

Microfinance as a Catalyst for Socio-Economic Transformation in Former Enclaves of Bangladesh: A Critical Appraisal

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Abstract

This study mainly endeavors to meticulously evaluate the role of microfinance interventions on the socio-economic metamorphosis of people of the former enclaves of Bangladesh. Post-integration, enforced identities, and rigid borders intensified enclave inhabitants, plight, amplifying economic ruin, job scarcity, substandard living, and developmental exclusion. Striving to integrate sequestered communities into the developmental framework, several NGO-MFIs instigated microfinance interventions within some former enclaves. This study deployed a multifaceted methodological framework, anchored in inductive reasoning, to delineate the profound ramifications of microfinance interventions rigorously. The findings of this study delineated microfinance borrowers, economic trajectory, showcasing amplified income, expenditure, and savings, alongside enhanced employment prospects. The escalating utility and travel costs of borrowers reflect augmented financial liquidity. Borrowers prioritized liquid assets over immovable wealth, with savings surging. However, infrastructural advancements in sanitation remained lackluster, highlighting microfinance's uneven efficacy in driving holistic socio-economic upliftment. In essence, the comparative evaluation elucidates that microfinance beneficiaries in the former enclaves of Bangladesh demonstrated a moderate escalation in household income and expenditure, coupled with enhanced fulfillment of basic needs and a pronounced supremacy in accrued savings and transport assets. Conversely, non-borrowers demonstrated elevated expenditures on travel and utilities, superior access to sanitary infrastructure and potable water, greater land tenure, and a heightened prevalence of mobile phone ownership, livestock, and poultry. The inferential analysis unveils a statistically significant correlation between microfinance participation and household income elevation, utility affordability, and asset valorization. Conversely, non-borrowers exhibited superior land tenure and infrastructural access. The findings of this study necessitate policy recommendations toward holistic socio-economic elevation (e.g., training opportunities, improving infrastructure, fostering entrepreneurship) beyond mere financial integration.

Key Words: Enclaves, Microfinance, Borrower, Economic, Asset.

1. Introduction

Every citizen holds a distinct national identity, evoking intrinsic pride in their sovereignty. However, enclave dwellers grapple with an existential identity crisis, perennially deprived of state-endowed privileges. Politically, an enclave denotes a territorial fragment wholly ensnared

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within an alien jurisdiction. These anomalous landmasses, geographically designated as enclaves yet colloquially termed 'Chitmahals,' epitomize geopolitical paradoxes (Whyte, 2002). As of 1996, global enclave configurations comprised 223 enclaves, 32 counter-enclaves, and a singular counter-counter enclave. Asia harbors the preponderance, with India and Bangladesh hosting 178 enclaves, 25 counter-enclaves, and the world's sole counter-counter enclave—an Indian fragment engulfed by Bangladesh, paradoxically encasing Bangladeshi land (Roy, 2019). The Indo-Bangladeshi borderlands, once beset by labyrinthine territorial intricacies, rendered their denizens stateless—ostracized from legal frameworks, branded as "ChiteerManush" (people of the enclaves) in vernacular discourse. Their anomalous existence underscores the pernicious ramifications of fragmented sovereignty and geopolitical entropy.

2. A Brief Idea about Enclaves

An enclave is a segment of a nation's mainland that is entirely detached from the primary landmass, situated within the borders of a neighboring country. Within India and Bangladesh, three distinct types of enclaves exist, such as:

- i. First-order enclave (a part of the mainland of a country).
- ii. Second-order enclave or counter-enclave (another enclave within an enclave).
- iii. Third-order enclave or counter-counter-enclave (another enclave within a counter-enclave).

3. Historical Background of the Enclaves of Bangladesh and India

The Land Boundary Agreement (LBA) aimed to resolve long-standing territorial disputes along the India-Bangladesh border, particularly concerning 162 enclaves completely surrounded by foreign land. These enclaves originated in 1713 following peace treaties between the Kingdom of Cooch Behar and the Mughal Empire, which failed to establish clear territorial demarcations. Before the rise of modern nation-states and stringent border controls, these enclaves posed minimal challenges. However, following the dissolution of British India in 1947 and the subsequent creation of Pakistan and India, enclave residents faced growing hardships (Hemlay, 2018).

