



Determinants of Microfinance Loan Default: An Empirical Investigation in Sri Lanka

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Authors' contributions

This work was carried out in collaboration between both authors. Author DTP designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author EAGS managed the literature searches and the analyses of the study. Both authors read and approved the final manuscript.

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ABSTRACT

The purpose of this research is to explore the factors that influence microfinance loan default in Sri Lanka. Both a deductive and a quantitative approach were employed. A structured questionnaire was designed by 5 Likert-scale. Questionnaires were distributed among 133 microfinance loan borrowers in the region of the Matugama Divisional Secretariat using convenient sampling. SPSS version 22 used to perform the exploratory factor analysis. The findings of this study confirmed three factors useful to explain microfinance loan default in Sri Lanka. These are the actions of the Microfinance Institute to control loan defaulting; the characteristics of the borrowers' family and loan group; and macro-economic issues. The findings of this study could be used by managers of Microfinance Institutes to manage their credit risk and customer portfolio. Certain policy implications such as possibility of granting access to Credit Information Bureau of Sri Lanka, accessing credit history of customers and government decisions directing Microfinance Institutes to request securities from its customers are few of them.

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1. INTRODUCTION

The term “microfinance” refers to the provision of financial services to low income clients, including those who are self-employed [1]. Microfinance became a buzz word among many when Professor Mohammad Yunus popularized the concept through initiating Grameen Banks where they started through offering small loans for Pakistan’s rural poor [2]. Following this footsteps many developing countries started to combine microfinance system in to their financial system through installing “Microfinance Institutions” (MFI) that offers micro loans to the poorest. MFIs were established with the purpose of providing micro loans, savings, business advice and training to Micro and Small Enterprises (MSEs) [3]. These facilities offered by MFIs enable Micro and Small Enterprises (MSEs) to easy access to finance [4].

By 2016 there were 123 million microfinance customers worldwide with India as the leader in terms of microfinance [5]. This microfinance ranking shows a strong impetus in South Asia while Latin America and the Caribbean are also highly active. Being a developing country Sri Lanka also has a huge demand for credit and a potential to succeed by using microfinance concept. Most Sri Lankans often face challenges while applying for a loan through a licensed Financial Institutes such as a commercial Bank. There are many poor people who could not fulfill the requirements put forth by these commercial banks creating a large market share for microfinance. According to Daily fit- [6], there is a credit gap of \$2.5 to \$3.58 billion between licensed financial institutions and potential customer needs for obtaining credit in Sri Lanka.

The ability to collect the microfinance loans efficiently and effectively influences the sustainability of MFIs. When MFI fails to collect its due amounts from its borrowers there are many repercussions to be faced such as inability to disburse more loans in the future, reducing operating profits and undermining liquidity. Therefore, microcredit loan default has now become a common issue to many MFIs operated in Sri Lanka which slow down the growth of microfinance sector and has also has become a serious challenge to sustainability of MFIs.

When loan arrears persist in the financial sector, poverty-related problems can also increase

rather than decrease. Recently, many social and economic challenges experiences occurred in Sri Lanka which confirmed and demonstrated the seriousness of the problem of loan default in the Sri Lankan MF sector. At present microfinance has already been banned in the Northern Province of Sri Lanka as many suicide attempts were reported and domestic violence against female as a result of obtaining microfinance loans. To minimize the opportunities for loan default it would be benefited to many stakeholders to identify reasons for defaulting a microfinance loan. Hence, there is an urgent need to explore the factors affecting microfinance loan defaults in the Sri Lankan context. To identify these factors a quantitative approach is identified as the most suitable as it allows to collect the perceptions from a larger sample. Therefore, this study aims to identify and analyze the factors influencing microfinance loan default in Sri Lanka.

Exploring factors influencing microfinance credit default have much significance. Sri Lanka being a developing country has to face many economic and socio-political problems such as eradicating poverty, gender equality, political instability, corruptions, high debt ratio and climate change [7]. To address these challenges MFIs have been identified as playing a significant role in poverty alleviation, rural development, gender equality (i.e. through women empowerment) and quality education which are considered as key goals of achieving sustainable development. Therefore, a study that focuses on indentifying factors hindering microfinance sector give more benefits to the practitioners as well as policy makers. The findings of this study would help loan policy developers, potential investors, government authorities and other stakeholders in identifying and solving diverse issues surrounding microfinance loan default.

