Determinants of repayment behaviour of MFI clients in the context of COVID-19: a case study of Lalitpur District, Nepal

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Abstract

This paper investigated factors affecting repayment performance of MFI clients in the context of COVID-19. Business characteristics, borrowers' characteristics and lenders' behavior were identified and predictors of loan repayment. A telephone interview using a full-fledged questionnaire was conducted among randomly chosen 160 loan clients of various microfinance institutions in Mahalaxmi municipality of Lalitpur district during Covid 19 pandemic (June-July, 2020). The descriptive statistics, correlation analysis, binary logistic regression analysis analyzed the data and qualitative analysis is done to support the result of research. The finding of study reveals that age of the borrower, educational level of borrowers, types of the business and profit generated business influence the repayment of loan. However, family size, skills, age of business, work performance, transparent communication and clarity of MFI policy does not have any impact on repayment of loan. COVID-19 pandemic has affected all types of business and created poor cash flow in the market and due to lockdown, the source of income has been decreased which causes large number of delay repayment of monthly installment is decrease in profit due to decrease in revenue of the business.

Keywords: Microfinance, MFIs, Loan Repayment, Covid 19 and Nepal

Introduction

Microfinance supplies credits and other financial services to small economic units and micro-enterprises to unleash their potentiality of generating income as opposed to consumption. It plays a role in helping some households make different inter-temporal choices in consumption and serves as engine of growth to fuel business creation (Banerjee et al., 2015). Microfinance Institutions are the specialized types of institutions promoting income generating activities of the poor by providing banking and financial services and thereby contributing in the upgrading their economic and social standards (Nepal Rastra Bank, 2013).

While almost every sector of the economy has felt the brunt of Covid-19, low income households and small businesses are disproportionately affected because of having little savings and assets to help them cope with shock created by the current pandemic (Shrestha, 2020). The COVID-19 pandemic threatens lives and livelihood, and with that has created immediate challenges for institutions that serve affected communities. Lockdown due to COVID -19 pandemic has decreased household income due to decrease in business sales. MFIs are suffering from both a lack of repayment*s* and a lack of access to capital and liquidity from funders (Malik, et al., 2020). In Nepal, the first case of COVID-19 was confirmed on 23 January who had returned from

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China on 9 January 2020. On 19th March, Government of Nepal had declared lockdown where all government and private offices were closed expect which provide essential services. Sinha and Dhakal (2020) found that COVID-19 lockdowns posed challenges for collections of repayment from clients for a limited period of time. They stated that service sectors such as hotels/restaurants, beauty parlours, hair salons were highly affected by the pandemic. Because lockdown conditions, it had been difficult for microfinance institutions to manage their business as their clients were suffering from business or income loss.

In the mid of May 2020, average loan delinquency of all microfinance institutions reached to almost 48 percent of total loan outstanding (NRB, 2020). Nepal Microfinance Bankers' Association (2020) conducted the survey in regards to impact of Covid 19 on microfinance among Chief Executive Officers of 54 MFIs. The report stated that all sectors of MFIs' loan portfolio were affected and MFIs believed that clients lost their income due to loss of their business (Shrestha, 2020).

Objectives

This paper aimed to determine the factors influencing loan repayment of MFI clients in the context of COVID-19. Below are the specific objectives of this study:

To investigate the characteristics of clients that affect the repayment of loans in MFIs

To analyze the business characteristics that influence loan repayment in MFIs.

To explore lender's behavior that contributes to loan repayment among MFIs' clients.

The Hypotheses

H_1: There is significant relationship between client characteristics and loan repayment among microfinance loan beneficiaries.

The demographics of a client is taken as an important determinant to analysis their ability to payback loan. The financial or credit officer will determine whether consumers are going to make the lowest attempt to meet their credit obligations. The client characteristics are age, gender, level of education, number of dependents a client support financially and their skills.

H_2: There is significant relationship between business characteristics and loan repayment among microfinance loan clients.

Business characteristics relate to the nature and type of the business and its performance in relation to the others in the environment. They include the size and age of the business; income and profits generated from the business.

H_3: There is significant relationship between lenders' behavior and loan repayment among microfinance loan clients.

Lender's behavior is defined as loan officer and MFIs behaviors towards their clients. It includes clarity about the credit policy, transparent communication with their clients and work performance of MFI. It is believed that loan repayment is also determined by behavior of MFIs towards borrowers.

Review of literature

Loan repayment usually had devastating effect on both loan borrowers and the institutions that issue the loan. For the borrowers, delay loan repayment and default may not only loss of their properties but also it

makes difficulty for them to access future loan. Loan repayment default is risk presented to an institution by a borrower failing to repay at least three installments within a period of one month which indicates of increase risk that a borrower will certainly fail to make all the repayment and automatically fail to repay loan (Pearson & Greeff, 2006). Similarly, Phillips and Vander Hoff (2004) define loan repayment default as a failure to repay the interest or principal of loan by a borrower when debt is due.

