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Determinants of Loan Repayment: The Case of Microfinance Institutions in Nepal

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Abstract

Background

Loan delinquency among microfinance borrowers is a growing global concern, especially in South Asia, where microfinance programs have shown inconsistent performance. In Nepal, 59 microfinance institutions (MFIs) report a bad debt rate of 4.68% and an average non-performing loan (NPL) ratio of 7.49%. Timely repayment is critical to the financial sustainability of MFIs, yet there is limited research on the factors influencing repayment behaviour in Nepal.

Objective

This study aims to examine the determinants of loan repayment behaviour among MFI borrowers in Nepal, focusing on socio-demographic characteristics of borrowers, business-related attributes, and lender-specific factors.

Methods

Data were collected through a survey of 384 purposively selected borrowers in Chitwan district, the third largest microfinance hub in Nepal. Multiple regression analysis was used to evaluate the impact of these factors on repayment performance. Diagnostic tests confirmed the absence of multicollinearity.

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Findings
Borrower socio-demographic characteristics had the strongest positive influence on repayment, with female gender, higher education, and financial literacy emerging as significant predictors. Business-related factors such as higher transaction volumes, full loan utilization, and involvement in non-agricultural enterprises also positively affected repayment, though business profitability was not significant. Among lender characteristics, friendly loan policies, feasible repayment schedules, and clear communication of loan terms improved repayment, while intensive supervision had a negative effect.
Implication
MFIs should prioritize careful borrower selection, promote entrepreneurship development for high-risk agricultural borrowers, and strengthen staff advisory and communication skills. Implementing flexible, borrower-friendly loan policies tailored to clients' conditions can further enhance repayment. The study enhances understanding of repayment behaviour in Nepalese microfinance and offers practical recommendations for improving MFI sustainability.
Keywords: Microfinance, Loan Repayment Behaviour, Socio-Demographic Factors, Borrower Business Characteristics, Lender Practices

1. Introduction

Due to the growing significance of the microfinance programs, these days terms inclusive finance, access to finance and financial inclusion are broadly in use. Still microcredit service is core business of majority of microfinance programs. The sustainability of Microfinance Institutions (MFIs) is positively associated with credit expansion particularly the scale of their loan portfolios and the intensity of lending activities (Tehulu, 2022).

Armendáriz and Morduch (2010) provide a foundational analysis of microfinance, emphasizing the role of profitability and strict monitoring in ensuring loan repayment. While their framework has been instrumental in understanding microfinance dynamics, subsequent studies have questioned the primacy of these factors, suggesting that borrower-specific attributes and institutional practices may play more significant roles in repayment behavior.

Basically, MFIs provide physical collateral free loan to its members, which put the loan in less secured. Timely loan repayment is crucial for MFIs for several reasons such as financial sustainability of MFIs (Morduch & Haley, 2002) , continued access to capital (Armendariz & Morduch, 2010), foster a culture of financial discipline and empowerment among clients (Cull et al., 2018), expand MFIs' outreach, address financial needs of marginalized communities and minimizing the credit risk (Sangwan et al., 2020).

Hence, gaining deeper insights into the determinants of loan repayment performance is crucial for MFIs. Traditional microfinance theory posits that profitability is a key determinant of loan repayment. However, empirical studies in South Asia suggest that cash flow management and active business operations may be more critical. Nagarajan and Meyer (2005) emphasize that rural financial institutions should focus on borrowers' cash flow and repayment capacity rather

than solely on profitability. Similarly, Rahman (2019) highlights that cash flow mismatches, especially when funds are used in unproductive sectors, can lead to loan delinquency. These findings underscore the importance of assessing borrowers' cash flow and business operations to predict repayment behavior effectively. A higher repayment rates may generate mutual benefits for both MFIs and clients by enabling lower interest rates and reducing the overall cost of borrowing (Mirpourian et al., 2016). However, repayment problems threatening the success of MFIs. Loan repayment typically has disastrous consequences for both the borrower and the lending institutions. For borrowers, loan default can result them to vanish their social reputation and lose the assets they had pledged as collateral but also make it challenging for them to obtain new loans or borrow money. On the other side, loan repayment default is exceedingly costly for lending institutions and can lead to severe financial hardship and even outright losses.

