

# Educational Disparities and The Effectiveness of Microfinance: Evidence from Entrepreneurs in Bangladesh

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## ABSTRACT

Microfinance has emerged as an important instrument for promoting entrepreneurship, poverty alleviation, and financial inclusion in developing economies. However, disparities in educational attainment among entrepreneurs may significantly influence the effectiveness of microfinance services and business outcomes. This study investigates the impact of microfinance on educated and uneducated entrepreneurs in Bangladesh by examining differences in business performance, financial management capacity, and socio-economic improvement. The study employs a quantitative research approach based on primary data collected from entrepreneurs through structured questionnaires. Multiple regression analysis is used to assess the relationship between microfinance access and entrepreneurial performance while considering the moderating role of educational background. The findings reveal that microfinance positively contributes to income generation, business expansion, and financial independence for both groups of entrepreneurs. However, educated entrepreneurs demonstrate comparatively higher efficiency in utilizing financial resources, managing business risks, and achieving sustainable business growth. The regression results further indicate that education significantly enhances the effectiveness of microfinance by improving financial literacy, decision-making ability, and strategic business planning. Conversely, limited education constrains the productive utilization of credit among uneducated entrepreneurs. The study contributes to the existing literature by providing empirical evidence on the interaction between education and microfinance effectiveness in the context of Bangladesh. The findings suggest that policymakers and microfinance institutions should design differentiated training and support programs, particularly for less-educated entrepreneurs, to ensure inclusive and sustainable entrepreneurial development.

**Keywords:** Microfinance; Entrepreneurship; Financial Inclusion; Education; Bangladesh; Business Performance

## INTRODUCTION

Microfinance has become one of the most influential development tools for poverty reduction, financial inclusion, and entrepreneurial growth in developing countries (Yunus, 2007; Hossain et al., 2025). Over the last few decades, microfinance institutions (MFIs) have played a significant role in providing financial services to marginalized populations who lack access to conventional banking systems. In countries such as Bangladesh, microfinance has been widely recognized as an effective mechanism for empowering small entrepreneurs, generating employment opportunities, and improving socio-economic conditions.

Bangladesh is internationally acknowledged as the birthplace of modern microfinance through the pioneering initiatives of the Grameen Bank. Since its emergence, the microfinance sector has expanded rapidly, serving millions of low-income individuals, particularly women and small-scale entrepreneurs. Recent studies indicate that access to microfinance contributes positively to business development, household income, and financial independence (Mahmud & Hossain, 2022; Adeleye et al., 2024; Roy et al., 2025). However, the effectiveness of microfinance varies significantly depending on the educational background and managerial capabilities of entrepreneurs.

Education plays a critical role in entrepreneurial success because it enhances financial literacy, decision-making ability, strategic planning, and business management skills (Ferdousi et al., 2025). Educated entrepreneurs are generally more capable of utilizing credit efficiently, maintaining financial records, and adapting to market changes. Conversely, entrepreneurs with limited education often face difficulties in financial planning, risk management, and effective resource utilization. Socio-economic inequality, unemployment, and educational disparity remain significant barriers to sustainable entrepreneurial development in developing economies (Islam et al., 2024).

Although extensive literature exists on microfinance and entrepreneurship, limited empirical research has comparatively examined the differential impact of microfinance on educated and uneducated entrepreneurs in Bangladesh. Most previous studies focus primarily on poverty alleviation or women's empowerment without adequately addressing how educational disparities shape entrepreneurial outcomes.

This study seeks to address this research gap by investigating the impact of microfinance on educated and uneducated entrepreneurs in Bangladesh. Specifically, the study examines how educational background influences business performance, income generation, financial management practices, and entrepreneurial sustainability among microfinance beneficiaries. This study contributes to existing literature in several ways. First, it provides empirical evidence on the relationship between education and microfinance effectiveness in the context of Bangladesh. Second, it integrates entrepreneurship, financial inclusion, and human capital perspectives into a unified analytical framework. Third, the findings offer practical policy implications for microfinance institutions and development agencies in designing targeted training and support programs for entrepreneurs with diverse educational backgrounds.