2. LITERATURE REVIEW

2.1 Microfinance

Microfinance is identified as a financial transactions service that offers financial assistance to unemployed or low-income individuals or groups. The two main aims of microfinance [8] are to alleviate poverty and empower women, which are also two major millennium development goals.

To achieve the first objective of alleviating poverty, Professor Yunus started his Grameen Banks with the aim of providing small loans to his country's rural destitute [2]. This process was begun as an experiment in the outskirts of Chittagong University in the village of Jobra, Bangladesh to grant loans to the rural poor without collateral at full-cost interest repayable in regular installments [9]. This method enabled microfinance to improve the living status of the poorest of the poor. In appreciation of this great work in 2006 the Nobel Peace Prize was awarded to both Professor Yunus and the Grameen Bank for their contribution to developing the concept of microfinance. Over the past, microfinance has turned into different business models which enabled the poor to earn an income while enjoying social benefits from its original self-financing model that provides social benefits to the rural poor.

2.2 Sri Lankan MF Context

Sri Lanka has a long history of microfinance. "Cheetu" in Sri Lanka has been operating at least from the beginning of the 20th century. Microfinance is still considered as an informal but effective way of capital accumulation and saving. However, today microfinance functioned is a basic method of offering micro credit to the poor. The microfinance sector in Sri Lanka now covers a wide range of institutions and products that ensure a significant mode of financial inclusion and empowerment especially for the low income and poor sections of society.

Today there are many institutions offering microfinance services, particularly to the poorest households in the country [10]. These institutions include licensed commercial banks, licensed finance companies, co-operative rural banks, thrift and credit co-operatives societies, Divineguma Banks, other community-based organizations, microfinance companies and non-governmental organizations (NGOs). They are mostly monitored through the Central Bank of Sri Lanka, Department of Cooperative Development and the Department of Divineguma Development. There are almost 200 MFIs in the country, of which only 100 have an established country-wide network. Among the MFIs in Sri Lanka there are some impostors pretending to be microfinance companies and charging high interest rates from its customers adding to the distress of borrowers. These MFIs give a negative impression of the Sri Lankan microfinance sector adversely affecting the reputation of the industry.

According to the literature, when MFIs are more interested in financial sustainability their interest in poverty reduction diminishes and hence there is a tradeoff between the outreach to the poor (ability of MF institutes to reach poor remote people) and financial sustainability (ability to cover its operating costs) of the MFI [11]. Therefore, to maintain a sustainable and balanced microfinance sector there is a need to regulate and supervise the MFIs in Sri Lanka. With this intention the Sri Lankan Parliament enacted the Microfinance Act No. 6 of 2016 which came into effect on 15th July, 2016. This Act grants licenses while regulating microfinance businesses of Sri Lanka to allow the MFIs to become licensed microfinance company (LMFCs). Also, to protect the microfinance sector all non-governmental microfinance organizations are required to be registered under Act No. 31 of 1980 (VSSO Act) by the Registrar of Voluntary Social Service Organizations (CBSL).

2.3 Loan Defaults

Loan default occurs when a borrower fails to repay a loan. According to Mensah [12] and Gatimu [13] loan repayment delay refers to a late payment, partial payment or a skipped payment. When repayment is delayed, a loan is treated as a delinquent loan which loan turns into default with the chance of recovering the loan becoming minimal. Delinquency results in increased risk of loss and is a warning about operational problems so that measuring delinquency is a very important element of MFI management.

The reasons for microfinance loan default have been identified differently by different stakeholders (from borrowers to loan officers and MFIs). According Sheila [14], inadequate financial analysis is another cause of microfinance loan default. Addae-Korankye [15] found that factors relating to borrowers are not the main reasons for loan default. Mungure [3] emphasized that apart from the risky borrowers, MFIs are also responsible for customers' loan default. For example, loan officers' lack of expertise and knowledge to assess borrowers could end in a loan default. Hence, loan officers need to be vigilant in order to minimize the risk of loan default by considering other aspects of loan default. On the other hand, high interest rates and delays in loan delivery could significantly increase transaction costs and also adversely affect repayment performance [16]. Loan shortages, disbursement lag, small farm size, high interest rate, age of farmers and poor

supervision have been identified as the major reasons for loan default [17]. The borrower's income level, loan interest rates and loan period are factors leading to loan default. For example, Kohansal [18] showed that the income of farmers in the Kohansan-Razavi province of Iran has a positive effect on loan repayment while loan interest and the number of installments have a negative effect on loan repayment performance.