Loan delinquencies of microfinance borrowers are getting larger attention in the world. In south Asian context, microfinance programs are experiencing up and down trend in history. Sangwan et al., (2020) also explored the repayment risk faced by MFIs in India, identifying key determinants of loan repayment behavior such as household characteristics, loan features, moral hazard factors, and regional attributes. Notably, the inclusion of moral hazard and regional attributes represents a distinctive contribution of their study. Households' income and loan delinquency has a negative relationship. While exploring the factors affecting loan repayment behavior, microfinance institutions' supervision should taken in consideration as mentioned by (Sangwan et al., 2020).

Nawai & Shariff (2010) argue that the effectiveness of MFIs largely stems from the use of group lending methodologies, whereby substantial responsibility for screening, monitoring, and enforcing loan repayment is shifted from the institution to the borrowers themselves. Through this mechanism. group members are able to access low-cost information concerning an applicant's reputation, level of indebtedness, financial status, and individual effort, thereby increasing the likelihood of successful repayment.

Any lending involves the risk that the amount lent may not come back all. Most of the loans of a MFI are supposed to come back in installments. The sustainability of MFIs depends largely on their ability to collect their loans as efficiently and effectively as much as possible (Jote, 2018). If proper care and effort is not given in loan recovery, loan delinquency may exist and it leads to loan default. Loan delinquency and default can happen because of many reasons. Some of these reasons could be wrong selection of borrowers, poor characteristics of borrowers, inefficiency of borrowers business or investment area, problem in cash flows of borrowers, weak credit appraisal, false information provide by the borrowers, managerial inefficiency of MFIs, unclear communication about product, corruption, demotivated staff, poor governance of MFIs and natural calamities. The cost associated with loan delinquency and default is big for MFIs.

Contrary to traditional expectations, increased supervision by microfinance institutions (MFIs) may negatively impact loan repayment. Giné and Karlan (2014) suggest that borrowers might perceive intensive monitoring as intrusive or coercive, leading to mistrust and psychological

pressure that discourages timely repayment. This highlights the need for MFIs to balance oversight with supportive engagement to foster a cooperative repayment environment.

In Nepal, total of 59 Microfinance financial institutions are in operation. According to loan delinquency data published by Nepal Rastra Bank (Nepal's central bank), the average non-performing loan (NPL) ratio of Nepalese MFIs rose bad debt was recorded 4.68 percent of total loan disbursed i.e. Rs. 391.44 billion. The average non-performing loan (NPL) of Nepalese MFIs rose from 4.68 percent in mid-December 2022 to mid-December 2023. In borrower side, microfinance borrowers facing repaying the loans are continuously protesting against the microfinance institutions against (Republica, 2024). Thus, microfinance is in crossroad in Nepal. So it is the crucial time to explore on microfinance borrowers' repayment behavior in Nepal. Research on this field is very limited in Nepal. Only limited researchers ((Silwal (2003); Giri & Shah (2019); Puri, (2021); Lamichhane, (2022) have conducted study on this issue. This motivate this author to undertake a more investigation into the determinants of loan repayment among microfinance borrowers.

While international and regional scholarship provides a broad understanding of repayment determinants, empirical studies in Nepal remain limited and fragmented. Existing studies do not sufficiently examine borrower socio-demographics, business characteristics, and institutional practices together in a holistic framework. Furthermore, recent developments such as the surge in NPLs and growing borrower protests—underscore the urgent need for updated and context-specific analysis.

This study contributes to the existing body of knowledge on microfinance by addressing the determinants of loan repayment behavior in the Nepalese context, where research on this issue remains scarce and fragmented. Unlike earlier studies that focused on isolated factors, this research adopts a comprehensive approach by simultaneously examining the influence of borrower socio-demographic characteristics, business attributes, and lender's institutional practices on repayment performance. In doing so, it provides a more holistic understanding of the factors shaping repayment outcomes. Furthermore, the study is timely, as Nepal's microfinance sector is currently facing rising levels of non-performing loans and increasing borrower protests, developments that have not been systematically explored in prior research. By offering updated empirical evidence, this study not only advances academic discourse but also generates policy-relevant insights that can guide MFIs, regulators, and policymakers in strengthening institutional sustainability, improving repayment mechanisms, and fostering healthier borrower–lender relationships.

Thus it will be relevant to study the three major factors i.e. borrower's socio-demographic characteristics, business characteristics and lender's characteristics which influenced the loan repayment behaviour of microfinance borrowers.

Accordingly, this study seeks to answer the following research questions:

1. What factors influence microfinance loan repayment in Nepal?
2. How does a client's personal and business characteristics affect the loan repayment?
3. How does lender's characteristics affect the loan repayment?

