

What Drives Default Loans in Microfinance in Urban Settings?

Dr. Md. Shahidul Islam¹

Saba Tabassum²

Md. Bokhtiar Rahman³

Abstract:

This study aims to address this performance gap by examining the causes and factors contributing to the increasing overdue rates of microfinance in Bangladesh, with a specific focus on DSK. A mixed-methods research design was employed. The main causes of loan default (LD) were found as operational deficiencies, economic factors, and borrower-related factors. Operational deficiencies include flaws in the operational process, e.g. inefficiency in member selection, and deficiency in project evaluation, selection, and monitoring. Borrower-related factors include skills deficiency, health and family issues, and attitudes towards default loans. Recommendations for enhancing operational efficiency include ensuring staff adherence to DSK's microcredit operation rules and regulations, developing a centralized database, enhancing project evaluation, selection, and monitoring, and providing staff training. To overcome external factors, it is recommended that DSK promote investment in profitable projects, provide skill development training, address personal issues, and monitor and address multiple loan behaviors. DSK and similar organizations have to set a specific overdue collection strategy.

Keywords: Microfinance, Default loan, Overdue, Operational efficiency, Economic conditions, Dushtha Shasthya Kendra (DSK)

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¹ Professor and Head of Research, Dushtha Shasthya Kendra (DSK), Dhaka, Bangladesh, E-mail: shahidul.islam@dskbangladesh.org

² Research Assistant, Research and Knowledge Management Department, Dushtha Shasthya Kendra (DSK), Dhaka, Bangladesh, E-mail: tabassum@dskbangladesh.org

³ Corresponding Author and Research Assistant, Research and Knowledge Management Department, Dushtha Shasthya Kendra (DSK), Dhaka, Bangladesh, E-mail: bokhtiar@dskbangladesh.org

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1.0 Introduction

Microfinance has long been regarded as a powerful instrument for poverty alleviation and economic empowerment. However, amidst the success stories of microfinance, there is a growing concern surrounding the increasing trend of overdue payments within microfinance institutions. One such institution grappling with this challenge is DSK, operating within the bustling metropolis of Dhaka.

The rising trend of overdue payments not only poses financial risks to microfinance institutions like DSK but also raises questions about the effectiveness of microfinance in addressing the financial needs of urban populations. Understanding the underlying factors driving this trend is crucial for developing targeted interventions to mitigate its impact and ensure the continued sustainability of microfinance initiatives. Microfinance involves offering financial services to individuals with low income, aiming to support them in boosting their earnings and improving their quality of life. It encompasses services like savings accounts and loans designed for those with limited financial resources. According to Khandker (2005), microfinance enables low-income consumers to save money and access credit to foster economic stability and progress (Khandker, 2012). The concept of Loan Default has varied interpretations depending on the context of microfinance policies. Yegon et al. (2013) describe Loan Default as a situation where an individual is unable to meet their loan repayment obligations by the due date (Yegon et al., 2014). Moti et al. (2012) define Loan Default, or credit risk, as the financial loss incurred when a borrower fails to make payments as agreed (Greenbaum et al., 2019; Mot et al., 2012). Several factors contribute to Loan Defaults. Major responsible and influencing factors have been found through the literature review which includes the nature and timing of loan disbursement (Okorie, 1986), poor supervision (Balogun & Alimi, 1988; Okorie, 1986), the profitability of enterprises (Akinwumi & Ajayi, 1990; Balogun & Alimi, 1988; Oke et al., 2007; Okorie, 1986), type and term of the loan (Okorie, 1986; Siaw et al., 2014), interest rates (Balogun & Alimi, 1988; Okorie, 1986; Siaw et al., 2014), the borrower's credit history (Okorie, 1986), income level (Okorie, 1986), transaction costs (Okorie, 1986), delays in disbursement (Balogun & Alimi, 1988; Siaw et al., 2014), government interference (Balogun & Alimi, 1988), household expenses (Akinwumi & Ajayi, 1990), exposure to sound management practices (Akinwumi & Ajayi, 1990), misallocation of borrowed funds (Ahmad, 1997), intentional negligence of borrowers (Ahmad, 1997), inadequate assessment by Credit Officers (Ahmad, 1997), erratic behavior (Khandker, 2012), systematically influenced by area characteristics (Khandker, 2012), branch-level efficiency (Khandker, 2012), bad weather (Bloem & Gorter, 2001) and unexpected price

fluctuations (Bloem & Gorter, 2001) from literature searching. On the other hand, loan non-payment positively influencing factors include training, basic literacy, and health services (Godquin, 2004; Roslan & Karim, 2009). However, all the studies are not contemporary; rather old and none of these studies were conducted based on Bangladeshi urban settings. In this context, this study aims to address this research gap by examining the causes contributing to the increasing overdue rates of microfinance in Bangladesh, specifically focusing on DSK. By identifying and understanding these causes, the study seeks to provide insights that can inform policies and strategies to enhance the performance and impact of microfinance institutions in the country.

