

Assessment of Credit Default in Microfinance Institutions in Zambia: A Case Study of Finca Zambia

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Abstract Loan default rates remain high for microfinance institutions (MFIs) globally, and Zambian MFIs are no exception. This study examined the causes of credit default in Zambian microfinance institutions and assessed measures that could be used to control it, using FINCA Zambia as a case study. A purposive sample of forty small and medium enterprise (SME) clients of FINCA Zambia drawn from four Lusaka branches was studied using questionnaires and interview guides, and the resulting data were analysed using a logistic regression model. The findings show that age, education level, high interest rates, lack of supervision on loan utilisation and diversion of loan funds significantly influenced loan default. Borrower age was positively and significantly associated with default at the 5% level. Relative to secondary education, having no formal education or only primary education increased the likelihood of default at the 5% level, while tertiary education reduced it at the 10% level. High interest rates increased default at the 10% level, lack of supervision on loan utilisation increased default at the 5% level, and diversion of loan funds increased default at the 10% level. The study further found that provision of suitable loans, flexible repayment terms, lower interest rates, training of clients, and timely loan disbursement were the measures most likely to reduce loan default. The study recommends that MFIs strengthen supervision of borrowers, apply stricter loan-screening criteria, expand client training, monitor the use of disbursed funds, and that policymakers consider measures to moderate lending interest rates.

Keywords: Microfinance institutions, loan default, credit risk, small and medium enterprises, logistic regression, FINCA Zambia

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1. Introduction

Microfinance institutions (MFIs) form an essential part of the financial systems of many nations and are widely used as a tool for reducing poverty. There are over 7,000 MFIs serving more than 25 million clients worldwide [1]. Microfinance has evolved into an industry providing loans, transfers, deposits and micro-insurance, and is recognised as an effective channel for poverty-alleviation programmes [2]. MFIs provide banking and credit facilities to disadvantaged individuals and small-scale entrepreneurs who would otherwise lack access to formal financial services [3].

Despite this role, the failure of many MFIs to grow has been attributed to delinquency and credit default. Loan default is the failure of a borrower to meet a credit obligation when it falls due [4]. High default rates constrain the operations of MFIs by reducing credit income and the gross loan portfolio, thereby limiting growth, profitability and the provision of further loans to other borrowers [5]. The Sub-Saharan Africa region records the highest portfolio-at-risk (PAR 30)

internationally, exceeding 5%, raising concern about the sustainability of the regional MFI sector.

In Zambia, as of December 2018 there were about 34 licensed MFIs, comprising 9 deposit-taking and 25 non-deposit-taking institutions [6]. Non-performing loans in the Zambian banking sector averaged 12.4%, above the prudential threshold of 10% of risk-weighted capital [6]. FINCA Zambia, established in 2001 and licensed as a deposit-taking institution in 2012, became the largest MFI in Zambia by clients and gross loan portfolio in 2013. Despite this growth, FINCA Zambia continues to face elevated default rates, with non-performing loans standing at 3-4% of its total loan book. This study therefore examines the causes of credit default in Zambian MFIs and the measures that can be used to control it, using FINCA Zambia as a case study.

It is also worth noting that in Zambia MFIs are divided into two subcategories which consist of deposit and non-deposit taking. Both of these subcategories are licensed by the central bank operate under strict scrutiny. As part of the requirement, they undergo ongoing compliance supervision, which pay attention to capital adequacy requirements, Anti Money laundering checks, terrorist financing checks, governance rules and other regulatory checks.

The general objective of the study was to investigate the causes of credit default in microfinance institutions in Zambia and suggest possible solutions. The specific objectives were to assess the causes of credit default at FINCA Zambia, and to suggest measures that can be put in place to control credit default at FINCA Zambia. The study focused on SME clients of the four FINCA branches in Lusaka over the period 2015-2017, as these branches have the largest client base and provide good representation of the institution's operations.

2. Literature Review

Loan default refers to the failure of a debtor to fulfil a loan obligation as and when it is due [4]. It occurs when a borrower fails to make required payments or breaches the terms of a loan, whether through unwillingness or inability to pay [7]. A borrower is generally classified as a defaulter once three or more instalments are missed within a 24-month period [8].

