

CREDIT VULNERABILITIES OF MICROFINANCE INSTITUTIONS AND LOW-INCOME BORROWERS IN OCCIDENTAL MINDORO, PHILIPPINES: A PROPOSED MULTISECTORAL ASSISTANCE PLAN

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ABSTRACT

*Microfinance institutions in the Philippines are crucial in supporting low-income households with small businesses. However, credit defaults pose a challenge to both microfinance institutions and borrowers, hindering sustainable financial progress. To address this, a study used the Credit Risk Management Mechanism Model to investigate credit vulnerabilities and proposed a multisectoral assistance plan. The study utilized the descriptive-comparative research design and was conducted in Occidental Mindoro, Philippines, and collected data from 32 microfinance institutions and 242 low-income borrowers using complete enumeration and stratified random sampling. Socio-demographic profiles and data for the assistance plan were gathered using frequency and percentage distribution. Credit vulnerabilities were measured using weighted arithmetic mean and standard deviation, and the disparity was analyzed using independent samples *t*-test and one-way analysis of variance. The findings showed a notable difference in credit vulnerabilities between microfinance institutions and borrowers. To bridge this gap, microfinance institutions should invest in comprehensive training programs for staff and loan officers, improving credit assessment processes, risk identification, and tailored financial products. Collaboration with experts, consultants, and continuous monitoring is vital. Low-income borrowers should utilize financial literacy and education programs provided by microfinance institutions and other organizations. These programs must be accessible, culturally sensitive, and customized. Effective development and delivery require collaboration between microfinance institutions, community organizations, non-governmental organizations, and government agencies. Microfinance institutions should actively promote these programs for widespread awareness among low-income individuals.*

Keywords: level of credit vulnerabilities, microfinance institutions, low-income borrowers, credit risk, proposed multisectoral assistance plan

INTRODUCTION

In the realm of poverty alleviation and economic empowerment, microfinance emerges as a vital instrument, encompassing a diverse array of financial services tailored for the economically disadvantaged. Microfinance is the

term used to describe a wide range of financial services provided to the poor (i.e., those who have a monthly income of less than ₱10,957; Albert et al., 2018) and low-income households (i.e., those who have a monthly income between ₱9,520 and ₱21,194; Albert et al., 2018). These services are typically aimed at supporting small businesses and microenterprises, helping them increase their income levels and improve their standard of living

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(Nogueira et al., 2020). The services offered include deposits, payment services, loans, insurance, and money transfers (Kipruto, 2020).

The economically engaged and business-minded poor constitute the largest segment of microfinance clients (Veesar et al., 2020). This includes individuals such as farmers, rural craftsmen, home-based business owners, and those working in the unorganized sector. By providing them with efficient access to a range of financial products and services, these individuals can sustain and enhance their standard of living (Olubukola Otekunrin et al., 2022).

The Philippines is home to a significant number of low-income households engaged in microbusinesses (Ballesteros et al., 2020). One of the common challenges faced by these micro-business owners is the lack of access to banking services (Babatude et al., 2020; Bisht & Singh, 2020). In order for these microenterprises to grow and expand, the support of microfinance institutions is crucial. Therefore, the Philippines needs to prioritize and address this issue, considering the significant role that microenterprises play in the country's economy.

Moreover, microfinance institutions in the Philippines have provided low-income households with financial services for many years. Evidently, microfinance institutions have become crucial in various emerging countries because they give the poor, such as small-scale farmers, fishers, and microentrepreneurs, access to loans and improve their lives by fostering entrepreneurship (Hussen et al., 2021). Furthermore, it is an effective technique for reducing poverty by assisting the underprivileged in increasing their income, regulating their consumption, accumulating assets, and lowering their vulnerability to unforeseen events and economic disturbances (Cai et al., 2020).

In Occidental Mindoro, there are 37 microfinance institutions currently providing financial services. Specifically, 16 are operated by the private sector (rural banks), 15 are operated by non-governmental organizations, and 6 are operated by cooperatives. Furthermore, a few local commercial banks have converted a portion of their business to microfinance. This indicates that there

is sufficient evidence to support the unprecedented growth of the industry.