2.0 Methods

A mixed-methods research design, integrating both quantitative and qualitative approaches (Verhoef & Casebeer, 1997), was employed to comprehensively explore the reasons for increasing overdue rates in microfinance at DSK in Dhaka City. Sampling was conducted using a convenience sampling technique to ensure representation from various demographic and geographic segments within Dhaka City. Seven branches were selected as samples, one branch from each area based on the highest Portfolio at Risk (PAR). A structured questionnaire survey, including yes/no, multiple-choice, and open-ended questions, was conducted. The Likert scaling technique was used to measure the degree of agreement or disagreement (Likert, 1932). Among the sampled observations, overdue-borrower was 52, current-due was 33, no-due was 31, and staff was 43 for questionnaire-dependent survey. Qualitative methods included observation and focus group discussions (FGDs) (Scheelbeek et al., 2020) with borrowers. Borrowers were 8, 13, 19 and 28 for FGD1, FGD2, FGD3 and FGD4. The study analyzed the responses using percentile calculations and compared them among three groups of borrowers: overdue borrowers, no-due borrowers, and current-due borrowers. Univariate Analysis is conducted with the Chi-square test and Cramér's V test. Chi-square (McHugh, 2013) and Cramer's V tests were conducted to compare overdue borrowers with no-due (regular) borrowers, identifying significant differences in terms of demographic characteristics and their loan experiences. Bartlett's test for the measurement of data suitability for analysis (Bartlett, 1937). Cronbach's alpha coefficient analysis was also done which gauges the internal consistency or reliability of a group of survey items and assists in assessing whether a set of items consistently measures the same attribute (Cronbach, 1951). Cramer's V values were also calculated (Szegedi-Hallgató & Janacsek, 2019). Cramér's V (sometimes referred to as Cramér's phi and denoted as φ_c) is a measure of association between two nominal variables, giving a value

between 0 and +1. Values between 0 and 1 indicate varying degrees of association, with larger values indicating a stronger relationship. Descriptive analysis (mean) and percentile calculations of outputs were conducted, and variables were ranked to identify the important reasons for default loans in microcredit. A chi-square test was conducted to verify the significance of these reasons. Key Informant Interviews were done (KII) (Pahwa et al., 2023) with Area Managers, Focal Persons, Financial analysts, and Monitoring officers to collect data and investigate the causes of default loans in DSK's microfinance. Thematic analysis was used to analyze qualitative data from interviews and FGDs, identifying common themes and patterns related to reasons for increasing overdue rates.

3. Results and Discussions

3.1 Borrower-Dependent factors or causes: Demographic Characteristics

In Table I, the Demographic percentile shows the percentage of the respondents. A chi-square test was conducted to verify the significance of these reasons. Cramér's V is a measure of association. The chi-square test showed an insignificant difference, but Cramer's value indicates a positive and strong strength of association.

Age

Age of 83.87 % no due (regular) borrowers were below 40 years. In the case of overdue borrowers, 54.9% of borrowers' ages were below 40 years. In Table Ia, the chi-square test showed an insignificant difference, but Cramer's value was 0.894 which indicates the positive and strong strength of association. More aged borrowers are at a higher risk of default. Fianto et al. (2019) and Mokhtar et al. (2011) also found that age can interfere with loan repayment.

Literacy level of borrowers

Most of the borrowers' education levels were poor. SSC or lower SSC levels were 90.38% of overdue borrowers, 96.77% of no-due borrowers, and 96.97% of current-due borrowers which are depicted in Table Ib. There was no significant difference by using the chi-square test in the case of comparison between overdue and no-due borrowers. Godquin et al. (2004) noted the same findings that offering non-financial services like training, basic literacy, and health services can positively impact loan repayment (Godquin, 2004). From the study (from Table Ic), it was seen that the overdue borrowers, no-due borrowers, and current due borrowers had a low level of financial literacy, 28%, 29.03%, and 33.33% respectively.

Types of loans

Microcredit loan features like repayment mode and the amount are key factors in microcredit loan repayment problems (Mokhtar, 2011). From our survey respondents, the maximum overdue loan receivers took Jagoron (51.92%) and Agroshor (48.08%) loan packages but among the current due loanees, the Agroshor loan was 69.70% (Table Id).

Period engaged with DSK

The survey finding reveals that 26.92% of overdue borrowers were engaged with DSK over five years whereas only 3.33% of no-due borrowers were engaged over five years. Among the no-due (regular) borrowers, 86.67% of respondents were engaged with DSK for up to three years (Table Ie).

Present source of income and monthly expenditure of the family of borrowers

The main sources of family income of the respondents of overdue borrowers were business (33.82%), jobs (23.53%), and service sectors (23.03%), and in the case of current due and no due, it follows the same pattern (Table If). Monthly income and expenditure were within the limit from BDT 10000 to BDT 50000 for debtors. However, most of the respondents (67.31%) avoided these questions (Table Ig and Table Ih).

