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policy analysis on growth and employment



**RESEARCH PROPOSAL Presented to Partnership for Economic Policy (PEP)**

## **A Propensity-Score Matching Evaluation of the Social Impacts of Micro-Financing on Municipalities and Households in Bolivia**

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### **Abstract**

Financial deepening through micro-financing is considered a panacea for development. Nevertheless, micro-financing could promote informal microenterprises and self-employment ventures, which may “crowd out” the operations of formal and sustainable small-medium enterprises that are widely seen as the optimal foundation for sustainable local economic development. Thus, what is the real socio-economic impact of micro-financing? Is employment or income lost as a result of the entry/expansion of microcredit-induced microenterprises and self-employment ventures? What are the externalities of micro-financing? Is it really helpful in promoting inclusive growth? To answer these questions, the research will use census information, household surveys and data on regional financing in Bolivia to compare municipalities/households with access to financing (the treated population) with those municipalities/households that lack credit facilities, in order to estimate the impact of financing on growth and employment. At household level, the impact of gender discrimination in credit access will be evaluated analyzing the socio-economic characteristics of the households where a woman is the head of the household. The results will be useful to properly formulate policies of financial inclusion in the context of New Development Agenda of the Bolivian Government.

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## 1. Objective and key questions

Perform a **critical** impact evaluation of financing and micro-financing at regional and household level in Bolivia, taking into account informality and gender discrimination in credit access.

*At household level, the study aims to analyze households where a woman is the head of the household, in order to measure the impact and the determinants of gender discrimination in credit access.*

### OBJECTIVE

#### Key questions:

- Is employment and growth in regions with access to financing different from those of municipalities without micro-financing?
- Is there gender discrimination in credit access for households where a female member is the household head? What are the determinants of this discrimination? Which age groups of female household heads suffer more discrimination?
- Are households with access to financing, and with a female household head, more likely to improve their economic situation through informal self-employment?
- Is informal self-employment improving the economic situation of households with a female household head which have access to financing?

*These questions are interesting and policy-relevant because micro-financing is conceived as a panacea for development, but its consequences in terms of negative externalities had been rarely explored, particularly in Latin-America<sup>1</sup>. Thus, the study will be helpful to fill the knowledge gap of a lack of critical impact-evaluation of the micro-financing model, as it aims to provide evidence on both the positive and negative impacts of micro-credit in Bolivia, analysing not only the banking system but also the micro-finance credit granted by other entities.*

We believe that **the research is in line with the PEP-PAGE priority issues of safety net complementarities, informal sector and credit access for female entrepreneurs**, because of the following:

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<sup>1</sup> See for example,

- *The Commercialization of Microfinance: Resolution or Extension of Poverty?*, by M. Harper
- *Undermining the Chances of Sustainable Development in India with Microfinance*, by A. Karnani et al..
- *Microfinance Saturation in Bosnia and Herzegovina, What Has Really Been Achieved for the Poor?*, by S. Drezgic et al..
- *Gender and Microfinance in Southeastern Europe: A Critical View*, by V. Cyprus et al., or,
- *The End of Microfinance?*, by Milford Bateman, one of the main critics of the myth of micro-financing. Milford Bateman has even suggested that it is time to ditch the pointless and misleading impact evaluations of the microcredit model, as e.g. (Milford' cites) 'Win Some Lose Some? Evidence from a Randomized Microcredit Program Placement Experiment by Compartamos Banco' by Manuela Angelucci, Dean Karlan, and Jonathan Zinman, 'Microfinance at the Margin: Experimental Evidence from Bosnia and Herzegovina' by Britta Augsburg, Ralph De Haas, Heike Harmgart and Costas Meghir, 'The Miracle of Microfinance? Evidence from a Randomized Evaluation' by Esther Duflo, Abhijit Banerjee, Rachel Glennerster and Cynthia G. Kinnan, or 'Are microcredit participants in Bangladesh trapped in poverty and debt?' by Shahidur R. Khandker and Hussain A. Samad).