The root of these disputes traces back to Cyril John Radcliffe, a British lawyer unfamiliar with India, who was tasked with delineating the India-Pakistan border in 1947. His miscalculations led to discrepancies, including the inadvertent exclusion of an Indian police station from official maps, enabling Pakistan to claim it. Though the Nehru-Noon Agreement (1958) proposed a resolution, political and legal complications delayed its implementation (Pandey, 2011). The creation of Bangladesh in 1971 further complicated matters, prompting fresh negotiations and leading to a new land boundary agreement in 1974. Despite mutual consensus on an enclave exchange, political resistance in India stalled progress (Hemlay, 2018). Indian nationalists opposed the agreement, citing an imbalance in land cession—India relinquished 17,160.63 acres to Bangladesh while receiving only 7,110.02 acres. Although a protocol was introduced in 2011 to finalize the exchange, it lacked a definitive timeline. The deadlock persisted until Prime Minister Narendra Modi's government secured political support for a constitutional amendment, enabling India to ratify the LBA on May 6, 2015. The official exchange of 162 enclaves occurred

on July 31, 2015, granting enclave residents formal citizenship and resolving a seven-decade-long territorial dispute (Hemlay, 2018; Pandey, 2011).

4. Demographic Discussion on the Former Enclaves of Bangladesh

For decades, residents of 162 enclaves endured severe poverty, lacking access to healthcare, education, and law enforcement. Following nearly seventy years of negotiations, Bangladesh and India exchanged these enclaves under the Land Boundary Agreement (LBA) in 2015 (Ferdoush, 2019). The exchange, the fifth-longest international border swap, involved 111 Indian enclaves in Bangladesh and 51 Bangladeshi enclaves in India (Hemley, 2018). As a result, 37,369 residents in Indian enclaves within Bangladesh and 14,854 in Bangladeshi enclaves within India gained citizenship. Bangladesh received 17,160 acres, while India acquired 7,110 acres. Enclaves were located in Cooch Behar (India) and the northern districts of Bangladesh (Ferdoush, 2019).

Table: 01 Demographic Situation of the Former Enclaves in Bangladesh

District	Number of Former Enclaves	Upazilas		Population	Number of Unpopulated Former Enclaves	Area (in Acre)
		Number	Number of Former Enclaves			
Nilphamari	4	1	4	800	0	5155.5
Kurigram	12	3	12	11,251	1	1810.8
Panchagarh	36	3	36	20,924	21	119.2
Lalmonirhat	59	3	59	15,790	22	123.0
Total	111	10	111	48,765	44	7208.5

Source: BBS, 2018, and Field Survey

The above table highlights the varying socio-economic and demographic conditions across the districts. The total area of these 111 former enclaves is 7,208.5 acres, and they are home to 48,765 people (10,467 households), with 44 (39.6%) of the enclaves remaining unpopulated. These enclaves are distributed across 10 upazilas within these districts. All former enclaves in Bangladesh are located within the administrative boundaries of the four northernmost districts: Panchagarh, Nilphamari, Lalmonirhat, and Kurigram. Lalmonirhat has the largest number of former enclaves (59) across three upazilas and the most unpopulated enclaves (22). Panchagarh, with 36 former enclaves across three upazilas, has the highest population (20,924). Nilphamari has the fewest former enclaves (4) and the lowest population (800), with no unpopulated enclaves.

5. Significance of the Study

Nearly all residents of 73 former Indian enclaves in Bangladesh remain impoverished. Following the 2015 enclave exchange, the Bangladeshi government allocated BDT 200 million to enhance socio-economic conditions (Ferdoush, 2019). NGO-MFIs, including BRAC, ASA, TMSS, and

Grameen Bank, have launched microfinance programs, often more effectively reaching marginalized populations than the government (Hemley, 2018). However, more NGO-MFIs must engage to uplift these communities. This study assesses microfinance's impact in former enclaves, guiding policy formulation for financial and non-financial initiatives. It also establishes a foundation for addressing residents' genuine needs before implementing further development programs (Ferdoush, 2019).

6. Objective of the Study

This research endeavors to rigorously assess the role of microfinance initiatives on the socio-economic advancement of individuals dwelling in the former enclaves of Bangladesh. There are three specific objectives of this study are to:

- _ to evaluate the efficacy of microfinance in ameliorating economic conditions;
- _ to scrutinize the influence of microfinance in enhancing the standard of living;
- _ to explore the ramifications of microfinance on asset and wealth accumulation trajectories.

7. Literature Review

No comprehensive systematic study has been conducted on the impact of microfinance operations in the former enclaves of Bangladesh. Enclave dwellers have received minimal attention from researchers, with the literature scarcely addressing their political and socio-economic aspects (Rabbani, 2005). However, existing books and research provide general insights into the livelihood of former enclave residents and the impact of microfinance in Bangladesh and other countries worldwide. Karan (1966), Robinson (1959), Yunus (2015), and Whyte (2002) focused primarily on the geographical aspects of former enclaves, paying little attention to the socio-economic life of residents. Schendel (2002) analyzed the Bangladesh-India enclaves from the perspective of statehood versus individual livelihood, highlighting the significant suffering that enclave dwellers endured over the past 68 years. Despite possessing citizenship, they were treated as proxy citizens. Roy (2019) observed that enclave residents were economically impoverished, and their foreign identity exacerbated daily challenges. While the surrounding economy was also underdeveloped, host residents enjoyed the benefits of citizenship, making enclave residents even more vulnerable.