Not enough training

96% of overdue borrowers, 80% of no-due borrowers, and 93.55% of current-due borrowers did not receive any training on skill development (Table Ii). Roslan & Mohd Zaini (2009) also discovered that borrowers who didn't receive business-related training were more likely to default (Roslan & Karim, 2009).

Table-I: Demographic characteristics of borrowers and loan performance

Demographic areas	Particulars	Overdue loanee (%)	Regular (no due) loanee (%)	Current due loanee (%)	Chi-Square test (Asymp. Sig. (2-sided))	Cramer's V values
(a) Age	18-30	27.45	51.61	18.18	0.368	0.894
	31-40	27.45	32.26	54.55		
	41-50	29.41	12.90	27.27		
	51-60	13.72	0	0		
	60+	1.96	3.23	0		

(b) Literacy level	Illiterate	5.77	6.45	3.03	0.635	0.767
	Literate	28.85	16.13	27.27		
	class 1-5	13.46	25.81	18.18		
	Primary	1.92	0	30.30		
	class 6-10	28.85	38.71	12.12		
	SSC or Equivalent	11.54	9.68	6.06		
	HSC or Equivalent	5.77	3.23	3.03		
	Degree or equivalent/higher studies	3.85	0	0		
(c) Financial literacy	Low	28.00	29.03	33.33	-	-
	Moderate	26.00	38.71	33.33	-	-
	High	46.00	32.26	33.33	-	-
(d) Types of loans	Buniyad	0.00	3.23	0	0.083	0.884
	Jagoron	51.92	41.94	30.30		
	Agrosher	48.08	54.84	69.70		
(e) Period engaged with DSK	one Year	19.23	30.00	6.06	0.242	1.00
	Two year	19.23	20.00	33.33		
	Three year	25.00	36.67	21.21		
	Four year	5.77	10.00	18.18		
	Five year	3.85	0	9.09		
	Above	26.92	3.33	12.12		
(f) Source of family income	Business/Retail	33.82	36.84	26.19	0.304	.866
	Wage employment	2.94	0.00	0.00		
	Service/job	23.53	26.32	26.19		
	Manufacturing (food processing, weaving, craft, etc.)	5.88	2.63	7.14		

	Service sector (restaurants, cleaning, tailoring, etc.)	23.03	31.58	30.95		
	others	10.79	2.63	9.52		
(g) Monthly family income	Upto, 10000 tk.	3.85		0	-	-
	10,000-50,000	25.00	100.00	60.61		
	50,000+	3.85		9.09		
	No answer	67.31		30.30		
(h) Monthly family expenditure	Upto 10000	0		0	-	-
	10,000-50,000	28.85		57.58		
	50,000+	1.92		0		
	No answer	69.23		42.42		
(i) Received training on skill development	Yes	4.00	20	6.45	-	-
	No	96.00	80	93.55		

3.2 Borrower-Dependent Factors or Causes: Loan Investment Scenarios

Investment of loan

Mokhtar et al. (2017) observed that business type is also an important factor in microcredit loan repayment problems among borrowers (Mokhtar, 2011). The main sectors of default loan utilization were business (61.54%), transportation (19.23%), and building rental houses (7.69%) (Table IIa).

Investor of loan

The investors of the overdue loans were the husband, the borrower herself, and the son/daughter at 52.31%, 29.23%, and 10.77% respectively. In questionnaire-dependent analysis, borrowers said many reasons and factors for LD (Table IIb).

Personal issues: Family problems and sickness

The highest 21.79% of overdue borrowers and 18.75% of current due borrowers said the reason for default was sickness. 16.67% of overdue borrowers, and 10.42% of current due borrowers said they had family problems (Table IIc). Godquin (2004) noted that offering non-financial services like training, basic literacy, and health services can positively impact loan repayment (Godquin, 2004). Kassim et al. (2018) found similar default incidents in microfinance factors including family illness, hiding business operations, and over-stretched financial commitments (Kassim & Rahman, 2018).

Table-II: Loan investment scenarios and reasons for loan default of borrowers

Variables	Particulars	Over Due Loanee (%)	Regular (no due) loanee (%)	Current due Loanee (%)	Chi-Square test (Asymp. Sig.-2-sided)	Cramer's V values
(a) Purpose of taking the loan	Agriculture	1.92	9.68	0	.074	.933
	Livestock	1.92	0	0		
	Business	61.54	38.71	44.12		
	Transportation	19.23	32.26	29.41		
	Manufacturing	0.00	0	2.94		
	Building a rental house	7.69	9.68	8.82		
	Other service sector	1.92	0	2.94		
	Others	5.77	9.68	11.76		
(b) Users of the loan	Self	29.23	20.00	18.42	.22	1.00
	Husband	52.31	65.71	63.16		
	Son/daughter	10.77	11.43	7.89		
	Parents	0.00	0	2.63		
	Others	7.69	2.86	7.89		
(c) Reasons for not paying the instalment	Non-profitable investment project	15.38	0	12.50	0.511	.746