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2. Description of variables and their scale of measurement

From the empirical literature, this study considers loan repayment as the dependent variable, while borrower's personal characteristics, borrower's business-related attributes and lender's characteristics are treated as the independent variables.

Loan Repayment

Repayment performance refers to a borrower's capacity to meet loan obligations as scheduled. According Angaine & Waari (2014), it is defined as the extent to which loans are repaid on time in accordance with the loan agreement, typically assessed through the degree of arrears. Borrowers are generally expected to begin repayment in regular installments shortly after loan disbursement (Abimbola & Kolawole, 2021). Any delay in an installment is considered delinquency, while complete non-repayment constitutes default. Loan default may result from adverse circumstances that undermine the borrower's repayment ability. Thus regular repayment of scheduled installments i.e. some part of principal and interest. is considered as loan repayment which is a dependent variable for the study. Loan repayment performance was measured using five indicators: (i) prioritization of loan repayment, (ii) comfort in paying monthly installments, (iii) sufficiency of business income to repay installments, (iv) influence of lender's behavior on repayment, and (v) experience of penalties for delayed or missed payments. Responses were captured on the Likert scale and averaged to form a composite interval measure of loan repayment performance.

Borrower's Socio-demographic Characteristics (BSD)

This construct was measured through five items: (i) gender effect on repayment, (ii) marital status and its influence on delinquency, (iii) borrower's age and repayment capacity, (iv) education level and repayment performance, and (v) financial literacy and repayment behavior. Responses were recorded on the Likert scale and averaged to obtain a composite score.

Borrower's Business Characteristics (BBC)

This variable was assessed using five indicators: (i) market coverage relative to business age, (ii) adequacy of cashflows for repayment, (iii) profitability as a determinant of repayment, (iv) extent of loan amount invested in the business, and (v) nature of business (agricultural vs. non-agricultural) and its effect on repayment. The responses were measured on the Likert scale and combined into a composite measure.

Lender Characteristics (LC)

This construct included five dimensions: (i) borrower's perception of loan policy friendliness, (ii) feasibility of repayment schedule, (iii) adequacy of oversight and follow-up, (iv) efficiency of the loan approval process, and (v) clarity of terms and conditions explained by microfinance employees. Likert-scale responses were aggregated into a composite score representing lender characteristics.

The variables were summarized with their respective unit of measurement in table 1 below.

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Table 1. Variables and their description

Variables	Symbol	Unit of measurement	Expected sign/Hypotheses
		Dependent variable	
Loan repayment	LP	Scale	
		Independent variables	
Borrower's socio-demographic characteristics	BSD	Scale	+(Female borrowers, Married couple, younger borrower, High education level, High financial literacy has high loan repayment performance)
Borrower's business characteristics	BBC	Scale	+(Higher business transaction, Higher profitability, Loan investment in business, has high loan repayment behaviour) -(Agricultural loan has low loan repayment behaviour)
Lenders's Characteristics	LC	Scale	+(Friendly loan policy, feasible loan repayment schedule, Sufficient supervision, Loan approval process, Communication about loan term and conditions has high loan repayment behaviour)

3. Research Methodology

Research Design: This study employs a descriptive research design to systematically describe current situation of borrower's socio-demographic characteristics, loan repayment behaviour whereas causal comparative research design was followed to extract the relationship between loan repayment i.e. dependent variable and borrower's socio-demographic characteristics, borrower's business characteristics and lender's characteristics as independent variables. Multiple regression analysis was applied to evaluate the effect of the independent variables on dependent variable.

Study area: The study is based on empirical evidence collected through a 2023 survey of 384 purposively selected microfinance borrowers in the Chitwan district of Nepal. The Chitwan district of Nepal has the third highest number of microfinance centers operating in Nepal after Kailali district and Morang District (Nepal Rastra Bank, 2023). The Chitwan district is the highest MFIs penetrated district in Bagmati province of Nepal. This makes Chitwan a particularly relevant setting for exploring loan repayment behavior.

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Population and Sample:

In the absence of disclosure of the number of microfinance clients in Chitwan district, this author assumed the unknown number of study population. Accordingly, the sample size iwas determined using the Cochran (1977) formula for infinite populations. At a 95% confidence level and 5% margin of error, the formula suggested a minimum sample size of 384 respondents which was adopted for the survey.

