

# PAGE

policy analysis on growth and employment



Barriers limiting access to financial services for micro and small entrepreneurs in Bolivia: A randomized lab-field experiment on institutional ethnic discriminatory practices

EXPERIMENTAL RESEARCH PROPOSAL

Presented to

**Partnership for Economic Policy (PEP)**

By

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&

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Bolivia

**Updated proposal - October 2015**

## Before you begin

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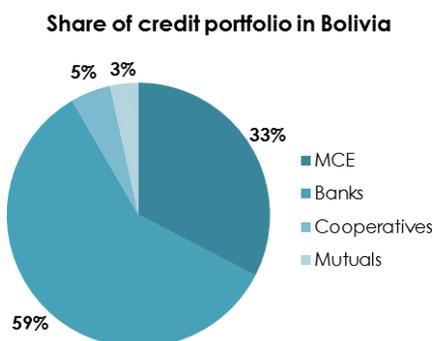
## SECTION A – Project Description

### 1. Motivation (300 words max.)

Bolivia has a long history of microfinance technology committed to improve financial access for unattended sectors of the population.\* Recently, the Bolivian government issued regulations for eliminating market barriers to credit access for micro and small enterprises: (1) limits to interest rates for productive activities,\*\* and (2) the requirement for specialized banks to keep at least 70% of its portfolio allocated on loans to Small and Medium Enterprises (SMEs).\*\*\* Despite these efforts to decrease institutional and market barriers to loan provision, there still may be **discriminatory practices** limiting the access of financial services for vulnerable sectors of the population, as Bolivia is a country composed of several indigenous ethnic groups\*\*\*\* who can be victims of **discrimination from credit officers** when asking for a loan in a financial institution. As there are no records of ethnicity in credit scoring (since this will be a discriminatory practice itself) it is not possible to use administrative information from financial institutions to assess the extent of discriminatory practices during loan provision. Nevertheless, a lab-field experiment can be used to evaluate if ethnic discrimination is a barrier limiting access to financial services for micro and small entrepreneurs of Bolivia.

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(\* )Bolivia was listed several times as the runner-up top performer in microfinance worldwide, just behind Peru, in the Global Microscope on the Microfinance Business Environment sponsored by the Inter-American Development Bank. See Economist Intelligence Unit (2010) and Economist Intelligence Unit (2011).

Microfinance is still an important financial activity in Bolivia. At September 30th, 2014, the gross portfolio of specialized microcredit entities (MCEs) was 33% of the total system of financial intermediation in Bolivia (see the graph below).



Of the total amount of gross micro loans allocated by MCEs 59% were allocated to men and 41% to women. A similar proportion of allocation is obtained using the number of operations instead of the amount of gross loans (54%, 45% respectively). Additionally, 32% of the customers of micro-finance are engaged in trade

activities, followed by services, and producers; only 7% of clients are employees who have gainful employment (see table below).

Economic sector	Number of clients	Share
Farmers	70,452	10%
Other producers	124,325	17%
Commerce	236,154	32%
Services	251,165	34%
Salaried	49,978	7%
Total	732,074	100%

Both in terms of portfolio and number of clients, microcredit is concentrated in the major departments of Bolivia: La Paz, Santa Cruz and Cochabamba. Seventy two per cent (72%) of the customers of micro-finance are in urban areas and only 28% in rural areas.

(\*\*) See the regulation of interest rates available at <http://www.lexivox.org/norms/BO-DS-N2055.xhtml>

(\*\*\*) See the Articles 234-237 of the New Law Financial Services of Bolivia (2013), available at [www.bcb.gob.bo/webdocs/sipav/Leyes/Lev393.pdf](http://www.bcb.gob.bo/webdocs/sipav/Leyes/Lev393.pdf)

(\*\*\*\*) Forty nine percent (49%) of the total population of Bolivia identifies itself as indigenous or part of an ethnic group, according to the last census of Bolivia from 2012.

