Social media instruments and the promotion of financial inclusion in Peruvian rural areas

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Abstract

This study seeks to evaluate the use of short soap operas as a mechanism to promote the use of formal savings accounts among poor rural women that have been secularly excluded from healthy interactions with the formal financial sector. We developed a short soap opera (telenovela), named Josefa, which transmitted pro-savings messages using characters and stories that could generate a level of identification with the intended audience. We used an experimental design that randomly assigned eligible villages of Huancavelica, the poorest department in Peru, to treatment and control groups, and organized special viewing sessions inviting all beneficiaries of Juntos, the Peruvian CCT program, in the eligible villages. A year later, we found that women who were exposed to the treatment have an improved knowledge and attitude towards formal savings, especially for precautionary motives. We did not find a significant change at the end of bimester savings balances until the July-August bimester, which we interpret as evidence that the improved pro-savings attitude remained latent for several months, until right about the time cash surpluses are likely, due to post-harvest season. In searching for the underlying mechanisms, we find no income effect, but a strong empowerment effect within the household, mainly for economic and financial decisions, and especially among the women under 40, which is also the group that shows more robust temporary savings effects. Overall, we interpret these results as evidence that the edutainment approach can have an important contribution to the financial inclusion of poor rural women that have faced secular exclusion from formal financial institutions like the ones from the Peruvian Southern Sierra.

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I. Introduction

Financial literacy interventions are being tried widely across the world to promote financial inclusion, transmitting key financial concepts and providing relevant information about options available to help households manage resources through time and uncertainty. Still, little is known about their effects, especially in developing countries (Xu & Zia, 2012). More recent efforts, however, comprehend the limitations of information and rationality, and are innovating by using psychological mechanisms to help understand choices made by the poor, searching for ways to counteract self-control problems, or identifying adequate role models that can improve their capacity to aspire to a better future (Banerjee & Mullainathan, 2010; La Ferrara, 2015; Lybbert & Wydick, 2016). La Ferrara (2015), in particular, reviews the evidence of the impacts of commercial television and educational entertainment (edutainment) over a variety of development outcomes, including family preferences and health, education and occupational choice, gender norms and social capital. Edutainment, as the process of purposely designing and implementing a media message to both entertain and educate, to affect the audience’s knowledge, attitudes and behavior, in particular, may have high probability to change the behavior of the poor by constructing popular role models that can connect to traditionally excluded audiences and exemplify the benefits of particular social attitudes or behavior.

Many recent studies indeed suggest that well-designed telenovelas that contain a significant aspirational element close to the viewers’ everyday reality can change patterns of behavior. Chong and La Ferrara (2010), La Ferrara, Chong, and Duryea (2012), and Chong, Rios, and Yanez-Pagans (2012) have demonstrated that aspirational content in telenovelas can have both short and long term effects, particularly in women. In these three studies, the authors demonstrate that telenovelas have held a central role in the functioning of contemporary Brazilian society, and that they have been crucial for the articulation, institutionalization, and changes in attitudes and patterns of behavior among women (fertility and divorce). Dellavigna and La Ferrara (2015) argue about the importance of the demand for entertainment when analyzing the impacts of media, as individuals choose a particular media independently of their preference for particular social and economic outcomes such as education, fertility, crime, or savings, even though the story may contain messages related to particular choices.
Separate studies focused on savings suggest the relevance of a theory of change in which behavior is driven by associating pro-social messages with the realizable goals and aspirations of their recipients. Karlan, McConnell, Mullainathan, and Zinman (2016), for example, show that savings reminder messages can have a substantial impact on the propensity to save and the probability that individuals stick to their savings goals. Most importantly for our study is that the authors of the paper saw the strongest effects on savings when the message was associated with a goal to which the participants could connect. More specifically to media instruments, Berg and Zia (2013) analyzed the impacts of a financial management plot on risky financial behavior. They inserted such a 2-month plot within an extremely popular soap opera in South Africa called Scandal, and incentivized viewership during that period by offering monetary compensation if those randomly chosen were able to answer key questions correctly about the financial management plot. They found improved financial knowledge on the specific topics treated within the subplot, but not in general. The treatment group also reported being more prone to borrowing from formal sources, and being less likely to engage in gambling and leasing agreements compared to the control group.

This study aims to contribute to this literature by evaluating, with the help of an experimental design, the use of a short soap opera (telenovela) called Josefa as a mechanism to improve savings knowledge, attitudes, and behavior among rural women of Huancavelica enrolled in Juntos, the Peruvian conditional cash transfer (CCT) program. To our knowledge, this is the first randomized controlled trial (RCT) that evaluates the relevance of soap operas for promoting saving and that can report on an objective measure: the changes in the daily balances observed in the participants’ accounts at Banco de la Nacion (BN). The focus in rural Huancavelica, one of the poorest departments in Peru, with the highest rate of the population of Andean origin and in villages secularly isolated from the rest of the national economy, underscores the importance of cultural factors.

We started by developing a quality mini-drama that combined a love story with characters and struggles that are close to the reality of the audience, with pro-savings messages that could affect the way they think about formal savings and their savings behavior. The pro-savings messages reminded viewers of the importance of saving for coping with risk and

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1 The control group was encouraged to watch another soap opera that was shown at the same prime time as Scandal.
capital accumulation, the risk of choosing an insecure mechanism, and showed that women like them can save, can interact confidently with savings institutions (for example, bank staff) and technologies (for example, debit cards), and can even accumulate meaningful amounts through regular deposits no matter how small.

We then organized special viewing sessions in each of the eligible localities randomly assigned to treatment, using the public school or other village building, and with the help of a trained facilitator that carried the required equipment and coordinated the help from community leaders and program officials (gestores). Randomization was performed at the village level, stratifying at the district level. Our preliminary results show that the soap opera was extremely successful in terms of capturing the interest of the targeted audience, based on the high proportion of invited people that attended the viewing sessions (average of 74%, with even a growing trend), and the way they recalled the characters, the story, and the key pro-saving messages, about a year after the viewing sessions. We also found that women in treatment villages had an improved pro-savings attitude, had a better understanding of the precautionary motive for savings, and improved control over economic and financial decisions within the household, about a year after the viewing sessions.

Finally, we found that savings do not significantly change immediately after the viewing sessions, but a strong effect is found about a year after, just after the harvest season when households tend to have cash surpluses. This effect is stronger among younger women, who also reported improved participation in household economic and financial decisions. First, this result is particularly important, as it takes us beyond the self-reporting towards an objective measure of savings behavior, and we are not aware of another study that has been able to report such an objective measure on financial inclusion. Second, this result is quite astonishing as it suggests the effects remain latent for about a year, but it appears strongly significant once cash surpluses provide a space for some savings. The idea that this effect is also associated with the empowerment of women within the household, and is stronger among younger women is also consistent with the importance of cultural factors.

The rest of the paper is organized in five sections, including the introduction. Section 2

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2 Control communities faced business as usual, e.g., they were invited to regular training sessions associated to compliance of conditionality’s, nutritional and childcare advice, and the likes.

3 Balances of the BN accounts before and until a year after the treatment were obtained with the support from the Ministry of Social Inclusion and Development (MIDIS), and establishing a protocol to guarantee confidentiality of the information.
presents a brief literature review and discusses the expected changes as a result of this intervention and the key research questions. Next, section 3 describes the process used to produce the video-drama and the organization of the viewing sessions. Section 4 presents the methodological framework, including a description of the experimental design, the data collected and the econometric approach to obtain the impact estimates. Section 5 presents the results, and we conclude with a summary and discussion of results.

