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Implications of Credit Risk on the Growth Sustainability of Microfinance Institutions in Buea Municipality in Cameroon from 2008 – 2015

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Abstract This study aimed at investigating the extent at which strategic credit risk management can leads to sustainable growth of microfinance institutions in the Buea municipality of South West Region of Cameroon was studied from two perspectives: profit and outreach. This signifies the dual objectives of microfinance institutions (MFIs) of improving the social status of the poor and maximizing returns from asset liability management. A restricted probability clustered random sampling of Ten MFIs of different categories in Buea municipality was used for the survey. Secondary data were collected from Fako Camccul chapter report from 2008 to 2015.The effect of default, risk coverage and credit policy culture on performance and growth of MFIs was measured by profit and breadth outreach respectively. The relationship between variables was measured by linear correlation and a multiple regression model of two equations tested at 5% level of significant was employed. The result was validated by a Hausmann test of endogeneity. The result indicate that that profit had a direct relation with credit policy but an inverse relation with default and risk coverage, while outreach showed a positive effect of investigative variables on outreach, but only credit culture was significant at 1% level of significant. It was therefore concluded that credit risk was a big handicap to the sustainable growth of MFIs in both profit and breadth of outreach. As a result proactive strategies like strong management information system, effective internal control and redesigning of suitable customers' oriented products were recommended.

Keywords: *microfinance, financial inaccessibility, joint liability, outreach, credit risk, credit policy culture*

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1. Introduction

According to [1] the priority of all enterprises both bank and non-bank focuses solely on profit maximisation and little or nothing is done about satisfying the welfare needs of the lower income brackets. As a result it is reasonable for conventional banks and/or formal financial institutions to exclude the poor from their target customers. [2] pointed out that there are at least three main reasons to do so: poor people lack credit history which banks will use as primary data for lending, the poor cannot pledge any collateral, especially land, to compensate in case of default and lastly, monitoring the loans provided to poor people is costly since most of them deals with small amounts of money making it cumbersome for banks to gather adequate information about them, especially their credit worthiness

According to World Bank statistics [3] in 2013, 10.7 percent of the world's population lived on less than US$1.90 a day, compared to 12.4 percent in 2012 down from 35 percent in 1990. The same report explained that half of the extreme poor live in Sub-Saharan Africa. The number of poor in this region fell only by 4 million with 389 million people living on less than US$1.90 a day in 2013, more than all the other regions combined. A vast majority of the global poor live in rural areas and are poorly educated, mostly employed in the agricultural sector, and over half are under 18 years of age. Financial inaccessibility by the poor is becoming a fundamental problem especially in sub-Saharan Africa couple with an ever increasing worlds' population. [4] found out that access to financial credit in Cameroon have been limited and is mostly through informal or semi-formal financial institution like Microfinance institutions. The problem of financial sustainability of these microfinance institutions (MFIs) becomes acute because of the vulnerability of their clients, considered as poor. As a result the fundamental business of lending has brought instability and stress to individual MFIs and the entire banking system; it is therefore imperative that MFIs should put in place adequate systems for credit assessment and evaluating the risks associated therewith. As MFIs move into a new high powered world of financial operations and trading, with new risks and more difficulty in assessing asymmetric information, there is a need for sophisticated and versatile instruments for risk assessment, monitoring, and controlling risk exposures in a more scientific manner. Credit risk remains the most important risk to manage till date. [5]

Microfinance customers constitutes sub-prime markets and can be described as constituting the greater part of the population pyramid and are characterized by little or no financial means, poor credit history, low incomes, unreliable borrowers, subsistence activities and high possibility of going bankrupt. According to [6], financial service delivery has witnessed a significant change the world over in the 21st century as compared to the 19th century, especially following the deregulation of their operations. As a result they have diversified into new areas such as microcredit, estate agency, women related activities and unsecured lending. The development of a healthy national financial system is an important goal and catalyst for the broader goal of national economic development. [7] stressed that countries with very many small and medium-sized enterprises prefer retail banking services although with an increased operating cost.

