



# SOAP OPERAS, TRUST, WOMEN'S EMPOWERMENT AND FINANCIAL INCLUSION: EXPERIMENTAL EVIDENCE FROM PERUVIAN RURAL AREAS

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# Motivation & Justification

- Fostering savings among the poor has gained importance around the world and Peru
  - Recent experimental evidence of limited impact of microcredit (Banerjee et. al., 2013; Karlan & Zinman, 2010) has reduced once excessively optimistic vision of microcredit
  - Microsavings has shown a fundamental role reducing vulnerability of poor households (Bauchet, et. al., 2011)
- Poor households demand savings services, and do save even with less than ideal mechanisms (Rutherford, 2002; Collins, et. al., 2009)
  - Informal mechanisms are often unsafe and insufficient, especially when associated to long run needs, or to aggregate shocks
  - Formal channels tend to be too rigid
    - Geographical and culturally distant from the poor

# Motivation & Justification II

- Many pro-savings interventions
  - Adapting products to the needs of the population
  - ICTs to improve access
  - **Financial education**
- Financial Literacy programs strike the knowledge barrier
  - However, evidence which links financial literacy with saving patterns is weak in developing countries (Xu and Zia, 2012; Karlan, Ratan & Zinman, 2013)
- Distrust and cultural distance are different factors
  - The use of role models can be helpful, especially in combination with entertainment programs – edutainment (La Ferrara, 2015)
    - Demand for entertainment is independent of the beneficiary's demand for specific social outcomes (dellaVigna and La Ferrara, 2015)

# Motivation & Justification III

- Socio-dramas has proven to be very useful to foster behavioral changes with strong cultural content
  - Specially among women
  - Brazil, regarding fertility patrons, women employment (La Ferrara, Chong y Duryea, 2012)
  - The effect of “MTV’s 16 and pregnant” on teen pregnancy (Kearney y Levine, 2015); MTV’s Shuga on sexual behavior, domestic violence in Nigeria (Banerjee, La Ferrara, Orozco, 2017)
- This study evaluates the contribution of Socio-Dramas in micro savings promotion among women from JUNTOS
  - To our knowledge, this is a first study that would use an experimental design to estimate the impact of soap operas with social message on economic behavior (using bank transactions)
    - Berg and Zia (2013) analyze the impact of introducing some chapters of a soap opera in South Africa, encourage adoption, observe changes on financial knowledge and pro-savings attitudes

# Intervention

- Production of a small mini-drama, called *JOSEFA*, that combines a love story, with economic struggles and aspirations, and pro-savings messages
  - Key element: closeness of the characters and story to the reality of the intended audience, while connecting positive savings practices to aspirations of success.
- Connecting messages with aspirations of the target audience may be key to alter pro-savings behavior (Karlan et. al., 2016)
- Closeness to the reality of intended audience may be key to affect rural women's self-image, important for improving their interaction with formal banks (Blattman,



Josefa



Rufina

Link Trailer:

<http://www.grade.org.pe/proyectos/mini-novelas-educacion-financiera-y-promocion-del-ahorro/>

# Intervention II

- Produced by Antorcha Comunicaciones
  - Heavy interaction with a Consultative Group with experts on financial inclusion in rural Peru (members from GRADE, Proyecto Capital, IEP, MIDIS and JUNTOS)
  - Previous qualitative study to understand conceptualization of savings and success among JUNTOS beneficiaries
- Expose one group of JUNTOS beneficiaries to a set of episodes combining a love story, social and economic struggles, and pro-savings messages associated to aspirations close to their own
  - Study location: rural towns of Huancavelica
  - Calls with help from JUNTOS managers and leaders mothers
  - 4 weekly sessions (5 episodes of 15' – 20')
- Viewing sessions in schools or community centers of the villages
  - All registered beneficiaries in treated villages were invited (4,220)
  - Calls/invitations with help from JUNTOS officers and mother-leaders
  - Sessions were organized by trained facilitators (14), who led the ex post discussion
    - They had photo ID cards, letter, required equipment (projector, speakers)

# Research Questions

- Can the use of telenovelas linking the benefits of savings (or dangers of not saving) with women's goals change savings patterns in terms of both financial and non-financial (livestock, jewelry, etc.) goods?
  - Knowledge, attitudes, use of BN account
  - How does it manifest in agricultural economies with high income risk and seasonality?
- What are the key channels?
  - Income, employment diversification effect?
  - empowerment of women within the household
  - Trust in general? In financial institutions?
- Do the effects of soap operas differ according to certain characteristics of women, their families and their communities?