Despite the recent expansion, microfinance institutions still face difficulties due to credit defaults (Kasoga & Tegambwage, 2021). Credit default refers to the failure of a borrower to repay a debt by the due date. Currently, individual organizations have experimented with employing group equity as collateral to guarantee the cycling of funds for the benefit of other individuals who are group members. However, for the majority of microfinance institutions, credit defaults have remained a substantial problem. This is supported by the study of Sangwan et al. (2020), which explains that a significant proportion of loans already default, posing a major challenge for microfinance institutions.

The problem of credit default among microfinance institutions has been explored in several public lectures and forums as one of the reasons why commercial banks have not shown much interest in funding micro, small, and medium-sized enterprises (Esubalew & Raghurama, 2020). Due to the unforeseen negative effects on financing micro, small, and medium-sized enterprises, high credit default rates should be a top priority for policymakers in developing nations. Credit default is a problem that microfinance institutions across the Philippines, especially in the province of Occidental Mindoro, must deal with.

In an attempt to prevent the increase in the number of credit defaults of microfinance clientele, the primary aim of this study was to determine the level of credit vulnerabilities of microfinance institutions and low-income borrowers in Occidental Mindoro, Philippines. Since this study only focused on microcredits, other microfinance services like deposits, payment services, insurance, and money transfers were no longer included in this study.

Lowering credit default rates is crucial for the growth and advancement of microfinance institutions toward operational and financial viability. Poor management practices, loan diversion, and reluctance to repay loans have been identified as the main causes of default (Nandini & Shubha, 2021). High credit default rates in credit programs for the poor are often attributed to inadequate market infrastructure, low company

income, and clients misallocating loan funds to consumption-related activities (Puliyakot, 2020). Consequently, microfinance institutions need to implement a variety of institutional techniques aimed at reducing the risk of credit default (Araujo et al., 2022). However, the majority of microfinance institutions continue to face significant challenges due to credit default.

Therefore, examining whether there are differences in the level of credit vulnerabilities between microfinance institutions and low-income borrowers in Occidental Mindoro, Philippines can help in developing specific interventions and techniques aimed at reducing the risk of credit default.

Naturally, numerous studies have been conducted to understand the causes and control of credit defaults (Çallı & Coskun, 2021; Goel & Rastogi, 2021). However, there is still a scarcity of studies that specifically compare the level of credit vulnerabilities of microfinance institutions and low-income borrowers.

Furthermore, the level of credit vulnerabilities has not been included as a variable in any of the available studies on microfinance institutions and low-income borrowers. Existing research has primarily focused on issues related to financial performance and legal consequences. There is also a lack of empirical evidence regarding the level of credit vulnerabilities among low-income borrowers. The literature mainly provides information on the percentage of payment defaults and the resulting consequences.

Moreover, it appears that no study has been conducted on the level of credit vulnerabilities of microfinance institutions and low-income borrowers in Occidental Mindoro, Philippines.

To fill the gaps, this study, for the first time, investigated the level of credit vulnerabilities of microfinance institutions and low-income borrowers in Occidental Mindoro, Philippines. The aim was to mitigate the increase in the number of credit defaults by proposing a multisectoral assistance plan.

OBJECTIVES OF THE STUDY

Generally, this study was conducted to investigate the level of credit vulnerabilities of

microfinance institutions and low-income borrowers in Occidental Mindoro, Philippines, to prevent the increase in the number of credit defaults by proposing a multisectoral assistance plan.

Specifically, this study had the following objectives:

1. To determine the socio-demographic profile of the respondents in terms of:
 - A. Microfinance Institutions
 - 1.1 Business Location; and
 - 1.2 Gross Loan Portfolio.
 - B. Low-income Borrowers
 - 1.1 Occupation;
 - 1.2 Other Sources of Income;
 - 1.3 Household Size;
 - 1.4 Total Monthly Household Income; and
 - 1.5 Total Amount of Loan Payable.
2. To identify the level of credit vulnerabilities of the microfinance institution-respondents and the low-income borrower-respondents in terms of:
 - 2.1 Incentive Mechanism for Group Lending;
 - 2.2 Dynamic Incentives;
 - 2.3 Collateral Substitutes; and
 - 2.4 Regular Repayment Schedule
3. To test if there is a difference in the level of credit vulnerabilities of the microfinance institution respondents and the low-income borrower respondents when each of them is grouped according to their socio-demographic profile.
4. To test if the assessments of the microfinance institution respondents and the low-income borrower-respondents in the level of credit vulnerabilities differ.
5. To propose a multisectoral assistance plan based on the assessments of the level of credit vulnerabilities of the microfinance institution respondents and the low-income borrower-respondents.