Ghatak and Guinnane (1999) analyzed the four problems face by formal credit institutions that lend to poor borrower who cannot offer much in the way of collatera: adverse selection, moral hazard, costly audits and enforcement. Ghatak and Guinnane showed simple model of lending how joint liability affect group formation, induces group members to influence the way other members select their project, helps the lender avoid costly audits, and gives encourages borrowers to repay their loans without the lender imposing costly sanctions. Conning (1996) analyzed in these issue suggests that sustainability could indeed be difficult to achieve many circumtances. Ghatak and Guinnane concluded with examples in study that slight modifications of the rules that robbed grioup lending of the joint-liability aspect that accounts for the high repayment rates.

Warue (2012) conducted research with MFI sepcific factors: Corporate governance, loan process and procedures, default recovery methods, SHGs specific factors: group governance, member screening process, default recovery methods, external factors: sociopolitical instability, economic downturn, weather conditions, inability to enforce. survey research design was used and a census of the 49 MFIs was taken, data was collected through a self developed structured questionnaire and administered to MFIs loan officers for response, Multiple regression analysis was used to establish relationship between loan delinquency and microfinance institutions. Microfinance institutions and self help groups' specific factors and external factors significantly affect loan delinquency performance among microfinance institutions in Kenya.

Nguta and Huka (2013) conducted research on factors influencing loan repayment default in microfinance institutions: the experience of Imenti District, Kenya and data were collected using both structure and unstructured questionnaire and were used descriptive and inferential statistics. Business characteristics include the size, age, type, location of business and profit generated from business which influence loan repayment default by clients. He found that high default cases were common on manufacturing than service industry, agriculture and trade sectors. And business located within the municipality had high loan repayment default rates as compared to business outside municipality. He also found that there was significant relationship between type of business, age of the business, number of employees and business profit with loan repayment default.

Solomon and Addisu (2013) studied on determinants of rural household's loan repayment performance: case of Oromia Credit and Savings Share Company (OCSS) and Keleta Saving and Credit Union (KSCU) in Dodota Woreda in Oromia regional state, this study employed logistic regression analysis and the result shows that age, sex, number of oxen owned, land holding size and loan supervision were positively and significantly influence followers to pay full and timely loan. Againe and Waari (2014) conducted research on factors influencing loan repayment in microfinance inatituiton in Kenya with 360 loan borrowers and 39 loan officiers of microfinance. The data were collected through structured and unstructured questuonnaires and interviewed and analysed using both descriptive and inferential statistics and also used logistic regression to

conclude their findings. Againe and Waari stated that various factors related to clients' characteristics: educational level, age, gender, hobbies; business characteristics: length of operation, management members, type of business and lender's characteristics: group handled, period taken to qualify new member and criteria used to evaluated credit worthiness, had significant impact on loan repayment with the controlling mechanism of the microfinance institutions.

According to Giri and Shah (2019), various microfinance institutions in Nepal had been providing micro loans without any collateral facilities to the economically challenged people in the country. Due to delayed loan repayment, timely loan repayment was a major concern for Nepalese MFIs. There are various factors that influence the borrowers to repay the monthly installments on time such as business characteristis, lender characteristics, client characteristics and loan repayment. Simple random sampling technique is used, inferential analysis and logistic regression is used for data analysis. The study was done with 120 borrowera and for qualitative 3 MFI officers of Bhaktpaur district Nepal. The study revealed that there was significant impact of annual profit earned and nature of communication of loan officers with the loan repayment.

Pandey and Ojha (2020) stated that the COVID-19 pandemic had posed unprecedented both challenges to both health and economic sectors. In Nepal, as in many other developing countries, MFIs were at forefront of provideing financial services to the low-income population, but due to lockdown farmers are unable to sell their produced product or they are forced to sell their produced product at low price and also many small enterprises were unable to operate their business with uncertainty. It reflected in the deliquency in repayment due to decrease in client's income. Due to lockdown, MFIs were not able to conduct regular center meetings with clients to carry out transation and further NRB had given a three-month moratorium up to mid-july 2020 to all borrowers which would delay the loan repayments.

On the above literature, this paper focuses on the evaluating the relationship of explanatory variables of loan repayment like client characteristics, business characteristics and lender's behavior with loan repayment behavior. Figure 1 provides conceptual framework for this study that is followed by hypotheses.