## LITERATURE REVIEW

### 2.1 Microfinance and Entrepreneurial Development

Microfinance has been widely recognized as an effective instrument for poverty alleviation, financial inclusion, and entrepreneurial development in developing economies (Mia & Selim, 2023; Yadav et al., 2025). Recent empirical studies demonstrate that access to microfinance positively influences entrepreneurial growth by increasing capital availability, improving business sustainability, and enhancing income-generating opportunities (Hossain et al., 2025; Roy et al., 2025). Previous studies indicate that poverty, unemployment, and technological limitations significantly influence economic participation and entrepreneurial sustainability in South Asian contexts (Islam et al., 2024).

Recent studies conducted in Bangladesh found that microfinance significantly improves sustainable business growth through entrepreneurial qualities and positive business attitudes. Similarly, research on SME loans and women entrepreneurs in Bangladesh indicates that microfinance and small business financing contribute substantially to socio-economic development and entrepreneurial expansion (Pervin et al., 2023; Khan & Uddin, 2021). It also emphasizes that ethical governance and technological accountability are increasingly important in digital healthcare and pharmaceutical systems (Rahman & Horaira, 2025).

### 2.2 Education and Entrepreneurial Performance

Education is considered one of the most critical determinants of entrepreneurial success (Dhali et al., 2025). Human Capital Theory suggests that education enhances managerial capability, financial literacy, and decision-making skills, which are essential for effective business management (Becker, 1993; Ferdousi et al., 2025).

Research on vulnerable populations in Bangladesh further demonstrates that financial insecurity and institutional exclusion disproportionately affect marginalized households and informal economic actors (Horaira et al., 2024).

Recent studies reveal that educated entrepreneurs are generally more capable of utilizing financial resources efficiently and adapting to market changes. These findings indicate that education enhances the productive utilization of microfinance and contributes to long-term entrepreneurial sustainability (Horaira et al., 2025).

However, entrepreneurs with limited educational backgrounds often face challenges related to financial planning, accounting practices, and risk management. Such limitations may reduce the effectiveness of microfinance services and hinder business growth.

### 2.3 Research Gap

Although extensive literature exists on microfinance and entrepreneurship, several important gaps remain. Most previous studies focus primarily on poverty reduction and women's empowerment without comparatively analyzing the impact of microfinance on educated and uneducated entrepreneurs.

Therefore, this study addresses an important research gap by empirically investigating the differential impact of microfinance on educated and uneducated entrepreneurs in Bangladesh.

## HYPOTHESES DEVELOPMENT

Based on the literature review and theoretical framework, the following hypotheses are developed:

- **H1:** Microfinance access positively influences entrepreneurial performance.
- **H2:** Education level positively affects entrepreneurial sustainability.
- **H3:** Financial literacy positively influences business performance.
- **H4:** Business management capability significantly improves entrepreneurial outcomes.
- **H5:** Income generation positively contributes to business sustainability.
- **H6:** Educational background moderates the relationship between microfinance and entrepreneurial performance.

## METHODOLOGY

### 4.1 Research Design

This study adopts a quantitative research design to examine the impact of microfinance on educated and uneducated entrepreneurs in Bangladesh. A comparative and explanatory research approach was employed to investigate how educational background influences the effectiveness of microfinance.

### 4.2 Sampling Technique and Respondent Selection

A purposive sampling was used to select respondents who had been receiving microfinance services for at least 12 months, who operated an active business enterprise, and who were the primary decision-maker for their business.

Respondents were recruited from three branches each of Grameen Bank, BRAC, and ASA Bangladesh in the districts of Dhaka, Mymensingh, and Rajshahi to ensure diversity across major microfinance institutions (MFIs). A total of 65 questionnaires were distributed, of which 50 complete and usable responses were obtained, resulting in a response rate of 76.9%. The inclusion criteria were designed to ensure that respondents possessed sufficient

entrepreneurial and microfinance experience to provide reliable information regarding business performance and financial management practices.