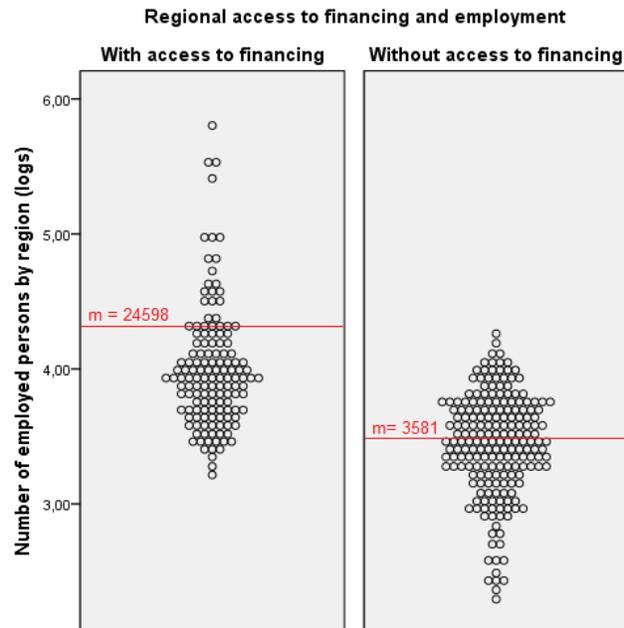
**Safety nets complementarities (to cash transfers)**

Increasing regional micro-financing can be viewed as a safety net to promote income growth and poverty reduction, but it is possible that micro-financing also promotes informal, familiar, self-employed activities which destroy the household ability to participate in the labor markets

**What is the impact of credit access on employment?**

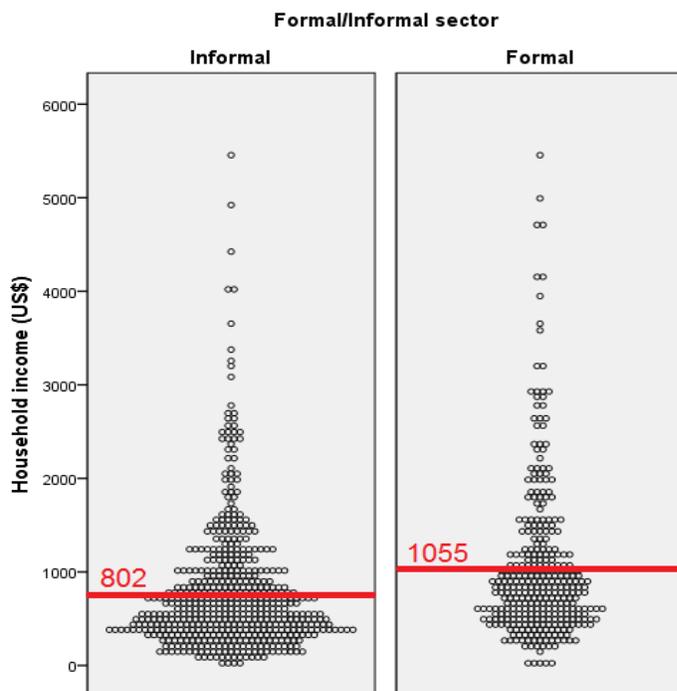
On average, the number of employed persons in regions where access to financing is available is **higher** when compared to those regions without loan provision in Bolivia

Financing seems to act as a “safety net” that allows vulnerable populations to participate in the labor market (nevertheless a reverse causality effect can exist as only employed people have credit access).



**Providing social protection for the informal sector**

Micro-financing in poor regions tends to be directed to the informal sector, and thus understanding the impact of financing is helpful to properly protect the low-income earners of the informal sector from a fall in his income or over-indebtedness.



**What is the impact of credit access on the income of the informal sector?**

On average, the income of households of the formal sector with credit access is **higher** compared to the informal sector\*

Maybe financing is not enough to improve the situation of the low-income earners of the informal sector.

(\* ) Registration in the pension system was used as a proxy for “formality”, based on the information of the principal activity of the household head.