## 2. Main research questions (200 words max.)

The main research question we seek to answer is:

*Does being part of an indigenous group is a limitation to credit access for micro and small entrepreneurs in Bolivia?*

As credit access depends on the evaluation of the profile of the potential borrower through credit scoring (i.e. credit risk analysis), our null hypothesis is that there is no significant difference in credit scoring between credit applicants **with** indigenous ethnic characteristics compared to credit applicants **without** indigenous ethnic characteristics. A lab-field experiment can be used to test this hypothesis if randomly selected credit officers are selected to evaluate credit profiles of micro and small entrepreneurs with and without indigenous ethnic characteristics. The difference between the credit scoring in the experimental and counterfactual group will be used to test the null hypothesis and answer the research question\*.

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 (\*) Indigenous ethnic characteristics can be understood as those related to a socially-defined category of people who identify themselves as indigenous, based on common ancestral, social, cultural, or linguistic similarities. See Isajiw (1974), or more recently, Peoples and Bailey (2014). These concepts of wide theoretical significance can be signalled to credit officers with person-based indicators of physical appearance and socio-cultural belonging:

Factor	Variable	Signal
Physical	Hair & skin pigmentation	Colorimetry (the amount of melanin in the skin/hair)
Socio-cultural	Indigenous sounding name	Indigenous sounding name
	Type of clothing	Indigenous

There is a need to identify which names are indigenous sounding and which names are not. Thus, as a check of distinctiveness in names, we pretend to conduct a survey to credit assistants that work with micro-entrepreneurs in La Paz. The similar strategy was used by Bertrand and Mullainathan (2004) for choosing

names in their experiment; nevertheless, we will use an on-line survey where the credit officer will be requested to relate a particular name to a photo. Each survey will contain two indigenous and two non-indigenous entrepreneur's pictures, according to our proposed definition of ethnicity.

### 3. Priority theme (200 words max.)

Micro and Small enterprises have a potential for economic empowerment and poverty reduction, but face great barriers during their creation and growth. One of these barriers is discriminatory practices from credit officers in financial institutions, as entrepreneurs with indigenous ethnic characteristics can be rejected for credit despite their repayment capacity or the profitability of her/his business. Thus, being part of an ethnic group can be a severe and arbitrary barrier limiting access to financial services for vulnerable and disadvantage groups of the population, which nevertheless need start-up or growth capital for their micro-small enterprise.

### 4. Policy relevance (200 words max.)

Our lab-field experiment is extremely important for the current socio-political and economic context of Bolivia. Since 2006, the government of Bolivia has been led by the indigenous president Evo Morales. Morales imposed regulations to reduce historical discriminatory practices that affected indigenous populations and ethnic minorities in Bolivia\*. In terms of credit access, the New Law of Financial Services of Bolivia (2013) states that the access of financial services must be on a basis of equal treatment, **without discrimination because of gender, race or cultural identity**\*\* It will be interesting to evaluate the impact of these efforts in reducing discrimination and formulate evidence-based policies of financial access for vulnerable groups. Both the Ministry of Development Planning of Bolivia and the Ministry of Economics of Finance will be interested in these policies. Groups of microfinance institutions as ASOFIN and FINRURAL will be also interested in knowing how ethnicity is influencing lending, as credit allocation will not be optimal if discriminatory practices arbitrarily distort the probability of default of a client.

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(\*)See the Law Against Racism and All Forms of Discrimination (2010), available at <http://www.rree.gob.bo/webmre/Documentos/d385.pdf>.

(\*\*) See the Article 74 of this Law, available at [www.bcb.gob.bo/webdocs/sipav/Leyes/Ley393.pdf](http://www.bcb.gob.bo/webdocs/sipav/Leyes/Ley393.pdf)

### 5. Experiment description (1.500 words max.)

- 1) Credit officers will be randomly selected from a list of micro-credit officers reported to the Financial Authority of the Financial System. The credit agencies will not be contacted in order to avoid some sort of punishment/instructions from microfinance institutions to the credit officers that will be part of the experiment.
- 2) Contact will be made with the selected credit officers by phone to briefly explain them about the experiment and to request their presence on the date of the experiment. A formal mail/e-mail specifying the participation conditions and the possibility to abandon the experiment at any time will also be provided to the

participants. The information that the participation fee will be offered at the end of the activity or whenever a participant decides to stop participating will also be provided. In the last case, it will be informed to the credit officers that those who do not complete the experiment will receive only transport compensation.