However this assertion confirms the fact that banked-liked institutions like microfinance institutions (MFIs) render better services in countries with high rates of small and medium sized enterprises that serve the needs of the vulnerable population. Contrary to this view, [8] argued that countries with a higher share of industries, with small firms relative to industries with large firms have a higher relative cost of market finance because they have a relatively high population of vulnerable customers for their products. As such they are exposed to more financing frictions than those with large firms. Although much progress has been made in serving this population, the problem has not been completely solved, and the overwhelming majority of people who earn less than $2 a day, especially in the rural areas, [9]. Most poor people find it difficult to mobilize resources to develop their business enterprises and provide their immediate needs which included feeding, housing, school fees and medical care. Accessible financial services could enable the poor to leverage their initiative and creativity, accelerating the process of building incomes, assets and economic security

The Cameroon banking sector, inclusive of MFIs, witnessed some growth which could be measured through increase in profit, outreach, and customers. This growth was not sustained as they started to experience some crisis characterized by instability. The result could be seen with so many banks and MFIs going bankrupt and Ministry of finance closing down about 82 MFIs between 2014 and 2015, The number of MFIs dropped from 645 in 2011 to 418 in 2015 [10]. The failure or poor performance of these financial institutions could be traced to the poor handling of financial services and high vulnerability to shocks like credit risk and capital inadequacy. This study intends to find answers to the following research questions: To what extent does strategic credit risk management sustains the growth of micro-finance institutions and ease financial accessibility by the poor in Cameroon? What are the main causes of delinquency and default in MFIs in Cameroon? Is there a relationship between outstanding loans and the profit of the institutions?

However, given the aforementioned, the paper is set out to identify and examine the impact of credit risk management strategies on the growth sustainability of microfinance institutions in facilitating financial accessibility in the Buea municipality and Cameroon in general. Specifically this paper wants to investigate; The effect of default and risk coverage on profit in microfinance institutions within Buea municipality, identify the causes of loan delinquency and default in MFIs, and it also seek to assess the effect of credit culture on delinquency and default of MFIs.

2. Literature Review

The goal of any business in general and financial intermediation of Microfinance in particular is to realize sustainable growth and value creation with time [11]. In the same vein [3] argue that an effective banking system is seen in its rate of growth and goes further to stress that sustainable growth is characterized by considerable depth measured by total asset, its breadth in terms of customer base, lending to a wide range of sectors and regions, broader product range and efficiency. That is why future cash flows from an investment are so important in quantifying an investment return especially in the present money value. It is notice that it is a big problem achieving this golden goal because of embedded risk factors surrounding the venture. Moreover, [12] spelt out that there is an increase in global competition among financial institutions amidst threats; he further adds that increased pressure from shareholders of these institutions for higher returns has resulted in looking for better ways to manage these threats. This is done by restructuring from either inside or outside. As a result it could be seen that any financial institution's economic performance and value depends on the quality of the services and the efficiency of its risk management. Also improved access to financial services can have an effect on increased income, consumption, and asset accumulation of both MFIs and their customers.

Furthermore according to [13] growth is the increased efficiency, profitability, and sustainability expected from an increase in size and operation limits. He cites the growth example of the Bancosol in Bolivia. BancoSol shows outstanding success in terms of breadth, depth, and quality of outreach and in terms of sustainability. It is the microfinance organization with the largest number of clients in Latin America and it reaches poor clients who could never expect to gain access to conventional financial institutions.

On his own part, [14] adds that, growth has at least some positive implications for microfinance organizations.