METHODOLOGY

The study employed a descriptive-comparative research design to systematically



characterize the socio-demographic profiles and level of credit vulnerabilities, as well as identify differences between microfinance institutions and low-income borrowers in Occidental Mindoro, Philippines. Data were collected from 32 microfinance institutions and 242 low-income borrowers using complete enumeration and stratified random sampling.

To gather data, a researcher-constructed survey questionnaire was utilized. The overall internal consistency of the instrument was found to be excellent at 94.7%. Specific components, such as collateral substitutes (93.0%) and incentive mechanisms for group lending (90.7%), also demonstrated excellent internal consistency. However, dynamic incentives (89.9%) and regular repayment schedules (89.1%) were rated as having good internal consistency.

After meticulously developing and validating the questionnaire, it was administered to two distinct groups of participants: 32 microfinance institutions and 242 low-income borrowers. Ethical considerations were taken into account to protect the rights and well-being of the respondents. To protect the privacy and confidentiality of research information, the study adhered to strict data protection protocols. All research data were stored securely, with access restricted to authorized personnel only. The personal information of respondents was de-identified to ensure anonymity and only aggregate data were reported in the study.

The retrieval of all questionnaires was promptly carried out within the same day, strictly adhering to safety protocols established by the Inter-Agency Task Force for the Management of Emerging Infectious Diseases. The researcher prioritized the well-being and health of the respondents by following safety guidelines, including physical distancing, facemask usage, and sanitization, to minimize potential risks associated with the ongoing pandemic.

For the analysis of data, socio-demographic profiles and data for the multisectoral assistance plan were gathered using frequency and percentage distribution. Credit vulnerabilities were measured using weighted arithmetic mean and standard deviation, while disparity was

analyzed using independent samples t-test and one-way analysis of variance.

RESULTS AND DISCUSSION

1. Socio-demographic Profile of the Respondents

Table 1
Socio-demographic profile of microfinance institutions and low-income borrowers in Occidental Mindoro, Philippines

Socio-demographic Profile	Frequency	Percentage
Microfinance Institutions		
Business Location		
Urban Area	12	37.50
Rural Area	20	62.50
Total	32	100.00
Gross Loan Portfolio		
₱150,000-₱6,124,999	8	25.00
₱6,125,000-₱12,099,999	7	21.88
₱12,100,000-₱18,074,999	11	34.38
₱18,075,000-₱24,049,999	6	18.75
Total	32	100.00
Low-income Borrowers		
Occupation		
Fisherman	35	14.46
Vendor	35	14.46
Sari-sari Store Owner	31	12.81
Employee/Businessman/Professional	27	11.16
Farmer	36	14.88
Washerwoman	44	18.18
Housewife	34	14.05
Total	242	100.00
Other Sources of Income		
Buy and sell/Sari-sari Store	61	25.21
Farming/Farm Laborer/Fishing	39	16.12
Business Owner/Manager	43	17.77
Salary from Relatives	48	19.83
None	51	21.07
Total	242	100.00
Household Size		
3-4 members	71	29.34
5-6 members	41	16.94
7-8 members	44	18.18
9-10 members	44	18.18
11-12 members	42	17.38
Total	242	100.00
Total Monthly Household Income		
₱9,520-₱10,816	26	10.74
₱10,817-₱12,113	23	9.50
₱12,114-₱13,410	34	14.05
₱13,411-₱14,707	31	12.81
₱14,708-₱16,004	25	10.33
₱16,005-₱17,301	30	12.40
₱17,302-₱18,598	22	9.09
₱18,599-₱19,895	21	8.68
₱19,896-₱21,194	30	12.40
Total	242	100.00
Total Amount of Loan Payable		
₱1,000-₱45,332	30	12.40
₱45,333-₱89,665	27	11.16
₱89,666-₱133,998	23	9.50
₱133,999-₱178,331	27	11.16
₱178,332-₱222,664	28	11.57
₱222,665-₱266,997	20	8.26
₱266,998-₱311,330	31	12.81
₱311,331-₱355,663	25	10.33
₱355,665-₱400,000	31	12.81
Total	242	100.00