Sales on credit and not getting receivable	2.56	0	2.08
Sickness of the member of Shamity or family member	21.79	0	18.75
Spend money on other purposes	3.85	0	4.17
Migrate to other areas	0.00	0	6.25
Inflation or increasing price level	0.00	50.00	0
Uncontrollable natural disaster	1.28	0	0
Absence of income-generating investment projects	1.28	0	0
Family problem	16.67	50.00	10.42
Becoming jobless	19.23	0	18.75
Others	17.95	0	27.08

Some important factors were found in FDGs where borrowers were the respondents (from Supplementary Table I). Major findings from FGDs were as follows-

Dealings with moneylenders

32% of members think that one reason for the overdue was involvement in local moneylenders in FDGs (Supplementary Table I). The borrowers took loans from other financial institutions including local money lenders. The mean value was 3.67 and the p-value was 0.001 which was statistically significant.

Investment in non-profitable project

In FGDs, 50% of members said that they invested the loan amount in income-generating projects. In quantitative analysis, from the opinion of the 15.38% overdue

borrowers and 12.50% current due borrowers, the main reasons were not profitable investment projects (Table IIc). Similarly, Norhaziah Nawai, & Mohd Noor Mohd Shariff (2012) found the determinants of Repayment Performance in Microcredit Programs: Four main factors determine repayment performance: borrower characteristics, firm characteristics, loan characteristics, and lender characteristics (Nawai & Mohd Shariff, 2013).

3.3 Causes of Loan Default(LD) based on Field Officers (FOs) Experience

We conducted the descriptive analysis (mean) and percentile calculation of output from the survey to field-level officers on the issue of reasons for increasing overdue or default loans in microcredit operations in DSK. We made a ranking of the variables to identify the important reasons for default loans in microcredit. We also conducted the chi-square test to verify the significance of the reasons for the overdue. We conducted a sample adequacy and sample reliability test. From Table III, the outputs were as follows: since the tolerance for the variables was 0.695 (greater than 0.5) for KMO and 0.000 (less than 0.05) for Bartlett's test, these measures indicate that the set of variables was suitable for analysis. Cronbach's Alpha was 0.828 which indicates good reliability of data.

Table-III: KMO, Bartlett's test, and reliability statistics of the sample

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy.		.695
Bartlett's Test of Sphericity	Approx. Chi-Square	256.190
	df	91
	Sig.	.000
Reliability Statistics	Cronbach's Alpha	.828
	Cronbach's Alpha Based on Standardized Items	.787
	N of Items	14

The results of Table IV mentioned the staff experience for the reasons of overdue dues. The interpretations of the table are as follows-

Migration of borrowers

The borrowers left the present branch area to unknown areas according to this study. So, the FO could not communicate with this default loaned. The topmost

reason for the increase in overdue was the migration of borrowers where the mean value was 4.27. It was statistically significant in the chi-square test. In the questionnaire survey, 6.25% of current-due borrowers and 50% of no-due (regular) borrowers mentioned the reasons LD was migrating to other areas.

Taking loans from other sources in addition to DSK

Multiple loan taking was the second important problem according to microcredit FOs. The borrowers take loans from other financial institutions including local money lenders. So, they could not pay the loan. As a result, they left the current place to avoid the loan pressures. The mean value was 3.67 and the p-value was .001 which was statistically significant. It indicates the practices of multiple loans of borrowers.

External economic factors

Addisu (2006) identified four main categories that explain repayment issues in loans: Borrower-related causes, Business operation-related causes, Lender-related causes, and extraneous causes (Adusei, 2020). The macroeconomic variable like inflation was a cause of default loans (Table IV). Since the cost of living is increasing day by day. The mean value was 3.41 and it was also statistically significant with the chi-square test. The above result was similar to the qualitative findings. From KIIs, it was seen that one of the reasons for the overdue was inflation. Gorter and Bloem (2001) noted that LDs often result from individuals making poor economic decisions or experiencing unforeseen misfortune, such as bad weather or unexpected price fluctuations (Bloem & Gorter, 2001). 50% of no-due (regular) borrowers thought inflation was a major reason for loan default (Table IIc).

Jobless borrowers

Members lost their jobs, especially during the period of COVID-19 which is another reason (fourth reason) for overdue microcredit (mean-3.13 and p-value-.003) (Table IV). Priyankara and Sumanasiri (2019) found that borrower family/group characteristics and macro-economic issues are factors of LD in Sri Lanka (Priyankara & Sumanasiri, 2019). Sunil Puliya Kot (2021) found that the causes of over-indebtedness which were economic shocks, low household income, multiple credit arrangements, and borrowing from informal sources increase the likelihood of household over-indebtedness (Puliya Kot & Pradhan, 2015). In the questionnaire survey, 19.23% of overdue borrowers and 18.75% of current-due borrowers said the reason for default was sickness (Table IIc).

Table-IV: Reasons for overdue: staff experiences.