Firstly, growth is the main mechanism for improvement of one of the key criteria for success in microfinance which is outreach. Increasing numbers of clients improve the organization's breadth and depth of outreach. The poor constitute the bulk of the population in developing countries especially sub-Saharan Africa and Cameroon in particular. Generally the poor are characterize by uncreditworthy firms and households who are potential clients but who do not have access to financial services [15]. Microfinance organizations therefore are their answer and should seek opportunities for sustainable growth. [14] goes further to stresses that outreach represents the provision of a wide array of financial services to large numbers of the poor. 15] adds that the depth which is the getting to the very poor is also outreach. [16] in the same vein concludes that the ability to provide

quality financial services to large numbers of people, especially the very poor is an indicator of an institution's social mission i.e to scale up and provide services to as many people as possible. To buttress all of the above [17] identify six dimension of outreach; Worth of outreach which signifies when the value clients places on products and services; the cost of outreach which is the sum of price - costs and transaction costs to clients; the scope of outreach which is the number of types of products and services offered to clients; the length of outreach signifying the time frame of the supply of products and services; depth of outreach which is the value that society attaches to a net gain of a given client and finally breadth of outreach which is the the number of clients reached.

According to [17] each of the six dimensions of outreach was developed to capture a different dimension of net social return. To him he considers net social return as consisting of two components: net customer benefit and net social benefit. Net customer benefit is the private benefit customers derive from the consumption of financial services.

Secondly, growth is an important mechanism for sustainability. Sustainability, in contrast to outreach, requires operating at a level of profitability that allows sustained service delivery without dependence on subsidized inputs [16]. This represents the institution's commercial strategy. Growth in the form of the addition of new and better products such as deposit facilities helps the intermediary satisfy more of the demands for financial services from existing and potential clienteles. This improves the quality of outreach, and enhances the image of the microfinance. Sustainability is important in as much as future and not only present outreach matters because it underpins perceptions of permanency of the microfinance organization, sustainability generates compatible incentives for all those with an interest in its survival, such as clients, managers, and staff[13]. Sustainable growth is a signal both to the intermediary's potential borrowers (microclients) and potential lenders (banks and donors). This means that the image of sustainability acquired by MFIs serves both to attract loanable funds from banks for additional growth and to increase the borrowers' willingness to repay loans.

However, in gaining confidence and attracting funding, [6] cited that in March 2007, private-equity giant Sequoia Capital invested $11.5 million in SKS Microfinance, the fastest growing MFI in India. As a true indication of its commercial viability, SKS listed its shares on the Indian stock exchange during 2010. To date, there have been several successful initial public offerings by pure microfinance institutions, including: Bank Rakyat Indonesia (Indonesia) in 2003, Equity Bank Limited (Kenya) in 2006, and Banco Compartamos (Mexico) in 2007. Sustainability according to [18] is measured as the sum of Coverage of financial expenses, Loan Loss, operating Expenses and Capitalization for growth. However, institutional sustainability is the key to successful provision of financial services to the poor and financial self-sufficiency is a necessary condition for institutional sustainability. 19] argued for the need of building sustainable financial systems for the poor from three perspectives: financial sector development, enterprise formation and growth, and poverty reduction.

Thirdly, growth of assets can help reduce average operating costs. When fixed costs are significant, and if microfinance organizations can take advantage of economies of scale, lower costs as a result of larger size can help increase both outreach and sustainability. Moreover, growth in the form of new products may generate economies of scale that may also lower costs and improve profits. This cost reduction according to [20] is through reduction of interest rates. The more loans are granted at low costs, the faster and higher the returns and though relatively small it will go to reduce operating cost. Summarily microfinance growth can be measured from, reduce average operation costs (profitability), sustainability and outreach.

Managing growth is the process of balancing the objectives of outreach and sustainability; that is, balancing the social mission and the commercial strategy. Pertinent indicators in measuring the above factors are many and varied and include monthly portfolio loan outstanding especially increase in real terms, annual flow of loan disbursed which is considered as an indicator of intensity in lending, rapid expansion in the number of clients with active loans, increase number of new borrowers, increase voluntary deposit facilities to clients indicated by the number of outstanding passbook accounts, [21].