The sampling followed a two-stage process. First, microfinance groups within the district were purposively selected based on the accessibility and feasibility of data collection. This approach was necessary given resource constraints and the wide geographic spread of microfinance operations in Chitwan district. Second, within each selected group, borrowers were chosen randomly to ensure that every member had an equal chance of participation. This combination of purposive group selection and random respondent selection allowed the study to balance methodological rigor with practical feasibility. Purposive sampling at the group level enabled the inclusion of diverse borrowers across different institutions, while randomization at the respondent level minimized potential bias and enhanced the representativeness of the data.

Instruments: The study employed structured questionnaires to measure both the dependent and independent variables. All items were developed using a five-point Likert scale, where 1 = *Strongly Agree*, 2 = *Agree*, 3 = *Neutral*, 4 = *Disagree*, and 5 = *Strongly Disagree*. While individual Likert items are ordinal in nature, aggregated responses were treated as interval data to allow for computation of mean scores and the application of parametric statistical analyses, such as correlation and regression.

The **dependent variable** of the study was *Loan Repayment Performance (LP)*, measured through five indicators: prioritization of repayment, comfort in paying installments, sufficiency of business income, influence of lender's behavior, and penalties experienced for delayed or missed repayments.

The **independent variables** comprised three categories. First, *Borrower's Socio-demographic Characteristics (BSD)* were measured through five items reflecting gender, marital status, age, education level, and financial literacy. Second, *Borrower's Business Characteristics (BBC)* included indicators such as market coverage, cashflow sufficiency, profitability, loan investment in business, and business type. Finally, *Lender's Characteristics (LC)* were assessed using items related to loan policy, repayment schedule feasibility, oversight and follow-up, loan approval process, and clarity of loan terms and conditions.

The distribution of the questionnaire has been approached by getting the permission from MFIs authority. Later, the survey questionnaire was distributed in the microfinance member's centre meeting place.

The internal consistency of the measurement scales was assessed using Cronbach's alpha. All constructs demonstrated acceptable reliability, with standardized Cronbach's alpha values above the threshold of 0.70: Borrower's Socio-demographic Characteristics (BSD, $\alpha = 0.834$, 5 items), Borrower's Business Characteristics (BBC, $\alpha = 0.779$, 5 items), Lender's Characteristics (LC, $\alpha = 0.764$, 5 items), and Loan Repayment Performance (LP, $\alpha = 0.807$, 5

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items. These results confirm the reliability and internal consistency of the scales employed in the study.

Data Analysis Tools: Initially, the collected information was arranged in Microsoft excel. Later data were coded to be deployed in SPSS. Using the SPSS software the descriptive analysis of data was conducted and pearson correlation analysis and regression analysis are performed via SPSS software. The significant variables were used to run a full model to test the effect of BSD, BBC, and LP factors on loan repayment in MFIs in Nepal. The estimated regression coefficients and p-values were interpreted.

Model Specification

Following the approach of (Abimbola & Kolawole, 2021), multiple regression analysis was utilized to examine the impact of borrower's socio-demographic characteristics, borrower's business-related attributes and lender's characteristics on borrower's loan repayment behaviour. The following regression model is specified:

$Y== \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

$LP = \beta_0 + \beta_1 BSD + \beta_2 BBC + \beta_3 LC + \varepsilon$

Where,

LP = Loan repayment

BSD = Borrower's Socio-Demographic characteristics

BBC =Borrower's Business characteristics

LC = Lender's characteristics

β_0 = The intercept

β_1, β_2, and β_3 = Coefficient of variables

ε = Error term.

In this specification, each independent construct (BSD, BBC, LC) is operationalized as the average score of its respective items on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Therefore, a "one-unit change" in BSD, BBC, or LC corresponds to a one-point increase on the Likert composite scale, reflecting stronger agreement with the items within that construct. For example, a one-unit increase in BBC reflects a shift toward greater perceived profitability, stronger cash flows, and higher investment of loans in business, which in turn is hypothesized to enhance loan repayment behaviour.

4. Results

Total of 384 questionnaires were collected from the survey. Among them three hundred seventy one (371) which are properly filled are considered for the further analysis. It implies the higher rate of respondents' participation in the survey.

Relationship between dependent variable and its predicators

Table 1 shows the relationship between the loan payment and explanatory variables, BSD, BBC and LC. All the explanatory variables have a significant but different degree of positive relationship with dependent variable loan payment. They are significant in the 1% significant level. BSD has strong positive relationship (0.760) with LP, similarly LC has moderate positive relationship (0.613) with LP and BBC has relatively low degree of positive relationship (0.598)

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with LP. It shows that all the explanatory variables have positive relationship with dependent variable i.e. LP, which means these explanatory variables can influence loan repayment behaviour of borrowers in microfinance in Nepal.