- 3) On the day of the experiment, the coordinator will provide written instructions about the experimental process to the participants.
- 4) The experiment coordinator will provide to each participant 20 folders with fictitious personal and financial information of potential borrowers (this information will be based on mixed information from real credit folders to retain authenticity).

Each set of 20 folders will be composed at follows:

	Non-Indigenous	Indigenous
Female	5	5
Male	5	5

In advance, before the experiment, the team members will use a credit-scoring model to properly calculate the credit risk of each folder.

- 5) In these folders, an indigenous/non-indigenous sounding name and a picture of the potential borrower will be used to signal the ethnicity of the entrepreneur to the credit officer.
- 6) The credit officers will be requested to perform a qualitative evaluation of the quality of each folder in terms credit guarantees and business flow. Also, they will be asked to determine the probability of default for at least one monthly payment in the loan period; the probability range is between zero (0) and a hundred (100), which zero meaning that the client will pay all of her/his payments, and a hundred meaning that the client will absolutely fail to pay at least one of her/his monthly credit payment.

This scheme of evaluation pretends to approximate its methodology to the real process of micro-credit evaluation currently used by credit officers in Bolivia, in which the credit officer, after the finance and economic evaluation, gives some suggestions and a conclusion concerning the approval or denial of the loan application.

After the experiment, a data analyst will transform the multinomial results of the credit officers into a (continuous) probability of default, using a credit score model. The **average** credit score of the folders of indigenous entrepreneurs against the **average** score of non-indigenous entrepreneurs will be used to test for discrimination.

## 6. Related literature (1000 words max.)

Taste-based discrimination (henceforth, TBD) was originally proposed by Becker (1971). In the model of Becker, TBD arises as the result of ignorance or *prejudice*, an intrinsic unpleasantness of employers against members of a minority group; this kind of prejudices are attached to race and/or gender characteristics and can be further extended to employee discrimination and consumer discrimination. Becker (2010) showed theoretically that taste-based discrimination -because of race, religion, sex, color, social class, personality, or other non-pecuniary considerations- originate a misallocation of resources,

ultimately reducing real incomes in the market, particularly those of the minority who was discriminated.

In contrast, statistical discrimination (henceforth, SD) is based mainly on the work of Arrow (1973) and Phelps (1972). SD is the result of limited information as employers who face uncertainty make decisions with prior information about qualities of the minority group based on (a) sociological beliefs or (b) previous statistical experience about the performance of the minority group. The discriminatory decision of employers can be considered *rational* (i.e. a decision that maximizes expected utility) if the cost of acquiring information is sufficiently high. In this case, employers will resort to easily observable characteristics as gender and race if these characteristics are correlated with the performance of the potential employees, i.e. gender and race information are used as a proxy for the performance of job candidates and affect hiring even if the employer does not have an intrinsic prejudice against the minority group.

The large majority of studies on discrimination were carried out in the labour market, evaluating discrimination in race and sex. According to Riach and Rich (2002), these employment experiments have not been designed explicitly to distinguish between the hypotheses which have been promulgated to account for discrimination (statistical discrimination vs. taste-based discrimination), but the diversity of non-white groups encountering discrimination, and the occupational pattern of the sex based discrimination, suggests that it is unlikely to have been statistically motivated. The recorded discrimination is more consistent with widespread social attitudes or tastes, to which employers obliged to conform; this is particularly true in sex-stereotyped jobs.

Following Altonji and Blank (1999), *discrimination in credit lending* can be defined as a situation in which potential borrowers who can meet their debt obligations in the same way are treated unequally in a way that is related to an observable characteristic such as ethnicity or gender. 'Unequally' in this case implies that potential borrowers face different credit-rejection rates or receive different credit amounts, conditional on the same characteristics.

In terms of competitive models of discrimination, TBD in credit lending can arise if the credit lender has an intrinsic prejudice against a potential borrower, while SD in the credit market will be the result of credit lenders who base their decisions on ethnic/gender stereotypes about a minority of potential borrowers. SD in the credit market can arise even if the lender lacks of intrinsic prejudices against the minority of borrowers, due to the fact that the discriminatory decision of the lender is the result of limited information about the credit profile of the potential borrower: even if a potential borrower can be a client with full and timely payment, i.e. a good credit client who meet its credit obligations, lenders who face uncertainty will use previous statistical experience on credit payments or sociological beliefs as prior information to take a discriminatory but nevertheless rational decision, in the maximizing-expected-utility sense, about the future credit performance of the potential borrower. Due to the high prevalence of ethnicity in Bolivia, both TBD and SD can likely arise in the Bolivian credit market as a consequence of cultural and language differences among the population in Bolivia; particularly, language barriers can be a major constrain for credit access and a cause for discrimination, as in the models of Lang (1986) or Lang(1993).