# Experimental design

- Identify 150 eligible rural villages in Huancavelica
  - JUNTOS areas of intervention, away from MIDIS prioritized districts
  - Medium sized villages (70-200) households, connected to public electricity network
  - JUNTOS transfer: direct deposit to their bank account (closeness)
- They were initially randomly assigned to the two treatment and a control groups (50 each)
  - Randomization was stratified at the district level (26)
  - Samples balanced in key socio-economic characteristics (population size, age, education, ethnicity, asset ownership, etc.)
- Two treatment arms: Half of treated villages included prizes via contest and a lottery, as incentives to attend/engage
  - Rules and prizes were announced at the opening session
  - Competitions were planned to include family, including heir children
  - Audience refused, facilitators could not comply, attendance equally high as the groups w/o incentives



# Econometric approach

- Estimation:

$$Y = c + \beta * Treat + GJ + \varepsilon$$

$GJ$  Program officer's fixed effect

$\beta$  Effect of treatment

Errors corrected for non-independent errors within locality

- Estimation of heterogeneity of effects:

$$Y = c + \beta_1 * X + \beta_3 * Treat * X + GJ + \varepsilon$$

Fixed effects and correction for non-independent errors apply, as above

$X$  Interaction variable

$\beta_1$  Effect of treatment on the sub sample with low intensity of X

$\beta_1 + \beta_3$  Effect of treatment on the sub sample with high intensity of X

$\beta_3$  Marginal effect of X's intensity

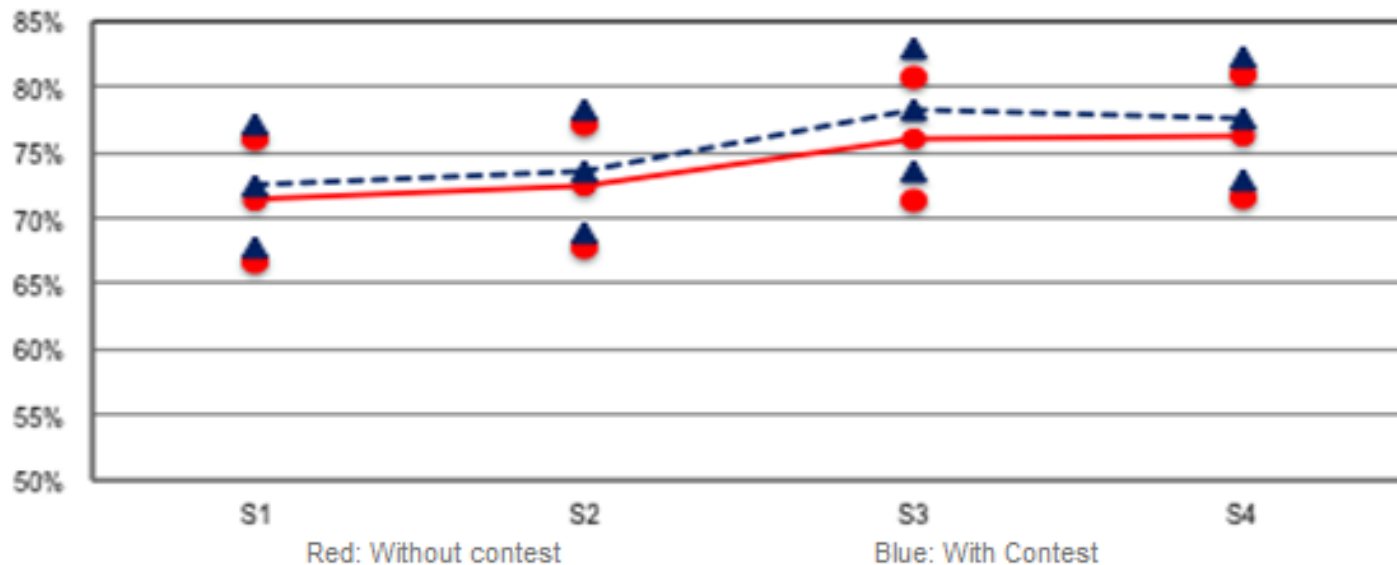
# Data Collection

- Survey about a year after the intervention to a sub-sample of the study population (2,220 beneficiaries, mother-leader, program official)
  - Basic socio-economic characteristics
  - Attitude/perception/use of the formal financial system
  - Social networks, idiosyncratic shocks
- Records of transactions at Banco de la Nacion (BN) accounts
  - Full sample, 3 months prior to intervention to about a year after
  - Confidentiality agreement obtained with help of BN and MIDIS
    - We sent the full list of beneficiaries in the study (6220) to BN, with basic SISFOH survey information attached
    - BN returned an anonymous list, adding bank transaction data

