

Credit Risk Assessment in Microfinance Institutions

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Abstract

Microfinance institutions (MFIs) came to existence to serve financial services to the poor who have historically been excluded from such services (Brau & Woller, 2004). This paper aims to research and examine credit risk assessment practices that exist within microfinance institutions when deciding to approve or decline an extension of microcredit to individual applicants. This paper first studies existing literature with respect to best practices that have been developed to this point, evaluates them, and investigates their flaws keeping MFIs from expanding their outreach to the poorest population. Then, it comes up with a proposed solution to this problem. This research shows that MFIs have not been able to implement effective and cost-efficient risk assessment practices in dealing with poor individuals because small-size loans granted as microcredit do not generate enough profit to justify the high cost of the human-intensive risk assessment process (Ibtissem & Bouri, 2013). Therefore, better risk management practices should be developed to make the whole process of assessment, evaluation, and extension of microcredit to individuals profitable and guarantee sustainable business for MFIs.

Keywords: Microfinance institutions, MFI, credit risk assessment, risk management, microcredit.

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Introduction

Microcredit is a small amount of credit granted to the poor to help with their finances in either their businesses or in their living and household. And microfinance institutions were established to provide a solution for microcredit demand. This study introduces current credit risk management practices for MFIs, analyzes their flaws, and focuses on the development of effective solutions to overcome the problems associated with existing practices. This will help MFIs better serve the community by increasing their outreach and facilitating financing for the poor. The poor can establish small businesses or grow their established small businesses by leveraging financial services provided to them, which ultimately results in economic growth for the geographic area (Kwagara, 2006).

This paper provides a thorough literature review with respect to microfinance institutions, the concept behind them, how they operate, the obstacles for their growth and sustainable business and the developments that have been made in the area of microfinance credit risk assessment. It gives a full understanding of the purpose of microcredit that helps alleviate poverty and foster economic growth. Then, it describes one of the major obstacles MFIs have been facing in attaining their goal of serving the poor which is in their outreach to the poorest. Finally, it concludes with a proposed solution to this problem.

According to Ibtissem and Bouri (2013), the problem with microfinance institutions is the depth of their outreach. MFIs have developed a few effective approaches that facilitate credit extension to the poor living in rural areas. Kwagara (2006) asserts the poor, mainly farmers in rural areas, use this credit to grow their businesses or even to address a financial problem in their households so that they can still operate their businesses and continue making a living out of them. It is usually easier for MFIs to extend credit to borrowers when they have collateral or a

history of a relationship with the MFI which could be a savings account or repayment of previous loans. When the borrower cannot provide one of these, there are other services provided by MFIs from which they could benefit such as group lending. Group lending has proven to be a powerful way for MFIs to mitigate default risk of the borrower (Kwagara, 2006, p. 23-24). However, when it comes to individual lending, particularly for the poor who have neither collateral nor a fair history, MFIs struggle with risk assessment practices. That is because the risk evaluation process for such cases is human intensive hence costly for the MFI. And, for the small size of the loan for a microcredit request, there is no profitable business justification for the MFI (Ibtissem & Bouri, 2013).

Credit risk for an MFI in this paper mainly refers to the risk of default in loan repayment by the borrower. This paper focuses on effective and cost-efficient credit risk assessment methods for microcredit lending to individuals. This study contributes to the field of project management by researching the best practices in risk management approaches and strategies for MFIs to keep the projects in microfinance industry sustainable.