The literature also indicates that MFIs themselves are responsible for loan default. For example, a study by Waweru [19] in Kenya identified the weaknesses associated with MFIs such as poor management decisions, weak strategies and failure to manage self-help groups (SHGs) as some factors influencing microfinance loan default. Lack of support from a loan group is another reason for loan default. For example, Besley [20] noted that members of a successful group are motivated to repay the loans of group members even if their projects have yielded insufficient profit. The negative effect rises when the entire group defaults even when some members have repaid individual loans.

In addition, macro-economic factors also need to be considered. A study Waweru [19] illustrates how macro economic downturn reduces consumer purchasing power. Therefore, macro-economic factors such as price levels and economic growth are some important factors when assessing the loan repayment capacity of borrowers. Also, the decline in the real Gross Domestic Product (GDP) and depreciation of the foreign exchange rate of a country could directly affect the repayment ability of borrowers [21]. Furthermore, macroeconomic stability and economic growth are associated with diminishing loan default [22]. Accordingly, the goal of achieving minimum loan default to ensure a healthy loan portfolio will ultimately lead to the sustainability of MFIs.

Microfinance institutional factors, borrower's family and loan group's influence and macroeconomic factors have been identified in this study as the three major causes of microfinance loan default.

3. STUDY DESIGN

Most studies of microfinance loan default are based on a qualitative approach. To extend the discussion based on the pre-examined qualitative work, this study used the quantitative approach to identify the factors affecting

microfinance loan default in Sri Lanka with specific reference to the Matugama Divisional Secretariat (DS). The Matugama DS was selected because it is one of the districts that recorded the highest number of microfinance loans in Sri Lanka. Convenience sampling was used to select respondents from the population of microfinance loan borrowers in the geographical region of Matugama DS. Convenience sampling is the one of the main and popular types of non-probability sampling methods and refers to the collection of information from members of the population who are conveniently available to the researcher. Convenience sampling was used in this study for several reasons. It enabled the researcher to easily access the respondents as they were available within the proximity of the researcher, to conduct the survey within a short period of time and at least cost.

At the later stage of data collection the researcher also used the snowball sampling method to access the early respondents and then their references to identify and reach other possible respondents. Finally, a total of 133 respondents participated in this study. They belong to seven (7) Grama Niladari Divisions (GNDs) under the Matugama DS.

3.1 Data Collection

Structured questionnaires consisting of close-ended questions were developed to conform to the objectives of the study. Confidentiality of the respondents was always ensured. Data collected about respondent's family income, size of the family, and educational qualifications and demographic factors were included as suggested in previous studies [23,14,24]. A five-point Likert scale was used to identify microfinance institutional factors, macro-economic factors and factors of microfinance group and family that could impact on microfinance loan default. The language and wording of the questionnaire were aimed to elicit the responses of microfinance loan borrowers. Generally, they have a low level of education level and are poor in English and its idiom. Thus the questionnaire was designed in Sinhala and for analysis all the data and information were translated into English.

3.2 Data Analysis

The data analysis was conducted using SPSS Version 22. In order to analyze and present the data, a descriptive analysis was done. The

internal consistency of the study instruments and instrument subscales was measured using Cronbach's alpha. The factor analysis was done using the principle axis factoring method to ensure construct validity.

4. RESULTS AND DISCUSSION

4.1 Demographic Profile of the Sample

The data was collected from 133 microfinance loan borrowers. The 133 questionnaires did not have any missing value or invalid response. Age-wise, 38.3% of the respondents were more than 45 years old and considered mature. The next highest age category of 31-40 years formed 24.8% of the total respondents while 18-30 years and 31-40 years categories were 19.5% and 17.3% respectively. The majority of microfinance borrowers who participated in the study had five family members including the respondent (30.1%) while the next number of members was four and six representing 22.6% and 21.8% respectively. Those with two family members represented 7.5% while those with eight family members represented 0.8% including the respondent. Education-wise the majority of respondents had completed Grade 9 and formed 51.9% of the total while 40.6% of respondents had qualifications up to GCE (O/L). Only one graduate respondent (0.08%) had obtained MF loans while 6.8% respondents had completed GCE (A/L). In respect of average monthly income as many as 51.5% of respondents belonged to the income range of Rs. 10, 000 – 30,000. The next highest income range was Rs. 30,000 - Rs 50,000 earned by a percentage of 32.3%. Those in the income range of less than Rs. 10, 000 and more than Rs 50, 000 were less than those in other income ranges of 4.5% and 12.0% respectively. The study also focused on borrowers who are members of the microfinance loan group. Most of the microfinance loan groups consisted of five members, that is, 54.5% of the total. Here we identified another two groups consisting of 3 and 4 members respectively who represented 28.6% and 16.5% respectively of the total sample.