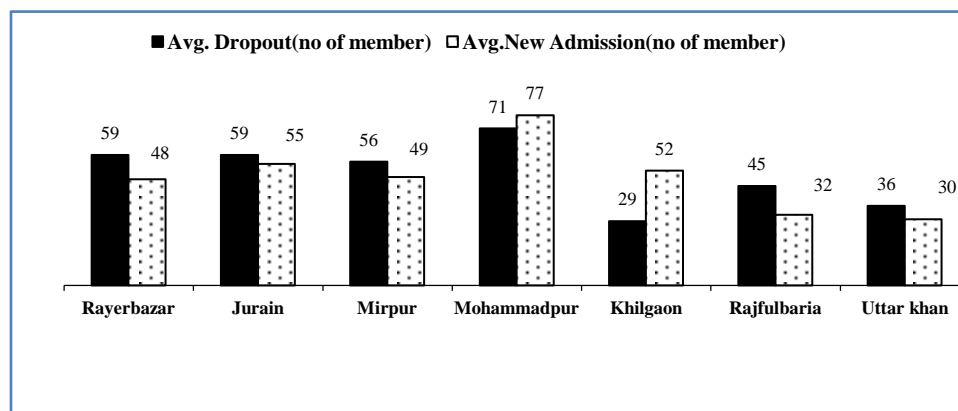
	Reasons for overdue	Level of Agreement (%)					Mean	Rank	Chi-Square	Asymp. Sig.
		1	2	3	4	5				
x1	Loan activity was not profitable/ Investment project is not profitable	11.63	37.21	32.56	13.95	4.65	2.6279	6	17.11	.002
x2	Sales on credit and not getting receivable	7.32	26.83	39.02	19.51	7.32	2.7907	5	21.6	.001
x3	I or others in my family had been sick	41.46	29.27	9.76	12.20	7.32	2.0465	12	24.95	.000
x4	Used the loan money for food or other items for the household	30.95	33.33	16.67	4.76	14.29	2.3256	10	20.48	.001
x5	I used the money for other purposes instead of investing in specific purpose	12.20	39.02	24.39	12.20	12.20	2.6047	7	17.69	.003
x6	Migration from the location	0.00	4.65	20.93	16.28	58.14	4.2791	1	27.60	.000
x7	Repayment system(frequency of instalment)	47.50	32.50	12.50	2.50	5.00	1.7209	14	36.39	.000
x8	absence of a suitable income-generating investment project	21.43	28.57	26.19	16.67	7.14	2.5349	9	13.51	.019
x9	inflation or increasing price level of daily commodities	23.26	4.65	16.28	18.60	37.21	3.4186	3	12	.017
x10	external factor beyond your control(natural disaster)	45.00	17.50	20.00	15.00	2.50	1.9767	13	4.39	.570
x11	Family problem	23.81	19.05	33.33	16.67	7.14	2.5814	8	15.46	.009
x12	becoming jobless	18.60	11.63	25.58	25.58	18.60	3.1395	4	12.93	.003
x13	Taking loans from other sources in addition to DSK	0.00	5.26	23.68	21.05	50.00	3.6744	2	19.20	.001
x14	Others	17.65	29.41	20.59	23.53	8.82	2.1860	11	4.302	.507

3.4 Operational Practice Dependent LDs Factors and Causes

Anthony Siaw et al. (2014) observed that a high positive correlation exists between the reasons for LDs and the processes used to grant loans (Siaw et al., 2014). Mercy Cherotich Cheruiyot et al. (2015) loan delinquency factors such as institutional factors like internal operations, credit policies, and procedures greatly impact loan delinquency (Cheruiyot, 2015). The area managers, focal persons, and financial analysts were the respondents of KIIs (Supplementary Table II). They stated some major reasons for overdue (default loans) which include inflation: price hikes in commodities, lack of verification in the loan proposal, problems in the selection of Shamity head, problems in the selection of Shamity head, lack of verification of authentic guarantor, lack of mentality to repay, shortage of skilled staff and deficiency in new member selections.

There were deficiencies in the selection of new members which caused the bad loanee. One of the reasons was a high rate of dropout. It was seen that the monthly average dropout of Rayerbazar, Jurain, Mirpur, Mohammadpur, Kilgaon, Rajfulbaria, and Uttar Khan were 59, 59, 56, 71, 29, 45, and 36 %, respectively (Figure 1). So, the FOs overcome to dropout by enrolling new members to maintain the disbursement target.

Figure-1: Average monthly dropout and new entry (from January 2023 to December 2023)



3.4.1 Flaws in the Operation Process and Inefficiency in the Selection of Members

Low members' presence in the Shamity meeting

In the case of presence in the Shamity meeting, the scenarios of borrowers who pay their instalment regularly were regular (74.19%), irregular (19.35%), and never

(6.45%). On the other hand, the overdue members' presences in the Shamity meeting were regular (17.65%), irregular (7.84%), and never (74.51%). Interestingly, a similar trend was observed among the current due borrowers (regular 42.42%, irregular 9.09%, and 48.48%) in the meeting. The Chi-Square test and Cramer's V value were 0.199 and 1.00, respectively (Table Va). Similar findings were observed from the FDGs that an average of 35 % of members do not present in the Shamity meetings regularly (Supplementary Table I).