II. Conceptual framework

The impacts of media on social outcomes have been increasingly scrutinized in the literature, for instance, the impact of violence in movies on crime. Surprisingly, though, the evidence of such a connection is rather mixed. DellaVigna and La Ferrara (2015) argue that such effects are possibly hidden due to the fact that such exposure substitutes for activities that are not better for crime reduction. Another factor is the complications linked to capturing long-term effects for this kind of exposure. More recently, however, studies have started to document the impacts of media exposure on fertility. First, we have La Ferrara et al., (2012) which discusses the long term effects on fertility rates in Brazil from exposure to soap operas (telenovelas) by taking advantage of the staggered expansion of cable into Brazil. A similar strategy is used in Kearney and Levine (2015) to show the impact of the MTV show 16 and pregnant on teenage births in the United States. DellaVigna and La Ferrara (2015) argue that the estimated impacts of the former are based on the overall demand for entertainment by the target population, making the decision to watch mostly unaffected by the social messages that could be inserted in the episodes. We argue that the decision to watch Josefa, although generated from an invitation by Juntos officials, is strongly based on the high demand for this kind of media entertainment in the rural areas in which we base our study, and it is not a substitute for some other pro-savings activities.

A key element of the quality of the story is the closeness of the characters and story to the reality of the intended audience, while connecting positive savings practices to aspirations of success. Closeness to the reality of the intended audience may be key to affecting rural women’s self-image with respect to the interactions with the formal economy that has traditionally excluded or ignored them, which may be important for them in order to change
the attitude towards positive interactions with formal banks (La Ferrara, 2015). On the other hand, the connection between the messages in the soap opera and the aspirations of the target audience may be key to getting pro-savings messages across, and leading to behavioral changes with respect to the savings accounts at the BN (Karlan et al., 2016).

Based on this, the key question behind this study is whether a soap opera with characters and a storyline close to the reality of the targeted audience (female CCT beneficiaries from rural village of southern Peru), and with clear pro-saving messages can capture the audience’s interest and transmit messages that can lead towards changes in their savings patterns, in particular in their use of their accounts at BN. In doing so, the hypothesis behind this is that information about financial concepts and products is not enough to result in such a change, and that a soap opera, as the one produced for this study, can help overcome some cultural barriers that keep poor Peruvian rural villagers from transacting with formal banks in Peru. In particular, this study aims to answer the following research questions:

(i) Can the use of telenovelas linking the benefits of savings (or dangers of not saving) with women’s goals change their use of savings patterns in financial (BN accounts) and non-financial (livestock, jewelry, etc.) instruments?

(ii) Do telenovelas affect savings levels differently when the viewing of episodes is associated to incentives that increase community-based competition and lotteries?

(iii) By what means do these changes in savings patterns empower women to change the patterns of household consumption and strategies for generating family income?

(iv) Do the effects of telenovelas on the patterns of saving, the empowerment of women, and the well-being of the household differ depending on their previous exposure to TV or radio programs and soap operas, or on other characteristics of the women, their families, and their communities?

Clearly, the answers to these questions in this particular setting would depend on the quality of the soap opera created especially for this purpose and population. The next section describes the process followed to produce the soap opera and the organization of the viewing sessions.
III. Producing and showing the soap opera

The production of the soap opera was assigned to an audiovisual firm, Antorcha Comunicaciones, that has vast experience in the development of media material that combine fiction with messages that promote positive social attitudes or behaviors among different target groups. We asked Antorcha to work with a Consultative Group (CG), formed by professionals of social sciences, experienced with interventions promoting financial inclusion in poor Peruvian rural areas. This was done to help strengthen the pro-savings messages included in the different episodes, and to ensure their consistency with other messages targeted in alternative projects led by the unit of Financial Inclusion of the Ministry of Development and Social Inclusion (MIDIS) and the Juntos program. The CG was led by the co-Principal Investigator (PI) Martin Valdivia (GRADE), and also included a member of the Unit of Financial Inclusion of MIDIS, a representative of the Juntos program, and four members from Proyecto Capital and IEP.5

The first act was for Antorcha to transmit to the CG some basic knowledge about producing soap operas, which was followed by an agreement on a protocol for the collaboration. The CG then commissioned a qualitative study to learn about the characteristics of the CCT beneficiaries and its communities in the study location (four provinces of Huancavelica, one of the poorest departments in Peru), especially about their knowledge, perceptions and practice of sound saving strategies, formal and informal, and the way they connect to their social aspirations and role models.6 The results of this study were intensively discussed in two workshops, which helped Antorcha define the concept for the full story in five episodes.7

The next two workshops allowed for a discussion of the concept proposed by Antorcha for the full story (5 episodes of 20 minutes each). They decided it would be a story about personal development combined with a love story where the main character was a young female

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4 The planning and production of the soap opera was carried out mostly throughout 2013. See Appendix Figure 1 for a detailed timeline of the production of the soap opera, as well as of the whole study.

5 Proyecto Capital funds Todas Cuentan, which is the initiative that has initially promoted and funded this project. For more information, about Proyecto Capital, and its initiatives, see: http://www.iep.org.pe/fp_ap_proyectos_fase_proy_proyid_192.html.

6 The fieldwork and qualitative analysis of the information was executed by two anthropologists from Proyecto Capital: Elena Caballero and Maria Cristina Gutierrez. A key learning of this study was the importance of the community to validate any concept of individual success.

7 The decision of five episodes of 20 minutes was mainly the result of budget considerations.
beneficiary of Juntos, named Josefa. The savings culture and communal solidarity were defined as key elements of the character’s personal development and social success. The positive messages, pro-savings and pro-conditionalities, would be transmitted through the interaction between Josefa and her older sister, Rufina, who had already achieved some elements of social success, and who decides to help Josefa with her struggles by teaching her the key values she found useful. The scripts for each of the five episodes were also discussed and approved by the CG, including the definition of the key pro-savings messages in each episode, as follows:

1) It is important to save some of the money you earn/have, no matter how small (buy only what you really need, avoid spending all).

2) Risks of non-financial savings (need to keep savings in safe place).

3) Always keep some savings for unexpected expenses/emergencies.

4) Savings are key for future welfare-improving investments (advantages of partnering for social and economic community enterprises).

5) Planned savings can help achieve great goals and a better future.

The shooting of Josefa took place in rural Junin, a department neighbor to Huancavelica between October and November of 2013, and the final version of the episodes were ready by February 2014. Following this we organized special group viewing sessions in the localities where the beneficiaries resided, to avoid distance to the viewing locations affecting attendance and to avoid private viewing negatively affecting the social capital that they had built through the CCT program. The sessions occurred throughout August of 2014, with the help of a group of 14 trained facilitators. A key element of the organization of the viewing sessions was the protocol to invite women from each locality to the event, for which we had the valuable support from the program’s local official (gestor) and the community representative. We invited all the of the women registered as beneficiaries of Juntos in the

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8 Figure 2 shows the images of the two main characters of Josefa.