4.2 Microfinance Loans

The main focus of this factor was on identifying the actual purpose of borrowing a loan other than the purpose stated in the loan application. Most respondents stated "To repair/build a house" as the reason, accounting for 36.8%. loans", while 21.8% borrowed "to expand their existing

business". The least number (11.3%) of respondents had obtained loans "to start a new business".

Next, the items in this factor focused on identifying the current status of microfinance group's loan repayments and defaults. The majority of respondents (87.2%) had "repaid their loans themselves" while 3% had "repaid their loans through group members" rather than by themselves. There were some cases (9.8%) where "both borrowers and group members repaid their microfinance loans".

4.3 Microfinance Institutional Factors (MFI)

Seven statements in the survey instrument were intended to measure MFI. The KMO value was 0.709 and p-value of the Bartlett's test of Sphericity (Chi-square=221.155, df= 21) was significant ($P < 0.05$). The analysis confirmed that the two-factor solution with a Cronbach's alpha of 0.741 confirmed that these statements were a reliable measure of the MFI construct. The first factor consisted of the statements in the questionnaire MF12, MF14, MF13, and MF15 with MF12 leading [the group with its highest contribution]. The second factor consisted of MF16, MF17 and MF11 where MF16 led with the highest contribution. In summary, 56.82% of the variance of the MFI construct was explained through these seven statements (Table 1).

Overall (Annexure 1), the majority of respondents disagreed with the statement that "the interest rate of the MF institute of their choice is more attractive than that of another institute". However, most of the respondents who had defaulted group loans disagreed with this statement and also the majority of those who hadn't defaulted also disagreed with this statement. Most of the respondents agreed that "the MFI has approved adequate loans", according to the overall result. But most of respondents who had defaulted loans were either neutral or disagreed with this statement. The overall result was mostly dependent on the responses of those who hadn't defaulted since most of them had agreed or strongly agreed with the statement. Among the overall responses most of participants agreed that "the loan was granted at the right time I expected". This was mostly agreed on by respondents who hadn't defaulted before. The majority of respondents who had defaulted disagreed with the statement that the loan was

not granted at the right time they expected. Most respondents highlighted that they were satisfied with *“the procedure that MFI followed to approve loans”*. Interestingly, those who had already defaulted loans were not satisfied with the procedures followed by MFI to approve a loan. The majority of respondents in the sample agreed that *“the MFI had estimated their total debt before approving the loan”*. Remarkably, the results denoted that those who had already defaulted loans were neutral on this statement, whereas the majority of the sample who were non defaulters agreed with this statement which enabled the majority of the respondents to agree with this statement. Overall, the results indicated that the majority disagreed with the statement that *“the MFI suggested a simple and easy installment method”*. Respondents who have defaulted loans before disagreed with this statement while those who hadn't defaulted agreed. Most of the respondents disagreed with the statement *“the MFI had not arranged workshops and training programs after they had granted them a loan”*. Both borrowers who previously defaulted and non defaulters disagreed with this statement.

4.4 Influence of Family (F)

Table 2 shows the results of the factor analysis that includes items relating to the borrower's family and loan group. Four items were identified as measuring the factors of family and the MF loan group. The KMO value was 0.681 and p-value of Bartlett's test of Sphericity (Chi-square=79.987, df= 6) was significant (P< 0.05). Cronbach's alpha of 0.665 also confirmed that they were reliable measures of family influence. Among the four statements measuring this factor, F2 was identified as the most significant item leading to this influence of the family constructs. In summary, these four statements explained 50.31% of the variance of the construct.