Figure 1: **Conceptual framework of the study**
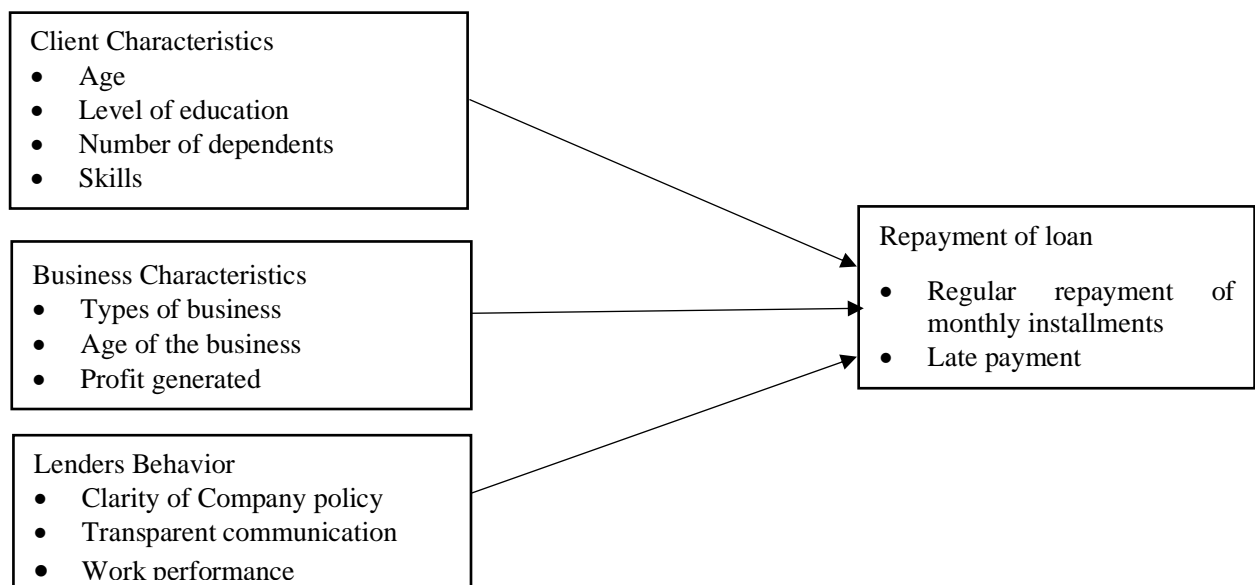
Methodology

The study is both quantitative and qualitative in nature. The study follows explanatory research design to identify and confirm the relationship (as stated in the hypothesis) between independent variables: client characteristics, business characteristics, lenders' behavior and dependent variable: Repayment of loan. A deductive approach of scientific research is used to carry out this study. According to Bryman and Bell (2015), deductive theory is common view of the relationship between theory and research and the researcher, on the basis of what is known about a domain and the theoretical considerations within it, deduces a hypothesis or hypotheses that must be subjected to empirical scrutiny.

Among 276 municipalities, Mahalaxmi municipality is selected for this study which is situated in the north-eastern part of the Lalitpur district. Convenience sampling technique is used to conduct the survey. The population of this study are the entire loan borrowers of microfinance institutions of Lalitpur Mahalaxmi Municipality area which cannot be determined exactly at the COVID- 19 pandemic, so the convenience sampling method is used. The researcher took 160 samples of different places of Mahalaxmi municipality to cover the key characteristics of the study. Data is collected using structured questionnaire that has been administered with the help of related literature of previous researchers. Due to COVID-19 pandemic and lockdown in the country, phone survey has adopted for the collection of primary data. Microfinance institutions has helped in this research by providing detail of loan borrowers which makes easier in this research for data collection. A set of structured questionnaires has been asked to loan borrowers by phone. The data collected from the primary sources are summarized and presents in the forms of tables and charts by various test and tools.

Descriptive analysis and binary logistic regression analysis are carried out for the analysis purpose. Binary Logistic Regression is a type of regression technique used to study the relation between a dependent and one or more independent variables, when the dependent variable is categorical. Logistic regression is used to describe data and to explain the relationship between dependent binary variable and one or more nominal, ordinal, interval or ratio-level independent variables. At the center of the logistic regression analysis is the task estimating the log odds of an event (Swamy, 2019). Mathematically, logistic regression estimates a multiple linear regression function defined as:

$$Z = log\left[\frac{p_i}{1 - p_i}\right] = \beta_0 + \beta_1 x_1 + \beta_2 x_2 \ldots + \beta_k x_k$$

Linear Probability Model is defined as:

$$P_i = \beta_0 + \beta_1 x_i$$

Where P_i = probability of occurrence of event

If X has no upper or lower bound, then for any value of β there are values of X for which either pi > 1 or pi < 0. This is contradictory, as the true values of probabilities should lie within the (0, 1) interval.

Odds = $\frac{P_i}{1 - P_i}$

Where, P_i = Probability of event

$1 - P_i$ = Probability of non-event.

