# NUDGING LATIN AMERICA AND THE CARIBBEAN

## A DECADE OF IMPROVING PUBLIC POLICIES THROUGH BEHAVIORAL ECONOMICS

**Cataloging-in-Publication data provided by the**
**Inter-American Development Bank**
**Felipe Herrera Library**
Nudging Latin America and the Caribbean: a decade of improving public policies through behavioral economics / Inter-American Development Bank.
p. cm. — (IDB Monograph ; 967)
Includes bibliographic references.
1. Economics-Psychological aspects-Latin America. 2. Economics-Psychological aspects-Caribbean Area. 3. Latin America-Social policy. 4. Latin America-Economic policy. 5. Caribbean Area-Social policy. 6. Caribbean Area-Economic policy. I. Inter-American Development Bank. Department of Research and Chief Economist. II. Series.
IDB-MG-967

**JEL codes:** C93, D91, C90
**Keywords:** Behavioral economics, COVID-19, field experiments, public policies.

**This compilation would not be possible without the authors' contribution to the academic papers cited in this document. A special thanks to Nicolas Ajzenman, Martín Alessandro, Rafael Anta, Irani Arráiz, Helen Baker-Henningham, Laura Becerra Luna, Samuel Berlinski, Pedro Bernal, Eleonora Bertoni, Diether Beuermann, Syon Bhanot, Matteo Bobba, Cynthia Boruchowicz, Mariano Bosch Mossi, Matías, Julián Bustin, Fernando Caffera-ta, Carla Calero, Paul Carrillo, Edgar Castro, Susan Chang, Vicente Cibils, Ana Corbacho, Julian Cristia, Mateo-Berganza Díaz, Taryn Dinkelman, Huáscar Eguino, Gregory Elacqua, Danielo Fernandes, Flora Finamor Pfeifer, Lucia Freira, Verónica Frisancho, Patricia Garcia, Daniel Gingerich, Sally Grantham-McGregor, Juan Miguel Hernández-Agramonte, Sarah Humpage, Emma Iriarte, Stewart Kettle, Bruno Cardinale Lagomarsino, Florencia López Bóo, Eduardo Lora, Jose Lu Perez, Alessandro Maffioli, Luana Marotta, Sebastian Martinez, Ricardo Mastai, Carolina Méndez, Mónica Mogollón, Joaquin Navajas, Daniel Ortega, Cristina Parilli, Marcelo Pérez Alfaro, Christine Powell, Maria Fernanda Rodrigo, Marisol Rodriguez Chatruc, Soraya Roman, Dario Romero, Ben Roseth, Adrian Rubli, Guilherme Russo, Dario Salcedo, Marco Sartorio, Carlos Scartascini, Simeon Schächtele, Alberto Simpser, Tainá Souza Pacheco, Ernesto Stein, Jorge Streb, Luis Tejerina, Ailin Tomio, Jerónimo Torrealday, Fernando Torrente, Fabian Triskier, Alejandro Vasquez Echeverria, Marcos Vera-Hernández, Juan Miguel Villa, Razvan Vlaicu, Susan Walker. We thank Sofia Maradiaga, Vincent Stüber, and Ivanna Valverde for their input, editing assistance, and invaluable feedback.**

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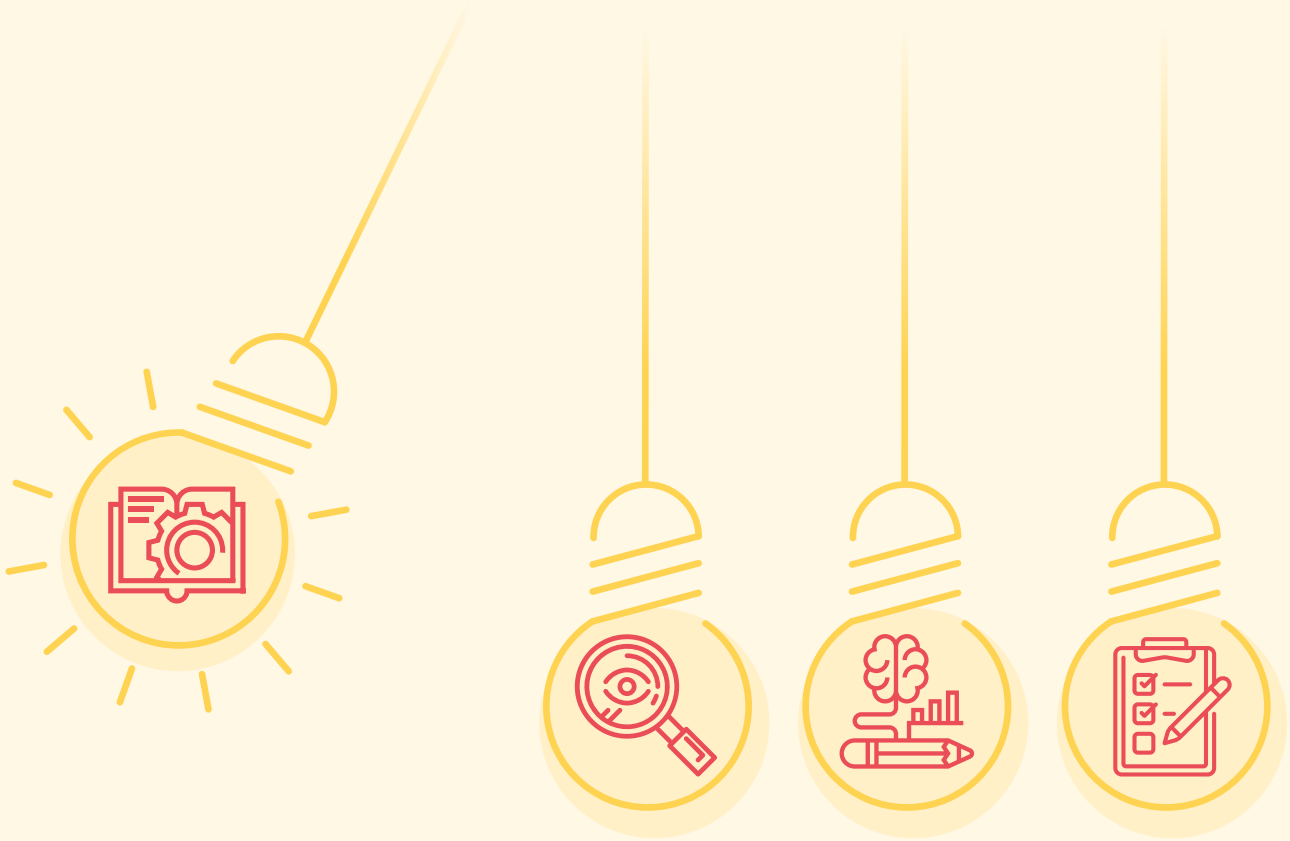
## A DECADE OF IMPROVING PUBLIC POLICIES THROUGH BEHAVIORAL ECONOMICS



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# Introduction

**For almost a decade, the Inter-American Development Bank (IDB) has devoted itself to improving the lives of citizens in Latin America and the Caribbean using tools from behavioral science.** One discipline of behavioral science—behavioral economics—gathers insights from psychology, economics, and other social sciences to provide a holistic picture of human behavior. It takes into consideration the latent influence on behavior of both the context and social interactions of people's environments. Through "nudges," which are changes made to the choice architecture without forbidding any other options or significantly changing economic incentives (Thaler and Sunstein 2008), behavioral economics can help generate systematic and predictable changes in the behavior of a group in a specific context. Naturally, this potential has made the discipline a vital tool for governments interested in improving the results of their programs and policies.

At the Inter-American Development Bank, research teams have worked with local and national governments in Latin America and the Caribbean to advance knowledge on individual and collective decision making. By designing strategies and nudges to correct biases and barriers that steer choices toward suboptimal outcomes, the researchers have helped people make wiser decisions in a number of areas, including education, saving, health, tax compliance, and labor markets.

Unfortunately, the crisis generated by the COVID-19 pandemic and other recent natural and social events have worsened the preexisting social and economic challenges in the region. Several countries that were already facing financial difficulties have been forced to operate with reduced budgets and to identify inefficiencies in both income and expenses. For this reason, maximizing the impact of policies and programs through the application of scientific evidence has become more important than ever. This report seeks to fill this need by gathering the tools and lessons learned from behavioral interventions implemented by the IDB in Latin America and the Caribbean in the past decade and making them available to policymakers in the region.

**The thirty-eight interventions described here span countries from across the region of Latin America and the Caribbean, thirteen of which are indicated in map I.1. They provide tangible examples of the IDB's work, summarized in this report in eight areas:** education, gender, health, COVID-19 (covering interventions implemented to support governments in their efforts to curb the spread of the virus), social security and pensions, taxes, public administration, and small and medium enterprises.

# Regional Impact Map

MAP I.1 Regional Impact Map


## 38 interventions

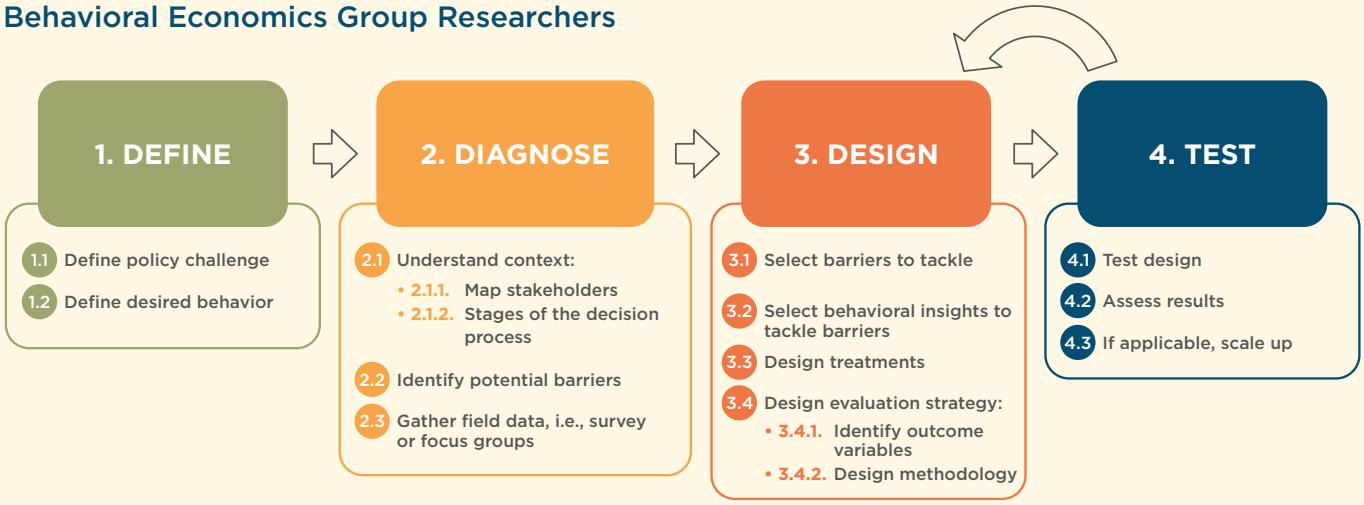
**This document covers interventions that were implemented in many countries throughout Latin America and the Caribbean.** On the map, you can see where the interventions were implemented.

# Methodological Guide to Interventions

**Given that each public policy challenge and every context that surrounds it is unique, researchers at the Inter-American Development Bank apply a rigorous methodology to diagnose, design, and evaluate correctly the interventions they implement.** While space does not permit us to present in depth here the principles of behavioral economics or explain in detail the biases that are commonly present in decision making, readers can expand their knowledge of these areas by taking our online course and reading our technical guide on how behavioral economics can help fight the coronavirus (Martinez et al. 2021a).

Figure M.1 summarizes in graphical form the methodological guideline applied by IDB researchers; further information on the methodology is available in our practical guide (Martínez et al. 2021b).

**FIGURE M.1 Methodological Guideline for IDB Behavioral Economics Group Researchers**



# Interventions

**This report will present summaries of many of the interventions done in the Latin America and Caribbean region by researchers and specialists at the IDB in eight different subject areas:**

- EDUCATION
- GENDER
- HEALTH
- COVID-19
- SOCIAL SECURITY AND PENSIONS
- TAXES
- PUBLIC ADMINISTRATION
- SMALL AND MEDIUM ENTERPRISES

The report section for each area will begin with an overview of the lessons learned in that area, followed by a table of the behavioral barriers encountered in the interventions and the tools utilized to counter them.

**This will be followed by the intervention summaries for the subject area, each divided as follows: the context for the project; a summary of the project; an analysis of the behavioral barriers present in that specific context and the behavioral tools used to counter them; the intervention design, the challenges presented by each project; the results of the project; and the implications for public policy of the project and its results.**


**Our hope is that this document is welcomed as an accessible repository of knowledge and a reference for many different audiences interested in developing future projects in the region.**

# EDUCATION

# Education

**In the field of education, the IDB has implemented interventions in Chile, Mexico, Peru, and Uruguay. This review of those interventions observes the presence of various common behavioral barriers, such as the status quo, cognitive overload, social norms, hassle factors, and the availability heuristic, that could have discouraged action for students and teachers alike** (see table 1.1). It also notes other barriers, like lack of information. The plethora of tools deployed to counter these barriers included feedback, framing, planning tools, reminders, social norms, salience, and simplification.

In Uruguay, sending parents text messages that included feedback, planning prompts, and information on the benefits of education and parental identity helped increase school attendance, particularly in areas of the country where attendance was low. In Chile, keeping parents updated with messages containing feedback on their children's performance improved students' grades, attendance, behavior, and probability of advancing to the next grade. In disadvantaged areas in Peru, prompting an altruistic identity and providing monetary incentives at timely moments in the job application system helped increase the number of teachers applying for jobs in schools.

Overall, researchers at the IDB observed that, from a behavioral perspective, **providing salient and simplified information, reducing hassle factors, leveraging social norms in a positive manner, and sending timely reminders** could be cost-effective ways to improve different aspects and issues related to education in the region. Table 1.1 identifies common barriers to and tools for taking action on education.

**TABLE 1.1 Behavioral Barriers and Tools Relevant to Educational Interventions**

| Behavioral Barriers | Other Barriers | Behavioral Tools |
|---|---|---|
| » Cognitive overload<br>» Hassle factors<br>» Social norms<br>» Status quo | » Lack of information | » Feedback<br>» Framing<br>» Planning tools<br>» Reminders<br>» Salience<br>» Simplification<br>» Social norms |

See definitions

# 1.1. Nudging Parents to Improve Preschool Attendance

**COUNTRY** Uruguay

**YEAR** 2019

**TEAM** Laura Becerra-Luna, Juan Manuel Hernández-Agramonte, Florencia López-Bóo, Mercedes Mateo-Díaz, Marcelo Pérez-Alfaro, and Alejandro Vásquez-Echeverría.

## CONTEXT

**Preschool is an invaluable opportunity for children to develop cognitive, socioemotional, and motor skills, but to obtain these preschool gains, they must be physically present. Typically, absenteeism rates are notably higher in the early years than at other school levels.** Children who do not regularly attend preschool miss learning opportunities and interrupt their skills acquisition process, which might prevent them from reaching their full potential. The result is likely to be poorer academic outcomes later and worse performance in the labor market.

Although Uruguay has increased its levels of preschool coverage to achieve almost universal education for children ages four and five, more than a third of those enrolled in public preschool programs do not attend regularly. Absenteeism is skewed toward schools located in lower socioeconomic areas and earlier preschool grades.