According to [22] on banking supervision the goal of credit risk management is to maximize a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. It goes further to stress that bank-liked financial institutions should have a keen awareness of the need to identify, measure, monitor and control credit risk as well as to determine that they hold adequate capital against these risks and that they are adequately compensated for risks incurred. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organization, [12]. In order to keep credit risk under acceptable limits, an MFI must have clarity on its business environment. According to [22] the board of directors should have responsibility for approving and periodically reviewing the credit risk strategy and significant credit risk policies of the bank. The strategy should reflect the bank's tolerance for risk and the level of profitability the bank expects to achieve for incurring various credit risks. Besides, MFIs should make their visions and missions statement clear as well as policies for the day-to-day operations. Furthermore, MFIs should operate a good management information system which [23] consider as systematic and simple record keeping system, which can generate timely and accurate reports needed for decision making and making the information available to the right people at the right time. A simple and systematic record-keeping system had been manual but, the manner in which this information is stored, accessed, and analyzed.

2.1. Empirical Literature

Studies conducted by[18] in Morocco, Pakistan, Nicaragua and Bosnia Herzegovina on growth and vulnerabilities in microfinance found out that there was an

impressive growth of MFIs in these countries between 2004 and 2008, MFI market expansion in these countries was driven by policies on credit products and credit delivery methods common in microfinance. There were, however, substantial differences in the credit approaches in the four countries. Lending directly to individuals or microenterprises was the preferred approach in Bosnia and Nicaragua, whereas lending through groups dominates in Morocco and Pakistan. This proves that not only the Grameen techniques can assist in MFIs growth, and that any approach depends on the prevailing business environment as specified by the Basel III accord.

[24] argues that though the group lending style was generally successful in Bangladesh, replicating in other countries was not totally successful. In 1996, the Asian and Pacific Development Centre (APDC)—an intergovernmental body of Asian-Pacific countries, carried out an assessment of microfinance institutions (MFIs) in 11 of these countries, with the support of UNDP. Included in the study were seven MFIs from the Philippines, six of which used the Grameen technique. By the end of 1995, the situation of the sample replicators had improved generally, but the gap between good and poor performers had widened, meaning it was not completely successful. Although social collateral is widely used, it is not universally accepted by all as the optimal approach. For example, [25] concludes that alternate forms of institutional arrangements may be better than credit cooperatives in alleviating poverty

However, barriers to microfinance outreach remain and must be overcome if optimal levels are to be attained. Rapid growth in terms of client outreach and increased return on assets (ROA) through better credit policies should be pursued aggressively and with a sense of urgency wherever growth-ready microfinance institutions are operating in a reasonably enabling environment.

[13] in measuring the growth of Bancosol in Bolivia observed that loans made in Boliviano the local currency are offered for shorter terms to maturity and generally require more frequent payments than loans in dollars. They further stresses that all loans are amortized in equal-size installments, charge interest on the outstanding balances only, and do not require compensating balances. Repayments for majority of loans are every week, every two weeks, or every four weeks. The nominal interest rate charged is 4 percent per month, plus a flat up-front fee of 2.5 percent of the loan amount. For the median loan these terms imply effective interest rates of about 6.1 percent per month in nominal and 4.9 percent per month in real terms

2.2. Theoretical Literature

Agency Theory

To better understand the implications of credit risk on sustainable growth, the study is founded on the agency theory which according to [26] explains the relationship that occurs when one partner in a transaction, the principal (MFI) establishes trust and confidence on another party called the agent (Borrower). The welfare of the principal is affected by the choices and behavior of the agent. As a result of his behavior the earlier decision taken about the agent becomes problematic in that the interests of principal and agent will diverge; the principal cannot perfectly and costlessly monitor the actions of the agent, and the principal cannot perfectly and costlessly monitor and acquire the information available to or possessed by the agent. This constitutes the agency problem. The reason for using this theory is the possibility of opportunistic behavior on the part of the borrower that works against the welfare and sustainability of the microfinance institutions.

[11] observed that the problem of asymmetric information which is made up of adverse selection and moral hazards is the main cause of default. It can be analyzed using the agency theory. In examining asymmetric information, [11] explained that it is when one party's insufficient knowledge about the other party involvement in a risky transaction after granting loan. Adverse selection is an asymmetric information problem that occurs before the transaction, potential bad credit risks are those who actively seek out loans. Thus the parties who are most likely to produce an undesirable outcome are the ones who want to engage in a transaction. Because adverse selection increases the chances that a loan might not be repaid, the lender might decide not to grant the loan despite the fact that there are good credit risks in the market. He will stand to lose because of fear of the undesirable outcome from the agent. A particular characterization of that adverse selection problem and how it interferes with the efficient functioning of a market is outlined in an article by George Akerlof where he refers to as the lemon problem, in the used car market where a buyer cannot determine the quality of the car, low quality refer to lemon.