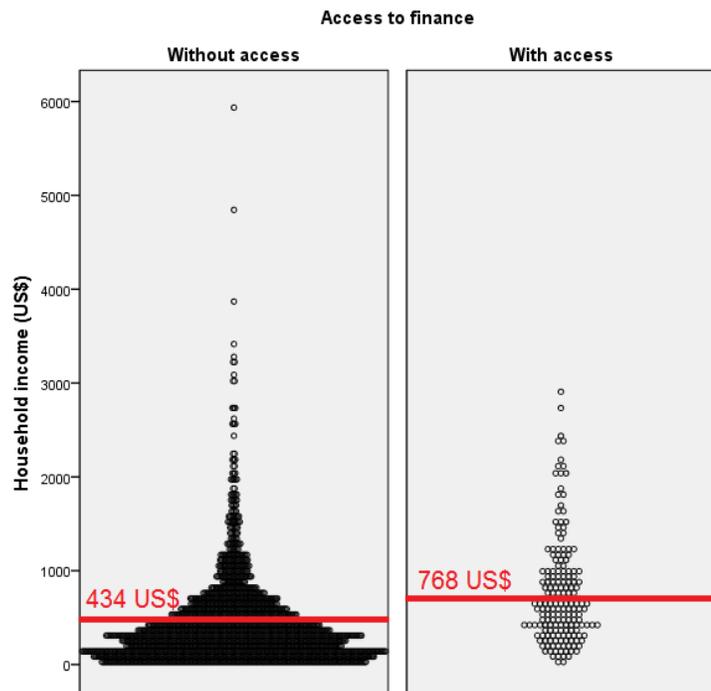
## Discrimination in credit access for female entrepreneurs

We would like to evaluate the consequences of gender discrimination in credit access for those households in which women are household heads, in terms of reduced household income, generation of major opportunities of productive activities or better life conditions (health and education), which may be improved with credit access.

### What are there consequences of gender discrimination in credit access?

The proportion of households with credit access is 12% when a man is the household-head, while the proportion of households with credit access is only 9% when a woman is the household-head.

In those households with woman household-heads, the income of households is nevertheless **higher** than those without credit access.

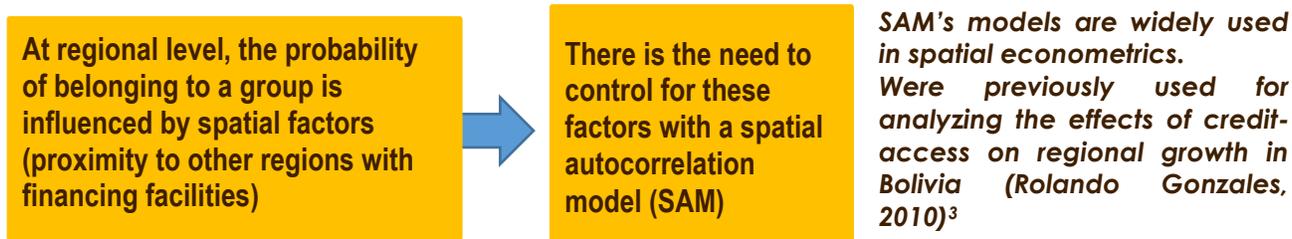


## 2. Methodology

- The descriptive results suggest that,
  - Financial access can act as a safety net to promote regional employment, thus **financial expansion may be useful to improve the regional labor market.**
  - Credit access alone does not seem to be enough to improve the household income of the informal sector, thus **there may be a need to protect low-income earners of the informal sector from over-indebtedness or income fall.**
  - There is some evidence of gender discrimination (low loan coverage for women), **thus policies of financial deepening for woman household-heads may be appropriate to improve income in these households.**
- Nonetheless, other demographic and socio-economic variables might be relevant to explain the differences between groups: **we need to account for confounding variables to perform an unbiased impact evaluation of financing and thus properly formulate evidence-based policy recommendations**