A major factor contributing to children's absence from preschool may be that parents do not understand or value the significance of early childhood education. Programs that shift their mindsets by emphasizing the benefits of preschool attendance could be effective in lowering absenteeism rates. To date, however, little research exists on how best to promote this attitudinal shift.

## THE PROJECT

**In partnership with the Ministry of Education, researchers evaluated in this study the impact of a behaviorally informed message intervention in Uruguay.** The key research question was whether behaviorally informed text messages could "nudge" parents to take their children to preschool every day, and if these messages would change parents' attitudes toward early education. Text messages were delivered through the Ministry of Education's "GURI Familia"[1] application, a platform for communication between parents and schools. They targeted parents of children from three to five years of age enrolled in public preschools.

[1] Gestión Unificada de Registros e Información de las Familias (Unified Records and Information Management for Families).

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Hassle factors
- Status quo

### Behavioral Tools

- Feedback
- Framing
- Identity priming
- Planning tools

See definitions

## BEHAVIORAL BARRIERS

**Hassle factors:** Even if parents believe they should send their children to school, just a few simple obstacles can deter them from their intention.

**Status quo:** In this case, the status quo was biased toward not sending children to school every day.

## BEHAVIORAL TOOLS

**Feedback:** Giving parents information about their children's absenteeism from school can raise their awareness and prompt them to act differently for the benefit of their children.

**Framing:** Explicitly using words that denote gains in children's development as a result of school attendance might encourage parents to make sure their children don't miss school so they can keep obtaining those gains.

**Identity priming:** Increasing parents' sense of responsibility for their children's futures might activate a sense of ownership and lead them to deter absences.

**Planning tools:** Nudging parents to think about the concrete steps necessary to take their children to school can lead them to act to decrease absences.

## INTERVENTION DESIGN

**Parents of students in 194 preschools were assigned to a treatment group and a control group.** Those in the treatment group received text messages intended to nudge them to bring their children to school consistently and minimize unnecessary absences. The messages provided information about the number of absences to date, the benefits of early childhood education, logistical planning to get children to preschool, and the important role parents play in getting their children to school. The parents received personalized messages weekly for three months, **designed to include four different behavioral science tools to induce them to change their behavior, as shown by the following examples:**

1. **Feedback:** *"[Parent name]: [Child's name] has been absent [# absences] days in the last 3 weeks. Help [him/her] develop a habit of responsibility by avoiding missing more days the rest of the year!"*

2. **Planning prompt:** *"[Parent name]: Think about the reasons that may have prevented your child from attending school last year. Create a plan to avoid them this school year!"*

3. **Positive parental identity:** *"[Parent name]: What you do for [child's name] today—for example, taking [him/her] to school—will affect [his/her] future. You have a key role in [his/her] education!"*

4. **Gains in the short and long terms:** *"Hello [parent name]: Have you noticed the change in the development of [child's name] since [he/she] has attended preschool? Imagine what it would be like if [he/she] went every day. Let the rain not be an excuse, take [him/her]!"*

**Messages were sent three or four times a week, varying the day, between 5 and 8 p.m. Parents assigned to the control group did not receive messages during the intervention period.**

## CHALLENGES

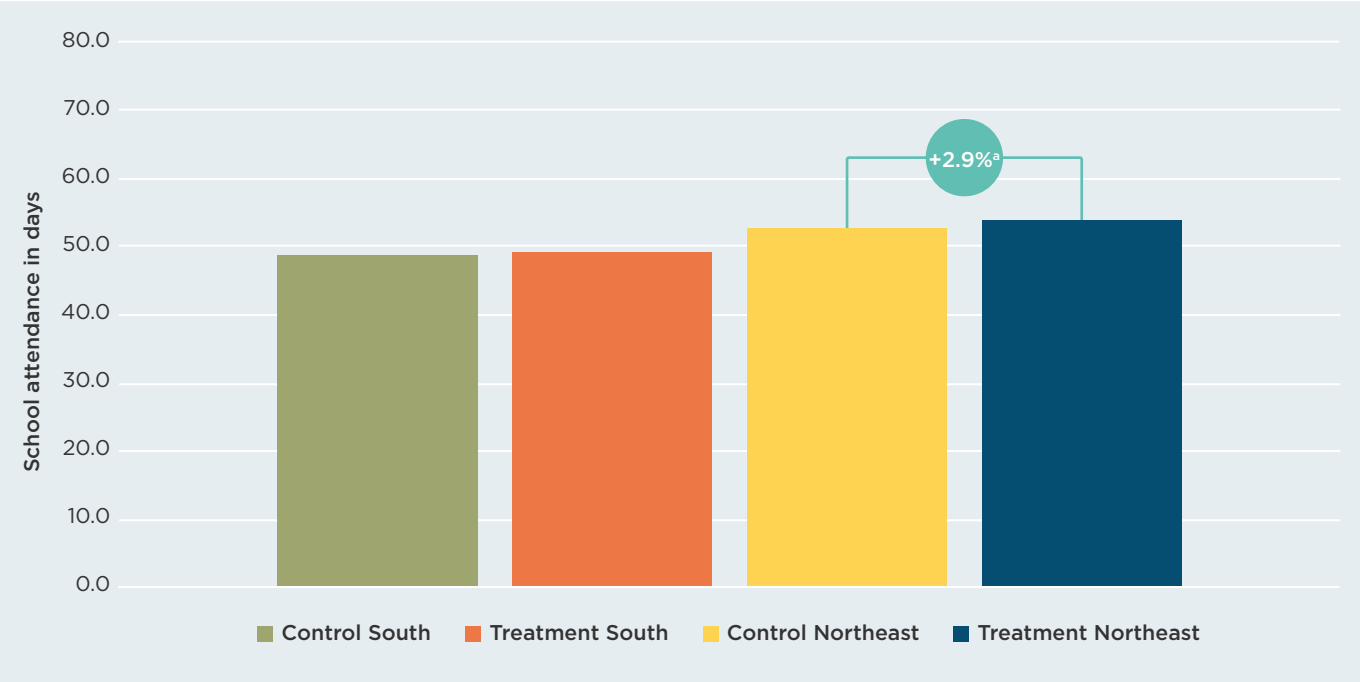
- Timing the intervention to match the season when absenteeism was highest was key, as was context analysis.
- If absenteeism were related more to structural factors than to psychological barriers, nudging might be irrelevant to addressing the underlying problem.

## RESULTS

**This randomized evaluation was effective in increasing the attendance of students in the middle of the distribution.** A possible explanation is that, for these students, behavioral barriers interfered most with attendance, creating more latitude to influence behavior through nudges. Specifically, an increase in attendance was observed, ranging from 0.31 to 0.67 days, over the 13 weeks of intervention.

Of particular interest was the change in attendance in the northeastern region of Uruguay. There, the attendance of students in the treated schools increased by 1.48 days (or 2.9 percent change), with a significance level of 5 percent (see figure 1.1.1). The Northeast is the least populated region of Uruguay and is consistently low performing across several indicators, such as infrastructure, economic activity, health, education, and poverty. The message campaign proved to be an effective, low-cost intervention to increase attendance in this area and reduce geographical differences.

### FIGURE 1.1.1 Treatment Effects on Attendance by Region




[a] Statistical significance level of 10%.

Using the Uruguay Child Development Inventory (El Inventario de Desarrollo Infantil, or INDI), the researchers found that missing a day of kindergarten represented a decrease of 0.13 standard deviations in cognitive outcomes. In the northeastern region, higher attendance would equate to an increase of 0.2 standard deviations in cognitive outcomes as measured by INDI. **These results point to the potential of behavioral tools to reduce inequality in access and learning from the early years.**

## POLICY IMPLICATIONS

» **Simple interventions like text messages to parents can improve school attendance rates at a relatively low cost,** with positive implications for children's long-term developmental outcomes. In future interventions targeting older students, messages can be sent to both students and their parents.

# 1.2. “Parents Up to Date” to Improve Children’s School Performance

**COUNTRY** Chile

**YEAR** 2016

**TEAM** Samuel Berlinski, Matias Busso, Taryn Dinkelman, and Claudia Martinez

## CONTEXT

**School dropout and grade repetition are two of the biggest challenges facing education systems in middle-income countries.** As of 2011, only 46 percent of students in Latin America and the Caribbean graduated from high school on time, and only 53 percent of young people between the ages of 20 and 24 years had completed their studies at this level (UNFPA and ECLAC 2011). Previous studies found that school absences, misbehavior, and declining grades were signs of impending grade repetition and future dropouts.

## THE PROJECT

**This study tested whether communication between schools and parents about student performance could help families improve their children’s school performance.**

The research team conducted a randomized experiment with a sample of low-income Chilean families to evaluate the effects of digitizing existing school records on attendance, grades, and behavior and then communicating this information to parents each week through text messages. The program was called Papás al Día, or “Parents Up to Date.” The experimental sample included almost 1,500 children enrolled in grades 4–8 in eight schools in Santiago.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Cognitive overload
- Salience

### Other Barriers

- Lack of information

### Behavioral Tools

- Feedback
- Social norms

See definitions

## BEHAVIORAL BARRIERS

**Cognitive overload:** Parents may forget or overlook information contained in report cards.

**Salience:** Report cards may be unnoticeable documents for parents.

## OTHER BARRIERS

**Lack of information:** Although schools around the world regularly record student outcomes, families may not have timely access to this information. At best, schools communicate these data to parents using report cards, which may or may not ever reach home.

## BEHAVIORAL TOOLS

**Feedback:** For this intervention, text messages were designed to give frequent feedback to parents about their children's behavior.

**Social norms:** In the context of the present study, acceptable behavior is for parents to catch up on their children's school performance.

## INTERVENTION DESIGN

**Parents of approximately 1,500 students enrolled in grades 4–8 in eight schools across Santiago agreed to receive frequent information about their children by text message.** The program required digitizing school administrative records on academic performance and communicating this information to parents through weekly automated messages. **The messages included the following feedback:**

1. **Attendance (weekly):** how many days during the previous week the child was in school.

2. **Behavior (included bimonthly):** the number of positive, neutral, and negative behaviors teachers recorded in their notes over the prior month.

3. **Grades (included bimonthly):** the child's three most recent math test scores and the average of those scores. Parents also received the class average score for the same tests so they could see how well their children performed relative to their classmates.

Parents who consented to participate in the study were randomly assigned either to the treatment group or the control group, and the number of students in the treatment group was also randomized (at either 25 percent or 75 percent) at classroom level. **Those in the control group received normal communications from the schools, including some neutral text messages with general information about school events. The content of the messages is provided in table 1.2.1.**

| TABLE 1.2.1 Text Message Content | | |
|---|---|---|
| **Message Type** | **Frequency** | **Text** |
| 1. Attendance (treatment group only). | One text message per week to EVERY parent/guardian in treatment group, sent EVERY FRIDAY, 19:30. | "[Caregiver]: School records indicate that {ChildName} attended {AttendDays} of {ValidDays} school days this week. Parents Up to Date." |
| 2. Behavioral misconduct (treatment group only). | One text message per month to EVERY parent/guardian in the treatment group, sent first TUESDAY of EVERY MONTH, 19:30. | "[Caregiver]: School records indicate that last month, {ChildName} had {NumPos} positive behaviors and {NumNeg} negative behaviors in class. Parents Up to Date." |
| 3. Grades for recent math tests (treatment group only). | One text message per month to EVERY parent/guardian in the treatment group, sent first TUESDAY of EVERY MONTH, 19:30. | "[Caregiver]: According to school records, {ChildName} scored {TestScore} on his/her last math test. The class average was {ClassScore}. Parents Up to Date." |
| 4. Messages to encourage continuation (treatment and control). | One text message per month, to EVERY parent/guardian in both groups, sent first MONDAY of EVERY MONTH, 19:30. | "[Caregiver]: The next {MeetingType} at school {SchoolName} is on {DATE} at {TIME}. Do not miss it! Parents Up to Date." |

## CHALLENGES

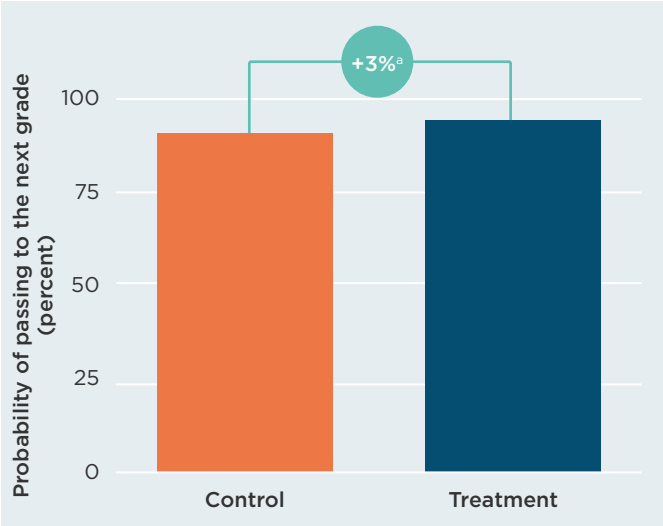
- The research team encountered several challenges in conducting the study. First, the behavioral data were difficult to collect. In Santiago, each classroom has a notebook in which teachers can enter comments on particularly good or bad behaviors of specific students. The team needed to develop a system for categorizing these behavior notes as positive, negative, or extremely negative, and then implement these definitions in all classes.
- Second, although all text messages were sent as planned, issues arose with delivery and reception. To maximize the chances of reception, delivery was changed from Friday to Monday early on in the intervention. Moreover, to minimize the chance of message failure, all consenting parents were recontacted to verify and/or update their cellphone numbers.
- Finally, since Parents Up to Date was a relatively low-involvement intervention, parents were not instructed in how to interpret or use the information they received.

## RESULTS

**The randomized evaluation produced immediate results within the first five months, which extended to the end of the first school year.** By the end of the year, students in the treatment group improved in many areas compared with the control group. Cumulative average mathematics grades were higher among these students, and their probability of obtaining a passing grade in math increased by 2.8 percentage points (relative to an average grade of 90 percent).

The probability of these students having cumulative attendance greater than the minimum 85 percent required to pass the grade was also higher, increasing by 6.7 percentage points, while extremely negative teacher notes on their behavior (describing harassment or verbal and/or physical violence) decreased by 1.3 percentage points. As seen in figure 1.2.1, the probability of being promoted to the next grade increased by 2.9 percentage points.

### FIGURE 1.2.1 Probability of Promotion to the Next Grade




[a] Statistical significance level of 5%.

Finally, positive classroom-level spillover effects from students in the treatment group in the same classroom were observed for both grade and attendance outcomes and for the probability of passing the grade, but not for behavioral outcomes.

## POLICY IMPLICATIONS

- **The results showed that a low-cost, low-touch, feasibly scalable intervention can have an important impact on students' behavior, with potentially large gains in long-run human capital attainment.** Relative to other types of parenting programs, the intervention cost little and would likely be more sustainable and amenable to scale-up in developing-country settings outside of Chile. Effective use of a technology that enhances parent–school communication can improve outcomes, thereby improving the returns to existing school inputs.
- This study continued for one and a half years, and the researchers observed many outcomes at the monthly level throughout this period. The discussion above has focused on outcomes measured five months after treatment. It remains vital, however, to understand program effectiveness over the medium and longer terms, as parents may become fatigued by the program or assume new parental habits that render it obsolete.