Mode of payment of instalment: FOs collect from borrowers' houses

From Table Vb, it was observed that 26.83% of no-due borrowers, 48.15% of overdue borrowers, and 45% of current-due borrowers paid their instalments to FOs (FO) directly when FO went to their residence.

Mode of becoming a member of DSK: through Shamity head

Members who joined DSK through the head of Samity were 50.94% of the overdue category, 38.71% of no-due or regular payee borrowers, and 50% of current due borrowers whereas only 3.77% respondents of overdue, and 3.23% respondents of current due were engaged with DSK through officers (Table Vc). Of overdue borrowers who became members through other members, the percentage of respondents was 33.96%, 54.84% of no dues borrowers, and 50% of current due borrowers. The Chi-Square test and Cramer's V value were 0.238 and 1.00, respectively. This result was similar to the FDGs where 50% of members were involved in DSK through Shamity head which can cause the chance of bias and centralized loan (Supplementary Table I).

Flaws in the guarantor process

There was a weakness in the guarantor process. First, in the form, there was a provision for witnesses but no provision for any guarantor. Second, the guarantors were close to the loanee as relatives so other members did not take any default risk. From KIIs, it was found a similar result that there was a lack of verification on authentic guarantors (Supplementary Table II).

Problems in the selection of Shamity's head

The role of the Shamity head is important in the microcredit operational process. So, an improper Shamity head causes many problems in the case of loan operation. From the KIIs, it was seen that there is a deficiency or difficulty in the appropriate selection of Shamity head (Supplementary Table-2).

Multiple loans

The borrowers were involved in multiple loans. Among the respondents, 68.09% of overdue borrowers, 26.67% of no-due borrowers, and 59.38% of current-due borrowers agreed that they (borrowers or family members) have multiple loans. From the KIIs, borrowers have a lack of mentality to repay which causes the default loan (Supplementary Table II).

Loan centralization

From the FDGs and observation methods, the existence of some centralized loans was found (Supplementary Table I).

Table-V: Members' Presence in Shamity meetings, Modes of being a member, Mode of payment of instalments by borrowers, and Post disbursement monitoring by staff

Particular	Types	Overdue Borrowers (%)	No due (regular) Borrowers (%)	Current due Borrowers (%)	Chi-Square test (Asymp. Sig. (2-sided))	Cramer's V values
(a) Members' Presence in Shamity meeting	Regular	17.65	74.19	42.42	0.199	1.00
	Irregular	7.84	19.35	9.09		
	Never	74.51	6.45	48.48		
(b) Mode of payment of instalments	Being present in Shamity	38.89	60.98	37.50	0.220	1.00
	Deposit into Head of Shamity	11.11	9.76	10.00		
	Through other persons	0.00	2.44	0.00		
	Directly to the branch	1.85	0	7.50		
	others(FO goes to each house)	48.15	26.83	45.00		
(c) Mode of becoming the member of DSK	Through Head of Shamity	50.94	38.71	50	.238	1.00
	Through Member	33.96	54.84	50		
	Through Officers	3.77	3.23	0		
	Others	11.32	3.23	0		
(d) Supervision of projects after disbursement by staff	Regularly	62.75	82.76	70.00	.199	1.00
	Irregularly	11.76	13.79	16.67		
	Not at all	25.49	3.45	13.33		

3.4.2 Deficiency in project evaluation, selection, and monitoring

Kassim et al. (2018) found that default incidents in microfinance are influenced by factors like post-disbursement monitoring, technical assistance, inexperienced field workers, weekly payment schedules, family illness, hiding business operations, and over-stretched financial commitments (Kassim & Rahman, 2018). Alex Addae-Korankye (2014) found the causes of LD as high interest rates, inadequate loan sizes, poor appraisal, lack of monitoring, and improper client selection are significant factors leading to LD (Addae-Korankye, 2014). Project evaluation, selection, and monitoring related causes of LD based on this study were presented below-

Lack of verification in the loan proposal

KIIs focus that loan proposals are not properly evaluated which is causing the default loan (Supplementary Table II).

Inappropriate selection of project of borrower

According to FGDs and quantitative analysis (Table IIa and Supplementary Table I), the loan was used for other purposes instead of investing in specific purposes such as buying food or other items for the household.

Deficiency in project evaluation

All FOs replied that they evaluated the projects. However, the modes of evaluation among them were not unique. The main evaluation tools were onsite inspection (82.86%), profit-risk assessment (12.70%), and income-expenditure of borrower's business (11.11%) (Supplementary Table IIIb). The commonly followed project evaluation tool was on-site inspection which was not a financial technique of project evaluation. Our result is similar to Ahmad (1997) who identified key factors contributing to LDs, which include borrowers' reluctance to repay loans, misallocation of borrowed funds, intentional negligence, and inadequate assessment by Credit Officers.