Haider (2016) examined the social capital of enclave dwellers, emphasizing their reliance on personal relationships with neighboring individuals due to their isolation. The absence of formal administration led to significant suffering, with the enclave environment following the principle of "Might is right." Enclave inhabitants generally maintained good relations with surrounding communities, although marriage between enclave dwellers and host residents was a concern. Agriculture and daily labor were the primary economic activities, with most residents relying on farming. Women were particularly vulnerable, facing frequent violence without legal recourse (Haider, 2016).

Following independence, new national identities and border controls heightened enclave residents' vulnerabilities. The primary challenges included economic hardship, social exclusion, and inadequate infrastructure (Rabbani, 2005). Studies by Barman (2007), Sen (2000, 2012), Bhattacharya et al. (2011), and Chakraborty (2016) explored issues of social exclusion in these enclaves. Studies assessing microfinance's impact on income and poverty show mixed results. Pitt and Khandker (1998) found that microfinance increased consumption by 18% for female borrowers and 11% for male borrowers. Hulme and Mosle (1996) reported that microloans increased incomes by 10-30% in Bangladesh, India, and Indonesia. Chowdhury, Ghosh, and Wright (2005) found that microfinance programs reduced objective and subjective poverty rates by 2.5% and 6.5% annually. Rahman and Khan (2013) observed improvements in borrowers' calorie intake, underscoring microfinance's positive socio-economic impact.

8. Methodology

This study adopted a mixed-method approach where both qualitative and quantitative will be employed with inductive reasoning to address the research objectives. For the successful completion of the study, data and information will be collected from both primary and secondary sources. Quantitative primary data was gathered through surveys, while qualitative primary data was collected using the Key Informant Interview (KII) method.

Sampling Design

Among the 111 former enclaves, 44 remain uninhabited, while the remaining 73 vary in size and population density. Several NGO-MFIs, including ASA, BRAC, and TMSS, operate microfinance programs in these areas. In this study, initially, a random sampling method was employed to select 47 former enclaves across four districts in Bangladesh, comprising both the microfinance borrower and non-borrower groups, where various NGO-MFIs have been implementing microfinance programs. From these, 468 respondents were randomly chosen for data collection, ensuring a comprehensive analysis of microfinance impacts in the former enclaves.

Table:02 Distribution of Respondents (Category-wise and District-wise)

Districts	Number of Former Enclaves	Type of Respondents		Total Respondents
		Microfinance Borrowers	Non-Borrowers	
Lalmonirhat	16	59	125	117
Panchagarh	16	112	42	154
Kurigram	12	59	66	125
Nilphamari	3	30	42	72
Total	47	276	192	468

Source: Present Study

This table summarizes data from four districts, showing the number of former enclaves and the respondents within them. The study involved 47 former enclaves, where 276 respondents were borrowers and 192 were non-borrowers, totaling 468 respondents. Data has been meticulously gathered from residents within the former enclaves. As more than 95% of the microfinance beneficiaries in Bangladesh are women, so all the respondents in this study were women. Nevertheless, interactions with male respondents provided supplementary insights. Respondents were selected from various age groups to enrich the understanding of their lived experiences within a historical context.

Sample Size Determination

To gather qualitative information, potential respondents were chosen using a non-probability method (purposive sampling). A total of 12 interviews were conducted for this purpose. Quantitative data was collected from 48,765 enclave people from 10,467 households ($N=48,765$) of the four districts. Considering $N=48,765$ in the respective four districts, the following sampling

approach and statistical formula were applied to the sample design.
$$n = \frac{(z^2 \cdot p \cdot q \cdot N)}{(z^2 \cdot p \cdot q + (N-1) \cdot e^2)} + 1$$

For this study, the formula becomes :
$$n = \frac{1.96^2 \times 0.5 \times 0.5 \times 48765}{1.96^2 \times 0.5 \times 0.5 + (48765-1) \cdot 0.05^2}$$

Where: $n=384.16$. Rounding up to the nearest whole number, the sample size required would be 384. To deal with 5% of respondents will be included in the survey. So the total sample size will be; $n=(384+22\%)=468$.

9. Demographic Information of the Respondents

The average age of microfinance borrowers was 32 years, while non-borrowers averaged 36 years. Borrowers had an average of 4.2 years of education, compared to 3.3 years for non-borrowers. Illiteracy was a significant issue, with 45.7% of respondents identified as illiterate, a rate 16.1% higher among non-borrowers. Additionally, over 56% of household heads were illiterate, with non-borrowers experiencing a 6.5% higher rate. Training opportunities were limited, with only 12.6% of respondents having received training, more common among borrowers (15.2%) than non-borrowers (9.1%).