# 1.3. The Effects of Performance Feedback on School Choice

**COUNTRY** Mexico

**YEAR** 2014

**TEAM** Matteo Bobba and Verónica Frisancho

## CONTEXT

**People's plans for the future are, by nature, made with uncertainty and rely on subjective expectations about the present and future.** This is the case for students' school and career choices, which may be biased by youth misperceptions of their own talent and skills. Access to information and knowledge is, thus, crucial to helping students and/or parents make sound educational choices, especially for students from less-privileged backgrounds who might be even less informed. Providing them with tools that enable well-informed life choices may enhance their social and economic mobility.

## THE PROJECT

**Researchers conducting this study sought to understand how individual expectations of one's own academic ability shape curricular decisions in upper-secondary education.** The study made use of the assignment mechanism used by the Metropolitan Commission of Public Institutions of Higher Secondary Education (COMIPEMS) in the metropolitan area of Mexico City to allocate students into public high schools. Two institutional features were key to the research design. First, the assignment system is based on stated preferences on the choice of schools and scores on a standardized scholastic admission exam. Second, applicants are required to submit rank-ordered lists of their preferred schools before taking the admission test.

The study used a subsample of applicants from the least-advantaged neighborhoods within the catchment area of the school assignment mechanism, because these students were less likely to have access to previous indicators of their academic potential. Researchers conducted an experiment to evaluate the impact of the intervention.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

» Social norms

See definitions

## Behavioral Tools

» Feedback

See definitions

## BEHAVIORAL BARRIERS

**Social norms:** Students from highly marginalized neighborhoods are more likely to believe they are not good enough to pursue certain academic and/or professional paths because positive models (that is, students from less favored socioeconomic backgrounds who have been admitted to recognized academic institutions) are scarce for them.

## BEHAVIORAL TOOLS

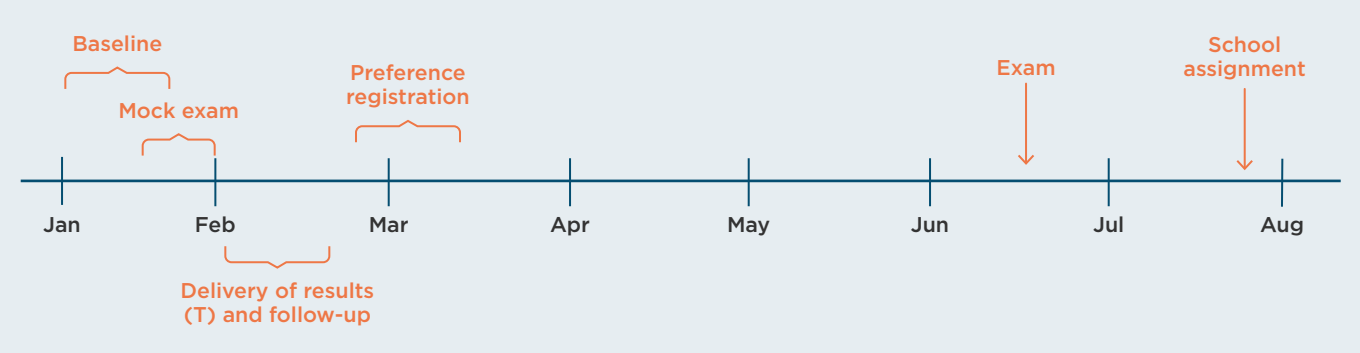
**Feedback:** Communicating evaluative or corrective information to students about their performance on a mock-up examination can influence their future decisions.

## INTERVENTION DESIGN

**The intervention involved administering a mock school admission exam to students divided into treatment and control groups.** Group assignment was stratified at the school level, with 44 schools in the treatment group and 46 in the control group. Test results were not reported to the students in the control group. Schools randomized out of the intervention (28) constituted a pure control group, in which the mock examination was not carried out and the interview only took place in the follow-up survey. Students in the treatment group participated in a face-to-face session in which they were provided with feedback on their test performance.

Figure 1.3.1 presents the timeline of the intervention. Feedback on performance on the mock exam was delivered at the beginning of the follow-up survey. Surveyors showed each student a graph with two preprinted bars: one showing the average score among the universe of applicants who took the high school admission exam administered by the COMIPEMS system in 2013 and the other the average mock exam score in the class of each applicant. During the interview, a third bar was plotted corresponding to the student's score on the mock exam.

### FIGURE 1.3.1 The School Assignment Process and the Intervention: A Timeline




**Note:** COMIPEMS rules in place in 2014.

## CHALLENGES

» The main challenge encountered by researchers in carrying out the intervention was absenteeism among the participating students on the exam day and attrition among the test takers for the follow-up survey. From the initial sample of 3,001 students assigned to either the treatment or the control group at baseline, 2,790 were present on the day of the exam, and 2,544 attended the follow-up survey.

## RESULTS

**Researchers carried out a comparison between randomized treatment and control groups, and they found that students' subjective beliefs about their academic ability responded to the provision of information about their own performance.** Conditional on taking the mock exam, mean beliefs in the treatment group fell 7.5 points on average, while the standard deviation of beliefs went down by about 2.6 points. Relative to the control group, these effects represented 10 and 15 percent reductions in the mean and standard deviation, respectively.

It was also observed that effects of the treatment might depend on the direction of the update, because about 80 percent of the applicants in the sample had scores below their baseline mean beliefs.

Applicants in the treatment group who received positive feedback increased their stated preferences on the choice of schools by 8.3 percent in comparison to the control group. This corresponded to approximately 18 percent of the sample mean in the control group. Large reductions in mean beliefs observed among the applicants receiving negative feedback in the treatment group did not appear to translate into any corresponding change in the demand for academically oriented programs.

## POLICY IMPLICATIONS

» **Students face important informational gaps related to their academic potential. This study found that closing these gaps has a sizable effect on the choice of academic tracks in high school.** It follows that providing youth with individualized information on their own academic potential can effectively alter career decisions during a critical period of their schooling trajectories.

» In light of these findings, policies should aim to disseminate information about individual academic skills to students to provide them with better tools to make well-informed curricular choices. One approach, for example, might be to provide incentives to middle schools to implement mock tests and deliver score results before students submit their rank-ordered lists of preferred high schools within the centralized assignment mechanism.

# 1.4. Altruism and Incentives to Reduce Teacher Sorting

**COUNTRY** Peru

**YEAR** 2019

**TEAM** Nicolás Ajzenman, Eleonora Bertoni, Gregory Elacqua, Luana Marotta, and Carolina Méndez

## CONTEXT

**Education can provide equal opportunities to students from different backgrounds. Frequently, however, people from lower socioeconomic spheres receive a lower quality of instruction as a consequence of teacher sorting**—that is, the propensity of more highly qualified teachers to instruct students from a higher socioeconomic status, while less-qualified teachers are more likely to work in low-income schools.

This situation has significant adverse effects on students' cognitive, noncognitive, and long-term outcomes. Not surprisingly, it also contributes to inequality in Latin America. The exploration of policies that alleviate sorting patterns is, therefore, important to offering high-quality instruction independent of students' backgrounds.

## THE PROJECT

**Often, disadvantaged schools are understaffed and have low-quality instructors.** To address the need to explore policies that efficiently provide high-quality instruction in these schools, this project integrated an experimental design into Peru's national teacher selection process in 2019. Specifically, the project—informed by behavioral sciences—implemented two interventions. One invoked an altruistic identity, and the second sought to make preexisting external incentives to choose to teach in disadvantaged schools more salient and comprehensible.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Cognitive overload
- Hassle factors
- Social norms

### Other Barriers

- Structural barriers

See definitions

## Behavioral Tools

- Identity priming
- Reminders
- Salience
- Simplification

See definitions

## BEHAVIORAL BARRIERS

**Cognitive overload:** Teachers might fail to register school preferences because the process is overly complex, so they leave it for later or simply don't do it.

**Hassle factors:** Previous studies have indicated the information on differential compensation for teachers is often complex, with too many pop-up windows appearing in online sources.

**Social norms:** The observation, for example, that colleagues apply more to "high-quality" schools (descriptive social norm) or the existence of a general belief that teaching in higher-performing schools is better (prescriptive social norm) can normalize such beliefs.

## OTHER BARRIERS

**Structural barriers:** Other factors encompass gender differences in regard to work flexibility and mobility, such as limitations associated with long commutes to remote areas, which disproportionately affect women and decrease their likelihood of teaching in disadvantaged schools.

## BEHAVIORAL TOOLS

**Identity priming:** Teachers might identify with pro-social values, increasing the likelihood of their opting to teach in disadvantaged schools.

**Reminders:** Teacher candidates received messages to remind them of their upcoming decision and, depending on the experimental condition, of the rewards associated with teaching in disadvantaged schools.

**Salience:** The study employed iconographies and colors to make information on disadvantaged schools more prominent.

**Simplification:** The information on the benefits of working in disadvantaged schools was simplified and made easier to obtain.

## INTERVENTION DESIGN

**The intervention used administrative data from the 2019 public school teacher selection process in Peru, including every region except the metropolitan area of Lima and the Constitutional Province of Callao and covering 86 percent of all teachers applying.** In total, the experiment initially included 11,568 teacher candidates who successfully passed the Peruvian national teacher selection (out of over 180,000 applicants). The final sample consisted of 7,217 participants.

The study observed two outcomes from the online vacancy selection platform where candidates select and apply for particular schools: (1) a candidate's choice of a disadvantaged school and (2) a variable indicating if a candidate were assigned to a disadvantaged school for the final in-person evaluation.

The research design contained three arms with similar numbers of participants: one control group and two treatment groups, one of which was subject to an identity-related intervention and the other an intervention based on extrinsic motivation. With this design, the experiment tested two mechanisms that are often described as successful in influencing decision making.

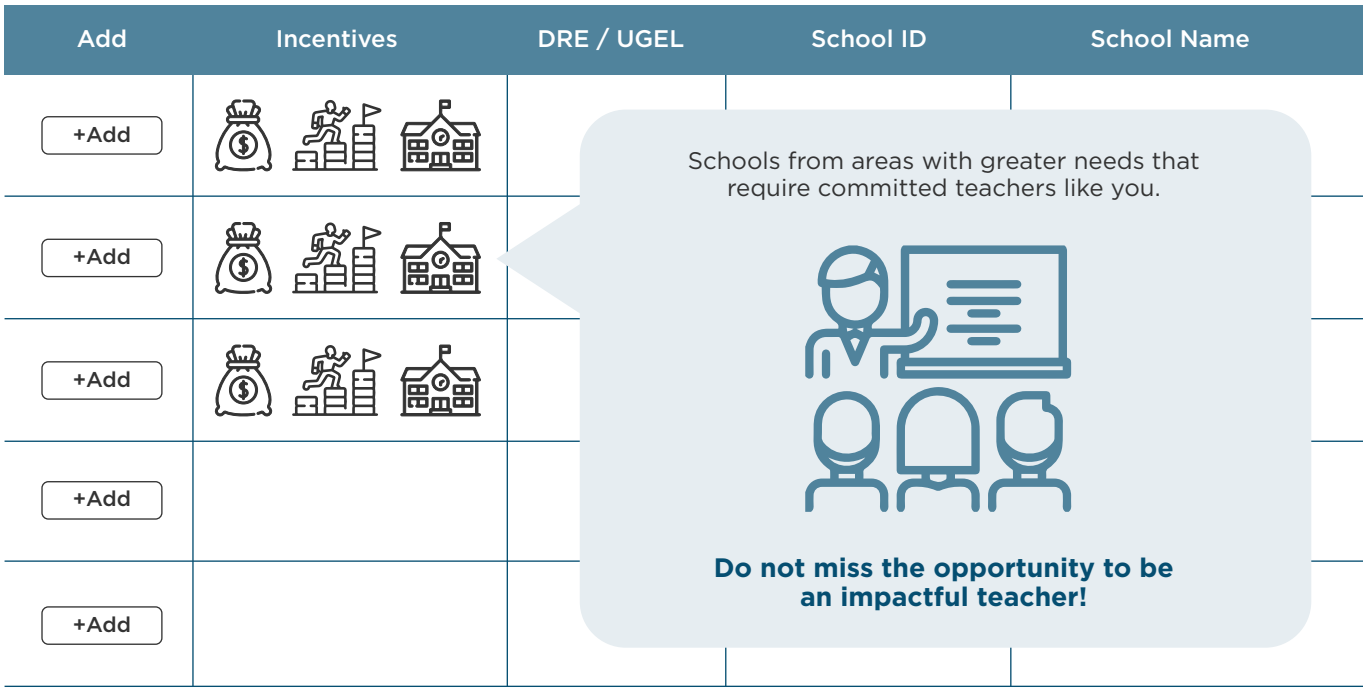
The experiment was conducted in August and September 2019 and included three elements of intervention: (1) text messages, (2) a voluntary online exercise, and (3) online pop-up windows. The text messages were sent in the days before the online procedure for selecting schools, while the voluntary online exercise and the use of pop-ups took place during the selection procedure.

The interventions included several features. First, text messages in the identity arm employed primes for altruistic identities, such as "Thank you for being an agent of social change." Those in the extrinsic motivation arm emphasized benefits in monetary and career terms, while those in the control condition were neutral and provided basic information about the status of the application process.

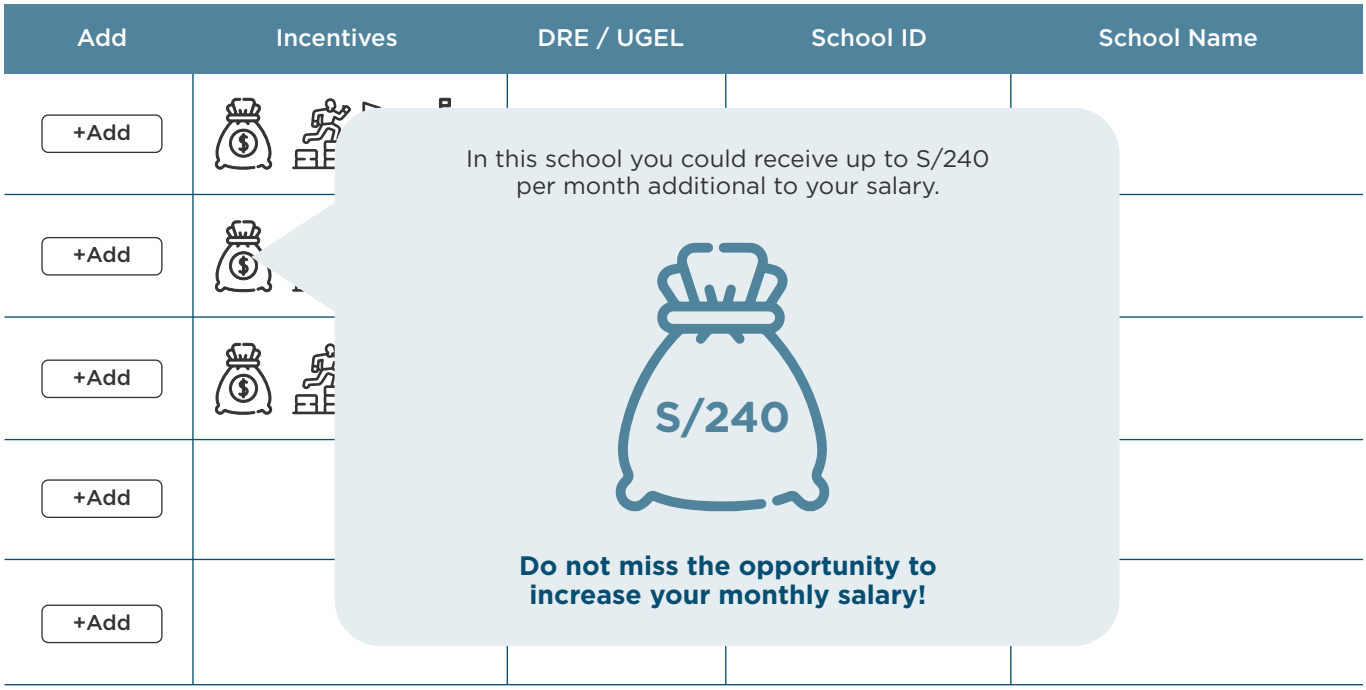
Second, all three conditions offered a voluntary written online exercise during the application process. The identity-related exercise aimed to activate an altruistic identity, asking applicants to share reasons they wanted to become teachers, while the extrinsic motivation exercise asked them to reflect on how monetary incentives promote the welfare of teachers. The control group was asked to complete an evaluation of the registration process so far.