9 The team from Antorcha planned and implemented the whole shooting, including the casting and the choice of costumes, locations, etc. A trailer of Josefa can be found at the following link: http://www.grade.org.pe/proyectos/mini-novelas-educacion-financiera-y-promocion-del-ahorro/

10 Facilitators were all professionals and residents of Huancavelica, with a degree in social sciences or communications. All of them were fluent in Quechua, and with experience working in rural areas with female beneficiaries of Juntos. They were trained during a 2-day workshop in Huancavelica, to clarify the objectives of the sessions and offered guidelines for facilitating the discussion of each episode.
treatment localities. A first printed invitation card was delivered to all listed beneficiaries two weeks in advance through the community representative (madre líder). A reminder was later sent two or three days before the inaugural session.

The facilitators were equipped with a film projector, laptop and speakers, which they used to show each episode, with the help from key local agents they identified and contacted during validation visits prior to the beginning of the viewing sessions. After this validation and the call for beneficiaries, the facilitators started visiting communities every week (1 community every day from Monday to Friday, and two on Saturday), organizing viewing sessions in schools or health centers, mostly in the afternoons to maximize attendance. The facilitators greeted attendees at the viewing of each episode, and proceeded to present the episode. After the episode, they facilitated a brief discussion among attendees about the events of the episode and the key pro-saving messages, similar to regular training sessions usually organized by Juntos. They then closed with an invitation to the following session.

IV. Methodological framework

This study explores the impacts of having been invited to watch Josefa on the financial savings knowledge, attitudes and behavior of the female beneficiaries of Juntos, using an experimental design. In what follows, we describe the experimental design, the data collected and the econometric approach used for the data analysis.

4.1. The experiment

We first selected 150 eligible communities in the department of Huancavelica, one of the poorest departments in Peru, specifically from four provinces: Tayacaja, Acobamba, Churcampa and Huancavelica, as we chose to stay away from the 70 districts prioritized by the Ministry of Social Inclusion and Development (MIDIS) to avoid working with a population

11 During the validation visits, facilitators met community leaders, secured a proper space for the sessions, most of the time in the local school or health centers, and identified some local contacts that could support them with invitations for the target audience and during the sessions.

12 Training sessions regularly offered by the program addressed the importance of conditionalities (school attendance and health controls), and nutritional information, among others.
overexposed to financial literacy treatments. Our approach was to work with an eligible group that would include traditionally excluded populations, but for whom the cultural barrier was more relevant than others such as the geographical distance from the BN agency. Consequently, we included some extra eligibility criteria, based on villages’ population size, poverty level and access to electricity and financial infrastructure.\footnote{More precisely, eligible villages needed to have at least 150 households, have electricity, be served by the program Juntos, and receiving cash transfers through direct deposits to the BN account, rather than receiving an envelope with the cash, which the program does for those villages that are too far away from the BN offices.} Access to electricity was an obvious conditionality as it was absolutely needed to allow the viewing sessions in the villages. With respect to financial infrastructure, we learned that Juntos beneficiaries had two mechanisms to receive the transfers; one was through a direct deposit into their BN account, while other beneficiaries received the cash directly via a special transport that visits the localities every two months. It was clear that the second group was located in villages that were too far away from the BN agency in the district, so we decided to restrict the eligibility to those villages that received the transfers through direct deposit, and knowing that the geographical barrier in terms of distance to the nearest BN agency was not that relevant for them.

The 150 eligible rural villages were randomly assigned to the control and two treatment groups, 50 villages to each group. Women in the villages assigned to the first treatment group were invited to a viewing session organized in their own village. The second treatment group were invited to similar sessions, but also had a questionnaire competition followed by a lottery worth $30 USD of in-kind prizes for those women who were able to correctly answer questions about the characters, the storyline, and the pro-saving messages.\footnote{In-kind prizes refer to actual goods or services, as opposed to cash gifts.} The competition and lottery were announced on the first invitation and participants were reminded about them at every viewing session. The lottery was supposed to occur if more than one beneficiary was able to answer the set of questions correctly. The idea of this treatment group was to see if such a complementary incentive was necessary and effective in increasing attendance to the viewing sessions. However, this treatment did not work as planned, as participants rejected the idea of a lone beneficiary and demanded the value of the prize to be distributed among all of them, despite the fact that it was a very small amount for each participant. In the end, facilitators complied with their request. Since we did not observe any difference in attendance rates for the villages that did not include this incentive, we decided to present the results
pooling the sample of the two original treatment groups, as opposed to distinguishing between the two treatments.

Randomization was stratified by district and originally established two treatment groups and one control group, with 50 localities per group.\textsuperscript{15} Figure 3 shows the geographical distribution of the villages in each treatment group across the four Huancavelica provinces. In the 150 eligible villages there were 6,383 female participants registered as beneficiaries of Juntos; 4,220 of them belonged to the 100 communities that were invited to the viewing sessions for Josefa, while 2,163 beneficiaries in 50 villages were part of the control group. Table 2 shows that the randomized surveyed sample was balanced in almost all variables checked.\textsuperscript{16}

### 4.2. Data collection

The analysis of the impacts of this media-based intervention is based on the use of two key sources of information: a household survey conducted about a year after the viewing sessions and the administrative records of the financial transactions performed by the Juntos beneficiaries with their BN account. These were obtained through the collaboration with MIDIS, and after we defined a clear protocol to guarantee the preservation of the confidentiality of such information.\textsuperscript{17}

The follow up survey included three separate modules: one for the female beneficiaries of Juntos, another one for the community leader that coordinated the program, (Madre Líder) and a third one for the program official (Gestor). The latter modules questioned basic socio-economic characteristics of the corresponding agent, plus some background about their role in the program. In the treatment villages, we asked the agent about the characters, storylines, and pro-saving messages included in Josefa, and about the way the viewing sessions affected the relationship with their constituency.

\textsuperscript{15} We generated 100 runs of the randomization and checked for balance across the number of female beneficiaries of Juntos, access to some kind of education/health infrastructure and distance to the district capital. Run number 13 was selected, which balanced the three groups of the study on the referred observables.

\textsuperscript{16} We explain below the characteristics of the survey sample. Also, it is important to remember that this survey was conducted about a year after the intervention, so we restricted ourselves to compare variables that were not likely to change with time.

\textsuperscript{17} Budgetary restrictions did not allow for a baseline survey.
The household survey included a questionnaire that asked about the beneficiaries' individual and family socio-economic characteristics, plus their financial perceptions, attitudes and practices, both for savings and credit transactions, and several measures of household vulnerability and social networks of their members. Finally, it included questions about the telenovela in treatment villages, and questions about female empowerment within the household and village and trust, among others. The survey was given to a random sample of 2,274 Juntos beneficiaries (about an average of 15 per village), plus 147 community leaders and 33 program officials.