According to the overall result (Annexure 1), most of the respondents agreed that *“their total family income was sufficient to settle their remaining total debt”*. However, those who disagreed with this statement were previous loan defaulters while the majority of respondents who hadn't defaulted agreed with the said statement. Most of the respondents agreed and strongly agreed with the statement that *“their family members help to settle their loans”*. The majority of respondents who agreed were loan defaulters while there was not much difference in the

responses of people who hadn't defaulted group loans. The results indicated that the majority of respondents were neutral on *“the support of members of the loan group for them to manage credit”*. The majority of the respondents who had defaulted before disagreed with this statement whereas those who hadn't defaulted before were neutral. This affected the overall result. The results confirmed that the majority of respondents strongly agreed that their *“group members encouraged them to pay their instalments on the due date”*. However, those who had defaulted loans before were neutral on this statement whereas those who hadn't defaulted strongly agreed.

4.5 Macroeconomic Factors (ECO)

This factor is covered in four statements that aim to measure the macroeconomic impact as a reason for loan default. The factor analysis confirmed a one-factor solution with a Cronbach's alpha of 0.580, which is approximately 0.6 (acceptable) and confirming that these statements were reliable measures of ECO. The KMO value was 0.557 and p-value of Bartlett's test of Sphericity (Chi-square=74.3995, df= 6) was significant (P< 0.05). In summary, these four statements explained 45.95% of the variance of ECO (Table 3).

Annexure 1 shows that most of the respondents agreed that *“the inflation effect on our economy adversely affects ability to repay their loan”*. The majority of the respondents who had defaulted loans strongly agreed with the above statement while most of the respondents who hadn't defaulted loans also agreed or strongly agreed with it. Most of the respondents' attitude to *“the effect of depreciation of foreign exchange rate on their ability to repay loans”* was neutral. Most of the respondents who had defaulted loans agreed that depreciation of the foreign exchange rate adversely affected to their repayment ability whereas many non- defaulters were neutral on the statement. Most respondents strongly agreed that *“frequent weather changes and natural disasters adversely affect their ability to repay”*. Both previous loan defaulters and non-defaulters strongly agreed with this statement. The results confirmed that the respondents were either neutral or agreed on *“the political instability of the country and village level, adversely affecting their ability to repay”*. Among them, most loan defaulters agreed with this statement while the majority of non-defaulters were neutral.

Table 1. Explanatory factor analysis for MFI

Item label	Statement	Factor loading		Cronbach's alpha	% variance
		Component			
		1	2		
MF12	MF Institute has approved adequate advances /loans.	0.851			
MF14	I am satisfied with the procedures that MF institute followed to approve the loan.	0.767		0.741	56.82
MF13	The loan was granted at the right time I expected.	0.761			
MF15	When I applied for the loan, MF institute estimated my total debt.	0.436			
MF16	MF institute suggested to me a simple and easy instalment payment method.		0.820		
MF17	MF institute arranged workshops, technical instructions and financial knowledge, after they granted me a loan.		0.697		
MF11	The interest rate of MF Institute of my choice is more attractive than that of other institutes.		0.648		

Table 2. Explanatory factor analysis for influence of family

Item label	Statement	Factor loading	Cronbach's alpha	% variance
F2	My family members help me to settle the loans.	0.808	0.665	50.31
F1	I think, my total family income is sufficient to settle future total debt.	0.751		
F4	My group members encourage me to pay the loan installments on the due date.	0.668		
F3	Members of the loan group support me to manage the credit.	0.590		

Table 3. Explanatory factor analysis for ECO

Item label	Statement	Factor loading	Cronbach's alpha	% variance
ECO2	Depreciation of the rupee against the USD, have adversely affected the ability to repay my loan.	0.871	0.580	45.95
ECO1	Inflation adversely affected my ability to repay my loan.	0.753		
ECO4	Political instability of the country and village level, adversely affected my ability to repay my loan.	0.668		
ECO3	Frequent weather changes and natural disasters adversely affected my ability to repay my loan.	0.419		

5. CONCLUSIONS

The main objective of this study was to identify and analyze the factors influencing microfinance loan default in Sri Lanka. The data analysis confirmed the two-factor solution to the construct of MFI. These two factors were named as "Loan granting procedure" and "Customer services offered by MFI". The second factor aims to measure the influence of the borrower's family and loan group which was loaded into a single factor solution. The third factor that aims to measure the impact of macroeconomic variables on borrowers' loan default was loaded into a single factor. In conducting the factor analysis none of the statements were removed from the whole data set as each statement in the three constructs was statistically supported to remain.