Finally, during the online application process, all conditions included pop-ups that appeared when candidates moved their cursors over icons (see figures 1.4.1 and 1.4.2).

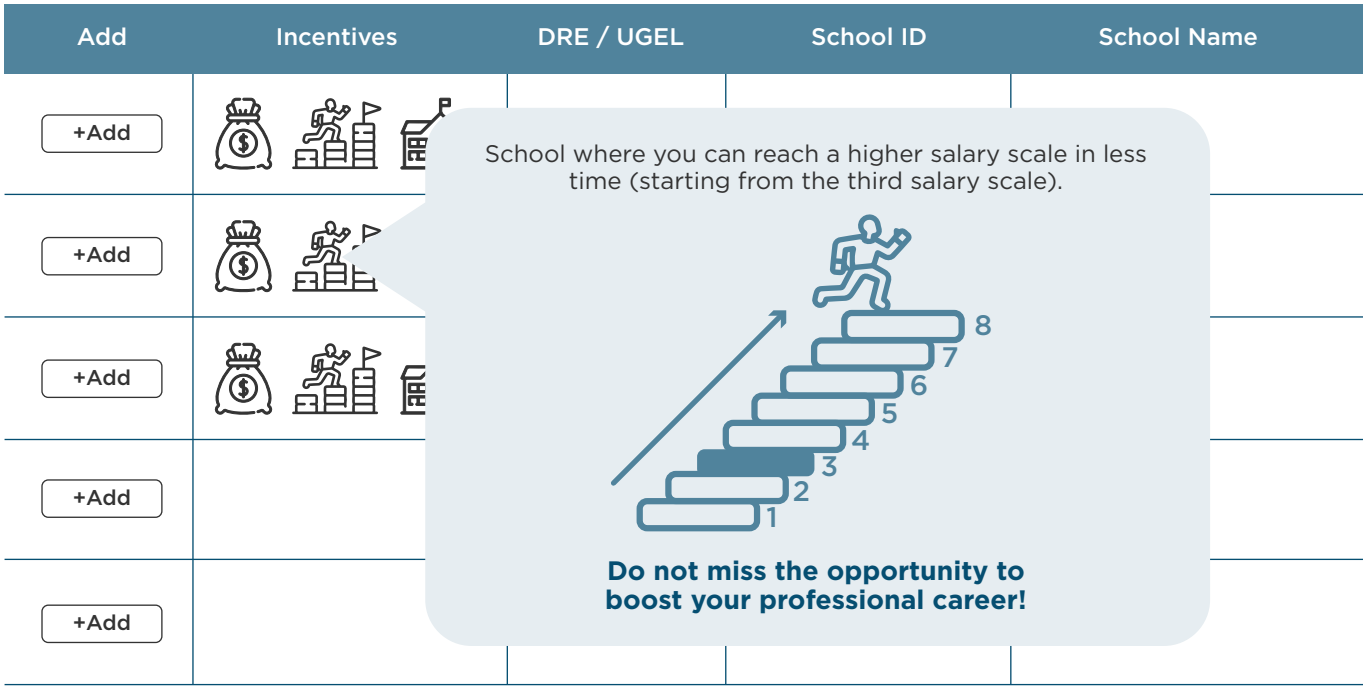
**FIGURE 1.4.1 Pop-Up during Online Vacancy Selection: Identity Condition**



## FIGURE 1.4.2 Pop-Up during Online Vacancy Selection: Extrinsic Motivation Condition




(a) Monetary incentive




(b) Career progression

## CHALLENGES

» The main challenge presented in the study was that some of the regions did not provide for sufficient variation in the types of schools, and successful teacher candidates from these regions had to be excluded from the sample.

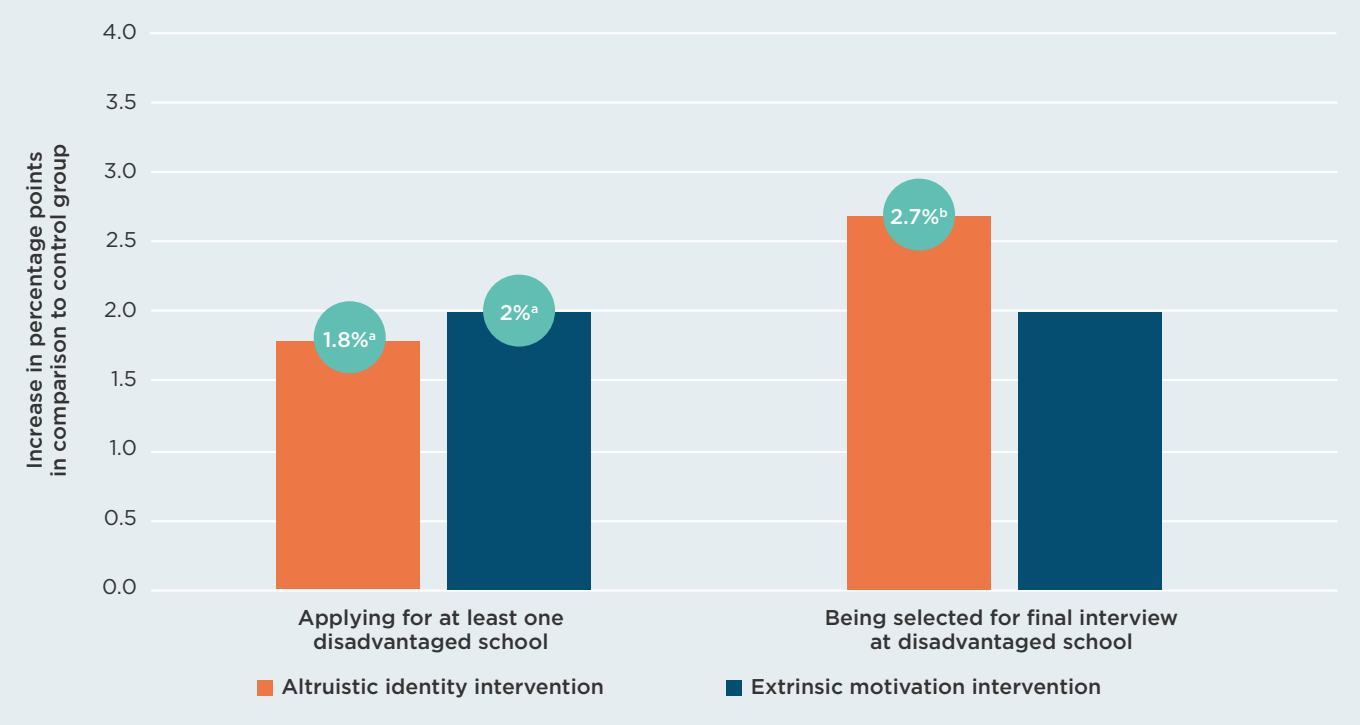
## RESULTS

**Both interventions had significant, positive effects on the probability of a teacher applying to at least one disadvantaged school** (see figure 1.4.3). While the identity-related intervention led to an increase in probability of 1.8 percentage points (pp), the extrinsic motivation condition led to an increase of 2 percentage points (both significant at the 10 percent level). Important differential effects also occurred. First, male and female teachers seem to have systematically different preferences for schools, with men more likely to choose poorer and more remote regions. Second, "high-performing" candidates within the sample were more likely to select disadvantaged schools in the identity-related condition (2.8 pp at the 10 percent level), while "low-performing" candidates reacted more strongly to the extrinsic motivation (2.4 pp at the 10 percent level).

With regard to assignment for the final interview, the identity-based treatment led to an increase in assignment likelihood of 2.7 pp (at the 5 percent level). While the analysis indicated the group-level result might have been driven by male and high-performing teachers, these interaction terms lacked statistical significance. Effects on the extrinsic motivation group displayed a positive coefficient but equally lacked statistical significance.

The researchers estimated the average cost of filling one vacancy in a disadvantaged school through either of the two strategies employed in the study at US$13.

### FIGURE 1.4.3 Treatment Effects of the Two Experimental Groups on School Selection and Assignment




[a] Statistical significance level of 10%. [b] Statistical significance level of 5%.

## POLICY IMPLICATIONS

» **Given the importance of providing equal opportunities in numerous education systems, the study makes a valuable contribution by offering a cost-efficient tool to alleviate the effects of teacher sorting,** including evidence that identity-based interventions have particular potential to alter the decision-making processes of teacher applicants that foster their selection of disadvantaged schools. The use by many countries of online vacancy selection portals makes the study design potentially replicable outside of Peru.

# GENDER

# Gender

**The Inter-American Development Bank has performed interventions in Honduras, Mexico, and Peru to improve gender equality.** Problems that have been addressed at the intersection of gender and education range from encouraging women to make use of scholarships and application tools to inspiring them to take up careers in STEM (science, technology, engineering, and mathematics). To combat gender violence in Honduras, researchers used a novel methodology that employed behaviorally informed Facebook ads to prompt survivors of this type of violence to seek help.

The presence of social norms throughout these interventions highlights the work ahead to change stereotypes and expectations placed on women in the region. Social norms and the simplification of information and processes can be used to help women and girls in different contexts. Table 2.1 identifies common barriers to and tools for promoting gender equality.

**TABLE 2.1 Behavioral Barriers and Tools Relevant to Gender Equality**

| Behavioral Barriers | Other Barriers | Behavioral Tools |
|---|---|---|
| » Availability heuristic<br>» Choice complexity<br>» Cognitive overload<br>» Stereotypes<br>» Sunk costs<br>» Uncertainty aversion | » Lack of information | » Planning tools<br>» Reminders<br>» Role models<br>» Salience<br>» Simplification |

See definitions

# 2.1. Nudging Vulnerable Youth into Higher Education with a Gender Approach

**COUNTRY** Peru

**YEAR** 2020

**TEAM** Monserrat Bustelo, Gregory Elacqua, Andrea Juscamaita, Carolina Méndez, Alejandra Montoya, Claudia Piras, María Fernanda Prada, and Ana María Rojas.

## CONTEXT

**Decisions related to higher education, which are highly complex and crucial to defining students' futures, are often made in a context of imperfect information.** Students of low socioeconomic status are at a disadvantage because they have less access to such information and fewer mechanisms to overcome the imperfections. In addition, the existence of gender stereotypes and biases can influence this process, particularly when choosing the type of career and educational institution based on their quality and the level of demand for them.

In Peru, the National Scholarship and Credit Program (PRONABEC) offers Beca 18, a scholarship that enables low-income students with high academic performance to pursue higher education. Applicants for Beca 18 are required to apply to institutions of higher education and choose careers, and the program provides tools to guide them in doing so.

## THE PROJECT

**PRONABEC and the IDB conducted an experimental study to encourage use of the tools PRONABEC offers potential beneficiaries of Beca 18 to facilitate the process of choosing a career and applying for higher education.** The ultimate objective of the study was to improve the quality of the application process in 2020 by encouraging applicants to choose more competitive educational institutions and careers with a high economic return, with particular emphasis on women.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Choice complexity
- Mental model
- Stereotypes

See definitions

### Behavioral Tools

- Identity priming
- Reminders

See definitions

## BEHAVIORAL BARRIERS

**Choice complexity:** The process of calculating the selection score for Beca 18, although public, is complex, which can make a tough decision even more difficult. For this reason, PRONABEC provides a tool that gives detailed and easy-to-understand information about the effects on the selection score of choosing particular careers and educational institutions, including concrete examples and opportunities to compare choices.

**Mental model:** Women tend to have a less positive view of their academic performance and abilities than men, which may be explained by differences between them in risk and competition aversion. In the context of Beca 18, women's lack of self-confidence could, among other things, be responsible for their selection of less competitive and challenging careers and institutions.

**Stereotypes:** Traditional gender stereotypes may prompt the selection of fields of study associated with stereotypically female jobs, which tend to have lower economic returns. Women, for example, are less likely than men to select STEM fields (science, technology, engineering, and mathematics).

## BEHAVIORAL TOOLS

**Identity priming:** Women received messages that aimed to boost their self-confidence.

**Reminders:** During the application process for Beca 18, reminders were sent to students who might have been procrastinating due to behavioral barriers to motivate them to apply.

## INTERVENTION DESIGN

**The application process began on January 6 and ended on March 1 with the closing of the electronic application.** During it, students who had been preselected to apply were sent text messages reminding them to do so. Researchers promoted the messages using the tools PRONABEC makes available through its Support and Orientation Platform (PAO) to assist in the application phase. These tools comprise a vocational orientation test, information on higher education institutions and fields of study offered in the country, and mock university entrance exams for students to practice and review the content typically assessed by the actual exams, as well as reminders of important dates.

Women were randomly assigned to a treatment group and a control group to assess which text messages promoted choices of careers with higher economic returns and high-quality educational institutions. Both groups, as well as men, received basic reminders. Women in the treatment group also received self-confidence messages to motivate them to act. The intervention can be summarized as follows:

- Duration: Six weeks, from January 17 to February 27
- Method: Reminders in the form of text messages addressed to all shortlisted applicants
- **Three groups identified among those shortlisted:**
  1. Men receiving standard messages (4,389)
  2. Women receiving standard messages (control group, 1,871)
  3. Women receiving differentiated messages (treatment group, 1,872)

## CHALLENGES

» The main challenge in the study was presented by the intervention's design to ensure no applicant would be disadvantaged, which meant that all shortlisted applicants received messages with information about the application process and the benefits of the PAO tools. Because of this, the impact of the informational messages on the percentage of preselected applicants who applied for the scholarship could not be evaluated.

## RESULTS

**Results of the study suggested that the self-confidence and motivational messages sent to the treated women increased the use of the mock exams—one of the three PAO platform tools—especially on the same day the vocational orientation tool was used.** Differentiated messages to treated women seemed to increase the likelihood of using the mock exams on the day of the career counseling and the number of times shortlisted women took them.

The intervention also increased the use of the educational offer (EO) tool, but only among "graduated" women—that is, those who applied for the scholarship after graduating from high school rather than in their last year of high school. In this group, the use of the EO tool increased by 3.9 percentage points (pp), for a 10 percent level of significance.