# Attendance rates by session, and treatment group

- High participation compared to their programs

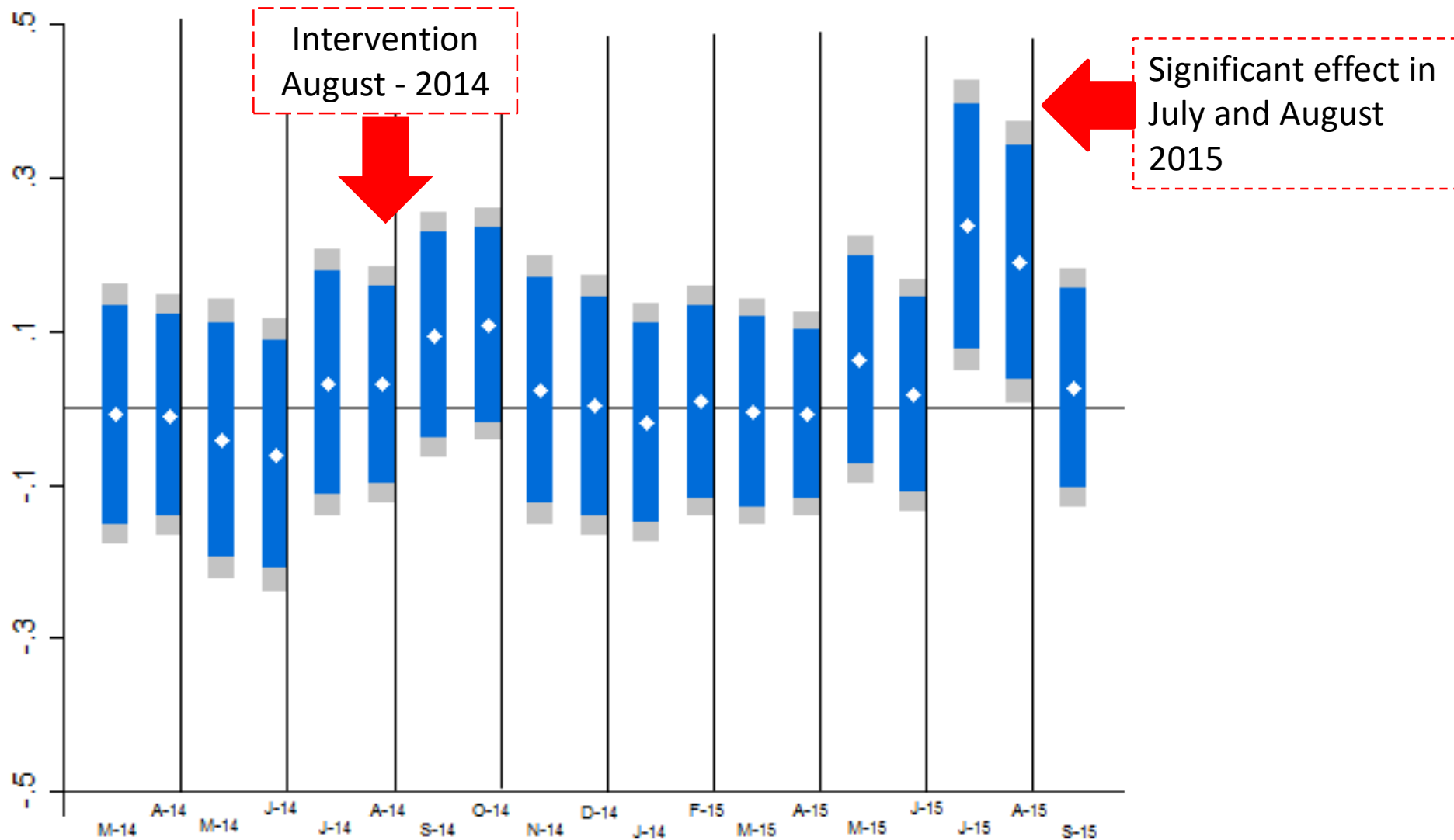
Attendance rate per session



# Recall levels of Josefa (a year after)

	Obs	Full Sample	Young (<40)	Old (>40)	P. Value
Recalled characteres/storyline (over 11)					
At least 3	1,127	0.538	0.566	0.503	0.063**
At least 6	1,127	0.079	0.101	0.054	0.047**
Average	1,127	2.97	3.12	2.797	0.323***
Recalled pro-savings messages (over 7)					
At least 1	1,127	0.986	0.996	0.973	0.023**
At least 2	1,127	0.628	0.649	0.603	0.046*
Average	1,127	2.02	2.079	1.951	0.128**

# ATE Estimates – BN account balances (log)



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			ATE	
	Obs	Control	OLS	FE
Full Sample				
July 2015	6,349	0.457	-0.013	0.236
		(0.051)***	(0.063)	(0.096)**
August 2015	6,349	0.372	-0.041	0.189
		(0.049)***	(0.060)	(0.093)**
Survey Sample				
July 2015	2,271	0.41	-0.007	0.286
		(0.079)***	(0.097)	(0.130)**
August 2015	2,271	0.219	-0.023	0.273
		(0.051)***	(0.092)	(0.125)**

# ATE estimates and interactions– BN account balances (log)

		ATE	
	Obs	jul-15	aug-15
ATE			
Full Sample	6,349	0.236 (0.069)***	0.189 (0.067)**
Survey Sample	2,271	0.286 (0.105)***	0.273 (0.100)***
Age			
<= 40	2,271	0.42 (0.124)***	0.408 (0.115)***
> 40		0.118 (0.15)	0.104 (0.147)
P.val		0.431	0.479
TV exposure			
<= 1 hours a day	2,270	0.275 (0.112)**	0.271 (0.107)**
> 1 hours a day		0.347 (0.252)	0.272 (0.231)
P.val		0.168	0.239
Exposure to other financial literacy programs			
None	2,258	0.281 (0.114)**	0.296 (0.109)***