In similar manner moral hazards is an agency problem that arises after the loan transaction has occurred. The lender (MFI) runs the risk that the borrower will engage in activities that are undesirable from the MFI point of view, because they make it less likely that the loan will be repaid, because of such fears the lender might refuse to grant a loan which will be very costly to him, because of the probabilistic future outcome. In order to avoid the loss that might arise from adverse selection and moral hazards, the agency cost is incurred to protect principals' interests and to reduce the possibility that agents will misbehave. Such costs include: screening and monitoring expenditures by principals; bonding expenditures by agents and residual loss of principal. The analysis of adverse selection indicates that microfinance institution play a greater role in moving funds to needy poor customers using an direct finance route especially in the developing nations, particularly when the information about firms is easily gotten.[19] points out some barriers that accentuate the asymmetric information problems in case of smaller enterprises (agents) in developing countries. Physical barriers of poor infrastructure like lack of markets, roads, power, communications, can worsen both the adverse selection and moral hazard problems.

3. Methodology

3.1. Description of Study Area

The study was carried out in the South West Region of Cameroon, precisely in Buea subdivision with a population

of 120000 inhabitants [27]. It has all the characteristics of the entire south west region and is the administrative headquarters of the region and has many branches of MFIs in all categories. The scope was limited to this region because of the vast nature of the area couple with limited financial means and also due to it advantage of having all categories of MFIs. Buea subdivision has a diverse population structure, made up of both urban poor and the suburban poor, mostly students and farmers. Also a greater part of the urban population is engaged in petty trading activities mostly carried out by women

3.2. Method and Sources of Data Collection

A survey investigation approach was adopted which entails the use of both qualitative and quantitative methodologies. It involved the use of Primary source which has a more involved role and closeness to the research object. It involved the use of structured personal interview and questionnaires to management executives. On the other hand secondary source was used which involved the collection of numerical data in order to explain, predict and control phenomenon of interest. It investigated cause–effect relationship between profit/outreach and credit policy culture, risk coverage and default. Quantitative methodology made used of extensive secondary data gathered from MFIs records, articles, credit log books, financial statements, Fako credit unions chapter reports and income statement, and other publications.

We adopted a restricted probability clustered random sampling, because the population (MFIs clients) was heterogeneous in nature and we could identify the three categories of MFIs in the municipality

3.3. Tools of Data Analysis

A panel data was used to justify that the behaviours of microfinance institutions are observed across time. A two equations regression model estimation was used, one testing the impact of credit risk variable on profit and the other the effect of the same credit risk on outreach.

Y = f (default, insurance coverage, credit culture).

Y: Dependent variable which were profit and outreach as a function of the credit risk management variables of; Loan delinquency/default, insurance coverage and credit policy culture. The model was logged to smoothen the independent variables to follow a normal distribution and to ease the estimations by reducing the size of the standard error.

Profit Equation:

$$\text{LogPRFit} = \beta 0 + \beta 1\text{LogDeFT it} + \beta 2\text{LogRSKCit} + \beta 3\text{LogCPC it} + \text{uit} + \varepsilon\text{it}. \quad (1)$$

aprori; β0>0; β1<0; β2>0; β3>0

Where:

β0, β1, β2, β3 are the theoretical expectations of the estimated parameters of the models. They show the signs and sizes of the estimated parameters of the model. They are referred to as elasticities and measures the extent to which independent variable affects the dependent variables.

LogPRFit : Log of profit over time and across space

LogDeFT it : Log of default

LogRSKCit : Log of risk coverage

LogCPC it : Log of credit policy

μit =is the stochastic disturbance term showing the other variables that affect profit but which are not included in the model (Between entity error).

εit= within entity error.