Both groups had an identical average household size of 4.6 members. Child marriage was prevalent, with an average marriage age of 15 years for respondents. Common health issues included colds (30.3%), high blood pressure (15%), and gastric problems (14%). Most respondents sought treatment from local pharmacies (46%) and quacks (34%). Government healthcare facilities were, on average, 4 km away. Electricity access was widespread, with over 95% of respondents having connections. Tubewells were the primary drinking water source, while 55.8% lacked sanitary toilet facilities, likely contributing to health issues.

Most respondents were women, with 93.5% of microfinance borrowers and 92.7% of non-borrowers being housewives. Self-employment was slightly lower among borrowers (1.8%)

¹ Where, n = Sample size, N = Targeted Population size, e = Admissible error in the estimate, p = Proportion of defectiveness or success for the indicator, $q=1-p$, z = Standard normal variable at the given level of significance.

² $z=1.96$ for a 95% confidence level, $p=0.5$, $q=0.5$ (i.e., $1-p$), e is the desired margin of error as a decimal (0.05 in this case), and $N=48,765$.

compared to non-borrowers (2.05%). Given that households often had multiple income sources, the primary source was identified based on earnings. These findings highlight critical socio-economic conditions in former enclaves, emphasizing education, healthcare access, and sanitation as key concerns.

Table: 03 Primary Source of Household Income

Type of Occupation	Type of the Respondents' Households		All Samples (%)
	Microfinance Borrower Households (%)	Non-Borrower Households (%)	
Daily Wage	56.5	47.9	53.0
Agriculture	14.9	34.4	22.9
Small Business	23.6	12.0	18.8
Service	0.7	2.1	1.3
Unemployed	1.5	1.0	1.3
Other	2.9	2.6	2.8
Total	100	100	100

Source: Field Survey

Wage-based employment was the primary income source for most respondents. Small enterprises contributed to 22.9% of borrowers' and 18.8% of non-borrowers' household income. Self-employment income was 1.2 times higher among non-borrowers, while daily wage work was 8.6% higher among borrowers. Unemployment rates were similar (borrowers 1.5%, non-borrowers 1%).

Table: 04 Households' Financial Affairs

Financial Affairs	Category of the Respondents		All Samples (Average)
	Microfinance Borrowers (Average)	Non-Borrowers (Average)	
Household income (BDT)	15,012	14,372	14,750
Household expenditure (BDT)	10,542	10,296	10,441
Household savings (BDT)	8,493	6,105	7,299
Household Earners (Number)	1.2	1.3	1.2

Source: Field Survey

The survey delineates a superior income for microfinance borrowers (BDT 15,012) over non-borrowers (BDT 14,372), paralleled by marginally elevated expenditures (BDT 10,542 vs. BDT 10,296). Savings exhibited a stark contrast, with borrowers amassing BDT 8,493 against

non-borrowers BDT 6,105. Notably, 49.5% of non-borrowers hoarded savings domestically, whereas borrowers exclusively entrusted NGO-MFIs.

10. Regarding Involvement in Microfinance Program

A cohort of seven NGO-MFIs was engaged in the execution of multifarious socio-economic initiatives across 67 densely inhabited enclaves. These undertakings encompassed an array of domains, namely, the provision of credit facilities, the dissemination of educational resources, the implementation of sanitation measures, and the facilitation of healthcare services. In addition, there are five NGO-MFIs branches within the geographical area of these former enclaves.

Table: 05 NGO-MFIs Operating Microfinance Program in Former Enclaves

Name of the NGO-MFIs	Number of Former Enclaves	Number of Beneficiaries
BRAC	21	2096
ASA	29	1275
Grameen Bank	11	1060
RDRS	10	1425
BURO Bangladesh	5	189
TMSS	2	550
Padakhep	5	120

Source: Field Survey and KIIs

Seven NGO-MFIs spearhead socio-economic interventions in former enclaves, with BRAC and ASA commanding the highest beneficiary outreach. BRAC, ASA, RDRS, and TMSS concurrently implement non-financial initiatives, encompassing education, sanitation, and healthcare. Borrowers engaged in microfinance for an average of 4.8 years, securing loans four times, cumulatively amounting to BDT 1,14,966. Predominantly, 60.8% of loans funded agriculture, while 17.4%, 13.3%, and 8.6% facilitated small enterprises, livestock, and vehicle procurement, respectively. Non-borrowers stemmed from psychological duress, familial opposition, procedural intricacies, and preference for informal borrowing channels, exacerbating financial exclusion within these marginal enclaved communities.