Small and medium enterprises (SMEs) are defined in Zambia according to total fixed investment, sales turnover, number of employees and legal status. SMEs are important drivers of economic development through job creation, expansion of the tax base and improved incomes for low earners [9]. Microfinance refers to the provision of micro-credit, micro-savings and micro-insurance to poor people to expand their financial choices and reduce poverty [10].

2.1. Causes of Loan Default in Microfinance Institutions

Studies attribute loan default to a range of factors including borrower sex, age, education level, marital status, multiple borrowing, diversion of loan funds, high interest rates, inadequate training, lack of supervision and business failure [11].

2.1.1. Gender

Evidence on the relationship between gender and default is mixed. One study found male clients defaulted more than female clients (5.9% versus 2.9%) [12], attributing this to women being more risk-averse and to men diverting loan funds toward consumption expenditures such as school fees and utility bills [13]. Conversely, other studies found that women have a better repayment history than men [14].

2.1.2. Age

Findings on age are also mixed. Some studies found that older borrowers default less than younger borrowers [15], while others found the opposite, arguing that as borrowers age their capacity to work and engage in productive investment declines, reducing their ability to service loans [16].

2.1.3. Level of Education

Education is consistently found to be an important determinant of default, with lower education levels associated with a higher likelihood of default [17].

Borrowers with limited education are thought to lack the managerial skills needed to generate sufficient returns to service loans, whereas more educated borrowers can manage their businesses more effectively and repay on schedule [18].

2.1.4. Marital Status

Married borrowers have generally been found to have a lower risk of default than unmarried borrowers, as spouses can provide financial support that helps cover loan repayments without compromising other household needs [19].

2.1.5. Multiple Borrowing

A strong positive relationship has been found between holding multiple loans from different sources and the probability of default, as servicing several loans strains a borrower's resources [20]. One study found over-indebtedness from multiple borrowing to be a primary cause of default among microfinance clients [21].

2.1.6. Diversion of Funds

Diversion of loan funds away from their intended purpose increases the likelihood of default [22]. When funds meant for income-generating activities are used for other purposes, the borrower's motivation and ability to repay are compromised, sometimes resulting in losses to the lender's projected cash flows [23].

2.1.7. High Interest Rates

High interest rates increase the cost of borrowing and place heavy demands on borrowers, raising the probability of default [24]. In one study, interest rates ranging from 40% to 60% were found to be a dominant cause of default, cited by 23.4% of respondents [25].

2.1.8. Lack of Training

Insufficient training of clients on loan utilisation and basic business management before and after disbursement has been associated with higher default rates, as untrained clients may lack the skills needed to generate adequate returns [26].

2.1.9. Lack of Loan Monitoring

Lack of supervision of borrowers on how loans are utilised is a leading cause of default [27]. Inadequate monitoring resources, such as vehicles for field visits, have been found to be a significant contributing factor in some institutions [28].

2.1.10. Business Failure

Business failure is among the most common causes of default, since a borrower whose business fails has no source of funds to repay the loan, resulting in losses to both borrower and lender [29].

2.2. Measures to Control Loan Default

Loan default has been identified as the single biggest risk to the cost-effectiveness and sustainability of MFIs worldwide [30]. Recommended mechanisms for

controlling default include rigorous loan appraisal using historical and projected financial information, development of internal credit-rating capabilities supplemented by external credit reference bureau data, careful supervision of loan reimbursement with prompt action when clients default, and early recognition of default signals [31]. Group lending has also been found to improve repayment performance through peer monitoring and social pressure, although findings on its effectiveness are not universal [32].

2.3. Theoretical Framework

2.3.1. Agency Theory

Agency theory examines how economic actors form contractual agreements based on asymmetric information [33]. In this study, the MFI represents the principal and the borrower the agent. Information asymmetry between the MFI and the borrower regarding socioeconomic characteristics, business knowledge, experience and reputation can lead to loan defaults, through either moral hazard or adverse selection.