The relationship between the variables is that there is an inverse relationship between credit risk and growth sustainability of microfinance institutions, that is the higher the credit risk the lower the growth

Outreach (membership/share per member) Equation:

This equation specified outreach as a function of default, capital, risk coverage and credit policy culture (outstanding loan). It examines the effect that delinquency/ default, risk coverage and credit policy culture have on the membership of these MFIs. The model is specified as

$$\text{LogMBSit} = \lambda 0 + \lambda 1\text{LogDeFTit} + \lambda 2\text{LogRSKCit} + \lambda 3\text{LogCPCit} + \text{uit} + \varepsilon\text{it}. \quad (2)$$

Aprori: λ0>0; λ1<0; λ3>0; λ2<0; λ3>0

Where:

λ1 λ2 λ3 are the theoretical expectations of the estimated parameters of the models. They show the signs and sizes of the estimated parameters of the model.

LogMBSit: Log of outreach over time and across space

LogDeFT it: Log of Default

LogRSKCit: Log of risk coverage

LogCPC it: Log of credit policy

μ2it: is the stochastic disturbance term showing the other variables that affect profit but which are not included in the model (Between entity error).

εit: within entity error

Also i =1, 2... N is the cross-section dimension and t =1, 2... T is the time dimension of the panel data.

In estimating the model, both quantitative and descriptive tools of analysis were used. Panel data allowed us to control for variables we cannot observe or measured like Socio-cultural factors. It made used of fixed effect models (FEM) which is used when analyzing the impact of variables that vary over time. It explores the relationship between predictor and outcome variables within an entity (MFI).Also there is the random effects model (REM) which measures the variation across entities and assuming to be random and uncorrelated with the predictor or independent variables included in the model.We validated our model by testing for issues like serial correlation or auto correlation which happen when regression errors are correlated across observations. Serially correlated errors are said to be heteroskedastic. Also we tested for Multicollinearity which is when two or more independent variables are highly, but nor perfectly correlated with each other and Unit root test or stationarity testing if all panel have unit root.

Table 1. Summary of the variables and their definition

Variable	Definition	Indicator
DeFT	Default	Loan delinquency,>10%
RSKC	Risk Coverage	Porfolio at Risk (PAR)
CPC	Credit policy culture	outstanding loans
PRF	Profit	Interest on loans
MBS	Outreach	Membership

4. Presentation and Discussion of Results

According to summary of descriptive statistics, (see Appendix A1). It was observed that membership or share per member used to measured outreach was7.4 on average, noticed as the least among the list of variables. This signifies that membership was increasing at a low rate with increase in time. It can be concluded that people are very reluctant opening saving accounts because of ignorance of its important, little interest income and some minimum deposits requirements to open an account. The great implication of this is the persistent capital inadequacy making it difficult for a smooth functioning. Conversely with profit, a similar dependent variable, it has a mean value of 15.85 with a standard deviation of 1.89 implying that many factors contribute to generate profit with a greater variability. This means that unlike membership there is a big difference between the observed data and the distance from the mean is relatively high that is, variability rate is very high. We can conclude that profit is a function of so many factors having different magnitudes. Also, maximum value of profit doubles the minimum of 9.2.The rest of the independent variables is almost at the same level with regards to mean and standard deviation. Risk coverage, credit policy culture, and default have 16.27, 18.89 and 16.19 for mean and 1.3, 1.16 and 1.64 for standard deviation respectively. Default has the highest standard deviation, implying it has a greater impact in the dependent variable with changes in time

Following result from Pairwise correlation results on Appendix A2, it can be seen that membership is positively correlated to profit, risk coverage, credit policy culture, and default with coefficient of 0.36, 0.20, 0.66, 0.43 respectively. This result clearly shows that a positive change in profit leads to a similar positive change in membership because members/customers of MFIs will prefer to invest in profitable institutions by buying of shares and membership rights. Also with increase in risk coverage which is a function of capital kept aside as provision or economic capital, potential financial risk is averted though with a lower coefficient of 0.2.Credit culture has a greater positive coefficient meaning that membership increased with increase in outstanding loan, because it is from loans granted that profit is generated.