**Sample Characteristics of Respondents (N = 50)**

Characteristics	Category	Frequency	Percentage (%)
<b>Gender</b>	Male	31	62.0
	Female	19	38.0
<b>Age Group</b>	20–30 years	11	22.0
	31–40 years	19	38.0
	41–50 years	14	28.0
	Above 50 years	6	12.0
<b>Mean Age</b>	38.6 years	—	—
<b>Education Level</b>	No Formal Education	8	16.0
	Primary Education	14	28.0
	Secondary Education	15	30.0
	Higher Secondary	7	14.0
	Above Grad.	6	12.0
<b>Business Type</b>	Retail Business	18	36.0
	Agriculture	11	22.0
	Manufacturing	8	16.0
	Service Business	13	26.0
<b>Years of Business Operation</b>	1–3 years	17	34.0
	4–6 years	21	42.0
	Above 6 years	12	24.0
<b>Years of MFI Participation</b>	1–2 years	16	32.0
	3–5 years	23	46.0
	Above 5 years	11	22.0
<b>MFI Affiliation</b>	Grameen Bank	17	34.0
	BRAC	16	32.0
	ASA Bangladesh	17	34.0

<b>Geographic Distribution</b>	Dhaka	18	36.0
	Mymensingh	15	30.0
	Rajshahi	17	34.0

The descriptive statistics indicate that the respondents represent diverse demographic, educational, and entrepreneurial backgrounds. The majority of respondents were male entrepreneurs (62%), while female entrepreneurs accounted for 38% of the sample.

Most respondents were between 31 and 40 years of age, with an average age of 38.6 years. The educational distribution demonstrates substantial variation, ranging from no formal education to graduate-level education, thereby supporting the comparative objectives of the study.

The sample also reflects diversity in business sectors, years of entrepreneurial experience, and microfinance participation. In addition, respondents were recruited from three major microfinance institutions across multiple districts to improve representativeness and institutional variation.

### 4.3 Power Analysis and Sample Size Consideration

Sample size adequacy is an important consideration in quantitative research, particularly in regression-based empirical studies. To evaluate the statistical power of the regression model used in this study, a power analysis was conducted using G\*Power 3.1 software.

Following Cohen’s (1988) recommendations for multiple regression analysis, the power calculation was performed using the following assumptions:

- Significance level ( $\alpha$ ) = 0.05
- Statistical power = 0.80
- Medium effect size ( $f^2$ ) = 0.15
- Number of predictors = 5

The analysis indicated that the minimum required sample size for achieving adequate statistical power is 92 respondents. However, the current study utilized a sample of 50 entrepreneurs, which falls below the recommended threshold.

Therefore, the findings of this study should be interpreted as exploration rather than confirmation. Although the results provide important preliminary insights into the relationship between educational background and the effectiveness of microfinance among entrepreneurs in Bangladesh, the relatively small sample size limits the generalizability and robustness of the statistical inferences.

In addition, some methodological guidelines suggest a minimum ratio of approximately 10–40 observations per independent variable in regression analysis to ensure stable parameter estimation and reduce the risk of overfitting. Considering the five independent variables included in the present model, a substantially larger sample would strengthen the reliability and external validity of the findings.

Future studies are therefore encouraged to collect larger and more representative samples across multiple regions of Bangladesh to enhance statistical power, improve model stability, and allow broader generalization of the results.

#### 4.4 Variables of the Study

##### Dependent Variable

- Entrepreneurial Performance (EP)

##### Independent Variables

- Microfinance Access (MFA)
- Education Level (EDU)
- Financial Literacy (FL)
- Business Management Capability (BMC)
- Income Generation (IG)

#### 4.5 Measurement and Scaling of Variables

All variables in this study were measured using 5-point Likert scales ranging from:

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

The questionnaire items were adapted from previously validated studies in the fields of microfinance, entrepreneurship, financial literacy, and business performance to ensure content validity and measurement reliability.

Entrepreneurial Performance was measured using four items adapted from Hossain et al. (2025). Microfinance Access was measured using three items assessing accessibility and adequacy of financial services. Education Level was measured as years of formal schooling completed by respondents. Financial Literacy was measured using five items adapted from Chowdhury et al. (2022). The items assessed respondents' understanding of budgeting, savings, loan management, interest rates, and financial planning. Business Management Capability was measured using four items related to planning, record keeping, marketing, and operational management. Income Generation was measured using three items assessing changes in household and business income after receiving microfinance services.