Table 1 presents the socio-demographic profile of microfinance institutions and low-income borrowers in Occidental Mindoro, Philippines. The findings indicate that a significant majority of these institutions, amounting to 62.50%, are strategically located in rural areas, whereas the remaining



37.50% are positioned in urban areas. Moreover, the largest proportion of microfinance institutions, accounting for 34.38%, have a gross loan portfolio falling within the range of ₱12,100,000-₱18,074,999.

Regarding the occupational distribution among low-income borrowers, washerwomen represent the largest proportion at 18.18%. Additionally, 25.21% of low-income borrowers engage in buying and selling or operate sari-sari stores. Furthermore, the majority of low-income borrowers, constituting 29.34%, have 3-4 members in their households. In terms of total monthly household income, 14.05% of low-income borrowers fall within the range of ₱12,114 to ₱13,410. Moreover, the data reveals that 12.81% of these borrowers have loans payable within the range of ₱266,998-₱311,330 and ₱355,665-₱400,000, while only 8.26% have loans amounting to ₱222,665-₱266,997.

The findings presented in the study shed light on the socio-demographic profile of microfinance institutions and low-income borrowers in Occidental Mindoro, Philippines. The results indicate that a significant majority of microfinance institutions are strategically located in rural areas, while the rest are positioned in urban areas. This distribution highlights the importance of microfinance in providing financial services to underserved rural communities, where access to formal financial institutions is often limited (Smith, 2020).

Furthermore, the study reveals that a substantial proportion of microfinance institutions have a gross loan portfolio falling within a specific range. This finding suggests that there is diversity in the scale of operations among microfinance institutions, with some catering to smaller loan sizes while others serving larger financial needs. This variation in loan portfolio size could be attributed to the differing demands and economic activities prevalent in the region (Gutierrez et al., 2021).

The occupational distribution among low-income borrowers reveals interesting insights into the economic activities pursued by this segment of the population. Washerwomen and individuals engaged in buying and selling, such as operating sari-sari stores, represent significant proportions of

low-income borrowers. This highlights the importance of microfinance in supporting income-generating activities in the informal sector, where individuals often lack access to traditional credit sources (Lopez & Serrano, 2020).

The study also explores the household characteristics of low-income borrowers, indicating that a majority of them have small household sizes of 3-4 members. This finding aligns with previous research highlighting the prevalence of small-scale businesses and entrepreneurial activities among households in developing countries (Santos & Rocha, 2019). Understanding household size is crucial for designing appropriate financial products and services that meet the specific needs and capacities of low-income borrowers.

2. Level of Credit Vulnerabilities of Microfinance Institutions and Low-income Borrowers

Table 2
Level of Credit Vulnerabilities of Microfinance Institutions and Low-income Borrowers

Level of Credit Vulnerabilities	Microfinance Institutions		Low-income Borrowers	
	Mean	SD	Mean	SD
1. Incentive Mechanism for Group Lending	2.49	0.38	2.98	0.29
2. Dynamic Incentives	2.49	0.36	2.99	0.31
3. Collateral Substitutes	2.56	0.49	3.10	0.41
4. Regular Repayment Schedule	2.50	0.40	3.02	0.34
Grand Mean	2.51	0.19	3.02	0.75

The findings presented in Table 2 emphasize the significant credit vulnerabilities observed among microfinance institutions and low-income borrowers. Based on the data, microfinance institutions displayed an average credit vulnerability score of 2.51, accompanied by a standard deviation of 0.19. These figures indicate a notable level of vulnerability within their credit portfolios. Moreover, low-income borrowers exhibited an even higher mean credit vulnerability score of 3.02, along with a larger standard deviation of 0.75, signifying a broader range of vulnerability levels among them.

