However, they also found that microfinance also increases expenses. Despite increase in revenue, they also found that microfinance loans also lead to a decrease in the net profit of small businesses due to increasing expenses.

This increase in expenses is attributed to the high interest rates and short repayment periods of microfinance loans. Thus, while microfinance increases revenue, a large portion is used to service the interest and repayment of these loans. Ultimately reducing the profitability of MSEs.

Robustness Checks

Lastly, we include robustness checks in Table 4. In each model, we use a different subsample of firms based on their size. The size of firms is determined by the value of total assets and the number of workers, paid and unpaid. We also include different specifications based on the usage of control variables.

Table 4. Robustness check

		(1)	(2)
A. Exclude very small firms			
Exclude firms with assets below IDR100,000	(1)	0.141**	0.125**
		(0.074)	(0.072)
Exclude firms with assets below IDR1,000,000	(2)	0.117**	0.121**
		(0.056)	(0.059)
B. Exclude larger firms			
Exclude firms with more than 20 workers	(3)	0.245***	0.190**
		(0.085)	(0.081)
Exclude firms with more than 5 workers	(4)	0.245***	0.194**
		(0.083)	(0.080)
Firm Characteristics		Yes	Yes
Owner Characteristics			Yes

Standard errors in parentheses; * p < 0.1, ** p < 0.05, *** p < 0.01

Panel A excludes relatively small firms based on the value of their total assets. The cutoff points of IDR100,000 and IDR1,000,000 are used. At both cutoff points, results show that our results are robust and consistent at the 5% significance level. Excluding firms with assets below IDR100,000, we find that microfinance increases firms' assets by 12.5%-14.1%. Similarly, excluding firms with assets below IDR1,000,000, we find that microfinance increases assets by 1.17%-12.1%. Overall, microfinance affects relatively larger firms but at a lower magnitude. This shows that the positive effects of microfinance on firms' assets follow a diminishing pattern larger firms' assets are less affected compared to smaller firms. This is likely to happen when firms already own relatively larger assets; they are likely to spend the financing received on other avenues other than assets.

Panel B excludes larger firms in terms of the number of workers. The cutoff points of 5 and 20 workers are used. Similar to Panel A, results are robust. Excluding firms with more than 20 workers, we find that microfinance increases firms' assets by 19%-24.5%. Similarly, for even smaller firms (firms with five or fewer workers), microfinance increases assets by 19.4%-24.5%. Overall, our findings are robust across firms of various sizes.

Managerial Implications

The findings of this study highlight the crucial role of microfinance in enhancing the asset base of micro and small enterprises (MSEs), particularly among smaller firms facing financial constraints. Business managers and policymakers should recognize the importance of increasing access to formal microfinance institutions while ensuring that these services are tailored to the specific needs of smaller enterprises. Simplified loan application processes, lower interest rates, and financial literacy programs can help optimize the impact of microfinance, allowing businesses to effectively utilize funds for asset growth and operational improvement. Moreover, microfinance institution managers should focus on improving outreach strategies for underserved business segments, ensuring that the most vulnerable firms benefit from available financial resources.

Furthermore, given the study's evidence of the varying impact of microfinance across different firm sizes, managerial strategies should be adapted to maximize the effectiveness of financial interventions. For smaller firms, microfinance should be coupled with business development training and mentorship to enhance their long-term sustainability. However, for larger firms, financing models should evolve beyond traditional microloans, incorporating growth-oriented funding mechanisms such as investment partnerships or structured credit programs. Additionally, regulatory bodies should work toward improving the structure of informal microfinance institutions to complement, rather than compete with, formal financial services, ensuring that businesses receive stable and fair financial support. By implementing these strategies, managers and policymakers can enhance the role of microfinance as a catalyst for sustainable business growth and economic development in the region.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The findings of this study underscore the significant impact of microfinance on the asset growth of micro and small enterprises (MSEs) in Indonesia. Through a robust analysis across different firm sizes, this study demonstrates that access to microfinance consistently enhances the assets of MSEs, with smaller firms experiencing a relatively higher magnitude of growth. This indicates that microfinance is particularly effective in bolstering the asset base of the most vulnerable enterprises, thereby playing a crucial role in alleviating poverty and empowering the economy.

Moreover, the study highlights the importance of tailored microfinance interventions that consider firm size and specific needs, as larger firms tend to benefit less from these financial services. The diminishing returns observed for larger firms suggest that microfinance programs should focus on the most disadvantaged enterprises to maximize their developmental impacts.

In conclusion, this study reinforces the critical role of microfinance in fostering the growth and sustainability of MSEs in Indonesia. Policymakers should support and expand microfinance initiatives to ensure accessibility to the smallest and most vulnerable businesses, which are the backbone of the country's economy. Future research could explore additional dimensions, such as the long-term effects of microfinance on firm performance and the potential benefits of integrating microfinance with other forms of financial and nonfinancial support.

Recommendations

This study highlights the significant role of microfinance in driving asset growth among Indonesia's micro and small enterprises (MSEs), particularly among smaller and more vulnerable firms. Policymakers should focus on expanding access to formal microfinance institutions while ensuring that these programs are designed to meet the specific needs of the smallest businesses in the sector. Tailored interventions, such as lower interest rates, simplified application processes, and targeted financial literacy programs can maximize developmental impact. Additionally, government partnerships with microfinance institutions can help scale up funding and provide integrated support, such as mentorship and market-access programs, to further enhance MSE growth. Efforts should also be made to regulate and improve informal microfinance practices to ensure that they complement rather than undermine the positive effects of formal microfinance systems.

While this study confirms the short-term benefits of microfinance on MSE asset growth, future research should explore its long-term impacts on firm performance and sustainability. Analyzing how microfinance affects non-financial outcomes, such as employment generation, gender empowerment, and community development, would provide a more comprehensive understanding of its broader socioeconomic contributions. Moreover, comparative studies between Indonesia and other ASEAN countries could provide insights into regional best practices and variations in microfinance effectiveness. Finally, examining the interplay between microfinance and non-financial interventions, such as training programs or digital tools, would shed light on how to create holistic strategies to support MSEs.

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