Definition of Variables

Variables	Definition
Repayment of Loan	- Regular repayment of monthly installment (1) and late payment of monthly installment (0).
Client Characteristics	- Age: Age of the borrowers (18-30 years = 1, 31-40 years = 2, 41-50 years = 3, and above 50 = 4). - Level of Education: Education level of borrowers (SLC or below= 1, +2/Intermediate = 2, Bachelor = 3, and Master and above = 4). - Number of Dependents: Number of dependent family members (1 to 2 = 1, 3 to 5 = 2, 6 to 10 = 3, and 10 and above = 4). - Skills: Skills that learn before starting the business (1=Yes, 0=No).
Business Characteristics	- Types of Business: Types of a business that borrowers are operating (Manufacturing=1, Trade=2, Service=3, and Agriculture=4) - Age of the Business: The period of operation of borrowers' business (Less than 2 years = 1, between 2 and 5 years = 2, between 5 and 10 years = 3, and more than 10 years = 4). - Profit Generated: Monthly profit generated by borrowers' business (below 10000 = 1, between 10001 and 50000 = 2, between 50001 to 100000 = 3, and above 100000).
Lenders' Behavior	- Clarity of Company: Clarity about company's policies by borrowers (1 = satisfied and 0 = dissatisfied) - Transparent Communication: Transparent communication of loan officer with their client about terms and condition of services (1 = satisfied and 0 = dissatisfied) - Work Performance: Work performance of Microfinance institutions for collection of installments with their clients (1= satisfied and 0 = dissatisfied).

Results and discussion

Clients Characteristics

Age: Out of total respondents 160, 18.1% of respondents belongs to 18 to 30 years of age group. 44.4% of total respondents (i.e., 71 out of 160) belongs to 31-40 years age group, 28.7% of total respondents (i.e., 46 out of 160 respondents) belongs to 41-50 age group and 8.8% of total respondents (i.e., 14 out of 160 respondents) belongs to 50 and above age group. Most of the microfinance loan borrowers belong to age group between 31 and 40.

Number of Dependents: Family size indicate the number of persons the respondent support financially. The number of dependents may have an effect on the family income and expenditure which could ultimately affect the loan repayment of microfinance institutions. The study shows, 15% of respondents have 1 to 2 dependent member and 73.1% of respondents have 3 to 5 dependent member and rest 11.9% of total

respondents have 6 to 10 dependent members in their family. So, most of the respondent have 3 to 5 dependents in their family whom they have to support financially.

Level of Education: The study established that majority (76.3%) of the respondents has SLC or below education. Respondent with +2 or intermediate educational level are 22.5% out of total respondents and only 1.3% out of total respondents have Bachelor or university level education. This implies that majority of the respondents have primary and secondary level of education which could be important in the success of the business and contribute to increase business income and influence them for timely repay their loan installments.

Skills: The study shows most of the respondents started their business without taking any training and without having skills and knowledge about their business, the response rate is 58.8% out of total respondents. And 41.2% of total respondents have taken training and learn the skills that necessary for their business. The skills and training such as tailoring, driving, handicraft and so on has taken by respondents.

Business Characteristics

Business characteristics includes the type of business, age of the business and the profit earned by business also whether the profit earned by business is sufficient to repay their monthly installment.

Types of Business: 50% of total respondents are engaged in trade business, 26.9% of respondents operated services business while 14.4% of respondents are engaged in agriculture and 8.8% of total respondents operated manufacturing business. Most of the respondents are engaged in the trade business such as grocery shop, readymade shoes store, cosmetic shops and fancy clothes stores and retail vegetables and fruits shop. After trade business some of the borrowers are engaged in service business such as driving tempo, tailoring business and beauty parlor.

Age of the Business: the study shows that 34.4% of respondents has their business running for duration of between 2 and 5 years and 31.3% of the respondents has operated their business for duration of between 5 and 10 years, 17.5% of the respondents has been operating their business more than 10 years and only 16.9% of the total respondents who has operated their business for less than 2 years. This indicate that most of respondents has their business operation period between 2 and 5 years; and 5 and 10 years. The new business which are less than 2 years has start up challenge and old businesses have overcome start-up challenges and increases the revenue which ultimately affect the loan repayment of microfinance institutions.

Business Profit: Business profit is the main factor that influence in timely repayment of loan and monthly installment. The study reveals, 62.5% of the respondents have business profit between NRs. 10001 and NRs. 50000 and 31.9% of the respondents have business profit between NRs. 50001 and NRs. 100000, 5% of total respondents earn more than NRs. 100000 per months and only 0.6% of respondents earn less than NRs. 10000 per months. The study shows that most of the respondents earn profit between 10001 and NRs. 50000 and also between NRs. 50001 and NRs. 100000. According to previous researcher Againe and Waari, (2014) it was clear that the more profitable a business is easier for business to repay their loan on time and business with less profitable has to struggle between reinvesting the profit back into the business and repay loan so it increases the rate of loan repayment default.

