

MicroSave Briefing Note #143

Design Considerations for Credit Scorecard for MSME Financing

Anup Singh and Venkata N A
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Background

Globally, micro, small and medium enterprises (MSMEs) play a crucial role in promoting economic development. However, one of the major challenges faced by MSMEs is the lack of access to finance. Financial institutions are wary of financing MSMEs and cite a variety of reasons for this, including lack of reliable financial information, poor financial record keeping and absence of credit history. Given the potential of the MSME sector, simple and effective risk models that look beyond audited financial statements are essential. A McKinsey² study reports that 72% of banks use credit risk assessment models based on traditional information sources, and 69% banks reported lack of or poorly designed credit scorecards. In this Note, we suggest a fresh approach to MSME finance through the design of credit scorecards. We base our approach on practical experience based on our work in MSME finance across Africa and Asia.

Benefits of an effective credit scorecard

An effective credit scorecard is dynamic, linked to the MSME market and local economy, and enables the financial institution to enhance efficiency while managing portfolio risk effectively. The key benefits include:

- Segregating loan applications into the three buckets of “approve”, “reject” and “further analysis required”;
- Enhancing efficiency of the screening process by reducing time taken for decision making;
- Ensuring consistent appraisal, evaluation and approval by reducing judgemental errors; and
- Enabling the financial institution to link interest rates to the risk profile of the applicant.

In our extensive experience with small banks and microfinance institutions offering MSME finance using a scorecard, the financial institutions were able to significantly reduce processing time, increase portfolio quality and productivity and enhance customer satisfaction.

Designing a simple, yet effective, credit scorecard³ for MSMEs

The core design principles for an effective credit scorecard are that it must be succinct, simple, quantitative, easy and fast to administer. The design can thus follow a five-step framework as below:

Select the type of scoring model

Identify key factors

Ascertain components

Define the criteria level

Conduct iterative analysis of factors, refine and implement

Select the type of scoring model

There are mainly two types of scoring models, namely, statistical and judgemental. The key differences between the two models are as follows:

Attributes	Statistical	Judgemental
Data source	Past loans, specifically the loans that are delinquent or in default	Based on understanding and experiences of staff and institution
Model	Quantifies risks	Ranking model
Determination of factors	Using statistical tests	Brainstorming between key members of a working group
Process	Linear	Iterative
Skills required to design	Advanced statistical skills	Moderate
Adjustments	Fairly easy using statistical tests	Very hard to identify
Validation and simulation	Can be done	Cannot be done

Although a statistical model is preferable to a judgemental model because of its benefits, designing a statistical model is time consuming and needs complex statistical analysis of past loans, as well as a whole host of other indicators – savings history, industry for which the loan is being sought, experience/age/address of the borrower etc. Statistical models are based on estimation techniques such as [logistic regression](#) or [probit](#) to arrive at probability of default based on historical data and behaviour of a similar segment. Once the estimation model is statistically valid, it is used to predict behaviour of new clients by assessing client details on the model.

Thus, designing statistically modelled tools is only suggested when the financial institution has high quality data on past loans and other related indicators, has access to expert statisticians to develop risk models and has a robust and flexible information technology system. We have seen very large banks struggle to implement effective statistical credit scoring models. So alternatives are often required.

In this Note, we explain the basics of judgemental credit scoring design, as it is one of the most practical approaches to design credit scorecards, and particularly suits smaller banks and microfinance institutions scaling up to MSME finance.

To develop a judgemental credit scorecard, expert judgment must be exercised in defining factors and components for the scorecard and assigning weights. The scorecard should mimic the actual loan underwriting process to make the tool practical and effective. The scorecard should have appropriate grades such as low, medium and high risk to differentiate between risk profile of the applicants, to

enhance processing speed, and to set lending policy and pricing decisions according to the risk profile of the borrower. To develop an effective scorecard, the financial institution will need to establish a working group, led by the Director-Credit.

Identify key factors

The working group may use the question, “What are the characteristics of a client who repays on a timely basis?” to zero-in on the key factors. Based on past experience and brainstorming, the working group should identify these characteristics or “key factors”. Some of the outcomes from *MicroSave’s* previous engagements suggest that key factors include: past financial behaviour, client profile, primary sources of repayment, nature of business etc. To keep the tool simple, it is suggested that the working group should ideally focus on 3-5 key factors adequate to provide credible credit risk assessment. To reduce from a list of several factors, the group can run a priority ranking exercise. Once the factors are decided, the group may begin to assign weights. Usually the process of assigning weights is an iterative process and should be done keeping in mind the relative importance of the factors.

Ascertain components

For each key factor, the working group should ascertain components based on the ready availability of data, objectivity, ease of collection of information and relevance to the scorecard. For instance, for past financial behaviour as a factor, the components can be credit history and savings history. Once the working group has identified all the relevant components, they should assign weights to each of the components based on their relative importance. This will be an iterative process and for ease of assigning weights, the working group can take 100 as the absolute weight for all the factors.

Define the criteria level for each component

Once the working group has decided the factors and components, and assigned weights, they should define the criteria for assigning scores. A suggested approach is to use a numeric scale grading of 0 to 5. While zero can be assigned to all the cases where there is lack of or insufficient data or where the client’s repayment performance is relatively poor, 5 can be awarded to best in class repayment performance. Based on the past data availability and experience of working group members, they can define the criteria and levels for performance. For example:

Factor	Component	Criteria (Score)
Past financial behaviour	Credit History	100% repayment on time for more than 2 loan cycles (5)
		100% repayment on time for one cycle (4)
		Only one instalment defaulted (3)
		2-3 instalments defaulted (2)
		More than 3 instalments defaulted (1)
		No loan records (0)

Conduct iterative analysis of factors, refine and implement

Once the scorecard is ready, it should be tested alongside the existing appraisal systems, and the staff should continuously validate the accuracy and relevance of the scorecard. The feedback will help the working group to tweak and finalise the scorecard. *MicroSave’s* experience suggests that an effective credit scorecard is built on a series of iterative analyses of factors/indicators/predictors over a course of six to eight months of testing and refinement for the scorecard to achieve a level that mirrors traditional appraisal techniques.

Costs and benefits

When *MicroSave* supported a bank in Central Africa to do this, the total costs of design and implementation of credit scorecard were approximately US\$11,500. Monetising the involvement of the CEO, Operations Head, SME Manager and Credit Analyst as well as external support for the design amounted to US\$8,000. In the implementation phase, intermittent involvement from SME Manager and Credit Analyst to review and refine amounted to another US\$3,500. The benefits far outweigh costs as the institution has doubled its productivity, managed portfolio quality better than what they experienced in their previous SME loans (non-performing loans are now 0.98% of portfolio as against 9% before introduction of the scoring system) and increased customer satisfaction (on account of quicker turnaround of loan request – 2 weeks maximum) contributing to an increase in profits to the tune of US\$90,000 in the first 10 months of implementation.

Conclusion

A judgemental scorecard developed using in-house experience and staff members’ practical knowledge of credit risks for MSMEs, and refined based on a series of pilot-tests, has the potential to enhance efficiency of loan processing and underwriting. Utmost care and caution should be exercised in the design of the scorecard, and the financial institution should not short-cut the process of testing it out in parallel with its traditional underwriting to build a robust model.

Credit scorecards have the potential to support financial institutions to enhance lending to the MSME sector while at the same time managing risks. However, it is important to note that credit scorecards are not silver bullets and it may not be able to predict default in all circumstances.