At least 1		0.125 (0.296)	0.119 (0.293)
P.val		0.673	0.684
Social Capital Index			
Hight intensity	2,271	0.22 (0.134)	0.237 (0.127)*
Low intensity		0.353 (0.142)	0.309 (0.136)
P.val		0.13	0.23

# ATE estimates – Other deposits and withdrawals

			ATE	
	Obs	Control	OLS	FE
Deposits				
# Transactions	6,349	0.0075	0.0114**	0.0148**
		0.0047	0.0058	0.0073
Amount (soles)	6,349	1.2325	6.3862**	6.8109**
		2.1034	2.5781	2.9305
Amount (log)	6,349	-2.2604***	0.0349*	0.0462**
		0.0157	0.0193	0.0231
Withdrawals				
# Transactions	6,349	1.1498***	-0.0251	0.0146
		0.0242	0.0297	0.0663
Amount (soles)	6,349	247.0415***	1.4859	-2.5988
		5.0210	6.1543	7.7999
Amount (log)	6,349	4.5806***	-0.0157	-0.1314
		0.0556	0.0681	0.0906



# ATE estimates– Income, wealth, employment effects

	Obs	Control	ATE	
			OLS	FE
HH Income (log)	2,273	6.5496*** (0.0326)	0.0002 (0.0401)	0.0015 (0.0749)
% Farming Income	2,273	0.4521*** (0.0103)	-0.0282** (0.0127)	-0.0108 (0.0223)
% Agricultural Income	2,273	0.6107*** (0.0095)	0.0013 (0.0117)	0.0140 (0.0179)
HH Expenses (log)	2,269	5.7360*** (0.0242)	0.0081 (0.0299)	0.0770 (0.0523)
Assets - dwelling	2,271	0.0000 (0.0360)	0.0000 (0.0440)	-0.0090 (0.0650)
Assets - home assets & services	2,271	-0.0300 (0.0360)	0.0460 (0.0440)	0.0060 (0.0740)
Beneficiary's main activity				
Agriculture/Livestock	2,218	0.9209*** (0.010)	0.0023 (0.012)	0.0103 (0.0125)
Processing of agricultural	2,218	0.0026 (0.002)	0.0172*** (0.004)	0.0205*** (0.005)
Non-agricultural	2,218	0.0791*** (0.010)	-0.0023 (0.012)	-0.0103 (0.013)