5.1 Microfinance Institutional Factors (MFI)

Factor analysis confirmed that the MFI2 statement makes the highest contribution. This statement looks at the loan size approved by the MFI according to the borrower's perspective. Balogun [16] stated that loan shortfall or inadequate loan size could highly influence borrowers to default loan repayment. The results of this study are in line with the findings of Balogun [16] which confirmed that most of the respondents had defaulted their loans mainly due to their MFI offering a loan which is inadequate in size. The results confirmed that loan size is not a concern for those non-defaulters compared to previous loan defaulters. This leads the loan defaulters to seek and obtain new loans irrespective of the amount of the loan. This customer behavior is considered risky as it adversely affects the repayment capacity of the borrowers.

The results indicate that those who have previously defaulted loans were not satisfied with MFI's procedures followed in applying for a loan. Establishing a proper loan approval procedure would help MFIs to mitigate the risk of any future loan defaults. The perceptions of the non-loan defaulters were positive about their MFIs as they help to manage their loan portfolios and the repayment basis.

Delays in loan delivery have a significant impact on the loan repayment ability of borrowers [16]. The study confirmed that MF loans were granted at the right time the borrowers expected. However, those who had defaulted before were

dissatisfied with the speed of granting the loan through MFI. It seems that these risky borrowers were those who applied for a loan when they needed money urgently. Most of these borrowers are risky and have businesses which are not well-planned or cannot forecast income generation. On the other hand, MFIs need to spend sufficient time to screen the customer before granting a loan because of the possible negative impact on the profitability of MFIs. Similarly, too much delay in granting a loan could also cause borrowers to default repaying their existing loans as they look for other sources of costly financing methods.

The literature suggests that MFIs' concern for proper financial analysis of its customers can control the possibility of loan default by its customers [16]. The results of this study confirmed that both defaulting and non-defaulting borrowers agree on estimating their total debt to the MFI before granting a loan. Therefore, all the parties could benefit through a thorough analysis of the financial risk of the borrowers.

The literature also observed that the number of loan installments or the duration of the loan has a negative impact on the repayment capacity of borrowers [18]. The statement used to measure this aspect in this study aimed at looking how borrowers perceive the instalment methods suggested by the MFI. Most respondents confirmed that they were not happy with the number of installment suggested by their MFI. In line with the findings of Kohansal [17], who also indicated that the number of instalments had a negative effect on repayment, the respondents in this study also think their repayment schedules suggested by the MFI restrict their on-time repayment capacity. As a practice microfinance officers personally visit and collect weekly and bi-weekly instalments from its borrowers in order to minimize default risk. But it does seem to be an easy task for borrowers to repay their loans provided the MFI is ready to negotiate the best repayment plan taking customer preferences into consideration.

MFIs keen on supervising borrower's funds could minimize the risk of loan default in the future [17]. This study highlights the importance of developing sound financial literacy among MF borrowers. This could be done through training sessions on fund management. Without providing this financial knowledge, MFI cannot expect their borrowers to repay their loans on time. Therefore, to minimize loan default risk it is

advisable for MFIs to conduct training sessions, workshops and other supportive programmes from time to time to enable borrowers to effectively manage their loan funds.

Okpugie [25] and Vandel [26] noted that high interest rates charged by most MFIs were a major reason for loan default. Due to the urgency of obtaining funds most microfinance borrowers do not compare interest rates across MFIs. However, this study showed that most borrowers were dissatisfied with the interest rates and agreed that the interest rate charged by their MFI is not attractive. Borrowers feel they are paying above market average interest rates. Ultimately, charging high interest rate negatively impacts on customer satisfaction as well while adversely affecting the loan repayment capacity of the borrowers. This may also lead to non-performing loans that severely affect the loan portfolio of MFIs.

5.2 Family Influence

The respondents in this study perceive their family support as helping them to settle loans on time. Without the support and help of family members, borrowers cannot repay their loans on time. Therefore, MFIs can avoid the problem of loan delinquency by taking action to enhance the borrower's family cohesiveness. The results of this study are an encouragement for MFIs to recognize family values and further develop family support in various ways.