To test the effects of discrimination in the context of an empirical field experiment, Bertrand and Mullainathan (2003) sent resumes to job ads to evaluate if there was any discrimination in the labour market of Boston and Chicago; Bertrand and Mullainathan sent similar resumes, the only difference was the African American sounding names. They found evidence that racial discrimination is still a prominent feature of the labour market. As in Bertrand and Mullainathan (2003), we will try to have loan applicants with similar characteristics, except for ethnicity.

In terms of discrimination in the credit markets, Deku et al. (2003) evaluated access to consumer credit in the UK using information on 59,477 households between 2001 and 2009. Deku op. cit. found evidence that households of a racial origin other than white are more likely to be excluded from consumer credit. Blanchflower et al. (2003) use National Survey of Small Business Finances to evaluate discrimination in the small business credit market in the U.S. Using an econometric analysis of loan denial probability, Blanchflower et al. found that black-owned small businesses are almost three times more likely to have a loan application denied. Despite being loan denial probability an appealing methodology, it is not possible to replicate the study of Blanchflower et al. in Bolivia, because there is not available data of small business in this country. Nevertheless, it is possible to perform a field experiment to evaluate discriminatory practices for micro and small business in Bolivia, as we intend to do.

Concerning about credit scores, Ayra et al (2013), show that among some of the determinants of credit scores, trustworthiness is a significant one. In fact, they point out the difference between the ability to pay a debt and the willingness to pay, the last one related to others factors different from economic and financial capabilities. Furthermore, Karlan (2005) applies a trust game in order to measure trust and trustworthiness, in Ayacucho, a village of Peru. One important data showed in this paper is that they find a different behavior between pairs of indigenous and pairs of non-indigenous (called western) and indigenous.

Finally, an interesting previous study was presented as a proposal to the **Partnership for Economic Policy (PEP)** by Nwosu et al. (2013). Nwosu et al. wanted to identify if there is any discrimination in credit markets for women entrepreneurs in Nigeria, using propensity score matching. Our study will be supplementary to this research as (1) we intend to make the lab-field experiment in a Latin-American country, (2) our focus is on indigenous ethnic discrimination, while Nwosu et al. focus on gender discrimination, and (3) we will use an experimental approach, complementing the quasi-experimental study of Nwosu et al. Thus, our study will further enhance and enrich the results about discrimination in credit access in developing countries, deepening the research lines of **PEP**.

## SECTION B – Experiment Implementation

### 7. Targeted population (200 words max.)



The targeted population of the experiment are credit officers of financial institutions specialized in lending to micro-entrepreneurs.

When performing the experiment, the profiles of potential borrowers will include pictures showing the membership of micro-entrepreneurs to the Aymara\* ethnic nation, which is the principal indigenous ethnic group in La Paz, Bolivia.

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(\*) Aymara people are an indigenous nation located in Los Andes and Altiplano regions of South America. See Buechler (1971).

## 8. Recruitment protocol and sample size (1.000 words max.)

Recruitment protocol:

- 1) Credit officers will be randomly selected from a list of micro-credit officers reported to the Financial Authority of the Financial System. The credit agencies will not be contacted in order to avoid some sort of punishment/instructions from microfinance institutions to the credit officers that will be part of the experiment.
- 2) Contact will be made with the selected credit officers to briefly explain them about the experiment and to request their presence on the date of the experiment. The experiment will take place in an office specially arranged for this experiment.