We were also able to get access to the data of the financial transactions made with their BN accounts by the Juntos beneficiaries in our study sample (6,383 women), which adds significantly to the contribution of this paper to the literature, as it goes beyond self-perception and attitudes towards savings. With the support from the Financial Inclusion Unit at MIDIS, we were able to reach an agreement with BN to get access to the individual records between May 2014 and July 2015, a year after the viewing sessions, while preserving the confidentiality of such information. The protocol first implied for GRADE to submit to the BN the list of beneficiaries (6,383) in the 150 localities with basic demographic information from the Juntos database, including the locality and their Juntos program ID. Next, the BN used the ID numbers to identify each woman and her account, and obtain the transaction data for the requested period, which they merged with the demographic data. Finally, they returned the database to GRADE after they erased the ID numbers. In addition, both authors signed an agreement to follow strict protocols for not sharing this information beyond the research team, and erased any trace that could allow the individual behind the financial activity to be identified.18

The financial information from BN included all deposits and withdrawals made by the beneficiaries or the program during the investigation period, which was three months prior to the intervention and up to a year after. We are not aware of any other experimental study that has been able to use this kind of objective measure, as most of them only report self-reported indicators which can be biased since individuals may not always answer such questions truthfully, especially, for example, if they sense that there is a right answer.

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18 The two leading authors currently possess valid Yale certificates for management of data involving human subjects.
4.3. Econometric approach

For the estimation of impacts, we used the treatment-control (T-C) differences based on the randomly allocated intention to treat (ITT). As explained in section 4.1, here we will present the effects being invited to the Josefa viewing sessions. As mentioned earlier, we decided to pool the two treatment groups that were originally distinguished since the extra viewing incentives that were planned for the second treatment group were actually rejected by the participants. Let us denote T as the group that was invited to the viewing sessions to watch Josefa. The comparison between treatment (T) and control groups allows the estimation of the ITT effects of being exposed to Josefa and the messages included in it. Formally, the preferred specification is the ANCOVA estimator for the ITT effects, which we obtain through the following regression:

\[ Y_{ijk} = \alpha + \beta T_{jk} + \gamma X_{ijk0} + \delta_k + \varepsilon_{ijk} \]  

where \( Y_{ijk} \) denotes an outcome variable for a woman \( i \) in village \( j \) coordinated by gestor \( k \) at time 1 (follow up), \( T_{jk} \) is a dummy variable that takes the value of 1 if the woman belongs to village \( j \) that was assigned to the viewing session of Josefa. \( X_{ijk0} \) is the vector of stratifiers used in the randomization, \( \delta_k \) is the gestor fixed effects and \( \varepsilon_{ijk} \) is the error term. Thus, \( \beta \) is the effect of basic exposure, and the error term is assumed to be uncorrelated across villages but not within them.

We evaluate the impact of this intervention upon a large number of indicators related to knowledge of financial concepts, attitudes and perception around savings, risk management, among others, and behavior. However, testing multiple outcomes using (1) independently increases the probability of rejecting a true null hypothesis for at least one outcome above the significance level used for each test (Duflo, Glennester, & Kremer, 2007). We need to adjust the estimated p-values if we want to test whether Josefa has an impact on the family of outcomes associated to perceptions and attitudes towards savings and risk management. A

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19 The results section also presents the diff-in-diff estimates with village fixed effects, for some aggregate indexes such as a robustness check.
20 See footnote 6 for the full list of stratifiers. Also, see Bruhn and McKenzie (2009) for a discussion of the need to control for the stratifiers in the estimation of treatment effects.
21 While estimating (1), we include observations with missing data on the control variables, by assigning them a zero value and including a dummy equal to one for such observations with missing data. Attrition is not analyzed in this version considering that we had no baseline survey and that non-response rates were minimal. Also there was no difference between treatment and control groups.
summary measure that captures this idea is the mean standardized treatment effect. Following Kling, Liebman, and Katz (2007), we implement that by defining a summary measure $Y^*$ as the unweighted average of all standardized outcomes for a family. That is, we get $Y^* = \frac{\sum_k Y_k^*}{k}$, where $Y_k^* = (Y_k - \bar{Y}_k)/\sigma_k$. $Y_k$ denotes the outcome variables within each family and were re-defined in some cases so that a larger value is always better for the business or household. Standardization is done using mean and variance for the control group at baseline. Thus, the mean and standard deviation of $Y$ in (1) for $Y^*$ allows us to test whether the treatment had an overall positive effect on the corresponding family of outcomes.

V. Results

First, we present the results in terms of attendance to the viewing session and the recollection of key characters, storylines and pro-savings messages by the women that were assigned to the treatment groups. Next, we present a series of self-reported measures of knowledge about savings options, risk management strategies, beneficiary’s empowerment, and savings in formal financial institutions.

5.1. Attendance and recollection

Training sessions for women attached to another high-demand service often suffer from serious problems such as getting people to attend the sessions, especially after the first session. That is true regardless of the theme, but it is clearly true for financial education sessions (Xu & Zia, 2012; Karlan, Ratan, & Zinman, 2014). Based on the quality of the final product and the value of entertainment for rural women with low exposure to this type of media product, we hoped Josefa would suffer less from attendance problems; however, the results were not as expected.

The sessions had high attendance rates and occurred mostly without any major incidents. Only in 3 communities, one session had to be rescheduled due to problems with the infrastructure at the viewing location. In the case of low attendance, a conversation with the
Madre Líder and the Gestor was arranged to encourage beneficiaries to attend the next session. Then, at the next session the previous episode was shown first, followed by the next one. On average, 3,107 beneficiaries watched the telenovela each week, and in the treated communities, the average attendance rate was 75% of all of the Juntos beneficiaries who were invited. Figure 4 shows the average rate of attendance per session for the 100 communities in the first and second treatment groups, and it should be noted that there was an increase in the attendance rate by the third session.

We also asked the beneficiaries assigned to the treatment about their recollection of the soap opera in the survey, which was conducted about a year after the viewing sessions.

Table 3 shows the answers about the recollection of characters or storylines and the pro-saving messages included in Josefa. First, the women reported recalling on average three of the eleven characters or storylines we asked about, and two of the five main pro-saving messages included in Josefa. The plots most mentioned by the women were related to the image of Josefa saving in the BN agency, and the successful guinea pigs business initiative. With respect to the pro-savings messages, the most mentioned ones were (1) you can always save at least part of what you earn, no matter how small, and (2) the importance of the security of the savings mechanism used. We interpret these results as an indication that the viewing sessions caused a significant impression on the audience, and that some of the pro-saving messages remained even a year after the viewing sessions. We also see that recollection was significantly stronger for the younger beneficiaries (under 40), as age differences account for 0.17 s.d. of the plot recollection and 0.12 s.d. of the messaging recollection.

5.2. Estimated impacts

We then examined the impacts of Josefa on the attitudes and perceptions of the beneficiaries with respect to savings, formal and informal, and found several changes that are consistent with the messages contained in the soap opera. Table 4 shows that women assigned to the treatment were 6.8 percentage points (pp) more likely to report that they are able to save by themselves, although at the same time, 8.4 pp more likely to have regrets after spending money on something that is not necessary. The latter is an expression of the importance of temptation to determine certain purchasing behavior, but also shows that
Josefa has made them more aware that such spending needs to be controlled. Indeed, at the same time, they tended to report less that they spend any extra money immediately. Finally, the summary standardized pro-savings attitude index shows that those treated have 0.12 s.d. more positive attitude towards savings.