11. Discussion on Findings

Discussion on Findings Using Descriptive Analysis

This section elucidates the ramifications of microfinance programs on multifarious dimensions, encompassing economic paradigms and quotidian existence. These initiatives catalyze local economic dynamism and elevate individual quality of life by facilitating access to financial resources.

Table: 06 Impact of Microfinance on Economic Affairs

Economic Affairs	Percentage of Borrowers Reporting Increase (%)	Rate of Increase (%)
Average household income	78.8	25.7
Average household expenditure	73.2	35.4
Expenditure on travelling	43.1	45.3
Expenditure on utility	76.1	77.5

Source: Present Study

Economic analysis reveals a substantial escalation across household financial parameters. Household income surged by 25.7%, with 78.8% of microfinance borrowers affirming growth, aligning with Pitt and Khandker (1998). Expenditure soared by 35.4% (73.2% of borrowers), corroborating Hulme and Mosley (1996). Travel costs skyrocketed by 45.3% (43.1% borrowers), while utility expenses exhibited a staggering 77.5% surge (76.1% respondents), paralleling findings by Rahman and Khan (2013). These metrics underscore microfinance's profound economic ramifications within marginalized enclaved communities.

Table: 07 Impact of Microfinance on Standard of Living

Standard of Living	Percentage of Borrowers Reporting Increase (%)	Rate of Increase (%)
Expenditure on basic needs fulfillment	85.5	22.5
Creating employment opportunity	3.6	62.5
Access to sanitary toilet	36.8	20.5

Source: Present Study

The economic shifts significantly improved living standards. Basic needs expenditure rose by 22.5% for 85.5% of respondents. Employment opportunities surged by 62.5%, noted by 3.6% of respondents. Access to sanitary toilets was enhanced by 20.5% for 36.8% of respondents. These changes signify improved fiscal resilience and elevated living standards among respondents.

Table: 08 Impact of Microfinance on Asset Accumulation

Type of Assets	Percentage of Respondents Reporting Increase (%)	Rate of Increase (%)
Amount of Savings	76.0	264.0 ¹
Land ownership	13.0	9.1
Gold ornaments	8.0	60.0
Number of Televisions	15.6	60.0
Number of mobile phones	42.4	55.9
Number of livestock	35.9	43.8

Source: Present Study

The dataset delineates a substantial escalation in asset accumulation among microfinance beneficiaries, as evidenced by a 3.6-fold surge in savings for 76% of microfinance borrowers. Conversely, land ownership exhibited a tepid 9.1% growth, acknowledged by merely 13.0% of borrowers. Gold assets (8.0%) and television ownership (15.6%) both soared by 60.0%, while mobile proliferation (42.4%) surged by 55.9%. Livestock holdings expanded among 35.9% of borrowers, with a 43.8% increase rate. Collectively, this data signifies a positive trajectory in wealth growth for microfinance borrowers.

Table: 09 Difference Between Microfinance Borrowers and Non-Borrowers in Economic Affairs, Standard of Living, and Asset Accumulation

Subjects to Comparison	Category of the Respondents		Comparative Difference (%)
	Microfinance Borrowers	Non-Borrowers	
Average household income	Yes	No	4.5
Average household expenditure	Yes	No	2.4
Traveling expense (BDT)	No	Yes	6.4
Utility expense (BDT)	Yes	No	22.1
Basic Needs Fulfillment (BDT)	Yes	No	7.1
Access to safe water	No	Yes	1.7
Access to a sanitary toilet	No	Yes	22.3
Earners in the household (number)	No	Yes	2.6
Savings (BDT)	Yes	No	39.1
Landowners (number)	No	Yes	90.6
Amount of land owned (decimal)	No	Yes	37.5
Gold ornaments (in ana)	No	Yes	0.9
Television (number)	Yes	No	14.2
Mobile phones (number)	No	Yes	4.1
Livestock (number)	No	Yes	18.2
Transport (number)	Yes	No	60.1
Poultry (number)	No	Yes	17.6

Source: Present Study

Borrowers exhibited marginal increments in household income (4.5%) and expenditure (2.4%), while non-borrowers incurred elevated travel costs (6.4%). Utility expenses were disproportionately higher among borrowers (22.1%), yet they achieved superior basic needs fulfillment (7.1%). Non-borrowers exhibited greater landownership (90.6%), safe water access (1.7%), and sanitary facilities (22.3%). Conversely, borrowers surpassed in savings (39.1%) and transport assets (60.1%). These findings align with Hulme and Mosley (1996) and Rahman and Khan (2013), affirming microfinance's nuanced socio-economic impact. In a nutshell, the comparative analysis reveals that microfinance borrowers moderately increased household income and expenditure and excelled in basic needs, savings, and transport assets. Non-borrowers had higher expenses, better utilities, water access, land, and livestock.