Table 1: Relationship between dependent variable and independent variables

Correlations (n=371)					
		LP	BSD	BBC	LC
LP	Pearson Correlation	1			
	Sig. (2-tailed)				
BSD	Pearson Correlation	.760***	1		
	Sig. (2-tailed)	0.000			
BBC	Pearson Correlation	.598***	.489***	1	
	Sig. (2-tailed)	0.000	0.000		
LC	Pearson Correlation	.613***	.548***	.516***	1
	Sig. (2-tailed)	0.000	0.000	0.000	

***. Correlation is significant at the 0.001 level (2-tailed).

The presentation of the results follows the two-stage analytical strategy. First, we present the influence of each category of independent variables separately to establish their fundamental relationships with loan repayment performance. This provides clarity on the individual effect of each variable before controlling for other categories. Subsequently, the results of the comprehensive multiple regression model, which integrates all significant variables, are presented and discussed.

4.1. Analysis of Individual Variable Categories

Thus, we begin by separately analyzing the relationship between the sub-components of the independent variables—Borrowers' Socio-Demographic (BSD), Borrowers' Business (BBC), and Lender's Characteristics (LC).

Borrowers' Socio-Demographic Variables Results

Table 2 presents microfinance borrowers' perception regarding the influence of borrower's socio-demographic factors including gender, marital status, age, education and financial literacy on timely loan repayment. The constant term (β_0=0.885, p<0.001) is positive and statistically significant, indicating that when all predicators are at zero, the expected loan repayment performance is 0.885). The findings indicate that female borrowers (β_0=0.121, t =3.096, p=0.002), unmarried borrowers (β_0=0.310, t =7.128, p=0.000), educated borrowers

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(β_0=0.192,t =4.042, p=0.000) and financially literate borrowers (β_0=0.206, t=5.196, p=0.000) exhibit a positive and statistically significant relationship with loan repayment performance in MFIs. Result shows that being a female borrower and unmarried borrowers has a positive and statistically significant effect on loan repayment performance. Borrowers with higher education levels show significantly better loan repayment performance. Whereas, age factor (β_0=-0.041,t=-0.821, p=0.412) has negative and statistically insignificant coeffiecient. This suggests that being and elder borrower does not have a meaningful effect on loan repayment behavior in this sample. Beta coefficient of unmarried borrowers is 0.31, which is higher among other socio-demographic factors thus it indicates that the unmarried borrowers have less probability of being loan delinquency. Female, unmarried, educated and financially literate clients will ensure the good repayment of loan in MFI so that MFI needs to be conscious of these factors on selection of borrowers.

Table 2. Borrower's Socio-Demographic characteristics and loan repayment

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	0.885	0.141	6.276	0.000
	Female borrowers	0.121	0.039	3.096	0.002
	Unmarried borrowers	0.310	0.044	7.128	0.000
	Elder borrowers	-0.041	0.050	-0.821	0.412
	Higher education	0.192	0.048	4.042	0.000
	Financially literate	0.206	0.040	5.196	0.000

a. Dependent Variable: LP

Table 3. Borrowers' Business Characteristics Variables Results

Table 3 illustrates that the borrower's own business characteristics which is considered major factor in loan repayment performance. In the regression anlalysis the intercept (β_0=1.431, p<0.001) is positive and significant, suggesting that when all predicators are at zero, the baseline loan repayment score is 1.431. Here, higher volume of business transactions (β_0=0.129, t=3, p=0.003), loan investment in business (β_0=0.161, t=3.71, p=0.000) and non-agricultural business (β_0=0.298, t=6.868, p=0.000) is positive and statistically significant effect. This indicates that businesses with higher transaction flows are more likely to repay loan on time. Similarly, loan utilization within the business significanlty improves repayment performances. It is found that non-agricultural businesses are more reliable for timely repayment.

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Interestingly, profit making businesses (β_0=0.063, t=1.699, p>0.05) has positive coefficient, but the effect of profitability on loan repayment is statistically insignificant. This finding suggests that profit generation alone does not necessarily guarantee better loan repayment performance.. It highlights an important research implication that profitability may not always translate into sufficient liquidity for repayment.

The results indicate that higher transaction flows, loan investment in business, and non-agricultural enterprises significantly enhance loan repayment behaviour. In contrast, profitability does not significantly predict repayment performance, suggesting that profit may not equate to adequate cash flow or timely loan obligations. This indicates that while a business may appear profitable on paper, cash flow constraints, delayed receivables, or irregular earnings can hinder timely repayment. Therefore, ensuring sufficient business transactions and directing loans into productive business activities are more critical than profitability alone for avoiding loan delinquency.