# ATE estimates – Women's empowerment (index key household decisions)

			ATE	
	Obs	Control	OLS	FE
Trust				
Overall Trust Index	2,271	0.025	-0.039 (0.044)	-0.093 (0.084)
in Financial Institutions	2,271	0.319	0.068 (0.021)***	0.040 (0.033)
Self-esteem	2,271	0.560	0.008 (0.022)	0.007 (0.037)
Community Participation	2,271	0.634	-0.003 (0.021)	0.000 (0.043)
Empowerment				
Financial decisions	2,271	-0.049 (0.036)	0.075 (0.044)*	0.138 (0.057)**
Financial and economic decisions	2,271	-0.045 (0.036)	0.069 (0.044)	0.132 (0.059)**

# ATE estimates– Empowerment effects by age and tv exposure

		Age			Has TV		
	Obs	<40	<=40	P.val	Yes	No	P.val
Trust							
Overall Trust Index	2,271	-0.059 (0.081)	-0.134 (0.107)	0.369	-0.074 (0.124)	-0.110 (0.073)	0.743
in Financial Institutions	2,271	0.062 (0.039)	0.014 (0.039)	0.255	0.036 (0.048)	0.044 (0.039)	0.889
Self-esteem	2,271	0.007 (0.036)	0.007 (0.047)	0.988	0.012 (0.050)	0.007 (0.43)	0.932
Community Participation	2,271	-0.016 (0.045)	0.021 (0.047)	0.319	0.029 (0.050)	-0.024 (0.046)	0.224
Empowerment							
Financial decisions	2,271	0.187 (0.064)***	0.104 (0.077)	0.31	0.088 (0.073)	0.173 (0.082)**	0.42
Financial and economic decisions	2,271	0.171 (0.065)***	0.109 (0.080)	0.46	0.069 (0.074)	0.18 (0.081)**	0.26

# First Results: Discussion

- Viewing sessions were a success
  - Attendance rates confirms the efficacy of relevant media to increase participation in traditional training sessions
    - Not only they attended the first session, attendance increased in the following sessions
    - No need to include competition/lottery
  - Impact of viewing for the first time people like them on screen?, with stories of suffering, effort and success that relate to them?
- does it indeed change savings behavior?
  - Results suggest an increased use of the BN savings account to manage seasonal agricultural income fluctuations
    - Treated women increased their balances right after harvest season
    - Effect disappears about three months later, as cash needs grow again
    - Effect is large in relative terms (~20%), although still small in absolute terms (~USD 6-7)
  - Effects are concentrated among the youngest (~40%), who have no TV (~28%)

# First Results: Discussion II

- What are the channels?
  - Change in attitudes consistent with messages in *JOSEFA*: increased importance of precautionary motive for savings, concern of safety of the savings mechanism
  - Women's empowerment within the household: increased participation in key economic and financial decisions (not in other kind of decisions); increased participation in processing of agricultural products (small, but in line with diversification of income sources)
  - Trust in financial institutions (BN, in particular)?: weak but consistent evidence that treated women were less likely to report high distrust on financial institutions (no change wrt other institutions)
    - 67% of those in control group reported they do not trust at all banks (clearly a policy challenge for financial inclusion)
- Results provide evidence for the usefulness of edutainment for generating change in key culturally charged economic behaviors for secularly excluded populations