Discussion on Findings Using Inferential Analysis

The table below shows the impact of microfinance on the microfinance borrowers' economic affairs.

Table: 10 Impact of Microfinance on Economic Affairs

Independent Variables	(Model 01)	(Model 02)	(Model 03)	(Model 04)
	Household Income	Household Expenditure	Travel Expense	Utility Expense
Respondent Age	714.4 (464.6)	-236.8 (285.1)	2.952 (13.13)	28.29 (24.76)
Respondent Age Square	-5.898 (6.708)	3.827 (4.116)	0.0720 (0.190)	-0.332 (0.358)
Respondent education	247.2 (226.6)	-62.64 (139.1)	8.532 (6.403)	27.27** (12.08)
Respondent's profession (housewife only)	-8,186*** (2,682)	550.1 (1,646)	-23.63 (75.78)	106.9 (142.9)
Household head age	-20.76 (335.8)	197.5 (206.1)	1.647 (9.490)	-0.939 (17.90)
Household head age square	-1.183 (4.362)	-2.846 (2.677)	-0.0532 (0.123)	0.0478 (0.233)
Household head education	484.5** (195.0)	264.7** (119.7)	15.40*** (5.511)	23.99** (10.40)
Household head profession (self-employed work)	1,435 (1,320)	1,313 (809.9)	-53.50 (37.30)	-54.47 (70.35)
Household size	1,380*** (469.1)	865.6*** (287.9)	5.979 (13.26)	49.21** (25.01)
Access to training (Yes)	1,487 (1,955)	17.70 (1,200)	-136.9** (55.26)	-146.9 (104.2)
Microfinance borrower (Yes)	9,178** (3,414)	827.6 (793.0)	-26.68 (36.52)	114.8* (68.89)
Constant	683.1 (8,132)	5,781 (4,945)	-27.13 (227.7)	-660.0 (429.6)
Observations	316	316	316	316
R-squared	0.126	0.072	0.085	0.091

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

The above table shows that the respondent's profession (housewife) was found to have a significant negative impact on household income. Household head education was found to have a positive and significant impact on all dependent variables, except for travel expense, where it is highly significant. Household size was found to have a positive and significant impact on household income, household expenditure, and utility expense. In terms of microfinance borrowers, it was found a positive and significant impact was found on household income and utility expenses, and a negative and significant impact on travel expenses.

Table: 11 Impact of Microfinance on Standard of Living

Independent Variables	(Model 05)	(Model 06)	(Model 07)	(Model 08)
	Basic Need Fulfillment	Employment Generation	Access to Sanitary Toilet	Living in Own House
Respondent Age	21.99 (155.0)	28.29 (24.76)	0.00229 (0.00963)	-0.0192 (0.0207)
Respondent Age Square	1.021 (2.238)	-0.332 (0.358)	-4.07e-05 (0.000139)	8.41e-05 (0.000299)
Respondent education	92.23 (75.58)	27.27** (12.08)	-0.00889* (0.00470)	-0.0113 (0.0101)
Respondent's profession (housewife only)	-2,080** (894.5)	106.9 (142.9)	-0.0755 (0.0556)	0.145 (0.120)
Household head age	100.9 (112.0)	-0.939 (17.90)	-0.00367 (0.00696)	0.000219 (0.0150)
Household head age square	-1.436 (1.455)	0.0478 (0.233)	4.92e-05 (9.05e-05)	4.47e-05 (0.000195)
Household head education	146.2** (65.05)	23.99** (10.40)	0.00757* (0.00404)	-0.00301 (0.00870)
Household head profession (self-employed work)	-543.2 (440.2)	-54.47 (70.35)	0.0591** (0.0274)	-0.0213 (0.0589)
Household size	647.0*** (156.5)	49.21** (25.01)	0.00483 (0.00973)	-0.0402* (0.0209)
Access to training (Yes)	1,395** (652.2)	146.9 (104.2)	0.000426 (0.0405)	-0.0383 (0.0873)
Microfinance borrower (Yes)	480.9 (431.1)	114.8* (68.89)	0.00185 (0.0268)	-0.00998 (0.0577)
Constant	2,004 (2,688)	-660.0 (429.6)	1.023*** (0.167)	1.684*** (0.360)
Observations	316	316	316	316
R-squared	0.141	0.091	0.041	0.047

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

The above table shows that in terms of basic need fulfillment, this study found significant results for the respondent profession (housewife), household head education, household size, and access to training. In terms of employment generation, respondent education, household head education, household size, and microfinance borrower status were found to have a statistically significant positive association. Concerning access to sanitary toilets, a significant association was found in the case of respondent education, household head education, and household head profession (self-employed work).