Although the messages failed to have a differentiated effect on the use of the EO tool, they affected the times at which it was used. Observations of daily EO use and simulations conducted after each message was sent showed that use by treated women increased on the days after receiving a message only when the differentiated messages specifically mentioned that tool. Also, mock exam use did not increase significantly with any particular message, suggesting that use of the EO tool was indeed responsive to the content of the message.

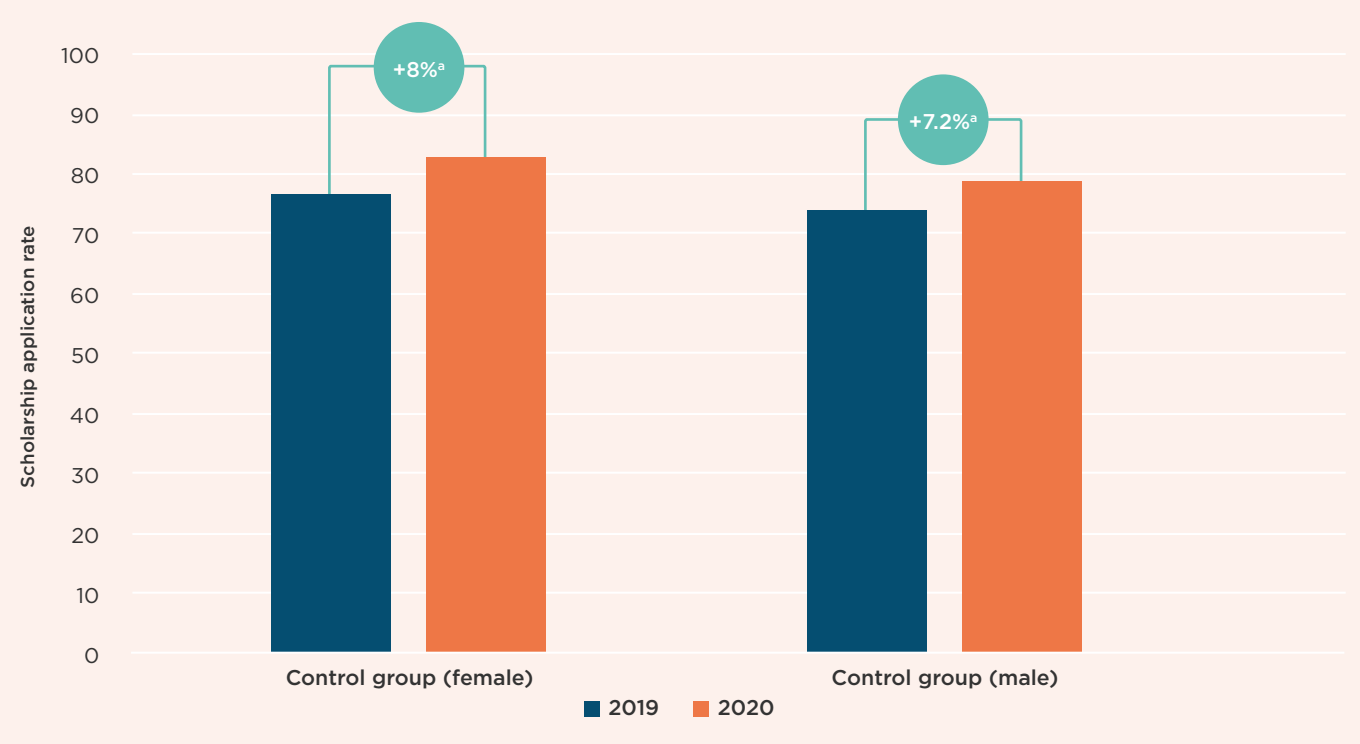
It was observed that the intervention had no effect on the use of the vocational guidance tool (VO), and it also failed to change the probability that a woman applied for or won Beca 18. The study also found that women who received the messages applied to lower-quality institutions than those who did not. Fortunately, these differences did not translate into significant differences in the selection score and, therefore, did not affect the probability of winning the scholarship. No significant effect was found on the selection of high-return careers. The descriptive analysis showed that, in 2020, women's scholarship application rates (both among those who received the motivational and confidence messages and those who did not) exceeded those of men.

Finally, compared to the previous year results, application rates increased 6.2 pp for women, while they only increased 5.3 pp for men (figure 2.1.1).

## POLICY IMPLICATIONS

» **Given the low cost of text messaging, it would be useful for governments to explore further the effect of informational messages on education decisions by women.**

## FIGURE 2.1.1 Changes in Application Rates between 2019 and 2020




[a] Statistical significance level of 1%.

# 2.2. Closing the Gender Gap in STEM Careers

**COUNTRY** Mexico

**YEAR** 2018

**TEAM** Monserrat Bustelo, Margarita Gómez, Claudia Piras, Marlene Saint Martin, Pablo Soto-Mota, and Miguel Székely.

## CONTEXT

**Gender disparities affect labor markets across all sectors. They are especially pronounced, however, in the STEM (science, technology, engineering, and mathematics) fields.** In Latin America and the Caribbean, 60 percent of graduates from tertiary education are women, but they represent only 30 percent of graduates in STEM fields. Since jobs with the highest pay are in these fields, low female representation in STEM and high pay differentials relative to other jobs reproduce inequalities and gender wage gaps, which, in Mexico, have amounted to 16.7 percent (ILO 2018). In consequence, increasing female representation in STEM fields could help to promote gender equality in Mexico's labor market.

## THE PROJECT

**This study, conducted in collaboration with Mexico's Secretary of Education, tested behaviorally informed interventions to increase female students' interest in STEM careers, as measured by their choice of university majors in schools in Mexico City in 2018,** by implementing a quasi-experimental design with two treatment groups.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Self-efficacy
- Social norms
- Stereotypes

### Other Barriers

- Lack of information

### Behavioral Tools

- Role models
- Salience
- Simplification

See definitions

## BEHAVIORAL BARRIERS

**Self-efficacy:** Influenced by identity, norms, and stereotypes, women might perceive their self-efficacy to complete STEM-related activities as lower than that of male students, which, in turn, might reduce their motivation to pursue those activities.

**Social norms:** Norms can also have an adverse effect on women, as they might lead them to believe that "most women are not STEM majors" or even that "women should only take care of the home and have children."

**Stereotypes:** Stereotypes are often resistant to revision. In this case, female students might perceive STEM fields as more suitable for men, or they might face preconceptions by men that women are less suited for these fields.

## OTHER BARRIERS

**Lack of information:** Female students might have less knowledge of the application process for STEM careers than male students.

## BEHAVIORAL TOOLS

**Role models:** For female students, learning about a successful woman in the STEM fields might provide a role model.

**Salience:** Making female students' outstanding performance salient might reduce their self-efficacy bias.

**Simplification:** A practical guide to applying for university admission was delivered to reduce the barriers of lack of information and complexity of the process.

## INTERVENTION DESIGN

**The project started with a survey administered to over 12,000 high school students in Mexico. The survey found that female students faced the following behavioral bottlenecks in terms of STEM careers: stereotype bias, social norms bias, self-efficacy bias, lack of information, and choice complexity.** To overcome these barriers, researchers conducted a quasi-experiment with 3,650 students from 32 public schools in Mexico City.

The intervention focused on female students in their last year of high school with high performance in scientific and mathematical subjects. Researchers randomized participants into three groups: two treatments and one control. Members of each treatment group received personalized letters. To tackle gender stereotype biases, students in the first treatment group were sent the story of a role model. Those in the second treatment group received a practical guide to applying to college to reduce the lack of information and the complexity barriers presented by the process. Both letters included salient messaging highlighting the student's top performance to increase the perception of self-efficacy. The rest of the students received a placebo letter with basic information about STEM-related majors.

## CHALLENGES

» No challenges were reported for this intervention.

## RESULTS

**Overall, the study produced some evidence that the behaviorally informed treatment letters increased treated females' preference for math compared to those in the control group.** The behavioral interventions had no substantial effect on their decisions to study a STEM subject, however.

## POLICY IMPLICATIONS

» **The results of the study highlighted two main areas for further research to encourage women to study STEM fields and to accelerate gender equality in the labor market.** Researchers could, first, investigate the effects of exposing female students to STEM career information at an early stage of high school. Second, they could explore the impact of providing information to parents, as fieldwork confirms that family social norms influence females' career choice. The results of those studies will help governments design better application processes that ultimately can nudge women to apply to STEM fields.

# 2.3. Encouraging Women Survivors of Violence to Seek Help

**COUNTRY** Honduras

**YEAR** 2020

**TEAM** Paloma Bellatin, Monserrat Bustelo, Chloe Bustin, Nidia Hidalgo, and Mónica Wills Silva.

## CONTEXT

**Over a quarter of all women in Honduras between the ages of 15 and 49 years have experienced at least one act of physical violence in their lives.** Over a fifth have experienced violence from a partner in a relationship during the previous year. Yet few of these women have sought institutional support from the police, courts, or women's organizations. Violence against women (VAW) is even more pronounced during times of crisis and economic hardship, as has been the case with COVID-19. The imperative of isolation and social distancing imposed by the pandemic has also strongly limited survivors' opportunities to seek outside help by reducing access to both institutional resources and social support networks of friends and family. Together, these factors have shown the importance of investigating how best to support survivors' access to institutionalized help.

## THE PROJECT

**This project tested the effectiveness of different behaviorally informed Facebook ads in raising women's likelihood to seek information about support services and seek help in cases of violence against them.** Researchers conducted a multi-arm, individually randomized controlled trial (RCT) on Facebook in collaboration with the Behavioral Insights Team (BIT), the National Institute for Women (INAM), and Ciudad Mujer in Honduras in Fall 2020. Ciudad Mujer is a one-stop facility offering multiple services to women, including gender-based violence counseling and prevention.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Availability heuristic
- Intention–action gap
- Sunk cost fallacy
- Uncertainty aversion

See definitions

### Behavioral Tools

- Planning tools
- Reduction of availability heuristic
- Reduction of the sunk cost fallacy
- Reduction of uncertainty aversion
- Self-identification
- Simplification

See definitions

## BEHAVIORAL BARRIERS

**Availability heuristic:** Women might not classify emotional or financial abuse as a form of violence because the available mental representation of violence is mainly associated with physical abuse rather than other forms.

**Intention–action gap:** Women's intention to take action in a violent situation might get derailed by, for example, enticing stimuli (such as the partner temporarily acting kind) or a failure to suppress behavioral responses (such as fear of retaliation), among others.

**Sunk cost fallacy:** Women might, for instance, think about their investment of emotions, time, and energy into a relationship, which lowers their probability of ending it.

**Uncertainty aversion:** Women in violent situations are particularly susceptible to this bias when making the mental leap between the intention to seek help and the action of seeking it, facing a very high level of uncertainty.

## BEHAVIORAL TOOLS

**Planning tools:** Messages could be designed that encourage individuals to make concrete plans for taking action. They might urge them to divide the objective (for example, reporting a violent relationship) into a series of smaller, concrete tasks (such as seeking information on a website, planning time to call a hotline, or preparing talking points) and to anticipate unexpected developments. These types of interventions often suggest an exercise based on writing down crucial information, such as date, time, and place.

**Reduce availability bias by portraying different forms of the same phenomenon:** If women's mental representation of violence is mostly of a physical nature, portraying emotional and financial abuse as different forms of VAW might help them identify these experiences as violence, as well.

**Reduce the sunk cost fallacy:** Dispelling women's qualms about sunk costs might include, for example, presenting them with counterfactual realities (how their lives could be otherwise), which can allow them to imagine a better future where they have the potential to gain something, not just lose something, from ending the relationship

**Reduce uncertainty aversion:** If women, for instance, fear the consequences of their actions and what might await them after taking an initial step against VAW, emphasizing confidentiality protocols and clarifying the steps for them to follow can reduce uncertainties.

**Self-identification:** Identity provides individuals with a sense of self based on their own physical characteristics, memories, experiences, relationships, group memberships, and values. It has been a basis for social marketing campaigns on college campuses in the United States to reduce VAW perpetration and promote bystander intervention. In the case of this intervention, researchers used narrative graphs portraying characters and situations that women in Honduras could recognize and relate to.

**Simplification:** Taking action to stop VAW might seem like an insurmountable challenge. Simplifying steps might help victims follow through on intentions to take action.

## INTERVENTION DESIGN

**As a first step, this study conducted qualitative research on major factors that prevent women who experience violence from seeking help. The qualitative research was conducted in El Salvador, but results were validated in Honduras, where the study's quantitative part took place.**

This trial focused on a population of women Facebook users in Honduras, with participants recruited through Facebook ads. **The ads were shown to users who met four criteria:**

- » They lived in Honduras.
- » They self-identified as female.
- » They were between 18 and 65 years of age.
- » They spoke Spanish as their primary language.

These users were randomized into five groups, including four treatment groups (T1–T4) and one control group. The randomization was automated through Facebook, using its A/B testing allocation algorithm. To define power parameters, a one-day pilot was run in July 2020.

The five groups are shown in table 2.3.1.

**The study included a primary variable, a secondary variable, and an exploratory variable:**

- » ***Views of content*** were observed when women clicked on the ads and loaded the Ciudad Mujer website. The variable was operationalized as the proportion of landing page views for each treatment group.
- » ***Contact*** referred to the number of women who clicked on the contact channels of Ciudad Mujer (WhatsApp, email, Facebook, LinkedIn, Twitter). As with views of content, the proportion was measured relative to all participants within a treatment group.
- » ***Calls to the 911 hotline*** (the exploratory outcome) were added to the study data toward the end of women's 911 calls, when they were asked for their consent to participate in the study. If they consented, they were asked if they saw a Facebook or Instagram ad before calling 911. If they said yes, they were then asked what image they saw.

**TABLE 2.3.1 Overview of Experimental Conditions**

| Group | Intervention | Reach (no. of women) |
|---|---|---|
| Control | Standard message about calling 911 when experiencing violence. | 168,992 |
| T1: Uncertainty aversion | Reduce uncertainty aversion by clarifying next steps (figure 2.3.1). | 155,073 |
| T2: Misidentification of violence | Help survivors identify different forms of violence. | 170,977 |
| T3: Sunk cost fallacy | Reduce the sunk cost fallacy with an image of a better future (figure 2.3.2). | 167,585 |
| T4: Lack of safety plans | Reduce intention–action gap by providing a checklist of next steps to foster implementation intentions. | 166,18 |
| Total | | 829,445 |

## FIGURE 2.3.1 T1: Uncertainty Aversion Treatment


**Note:** The text in the figure translates as follows: "If you are experiencing violence, take the first step and seek support. We are here to listen to you and give you the information you need. All the information you provide will be anonymous and confidential. Call 911."

## FIGURE 2.3.2 T3: Sunk Cost Fallacy Treatment


**Note:** The text in the speech bubble translates as follows: "Leaving him changed my life. Many times I thought he was going to change, but he didn't. I didn't know what was going to happen to me, but I took courage and looked for support in Ciudad Mujer." The text in bold below the group of people translates as: "Now I am studying, and I was able to start my business. I never thought that I was going to achieve everything I have now, and I would like the same for you. Seeking support is the first step." The text at the bottom of the figure translates as: "We are here to support you. Your information will be anonymous and confidential. Call 911."

## CHALLENGES

- One challenge in conducting the intervention was posed by the use of Facebook ads, as the experimenters could not control the randomization mechanism and the balance of, for instance, the numbers of participants across treatments. Furthermore, Facebook's impact indicator did not provide a sufficiently close estimate for valid results. This imprecision affected all treatment arms equally, however, and thus was not expected to bias the results.
- Second, carrying out the study online might have limited generalization (external validity) to other environments, in that researchers could only observe online activities. Decisions on the part of women to seek services in person did not appear in outcome measurements.