In Table 5, we observe their answers to hypothetical questions about the mechanisms they would use in the case of a need of 500 soles (about $185 USD at the time of the survey). Again, those assigned to the treatment tended to answer more consistently with some of the messages in Josefa. Indeed, they were 9.6 pp more likely to report using their savings to cover that need, and 13.4 pp less likely to ask their family or friends for a loan. The situation is more undetermined when they report the strategies they used to cope with bad shocks over the 12 months prior to the survey, that is, since the Josefa viewing sessions. On the one hand, treated beneficiaries were 6.8 pp more likely to report having used their savings to cope with bad shocks. However, at the same time, they were also more likely to report having sold livestock for such purposes, which is traditionally considered an informal mechanism rural families use to save some surplus money they may have, for instance, after selling their harvest. This may result from the fact that keeping livestock was not that immediately effective, considering that keeping livestock in rural areas also has some cultural implications that go beyond the savings motive. However, it may also result from the fact that the importance of saving was a stronger message than the one of the importance of using a formal mechanism.

5.2.1. BN account balances

Many previous studies promoting financial education interventions are limited by the use of self-reported information about the beneficiaries’ financial knowledge or their attitudes towards certain financial instruments such as credit, savings, insurance, among others, which are subject to some bias, especially if the respondent perceives a “right” answer in some form. There are exceptions when the financial education intervention is designed purposely and precisely to promote the adoption of a particular financial product, and when the financial institution can collaborate to share their records on the adoption of such a product. In this case, the Josefa intervention is not connected to the adoption of a particular new product, as the beneficiaries had already had their savings account for several years in 2014. However, with the collaboration from the MIDIS unit for financial inclusion, we were able to reach an
agreement with BN to get access to the records of the transactions while preserving the rights for confidentiality, which allowed us to analyze the impacts of the intervention on a more objective measure.

In this paper, we analyzed the records of the transactions made by Juntos beneficiaries in treated and control localities with their BN accounts between March 2014 (three months before the viewing sessions) until September 2015, about 14 months after. Figure 5 shows the impacts of Josefa on each bimester for the full sample of those registered in Juntos in eligible localities. There was an increase at the end of bimester balances immediately after the viewing sessions, but they failed to be significantly positive until July 2015, about a year after the session, which coincides with the harvest season in Huancavelica. The next semester (September-October 2015) also shows an increased balance, but again, it was not statistically significant, as in the months prior to the July-August bimester. We interpret this result as evidence that the improved pro-savings attitude remains latent until cash surpluses allow for increased formal savings, while they wait for extra cash needs to materialize. Nevertheless, it is surprising that this effect appears even a year after the viewing sessions.

Table 7 shows the impacts of Josefa on the average end bimester balances for July and September, 2015, for the full sample and the randomly selected survey sample. By July 2015, the treated group showed higher average daily balances (20 soles, or 36% above the control group average) on average, and the survey sample showed a similar effect (33%). However, this effect stopped being significant by the next bimester, the one that starts with the transfer in early September. We next explored whether the effects of Josefa observed for the July-August bimester vary by beneficiary age, her exposure to TV, or financial education programs (Table 8). In the case of age, we consider the differences observed in recalling Josefa’s plots and pro-saving messages which were stronger among the younger women.

Table 3). With regards to exposure to TV, it should be noted (see Table 2) that only about 44% of the eligible population had a TV at home. We found that these effects accrued mostly for younger beneficiaries (under 40), and those with less access to TV and less prior experience

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22 Main harvest season in Huancavelica goes from May to July, according to most agro-ecological reports (see, for instance, CARE-Peru, 2007).

23 Table A. 1, Figure A. 1 and Figure A. 2 show a similar pattern when looking at average daily balances instead of the end of bimester balances shown in the text.
with financial education programs. However, we failed to reject the null hypothesis of equal effects.

The next question deals with what mechanisms explain the important savings effect observed in the July-August bimester. One hypothesis is that the Josefa intervention generated some income effect so that beneficiaries can now leave their money in their BN accounts for a longer period, or until they need to use it. However, the evidence reported in Table 9 does not support such hypothesis, as income, expenditures or asset ownership effects are not able to reject the null hypothesis. It may be that the results reported here are more related to Josefa helping increase the trust the beneficiaries have in formal banks, as it projects an image of a positive role model who, after many struggles, starts to have success in life while using her BN account. For now, we can say that such effects seem to be connected with the women feeling more empowered to make or participate in economic and financial decisions within the household.

Table 10 indeed shows the impacts of Josefa on four standardized indexes that summarize the role women self-report that they have on a variety of household decisions. Non-economic decisions include decisions associated to fertility, and the health and education of the respondent’s children. Economic decisions include occupational decisions while financial decisions refer specifically to credit and saving decisions. Interviewed women report whether they make those decisions by themselves, whether they participate in such decisions and with whom. What we found is that there is no effect of Josefa on non-economic decisions, but a significant positive effect on economic and financial decisions, a year after the viewing sessions. In the case of economic decisions, the effect is about 0.11 s.d., while the effect on financial decisions is almost 0.14 s.d. Furthermore, we found such empowerment effects to accrue among the younger beneficiaries and those that did not have access to TV at home, although actually the null hypothesis of equal treatment effects is not rejected.
VI. Summary and discussion

This study uses an experimental design to explore whether exposure to a soap opera that combines a typical love story with clear pro-saving messages can contribute to the financial inclusion of poor rural women by increasing their knowledge and attitudes towards formal savings. Based on the literature on the value of entertainment for educational purposes, we first developed a 5-episode soap opera that included characters and plot lines that would connect with our intended audience, poor rural women who have traditionally been excluded from healthy interactions with the formal sector, in particular, with financial institutions, despite residing in villages with relative manageable geographical access to banking agencies and other basic social and economic infrastructure. Next, we organized special viewing sessions in their own villages with the help of facilitators who travelled with the necessary equipment to show the soap opera, Josefa, to the invited audience.

Our preliminary results show that the soap opera was extremely successful in terms of capturing the interest of the targeted audience, based on the high proportion of invited people that attended the viewing sessions (average of 74%, with even a growing trend), and the way they recalled the characters, the story and the key pro-saving messages, about a year after the viewing sessions. Furthermore, we also found that women in treatment villages had an improved pro-saving attitude, and had a better understanding of the precautionary motive for savings about a year after the viewing sessions. Finally, we found that the improved pro-savings attitude remains latent for about a year but materializes in increased temporary savings about a year later, and is likely to be when cash surpluses appear as a result of post-harvest season. The BN savings account balances by the end of the July-August bimester were 30% higher for the treated group compared to the control group. This effect remained positive for the next bimester, but stopped being statistically significant, similar to the situation in the months prior to July, 2015. We interpret this result as evidence that the improved pro-saving attitude remained latent until when cash surpluses allow for increased formal savings, while they wait for extra cash needs to materialize. Still, the surprising result is that such effect appears even a year after the viewing sessions. Finally, the savings effect in the July-August bimester was especially strong among the younger women (under 40), and those who had less access to TV at home.

We did not find an income effect that can be attributed to Josefa, but the women exposed
to the soap opera did show improved control over economic and financial decisions within the household. Furthermore, this effect was stronger among younger women, which was consistent with the increased savings effect found for the July-August bimester.