Family income has a considerable impact on loan repayment performance. Kohansal [18] observed that the income of farmers has a positive effect on their loan repayment. This study also confirms that the total family income level of the borrower which is sufficient to settle outstanding loans has an impact on the loan default of borrowers. MFIs therefore consider total family income generation and capacity when granting loans to mitigate any risk of default.

By today almost all microfinance loans are disbursed among borrowers based on the group loaning mechanism as collateral. This aspect of a group's collectiveness to repay the instalments on the due date was included to measure this construct. The results indicated that members agree that group members encouraging each other to repay their loans would help them to settle the instalments on time. It seems that members' cohesiveness encourages on time repayment of loan instalments [20].

The advice and guidance of other group members to manage funds is considered an important dimension that ensure on time repayment of loans [20]. As a practice most members interact with each other until they obtain loans whereas afterwards they do not discuss how to manage their loans. With the intention of understanding how group encourage loan repayment this item was included in this factor. The results confirmed that group member support is an important item to explain loan default of microfinance borrowers. It seems that strong support and guidance from other group members significantly affect loan repayment as well as repayment of dues on time. Therefore, healthy interaction among group members is vital to minimize the risk of default.

5.3 Macroeconomic Factors

In today's globalised market the depreciation of the foreign exchange rate directly affects the loan repayment ability of borrowers [21]. In view of the impact of foreign exchange fluctuations on the repayment capacity of microfinance borrowers, this study included this macroeconomic item to explain loan default behaviour of borrowers. This statement looked at how the depreciation of exchange rate impacts on loan repayment. The neutral responses to this item showed that most borrowers were unaware of the foreign exchange rate and its impact on their loan repayment. However, among those who previously defaulted on their loans perceive adverse foreign exchange rate depreciation as an impact on their repayment capacity.

Inflations rates in Sri Lanka increase on a daily basis threatening the standard of living of the people, especially those who are most vulnerable in low and middle level income families. Rising inflation affect the poorest of the poor the most with their purchasing power declining. This affects heavily their loan repayment capacity. This aspect was included in this factor in order to understand the impact of inflation on the repayment capacity of microfinance borrowers. As Waweru [19] explains, inflation reduces the purchasing power of borrowers with a negative impact on their loan repayment capacity.

When the macro-economic performance is strong in a country it minimizes the loan default opportunity of borrowers [22]. This aspect of the economic and political stability of a country as a factor to explain loan default of microfinance borrowers "*Political instability of the country and*

village level, adversely affecting to the ability of my loan repayment" was included to the questionnaire under macro-economic construct. However, the results of this study confirmed that the political instability of the country and instabilities at the village level are useful items to explain loan default. However, based on the perceptions of the respondents this item has not much of an impact on loan default. It seems to be that the repayment capacity of the borrowers does not depend on the political instability surrounding borrowers.

Frequent weather changes and natural disasters are common in Sri Lanka. Considering the importance of climate change and its impact, this study included it as an item to explain the loan default of borrowers. The results of this study confirmed that frequent weather changes and natural disasters are an important reason for loan default of microfinance borrowers. It seems that most of the respondents have some experience of weather changes and natural disasters that have hindered their loan repayments.

6. LIMITATIONS AND FUTURE RESEARCH

There are certain limitations that need to be noted in this study. A paper-based questionnaire fails to gather qualitative information such as inner feelings and perceptions of respondents about the hidden reasons behind loan default with MFIs in Sri Lanka. Therefore, future researchers could use qualitative methods to confirm the findings of this study. Also, future researchers could use longitudinal research to understand the changes in borrowers' perceptions and behaviours and MFIs' perceptions over time.

Data was collected from microfinance borrowers only in the Matugama region. Responses from other stakeholders such as MFI managers, executives, family members of loan borrowers and group members can help to understand the true picture of microfinance loan defaults. Hence, future researchers could consider collecting data from a diverse pool of respondents for better results and for developing a model that explains factors influencing microfinance loan default in Sri Lanka.

At present, microfinance is regarded as a mature field and loan default as an emerging issue for discussion. The field of microfinance and many issues surrounding have been well explored

through qualitative research methods. The quantitative model developed in this study could be used to further explore this issue in future especially by using a much larger sample. This study has tested and proposed three variables that influence loan defaults especially in a developing country context. Hence, the findings of this study could be further examined to understand the microfinance loan default problem in other emerging economies.