Lenders' Behavior

The response of the respondents with clarity of policy, transparent communication, and work performance of microfinance and repayment of loan is shown in Table 1. The descriptive analysis includes total number of respondents, minimum value, maximum value, mean and standard deviation of the variables.

Table 1: *Lenders Behavior and Repayment of Loan*

	N	Mean	Std. Deviation
Clarity of Policy	160	3.9521	.54925
Transparent communication	160	4.1312	.56214
Work performance	160	4.0833	.45634
Repayment of loan	160	4.1672	.42125

Table 1 shows mean and std. deviation of the variables. The mean of clarity of policy is 3.9521 which states that the respondents are clear about the rules and regulation and policy of the microfinance institutions and they are aware about the microfinance policy. The standard deviation represents the variation in respondent's answer which is 54.925%. The mean of transparent communication is 4.1312 which means respondents are highly satisfy with the loan officer that they show clear and transparent documents about interest rate, product prices and clearly communicate the terms and conditions about all financial services and loan officer deals with the borrowers based on their knowledge and understandings. The standard deviation represents the variation in respondent's answer which is 56.214 percent. The mean of work performance is 4.0833 which means that respondents are highly satisfy with the work performance of microfinance institution such as remind their client about payment of installment and provide proper monitoring and follow-up by authorities about loan. The standard deviation represents the variation in respondent's answer which is 45.634 percent. The mean of repayment of loan is 4.1672 which means that respondents are highly influence by profit generated by business, knowledge and skills and overall lender's behavior to repay loan on time. The standard deviation represents the variation in respondent's answer which is 42.125 percent. Hence, respondents are highly satisfying with lender's behavior and that helps them to repay loan on time.

Logistic Regression Analysis

Logistic regression is used to find out the factors influencing loan repayment behavior of MFIs' clients.

Table 2: *Predictive capacity of the logistic regression model*

Observed		Predicted		
		Repayment of Loan		Percentage
		Delay Repayment	**Timely Repayment**	**Correct**
Repayment of Loan	Delay Repayment	110	7	94.0
	Timely Repayment	34	9	20.9
Overall Percentage				74.4

Cox and Snell R Square	0.128
Nagelkerke R Square	0.187

Table 2 shows 117 respondents out of total 160 respondents pay delay monthly instalment, and 43 respondents pay their monthly instalment on time. So, the overall predictive capacity model is 74.4% i.e., this model will support the statement that claims that there is delay repayment of monthly installment by the borrowers by 74.4% in the COVID-19 pandemic. Because of COVID-19 pandemic, it effect all type of business which ultimately lower the income of borrower so its causes the delay repayment of monthly installment. The value of Nagelkerke R square is obtained as 0.187 which means that 18.7% of variation in the dependent variable is described by the independent variables.

Table 3: *Logistic regression analysis for loan repayment*

	B	S.E.	Wald	Sig.	Exp(B)
Age	.585	.303	3.727	.054	1.794
Education	.763	.436	3.068	.080	2.144
Number of Dependents	.073	.435	.028	.868	1.075
Skills	-.007	.434	.000	.987	.993
Types of Business	.510	.249	4.183	.041	1.665
Age of Business	.073	.278	.070	.792	1.076
Profit	.783	.341	5.259	.022	2.188
Clarity of Policy	.523	.491	1.135	.287	1.687
Transparent communication	-.058	.404	.021	.886	.944
Work performance	-.735	.605	1.477	.224	.479
Constant	-5.770	2.546	5.135	.023	.003

The result from logistic regression, p-value of type of business is less than 0.05 (i.e., 0.041) so there is significant relationship between type of business of client and timely repayment of monthly installment and regression coefficient is 0.510, it means there is positive relationship between type of business and repayment of loan. As expected, the result shows that there is significant relationship between business profit and repayment of loan and positive coefficient shows the direct relationship between business profit and repayment of loan. Thus, as the business profit increases the ability of the client of repayment of loan also increases. Moreover, age and education also affect the loan repayment behavior of microfinance clients but the coefficients are significant at 10 percent level of significance only. However, skills, age of business, clarity of policy, transparency in communication and work performance have no effect on the loan repayment behavior during Covid-19 pandemic.

The expected B-value gives the odds ratio that gives the relative measure of effect of the independent variable with the repayment. If the value is greater than 1, then the odd of an outcome occurring increases and if the value is less than 1, any increase in the predictor variable leads to a drop in the odd of the outcome occurring (Mbachu, Nduka, and Nja, 2012). From table 3, the odd ratio of number of dependents is 1.075, it means when the predictor is raised by one unit, will increase level of sustainability by 1.075 times. And skills

odd ratio is 0.993 which implies that the borrowers are 0.99 times likely to default on loan repayment because of negative correlation between skills and loan repayment. Similarly transparent communication and work performance's odd ratio are 0.944 and 0.479 respectively it means the borrowers are likely to default on loan repayment because of negative correlation with loan repayment and transparent communication and work performance.