Sample size:

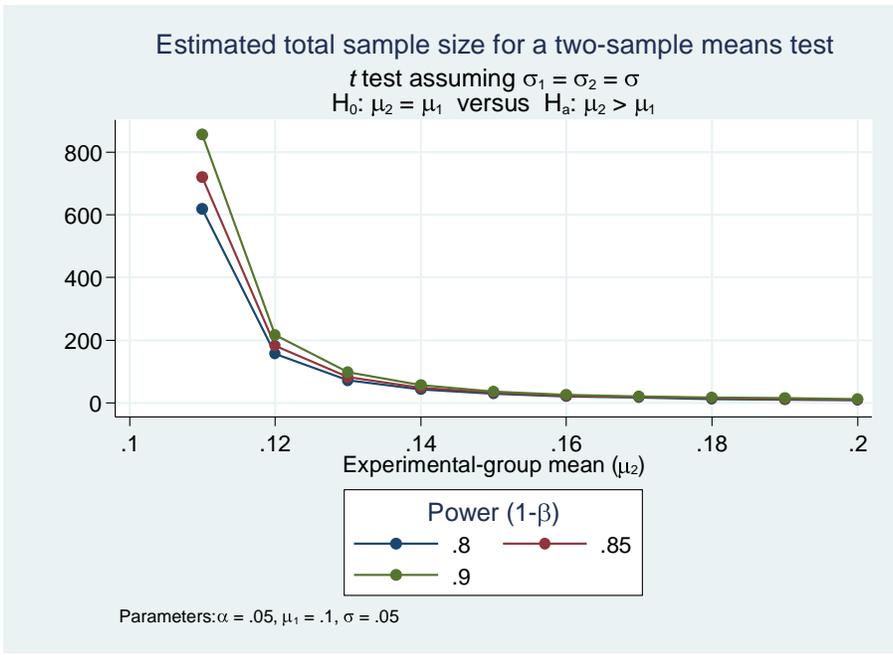
Let  $\mu_1$  be the average credit score of non-indigenous entrepreneurs and  $\mu_2$  the average credit score of indigenous entrepreneurs, *ceteris paribus*. Assuming equal variances of the probability of default in each group,  $\sigma_1^2 = \sigma_2^2 = 5\%$ , as there is no reason to believe that discrimination affects higher moments of the distribution in credit scoring, then the null of no discrimination in credit evaluation against indigenous entrepreneurs,

$$H_0: \mu_2 = \mu_1,$$

can be tested against the one-sided alternative of discrimination in credit evaluation against indigenous entrepreneurs, i.e. higher risk scores for the folders with indigenous sounding names:

$$H_1: \mu_2 > \mu_1.$$

Power calculations stratified by agencies suggest that a sample size of **98 credit officers**, is needed to test  $H_0$  using a conventional alpha significance level of 5%, with a statistical power of 90% and an effect size of 3% for an average probability of default (credit risk) of 10% in the folders of the non-indigenous group.



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. power twomeans .10 (.11(.01).2), power(.9) sd(.05) onesided
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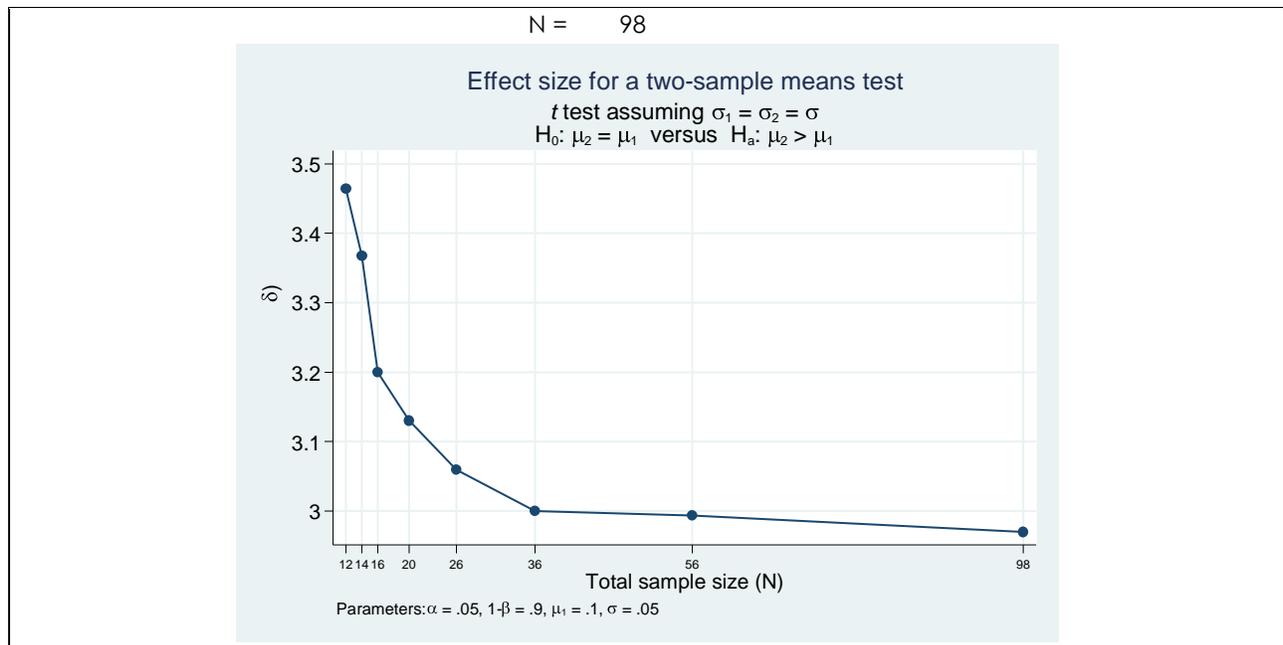
Performing iteration ...