The temporary formal savings effect is particularly important, as it takes us beyond self-reporting towards an objective measure of savings behavior. Furthermore, we are not aware of any other study that has been able to report such an objective measure in the literature on financial inclusion. We interpret these results as evidence that, beyond traditional financial education approaches, the edutainment approach can have an important contribution to the financial inclusion of poor rural women who have faced secular exclusion from formal financial institutions, such as those in the Peruvian Southern Sierra.
References


Appendix

Figure 1: Timeline of the study

Figure 2: Josefa’s main characters
Figure 3: Eligible communities by treatment

Figure 4: Attendance rates by session, and treatment group
Figure 5: ATE estimates - BN account balances (local currency)

Notes: Account balance 60 days after Juntos transference

<table>
<thead>
<tr>
<th>Provinces</th>
<th># Districts</th>
<th># Localities</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acobamba</td>
<td>6</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Churcampa</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Huancavelica</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Tayacaja</td>
<td>8</td>
<td>26</td>
<td>25</td>
<td>25</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>26</td>
<td>50</td>
<td>50</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>50</td>
<td>150</td>
<td></td>
</tr>
</tbody>
</table>
### Table 2: Basic socio-economic characteristics (Balance analysis)

<table>
<thead>
<tr>
<th>Characteristics of the junta’s beneficiaries</th>
<th>Obs</th>
<th>Control</th>
<th>Treatment</th>
<th>C vs T</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>2,274</td>
<td>41.465</td>
<td>42.337</td>
<td>0.0695 *</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.258)</td>
<td>(1.227)</td>
<td></td>
</tr>
<tr>
<td><strong>Educational attainment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>2,273</td>
<td>0.248</td>
<td>0.260</td>
<td>0.587</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.102)</td>
<td>(0.096)</td>
<td></td>
</tr>
<tr>
<td>Up to primary education</td>
<td>2,273</td>
<td>0.480</td>
<td>0.463</td>
<td>0.498</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.049)</td>
<td>(0.051)</td>
<td></td>
</tr>
<tr>
<td>Secondary school or more</td>
<td>2,273</td>
<td>0.272</td>
<td>0.277</td>
<td>0.840</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.108)</td>
<td>(0.104)</td>
<td></td>
</tr>
<tr>
<td><strong>Language most used at home</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spanish (%)</td>
<td>2,274</td>
<td>0.210</td>
<td>0.186</td>
<td>0.510</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.117)</td>
<td>(0.118)</td>
<td></td>
</tr>
<tr>
<td>Quechua (%)</td>
<td>2,274</td>
<td>0.789</td>
<td>0.815</td>
<td>0.469</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.118)</td>
<td>(0.118)</td>
<td></td>
</tr>
<tr>
<td><strong>Besides JUNTOS, # of programs affiliated to</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None (%)</td>
<td>2,274</td>
<td>0.208</td>
<td>0.222</td>
<td>0.464</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.019)</td>
<td>(0.018)</td>
<td></td>
</tr>
<tr>
<td>One (%)</td>
<td>2,274</td>
<td>0.808</td>
<td>0.766</td>
<td>0.157</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.026)</td>
<td>(0.023)</td>
<td></td>
</tr>
<tr>
<td>Two (%)</td>
<td>2,274</td>
<td>-0.003</td>
<td>0.002</td>
<td>0.810</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.013)</td>
<td>(0.010)</td>
<td></td>
</tr>
<tr>
<td>three or more (%)</td>
<td>2,274</td>
<td>-0.012</td>
<td>0.009</td>
<td>0.111</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.010)</td>
<td>(0.008)</td>
<td></td>
</tr>
<tr>
<td><strong>Owns a tv</strong></td>
<td>2,271</td>
<td>0.438</td>
<td>0.446</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.018)</td>
<td>(0.022)</td>
<td></td>
</tr>
<tr>
<td><strong>Asset index - dwelling (i)</strong></td>
<td>2,274</td>
<td>0.008</td>
<td>-0.008</td>
<td>0.270</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.036)</td>
<td>(0.036)</td>
<td></td>
</tr>
<tr>
<td><strong>Asset index - home assets and services (ii)</strong></td>
<td>2,274</td>
<td>-0.083</td>
<td>-0.079</td>
<td>0.893</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.053)</td>
<td>(0.052)</td>
<td></td>
</tr>
<tr>
<td><strong>Asset index - dwelling (i)+(ii)</strong></td>
<td>2,274</td>
<td>-0.025</td>
<td>-0.034</td>
<td>0.629</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.040)</td>
<td>(0.039)</td>
<td></td>
</tr>
<tr>
<td><strong>Tenure of leader/coordinator</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader Mother</td>
<td>147</td>
<td>0.607</td>
<td>0.393</td>
<td>0.529</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.555)</td>
<td>(0.578)</td>
<td></td>
</tr>
<tr>
<td>Junto’s Representative</td>
<td>107</td>
<td>1.028</td>
<td>1.028</td>
<td>0.994</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.028)</td>
<td>(0.040)</td>
<td></td>
</tr>
</tbody>
</table>

### Table 3: Recall levels of Josefa – characters, storyline, pro-saving messages

<table>
<thead>
<tr>
<th>Recalled characters/storyline (11)</th>
<th>Obs</th>
<th>Full Sample</th>
<th>Age of the beneficiary</th>
<th>Diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average #</td>
<td>1,127</td>
<td>2.97</td>
<td>3.12</td>
<td>2.797</td>
</tr>
<tr>
<td>SI</td>
<td>1,127</td>
<td>0</td>
<td>0.078</td>
<td>-0.093</td>
</tr>
<tr>
<td>At least 3</td>
<td>1,127</td>
<td>0.538</td>
<td>0.566</td>
<td>0.503</td>
</tr>
<tr>
<td>At least 6</td>
<td>1,127</td>
<td>0.079</td>
<td>0.101</td>
<td>0.054</td>
</tr>
<tr>
<td>Recalled pro-saving messages (7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average #</td>
<td>1,127</td>
<td>2.02</td>
<td>2.079</td>
<td>1.951</td>
</tr>
<tr>
<td>SI</td>
<td>1,127</td>
<td>0</td>
<td>0.054</td>
<td>-0.063</td>
</tr>
<tr>
<td>At least 1</td>
<td>1,127</td>
<td>0.986</td>
<td>0.996</td>
<td>0.973</td>
</tr>
<tr>
<td>At least 2</td>
<td>1,127</td>
<td>0.628</td>
<td>0.649</td>
<td>0.603</td>
</tr>
</tbody>
</table>

Notes: SI denotes a standardized index based on the number of options provided for each aspect in the questionnaire.
Table 4: ATE estimates – savings attitudes