Problem Statement and Justification

Microfinance institutions have been struggling in their outreach to the poorest of the population essentially because of a lack of effective credit risk assessment practices targeting that segment. The poor are excluded from financial services due to lack of collateral as a guarantee for repayment of loans or a history with indications of their creditworthiness. Based on the literature, MFIs basically provide financial services to the poor in two ways: group lending and individual lending (Ibtissem & Bouri, 2013; Kwagara, 2006). Kono and Takahashi (2010) believe in group lending, which comprises most of MFIs' activities, they have made significant advances by developing some very effective strategies to mitigate client default risk. For individual lending, however, MFIs have yet to serve their purpose of lending to the poor. The reason behind that is that there are no effective and cost-efficient credit risk management practices to assess the default risk for clients with no history of loan repayment or saving habits. For such a client base, the best practice based on some successful MFIs' experiences has been human intensive assessment practices that include thorough research on each client and their business plan to make sure their business would work out to be profitable and the client's personal characteristics would guarantee repayment of the loan (Ibtissem & Bouri, 2013; Kwagara, 2006). However, this strategy is very costly and has worked out only for MFIs that are non-governmental organizations (NGOs) and get donations and government support to fund their operations (Kwagara, 2006). For private sector MFIs, that simply does not have business justification as they must make profit to keep their business sustainable (Ibtissem & Bouri, 2013). Therefore, the outreach of private MFIs does not go deep enough to serve financial services to the poorest. If this problem continues to exist, the poorest will be excluded from financial services and the initial intention of MFIs will not be completely met. Thus, effective

and cost-efficient risk assessment methods should be developed for MFIs to evaluate clients, who basically have nothing to present but their personality and business ideas, and extend microcredits to them after an effective screening process.

Literature Review

According to Ibtissem and Bouri (2013), it has been proven that microfinance institutions have helped reduce poverty by supplying credit to the rural poor population of society. The fast-growing demand and supply for microcredit in the current competitive microfinance market has made the microlending business riskier than ever. Therefore, there is a high need for better and more efficient risk management practices for MFIs to ensure their business sustainability.

Commercial banks have historically avoided extending credit to the poor and there are two main reasons for that. Yunus (1994 a) states that lack of collateral is basically the first major reason that keeps commercial banks from lending to the poor (as cited by Ibtissem & Bouri, 2013). Collateral is a means to mitigate the risk of default or transfer the risk to the borrower by taking collateral's ownership from her in case of default in loan repayment. The poor, however, has little or nothing of material value to put down as collateral when applying for a loan. Ibtissem and Bouri (2013) assert the second major obstacle in lending to the poor, is the small sizes of the loans applied for by the poor. The whole lending process including risk assessment for a loan application usually has a significant fixed cost for the lender. Therefore, having to grant many small size loans to the poor is costlier than granting fewer large size loans to the wealthy. This, in turn, reduces the profitability of the small size loans and their appeal to the banks.

Ibtissem and Bouri (2013) state microfinance institutions have come up with some approaches that overcome these problems. One very common approach that many MFIs use is group lending. In this approach, borrowers are either approved or declined for a credit application as a group. When granted the credit, each member of the group gets the credit for herself, but the liability is borne by the group. There is peer pressure among the group members

for on-time repayment of the individual loans by the members so that the group maintains a good creditworthiness indication on the lender's side and can always benefit credit extension.

Armendariz and Morduch (2005) state that group lending is the secret for increased microfinance credit repayments. A disadvantage to group lending, however, according to Armendariz and Morduch (2000) and Churchill (1999) is the domino effect which is when one member is unable to make repayments and that becomes contagious to other members (as cited by Ibtissem and Bouri, 2013). Despite this disadvantage, the group lending practice has appeared to work well for microfinance institutions' lending practices (Ibtissem & Bouri, 2013). But what is their approach for individual credit risk assessment?