Table 3. Borrower's Business Characteristics and Loan Repayment

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	1.431	0.188	7.626	0.000
	Higher business transactions	0.129	0.043	3.000	0.003
	Profit making	0.063	0.037	1.699	0.090
	Loan investment in business	0.161	0.043	3.710	0.000
	Non-agricultural business	0.298	0.043	6.868	0.000

a. Dependent Variable: LP

Lenders' Characteristics Variables Result

The regression analysis further examined the role of lender-related characteristics on loan repayment behaviour. As shown in Table 4, several institutional factors were found to significantly influence repayment performance.

The coefficient for friendly loan policy is strongly positive and statistically significant (β_0 = 0.594, p < 0.001). This indicates that when borrowers perceive loan policies as supportive and client-friendly, their repayment behaviour improves substantially. Similarly, a feasible repayment schedule has a positive and significant effect (β_0 = 0.120, p = 0.001), suggesting that when installment deadlines and amounts are aligned with borrowers' financial capacities, repayment compliance is enhanced. Moreover, clear communication of loan terms and conditions also exerts a positive and significant influence (β_0 = 0.148, p < 0.001). Transparent communication likely helps borrowers to better plan and manage their repayment commitments.

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Surprisingly, sufficient supervision by microfinance institutions (MFIs) was found to have a negative and significant effect on repayment ($\beta_0 = –0.082$, $p = 0.031$). This counterintuitive result may suggest that excessive monitoring or intrusive follow-ups create pressure, mistrust, or resentment among borrowers, which in turn discourages timely repayment. Instead of being perceived as supportive oversight, frequent supervision may be interpreted as penalizaing or as a lack of trust in borrowers, thereby harming repayment performance. This unexpected finding warrants further qualitative investigation.

In contrast, the loan approval process exhibited a very weak positive but statistically insignificant relationship with repayment behaviour ($\beta_0 = 0.017$, $p = 0.642$). This result implies that the procedural aspect of loan approval does not play a critical role in determining repayment once the loan has already been disbursed.

Overall, the findings suggest that institutional characteristics such as loan policies, repayment schedules, and communication practices are crucial drivers of repayment performance. However, the negative effect of supervision indicates that MFIs may need to redesign their monitoring practices to be more supportive rather than coercive. Additionally, the insignificant role of the loan approval process underscores that repayment behaviour is shaped more by post-disbursement borrower–lender interactions than by pre-disbursement formalities.

Table 4. Lender's Business Characteristics and Loan Repayment

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	0.794	0.147	5.398	0.000
	Friendly loan policy	0.594	0.031	19.393	0.000
	Feasible repayment schedule	0.120	0.035	3.382	0.001
	Sufficient supervision	-0.082	0.038	-2.166	0.031
	Loan approval process	0.017	0.037	0.465	0.642
	Communication about loan term	0.148	0.035	4.291	0.000

a. Dependent Variable: LP

Elaboration on Explanatory Variables

Elaboration on explanatory variables are presented in table 5.

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Table 5. Variables and their description

Independent Variables	Symbol	Expected sign/Hypotheses	Result from linear regression model
Borrower's socio-demographic characteristics	BSD	+(Female borrowers, Unmarried borrower, younger borrower, High education level, High financial literacy has high loan repayment performance)	Female borrowers (β_0 =0.121),Unmarried borrowers (β_0 =0.310), Higher education (β_0 =0.192) and Financial literacy (β_0 =0.206) have positive association between loan repayment of MFI's borrower. However, Elder borrowers (β_0 =-0.041) have negative associations but fail to be significant.
Borrower's business realted attributes	BBA	+(Higher business transaction Higher profitability, Loan investment in business, has high loan repayment behaviour, Non-Agricultural loan has low loan repayment behaviour)	Higher business transactions (β_0 =0.129), Loan investment in business (β_0 =0.161), and Non-agricultural business (β_0 =0.298) have positive association between loan repayment of MFI's borrower. But study fail to establish the association between profit and loan repayment.
Lenders's Characteristics	LC	+(Friendly loan policy, feasible loan repayment schedule, Sufficient supervision, Loan approval process, Communication about loan term and conditions has high loan repayment behaviour)	Friendly loan policy (β_0 = 0.594), Feasible repayment schedule ((β_0 =0.120), and Communication about loan term (β_0 =0.148)have positive association between loan repayment of MFI's borrower. Surprisingly, Sufficient supervision (β_0 =-0.082) has negative association between the loan repayment. But, study unable to establish an association between Loan approval process (β_0 =0.017) and loan repayment.

