

# REEVALUATING WHAT WE KNOW ABOUT THE IMPACT OF MICROFINANCE

Past RCTs do not discredit the impact of microloans on poverty reduction

## RESEARCH OVERVIEW

A recent review of six studies on the impact of microfinance by economists at the University of Connecticut has determined that prior claims that these studies discredited the impact of microfinance were themselves unfounded. Instead, when the studies are aggregated to achieve greater power, the data suggests the possibility of the impact of microfinance being moderately positive for business profit and durable consumption outcomes.

## RESEARCH FINDINGS

- ▶ **For Financial Inclusion:** The original six RCT studies do not discredit the role of microloans in poverty alleviation and improving livelihoods for poor households.
- ▶ **For Future Impact Evaluations of Microfinance:** Future studies can be improved by paying more careful attention to market saturation, treatment targeting, power calculations, and frequency of data collection.

## BACKGROUND

**Moderately positive impact of microloans have already been measured, despite negative press.** A growing constituency of practitioners, academics, and donors have become increasingly interested in testing and measuring the impact of interventions aimed at poverty alleviation—chief among them being microcredit. While a number of highly rigorous research methods exist for evaluating the impact of a particular intervention, arguably the most reliable method has been the Randomized Control Trial (RCT). In 2015, six RCTs measuring the impact of microloans were published in a top economics journal.<sup>1</sup> Despite articles claiming otherwise,<sup>2</sup> these studies do not discredit microloans. Rather, these popularized critiques were based on a cursory review of the studies without careful interpretation of the results. The original studies found:<sup>3</sup>

- ▶ An increase in access to microfinance services for treatment over control
- ▶ Positive impacts on starting or growing an existing business (e.g., increasing profit, revenues, assets)
- ▶ No negative impacts of microloans, despite high interest rates in some studies (up to 110% APR)

**Lingering concerns with the studies' design.** The initial studies showed that entrepreneurs invested in their businesses and experienced greater freedom in how they earned and spent their money, but did not show substantial increases in income. Yet on average, only 26% of the treatment group across the six studies decided to take a loan, suggesting that demand for credit was low. This naturally raises questions such as—*Was credit constraint a major factor in clients' poverty? Were these studies conducted in markets where neither treatment nor control groups had alternative credit options? Did the studies' time frames allow sufficient time to capture long-term outcomes such as income or well-being? Did these studies test good practice microfinance that included sufficient client training?*

## THE RESEARCH PROJECT

In 2018, Dr. Nathan Fiala and Mahesh Dahal (Univ. of CT) reviewed these six microcredit RCTs. Their review sought to replicate the studies' original results and answer two additional questions:

1. Can we learn anything new by pooling data for common indicators between the six studies?
2. How should these findings inform future studies on the impact of microfinance?

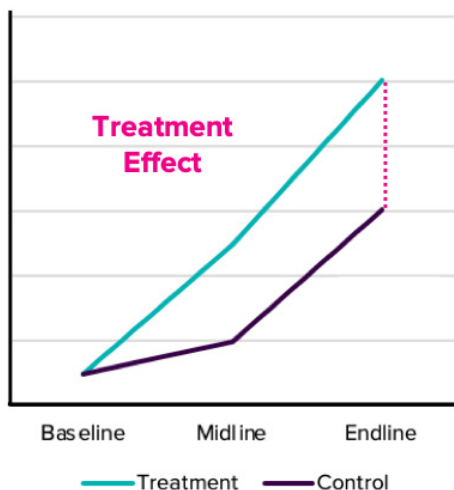
## RESEARCH FINDINGS

Based on their review, Dahal and Fiala concluded that, while the studies were replicable, they should not have been presented as definitive evidence to disprove the positive impact of microcredit on income because of their weak statistical power. Despite the perception of many microfinance critics, the six studies reviewed do not discredit the role of microcredit in poverty alleviation and improving livelihoods of poor households.