Table: 12 Impact of Microfinance on Asset Accumulation

Independent Variables	(Model 09)	(Model 10)	(Model 11)
	Amount of Savings	Amount of Land Ownership	Total Asset Value
Respondent Age	883.1 (1,733)	5.702 (3.487)	63,338 (61,729)
Respondent Age Square	-7.121 (25.02)	-0.0660 (0.0503)	-580.7 (891.3)
Respondent education	248.6 (845.1)	1.451 (1.701)	36,252 (30,109)
Respondent's profession (housewife only)	143.0 (10,001)	-2.250 (20.13)	54,361 (356,320)
Household head age	-361.8 (1,252)	-1.210 (2.521)	-5,520 (44,625)
Household head age square	0.824 (16.27)	0.0161 (0.0327)	33.08 (579.6)
Household head education	1,440** (727.3)	5.538*** (1.464)	29,608 (25,914)
Household head profession (self-employed work)	5,211 (4,922)	38.18*** (9.906)	727,010*** (175,372)
Household size	-632.3 (1,749)	2.349 (3.521)	71,512 (62,331)
Access to training (Yes)	3997.8*** (1448.5)	8.589 (14.68)	65,547 (259,824)
Microfinance borrower (Yes)	31.1** (15.22)	9.522 (9.699)	452,968*** (171,715)
Constant	-6,392 (30,052)	-95.81 (60.48)	-1.635e+06 (1.071e+06)
Observations	316	316	316
R-squared	0.033	0.151	0.122

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

In the above table, Model 10 (Amount of Land Ownership) explains the most variance, followed by Model 11 (Total Asset Value) and Model 09 (Amount of Savings). This table shows that higher education levels of respondents and household heads generally had a positive impact on savings, land ownership, and total asset value. There is some evidence that age impacts savings and total asset value positively, but the significance levels are low. Notably, household head education shows significant positive effects in Models 09 and 10. Household heads who were self-employed showed highly significant positive associations with savings, land ownership, and total asset value. Larger household sizes tend to have positive associations with land ownership and total asset value, but these effects were not statistically significant. Access to training and being a microfinance borrower significantly increased savings (Model 09) and total asset value (Model 11).

The regression models reveal the following insights about the impact of microfinance on various aspects:

Table: 13 Impact of Microfinance on Economic Affairs, Standard of Living, and Asset Accumulation

Indicators	Sub-Indicators	Impact of Microfinance
Economic Affairs	Household Income	<i>Being a microfinance borrower significantly increases household income.</i>
	Household Expenditure	Positive but not significant impact on household expenditure.
	Travel Expense	Negative but not significant impact on travel expenses.
	Utility Expense	<i>Significant increase in utility expenses for microfinance borrowers.</i>
Standard of Living	Basic Need Fulfillment	Positive but not significant impact on fulfilling basic needs.
	Employment Generation	<i>Significant increase in employment generation associated with microfinance borrowing.</i>
	Access to Sanitary Toilet	Very minor and not significant impact.
	Living in Own House	Slight negative and not significant impact on the likelihood of living in one's own house.
Asset Accumulation	Savings	<i>Significant increase in savings for microfinance borrowers.</i>
	Land Ownership	Positive but not significant impact on land ownership.
	Asset value	<i>Highly significant increase in total asset value for microfinance borrowers.</i>

Source: Present Study

The table shows that microfinance has been shown to have a significant positive impact on household income, employment generation, and asset accumulation, though its effects on some aspects of living standards remain limited. Household income increases significantly for microfinance borrowers, supporting the findings of Banerjee et al. (2015), who noted that microfinance

participation helps expand income-generating activities. However, its impact on household expenditure and travel expenses is not significant, suggesting that income gains may be directed toward savings or investments rather than increased consumption (Khandker, 2005). Additionally, utility expenses rise significantly, indicating greater access to essential services, a trend consistent with Pitt and Khandker's (1998) study on microfinance's role in improving living conditions.

Regarding the standard of living, microfinance contributes to employment generation, aligning with findings by Morduch (1999), who observed that access to microfinance fosters self-employment. However, its influence on basic need fulfillment and access to sanitary toilets is minimal, suggesting that borrowing alone does not ensure substantial improvements in quality of life. A slight negative impact on homeownership may indicate that borrowers prioritize business growth or other financial needs over purchasing property, a pattern also highlighted by Karlan and Zinman (2011). In terms of asset accumulation, microfinance borrowers experience a significant rise in savings and total asset value, reinforcing findings by Karlan and Zinman (2011), who reported that microfinance participation enhances financial resilience. Although there is a positive but not significant impact on land ownership, this suggests that while microfinance supports short-term financial stability, its role in long-term wealth-building, such as property acquisition, remains limited (Armendáriz and Morduch, 2010). Overall, microfinance serves as a catalyst for income growth, employment, and financial security, but its effect on broader living standards is less pronounced. Complementary interventions, such as financial literacy programs and infrastructure improvements, may be necessary to maximize its benefits.