Armendariz and Morduch (2000) highlight some systematic approaches that MFIs adopt in their individual microcredit risk assessment. Those are non-refinancing threats, regular repayment schedules, collateral substitutes, and the provision of nonfinancial services. Non-refinancing threat means the borrower would be prone to rejection for her future loan applications if she demonstrates bad repayment behavior. This is an incentive for the borrower for future loans. Morduch (1999), on the other hand, argues this practice will fail when the borrower is not intending for future loans or when she considers shifting to another lender. Ibtissem and Bouri (2013) assert for collateral substitute practice, the lender would accept anything of value from the borrower as collateral. This could be a degree certificate of the borrower, any kind of license she has, her home appliance that are of material value etc. Additionally, the lender may accept a guarantor's guarantee for the borrower as a factor in deciding for the provision of the loan. Regular repayment schedule is another practice that microfinance institutions implement in mitigating microcredit risk. This practice helps build the discipline of on-time repayment in the borrower and requires the borrower to have a second

source of income as the repayment starts right after the loan is granted. The requirement of having a second source of income automatically excludes potential borrowers who are intending to invest the loan in their business which is going to be their only source of income. Lastly, the provision of nonfinancial services is when the lender goes beyond granting credit to the applicant. That is, the lender takes part in the assessment of the borrower's business plan, the economic suitability, and environment in which the business is to be established and contributes to the borrower's success by supporting her in developing management and technical skills she needs. This practice has gained good results however, it is very costly and decreases profitability for the lender (Ibtissem & Bouri, 2013).

According to Viganò (1993), the difficult part of lending for microcredit institutions is the cost of risk assessment and the lack of information respecting the borrower. And the argument supporting high interest rates for such loans to make the business profitable is in theory not the case (Stiglitz & Weiss, 1981). Stiglitz and Weiss (1981) argue that only the borrowers would accept high interest rates whose business plans are too risky and therefore there is a higher risk of default which results in more defaults and decreased profits for the lender.

Ibtissem and Bouri (2013) state overall, there are three major practices in credit assessment in lending business implemented by banks. Those are "structural approach or reduced form models, statistical approach, and expert-judgment approach" (Ibtissem & Bouri, 2013, p. 17). The first approach is a complex and stochastic one that works for evaluating credit risk for public firms thus is not applicable to lending to the consumer. The other two approaches are being implemented in consumer credit risk evaluation.

According to Ibtissem and Bouri (2013), the statistical, also known as empirical, approach uses credit scoring model which does not have universal standard criteria and evaluates

the risk of default for every borrower based on their financial and nonfinancial characteristics, and their behavior in relation to previous loans repayments. This model totally relies on available data in respect to customer's financial situation and previous behavior. Therefore, it might not be the best one to utilize for micro credit applicants who do not have a history of loan repayment.

Ibtissem and Bouri (2013) assert in the third approach, expert-judgment or subjective-judgment approach, the creditworthiness of the borrower is determined by the expert loan officer's judgment who relies on information she collects by meeting with the borrower. The loan officer considers some principles in making a judgment whether the borrower would default or not. She may apply 5C practice in her assessment which evaluates the borrower's "character, capacity, condition, capital, and collateral" (Ibtissem & Bouri, 2013, p. 17). Babu and Singh (2007) argue that subjective-judgment approach is very costly for the lender. This approach does not include quantification and there is no correlation being considered between the borrower's characteristics, but they are evaluated individually and sequentially. Additionally, the loan officer might always have some sort of bias toward any borrower that might impact her judgment (Ibtissem & Bouri, 2013).

Credit scoring model has approved to decrease credit default risk of borrowers, decrease the cost of credit assessment and dramatically increase profitability for MFIs. This has been shown by many literature giving examples or factual data, as stated by Ibtissem and Bouri (2013). However, there are counter-arguments presented by some such as Schreiner (2003) who believes that credit scoring model is not efficient for MFIs due to two reasons. One is the unique characteristics of microenterprises makes difficult to classify them. Second, the credit scoring model might not be used for microenterprises due to lack of financial statements for them. Most banks take an approach that uses both the credit scoring model and human intensive assessment.

They manage a large portfolio of smaller risk using credit scoring model and a small portfolio of large risk utilizing expert lending officers. Ibtissem and Bouri (2013) conclude that a model which is a combination of credit scoring model and officer assessment practices would be the best method for microfinance institutions in assessing credit risk for microenterprises. However, they do not address how to reduce the high cost associated with the subjective assessment by well-skilled officers.