Estimated sample sizes for a two-sample means test  
 † test assuming  $sd1 = sd2 = sd$   
 $H_0: m2 = m1$  versus  $H_a: m2 > m1$

alpha	power	N	N1	N2	delta	m1	m2	sd
.05	.9	858	429	429	2.929	.1	.11	.05
.05	.9	216	108	108	2.939	.1	.12	.05
.05	.9	98	49	49	2.97	.1	.13	.05
.05	.9	56	28	28	2.993	.1	.14	.05
.05	.9	36	18	18	3	.1	.15	.05
.05	.9	26	13	13	3.059	.1	.16	.05
.05	.9	20	10	10	3.13	.1	.17	.05
.05	.9	16	8	8	3.2	.1	.18	.05
.05	.9	14	7	7	3.367	.1	.19	.05
.05	.9	12	6	6	3.464	.1	.2	.05

As shown below, the effect size for this design is 2.9698:

Estimated sample sizes for a two-sample means test  
 † test assuming  $sd1 = sd2 = sd$   
 $H_0: m2 = m1$  versus  $H_a: m2 > m1$   
 Study parameters:  
 alpha = 0.0500  
 power = 0.9000  
 delta = 2.9698  
 m1 = 0.1000  
 m2 = 0.1300  
 sd = 0.0500  
 Estimated sample sizes:



## 9. Experimental protocol (1.500 words max.)

The experiment protocol is divided in three phases, a design phase, a pilot & lab-field phase, and a data analysis phase:

Design phase:

- Consultation with stakeholders will take place for ethical clearance (to inform the association of micro-finance institutions about the experiment).
- A sample frame of credit officers will be collected from the list of micro-credit officers reported to the Financial Authority of the Financial System. The credit agencies will not be contacted in order to avoid some sort of punishment/instructions from microfinance institutions to the credit officers that will be part of the experiment.
- Credit officers will be randomly selected for the pilot phase and for the lab-field experiment. The random selection will be stratified by agency in order to avoid contamination related to information spread between credit officers.
- Contact with the selected credit officers will be made directly by phone, without asking or notifying to the employers about the participation of the credit officer in the experiment. The credit agencies will not be contacted in order to avoid some sort of punishment to the credit officers that were part of the experiment.
- A place to perform the experiment will be rented. The characteristics of the laboratory will be based on previous experiences in developing countries as the ones described in e.g. Haushofer et al. (2014).
- Materials for the experiment will be prepared: Folders with credit profiles, pencils, and others.
- Twenty (20) folders with information of potential borrowers will be prepared. In these folders, an indigenous/non-indigenous sounding name and a

picture of the potential borrower will be used to signal the ethnicity of the potential borrower (**treatment**). A balanced design with equal proportions of indigenous/non-indigenous folders will be used. The set of folders will also be balanced by gender.

- The folders will include the usual relevant information for credit evaluation, they will be fictitious folders constructed by mixing information from real folders to retain authenticity. Special effort will be made to make the folders credible and comparable between groups.
- A credit scoring model will be used to calculate in advance the credit risk (probability of default) of each folder in a range between zero (0) and one hundred (100).