7. RECOMMENDATIONS

It would be important for managers of MFIs to understand the causes of microfinance loan default. Hence, examining borrower's perceptions gives more insights for the MFI management in their decision making. According to the findings and results of the study, there are many borrowers who have already defaulted loans but managed to obtain new loans from different institutes outside existing MFIs. For this reason it is recommended that MFIs and their loan officers follow a proper customer appraisal procedure before granting a loan. MFIs should design a comprehensive and effective lending policies and procedures which are regularly reviewed by their management.

The results of this study point to the importance of searching for new customer bases rather than offering loans to existing customers because it helps MFIs to control their credit risk. Most experienced microfinance borrowers are not uncomfortable or serious about defaulting loans as they are sure that their group members may repay on their behalf in a situation of arrears.

Self-motivated and educated groups help to control the loan default risk among borrowers. Therefore, MFIs should take necessary action to guide, supervise and review borrowers as well as their groups through training and workshops to enhance their financial literacy. Ignorance forces borrowers to obtain more loans to refinance their defaulted loans thus trapping them in a vicious circle. The results of this study confirmed that most of microfinance borrowers obtain loans for other purpose such as settling other loans and daily consumption purposes which means their repayment capacity is already at risk. Therefore, MFIs should ensure that loans are granted to those engaged in income generating activities. Careful screening procedures should be implemented before granting the loan.

There are many policy implication of this study. It pinpoints several key issues for the government

sector to consider in its policies. Governing bodies and policy makers should give urgent attention to minimizing the risk of loan default in the microfinance sector. MFIs operating in Sri Lanka face challenges while on the other hand borrowers face mental health issues through facing the stress of repaying loans on the due dates. Many stakeholders still blame the Sri Lankan government for not giving proper attention to this issue. The government should therefore endeavor to ensure the sustainability of the microfinance sector through formulating strong policies that create a favourable environment for MFIs to operate.

Regulatory authorities such as the Central Bank of Sri Lanka should take immediate actions to control all the MFIs in order to create a favorable business environment within the country. Especially a mechanism to determine a favourable and fair interest rate should be designed and workshops conducted for MFIs on credit management. Also, policy makers and regulatory officials should prepare standards and minimum requirements for granting microfinance loans for a second time borrower. At present, there are no such rules or a system in place to control this behaviour either among MFIs or customers.

The intention of many microfinance borrowers who have already defaulted on repayments is to obtain loans at any time at any cost from anywhere. Lack of coordination between MFIs through accessing information about customers has led to this kind of customer behavior. Hence, this study suggests that the government and other regulatory bodies such as the Central Bank permit the MFIs to consult the Credit Information Bureau of Sri Lanka to understand the credit history of the borrowers. Access to this system would enable these MFIs to reject the loan applications of high risk customers.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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ANNEXURE 1

Table 1. Summary of mean and SD for each of the statement in the questionnaire

Item label	Micro finance institutional factors	Mean	Std. Deviation
MF11	The Interest rate of the MF institute of my choice is attractive than the other institute	2.92	1.271
MF12	MF Institute has approved adequate advance/ loan	3.51	1.132
MF13	The loan was granted at the right time I was expecting	3.55	1.055
MF14	I am satisfied with the procedures that MF institute followed to approve the loan	3.23	1.193
MF15	When I was applying the loan, MF institute estimated my total debt	3.57	.932
MF16	MF institute suggested to me a simple and easy installment payment method	3.19	1.194
MF17	MF institute arranged workshops, technical instructions and financial knowledge, after they granted me a loan	1.89	.987
Average		3.12	1.109
F1	I think, my total family income is sufficient to settle future total debt.	3.55	1.177
F2	My family members help me to settle the loans.	3.70	1.161
F3	Members of the loan group support me to manage the credit.	2.92	1.122
F4	My group members encourage me to pay the loan installments on the due date.	4.05	.960
Average		3.56	1.105
ECO1	Inflation is adversely affecting the ability to repay my loan.	3.96	1.157
ECO2	Depreciation of the rupee against the USD, have adversely affected to the ability of my loan repayment	3.11	.994
ECO3	Frequent weather changes and natural disasters adversely affect my ability to repay my loan.	4.02	.961
ECO4	Political instability of the country and village level, adversely affecting to the ability of my loan repayment	2.88	1.181
Average		3.49	1.073

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