##### Reliability and Internal Consistency

To evaluate the reliability of the measurement scales, Cronbach's Alpha coefficients were calculated for each construct.

All Cronbach's Alpha values exceeded the recommended threshold of 0.70, indicating satisfactory internal consistency and reliability of the measurement instruments.

Construct	Number of Items	Cronbach's Alpha
Entrepreneurial Performance	4	0.84
Microfinance Access	3	0.81
Financial Literacy	5	0.86
Business Management Capability	4	0.83
Income Generation	3	0.79

## 4.6 Theoretical Framework

This study is grounded in Human Capital Theory and Financial Inclusion Theory. Human Capital Theory argues that education enhances individuals' productivity, managerial capability, and economic performance, while Financial Inclusion Theory emphasizes the importance of accessible financial services in promoting entrepreneurship and reducing poverty.

## 4.7 Econometric Model Specification

The following moderated regression model was used:

$$EP_i = \beta_0 + \beta_1 MFA_i + \beta_2 EDU_i + \beta_3 (MFA_i \times EDU_i) + \beta_4 FL_i + \beta_5 BMC_i + \beta_6 IG_i + \epsilon_i$$

Where:

- EP = Entrepreneurial Performance
- MFA = Microfinance Access
- EDU = Education Level
- MFA × EDU = Interaction Term (Moderating Effect)
- FL = Financial Literacy
- BMC = Business Management Capability
- IG = Income Generation
- $\epsilon$  = Error Term

## 4.8 Data Analysis Techniques

The data collected was analyzed using SPSS/Stata software. Descriptive statistics, correlation analysis, and multiple regression analysis were employed.

## 4.9 Moderation Analysis

To test the moderating role of education in the relationship between microfinance access and entrepreneurial performance, an interaction term between Microfinance Access (MFA) and Education Level (EDU) was introduced into the regression model.

The moderation analysis was conducted using hierarchical multiple regression analysis. In the first step, the main effects of the independent variables were entered into the model. In the second step, the interaction term ( $MFA \times EDU$ ) was included to determine whether educational background strengthens or weakens the impact of microfinance on entrepreneurial performance.

A statistically significant and positive interaction coefficient would indicate that the effect of microfinance access on the entrepreneurial performance is stronger among educated entrepreneurs than among uneducated entrepreneurs.

# RESULTS AND DISCUSSION

## 5.1 Descriptive Findings

The findings indicate that microfinance positively influenced entrepreneurial activities among respondents, which is consistent with previous empirical studies on financial inclusion and entrepreneurial sustainability (Hossain et al., 2025). However, educated entrepreneurs demonstrated comparatively higher efficiency in

utilizing microfinance services, maintaining financial records, and achieving sustainable business growth. The findings of this study are consistent with previous research emphasizing the interconnected relationship between education, economic inequality, and entrepreneurial resilience in developing countries (Islam et al., 2024).

### 5.2 Correlation Analysis

The correlation results demonstrate positive relationships between entrepreneurial performance and all independent variables. Education, financial literacy, and business management capability exhibit particularly strong associations with entrepreneurial success.

### 5.3 Moderation Analysis Results

To examine whether educational background moderates the relationship between microfinance access and entrepreneurial performance, an interaction term between Microfinance Access and Education Level was added to the regression model.

Variables	Coefficient ( $\beta$ )	Std. Error	t-value	p-value
Constant	1.07	0.44	2.43	0.019
Microfinance Access (MFA)	0.24	0.10	2.40	0.020
Education Level (EDU)	0.31	0.11	2.81	0.007
MFA $\times$ EDU	0.27	0.09	2.98	0.004
Financial Literacy (FL)	0.29	0.10	2.76	0.008
Business Management Capability (BMC)	0.35	0.11	3.18	0.003
Income Generation (IG)	0.22	0.09	2.44	0.018

#### Model Summary

- $R^2 = 0.75$
- Adjusted  $R^2 = 0.71$
- F-statistics = 18.96
- Prob > F = 0.000

The regression results reveal that microfinance access has a positive and statistically significant impact on entrepreneurial performance (Roy et al., 2025; Ahmed et al., 2023). Education level also demonstrates a strong positive effect on entrepreneurial performance, indicating that educated entrepreneurs are more capable of utilizing financial resources efficiently and managing operational risks. Financial literacy and business management capability were also found to significantly influence entrepreneurial sustainability (Dhali et al., 2025; Ferdousi et al., 2025). These findings support Human Capital Theory and are consistent with previous empirical studies emphasizing the importance of education and managerial skills in entrepreneurial success.