# JOSEFA: Main Characters



Josefa



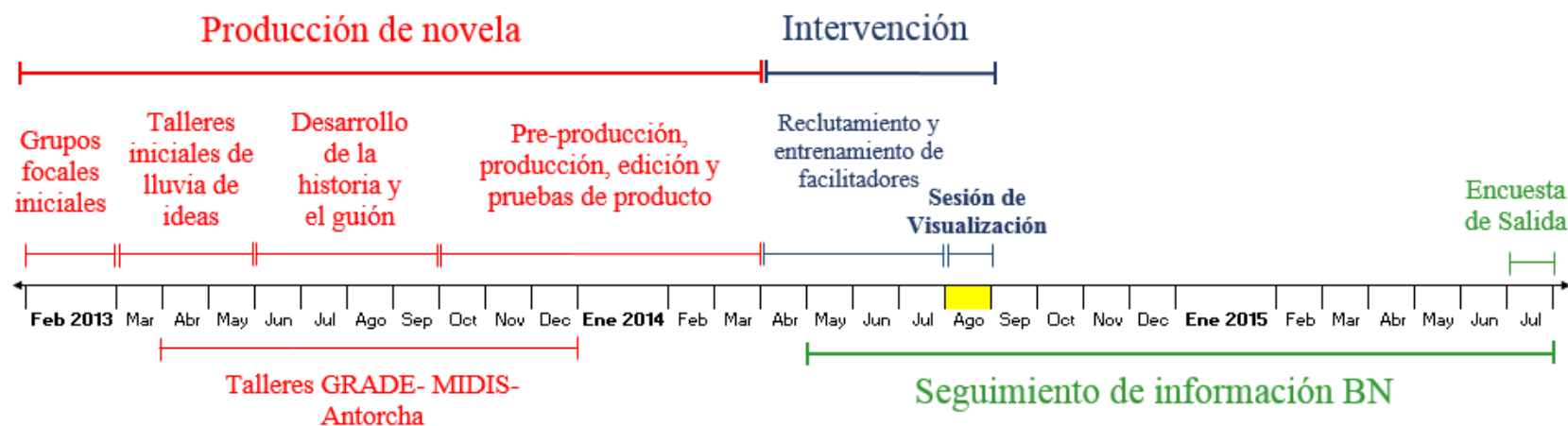
Rufina

# About the Soup Opera

- Josefa plot revolves around a Young woman from a village in southern rural highlands of Peru, who just lost her father and had a child
  - Positive messages (child care, solidarity, savings) are given through the interaction with her older sister
- Savings principal messages
  - It's important to save some money (chapter 1)
  - Risks of non financial savings. The need to keep savings in a safe place (chapter 2)
  - Having contingency savings. For example, for a medical emergency (Chapter 3)
  - Savings allow us to invest in something else. Possibility of partnering and invest in the community (chapter 4)
  - Planning savings can achieve greater goals and a better future (chapter 5)