2.3.2. Signaling Theory

Signaling theory holds that one party (the agent) conveys information about itself to another party (the principal). In the lending context, MFIs as principals must interpret signals sent by prospective borrowers regarding their likely use of funds and repayment intentions, under conditions of significant informational asymmetry that increase risk in the absence of collateral.

2.4. Conceptual Framework

Based on the literature reviewed, high interest rates, lack of supervision of borrowers, diversion of loan funds, lack of training of borrowers, multiple loans and business failure are conceptualised as independent variables, while loan default is the dependent variable that is influenced by these factors.

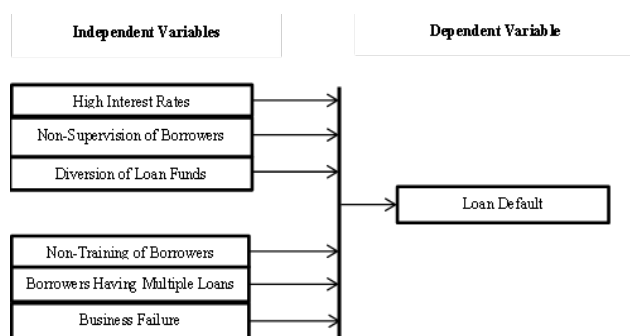


Figure 1. Conceptual framework of factors influencing loan default

3. Research Methodology

This study adopted a descriptive survey design combining qualitative and quantitative approaches. The population of interest comprised SME clients of FINCA Zambia operating in Lusaka. A convenient sample of 40 SMEs was selected through random sampling from clients

of the four FINCA branches in Lusaka over the period 2015-2017. Primary data were collected using semi-structured questionnaires and telephone interviews, while secondary data were obtained from FINCA Zambia records.

3.1. Model Specification

A customer was categorised as a defaulter if loan repayment was delayed by more than 30 days, and a non-defaulter otherwise. Given this binary outcome, a logistic regression model was used. The logit model is appropriate when the dependent variable is dichotomous and the explanatory variables comprise a mixture of continuous and categorical variables. The model was specified as:

$$Z = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + e_i \quad (1)$$

where Z is loan default (1 = defaulter, 0 = non-defaulter), α is the constant, β_1 - β_{10} are regression coefficients, and X_1 - X_{10} represent borrower's sex, age, education level, supervision on loan utilisation, supervision on loan repayment, multiple loans, training, business failure, diversion of funds and high interest rates respectively, with e_i the error term.

3.2. Description of Variables

The dependent variable equals 1 if the borrower defaulted and 0 otherwise. Sex is a binary variable (1 = male, 0 = female) expected to relate positively with default. Age is measured in years and expected to relate positively with default. Education is a categorical variable (no education, primary, secondary as reference, tertiary), with lower education expected to increase the likelihood of default. Marital status is a binary variable (1 = married, 0 = unmarried) expected to relate negatively with default. Supervision on loan utilisation and supervision on loan repayment are binary variables (1 = supervised, 0 = not supervised) expected to relate negatively with default. Multiple loans is a binary variable (1 = has multiple loans, 0 = otherwise) expected to relate positively with default. Training is a binary variable (1 = received training, 0 = otherwise) expected to relate negatively with default. Business failure is a binary variable (1 = business failed, 0 = otherwise) expected to relate positively with default. Diversion of funds is a binary variable (1 = funds diverted, 0 = otherwise) expected to relate positively with default. High interest rate is a binary variable based on whether the respondent perceived high interest rates as a cause of default (1 = yes, 0 = no), expected to relate positively with default.

3.3. Data Analysis

Data collected from the field were cleaned, coded and analysed using Stata version 14. Quantitative data were analysed using the logistic regression model described above, while qualitative responses from open-ended questions were analysed descriptively.

3.4. Ethical Considerations

Ethical considerations were addressed following

established guidelines [35]. Informed consent was obtained from all participants prior to data collection, participants were assured of the privacy of the data obtained, and respondents were informed of the aims and objectives of the study before primary data collection commenced.