Pilot phase:

- The pilot phase will be performed in the city of La Paz, in a rented place of the city, during the last week of October 2015. Eight credit officers will be selected for the pilot.
- On the day of the pilot experiment, the coordinator will provide written instructions about the experimental process to the participants.
- A participation fee will be offered at the end of the activity or whenever a participant decides to stop participating. In the last case, those who do not complete the experiment will only receive transport compensation. This will be clearly specified in the invitation and the instructions. (We decide to follow the standard procedure of paying at the end of the experiment to avoid creating a potential bias on participants. They may behave differently if they receive money before starting the experiment.)
- Identification and information about their experience will be requested to the credit officers when they arrive, but not the microfinance institution to which the credit officer belongs. This information will not be recorded in the folders, thus, it will be impossible to know which credit officer made a specific credit evaluation, even for the experiment coordinator and the research team. The experiment coordinator will also take note of the observable ethnic characteristics of the credit officer (surname as a proxy).
- The experiment coordinator will provide to each participant 8 folders with personal and financial information of potential borrowers.
- The credit officers will be requested to perform a qualitative evaluation of the quality of each folder in terms credit guarantees and business flow. Also, they will be asked to determine the probability of default for at least one monthly payment in the loan period; the probability range is between zero (0) and a hundred (100), which zero meaning that the client will pay all of her/his payments, and a hundred meaning that the client will absolutely fail to pay at least one of her/his monthly credit payment. There will be no time limit to perform to evaluation. We have chosen not to impose a time constraint to preserve the external validity of the experiment and avoid potential selection biases. Kocher et al. (2015) show that preferences related to financial decisions such as risk attitudes may deviate from the patterns in the absence of time pressure.

The instructions to participants will be the following ones:

- *BayesGroup.org is a multidisciplinary research institute aimed to improve the understanding of social and economic phenomena in developing economies, using modern research techniques, particularly but not exclusively Bayesian methods.*
- *Currently, BayesGroup.org is conducting a project about microfinance which involves measuring the process of credit evaluation. In this sense, we kindly request you to assign a credit risk score to 8 folders of potential lenders, following these instructions:*
- *Please read carefully all the information in the credit profile of the 8 potential lenders. A picture of the economic activity and the potential lender was included in the profiles.*
- *Please fill the evaluation sheet attached to the folders.*
  1. *What is the qualification you give to the application loan you finish to analyzed?*

	<b>Quality of each feature of the folder</b>				
	<b>Poor</b>	<b>Fair</b>	<b>Average</b>	<b>Good</b>	<b>Excellent</b>
<b>Credit guarantee</b>					
<b>Business flow</b>					

2. *According to your experience how do you qualify the trustwothy of the potential borrower concerning to the repay of loans?*

<b>Poor</b>	<b>Fair</b>	<b>Average</b>	<b>Good</b>	<b>Excellent</b>

3. *What is the probability of default for at least one monthly payment during the loan period. The probability range is between cero (0) and a hundred (100), which cero means that the client will pay all of her/his payments, and a hundred means that the client will absolutely fail to pay at least one of her/his monthly credit payment.*

<b>Probability of default (0 -100)</b>

- *The participation fee for being part of this exercise will be offered to you when you finish the evaluation of all the folders. If you decide to stop participating, you will only receive transport compensation.*

Lab-field phase:

The lab-field phase will follow the steps of the pilot study, making the appropriate changes upon the lessons learned in the pilot phase, as e.g. a change in the time allocated to perform the experiment. The lab-field phase will be performed in the

city of La Paz, in a rented place of the city, during the month of November 2015.

Analysis phase:

- The research team will resume the multiple results of the credit officers into a single measure of probability of default for each folder, using a credit scoring model. In order to evaluate if there exist statistically significant differences between the control and the treatment groups, Bayesian t-tests will be used to test the hypothesis of no mean differences between the groups.\*
- Other interesting qualitative experience/results from the recordings of the loan application will also be used as prior information for the t-tests and for the report of the lab - field experiment.
- The report of the study will be written.