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It should be noted that these results are consistent with the broader regression model (see Table 6), which explains a substantial proportion of the variance in loan repayment behaviour ($R^2 = 0.684$).

Before running multiple regression analysis, sub-domains such as elder borrower, profit making business and loan approval process that are unable to establish association with loan repayments are removed from the data set.

4.2. Multiple Regression results

A multiple regression analysis was employed to find out the influence of borrower's socio demographic characteristics (BSD), borrower's business related attributes (BBA) and lender's characteristics (LC) on loan repayment (LP) among microfinance borrowers in Nepal. Given the possibility of interrelationship among the explanatory variables, diagnostic tests for multicollinearity were also conducted. The Variance Inflation Factor (VIF) values for all predictors were below 2 (BSD = 1.553, BBA = 1.495, LC = 1.597), which is well below the common threshold of 5. The results indicated that the variance inflation factor (VIF) values for all predicators were within acceptable limits, confirming that multicollinearity does not threaten the robustness of the model.

As presented in Table 6, the regression model demonstrates that the independent variables (BSD, BBA, and LC) collectively explain 68.4% of the variance in loan repayment behavior ($R^2 = 0.684$; Adjusted $R^2 = 0.681$). The overall model fit is statistically significant ($F = 264.369$, $p < 0.001$), confirming that the predictors jointly contribute to explaining variations in repayment performance.

The estimated regression equation is:

LP=0.014+0.563BSD+0.221BBA+0.219LC

Table 6: Multiple regression results

Dependent Variable: Loan Repayment (LP)
Independent Variables: Borrower's socio demographic characteristics (BSD), Borrower's business characteristics (BBC) and Lender's characteristics (LC)
Method: Least squares

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.014	0.150		0.095	0.924		
BSD	0.563	0.040	0.542	14.004	0.000	0.664	1.553
BBA	0.221	0.036	0.217	6.069	0.000	0.669	1.495

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LC	0.219	0.040	0.207	5.443	0.000	0.626	1.597

R-squared :0.684	Adjusted R-squared: 0.681
S.E. of regression:0.43244	Sum squared residual: 68.629
F-Statistic :264.369	P-Value: 0.000

The coefficient for borrower's socio-demographic characteristics (BSD) is both positive and statistically significant (β_0 = 0.563, t = 14.004, p < 0.001). This suggests that a one-unit improvement in socio-demographic factors increases loan repayment performance by 0.563 units, making BSD the strongest predictor among the independent variables.

Borrower's business attributes (BBA) also exhibit a positive and significant effect on repayment (β_0 = 0.221, t = 6.069, p < 0.001). Similarly, lender's characteristics (LC) significantly contribute to repayment behavior (β_0 = 0.219, t = 5.443, p < 0.001). These findings indicate that improvements in business-related and lender-related factors enhance repayment performance, though to a lesser extent compared to socio-demographic characteristics.

Regarding multicollinearity, the VIF values (BSD = 1.553, BBA = 1.495, LC = 1.597) are all below the conventional threshold of 5, indicating that the independent variables are not highly correlated and that the regression coefficients can be interpreted reliably.

In summary, the analysis provides strong evidence that borrower's socio-demographic characteristics, business attributes, and lender's characteristics significantly influence loan repayment in microfinance institutions in Nepal, with socio-demographic characteristics exerting the most substantial effect.

5. Discussion

The primary objective of this study was to identify the factors influencing loan repayment among MFIs borrowers in Nepal. The empirical findings reveal that borrower's socio-demographic characteristics, business-related attributes and lender-specific factors all exert significant influence on loan repayment performance, confirming their role in shaping borrower behaviour. These results align with prior studies conducted by Jote (2018), Mirpournian et. al. (2016), Sangwan, Nayak & Samanta (2020).

The analysis revealed that borrower characteristics have a stronger and more significant impact on repayment performance than either lender characteristics or business-related factors, which contrasts with findings reported by Giri and Shah (2019). Specifically, female borrowers demonstrated higher repayment rates, corroborating existing literature. Unmarried female borrowers exhibited comparatively fewer socio-economic burdens than their married counterparts, contributing to improved repayment behaviour. Furthermore, higher levels of education and financial literacy were associated with better repayment performance, as education enhances awareness, access to information, effective utilization of loans, and resource management—findings aligned with Jote (2018).