Consistence with the previous study (Againe & Waari, 2014), this study revealed that there is significant relationship between client characteristics such as age of loan borrowers, educational level of borrowers and family with loan repayment of loan., the current study also found that there is significant relationship between client characteristic: age and the educational level with loan repayment and also there is positive relationship of age, educational level with repayment of loan. But there is no significant relationship between number of dependents in family and skills learn before starting their business with repayment of loan of microfinance institutions that means the family size and skills does not influence microfinance institution's borrower to repay their loan.

The study of Naguta and Huka (2013); Againe and Waari (2014); and Giri and Shah (2019) found that there is significant relationship between business characteristics: types of business and profit of the business with repayment of loan and also they revealed that there is no relation between age of the business and repayment of loan. Supporting their findings, current study also found that there is significant relationship between types of the business and profit of the business with loan repayment of loan and there is no relationship between age of the business with loan repayment of loan. Warue (2012) revealed that there is significant relationship between lenders' characteristics and repayment of loan. Similarly, Giri and Shah (2019) also found that there is significant relationship between communication with clients and repayment of loan but there is no relationship between MFI policy and repayment of loan. On the contrary, the current study found that there is no relationship between repayment of loan and lender's behavior of microfinance institutions, it means that clarity of policy, transparent communication and work performance of microfinance institutions do influence on repayment of loan.

The repayment rate of current study is lower than the immediate study done by Giri and Shah (2019) in Nepal. The result is inconsistnce because of COVID-19 pandemic, it effects all type of businesses which ultimately lower the income of borrower so its causes the delay repayment of monthly installment. According to the response of the respondents, COVID-19 has affected more to the service business but with comparison to manufacturing business, service business and agricultural business, trade business are less harm, because they are allowed to open at morning and the evening as per government rules. The main cause of large number of delay repayment of monthly installment is decrease in profit due to decrease in revenue of the business.

Qualitative Analysis

The finding from the quantitative analysis is different from the other pervious researcher findings that the timely repayment has been decreased, the respondents who pay only interest are categories on delay repayment and the borrower who pay whole installments on time are categories on timely repayment. To support the findings from the quantitative analysis and to further analyze the causes of delay repayment, an

open ended and unstructured question was asked with the microfinance loan borrowers. Due to COVID-19 pandemic both the loan borrowers and lenders are facing the problem in loan repayment. There are various factors that are affected by COVID-19 pandemic, whose impact is clearly seen in repayment of loan.

Client Characteristics: Nature of borrowers' family members leads to the timely repayment of loan. Usually educated families are more understanding and supportive towards the process of loan repayment and in case of loan default, the family members are ready to pay on behalf of the borrowers. Due to COVID-19, loan borrowers are facing both financial and non-financial problem. People are suffering from psychological pressure. They are facing lots of difficulties while fulfilling their daily basic needs. The expenses of the household increase as the increase in number of dependents in the family so in these pandemic day's client are facing difficulty for paying monthly installment on time. This COVID-19 pandemic has affected their business, due to lockdown they source of income has been decreased.

Business characteristics: Borrowers repay the loan from the profit earned by the business they have invested in. While some businesses start to make profit as soon as they are operated while some businesses like farming, animal husbandry, etc. take some time before they start to earn profit. Some businesses also fail to make any profit at all. But in current situation most of the business fail to earn profit due to COVID-19 pandemic which creates higher rate of delay loan repayment. Government has announced lockdown in Nepal for 2 weeks, but it extended for more than 5 months. This pandemic lockdown has affected all types of business and creates poor cash flow in the market. According to the response of the respondents, COVID-19 has affected more to the service business such as vehicles, beauty parlor, food stalls and so on.

One of the respondents whose name is Sarita Bhushal, she is 34 years old, she has borrowed NRs. 2 lakhs from microfinance to help her husband for paying down payment of their vehicle and her husband himself work as driver and provide service for public. But due to COVID-19 pandemic their business is harm, their service business is closed during lockdown period. She said that income from the vehicle was only their source of income now they are facing problem how they are going to their monthly installment of microfinance loan on time.

Likewise, the food stalls and beauty parlor and tailoring business are highly affected by lockdown. According to respondents, the income of these business are decreased by 70-80% and the new business which are entered recently in the market are in the loss that they don't have future may be they will disappear in the upcoming days. Somehow loan borrowers are managing interest to pay which is compulsory according to company policy. Similarly manufacturing business are facing the problem lack of essential raw materials so they are not able to meet the demand. And the client who are engaged in agriculture, due to lockdown farmers are unable to sell their produced product or they are forced to sell their produced product at low price and also many small enterprises are unable to operate their business with uncertainty. This decreases their revenue and business profit which ultimately affect loan repayment. According to government rules vegetable shop, butcher shops and grocery shops are at morning and evening during lockdown period so as per respondent's view they earn some portion, but they have to pay rent, and fulfill the daily needs of their children. Business such as readymade clothes and shoes shops are also affect due to lockdown and grocery shops are allowed to open at morning and evening, so this is only the source of income as per respondents.