Default has a positive correlation though not too strong to signify that there is a serious asymmetric information problem. A bulk of customers prefers to go where they will easily default. With respect to profit and other variables it can be seen that profit is negatively correlated with risk coverage, with a coefficient of -0.344.This means that the higher the risk coverage, the lower the profit. This is because the bulk of capital meant to be granted as loans and other investment is kept as provision against risks thereby reducing the capital adequacy, coupled with the fact that insurance fee levied on borrowers go to add their expenditure in loan repayment. Also default is negatively correlated with profit with a coefficient of -0.17. since profit is a function of interest from outstanding loans and when there is default, profit or return on assets (ROA) becomes negative as loans become bad. The only variable positively correlated with profit is credit policy culture with a coefficient of 0.21 which as earlier explained, an increase in outstanding loan increases the possibility of increase return on asset (interest) provided the credit risk remains good.

Risk coverage with credit policy culture and default are positively correlated with coefficients of 0.11 and 0.30 respectively. This means that provision against risk leads to an increase in default because if insurance premium is paid by the customer then the total expenditure of principal, interest and insurance premium becomes heavy on him who will likely default. Lastly the correlation between credit policy culture and default is positive with coefficients of 0.57, this means a weak credit policy that does not regulate delinquency easily leads to default.

Concerning the relationship of credit risk and profit, a regression was run using random effect model because some time-varying and fixed right hand side regressors were correlated with the unobservable individual effects. This confirms what [28] suggests, that when there is endogeneity among the right hand side regressors, the OLS and Random Effects estimators are substantially biased.

Following the empirical result in table 4.3.3 above, it shows that risk coverage has an inverse relation with profit of MFIs with a negative coefficient of -0.44.This means that a 1% increase in risk will result in a fall in profit of0.446%. A P- value of 0.076 shows that it is statistically significant at 10% two tailed test. Risk coverage has proven to be a fundamental variable in determining the profit level of MFIs. This is because provision against risk reduces capital available for granting of loans which is the main asset that generates profit Also the insurance fee paid by the borrower add his expenditure and cost thereby reducing his chances to repay on time and causing him to be potential delinquent. This confirms the finding of [29]. Credit policy culture, has a coefficient of 0.61 indicating a direct relation with profit. This shows that a 1% increase in credit policy culture (outstanding loans) to either men, women or group result in0. 616 % increase in profit of any MFIs. A P-value of 0.073 means that the result is statistically significant at 10%. The effect of increase outstanding loan on profit is highly felt because the return on asset or interest is a function of outstanding loan. Concerning default; it has a coefficient of -0.30 showing an inverse relation with profit.

Table 2. Regression Results of Profit and MembershipDependent Variable: LPRF and Independent variable: LMBS

Regression result of Profit (LPRF)		Regression Result of outreach (LMBS)
Variable	Coefficient (P>|t|)	Coefficient (P>|t|)
Lrisk	-0.4467 (0.076)*	0.049277 (0.438)
Lnculture	0.6169 (0.073)*	0.2812332 (0.0000)***
Lndef	-0.3096 (0.020)**	0.0144252 (0.816)
Constant	16.3521 (0.0000)***	1.066504 (1.478)

***, ** and * represent 1%, 5% and 10% level of significance.

As concerns credit policy culture, it has a positive coefficient of 0.281, this shows a direct effect outstanding loan on membership. This means that a 1% increase in outstanding loan will lead to 0.28% increase in membership. Membership is highly dependent on the ease to financial access meaning that the main reason for increase customer/members is to obtain a loan. A P-value of 0.001 give room to conclude that the result is very statistically significant at 1%, two tail tests. This means that the result can be reliable at 99% confidence level and implying that the clients will open savings account provided there are opportunities to be granted a loan. We conclude that the more the outstanding loans the higher the number of clients.