Lack of post-disbursement monitoring of the project

62.75% of borrowers said that the employee from DSK supervised the project regularly but 37.2% said the employee from DSK supervised irregularly and never at all. 82.76% of regular (no due) borrowers said that the officers supervised the project regularly and 17.24% of borrowers said that the officers of DSK supervised irregularly and not at all (Table Vd). Patrick Mphaka (2017) identified Themes for Loan Repayment Success: Successful loan repayment strategies include

entrepreneurship, environmental business opportunities, favorable loan repayment conditions, methods for choosing borrower groups, and effective loan use monitoring (Mphaka, 2017). According to credit officers, 72.73% of on-site verification had been done by the staff (Supplementary Table III d). When asking the same of FOs, 72.73 per cent monitored the project with 'on-site verification'.

4.0 Existing Overdue Management System

FOs took different initiatives to collect overdue amounts according to borrowers, initiatives included motivation (32.43%), members' help (26.13%), Shamity heads' help (16.22%), and pressure (9.91%), project supervising (4.50%) and others (10.81%). Staff communicated with more than five no-due (regular) borrowers in the last 3 months. On the other hand, the staff communicated the highest three/four times 62.50% with overdue borrowers followed by more than five (25%), one/two (10.42%), and five (2.08%) whereas for the current due borrowers highest was three/four (72.73%) followed by more (24.24%) and one/two (3.03%). It indicates that the staff gave less effort to collecting overdue amounts. The same result was found from the onsite observation which was the lack of a database of overdue borrowers and a lack of records of communication in the record books.

5.0 Recommendations

Dan Norell (2005) said that reducing LDs requires proactive measures such as: Quickly following up on late loans, forming robust solidarity groups, updating and enforcing credit policies, focusing credit officers' efforts in specific geographic areas, avoiding lending to start-up businesses, and providing financial incentives to credit officers. In severe default scenarios, microfinance institutions (MFIs) might consider pausing new loans until the loan portfolio quality improves. Additionally, they should evaluate clients' ability and willingness to repay, and then devise strategies to mitigate future defaults (Norell, 2001). Some similar and additional theoretical recommendations based on this study were as follows-

5.1 Improvement of Operational Efficiency

Adherence to rules and regulations

Strict adherence to microcredit operation rules and regulations is essential to increase operational efficiency, which will enhance the Samity operation process and member selection. Microfinance institutes should implement corrective measures and adopt a zero-tolerance policy for any irregularities. Specific recommendations include:

- To form strong groups (Shamity) to prevent high arrears.

- To increase member participation in Shamity meetings.
- To improve member recruitment methods.
- To strengthen the guarantor process by introducing a robust verification system to ensure the authenticity and capability of guarantors, and include the guarantor provision in loan forms.
- To improve the selection process for Shamity heads.
- To address migration issues by encouraging regular updates of contact information and providing incentives for maintaining communication with DSK.
- To implement strategies to reduce member dropout rates.

Training for staff

Providing regular training for field staff on financial literacy, IT skills, communication, microcredit operational rules and regulations, effective project evaluation techniques, and repayment capacity assessment is very important.

Development of a centralized database

Developing a centralized database to track borrowers' loan histories and behaviors with DSK and other institutions is the demand of time. This should include:

- Inclusion of all branches in the Credit Information Bureau (CIB) as soon as possible.
- Each branch maintains its database regarding members' histories and behaviors.

Specific arrangement for overdue management

DSK and MF have to set specific overdue collection strategies, because overdue is increasing gradually, but initiatives are insufficient.

5.2. Enhancement in Project Evaluation, Selection, and Monitoring

Ensure funds are used for income-generating projects

Strengthening the evaluation process to ensure that loans are granted primarily for viable income-generating projects is needed. Financial counseling has to be provided

to borrowers on the effective use of loan funds and to strictly monitor loan usage to ensure funds are used appropriately.

Standardize project evaluation tools

Developing a comprehensive project evaluation framework that includes financial analysis, profit-risk assessment, and business plan evaluation is necessary.

Enhance loan proposal verification

Enhancing the verification process for loan proposals by cross-referencing multiple data points and conducting thorough on-site inspections is crucial.

Improve post-disbursement monitoring

Increasing the frequency and rigor of project supervision is vital. Technology should be updated regularly and monitoring must be changed according to these updates. Quick follow-up visits should be ensured immediately after a missed payment is crucial for reducing arrears.

5.3 External factors management

Promote investment in profitable projects

Guidelines should be provided to borrowers for investing in profitable and sustainable projects. Providing market research data and training to help borrowers identify and pursue viable business opportunities is required.

Provide skill development training

Offerings of extensive training and consultation in business management, financial literacy, and technical skills relevant to borrowers' enterprises to improve their ability to generate income and repay loans are necessary.

Address personal issues

Social support services, including counseling and healthcare assistance, to help borrowers manage personal issues that affect their repayment ability, should be provided.