Lenders' behavior: When the government announced to pay tax at the end of fiscal year then all financial institutions send notice to repay their monthly installment on time. So, microfinance institutions send their loan borrowers to repay their monthly installment. They make compulsory to pay at least interest of their loan. It creates difficult situation for the loan borrowers to pay 3-4 months interest at once. It is large amount for the borrowers whose businesses have been closed during whole lockdown period and there is no income so that they have to manage money from the other sources.

How loan borrowers manage to repay monthly installment during COVID-19?

In Nepal, as in many other developing countries, MFIs are at forefront of providing financial services to the low-income population, but due to lockdown farmers are unable to sell their produced product or they are forced to sell their produced product at low price and also many small enterprises are unable to operate their business with uncertainty. It reflects in the deliquency in repayment due to decrease in client's income. Due to lockdown, MFIs are not able to conduct regular center meetings with clients to carry out transation so there is delay in loan repayments by the loan borrowers.

During COVID-19 pandemic borrowers manage funds to repay their interest and some of them pay full monthly installment. According to respondent, microfinance instituitons send notice that they have to pay compulsory interest of their loan if they are unable to pay whole installments. Most of the respondents manage from their own business that governnment has allowed them to open morning and in the evening so they collect some funds bye selling their products and also from family supports. They borrow money from their family members. Some of the respondents are using their past saving to repay interest of their loan because it is compulsory to repay at the end of fiscal years. Some of the respondents manage funds other source of income such as house rent, husband's pension funds, family business and remittance from the abroad. Due to lockdown borrower are forced to manage funds compulsory for repayment of loan, their family member helps them to repay interest and monthly installment on time. Some of the respondents borrow additional loan from their friends and their relatives and also from their group members. Borrowers who are engaged on agriculture, they sell vegetables from the field to vendors as well as to final consumers so they earn some funds that help to repay them. And some of the respondents pay 3 months installment by borrowing with family member and friends.

COVID-19 is spreading across the globe and health care providers are urging people not to take it for granted. And this pandemic has brought with unexpected levels of stress, anxiety, and fear for business across the globe. It has affected all types of business and organizations along with microfinance institutions. As per the analysis by the Asian Development Bank, this deadly disease will hit almost every sectors of the Nepalese economy. It affects in number of sectors like tourism, trade and production linkages, supply and health. The people who are working on foreign countries are returning Nepal, they lost their job due to this pandemic, so the remittance of the country is decreasing day by day and the unemployment rate is increasing. It affects the small enterprise also, some of the startup small enterprise going to vanish from the market and some of them are suffering loss due to lockdown so many people are losing their job. These problems ultimately affect in the loan repayment, due to decrease in revenue of the business the loan borrowers are unable to repay monthly

installment in time. In this study, the rate of delay repayment is larger than timely repayment because of COVID-19 pandemic.

Conclusion

Microfinance allows to pursue entrepreneurial projects that generate extra income, thus helping them to better provide for themselves and their families. Microfinance programs uses a variety of models which have shown there is strong repayment records, often higher than conventional borrowers. There are various policies that an organization has to ensure that credit administration is done effectively. One of this policy is a collection policy is collection policy which is needed because all customers do not repay in time and some of the customers are slow payer and some are non-payers. Regulating in collections keeps debts alert and they tend to pay their dues promptly. The current study examines determinant of factors influencing loan repayment of MFI clients in the context of COVID-19 of Lalitpur District Nepal. The study concludes that age of the borrower, educational level of borrowers, types of the business and profit generated business influence the repayment of loan and but family size, skills, age of business, work performance, transparent communication and clarity of MFI policy do not have any impact on repayment of loan.

COVID-19 pandemic has affected all types of business and creates poor cash flow in the market. Borrowers are facing both financial and non-financial problems. This pandemic has affected their business, due to lockdown they source of income has been decreased which causes large number of delayed repayment of monthly installment is decreased in profit due to a decrease in revenue of the business. Borrowers are managing their funds by selling fixed assets, borrowing with family members, remittance and other borrowed from group members to pay a monthly installment. So MFIS in Nepal need to improve their work performance and polices and should not involve in unhealthy competitions to decrease the rate of delay repayment of monthly installments and they should design the policies to uplift their borrower economically during this pandemic. Microfinance institutions must adapt flexible policies and should provide digital facility and also lower the interest rate during this pandemic. Finally, MFIs are suggested to support their clients during this pandemic in the process of business resilience.