<table>
<thead>
<tr>
<th>Savings attitude</th>
<th>Obs</th>
<th>Control</th>
<th>ATE</th>
<th>OLS</th>
<th>FE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>They usually …</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Save money on their own (%)</td>
<td>2,273</td>
<td>0.507</td>
<td>0.042</td>
<td>0.068</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.044)</td>
<td>(0.053)</td>
<td>(0.038)*</td>
</tr>
<tr>
<td>Regret after spending money (%)</td>
<td>2,273</td>
<td>0.488</td>
<td>0.044</td>
<td>0.084</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.050)</td>
<td>(0.058)</td>
<td>(0.047)*</td>
</tr>
<tr>
<td>Want to save more than their husbands (%)</td>
<td>2,273</td>
<td>0.523</td>
<td>0.036</td>
<td>0.023</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.044)</td>
<td>(0.052)</td>
<td>(0.042)</td>
</tr>
<tr>
<td>Have to save their money separately (%)</td>
<td>2,273</td>
<td>0.378</td>
<td>0.060</td>
<td>0.033</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.046)</td>
<td>(0.056)</td>
<td>(0.050)</td>
</tr>
<tr>
<td>Desired savings in a year (ln)</td>
<td>2,195</td>
<td>6.154</td>
<td>0.022</td>
<td>-0.083</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.128)</td>
<td>(0.163)</td>
<td>(0.157)</td>
</tr>
<tr>
<td>Average savings in a year (ln)</td>
<td>2,210</td>
<td>0.445</td>
<td>0.421</td>
<td>0.807</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.500)</td>
<td>(0.573)</td>
<td>(0.395)**</td>
</tr>
<tr>
<td>Satisfied with their savings (%)</td>
<td>2,273</td>
<td>0.125</td>
<td>0.034</td>
<td>0.032</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.042)</td>
<td>(0.045)</td>
<td>(0.031)</td>
</tr>
<tr>
<td>Spends immediately (%)</td>
<td>2,273</td>
<td>0.641</td>
<td>-0.112</td>
<td>-0.152</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.045)</td>
<td>(0.054)**</td>
<td>(0.040)**</td>
</tr>
<tr>
<td>Necessity of hiding money from the husband or other adult withing the household</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hides her money inside her household (%)</td>
<td>2,273</td>
<td>0.333</td>
<td>0.045</td>
<td>0.029</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.039)</td>
<td>(0.050)</td>
<td>(0.047)</td>
</tr>
<tr>
<td>Doesn’t hide her money (%)</td>
<td>2,273</td>
<td>0.638</td>
<td>-0.063</td>
<td>-0.045</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.041)</td>
<td>(0.052)</td>
<td>(0.050)</td>
</tr>
<tr>
<td>Pro-savings attitudes standardized index</td>
<td>2273</td>
<td>-0.037</td>
<td>0.100</td>
<td>0.115**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.055)</td>
<td>(0.068)</td>
<td>(0.052)</td>
</tr>
</tbody>
</table>

Notes: Regressions include fixed effect by the program’s "gestor"and the errors are clustered at the village level. Standardized index is constructed based on all questions included in this variable.

Table 5: ATE estimates – Self-reported preference for options when in hypothetical need of cash

<table>
<thead>
<tr>
<th>In case you ever need S/. 500 would you</th>
<th>Obs</th>
<th>Control</th>
<th>ATE</th>
<th>OLS</th>
<th>FE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use your savings (%)</td>
<td>2,273</td>
<td>0.148</td>
<td>0.091</td>
<td>0.096</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.025)</td>
<td>(0.035)***</td>
<td>(0.031)***</td>
</tr>
<tr>
<td>Sell anything (%)</td>
<td>2,273</td>
<td>0.311</td>
<td>0.035</td>
<td>0.047</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.038)</td>
<td>(0.045)</td>
<td>(0.032)</td>
</tr>
<tr>
<td>Lower expenses (%)</td>
<td>2,273</td>
<td>0.040</td>
<td>0.001</td>
<td>0.009</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.011)</td>
<td>(0.015)</td>
<td>(0.018)</td>
</tr>
<tr>
<td>Apply for a loan:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Institution (%)</td>
<td>2,273</td>
<td>0.054</td>
<td>-0.005</td>
<td>-0.011</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.014)</td>
<td>(0.017)</td>
<td>(0.011)</td>
</tr>
<tr>
<td>Non-Financial Institution (%)</td>
<td>2,273</td>
<td>0.004</td>
<td>0.007</td>
<td>0.003</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.003)</td>
<td>(0.004)</td>
<td>(0.005)</td>
</tr>
<tr>
<td>Family and Friends (%)</td>
<td>2,273</td>
<td>0.529</td>
<td>-0.091</td>
<td>-0.134</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.044)</td>
<td>(0.050)**</td>
<td>(0.035)***</td>
</tr>
<tr>
<td>Government (%)</td>
<td>2,273</td>
<td>0.008</td>
<td>-0.002</td>
<td>-0.004</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.004)</td>
<td>(0.005)</td>
<td>(0.004)</td>
</tr>
<tr>
<td>It would be impossible (%)</td>
<td>2,273</td>
<td>0.121</td>
<td>-0.020</td>
<td>-0.006</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.023)</td>
<td>(0.029)</td>
<td>(0.022)</td>
</tr>
</tbody>
</table>
### Table 6: ATE estimates – Self-reported strategies used to cope with bad shocks over last 12 months

<table>
<thead>
<tr>
<th>Temporary migration …</th>
<th>Obs</th>
<th>Control</th>
<th>ATE OLS</th>
<th>ATE FE</th>
</tr>
</thead>
<tbody>
<tr>
<td>To apply for a job (%)</td>
<td>2,273</td>
<td>0.130</td>
<td>-0.007</td>
<td>-0.000</td>
</tr>
<tr>
<td>(0.029)</td>
<td>(0.034)</td>
<td>(0.026)</td>
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<td></td>
</tr>
<tr>
<td>To a friend’s/relative’s house (%)</td>
<td>2,273</td>
<td>0.024</td>
<td>-0.004</td>
<td>-0.004</td>
</tr>
<tr>
<td>(0.008)</td>
<td>(0.010)</td>
<td>(0.008)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indebt with …</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family or Friends (%)</td>
<td>2,273</td>
<td>0.097</td>
<td>-0.018</td>
<td>-0.023</td>
</tr>
<tr>
<td>(0.019)</td>
<td>(0.022)</td>
<td>(0.017)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Entity (%)</td>
<td>2,273</td>
<td>0.006</td>
<td>-0.001</td>
<td>-0.001</td>
</tr>
<tr>
<td>(0.003)</td>
<td>(0.003)</td>
<td>(0.004)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moneylenders (%)</td>
<td>2,273</td>
<td>0.008</td>
<td>-0.006</td>
<td>-0.006</td>
</tr>
<tr>
<td>(0.005)</td>
<td>(0.005)</td>
<td>(0.005)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sale …</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assets (%)</td>
<td>2,273</td>
<td>0.014</td>
<td>0.005</td>
<td>0.004</td>
</tr>
<tr>
<td>(0.008)</td>
<td>(0.009)</td>
<td>(0.008)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livestock (%)</td>
<td>2,273</td>
<td>0.174</td>
<td>0.077</td>
<td>0.060</td>
</tr>
<tr>
<td>(0.031)</td>
<td>(0.043)**</td>
<td>(0.029)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use savings (%)</td>
<td>2,273</td>
<td>0.171</td>
<td>0.084</td>
<td>0.068</td>
</tr>
<tr>
<td>(0.032)</td>
<td>(0.040)**</td>
<td>(0.030)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work longer shifts (%)</td>
<td>2,273</td>
<td>0.255</td>
<td>-0.024</td>
<td>-0.024</td>
</tr>
<tr>
<td>(0.037)</td>
<td>(0.043)</td>
<td>(0.035)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children work longer shifts (%)</td>
<td>2,273</td>
<td>0.036</td>
<td>-0.011</td>
<td>-0.007</td>
</tr>
<tr>
<td>(0.014)</td>
<td>(0.015)</td>
<td>(0.007)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (%)</td>
<td>2,273</td>
<td>0.118</td>
<td>-0.051</td>
<td>-0.006</td>
</tr>
<tr>
<td>(0.025)</td>
<td>(0.044)</td>
<td>(0.032)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 7: ATE estimates - BN account balances (local currency)