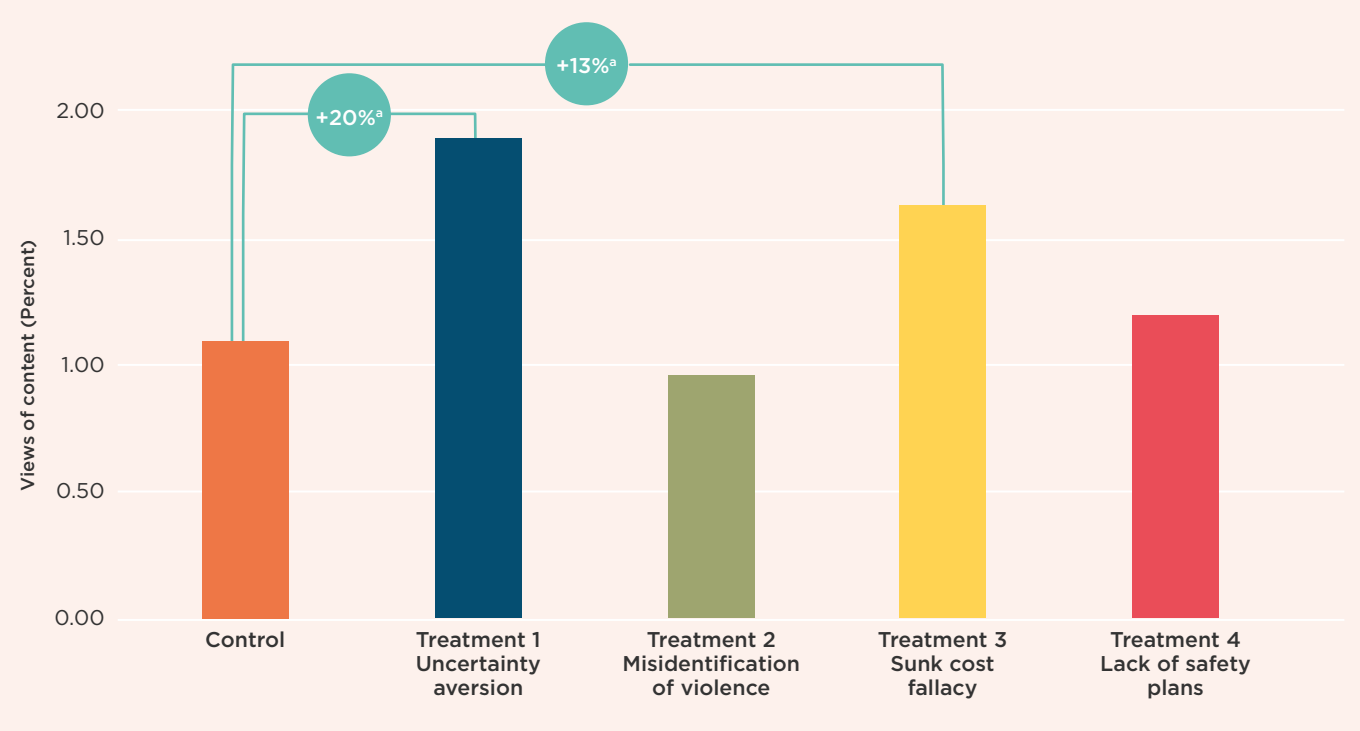
## RESULTS

**The study found that behaviorally informed interventions could have a significant positive effect on women's likelihood to seek help in response to violence. In the first treatment group (addressing uncertainty aversion), women were 19.4 percent more likely to visit Ciudad Mujer's website (*views of content*) than the control group, while women in the third treatment group (sunk costs) were 12.9 percent more likely to do so (see figure 2.3.3).** Both results were significant at the 1 percent level and adjusted for multiple comparisons. The second (forms of violence) and fourth (implementation intentions) treatments missed thresholds of statistical significance.

All four treatment arms were associated with significant, positive increases in the numbers of women who clicked on the *contact* channels of Ciudad Mujer as compared to the control group (figure 2.3.4). While general levels of contact were low (0.07 percent in the control group), women given the sunk cost treatment were more than twice as likely to click on the contact button.

A subgroup analysis showed that the likelihood of content views was higher for older age brackets than for younger ones. For younger women, showing different forms of violence (second treatment group) was the most successful treatment, while for older age categories, the uncertainty aversion treatment (first treatment group) was the most promising.

## FIGURE 2.3.3 Treatment Effects on Views of Content




[a] Statistical significance level of 1%.

## FIGURE 2.3.4 Treatment Effects on Trying to Establish Contact


[a] Statistical significance level of 1%.

## POLICY IMPLICATIONS

- **This study demonstrated a viable and evidence-guided approach to test behaviorally informed messages that encourage VAW survivors to seek help.** Combining qualitative and quantitative information, the study design proved highly useful in testing different alternatives before proceeding to a national scaling strategy.
- The findings also showed the usefulness of social media as a tool to reach women survivors of VAW in crisis situations, such as the COVID-19 pandemic, but they indicated a need to test messaging before rolling out national campaigns. Online experiments provide a readily available tool to do so. In the case of this study, the most effective messages (targeting uncertainty aversion and sunk costs) were scaled into a national communications campaign that consisted of radio and television commercials.
- Future interventions to increase the probability of women's taking action against VAW can build on the primary finding of this study: that messages with a positive emphasis (on, for example, future opportunities) might be more effective than negative ones.

# HEALTH

# Health

**Interventions in the area of health have taken place across Latin America and the Caribbean, from Argentina to Mexico, addressing a wide range of issues such as child development, prenatal care, vaccination, telemedicine, prescriptions, and COVID-19 prevention.** The use of reminders proved successful in increasing attendance at prenatal care visits in Guatemala and Peru, while descriptive social norms were helpful in Argentina in reducing unnecessary medical prescriptions for older adults. A parent training package launched in three Caribbean countries helped increase mothers' child development knowledge and children's cognitive development, and the potential of behaviorally informed interventions for micronutrient treatments was explored in El Salvador.

Table 3.1 lists the behavioral barriers observed and the tools used in interventions in the area of health.

**TABLE 3.1 Behavioral Barriers and Tools Relevant to Health**

| Behavioral Barriers | Other Barriers | Behavioral Tools |
|---|---|---|
| » Availability heuristic | » Lack of information | » Feedback |
| » Cognitive overload | | » Framing |
| » Hassle factors | | » Identity priming |
| » Optimism bias | | » Peer mentoring |
| » Overconfidence | | » Reminders |
| » Present bias | | » Salience |
| » Scarcity mindset | | » Simplification |
| » Social norms | | » Social norms |
| » Status quo | | |

See definitions

# 3.1. Delivering Parenting Interventions through Health Services in the Caribbean

**COUNTRIES** Antigua, Jamaica, and St. Lucia.

**YEARS** 2011–13

**TEAM** Helen Baker-Henningham, Susan Chang, Sally Grantham-McGregor, Florencia López-Boo, Christine Powell, Marcos Vera-Hernandez, and Susan Walker.

## CONTEXT

**In low- and middle-income countries, many children under the age of five do not achieve their full potential development as a result of risks associated with poverty, malnutrition, and inadequate stimulation.** While the integration of early childhood development interventions into health and nutrition services has been recommended to reduce these risks, information on which interventions are both most effective and feasible for delivery through health services has been limited.

## THE PROJECT

**The study consisted of a field experiment conducted in three Caribbean countries to develop an early childhood stimulation program.** The program was randomly assigned to groups that were formed during routine vaccination visits by parents to primary health care centers. The benefits were evaluated in terms of increasing parental knowledge, the amount of encouragement provided to the children, and their developmental levels.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Present bias
- Scarcity mindset
- Status quo

### Behavioral Tools

- Simplification

See definitions

## BEHAVIORAL BARRIERS

**Present bias:** Parents may be biased toward not investing time in their children's development because the rewards appear in the long term.

**Scarcity mindset:** Learning about parenting best practices can seem complicated, and parents who are too preoccupied with financial and time commitments may leave it for later.

**Status quo:** Parents may choose to maintain the status quo and perceive taking steps to foster their children's development as a loss.

## BEHAVIORAL TOOLS

**Simplification:** The design adopted a simplified version of information broken into pieces and delivered by a professional with the objective of teaching parents best practices during their children's routine primary care checkups.

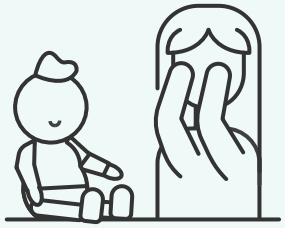
## INTERVENTION DESIGN

**In the Caribbean, maternal and child health clinics are based in primary care health centers and are typically held once a week.** Researchers delivered a parent training package to mothers of babies aged 3 to 18 months in routine clinics. The presentation did not require additional staff and was designed to occupy the time the mothers spent waiting to see a nurse. The package consisted of videos, followed by a discussion, with a demonstration and time for practicing several activities. The mothers were also provided with message cards and a few play materials to take home (see figure 3.1.1).

The videos delivered a series of child development messages. Nine modules were produced, each approximately three minutes in length, covering the topics (1) love, (2) comforting a baby, (3) talking to babies and children, (4) praise, (5) using bath time to play and learn, (6) looking at books, (7) simple toys mothers can make, (8) drawing and games, and (9) puzzles.

A cluster randomized trial was conducted in 29 Caribbean health centers, stratified by country. Health centers were assigned to either a control group (n=15) or an intervention group (n=14). Primary outcomes (children's cognition, language, and hand–eye coordination) and secondary outcomes (caregiver knowledge, practices, postpartum depression, and child growth) were measured after the 18-month postpartum visit.

**FIGURE 3.1.1 Illustrations from the Treatment**



Playing "hide-and-seek"

Reading books to baby

Encouraging exploration

## CHALLENGES

- The training and engagement of medical staff were key to carrying out this study. Researchers trained community health workers (CHWs) and nurses to discuss with mothers the messages presented by the videos and demonstrate the activities the mothers had seen. A manual provided to CHWs included program objectives, guidelines for engaging mothers in the discussion and demonstration sessions, and recommended content for each session. CHWs were trained in workshops, followed by coaching in clinics by a supervisor from the research team, who also monitored the quality of implementation.
- The main implementation challenges were related to staff workload and managing groups during the training of medical staff. Table 3.1.1 offers a breakdown of the intervention costs.

## RESULTS

**Multilevel analyses showed that the health center intervention had significant benefits for children's cognitive development and mothers' parenting knowledge (figure 3.1.2):**

- The average scores for children at intervention health centers after their 18-month visits were higher than those for children at control health centers, a difference of 0.3 standard deviations.
- Mothers in the intervention group improved significantly more in their scores on knowledge and attitudes concerning child development than mothers in the control group, an effect of 0.4 standard deviations.
- Qualitative interviews confirmed that both mothers and health staff perceived intervention benefits for the mothers themselves and their children.

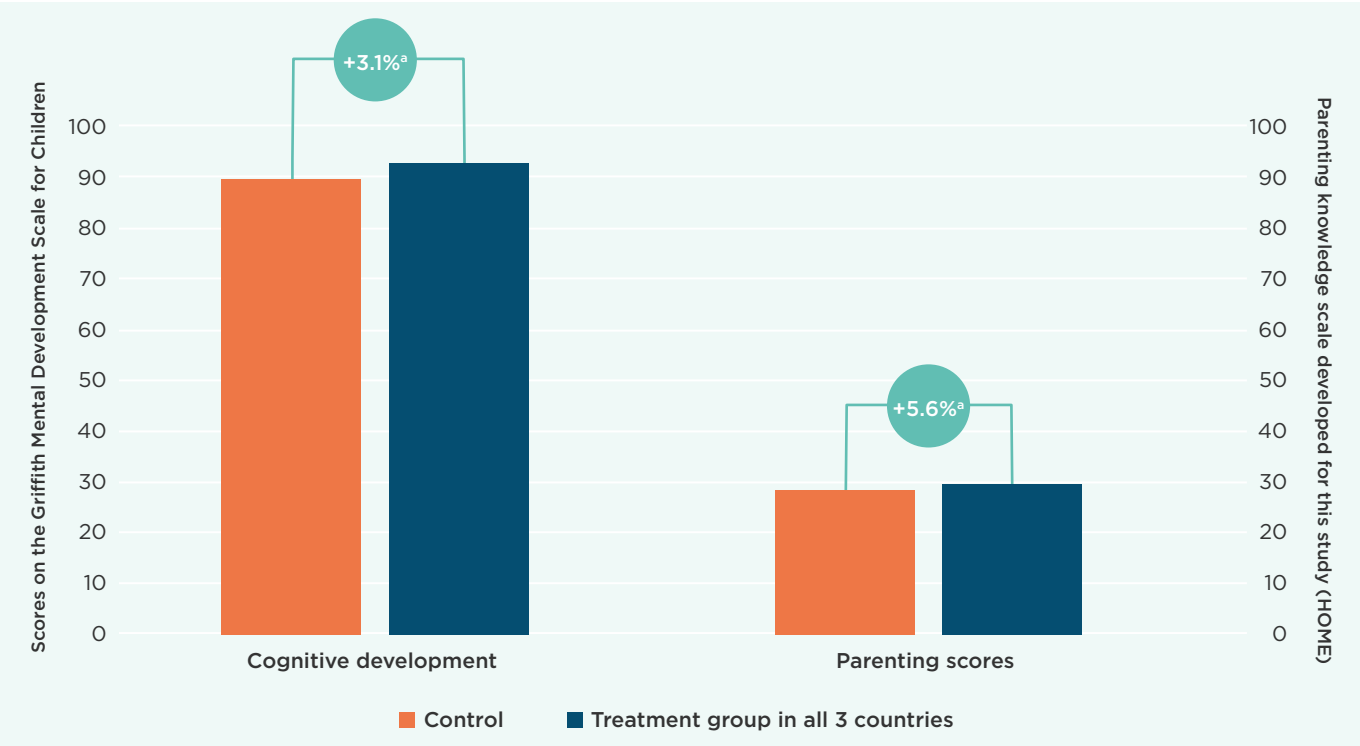
Furthermore, this intervention was cost effective. The most conservative analyses found a cost-benefit ratio of 5.3.

**TABLE 3.1.1 Yearly Costs of Health Center Intervention**

| No. | Description | Amount in US$ | Cost type |
|---|---|---|---|
| 1 | Equipment purchase | 1,256.60 | Fixed |
| 2 | Materials | 3,113.80 | Variable |
| 3 | CHWs' wages | 667.50 | Variable |
| 4 | CHWs' training | 8,550.0 | Fixed |
| 5 | Nurses' wages | 337.00 | Variable |
| 6 | Nurses' training | 2,100.00 | Fixed |
| 7 | Supervisor's wages | 2,643.80 | Variable |
| 8 | Supervisor's training | 1,500.00 | Fixed |
| | Total cost | 20,178.40 | |
| | Total cost per child | 100.90 | |

**Note:** A total of 200 children were intervened in a total of 10 clinics. A total of 40 CHWs, 27 nurses, and 1 supervisor worked in the pilot intervention.

