

## Are Psychometric Tools a Viable Screening Method for Small and Medium Enterprise Lending?

### Evidence from Peru

✓ Conventional credit screening is not suited for micro, small, and medium-sized enterprises (MSMEs) without credit histories or collateral.

✓ Psychometric tools that assess applicants' personality and character offer a viable alternative for evaluating MSME creditworthiness.

✓ With support from the Inter-American Development Bank (IDB) Group, a Peruvian bank piloted the Entrepreneurial Finance Lab's (EFL) psychometric credit scoring tool with 1,909 MSME loan applicants.

✓ The EFL tool was especially effective at helping MSMEs without a credit history increase loan access without worsening the bank's portfolio-wide repayment trends.

✓ Applicants without credit histories who met the EFL tool's score threshold were nearly four times more likely to access loans within six months versus those who scored below the threshold.

#### THE PROBLEM

Micro, small, and medium-sized enterprises (MSMEs) are key drivers of Latin American and Caribbean economies, accounting for the majority of businesses and employment. Nonetheless, they tend to stay small and have low productivity, in large part due to the region's huge financing gap – estimated at \$1.2 trillion in 2017<sup>1</sup> – that leaves MSMEs without access to the critical capital they need to grow.

Why is this the case? Conventional methods for assessing creditworthiness are typically not suited for MSMEs, many of which are sole proprietorships without credit history or collateral which places them at an automatic disadvantage when applying for loans. The information that banks need to assess their growth potential and risk profile tends to be scarce, unreliable, and difficult to obtain at a low cost. Likewise, relying on credit scores is not always possible because some countries lack well-developed credit bureaus. The average credit bureau in the region complies with only half of best practices and covers 43% of the adult population.<sup>2</sup>

One way to fill in this information gap at a low cost is through the use of psychometrics to assess applicants' personality, intelligence, and character. Employers have used psychometric assessments extensively in hiring with strong results. Tests to gauge general intelligence, integrity, and conscientiousness, along with work sample tests, have proved to be the best methods for predicting overall job performance.<sup>3</sup> There is an excellent opportunity to apply similar principles in the credit arena to assess potential borrowers' ability and willingness to repay loans.

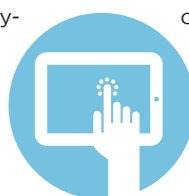
#### THE PILOT

IDB Invest and the [Multilateral Investment Fund](#) (MIF) worked with the [Entrepreneurial Finance Lab](#) (EFL) to pilot EFL's



psychometric credit scoring tool with a large bank in Peru looking to expand its MSME portfolio. Previously tested in Africa, this was the first time the EFL tool was applied in Latin America and the Caribbean on a commercial basis. As part of this pilot, IDB Invest provided a risk-sharing guarantee to the bank to cover a portion of its new credit exposure.

Starting in March 2012, small business owners who applied for working capital loans (average size of \$3,855 with terms of up to 18 months) were screened by both the EFL tool and the bank's conventional screening method, which included assessing their credit score and a site visit to the company. If their EFL tool score met a certain threshold defined by the bank, they were offered a loan. They could also be approved using the bank's conventional screening method. Since Peru has one of the most comprehensive credit bureaus in the region, covering 100% of the adult population, everyone has a credit score. However, for people with no – or no recent – credit track record with a formal financial institution, their score is based on demographic information rather than credit history.





## THE STUDY

Based on the pilot experience, a study was carried out to answer two key questions: (1) Did the EFL tool increase loan use for applicants in the six months following the loan application? (2) How effective was the EFL tool at screening good credit candidates? Researchers analyzed data on formal credit usage and credit scores from Equifax Peru. The credit score rating (as of April 2016) of applicants who were offered a loan based on their EFL tool score was compared to those who did not meet the EFL score threshold.



The bank screened 1,909 loan applicants using the EFL questionnaire from March 2012 to August 2013. The data collected during this timeframe and analyzed by the researchers includes the EFL score and the screening date, as well as the applicant's age, gender, business sales, and sector. The study divided the sample into two subgroups: those with a credit history ("thick" credit bureau files) and those without a credit history in the formal financial system ("thin" credit bureau files). At the time of application, 22% of MSMEs had either never received formal credit or had not formally accessed credit within the last five years.

## KEY FINDINGS

Taking into account the full sample, 78% of applicants who scored above the EFL threshold accessed a new loan from a financial institution within six months following the pilot loan application compared to 59% of applicants who scored below the threshold. The effect was even greater for the subgroup of applicants

without credit histories, of which 72% who met the EFL threshold accessed a loan within six months versus 18% of those who scored below the threshold.

Interestingly, they were not necessarily getting loans from the partner bank running the pilot but rather were using their fresh loan approval letters to shop around for better terms from other banks. In contrast, for the subgroup of applicants with credit histories, the use of the EFL tool had no significant effect on overall short-term loan use.

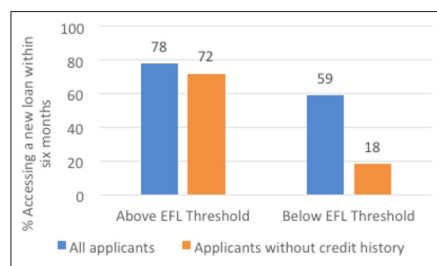


Figure 1: Short-term Loan Access (within six months of application)

Regarding the effectiveness of the EFL tool in screening good credit candidates, there is no evidence of lower Equifax

credit scores, or potentially poor repayment behavior, among applicants without credit histories. For applicants with credit histories who were more likely to take out a loan only from the partner bank, results show that they had lower Equifax credit scores three to four years later compared to those who were rejected by the EFL tool and were less likely to get a loan over that same timeframe. These lower credit scores may in part stem from applicants with bad credit histories receiving loans based on their EFL score alone. It is also possible that the partner bank did not prioritize monitoring and collection efforts for these clients due to the IDB Invest credit guarantee that was part of the pilot.

## CONCLUSIONS

Overall, the findings clearly reinforce the importance of gaining more comprehensive information about potential borrowers for assessing risk, making accurate lending decisions, and expanding credit supply. The EFL tool proved to be an effective alternative for helping MSMEs without a credit history increase their access to finance in the short-term without worsening the repayment trends of the bank's portfolio. Twenty percent of applicants (about 380 MSMEs) would not have received a loan offer from the partner bank based on its conventional screening method alone. However, for applicants with a credit history, the tool cannot be a substitute for traditional screening methods that weed out people with a history of poor loan repayment.

Given the unmet need for greater access to financing among MSMEs in the region – and the untapped business opportunity they represent for lenders – psychometric credit scoring tools offer a practical solution for both banks and potential borrowers, particularly in countries where well-developed credit bureaus are in the process of consolidation. ■

### Additional Information

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This brief summarizes the findings of the study by Arraiz, Irani, Miriam Bruhn, Claudia Ruiz Ortega, and Rodolfo Stucchi (2018), "[Are Psychometric Tools a Viable Screening Method for Small and Medium Enterprise Lending? Evidence from Peru](#)", which is part of IDB Invest's Development through the Private Sector Series.

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### References

- <sup>1</sup> IFC (2017). MSME Finance Gap. Assessment of the Shortfalls and Opportunities in Financing MSMEs in Emerging Markets.
- <sup>2</sup> World Bank Doing Business (2018).
- <sup>3</sup> Schmidt, F. L. & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological bulletin*, 124(2), 262–274.

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