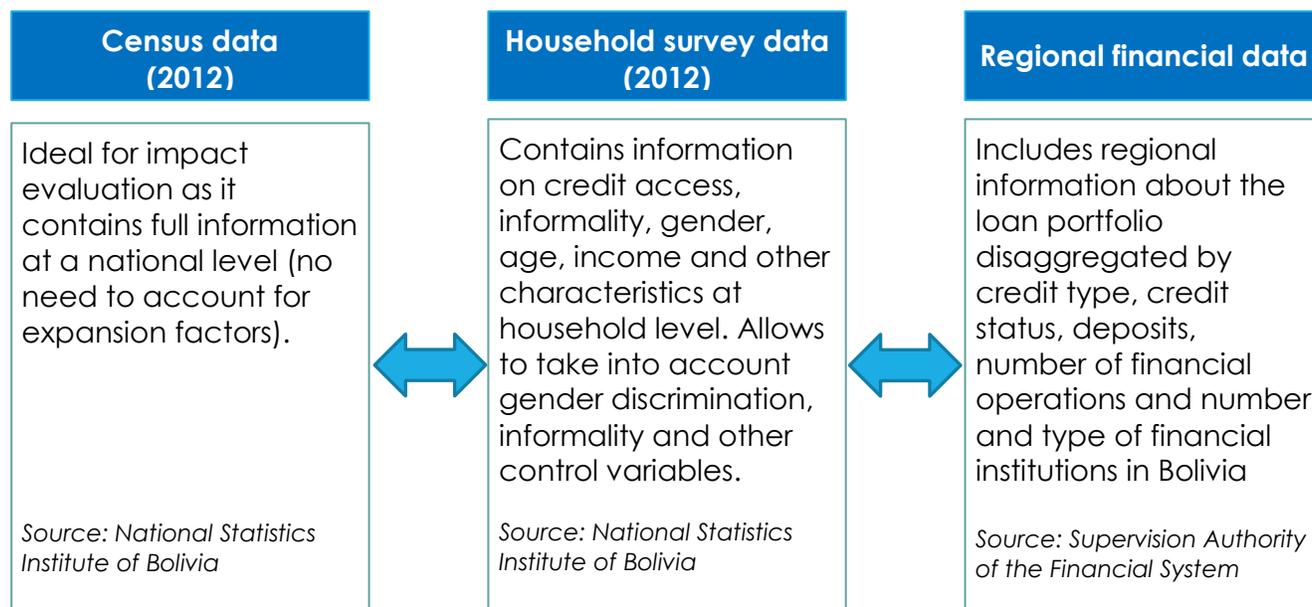
The **Propensity Score Method**<sup>2</sup> can be used to control for the selection bias of different individuals (in this case, municipalities or households) receiving the treatment by estimating the probabilities of receiving treatment, given some observed variables.

Municipalities/households with similar probabilities of receiving the treatment will be grouped to estimate a conditionally independent average effect of micro-financing at regional/household level.



### 3. Data requirements and sources

The data requirements of the research are the Census data, Household survey data and Regional financial data. Currently, *our team is already in possession of the household data, the census data and the regional financial data*<sup>4</sup>.



<sup>2</sup> Introduced by Rosenbaum and Rubin (1983).

<sup>3</sup> See "On the importance of credit for regional economic development in Bolivia: an analysis with non-parametric inference, spatial econometrics and Bayesian methods", by Rolando Gonzales, Central Bank of Bolivia First Award, XII National Research Contest, 2010.

<sup>4</sup> The Census data of Bolivia is freely available at:

<http://www.censosbolivia.bo/binbol/RpWebEngine.exe/Portal?&BASE=CPV2012COM>

The Household Survey data of Bolivia is freely available at:

<http://www.ine.gov.bo:8081/Webine10/enchogares1.aspx>

On the other hand, the financial data was kindly provided by a female member of our team (Patricia Aranda), who currently works as a researcher at the Authority of Financial Supervision of Bolivia.

The census data and the household data comprise demographic information and household characteristics of the population in Bolivia, including variables as e.g. employment status, age, sex, regional information of the number of inhabitants, information of the household type, the goods own by the members of the household, or the property status of the household.

There is no need to match the household data as it is already in the format required for the quantitative analysis. On the other hand, it is quite easy to match the census and the micro-financing data when both are converted to regional data at a municipality level. (See example figures in section 2).

#### 4. Policy impact

The Analysis Unit of Social and Economic Policy (**UDAPE, Unidad de Análisis de Políticas Sociales y Económicas**) of the Ministry of Development Planning is the development think-tank of the government of Bolivia, in charge of translating empirical results into evidence-based policy.

##### Policy Formulation at UDAPE:

- UDAPE is the technical secretariat of the «National Economic & Social Policy Council of Bolivia», which is in charge of formulating economic and social policies in coordination with all the sectors of the government
- UDAPE is part of the Ministry of Developing Planning, which is in charge of elaborating the New Development Plan of Bolivia up to 2025

##### Policy Evaluation at UDAPE:

- We have performed recently an impact evaluation of cash transfers to elderly, using a Regression Discontinuity Design (we found an impact of 13.5pp of poverty reduction in households starting receiving the transfer)
- Currently we are conducting impact evaluations of other conditional cash transfers

Specifically, the results of the study will be helpful to address the policy issues/needs of the National Development Plan (Agenda 2025) and the New Law No. 393 of Financial Services of Bolivia. Both the Agenda 2025 and the New Law of financial services seek to develop an inclusive and equitable financial system, committed to development and poverty eradication in Bolivia.