4. Results and Discussion

4.1. Demographic Characteristics of Respondents

Of the 40 respondents, 24 (60%) were male and 16 (40%) were female. In terms of age, 8 (20%) were aged 18-34 years, 23 (57.5%) were aged 35-54 years, and 9 (22.5%) were aged 55 years and above. Regarding

education, 8 (20%) had no formal education, 11 (27.5%) had primary education, 12 (30%) had secondary education, and 9 (22.5%) had tertiary education. Married respondents accounted for 29 (72.5%), while 11 (27.5%) were unmarried. The full distribution of demographic and other survey responses is presented in Table 1.

Other survey responses indicated that 26 respondents (65%) agreed that high interest rates contributed to default while 14 (35%) disagreed. Twenty respondents (50%) held multiple loans from different institutions. Business failure was reported by 23 respondents (57.5%). Only 17 (42.5%) of borrowers had been supervised on loan utilisation and 14 (35%) on loan repayment. Borrowers who had received training stood at 19 (47.5%), while 22 (55%) had diverted part or all of their loan funds to unintended uses.

Table 1. Demographics and Other Responses of the Respondents

Variable	Frequency	Percentage (%)
Sex		
Male	24	60.0
Female	16	40.0
Age		
18-34	8	20.0
35-54	23	57.5
55 and above	9	22.5
Educational level		
Non-formal education	8	20.0
Primary education	11	27.5
Secondary education	12	30.0
Tertiary education	9	22.5
Marital status		
Married	29	72.5
Not married	11	27.5
High interest rate (perceived cause)		
Agreed	26	65.0
Disagreed	14	35.0
Multiple loans		
With multiple loans	20	50.0
No multiple loans	20	50.0
Business failure		
Failing businesses	23	57.5
Otherwise	17	42.5
Supervision on loan utilisation		
Supervised	17	42.5
Not supervised	23	57.5
Supervision on loan repayment		
Supervised	14	35.0
Not supervised	26	65.0
Training of borrowers		
Trained	19	47.5

Variable	Frequency	Percentage (%)
Not trained	21	52.5
Diversion of funds		
Diverted	22	55.0
Never diverted	18	45.0

Source: Primary data collected from survey and FINCA Zambia (2018)

4.2. Classification of Default and Non-Default Borrowers

Of the 40 sampled borrowers, 22 (55%) were classified as defaulters, having not repaid their loans by the agreed date, while 18 (45%) were non-defaulters, as shown in Table 2.

Table 2. Classification of Borrowers Based on Default Status

Category	Frequency	Percentage (%)
Non-default	18	45.0
Default	22	55.0
Total	40	100.0

Source: Primary data collected from survey and FINCA Zambia (2018)

4.3. Determinants of Loan Default

A logistic regression model was fitted with 13 variables, of which 9 were statistically significant: age, education level (three dummy categories), high interest rates, business failure, supervision on loan utilisation, training, and diversion of funds. The results are presented in Table 3.

Table 3. Results of the Logit Model

Variable	Coefficient	Std. Error	Marginal Effect
Age	.2243**	.1007	.0224
Gender	1.5072	1.3442	.1451
Marital status	-.2109	1.4318	-.0210
No education	10.5143**	4.6456	.4427
Primary education	9.7431**	3.9993	.5100
Tertiary education	-6.3879*	3.3472	-.3023
High interest rate	5.6520*	3.1358	.4319
Multiple loans	-.0504	1.3314	-.0050
Business failure	5.9130**	2.9948	.3904
Supervision (utilisation)	-7.9646**	3.8470	-.4081
Supervision (repayment)	-.8243	1.9483	-.0791
Training	-3.4966*	2.0616	-.2906
Diversion of funds	4.1300*	2.4462	.3302
Constant	-21.2127**	9.4549	-

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Pseudo $R^2 = 0.5488$; Prob > Chi² = 0.0044; Log likelihood = -12.4204.

Source: Primary data and FINCA Zambia (2018)

Age was positively and significantly associated with default at the 5% level; a one-year increase in age was associated with a 2.2% increase in the probability of default, consistent with the view that the capacity for productive investment declines with age [16]. Education level was significant: relative to secondary education, having no formal education and primary education

increased the probability of default by 44% and 51% respectively (both significant at 5%), while tertiary education reduced the probability of default by 30% (significant at 10%), consistent with prior findings [17,18]. Sex and marital status were not statistically significant, though sex carried the expected positive sign and marital status the expected negative sign.