(\*) See inter alia, *Bayesian estimation supersedes the t test*, John K. Kruschke, *Journal of Experimental Psychology: General*, 2013, v.142 (2), pp. 573-603. Even if randomization will likely reduce the bias by equalising other factors that have not been explicitly accounted for in the experimental design, it will be interesting to present also regression-based results which control for other factors that might affect credit allocation, factors as e.g. the financial institution to which the credit officer belongs, gender, experience and other observable characteristics of the credit officers.

## 10. Timeline (300 words max.)

Phase	Activity	2015							2016		
		June	July	August	September	October	November	December	January	February	
Design	Consultation with stakeholders	█									
	Randomized selection of credit officers		█								
	Preparation of Loan Application folders			█							
	Recruitment of credit officers				█						
	Arrangements for experiment					█					
	Pilot field study						█				
	Field	Lab-field experiment						█			
		Data tabulation							█		
	Analysis	Data analysis								█	

Report writing	
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## 11. Budget outline (300 words max.)

Budget description	No.	Unitary cost USD	Expected cost in USD
Payment to study participants	98	45	4,410
Pilot	1	700	700
Experimental material & appetizer	2,156	2	4,312
Renting a space for experiment	2	1,500	3,000
Project Management (lead researcher)	1	5,000	5,000
Experiment coordinator	1	4,500	4,500
Research assistant	1	3,500	3,500
Data analyst	1	3,500	3,500
		<b>Total</b>	<b>28,922</b>

## SECTION B – Research Team

### 1. Team members

Name	Age	Sex	Education or Experience	Field of expertise
Gabriela Aguilera	29	F	Master in International and Development Economics, Université Panthéon Sorbonne (Paris I) Research support at the Inter-American Development Bank	Development economics, natural resources, finance, project management
Andrea Rojas	26	F	Master in Development Cooperation. University Jaume I. Castellón de la Plana - Spain	Development, gender and ethnic issues, project evaluation  She worked also as a credit analyst in financial institutions, thus she knows the procedures to evaluate a loan
Patricia Aranda	35	F	Bachelor in Economics,	Microfinance

			MBA	
Boris Luna	30	M	Bachelor in Economics, Post-graduate diploma on quantitative methods (Military School of Engineering - Bolivia)	Research assistance, ethnicity

## 2. Expected capacity building (200 words max.)

Team member	Expected capacity building	Specific tasks
Gabriela Aguilera	Gabriela is a young researcher and the female leader of our research team. Through the project, she will increase her knowledge on randomized field experiments and will further gain expertise on leading research projects	Project formulation and management. Writing of the final report.
Andrea Rojas	Beside increasing her extended background on field work, Andrea will benefit from the knowledge of senior researchers on the proper analysis of field data and scientific reporting	Field researcher, full-time field work, consultant on ethnic and gender issues. Writing of the draft and the final scientific report.
Patricia Aranda	Patricia will gained experience on quantitative methods for data analysis	Consultant on microfinance issues, procedures and regulation. In charge of the educational workshop in financial services
Boris Luna	Boris will gain experience on field work, microfinance, quantitative analysis, the management of research projects and scientific writing of study reports	Field researcher, full-time field work, enrolment of the participants, consultant on the ethnic background

## 3. List of past, current or pending projects in related areas involving team members (200 words max.)

Name of funding institution	Project title	Team members involved
PEP-PAGE	Bayesian Spatial-Propensity Score Matching Evaluation	Patricia Aranda Blanco

	of the Spillover Effects of Microfinance in Bolivia	
World Bank	Impact Evaluation of the Natural Disasters in Bolivia 2013-2014	Andrea Rojas Hosse
Inter-American Development Bank	<ul style="list-style-type: none"> <li>• Infrastructure Deficits, Growth and Poverty</li> <li>• Fiscal Vulnerability and Sustainability in Hydrocarbons-Producing Countries</li> </ul>	Gabriela Aguilera Lizarazú

#### 4. Ethical approval (200 words max.)

There is not an ethics review board in Bolivia. Nevertheless, we will consult the ethical implications of the experiment with ASOFIN and we received an ethic review from PEP.

#### 5. Ethical, social, gender or environmental issues or risks in relation to your experiment (300 words max.)

We believe that there are not any ethical, social, gender or environmental issues in relation to the experiment, if the study participants fully agree in being part of the study and properly know the procedure, protocol and implications of the lab-field experiment.

## 12. References

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