**Challenges with the studies’ design limited the original researchers’ ability to measure positive impacts.**

In fact, five of these six papers acknowledge that their studies were underpowered, although they stop short of stating that their results are null. (“Null” meaning not sufficiently powered to show any impacts—positive or otherwise.) Simply put, statistical power is based on two factors: the size of the treatment effect and sample size. The “treatment effect” is the difference in measured change between treatment and control groups. (See Figure 1.) If the treatment effect is large, the necessary sample size to show that the differences in effects were not “accidents” can be smaller. If the anticipated impact effect is small, a larger sample size is necessary. Many of these six studies struggled with low loan take-up in the treatment sample group and contamination of the control group, which watered down the impact effect. In the Mexico study, for example, only 17.3% of those in the treatment group took up loans, while 5.8% of the control group took up loans, watering down the difference from the theoretical ideal of 100% down to 11.5%.

Figure 1: Treatment Effect



This alone would not be a problem if the sample size had been large enough. But low loan take-up made it necessary to posit a larger effect size in order for changes in impact effects to register as “statistically significant.” (These thresholds are called “minimum detectable effects” [MDEs].) In the best-case scenario study, these low sample sizes increased MDEs for measuring business profits to 273% in Bosnia, meaning clients had to increase their profit by 273% (in 14 months) in order for the study to recognize that microloans had a positive impact on income. In the worst-case scenario study, clients in Mexico had to increase their income by 994% (in 16 months) for the study to recognize that microloans had a positive impact. Any less increase than the MDEs in the respective studies would state that “this study did not show statistically significant positive results of microloans.” For example, even though the treatment group increased their business profits by 68% more than the control group in Ethiopia, the study was not able to find any statistically significant impact, as the MDE for this outcome in the Ethiopia study was as high as 182%. Similarly meaningful but statistically insignificant results for increase in profit were measured in India (48% effect size, 895% MDE) and Bosnia (23% effect size, 273% MDE).

**Pooling data from the six studies addresses some of the power issues and improves the findings.** Running the pooled data (representing a sample of roughly 35,000) improves, but does not completely resolve, the statistical power issues present in the studies. Results of pooled analysis show a 29% increase in business profits for the treatment group and a 13% increase in durable consumption (both significant at 5%).<sup>4</sup>

**The issue of underpowered RCTs is not unique to microfinance, but there are ways that future studies of microfinance can and should work to mitigate study risks.** Statistical power is a problem in a wide range of studies. A review of 6,700 economic studies found that over half were underpowered, which demonstrates a serious, industry-wide challenge to RCT study design.<sup>5</sup> Reviewing these six RCTs reveals four main findings to improve the quality of future evaluations of microfinance:

1. Previous access to credit matters. Most of the six studies had a low up-take differential because access to credit was already high. Future studies should look for locations where access to credit is low and where credit constraint is a significant factor in the poverty of the region.
2. Better targeting for improved power. Power will improve if studies are designed so that take-up rates among treatment group is high and limited in the control group. Increased sample size would also help.
3. Focus on what you are evaluating and how to achieve optimal results. Consider if your evaluation is purely measuring access to credit, or if there are other constraints impacting key outcomes besides microfinance (e.g. business income may be impacted by access to a microloan and business training).
4. Include multiple rounds of data collection to increase the precision of estimated impacts with high variability (e.g. income, profits).

<sup>1</sup>Banerjee, Abhijit, Dean Karlan, and Jonathan Zinman. 2015. “Six Randomized Evaluations of Microcredit: Introduction and Further Steps.” *American Economic Journal: Applied Economics*, 7 (1): 1-21.

<sup>2</sup>Aizenman, Nurith. 2016. “You Asked, We Answer: Can Microloans Lift Women Out of Poverty?” National Public Radio. <https://www.npr.org/sections/goatsandsoda/2016/11/01/500093608/you-asked-we-answer-can-tiny-loans-lift-women-out-of-poverty>

<sup>3</sup>A more comprehensive summary of these RCTs, published by the original research firms: *Where Credit is Due*

<sup>4</sup>P=0.5 is a standard often used in social science research and suggests that there is a 5% chance that the results were accidental, meaning that any percent change greater than 5% can be considered valid and attributable to the intervention.

<sup>5</sup>Ioannidis, John, Tom D. Stanley, and Hristos Doucouliagos. “The power of bias in economics research.” *The Economic Journal* 127.605 (2017).