High interest rates were positively and significantly related to default at the 10% level; a 1 percentage point increase in interest rate was associated with a 43% increase in the probability of default, consistent with findings that high interest rates impose heavy repayment burdens on borrowers [24,25]. Supervision on loan utilisation was negatively and significantly related to default at the 5% level, reducing the probability of default by 41%, consistent with the view that monitoring reduces diversion of funds and reinforces repayment discipline [27]. Supervision on loan repayment was not statistically significant, although it carried the expected negative sign.

Diversion of funds was positively and significantly related to default at the 10% level, increasing the probability of default by 33%, consistent with prior findings that diverting funds away from income-generating activities undermines repayment capacity [22,23]. Training of borrowers before loan disbursement was negatively and significantly related to default at the 10% level, reducing the probability of default by 29%, consistent with the view that training equips clients with the skills needed to utilise loan funds productively [26]. Business failure was positively and significantly related to default at the 5% level, increasing the probability of default by 39%, consistent with prior findings that business failure leaves borrowers without a source of repayment [29]. Multiple loans were found to be statistically insignificant, with an unexpected negative sign, suggesting this factor is overshadowed by other determinants in this sample.

4.4. Measures to Control Loan Default

Respondents identified several measures that could reduce loan default at FINCA Zambia. Provision of suitable loans and flexible repayment terms were each cited by 15 respondents (37.5%), lower interest rates by 5 (12.5%), training by 3 (7.5%), and timely loan disbursement by 2 (5%), as shown in Table 4.

Provision of suitable loans, determined through proper appraisal of clients' needs, was viewed as critical, since inappropriate loan sizes increase the risk of default [31]. Flexible repayment terms were seen as enabling SMEs to adjust repayment in line with business performance, reducing pressure during periods of poor trading. Lower interest rates were recommended because high rates increase repayment costs and the probability of default [24]. Timely disbursement was considered important

because delays misalign loan receipt with planned business activities, while continuous training in financial management, proper use of funds and repayment was viewed as essential, particularly for clients with limited financial literacy [28].

Table 4. Measures to Reduce Loan Default

Measure	Frequency	Percentage (%)
Provision of suitable loans	15	37.5
Flexible payment terms	15	37.5
Low interest rates	5	12.5
Training	3	7.5
Timely loan disbursement	2	5.0
Total	40	100.0

Source: Primary data collected from survey

5. Conclusions and Recommendations

This study examined the causes of credit default in microfinance institutions in Zambia, using FINCA Zambia as a case study. The findings show that age, lack of formal or only primary education, high interest rates, lack of supervision on loan utilisation, diversion of loan funds, lack of training and business failure are significant determinants of loan default, while tertiary education reduces the likelihood of default. Sex, marital status, multiple borrowing and supervision on loan repayment were not significant in this sample. With regard to control measures, provision of suitable loans and flexible repayment terms were identified as the most important measures, followed by lower interest rates, training, and timely loan disbursement.

Based on these findings, the study recommends that MFI staff conduct frequent supervision visits to borrowers' business premises to verify utilisation of loan funds and assess repayment capacity. MFIs should adopt stricter loan-screening criteria, such as requiring a minimum operating history before lending, to reduce exposure to business failure. Regular training programmes on loan utilisation, business management, bookkeeping and savings should be provided to both clients and MFI staff, to improve clients' repayment capacity and equip staff with modern monitoring techniques. MFIs should monitor the use of disbursed funds, including periodic checks of account statements and physical visits, to reduce diversion of funds. Finally, the Bank of Zambia and the Government should consider policies to moderate lending interest rates, and MFIs should review their interest rate structures where feasible.

Future research could investigate borrowers' perceptions of MFI policies and procedures across multiple institutions, to inform broader policy restructuring aimed at improving repayment and reducing default. A comparative study across heterogeneous financial institutions, including commercial banks, would also be useful in assessing the broader impact of credit default beyond the microfinance sector.

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