Kwagara (2006) describes Small to Medium Size Enterprises (SME), their need for microcredit and how microfinance institutions in Kenya handle this demand. According to him, SMEs have some major problems accessing credit. First, they do not have the history and data required by banks to evaluate and approve their application. Second, they do not have securities to put down as collateral or any kind of guarantee to give to the lenders. Third, the owners of SMEs likely do not have a saving history with financial institutions so that they could provide a history of good behavior that would help them get approved for a credit request. Finally, the owners of SMEs usually do not have the education nor the capability to convince the lenders that they would have success in their businesses and repayment of their loans.

Atieno (1998), claims that commercial banks offer a very low number of credits to SMEs and those offered are usually rationed. That is where microfinance institutions act. They have been relatively successful in providing finances for SMEs in Kenya. According to Kwagara (2006), many of MFIs started as NGOs where they were funded by donors and supported by the government. However, when the donations stopped, those MFIs ran out of business, and the government support, on the other hand, has worked to its disadvantage.

Abedi (2000) asserts when a financial firm adopts a lenient credit policy, it generates more revenue and profit, assuming a high repayment rate. When the firm adopts stringent credit

policy, it extends less amount of credits that satisfy strict credit assessment measures. This causes a decrease in potential revenues. Abedi (2000) believes a financial firm's overhead cost and cost of credit management including evaluation, extending and monitoring credit, and credit risk will influence the firm's credit policy and that is its willingness to extend credit to clients. (as cited by Kwagara, 2006).

Abedi (2000) expresses banks use 6 C's to better know their customers and evaluate their credit request. He describes 6 C's as "character", "capacity or completion", "condition", "collateral", "contribution" and "common sense" (as cited by Kwagara, 2006, p. 19-21). Character refers to borrower's personality, honesty, and trustworthiness which is a good indication that she would repay her debt. Capacity or completion is meant to question the borrower's ability to repay, that is if the borrower has a source of income that could finance her repayment of the loan. Capacity also considers the borrower's history for previous loan repayments. Condition refers to the general environment in which the business is supposed to operate. Whether socioeconomic conditions are suitable for the type of business the borrower intends to start or has started. Whether the business is legal and meets the legal and social requirements of the community. Collateral is the security provided to the bank as a guarantee that the loan will be paid back. Contribution refers to the borrower's willingness to contribute from her own finances to the business or project. If the borrower contributes a percentage of the loan amount to the business, that is a good indication of her commitment and enthusiasm to the success of the business, hence repayment of her debt. Finally, common sense is the fair and prudent judgment of the loan officer or the credit assessment crew in evaluating, analyzing, approving or rejecting the credit request based on the data and information provided to them and their observations. According to Abedi (2000), the 6 C's are overall guidelines for financial

institutions to manage their credit risk and minimize their loss resulted from adverse selection (as cited by Kwagara, 2006).

Kwagara (2006) introduced the concept of “Character Assessment and Graduated Loan System” (p. 24). In this concept, Kwagara (2006) believes that MFIs should develop expertise in assessing their client’s characters and get to know the characteristics of a borrower that is likely to default. That is possible through building relationships with clients and implementing several strategies within those lending relationships to decrease the risk of default.

First is the forced savings practice which requires the borrowers to start saving for a certain period before they are eligible to take out a loan as well as after the loan is taken. This ensures building or supporting the habit of saving in clients which would help them better manage their finances hence be able to repay their debt. At the point where the loan is taken, the savings is kept as collateral to the loan.

Second is the small sizes of loans. Kwagara (2006) states that the idea of microfinance is to reach as many clients as possible while keeping the amount of each loan small enough to be considered as microcredit. This approach spreads the default risk among a broad client basis hence decreases the risk. It also helps get to know clients and their repayment behavior early in the relationship and with a small amount of credit. When the client maintains a good relationship with the lender by demonstrating reliable repayment habits, they qualify for larger amounts for future loans. Kwagara (2006) believes for larger amounts there should be a credit assessment committee for appraisal and approval of the loan to reduce the risk of bad decision making. The idea of small-size loans to more clients to spread the risk of default sounds promising if there is an effective and less costly method of screening bad debtors and keeping good ones. However, his study does not present such a method.