The level of credit vulnerabilities among both microfinance institutions and low-income borrowers is a significant concern identified in the study. Microfinance institutions exhibit a notable level of vulnerability within their credit portfolios, as



indicated by the average credit vulnerability score. This vulnerability could be attributed to various factors, including economic conditions, repayment capacity, and risk management practices within microfinance institutions (Zhuang et al., 2022).

Low-income borrowers, on the other hand, display an even higher mean credit vulnerability score, suggesting a broader range of vulnerability levels among them. This finding underscores the challenges faced by low-income borrowers in managing and repaying their loans, potentially due to factors such as irregular income streams, limited financial literacy, and inadequate social safety nets (Hulme & Arun, 2018).

3. Difference in the Level of Credit Vulnerabilities of Microfinance Institutions and Low-income Borrowers

3.1. Level of credit vulnerabilities of microfinance institutions

Table 3
Difference in the level of credit vulnerabilities of microfinance institutions when they are grouped according to their socio-demographic profile

Level of Credit Vulnerabilities	Socio-demographic Profile of Microfinance Institutions	t-value	F-value	p-value
	Business Location	2.107		P = 0.050 = 0.05
	Gross Loan Portfolio		3.872	P = 0.020 < 0.05

According to Table 3, the level of credit vulnerabilities in microfinance institutions seems to differ based on their location, whether urban or rural (P = 0.050 = 0.05). Additionally, the analysis indicates significant variations in credit vulnerabilities among microfinance institutions, particularly in relation to the gross loan portfolio (P = 0.020 < 0.05).

The study further examines the differences in credit vulnerabilities based on various factors. For microfinance institutions, the location (urban or rural) and the gross loan portfolio size significantly influence their credit vulnerabilities. These findings highlight the need for tailored risk management strategies and support mechanisms for microfinance institutions operating in different settings and with varying loan portfolios (Kundu et al., 2021).

3.2. Level of credit vulnerabilities of low-income

Based on the findings from Table 4, it is evident that there is a significant difference in the level of credit vulnerabilities among low-income borrowers based on their occupation (P = 0.038 < 0.05).

Table 4
Difference in the level of credit vulnerabilities of low-income borrowers when they are grouped according to their socio-demographic profile

Level of Credit Vulnerabilities	Socio-demographic Profile of Low-income Borrowers	F-value	p-value
	Occupation	2.273	P = 0.038 < 0.05
	Other Sources of Income	2.506	P = 0.043 < 0.05
	Household Size	2.447	P = 0.047 < 0.05
	Total Monthly Household Income	2.756	P = 0.006 < 0.05
	Total Amount of Loan Payable	2.246	P = 0.025 < 0.05

Moreover, the study delves deeper into the disparities in assessments by considering various factors related to the incentive mechanisms for group lending, dynamic incentives, collateral substitutes, and regular repayment schedules. Additionally, statistical tests conducted for each of these factors also yielded significant differences (P = 0.000 < 0.05).

The disparities in credit vulnerability assessments between microfinance institutions and low-income borrowers are notable. Microfinance institutions may employ specific incentive mechanisms for group lending, dynamic incentives, collateral substitutes, and regular repayment schedules to manage credit risks (Sarma, 2018). However, the study highlights significant differences in assessments across these factors, indicating the need for further research and interventions to align the perspectives of microfinance institutions and borrowers.

4. Difference in the Assessments of Microfinance Institutions and Low-income Borrowers

The analysis of Table 5 reveals a significant difference in the assessments of credit vulnerabilities between microfinance institutions



and low-income borrowers ($P = 0.000 < 0.05$). Moreover, the study delves deeper into the disparities in assessments by considering various factors related to the incentive mechanisms for group lending, dynamic incentives, collateral substitutes, and regular repayment schedules. Additionally, statistical tests conducted for each of these factors also yielded significant differences ($P = 0.000 < 0.05$).

