FIRM UP PERFORMANCE

ATHENS, GREECE
SEPTEMBER 9–12, 2019

WORLD BANK GROUP
Piloting Psychometrics to Overcome Collateral Constraints for Women Entrepreneurs

Experimental Evidence from Ethiopia

Salman Alibhai
World Bank
Sept 2019
OBJECTIVE: To identify a technology that could address the collateral constraint faced by women entrepreneurs in Ethiopia in accessing larger, individual-liability loans
Psychometrics

Measuring ‘ability’ and ‘willingness’.

Sample character traits:
Predictive Power

Scoring Process

**Questionnaire**
Self-administered (about 45 mins)

**Scoring Model**
Based on database of historic loan performance of other tested loan takers

**Score**
Cut-off or categorization
High score = reduced or no collateral
How do you think most people achieve success?

Hard Work

Many Friends

I don't understand
Using the buttons, add your 10 gold coins to the following categories to show how you normally spend your income:

- **Entertainment**: -1, +1
- **Food & Clothing**: -4, +1
- **Loans**: -2, +1
- **Miscellaneous Expenses**: -0, +1

**Total** = 3
Intervention
Implementation

**Amhara Credit and Savings, Pilot, 2017-18**
- 12 branches, 2,496 tests/1,132 loans
- Demonstrated ability of psychometrics to predict credit risk in Ethiopia
- Rolled out two new psychometric loan products

**Wasasa, Pilot + Impact Evaluation, 2018-19**
- 4 branches, target of 2000 tests/600 loans
- 600 treatment, 600 control
- Average loan size of $10,000, no asset collateral
- Measuring impact of large individual loan on firm growth
Impact Evaluation Design

Seble needs a large loan to grow her business but has no collateral.

Seble goes to participating MFI (Wasasa, ACSI) with all the documents required and passes all the check list.

Seble is asked to complete a 40 min questionnaire on a tablet (including the WB baseline survey). Within 5 min the score is returned to the client’s core banking system.

The LO goes to Seble’s business and checks all the remaining documents.

Half of the applicants are randomly selected to receive an unsecured loan, up to 250,000 ETB (USD 10,000)
Repayment

Bad 14 within the first 20 months on book

- Low Risk: 3.7%
- Medium Risk: 5.9%
- High Risk: 8.4%

Bad 30 within the first 20 months on book

- Low Risk: 1.5%
- Medium Risk: 2.7%
- High Risk: 4.9%

AUC: 60.0 or 2.3X risk split
Repayment: 99.6%

AUC: 61.7 or 3.3X risk split
Firm Growth

% Change in Profits, 2014-2017

% Change in # Employees, 2014-2017
Lessons Learned

• Psychometrics can predict credit risk for thin-file MSMEs, and can be a viable substitute to asset collateral for female borrowers.

• Psychometrics alone are not a solution: they are an additional layer rather than a substitute for the fundamentals of loan appraisal.

• Scaling fintech solutions requires more than a predictive technology: legacy banking systems, line-staff incentives, and operational structures matter.
Thank you!