<table>
<thead>
<tr>
<th></th>
<th>Obs</th>
<th>Control</th>
<th>ATE OLS</th>
<th>ATE FE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jul-15</td>
<td>6,349</td>
<td>55.181</td>
<td>2.507</td>
<td>20.698</td>
</tr>
<tr>
<td>(4.851)</td>
<td>(5.945)</td>
<td>(8.572)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set-2015</td>
<td>6,349</td>
<td>38.988</td>
<td>0.329</td>
<td>9.11</td>
</tr>
<tr>
<td>(4.538)</td>
<td>(5.562)</td>
<td>(7.859)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey Sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6.865)</td>
<td>(8.464)</td>
<td>(10.227)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set-2015</td>
<td>2,271</td>
<td>31.003</td>
<td>-8.455</td>
<td>-5.043</td>
</tr>
<tr>
<td>(6.052)</td>
<td>(7.462)</td>
<td>(8.702)</td>
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</tr>
</tbody>
</table>

Notes: Account balance 60 days after Juntos transference
### Table 8: ATE estimates and interactions – BN account balances (local currency)

<table>
<thead>
<tr>
<th></th>
<th>Obs</th>
<th>FE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Full Sample</strong></td>
<td>6,349</td>
<td>20.698</td>
</tr>
<tr>
<td></td>
<td>(8.572)**</td>
<td></td>
</tr>
<tr>
<td><strong>Survey Sample</strong></td>
<td>2,271</td>
<td>16.363</td>
</tr>
<tr>
<td></td>
<td>(10.227)</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;=40</td>
<td>2,271</td>
<td>20.788</td>
</tr>
<tr>
<td></td>
<td>(12.956)</td>
<td></td>
</tr>
<tr>
<td>&gt;40</td>
<td></td>
<td>10.557</td>
</tr>
<tr>
<td></td>
<td>(14.899)</td>
<td></td>
</tr>
<tr>
<td><strong>P.val</strong></td>
<td></td>
<td>0.591</td>
</tr>
<tr>
<td><strong>TV exposure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;=1 hours a day</td>
<td>2,270</td>
<td>20.63</td>
</tr>
<tr>
<td></td>
<td>(10.452)**</td>
<td></td>
</tr>
<tr>
<td>&gt;1 hours a day</td>
<td></td>
<td>-7.714</td>
</tr>
<tr>
<td></td>
<td>(34.713)</td>
<td></td>
</tr>
<tr>
<td><strong>P.val</strong></td>
<td></td>
<td>0.439</td>
</tr>
<tr>
<td><strong>Exposure to other financial literacy programs</strong></td>
<td>2,258</td>
<td>22.669</td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least 1</td>
<td></td>
<td>-32.482</td>
</tr>
<tr>
<td></td>
<td>(55.408)</td>
<td></td>
</tr>
<tr>
<td><strong>P.val</strong></td>
<td></td>
<td>0.339</td>
</tr>
<tr>
<td><strong>Social Capital Index</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High intensity</td>
<td>2,271</td>
<td>16.632</td>
</tr>
<tr>
<td></td>
<td>(14.322)</td>
<td></td>
</tr>
<tr>
<td>Low intensity</td>
<td></td>
<td>16.074</td>
</tr>
<tr>
<td></td>
<td>(0.258)</td>
<td></td>
</tr>
<tr>
<td><strong>P.val</strong></td>
<td></td>
<td>0.978</td>
</tr>
</tbody>
</table>

**Notes:** Account balance 60 days after Juntos transference in July 2015

### Table 9: ATE estimates – Income and wealth effects

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Control ATE</th>
<th>OLS ATE</th>
<th>FE ATE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HH Income (log)</strong></td>
<td>2,271</td>
<td>6.386</td>
<td>0.004</td>
<td>0.036</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.032)**</td>
<td>(0.040)</td>
<td>(0.071)</td>
</tr>
<tr>
<td><strong>HH Expenses (log)</strong></td>
<td>2,268</td>
<td>5.745</td>
<td>0.027</td>
<td>0.082</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.023)**</td>
<td>(0.029)</td>
<td>(0.055)</td>
</tr>
<tr>
<td><strong>Asset index 1 - dwelling</strong></td>
<td>2,271</td>
<td>-0.000</td>
<td>0.000</td>
<td>-0.009</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.036)</td>
<td>(0.044)</td>
<td>(0.065)</td>
</tr>
<tr>
<td><strong>Asset index 2 - home assets &amp; services</strong></td>
<td>2,271</td>
<td>-0.030</td>
<td>0.046</td>
<td>0.006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.036)</td>
<td>(0.044)</td>
<td>(0.074)</td>
</tr>
</tbody>
</table>

**Notes:** Asset indexes are standardized summary measures obtained as explained in the section 4.3. FE Regressions include fixed effect by the program’s "gestor" and the errors are clusterized at the village level.
Table 10: ATE estimates – Women’s empowerment indexes (key household decisions)

<table>
<thead>
<tr>
<th></th>
<th>ATE</th>
<th>Age</th>
<th>Hs TV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Control</td>
<td>OLS</td>
</tr>
<tr>
<td>Non-economic decisions</td>
<td>2,271</td>
<td>-0.021</td>
<td>0.031</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.036)</td>
</tr>
<tr>
<td>Economic decisions</td>
<td>2,271</td>
<td>-0.035</td>
<td>0.053</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.036)</td>
</tr>
<tr>
<td>Financial decisions</td>
<td>2,271</td>
<td>-0.049</td>
<td>0.075</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.036)</td>
</tr>
<tr>
<td>Financial and economic decisions</td>
<td>2,271</td>
<td>-0.045</td>
<td>0.069</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.036)</td>
</tr>
</tbody>
</table>

Notes: dependent variable is an index of the participation in the decision making process of non-economic, economic and financial decision. Regressions include fixed effect by the program’s “gestor” and the errors are clustered at the individual level.

Table A. 1: ATE estimates - BN account daily balances (local currency)

<table>
<thead>
<tr>
<th></th>
<th>Obs</th>
<th>Control</th>
<th>ATE</th>
<th>ATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jul-15</td>
<td>6,349</td>
<td>122.172</td>
<td>6.391</td>
<td>28.129</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.017)</td>
<td>(1.246)**</td>
<td>(6.977)**</td>
</tr>
<tr>
<td>Set-2015</td>
<td>6,349</td>
<td>116.682</td>
<td>-2.056</td>
<td>12.462</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.945)</td>
<td>(1.158)*</td>
<td>(6.623)*</td>
</tr>
<tr>
<td>Survey Sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jul-15</td>
<td>2,271</td>
<td>121.287</td>
<td>-4.407</td>
<td>15.741</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.512)</td>
<td>(1.864)**</td>
<td>(10.251)</td>
</tr>
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<td>Set-2015</td>
<td>2,271</td>
<td>113.839</td>
<td>-12.771</td>
<td>0.762</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.369)</td>
<td>(1.688)</td>
<td>(9.492)</td>
</tr>
</tbody>
</table>

Notes: BN account daily balance of 30 days after Juntos transference (including)

Figure A. 1: ATE estimates - BN account last day of the month balance (local currency)

Notes: Account balance in the last day of the month
Figure A. 2: ATE estimates - BN account daily balance (local currency)

Notes: BN account daily balance of 30 days after Juntos transference in July 2015 (including)