Suresh, Padma, and Vijayashree (2012) believe there is more risk associated with microfinance business than simply credit risk. They cite Churchill and Cheryl (2006) listing risks for microfinance institutions in four categories. Those are “institutional risk, operational risk, financial management risk, and external risks” (p. 14). Microfinance institutions should evaluate credit risk along with other risks as part of an inclusive risk management strategy (Suresh et al. 2012).

Overall, the existing literature provide great examples of success for MFIs in some areas including group lending and for individual lending when there is a history for the individual’s financial management skills and behavior or collateral for the MFI’s guarantee. In the cases that one of these two do not exist, MFIs come short in serving the poor individual due to the negligible profit of small-size loans and the high cost of credit risk assessment associated with screening.

Proposed Solution Approach

The existing problem in the microfinance industry is the high cost of an accurate risk assessment practice which prevents MFIs from extending credit to most poor borrowers. This paper studied various literature in regards to credit risk assessment methodologies implemented by MFIs and analyzed the problems and solutions they proposed along with areas where further research is needed. Ibtissem and Bouri (2013), asserts the MFIs have been facing sustainability problem. That is due to the high cost of credit risk assessment and low profit for small-size loans. The study suggests more research in combining judgmental and statistical assessment methods for individual lending to decrease the risk of default for microcredit lending.

Kwagara (2006), believes credit risk management is crucial in the success of MFIs and the judgmental assessment existing in Kenya has led to corruption in MFIs which is lending to family and friends or clients who somehow benefit the individuals facilitating the lending process. Kwagara (2006) carried research based on data collected through surveys from MFIs in Kenya, indicating how they dealt with different borrowers and how successful were the results they obtained. He suggests future study in the internal control system in MFIs and the regulations concerning MFIs offering microcredit products will help improve their sustainability.

Li, Niskanen, Kolehmainen, and Niskanen (2016), assert that the credit scoring model implemented by financial institutions for lending products is not suitable for evaluating SMEs and there is a need for an assessment method for SMEs. Their study introduces a more accurate credit scoring model which is a hybrid model combining traditional statistical methods with artificial intelligence technology. They claim their model helps lower capital requirement and increase profitability for the lenders and decrease interest rate for the borrowers. They suggest

future study in the area of considering financial and behavioral characteristics of the SME's and their owners will be beneficial in the development of more accurate credit scoring models.

Suresh et al. (2012), believe there is a risk management problem within MFIs which put their viability in danger. They suggest that the MFIs should manage the credit risk as part of their holistic risk management system. Therefore, improving their overall risk management policies and practices would help ensure sustainability of their businesses. They suggest some guidelines for MFIs to put in practice to help improve their risk management.

Clemente Malôa (2013), suggests that many market and street vendors (MSVs) in Mozambique have problems accessing financial services since they do not have accounting data or history of banking behavior that supports their creditworthiness. The author continues that judgmental assessment of competent loan officers is the key for accurate evaluation of credit risk. The study is based on field surveys taken from businesses in Maputo city in Mozambique. It suggests that implementing technology would help reduce transaction cost which in turn helps expand the outreach of lenders.