# Timeline of the study



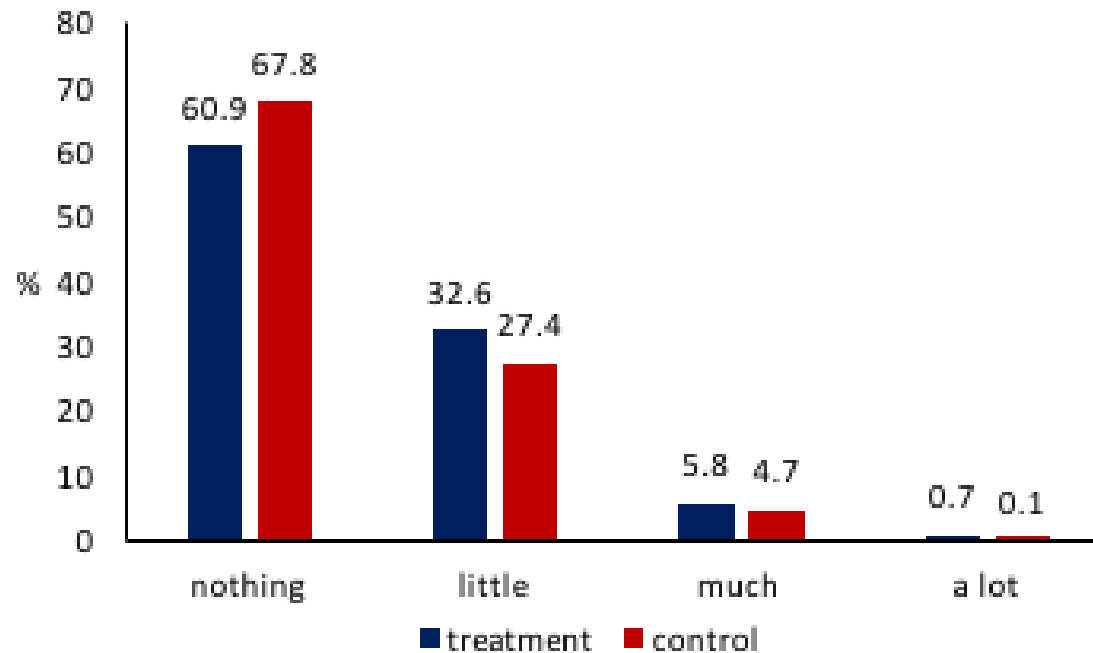
# Balance analysis

	Obs	Control	Treatment	P. Value
Characteristics of the junto's beneficiaries				
Age	2,274	41.465 (1.258)	42.337 (1.227)	0.069*
Educational attainment				
None	2,273	0.248 (0.102)	0.260 (0.096)	0.587
Primary education	2,273	0.480 (0.049)	0.463 (0.051)	0.498
Secondary education or more	2,273	0.272 (0.108)	0.277 (0.104)	0.840
Most used language at home				
Castellano(%)	2,274	0.210 (0.117)	0.186 (0.118)	0.510
Quechua(%)	2,274	0.789 (0.118)	0.815 (0.118)	0.469
Besides JUNTOS: number of programmes from which you are beneficiary				
None (%)	2,274	0.208 (0.019)	0.222 (0.018)	0.464
One (%)	2,274	0.808 (0.026)	0.766 (0.023)	0.157
Two (%)	2,274	-0.003 (0.013)	0.002 (0.010)	0.810
three or more (%)	2,274	-0.012 (0.010)	0.009 (0.008)	0.111
Owns a tv	2,271	0.044 (0.018)	0.052 (0.022)	0.008***
Household assets index (i)	2,274	0.008 (0.036)	-0.008 (0.036)	0.270
Household assets and services index (ii)	2,274	-0.083 (0.053)	-0.079 (0.052)	0.893
Household characteristics, assets and services index (iii)	2,274	-0.025 (0.040)	-0.034 (0.039)	0.629
Time with the leader mother and the junto's representative				
Leader Mother	147	0.607 (0.555)	0.393 (0.578)	0.529
Juntos local coordinator	107	1.028 (0.028)	1.028 (0.040)	0.994

# ATE estimates – BN account balances (local currency)

			ATE	
	Obs	Control	OLS	FE
Full Sample				
July 2015	6,349	60.527	5.626	25.411
		(5.015)***	(6.147)	(9.142)***
August 2015	6,349	55.182	2.507	19.839
		(4.851)***	(5.946)	(8.609)**
Survey Sample				
July 2015	2,271	53.22	-1.479	19.338
		(7.062)***	(8.707)	(10.911)*
August 2015	2,271	48.37	-3.63	16.363
		(6.865)***	(8.464)	(10.228)

# Trust in financial institutions



# ATE estimates – savings attitudes

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

# ATE estimates – savings mechanisms

	Obs	Control	ATE	
			OLS	FE
Saving preferences:				
Banco de la Nación	2,273	0.005 (0.003)	0.004 (0.004)	0.007 (0.004)*
Financial System	2,273	0.015 (0.006)	0.009 (0.008)	0.01 (0.006)*
Family and Friends	2,273	0.004 (0.002)	0.007 (0.004)*	0.009 (0.004)**
Inside the household	2,273	0.461 (0.048)	0.04 (0.056)	0.076 (0.039)**
Animals and seeds	2,273	0.066 (0.018)	0.034 (0.024)	0.038 (0.023)

# ATE estimates – Self-reported preference for options when in hypothetical need of cash

			ATE	
	Obs	Control	OLS	FE
In case you ever need S/. 500 would you				
Use your savings (%)	2,273	0.148 (0.025)	0.091 (0.035)***	0.096 (0.031)***
Sell anything (%)	2,273	0.311 (0.038)	0.035 (0.045)	0.047 (0.032)
Lower expenses (%)	2,273	0.040 (0.011)	0.001 (0.015)	0.009 (0.018)
Apply for a loan:				
Financial Institution (%)	2,273	0.054 (0.014)	-0.005 (0.017)	-0.011 (0.011)
Non-Financial Institution (%)	2,273	0.004 (0.003)	0.007 (0.004)	0.003 (0.005)
Family and Friends (%)	2,273	0.529 (0.044)	-0.091 (0.050)*	-0.134 (0.035)***
Government (%)	2,273	0.008 (0.004)	-0.002 (0.005)	-0.004 (0.004)
It would be impossible (%)	2,273	0.121 (0.023)	-0.020 (0.029)	-0.006 (0.022)

# ATE estimates – Self-reported strategies used to cope with bad shocks over last 12 months

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



# Average BN account balances (local currency) 30 and 60 days after JUNTOS transference