12. Policy Recommendations

Here are some recommendations based on the findings that will enhance microfinance effectiveness, ensuring long-term financial stability and economic growth for the people of the former enclaves of Bangladesh:

- Strengthening Financial Literacy and Training Programs
 - o Since access to training was found to positively impact economic affairs, asset accumulation, and employment generation, NGO-MFIs should enhance financial literacy and business training programs.
 - o Training programs should focus on investment strategies, savings management, and entrepreneurship to maximize the benefits of microfinance.
- Expanding Microfinance Services to Marginalized Groups
 - o The study found that housewives had a negative impact on household income, suggesting a need for targeted financial products and support mechanisms to empower women.
 - o Special financial assistance programs should be developed for women, especially those in self-employment or small businesses, to promote economic independence.

- Improving Access to Infrastructure and Basic Services
 - o Microfinance borrowers had higher utility expenses but lower access to sanitary toilets and safe water. Policymakers and NGO-MFIs should collaborate to integrate microfinance with community development initiatives, such as improving sanitation and water supply.
 - o NGO-MFIs can work with local governments to provide financial products that enable borrowers to invest in home infrastructure improvements.
- Enhancing Savings and Asset Accumulation Mechanisms
 - o A significant increase in savings was observed among microfinance borrowers, but asset accumulation was still limited in areas such as land ownership.
 - o NGO-MFIs should introduce savings-based loan models that encourage long-term financial planning, ensuring borrowers accumulate wealth sustainably.
 - o Providing incentives for investment in productive assets, such as livestock or business equipment, can further enhance financial stability.
- Encouraging Entrepreneurship and Employment Opportunities
 - o Since microfinance was found to have a statistically significant impact on employment generation, NGO-MFIs should introduce business incubation programs that help borrowers start and scale businesses.
 - o Loan structures should be diversified to cater to different business needs, including working capital loans, asset financing, and expansion loans.
- Monitoring and Evaluating Microfinance Effectiveness
 - o Continuous assessment of microfinance programs should be conducted to measure their long-term economic and social impact.
 - o NGO-MFIs should implement data-driven decision-making processes to tailor financial products to the evolving needs of borrowers.
- Government and Private Sector Collaboration
 - o Strengthening partnerships between the government, private sector, and NGO-MFIs can help provide technical support, improve infrastructure, and expand financial access to underserved communities.
 - o Regulatory frameworks should be strengthened to ensure microfinance operations remain transparent, efficient, and aligned with development goals.

13. Conclusion

The findings from both descriptive and inferential analyses provide a comprehensive view of microfinance's impact on economic affairs, standard of living, and asset accumulation among borrowers in the former enclaves of Bangladesh. The descriptive analysis reveals that microfinance significantly enhances financial stability, with many borrowers reporting increased household income and expenditure. Higher spending on utilities and travel indicates improved affordability and mobility. Standard of living improvements are evident, as 85.5% of respondents reported increased spending on basic needs, and employment opportunities rose by 62.5%. Asset accumulation also showed positive trends, with 76% of borrowers reporting increased savings,

alongside higher ownership of mobile phones and livestock. A comparative analysis between borrowers and non-borrowers highlights key differences. Borrowers demonstrated better savings rates and transport asset ownership, while non-borrowers had greater land, livestock, and poultry possession. Additionally, non-borrowers had better access to sanitary facilities and safe water, suggesting microfinance primarily improves financial stability rather than infrastructure access. The inferential analysis confirms these trends, identifying key financial improvement determinants. Household head education positively influenced income, expenditure, and asset ownership, while household size contributed to higher income and spending. Microfinance participation had a significant positive effect on household income and utility expenses but a negative association with travel expenditure. Regarding the standard of living, microfinance, along with household head education and training, modestly improved basic needs fulfillment and employment generation but did not significantly enhance access to sanitary toilets or home ownership. In asset accumulation, borrowers experienced notable gains in savings and asset value, with training access playing a crucial role. However, the impact on land ownership was minimal, suggesting microfinance primarily supports liquid asset growth rather than large-scale property acquisition.

The findings collectively underscore the vital role of microfinance in fostering economic growth and financial security among borrowers. While income, expenditure, and asset accumulation improved notably, the program's influence on infrastructure and land ownership remained limited. The evidence suggests that microfinance is an effective tool for enhancing financial stability and entrepreneurship, albeit with some gaps in broader socio-economic advancements. Future policies should focus on complementary interventions, such as improved access to infrastructure and training, to maximize the holistic benefits of microfinance programs.

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