These results suggest that MFIs seeking to improve repayment rates should prioritize careful assessment of borrower socio-demographic profiles during selection. Implementing prompt

and thorough screening procedures prior to loan disbursement is likely to enhance repayment performance.

Regarding business-related factors, the study found that higher business transactions, full investment of loan funds into business, and engagement in non-agricultural enterprises were positively associated with loan repayment. These findings support the empirical evidence presented by Giri and Shah (2019). Interestingly, profitability did not significantly predict repayment behaviour. Suggesting that cash flow management and active business operations are often more critical than profitability alone in the South Asian microfinance context (Nagarajan & Meyer, 2020; Rahman, 2019). This highlights the need for borrowers to focus on operational efficiency and cash flow stability in addition to profit maximization.

The study also examined the role of MFI-specific factors. Friendly loan policies, feasible repayment schedules, and clear communication of loan terms exhibited positive and statistically significant effects on repayment performance. These results underscore the importance of designing borrower-centric policies that are aligned with borrowers' socio-demographic, economic, and business conditions, including cash flow patterns. In contrast, sufficient supervision by MFIs had a negative and significant effect on repayment, possibly due to borrowers perceiving intensive monitoring as intrusive or coercive, leading to mistrust or psychological pressure that discourages timely repayment (Giné & Karlan, 2014). The loan approval process was not significantly related to repayment behaviour, suggesting that pre-disbursement procedural formalities may have limited influence once the loan is issued.

Collectively, these findings provide a nuanced understanding of loan repayment behaviour in the Nepalese microfinance context. While traditional microfinance theory emphasizes profitability and strict monitoring as key determinants (Armendáriz & Morduch, 2010). This study demonstrates that operational factors such as transaction volume, effective loan utilization, and borrower-friendly institutional practices play a more decisive role. Borrowers' actual cash flows and experiences with lender behaviour are thus stronger predictors of repayment performance than static profitability measures or rigid supervision protocols.

6. Conclusion

Given that a large proportion of MFI credit is collateral-free, social bonding remains a key component of joint liability group formation and lending methodology of MFIs globally. Accordingly, MFIs must exercise caution in client selection and group formation. The study suggests prioritizing unmarried, educated female borrowers, as they exhibit lower repayment risk, likely due to reduced socio-economic burdens and enhanced financial literacy.

In terms of business characteristics, the study highlights that cash flow management is a more critical determinant of timely loan repayment than profitability. While profitability may not guarantee liquidity for loan obligations, higher business transaction volumes and full utilization of loans in business positively influence repayment. Agricultural businesses are associated with higher repayment risk due to reliance on traditional farming practices and vulnerability to weather fluctuations. To mitigate such risks, MFIs should emphasize entrepreneurship

development, guiding members toward alternative, less volatile, and less risky business opportunities.

The results further indicate that borrower-friendly and advisory behaviour of MFI staff encourages borrowers to meet repayment obligations, while clarity regarding loan terms is associated with higher repayment rates. Consequently, MFIs should invest in enhancing staff interpersonal communication skills and design flexible, borrower-centric policies that align with borrowers' socio-economic and business contexts.

From a practical perspective, MFIs should focus on:

1. Careful borrower selection, emphasizing socio-demographic and financial literacy profiles.
2. Supportive business practices, including full loan investment in business operations and monitoring transaction flows.
3. Designing borrower-friendly institutional policies, with clear communication and feasible repayment schedules.
4. Balanced supervision, providing guidance without exerting excessive pressure, thereby fostering a cooperative repayment environment.

While the study offers valuable insights into the determinants of loan repayment, some findings diverge from prior research, highlighting areas for further investigation. Future studies could employ qualitative methods to explore borrower perceptions and behaviour in greater depth. Additionally, advanced quantitative techniques, including logistic regression, quasi-experimental designs, longitudinal studies, and ANOVA analysis, could be applied to examine differences across borrowers' socio-economic, demographic, and business contexts, providing more precise and generalizable findings.

Overall, the study contributes to a nuanced understanding of microfinance repayment behaviour in Nepal and offers actionable recommendations for MFIs to enhance sustainable loan repayment through improved borrower selection, business support, and institutional practices Careful borrower selection emphasizing socio-demographic and financial literacy profiles.

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Consent to Participate

Informed consent was obtained from all subjects involved in this study.

Ethical Consent and misconduct

I declare that this research was conducted ethically and take sole responsibility for any plagiarism or misconduct.

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