## FIGURE 3.1.2 Children's Cognitive Development and Mothers' Knowledge Scores




[a] Statistical significance level of 5%.

## POLICY IMPLICATIONS

» **The use of a variety of media to communicate key messages and the scheduling of their delivery for a time when recipients were already present (in this case, waiting for a nurse in a waiting room) were both key elements of the intervention's success, with implications for other policy interventions.**

# 3.2. Can Reminders Boost Vaccination Rates?

**COUNTRY** Guatemala

**YEARS** 2011–12

**TEAM** Matias Busso, Julian Cristia, and Sarah Humpage

## CONTEXT

**In recent years, Guatemala has implemented supply-side interventions to boost rates of early childhood vaccinations: vaccines are provided free, and consistent efforts are made to ensure they are always available.** In the mid-1990s, the government established the Coverage Extension Program (PEC), providing free basic health care services to children under the age of five and women of reproductive age, with a focus on preventive care. The Ministry of Health then hired local nongovernmental organizations (NGOs) to operate a network of basic rural clinics in which health workers are expected to track individual families and inform them when they should attend the monthly mobile medical team's visit.

As a result of these combined efforts, vaccination rates in Guatemala have increased dramatically. While coverage rates for vaccines due in the first months of life are high, however, they decrease markedly for those due after children turn one year of age. These patterns suggest families recognize the value of vaccination and may be willing to incur the (time) costs involved in having their children vaccinated, but they often fail to follow through with their plans to complete the vaccination cycle.

## THE PROJECT

**Rural families in Guatemala get their children vaccinated at early ages, which suggests they recognize the value of vaccination, but they fail to follow through with them as their children get older.** In this experimental intervention, community health workers were given monthly lists of children due for vaccination at the clinic, enabling them to send timely reminders to families.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Availability heuristic
- Hassle factors
- Optimism bias
- Present bias

See definitions

## Behavioral Tools

» Reminders

See definitions

## BEHAVIORAL BARRIERS

**Availability heuristic:** Parents' tendency to underestimate the probability of their children getting sick from preventable diseases may be based on examples of children who did not get sick from such diseases.

**Hassle factors:** Even if parents are fully aware they should get their children vaccinated, just a few simple obstacles can deter them from their intention.

**Optimism bias:** Parents may overlook the probability of their children getting particular diseases.

**Present bias:** People biased toward the present may value immediate gratification more than greater benefits in the future—for example, they may avoid or delay getting their children vaccinated even when this could result in complications from a disease later.

## BEHAVIORAL TOOLS

**Reminders:** Providing reminders can encourage parents to keep in mind the importance of children's vaccination.

## INTERVENTION DESIGN

**The intervention consisted of randomly assigning 130 basic clinics operated by NGOs under PEC to a treatment or a control group.** In treatment communities, health workers received lists of children who were due to receive vaccinations at the clinic in the following month, enabling them to send timely reminders to families.

The lists were distributed to community health workers at monthly meetings at the NGO offices, along with information on the medical team's upcoming visits to their clinics. While health workers in all PEC communities were normally expected to provide some kind of reminder, those in treatment communities received concise, up-to-date information regarding which families to remind, while those in control communities had to rely on their own records, which they may or may not have created and maintained. The specific type of reminder delivered depended on the initiative of the workers. After six months of implementation, the rate of children who had received all vaccines recommended for their ages was compared across groups.

## CHALLENGES

» **To implement the intervention, a software developer wrote a program that produced the lists of patients due for preventive health services.** Additional staff were hired to produce the lists every month for the clinics that were randomly assigned to the treatment group in each of the four study areas. These four staff members were aware of the study's experimental design and understood that they should not distribute the lists to clinics assigned to the control group.

At the community health workers' monthly meetings at the NGO offices, however, facilitators distributed the lists with information on individuals in their communities who needed health services that month and the following month to the treatment group. Community health workers in the control group were aware of the study and may have observed the lists being distributed to health workers in the treatment group, which could have led them to increase their efforts to track patients in their coverage areas. This may, in turn, have led to researchers' underestimating the treatment effects of this study.

## RESULTS

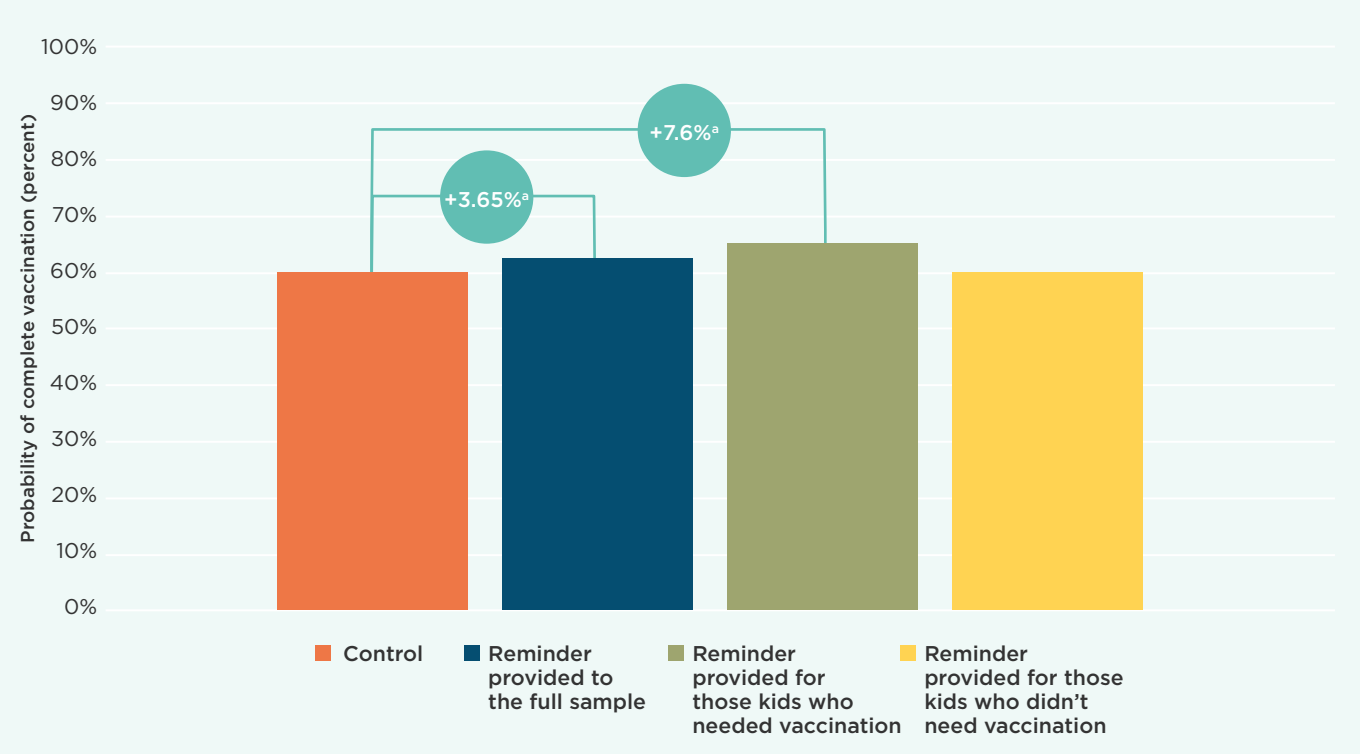
**As figure 3.2.1 shows, the intervention increased the probability of vaccination completion by 2.2 percentage points among all children in the treatment communities, based on intention-to-treat (ITT) analysis.** For children in the treatment communities who were due to receive a vaccine and whose parents were thus expected to be reminded about that due date, the probability of vaccination completion increased by 4.6 percentage points. The estimation of the local average treatment effect (LATE) showed a stronger outcome, increasing the probability of complete vaccination by 4.5 percentage points for all children in treatment communities and 9.1 percentage points for those due for a vaccine. Estimated effects for children of parents not expected to be reminded were essentially zero, suggesting that the intervention did not generate spillovers for these children within the treatment communities.

The overall effects of providing reminders were remarkable in light of the intervention's low cost. The estimated total cost of scaling it up in Guatemala would be only US$0.17 per child for the six-month intervention. Hence, the cost per additional child with vaccination completed as a result of this intervention is expected to be around $7.50. Reminders were found to be cheaper than other tools (such as conditional transfers) to increase immunization. The low cost-benefit ratio makes this a scalable option for other goals.

## POLICY IMPLICATIONS

» **This project offered evidence of the promising role reminders can play in increasing demand for preventive health services.** Not only is there an opportunity to expand their use to achieve further gains in vaccination rates at a moderate cost; they could also be used to spur demand for other preventive health care measures.

### FIGURE 3.2.1 ITT on Achieving Complete Vaccination




[a] Statistical significance level of 5%.

# 3.3. Timely Reminders to Seek Prenatal Care

**COUNTRY** Guatemala

**YEARS** 2011–13

**TEAM** Matias Busso, Dario Romero, and Dario Salcedo

## CONTEXT

**Every year, more than 300,000 women and 2.5 million babies throughout the world die from complications related to pregnancy and childbirth.** Most of these deaths occur in low-resource settings, and, in most cases, they could be prevented (WHO 2016). Rural Guatemalans, in particular, have little access to medical services, a fact that reduces the likelihood that women will receive adequate prenatal care.

In the mid-1990s, the government established the Coverage Extension Program (PEC), providing free basic health care services to children under the age of five and women of reproductive age, with a focus on preventive care. The Ministry of Health then hired local nongovernmental organizations (NGOs) to operate a network of basic rural clinics in which health workers are expected to track individual families and inform them when they should attend the monthly mobile medical team's visit.

## THE PROJECT

**In an experimental intervention to improve the use of prenatal care in low-resource settings, community health care workers in rural Guatemala were given up-to-date lists of pregnant women, enabling them to provide timely in-person reminders to attend clinics during visits from a mobile medical team.**

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Hassle factors
- Present bias
- Scarcity mindset
- Status quo

See definitions

## Behavioral Tools

» Reminders


## BEHAVIORAL BARRIERS

**Hassle factors:** Even when women are fully aware they should get prenatal care, just a few simple obstacles can deter them from their intention.

**Present bias:** A woman may, for instance, follow an inclination to skip a monthly prenatal visit while pregnant, even if that visit could prevent serious future health problems for her child.

**Scarcity mindset:** Prenatal visits might be forgotten or left for later if women feel like they don't have enough time to deal with other issues in their lives, related, for instance, to their finances or work.

**Status quo:** Women may be reluctant to change their habits during pregnancy by, for example, visiting the clinic.

## BEHAVIORAL TOOLS

**Reminders:** Reminders can bring to mind the need to go to prenatal checkups that have been postponed because the women have other things on their minds.

## INTERVENTION DESIGN

**A sample of 130 clinics was randomly allocated to a treatment group and a control group.** Community health workers for the communities in the treatment group received accurate and up-to-date information about pregnant women who would need prenatal care during the medical team's upcoming visit to their clinic. The health workers were trained to use these lists to go house to house, giving specific and timely in-person reminders to women so they would go to the clinic on the monthly visiting days. In the control group, the community health workers were not provided with the precise information from the program and had to rely on their own records.

## CHALLENGES

» **To implement the intervention, PEC designers developed a software program that generated the lists of patients from the program's medical record system; these were delivered to the community health workers during their monthly meeting with the NGO.** Not all the community health workers in the treatment group received the patient lists, however.

## RESULTS

**The study indicated that reminders had a positive and statistically significant effect on prenatal checkups six months before delivery, increasing the likelihood of women attending them by 6.6 percentage points, as indicated by the estimation of the local average treatment effect** (LATE; figure 3.3.1). The first trimester of pregnancy is significant for fetal development, so these prenatal checkups were particularly important. Positive and statistically significant effects were also found for prenatal assessments one and two months before delivery (7.8 and 7.2 percentage points greater probability, respectively).

Researchers also found that treatment effects increased with age. While for women between the ages of 14 and 24 years the effect was small and statistically insignificant, the intervention increased the probability of women aged 25 to 35 years getting a prenatal checkup one month before delivery by 11.4 percentage points. The effect was even greater for women between 36 and 49 years of age (47.9 percentage points). Intervention effects were also larger and more statistically significant for women who had had one previous miscarriage and for those pregnant for the first time. In sum, the intervention seemed more effective for the group of women who would benefit most from regular prenatal checkups.

## POLICY IMPLICATIONS

» **The project offered evidence of the promising role reminders can play in increasing demand for preventive health services.** An opportunity exists to expand the use of reminders to achieve further gains in rates of prenatal health care at a moderate cost.

### FIGURE 3.3.1 Prenatal Control Attendance


[a] Statistical significance level of 10%. [b] Statistical significance level of 5%.

# 3.4. Reducing Behavioral Barriers to Telemedicine Use

**COUNTRY** Argentina

**YEAR** 2019

**TEAM** Gastón Gerner, Ana María Rojas, and Carlos Scartascini

## CONTEXT

**The consolidation of mobile telephony is revolutionizing communication and the way people get access to services, and it offers an unprecedented opportunity for the provision of health care consultation and services where and when people need them.** Telemedicine applications (apps) are harnessing this opportunity to improve patient outcomes by optimizing care, saving time and cost, and expanding access to health care services and medical information.

Llamando al Doctor (Calling the Doctor) is a video-call medical service accessible on a digital app users can download to their mobile phones. The service is available 24 hours a day, every day, connecting patients directly with qualified doctors. Llamando al Doctor establishes agreements with health service providers in Argentina, who offer the service to their patients as part of their coverage plans.

## THE PROJECT

**Llamando al Doctor, a private Argentine health care provider, and the IDB Behavioral Economics Group carried out a study to assess the impact of telemedicine on the health consumption of users.** The study first sought to analyze the effectiveness of different communication methods in promoting registration for the app by sending email and mobile phone text messages detailing its attributes and benefits. A second stage was looking to explore the app's effects on the volume and type of face-to-face consultations between patients and health professionals.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Mistrust
- Status quo

See definitions

### Other Barriers

» Lack of information

### Behavioral Tools

» Framing

» Reminders

See definitions

## BEHAVIORAL BARRIERS

**Mistrust:** Patients underestimated or mistrusted the quality of care an app could provide and the app's ability to manage any queries during a virtual medical appointment.

**Status quo:** Patients in the study were accustomed to face-to-face consultations with their trusted doctors.

## OTHER BARRIERS

**Lack of information:** Patients didn't know about the app, and if they did, they did not understand how it worked in terms of cost and the availability of doctors.

## BEHAVIORAL TOOLS

**Framing:** The design included different framings, one of which was a loss framing that emphasized the sense of missing out on a great service from medical providers.

**Reminders:** Status quo bias might cause people to forget the arguments in favor of seeing the doctor online. Reminders would bring to mind the benefits of telemedicine.

## INTERVENTION DESIGN

**Health provider administrative records (sociodemographic characteristics, consumption of health care services, app downloads, and registrations) were used to randomize over 22,700 patients into treatment and control groups, which were sorted into sixteen strata.** Messages were designed to target patients in the treatment group. In total, six messages were sent between July and October 2019, split into three pairs, each comprising a text message and an email.