Table 5
Difference in the level of credit vulnerabilities between microfinance institutions and low-income borrowers

	Respondents	Mean	SD	t-value	p-value
Level of Credit Vulnerabilities	Microfinance Institutions	2.51	0.19	-16.581	P = 0.000 < 0.05
	Low-income Borrowers	3.02	0.16		

The disparities in credit vulnerability assessments between microfinance institutions and low-income borrowers are notable. Microfinance institutions may employ specific incentive mechanisms for group lending, dynamic incentives, collateral substitutes, and regular repayment schedules to manage credit risks (Sarma, 2018). However, the study highlights significant differences in assessments across these factors, indicating the need for further research and interventions to align the perspectives of microfinance institutions and borrowers.

5. Proposed Multisectoral Assistance Plan

To address the challenges faced by microfinance institutions and low-income borrowers in Occidental Mindoro, a proposed multisectoral assistance plan is presented. The involvement of non-governmental organizations, the government, and the business community is crucial in enhancing the performance and sustainability of microfinance institutions while empowering low-income borrowers. Collaborative efforts can support capacity-building initiatives, financial education programs, and policy reforms to create an enabling environment for inclusive financial services (Gutierrez et al., 2021; Santos & Rocha, 2019).

The findings and proposed multisectoral assistance plan discussed in this study contribute

to the understanding of microfinance institutions and low-income borrowers in Occidental Mindoro, Philippines. The socio-demographic profile of these institutions and borrowers, along with their credit vulnerabilities, highlight the need for targeted interventions that address the unique needs and challenges faced by each group. By leveraging the strengths and resources of various stakeholders, sustainable and inclusive financial solutions can be developed to improve the livelihoods and economic well-being of low-income individuals and communities.

CONCLUSIONS

The findings of this study provide valuable insights into the socio-demographic profile of microfinance institutions and low-income borrowers in Occidental Mindoro, Philippines. The results highlight the strategic distribution of microfinance institutions, with a majority located in rural areas, emphasizing their role in providing financial services to underserved communities. The study also reveals the diversity in the scale of operations among microfinance institutions, catering to varying loan sizes based on the region's economic activities. Additionally, it sheds light on the occupational distribution among low-income borrowers, underscoring the importance of microfinance in supporting income-generating activities in the informal sector. The study identifies credit vulnerabilities as a significant concern for both microfinance institutions and borrowers, emphasizing the need for tailored risk management strategies and support mechanisms. The proposed multisectoral assistance plan suggests the involvement of various stakeholders to enhance the performance of microfinance institutions while empowering low-income borrowers through capacity-building, financial education, and policy reforms. While this study provides valuable insights into microfinance institutions and low-income borrowers in Occidental Mindoro, there are several limitations to consider. First, the study's findings are based on a specific geographic region and may not be fully representative of the entire Philippines or other countries. Therefore, caution should be exercised when generalizing the results. Second, the study

relies on self-reported data, which may be subject to recall bias or inaccuracies. Future research could consider using a combination of self-reported data and objective measures to enhance data reliability. Third, the study focuses on the socio-demographic profile and credit vulnerabilities of microfinance institutions and borrowers but does not delve into the specific impact of microfinance on poverty alleviation or other socio-economic outcomes. Further research is needed to explore the long-term effects of microfinance interventions on the well-being of low-income individuals and communities. Despite these limitations, this study contributes to the existing literature and provides valuable insights for practitioners, policymakers, and researchers working in the field of microfinance and financial inclusion.

RECOMMENDATIONS

Based on the findings of this study, several recommendations can be made to address the challenges faced by microfinance institutions and low-income borrowers in Occidental Mindoro, Philippines. First, microfinance institutions should develop tailored risk management strategies that consider the specific needs and capacities of borrowers in different settings. This could involve strengthening credit assessment procedures, implementing dynamic incentives, and providing collateral substitutes to mitigate credit risks. Second, financial literacy programs should be designed and implemented to enhance the financial knowledge and skills of low-income borrowers, enabling them to manage their loans effectively and improve their repayment capacity. Third, policymakers and regulators should collaborate with microfinance institutions and other stakeholders to create an enabling environment for inclusive financial services. This could involve implementing supportive policies, facilitating access to capital, and promoting responsible lending practices. Lastly, the involvement of non-governmental organizations, the government, and the business community is crucial in providing multisectoral support, including capacity-building initiatives, funding opportunities, and advocacy for inclusive finance.

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