## The Agenda 2025

### Patriotic Agenda of the Bicentenary 2025 of Bolivia

The Agenda 2025 is the **New Development Plan of the Bolivian Government up to 2025**. **Pillar 5** of the Agenda 2025 is “financial sovereignty without subservience to capitalism”; the target of this Pillar is having a financial system with a social orientation in Bolivia, in order to provide resources to vulnerable groups and communities of the society.

One of the goals of Pillar 5 aims to “develop a financial system for integral development” committed to development and poverty eradication. In this system, the government is part of the financial system, both as a regulator and as an actor with development financial institutions (development banking), with the purpose of supporting **an inclusive and equitable financial system**.

In the vision of the Agenda 2025, financial deepening and financial access have geographical coverage targets (in terms of increasing loan provision, more regions with credit access and more financial education). The Agenda also takes into account the possibility of issuing special regulation for micro-financing, including non-conventional guarantees, in order to achieve the diversification of productive financing and thus strength the “plural economy” model of Bolivia.

**The results of the study will be helpful to achieve the goals of the Agenda 2025** because understanding the regional/household characteristics related to the impact of credit access in Bolivia is,

- *Extremely useful to grasp the policy impact of the policies of inclusive and equitable development banking (and thus decide what the targets of development banking should be in Bolivia).*
- *Useful to prioritize policies of geographical loan coverage to regions with credit needs (because if credit access is improving regional development and eradicating poverty in some regions, financial access must be expanded to regions without credit access, as suggested in the Agenda 2025).*
- *Useful to understand which social economic actors and women-led organizations can undertake productive activities to empower the forms of economic organization fostered by the Agenda 2025 (since financial access is useful for the capitalization of both SMEs and the “community” sector of the plural economy).*

*The dissemination of the study results will be helpful for financial education because will allow to highlight the benefits of credit access and thus promote payment behavior, particularly in rural areas where there is still some susceptibility in the use of conventional (regulated) financial services.*

## New Law of Financial Services of Bolivia

The New Law of Financial Services of Bolivia (2013) states that “financial services must fulfill the social function of contributing to the achievement of the objectives of integral development for well living, eliminating poverty and social and economic exclusion of the population”.

Also, this Law states that “access to financial services must be on a basis of equal treatment, without discrimination because of age, gender, race, religion or cultural identity”.

### **The study will be useful to design regulations for this New Law, because,**

- *Diversification of productive financing and special regulation with non-conventional guarantees can be useful to support the informal sector (nevertheless, if credit access is not fully improving the situation of the informal sector, policies to avoid over-indebtedness and a well-planned financial deepening scheme must be elaborated to prevent predatory loan provision).*
- *If there is evidence of discrimination to woman household-heads, then policies to expand credit access to these households would be appropriate to allow access to financial services on a basis of equal treatment.*

## **5. Policy influence plan (research communication strategy)**

There are plenty potential users of the research findings:

<b>Institution</b>	<b>Target</b>
<b>Ministry of Development Planning</b>	Development
<b>Ministry of Economics and Finance</b>	Finance
<b>Supervision Authority of the Financial System</b>	Financial supervision
<b>Central Bank of Bolivia</b>	Financial supervision
<b>Productive Development Bank of Bolivia</b>	Second floor banking for development
<b>Pro-Mujer</b>	Gender-oriented micro-financing
<b>Fin-rural</b>	Micro-financing organization
<b>ASOBAN</b>	Association of Banks of Bolivia
<b>ASOFIN</b>	Micro-financing organization

In terms of dissemination, an official communication will be sent to the stake-holders, notifying them about the project and the expected outcomes, and inviting them to be

*part of the project sending commentaries and periodically receiving updates of the results.*

*After concluding the project, the dissemination strategy contemplates the publication of a research paper and policy briefs for stake-holders and policy-makers. The budget also accounts for the organization of a national conference to present the results of the research, which will include presentations of related studies made by the Central Bank, the Bank of Productive Development of Bolivia, the Supervision Authority of the Financial System in Bolivia and other institutions.*