Based on the research in existing literature, there is a need for a cost-efficient and more effective credit risk assessment method for MFIs. This paper proposes such a method which utilizes algorithms for credit scoring models along with reducing the labor cost by minimizing the need for expert loan officers to assess the applicants personally. For this purpose, there should be a simple screening algorithm that utilizes a questionnaire to pull data from applicants regarding their personal traits and financial situation of them and their businesses. The questionnaire will consist of two parts. Part one should be based on psychological research to accurately capture the applicant's personal characteristics and determine how likely they are to repay their obligations as an individual regardless of their financial situation. The second part

should collect data regarding the applicant's business idea or the performance of their business. The algorithm will then score the applicant based on their riskiness from 1 being the riskiest to 10 being the least risky. This helps the MFI score the applicants in a very fast and cost-efficient way based on a simple but scientific questionnaire. Now, the MFI can categorize its applicants according to their scores and assign a portion of its microcredit portfolio to each category which depends on its overall lending policy at the time. This will be a developing practice in terms of the accuracy of the scoring model in targeting good debtors and will improve by experiment and data collection over time. On the other hand, the human-intensive part of the work has been reduced to the minimum by removing the loan officer's personal assessment. This is expected to save the MFI a great amount of money in the processing cost of the small-size loans which will eventually help stabilize the profits. This practice will be implemented in a 6-month project at Santander Bank which will consist of planning and developing the screening algorithm, starting the microcredit business line and experimenting and monitoring its performance for the project period. In the end, the collected data will be assessed to show how accurate the scoring model was and how successful the business line was in making the estimated profits. based on the results, the necessary changes in the scoring model and credit extension policy will be made to develop the optimal practice that generates stable profits for the business line.

The problem of outreach that MFIs have is due to a lack of efficient credit assessment and management for small-size loans (Ibtissem & Bouri, 2013). This has been keeping MFIs from providing financial services to the poor who demand microcredit to establish a business or grow their existing business (Brau & Woller, 2004). The solution proposed in this paper is expected to streamline microcredit extension by MFIs to the poor population without incurring the high cost of assessment and processes. It will help develop a suitable credit risk assessment

practice particular to small-size loans which facilitates granting loans to the poorest of the society. It will contribute to resolution for MFI outreach while ensuring sustainability for their businesses.

Conclusion

The poor have been historically excluded from financial services (Ibtissem & Bouri, 2013). This is partially due to lenders not having confidence in the poor's ability to repay their obligations. This is particularly true when the poor do not have something of material value to put down as collateral or a history that shows their good behavior in loan repayments or saving habits. Microfinance industry was established to serve this segment of the society. However, it has been facing challenges in deepening its outreach to the most of the market (Atieno, 2001). And that is because of complexity and the high cost of risk assessment practices which is not financially viable when it comes to granting small-size loans. This problem must be resolved so that MFIs can increase their outreach to the poorest while keeping their businesses sustainable.

This study proposes an efficient credit risk assessment practice for MFIs to implement that will substantially reduce the high cost of the process and therefore make the small-size loan business realize profits which in turn ensures sustainability for MFI's business. Many of the studied literature agree on the fact that traditional risk assessment practices are costly and that is what keeping MFIs from extending more small-size loans. Ibtissem and Bouri (2013), suggest MFIs should utilize both judgmental and credit scoring models in microcredit risk assessment and manage their loan portfolio in a way that costly risk assessment and low-cost risk assessment processes make a balance in the portfolio. This could be a good practice, however, it does not provide a solid solution for high-cost loans, which are small-size loans. Some others such as Kwagara (2006) and Clemente Malôa (2013), suggest that human judgment by skilled loan officers is the best way of decreasing credit default risk hence increasing profitability in the

microcredit business. They come short in addressing the high cost associated with human-intensive credit risk assessment practices.

Li et al. (2016), introduces an innovative method in the credit scoring model that utilizes artificial intelligence with statistical models to more accurately assess the credit risk. The study suggests more research in the financial and personal behavior of the SMEs and their owners would help developing an even more accurate credit scoring model. That is in a way what this study does. It comes up with a simple but scientific credit scoring model that avoids the high cost of human-intensive assessment practices hence makes the MFIs realize profits from small-size loans. Further research can be done in evaluating how successful here proposed credit scoring model was once it matures after utilizing data collected in the experiment period.

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