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The Microfinance Network of Arab Countries

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شبكة التمويل الأصغر للبلدان العربية

Sanabel 2016 Annual Conference

Credit Scoring:

Building Viable Credit Scorecards for MFIs
A Hands-On Workshop

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Introduction to Credit Scoring

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What is scoring?

The future is like the past

Past

Now

Future

Borrower Characteristics

Loan Repayment Behavior

Borrower Characteristics

Loan Repayment Behavior

Key assumptions

- New borrower behaviour will be similar to that of past borrowers with similar characteristics
  - Same segment
  - Same expected application population
    - NOT market changes (weather, macro economic indicators, etc.)

Key assumptions

- Predicts probability a borrower will be 'bad' as we define 'bad' for the target segment
  - All borrowers are either 'good' or 'bad'
  - 'Bad' should represent a client we would not wish to lend to (assumed to be a loss-making client).

Some benefits of scoring

- Decrease analysis time on small deals
- Provide client with a quick decision
- All loan officers reach same result
- Adjust credit policy through rules related to model
- Estimate costs/benefits of different policies
  - Quantitative
  - Explicit

Example 1: Consumer Portfolio

- Without scoring:
  - 60,000 Loans
  - Average processing time for loan: 5 days
  - Arrears over 90 days rate: 4%

Example 1: Consumer Portfolio

- With scoring:
  - Approve 2/3 of portfolio with scoring model
  - Processing time 1 hour
  - Expected delinquency rate on auto-approvals: 2%

How to get started?

- Type depends on quality/quantity of historic data:
  - Expert model – no data, new segment
  - Hybrid model – some data or similar segment
  - Statistical model – extensive data, same segment

What is most important?

1. Data
2. People
3. Processes

How to build an expert scorecard

- Choose characteristics you know from experience to be related to risk
- For each characteristic, make a one-factor model that ranks borrowers in terms of that characteristic
- Use a simple, consistent point scheme for all factors
- Add up the results of the single factor models to get a total score
- Compare scorecard rankings of new or past clients with subjective rankings by credit analysts

Continue adding factors

- Usually 15-20 factors maximum
- Try to create a ‘comprehensive risk profile’ of a borrower
  - Financial and non-financial factors
  - Willingness and ability to repay
  - Choose characteristics that can be collected consistently and at a reasonable cost
  - Avoid subjective judgment

What types of data work best?

- Behavioral data
  - Credit history
  - Air-time/mobile wallet usage
  - Bill payment (utilities, rent, etc.)
  - Bank account turnover
  - Bank deposit balances
  - Documented information about purchases/sales

What types of data work best?

- Personal or business verified income data
  - Salary
  - Tax returns
  - Business sales/purchases

What other types of data work?

- Demographics
  - Years in residence
  - Marital status
  - Number of dependents
  - Occupation
  - Address, Age, Gender (where allowed by law)
  - Education

Alternative data?

- Psychometrics
- Social media public profile information
- Biometrics
- Data stored on mobile phone (via app permissions)

Scoring Model Development

What is needed?

For the target segment, some combination of:

- Knowledge of clients/market
- Experience lending
- Historic data

And, most importantly

- A team and team leader that wants to use credit scoring!

Where does historic data come from?

In electronic format:
- Core banking system
- Loan memorandum (for example in Excel)
- Credit bureau reports (if available in electronic format)

In paper format
- Hard copy credit files
- Loan application forms

If not currently recorded on paper or electronically
- Can systematically collect on a 'pilot' basis

How to build the model?
7-step process

1. Assemble project working group
2. Define scorecard "segment"
3. Define "bad" loan for selected segment
4. Assess quality/quantity of data
5. Build model
6. Pilot test model
7. Validate model

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http://www.microfinance.com/English/Papers/Scoring_SMEs_Hybrid.pdf

The scoring process – more than a score

Systemization:

- Lots of data already collected
- Many files and formats
- Can also upload Excel-based information into a central database
- Storing the most relevant data electronically

Automation of business processes:

- Users and roles assigned
- Can track processing times, identify bottlenecks
- Manage by exception.

Annual validation

- Check procedures were followed by sales and risk management staff
- Solicit feedback from end-users (salespeople) on models
- Any shortcomings identified and communicated to risk management
- Documented overrides reviewed to assess effectiveness of case-by-case decision making in relation to systemic model decisions

Interested in the full Credit Scoring Workshop?

Contact: info@capplus.org

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