Monitor and address multiple loan behavior

Regularly reviewing borrowers' loan portfolios and providing counseling on the risks of over-borrowing is compulsory because regular counseling and monitoring can help manage this issue effectively.

6.0 Conclusion

In conclusion, the microfinance sector in Bangladesh, while crucial for economic empowerment and poverty alleviation, is currently challenged by increasing overdue rates that threaten its sustainability. This study, focusing on DSK in Dhaka City, identified key factors contributing to LDs through a mixed-methods approach. Significant insights were gained from both quantitative and qualitative analyses, revealing that operational deficiencies, economic factors, and borrower-related issues were primary contributors to the rising overdue rates. Operational deficiencies such as flaws in the operational process and inefficiencies in member selection, along with borrower-related issues like lack of skills, health and family problems, and attitudes towards default loans, were highlighted as major causes. To address these challenges, recommendations include enhancing operational efficiency through stricter adherence to rules, developing a centralized database for better project evaluation and monitoring, and providing comprehensive staff training. Additionally, addressing external factors through investment in profitable projects, skill development training, and monitoring multiple loan behaviors are essential steps for improving the loan portfolio quality of DSK. By implementing these recommendations, DSK and similar microfinance institutions can better manage overdue rates, thereby sustaining their mission to support underserved populations and contribute to broader economic development.

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Supplementary files

Supplementary Table-I: Thematic Analysis (FDGs)

	Respondents	Presence in Samity Meeting	Involvement in Samity through members	Involvement in Shamity through Samity's head	Regularly pay respective instalments	Invested in IGA Projects	Loan taken only from DSK	The husband is the user of the loan	thinks dealings with moneylenders are the reason for overdue	Multiple loan term borrowers of DSK
FGD1	1	√		√	√		√	√	√	
	2	√			√		√	√		
	3	√	√		√	√	√	√		
	4	√	√		√		√	√	√	
	5	√		√	√	√	√	√	√	
	6	√		√	√	√	√	√		
	7	√			√		√	√	√	
	8	√			√	√	√	√		
FGD2	9	√		√	√	√	√	√		
	10			√	√		√	√		
	11			√	√		√			√
	12			√	√	√	√			
	13			√	√	√	√	√		
FGD3	14		√				√			√
	15		√				√			√
	16			√		√	√			√
	17			√			√			√
	18			√		√	√			√
	19		√			√	√			√
FGD4	20	√			√		√			√
	21	√		√			√			√
	22	√	√		√		√			√
	23	√			√		√		√	√
	24	√			√		√		√	
	25	√		√	√	√	√		√	√
	26	√		√		√	√	√		√
	27	√	√			√	√		√	√
	28	√	√			√	√		√	
	Total	18	8	14	19	14	28	12	9	14

Supplementary Table-II: Thematic Analysis (KIIs)

Respondents	Deficiency in member selection	Price hike in commodities/business slump	Lack of verification on loan proposals	Problems in the selection of Samity Head	Lack of verifications on the authentic guarantor	Lack of mentality to repay	Shortage of skilled staff	Multiple borrowing from various MFIs	Lack of financial literacy of staff in terms of the SME Project	Lack of guidance on target fulfilment	Lack of verification on second loan term ceiling	Staff Positioning	Frequent staff transfer
KII 1	√	√	√		√						√		
KII 2		√		√		√		√					
KII 3	√	√		√	√	√							√
KII 4	√	√	√			√	√	√					
KII 4	√	√	√	√	√		√		√	√	√		
KII 5	√		√				√		√	√		√	
Total	5	5	4	3	3	3	3	2	2	2	2	1	1

Supplementary Table-III: Project evaluation and Modes of Post disbursement monitoring

Variables	Answers	% of the Respondents
Assessing the investment project, profit, and risk of the borrower by staff (project selection)	Yes	100
	No	0
The investment project, profit, and risk of the borrower assessment factors included	borrowers' experience analysis	1.59
	income-expenditure of the borrower's business	11.11
	business plan	1.59
	profit-risk assessment	12.70
	duration of the borrower's business in the area	1.59
	Economic situation analysis	4.76
	family income	6.35
	In terms of discussion with members	3.17
	scope of business	3.17
	On-site inspection	42.86

	by questioning neighbors and other members	6.35
	pre- and post-loan proposal verification	1.59
	stability of the business	1.59
	Lending history from other institutions	1.59
	Total	100.00
Monitoring/supervising the project that the creditors utilize the fund for investment projects by the Staff	Yes	95.35
	No	4.65
The monitoring system/supervision for utilizing the fund/post-disbursement.	Don't invest in profitable business but still payment does not get delayed	4.55
	Afternoon inquiries were made while going to the field	2.27
	by ensuring money is spent in the sector as mentioned in the loan proposal	2.27
	discussion with member	2.27
	on-site verification	72.73
	FO, assistant manager and branch manager supervise	2.27
	Inquiring about the project in which the loan proposal	2.27
	by questioning other members of the samity	2.27
	transaction receipt	4.55
	Profitable business	4.55
Total	100.00	