Author contributions
Conceptualization: Shrestha; Thapa. *Methodology:* Shrestha; Thapa. *Software:* Shrestha. *Validation:* Shrestha. *Formal Analysis:* Shrestha. *Investigation:* Shrestha. *Data Curation:* Shrestha. *Writing – Original Draft:* Shrestha. *Writing – Review & Editing:* Shrestha; Thapa. *Visualization:* Thapa. *Supervision:* Thapa.
Ethical statement
This research did not require an ethical approval as it does not involve any human or animal experiment.
Data availability statement
Data have been used only for this paper.
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References

Againe, F., & Waari, D. N. (2014, September). Factors Influencing loan repayment in Microfinance Institutions in Kenys. *Journal of Business and Management, 16*(9), 66-72. Retrieved April 2020

Banerjee, A., Duflo, E., Glennerster, R., & Kinnan, C. (2015). The miracle of microfinance? Evidence from a randomized evaluation. *American Economic Journal: Applied Economics, 7*(1), 22-53.

Bayang, S. (2009). Why Microfinance Fails to Meet Enterprise Goals. Retrieved May 212, 2020, from http://www.allgamvian.net/enterprisedetail.com

Berhanu, A., & Fufa, B. (2008, December). Repayment rate of loans from semi-formal financial institutions among small-scale farmers in Ethiopia: Two-limit Tobit analysis. *Journal of Socio-Economics, 37*(6), 2221-2230. doi:10.1016/j.socec.2008.02.003

Bryman, A., & Bell, E. (2015). *Business Research Methods* (4th ed.). Oxford University Press. Retrieved september 2020, from www.oup.com

Conning, J. (1996). *Group lending, moral hazard, and the creation of social collateral.* Center for Institutional Reform and the Informal Sector, University of Maryland at College Park.

Ghatak, M., & Guinnane, T. W. (1999, March 1). The economics of lending with joint liability: theory and practice. *Journal of Development Economics, 60*, 195-228. Retrieved 2020

Giri, S., & Shah, A. K. (2019, July). Factors Influencing Loan Repayment in Microfinance Institutions in Bhaktapur District, Nepal. *Advances in Economics and Business Management, 6*(4), 262-266. Retrieved April 2020

Malik, K., Meki, M., Morduch, J., Ogden, T., Quinn, S., & Said, F. (2020, April 24). COVID-19 and The Future of Microfinance: Evidence and Insights from Pakistan. *Oxford Review of Economy Policy*.

Mbachu, H. I., Nduka, E. C., & Nja, M. E. (2012, April). Designing a Psedudo R-Squared Goodness-of-Fit Measure in Generalized Linear Model. *Journal o Mathematics Research, 4*(2). doi:10.5539/jmr.v4n2p148

Nguta, M. H., & Huka, G. S. (2013, March). Factors Influencing Loan Repayment Default in Micro-Finance Institutions: The Experience of Imenti North District, Kenya. *International Journal of Applied Science and Technology, 3*(3).

NRB. (2013, March 20-22). *Regulation and Supervision of Microfinanace Institutionhs in SAARC Region.* Kathmandu: Nepal Rastra Bank.

Pandey, G. D., & Ojha, S. K. (2020). Covid-19 Effects on Microfinance Institutional (MFIs) Activities With Reference to Nepal. *International Journal on Recent Trends in Business and Tourism (IJRTBT), 4*(4), 4-8.

Pearson, R., & Greef, M. (2006). *Causes of default among housing micro loan clients.* FinMark Trust Rural Housing Loan Fund, National Housing Finance Corporation and Development Bank of Southern Africa, South Africa.

Phillips, R. A., & VanderHoff, J. H. (2004, November 19). The Conditional Probability of Foreclosure: An Empirical Analysis of Conventional Mortgage Loan Defaults. *Real Estate Economics*.

Shrestha, P. K. (2020). *Impact of Covid-19 on Microfinance Institutions of Nepal.* NRB Working Paper No. 51.

Sinha, S., & Dhakal, N. H. (2020, July). A Covid Perspective on Nepal Microfinance. *M-CRIL Advisory Note on the liquidity of MFIs in Nepal*, 1-7.

Solomon, A., & Addisu, B. (2013). Determinants of rural households loan repayment performance, in Oromia National Regional State: The case of Dodata Woreda. *International Journal of Research in Computer Application & Management, 3*(11).

Swamy, H. (2019, August 5). *Analytics Vidhya.* Retrieved from www.medium.com: https://medium.com/analytics-vidhya/insiders-view-on-logistic-regression-and-how-do-we-deploy-regression-model-in-gcp-as-batch-c62a64563210

Warue, B. N. (2012). Factors affecting loan delinquency in microfinance institution in Kenya. *International Journal of Management Science and Business Research, 1*(12), 27-48. Retrieved from http://www.ijmsbr.com