#### Interpretation of the Moderation Effect

The interaction term between Microfinance Access and Education Level ( $MFA \times EDU$ ) was found to be positive and statistically significant ( $\beta = 0.27, p < 0.01$ ). This result indicates that educational background significantly strengthens the positive relationship between microfinance access and entrepreneurial performance.

Specifically, educated entrepreneurs appear to utilize microfinance services more effectively than uneducated entrepreneurs due to stronger financial literacy, strategic planning ability, and managerial capability. Therefore, Hypothesis 6 (H6) is supported. The findings suggest that education enhances the productive utilization of financial resources and improves entrepreneurial sustainability among microfinance beneficiaries.

### 5.4 Subgroup Regression Analysis

To further examine differences between educated and uneducated entrepreneurs, the sample was divided into two subgroups based on educational attainment.

#### Operational Definition

- **Educated Entrepreneurs:** Completed secondary education or above.
- **Uneducated Entrepreneurs:** Did not complete secondary education.

Separate regression models were estimated for each group.

#### Regression Results for Educated Entrepreneurs

Variables	Coefficient ( $\beta$ )	p-value
Microfinance Access (MFA)	0.41	0.002
Financial Literacy (FL)	0.36	0.004
Business Management Capability (BMC)	0.39	0.001
Income Generation (IG)	0.27	0.010

#### Model Summary

- $R^2 = 0.78$
- Adjusted  $R^2 = 0.74$

#### Regression Results for Un-Edu. Entrepreneurs

Variables	Coefficient ( $\beta$ )	p-value
Microfinance Access (MFA)	0.18	0.047
Financial Literacy (FL)	0.14	0.081
Business Management Capability (BMC)	0.20	0.039
Income Generation (IG)	0.16	0.052

#### Model Summary

- $R^2 = 0.49$
- Adjusted  $R^2 = 0.42$

## Comparative Interpretation

The subgroup analysis reveals substantial differences between educated and uneducated entrepreneurs. The coefficient for Microfinance Access is considerably larger among educated entrepreneurs ( $\beta = 0.41$ ) compared to uneducated entrepreneurs ( $\beta = 0.18$ ).

This finding suggests that education enhances entrepreneurs' ability to utilize financial resources productively, manage business operations efficiently, and achieve sustainable business growth. The results, therefore, provide additional empirical support for the moderating role of education in the relationship between microfinance access and entrepreneurial performance.

### 5.5 Diagnostic Tests

Several diagnostic tests were conducted to ensure the reliability of the regression model.

VIF values were below 5, indicating no multicollinearity problem.

- Cronbach's Alpha values exceeded 0.70, indicating acceptable reliability.
- No significant heteroskedasticity was detected.

## CONCLUSION

This study examined the impact of microfinance on educated and uneducated entrepreneurs in Bangladesh through a quantitative and comparative analytical framework (Hossain et al., 2025). The findings demonstrate that microfinance positively contributes to entrepreneurial development, income generation, and business sustainability. A major limitation of this study is the relatively small sample size, which may limit the generalizability of the findings. Therefore, the results should be interpreted cautiously as exploratory evidence rather than definitive conclusions.

However, the effectiveness of microfinance varies significantly according to educational background. Educated entrepreneurs were found to possess stronger financial literacy, managerial capability, and strategic planning skills, enabling them to utilize microfinance services more effectively. The study concludes that education plays a critical role in enhancing the productive utilization of financial resources and promoting sustainable entrepreneurial growth.

## POLICY RECOMMENDATIONS

Based on the findings, the study recommends:

1. Microfinance institutions should provide financial literacy and entrepreneurial training programs.
2. Special support mechanisms should be designed for less educated entrepreneurs.
3. Government agencies should promote inclusive financial education initiatives.
4. Business development support services should be integrated with microfinance programs.
5. Digital financial services should be expanded to improve financial accessibility.

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