To be able to validate the result, a hausmann test of endogeneity was used to test whether the unique error (ui) are correlated with the regressors.To be able to make a good decision between fixed or random effect of right hand regressors on observable error term. It was concluded that the test for fixed effects is not significant and therefore we accept the null hypotheses that a random effect is appropriate and is significant at 10% because the coefficient is more than 5%.This implies that the right hand regressors had effects on unobservable error term. This means that any additional change in profit or outreach is due to specific individual effect, despite of any change due to either treatment effect. (see Appendix).

5. Conclusion and Recommendation

The main objective of this paper is to investigate the effect of credit risk management on the growth sustainability of MFIs. We reviewed empirical literature and the theories of joint liability and agency in order to carry out our own survey. From the empirical findings which shows a significant negative relationship between risk and profit of MFIs. This proves that poor performance of microfinance institutions is caused by poor management of resources, especially risky assets like loans. Client savings are not put into appropriate and profitable use. Asset-liability management is a big problem, causing delinquency and default to remain persistently high. Poor credit policies and methodologies are observed to be another cause for concern as there is a lot of connected and individual lending coupled with the lack of technological devices to improve performance like computers to embrace Hi-tech banking.

Again from the empirical result which shows a significant positive relationship between credit culture and outreach on one hand and profit on the other, means that the more outstanding loan the greater potentials for growth, this is consistent with [29] that the higher the risk of lending the higher the profit. Poverty rate remains high as the bulk of clients continuously remain vulnerable and do not change status couple with inadequate professional educational background. Also there is a poor regulatory framework of MFIs and an unconducive external environment this confirms [30] assertion that law that covers the microfinance and the supervision of the microfinance institutions influences the success and the sustainability of the microfinance institutions.

It was also noticed that the lack of a vibrant financial market causes the inaccessibility of financial resources because investors will not have adequate and reliable sources to get capital for long term investment that can generate income. MFIs in Cameroon are not encouraged like in India and Bolivia to be quoted at the local stock exchange where they can raise capital, and generate income easily, not relying only on the interest on loans, this is inconsistent with [31] that a strong financial market is the source for growth

Notwithstanding, the results of the survey shows that credit risk is a big handicap to the sustainable growth of MFIs in both profit and breadth of outreach, and in order to sustain the growth of these institutions in Cameroon and Buea Subdivision in particular, the following proactive strategies are strongly recommended; that MFIs should put in place strong management information system (MIS) characterized by regular, focused, systematic and simple record keeping reporting system in order to solve the problem of asymmetric information. Furthermore, MFIs need to take advantage of mobile phone that has become so common and implement strategies of branchless banking as it done most southern African countries; MFIs should improve on their product design to take care of poor handling of resources by both borrowers and management. It is notice that delinquencies and default are as a result of poor product design as such MFIs should have frequent repayments as it maintains contacts with clients. If the frequency is too low it results in loss of contact with client and escalates the risk of delinquencies and default. Lastly, it has to provide for seasonality, allow repayment flexibility, avoid bureaucratic and legal formalities, fix a ceiling on loan sizes. Also group lending methodologies a grameen banking system of Yunus Mohammad should be given more emphasis to take advantage of joint liability as postulated by the works of [32].

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Appendix

Table A1. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Membership	32	7.429203	.5349273	6.400258	8.612867
profit	27	15.85454	1.890771	9.206533	18.86708
risk cov	29	16.27072	1.301159	12.72634	18.69311
Credit culture	32	18.96628	1.16973	16.37533	21.09593
Default	32	16.19283	1.642274	11.06409	18.50969

Table A2. Pairwise correlations result and analysis

	mbs	lprf	lrskc	lncpc	deft
mbs	1.0000				
lprf	0.3617	1.0000			
Lrskc	0.2069	-0.3440	1.0000		
Lncpc	0.6609	0.2157	0.1186	1.0000	
Deft	0.4369	-0.1773	0.3037	0.5172	1.0000

Table A3. Hausmann test of endogeneity

- Coefficients ----

	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
lrisk	-1.015626	-.4466704	-.5689558	.2106656
lnculture	.0984743	.6168587	-.5183844	.4282149
def	-.1533569	-.3096497	.1562928	

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)=7.43
Prob>chi2 = 0.0601 (V_b-V_B is not positive definite).