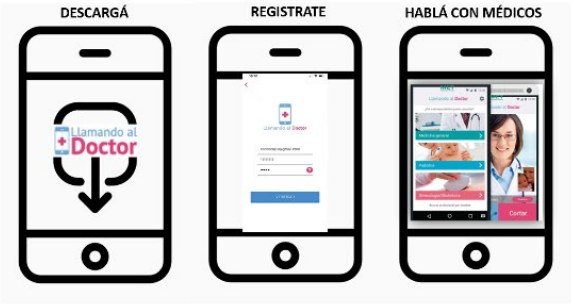
### TIMELINE

1. **Pair 1:**
   - » July 26 (first email)
   - » August 6 (first text message)
2. **Pair 2:**
   - » August 23 (second email)
   - » September 2 (second text message)
3. **Pair 3:**
   - » September 18 (third email)
   - » October 15 (third text message)

The messages were sent by the health providers' automated message management system, using a database of patients' contact information (email address and telephone number). Figure 3.4.1 shows one of the messages sent.

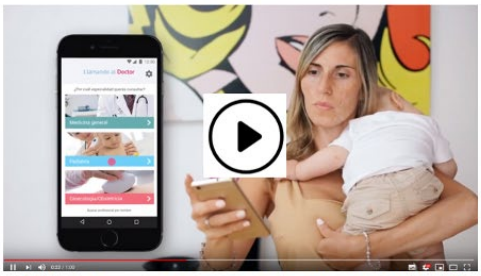
## FIGURE 3.4.1 Example of Email Designed for Treatment Group

¡Descargá la app **Llamando Al Doctor** de Google Play o AppStore!




Llamando al Doctor pone a tu disposición médicos altamente calificados que podés consultar sin costo y sin salir de casa. ¡No te perdás esta oportunidad!

Conocé más sobre cómo funciona la App



https://www.youtube.com/watch?v=q9_WM00unRE


**Note:** The text in this figure translates as follows: "Download the Call the Doctor app from Google Play or AppStore! Download. Sign up. Speak to a physician. Call the Doctor puts at your disposal highly qualified doctors you can consult at no cost and without leaving your home. Do not miss this opportunity! Learn more about how the app works. Log in by following the steps below: 1. Indicate that you are a user. 2. Fill in your ID number and your affiliate number (it appears on your ID card). 3. Enter your email and generate your password. 4. Finally, enter your phone number and choose your gender."

## CHALLENGES

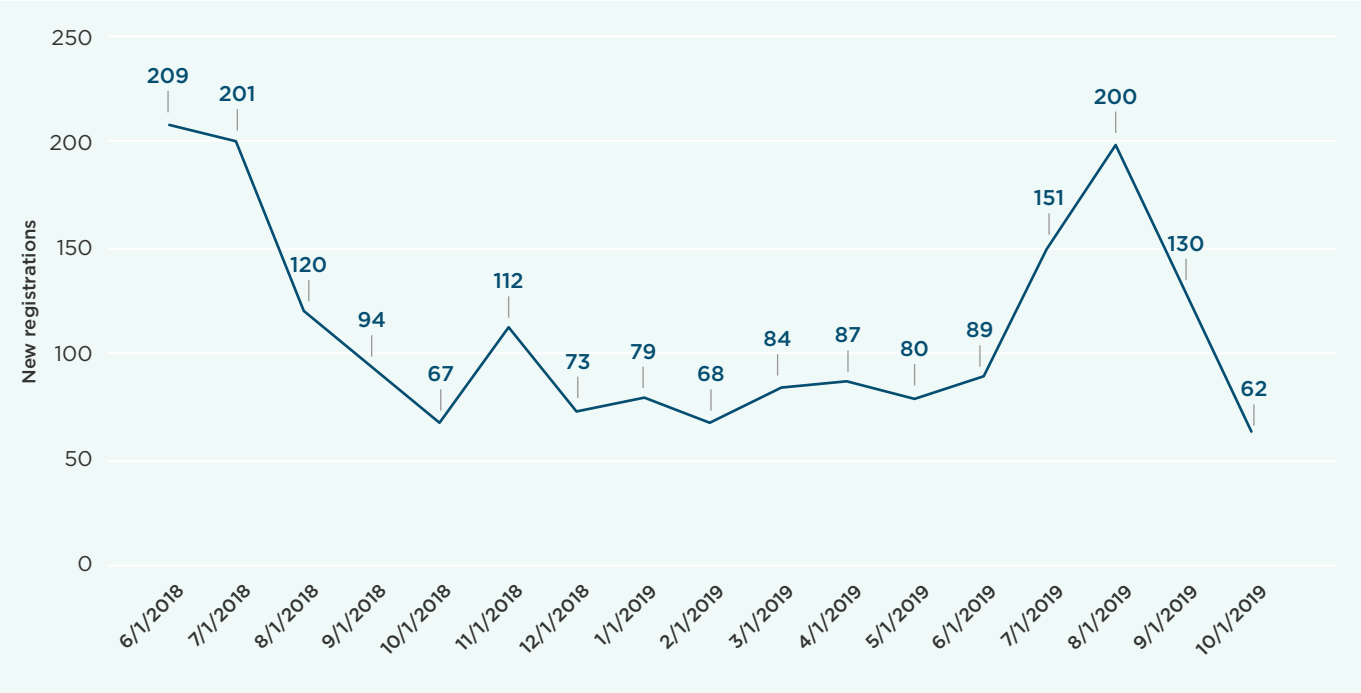
» **A major challenge to the intervention was an error in implementing the experiment. Although patients were randomly assigned to treatment and control groups, the automated message management system sent the messages to the entire sample instead of just the subset of patients assigned to the treatment group.**

## RESULTS

**The implementation error that resulted in all patients receiving the treatment (six messages) precluded a rigorous effectiveness analysis. It also prevented a second-stage evaluation of the effects on health consumption indicators of using this telemedicine technology.**

A simpler observation of trends within the sample in registering the app showed a positive correlation between the treatment (messages) and registrations. Figure 3.4.2 presents the total number of new registrations between June 2018 and October 2019 (dates of intervention were July 26 to October 15). It shows that new registrations peaked on the days when the messages were sent.

## FIGURE 3.4.2 New Registrations between June 2018 and October 2019




## POLICY IMPLICATIONS

» **Mobile technologies for health services are an attractive tool for health providers in Latin America and the Caribbean.** Although an implementation error prevented their being fully tested in this project, behavioral insights suggest their use can be promoted through nudges that reduce behavioral barriers to entry—for instance, by helping people overcome such biases as the status quo and such barriers as mistrust in remote connection to doctors and uncertainty regarding the quality of the services provided.

» Health providers can also design cost-effective campaigns to reduce the gap in information regarding the benefits of telemedicine. Increased use of remote health services can extend access to patients, reduce the time they spend traveling to hospitals, and accrue efficiency gains for resource management and costs among health providers. The Llamando al Doctor pilot in Argentina provides a complete roadmap for interested parties in the health and telemedicine sector to implement agile, cost-effective, and collaborative interventions to promote the use of telemedicine.

» **The descriptive results of this study indicated increasing numbers of daily registrations to Llamando al Doctor following the email and text message campaigns, suggesting promising prospects for telemedicine in Argentina and the region.**

# 3.5. Text Messages Can Increase Awareness about Prenatal Care

**COUNTRY** Peru

**YEARS** 2012–13

**TEAM** Rafael Anta, Diether W. Beuerman, Patricia Garcia, Alessandro Maffioli, Jose Perez Lu, and Maria Fernanda Rodrigo

## CONTEXT

**Several studies have demonstrated that prenatal events can have lifelong consequences for babies' future cognitive and noncognitive development, educational attainment, and labor market productivity (Almond and Currie 2011; Almond et al. 2018; Prinz et al. 2018).** Although the American College of Obstetricians and Gynecologists (ACOG) indicates that frequent (at least fourteen) prenatal care visits facilitate adequate development of the fetus (ACOG 1989), most pregnant women in developing countries attend only four or more prenatal care visits during their entire pregnancies (UNICEF 2021).

Increased awareness about the importance of prenatal care is, therefore, vital, and information and communication technologies such as mobile phone text messages could be used to reach expectant mothers. Evidence from previous text message–based interventions to provide incentives for desirable behaviors shows they have been effective in improving attendance at medical outpatient clinics (Perron et al. 2010) and in triggering desirable disease prevention and management practices (Cole-Lewis and Kershaw 2010; Dammert et al. 2014).

## THE PROJECT

**In 2010, the IDB, in a joint effort with the Universidad Peruana Cayetano Heredia (UPCH), the Ministry of Health of the province of Callao, UNICEF, and Telefónica Movistar, helped launch the WawaRed-Peru project ("Reducing Inequities in Health and Improving Maternal Health by Improving Health Information Systems").** WawaRed was implemented in a district of the Callao province where, at the time, 98 percent of the population met the requirements for comprehensive health insurance paid for by the government, but the number of prenatal care visits did not reach the minimum recommended by the American Medical Association (Beuermann et al. 2020).

The project involved developing and implementing a medical record system for maternal health, connected to a platform that sends personalized text messages to pregnant women. A randomized controlled trial was implemented to assess the effectiveness of the messages.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Cognitive overload
- Limited attention

### Behavioral Tools

- Reminders
- Salience
- Simplification

See definitions

## BEHAVIORAL BARRIERS

**Cognitive overload:** The limited link between attention and memory prevents individuals from processing all available information at the same time. This leads to, for example, forgetting the date of an appointment.

**Limited attention:** In focus groups conducted during project preparation, most of the women reported that forgetting was one of the main reasons for missing their prenatal checkups.

## BEHAVIORAL TOOLS

**Reminders:** Reminders for scheduled prenatal visits could mitigate attention failures and motivate greater compliance with scheduled appointments

**Salience:** Since people tend to focus on information or issues that are more prominent and ignore those that are less so, it is important to communicate at the right place and time.

**Simplification:** Personalized messages included the day, time, and exact location of the next appointment, which reduced the effort required to process information and/or take action.

## INTERVENTION DESIGN

**Development of the electronic medical records system and text message interface was completed in January 2012. The system began full and effective application and functionality in March 2012.** Pregnant women of more than 18 years of age attending their first prenatal care visits within the first twenty weeks of gestation were randomly assigned to a treatment or control group. During the pilot period, which ran from March 2012 until January 2013, randomization was conducted weekly via an automatic routine embedded in the electronic system and text message interface.

The final sample included 1,162 women, of whom 576 received reminders by text message (treatment) and 586 did not (control). The initial sample showed a dropout rate of 6 percent.

The text message intervention delivered two sets of messages. The first were prenatal care visit reminders, which were sent every Monday and the day before scheduled appointments to encourage the women to go to them. The message sent the day before was personalized and included the exact day, time, and location of the upcoming appointment. These messages sought to increase compliance with scheduled prenatal visits by ameliorating cognitive overload and limited attention.

The second set of messages conveyed educational information. To increase awareness about good nutritional practices, they recommended desirable food items, discouraged consumption of undesirable food items, and highlighted the importance of taking prenatal vitamins. These messages were sent on Wednesdays and Saturdays. Other, more specific educational messages concerning maternal conditions—including hyperemesis, obesity, malnutrition, anemia, smoking, hypertension, diabetes, HIV, tuberculosis, and alcohol and drug consumption—were also developed and delivered only to women affected by the specific conditions.

Table 3.5.1 summarizes the typology of the text messages sent and their frequency by gestation week and provides some examples.

## CHALLENGES

» **This study was limited in terms of external validity. The findings applied only to women who personally owned cell phones and who were due for relatively early prenatal care visits (that is, before twenty weeks of pregnancy).** Out of the 6,100 women who attended their first prenatal visits in one of the sixteen health centers in the study, 956 were ineligible, as they either were under 18 years of age or had attended their first prenatal visits after the first twenty weeks of pregnancy. Another 640 did not have personal cell phones, and 193 did not consent to participate in the study.

## RESULTS

**The study results confirmed that reminders were effective in ameliorating attentional failure and forgetfulness.** Providing text messages increased the likelihood of attending all the prenatal care checkups by 9 percent, and, as figure 3.5.1 shows, belonging to the treatment group also increased the total number of prenatal care checkups by 5 percent with respect to the control group mean. The positive effect on completed visits was explained mainly by the number of visits actually made on the scheduled date and time (equivalent to 0.24 visits on time, or 11 percent with respect to the control group mean).

The study also found that educational messages had some weak impacts in terms of increasing

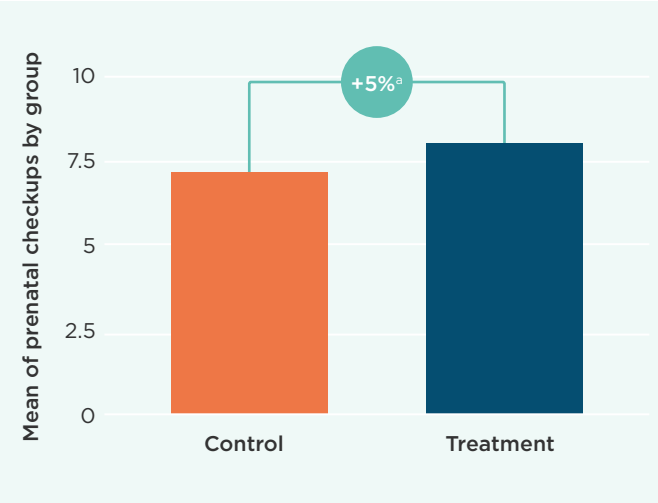
**TABLE 3.5.1 Typology of Messages**

| Message set | Topic | Frequency | Example |
|---|---|---|---|
| Reminders | General reminders<br><br>Personalized reminders | Every Monday after first prenatal visit<br><br>Day before the scheduled prenatal visit | Your health is important! Come to your prenatal visit.<br><br>Mommy, do not forget to attend your prenatal visit on [DATE] at [TIME] at [HEALTH CENTER NAME]. |
| Educational | Recommended food<br><br>Discouraged food<br><br>Vitamin intake | Pregnancy weeks: 6, 7, 8, 10, 13, 14, 16, 18, 21, 26, 31<br><br>Pregnancy weeks: 5, 9, 11, 12, 29, 32<br><br>Pregnancy weeks: 16, 19, 27 | Breakfast is the most important meal of the day. You could drink a cup of milk or eat yogurt and fruit.<br><br>You are doing very well! Keep going and avoid junk food (candy, carbonated drinks, or packaged snacks).<br><br>Mommy, take your vitamins because it is important for you and your baby. |

awareness regarding the desirability of specific food items, altering eating habits to some extent. No significant effects were found, however, for vitamin intake compliance or newborn health.

Finally, heterogeneous effects were found by educational level and distance from the health center, with larger impacts seen among more educated women with easier access to health centers.

### FIGURE 3.5.1 Mean of Prenatal Checkups by Group




[a] Statistical significance level of 1%.

## POLICY IMPLICATIONS

» **Information and communication technologies can contribute toward providing incentive for better prenatal care, both by lessening attentional failure and increasing awareness.** Because the intervention seemed more effective among more educated women, it may be the case that less educated women could benefit from a more personalized educational approach regarding preventive care during pregnancy. To increase their understanding of the benefits of preventive care, text messages may need to be complemented by other institutional arrangements serving disadvantaged groups of women.

# 3.6. Nudging to Increase Adherence to a Micronutrient Treatment in El Salvador

**COUNTRY** El Salvador

**YEAR** 2016

**TEAM** Nicolás Ajzenman, Pedro Bernal, Emma Iriarte, Stewart Kettle, and Florencia López Boo

## CONTEXT

**In the poorest municipalities of El Salvador, anemia affects one out of two children under the age of two (IHME 2011).** If untreated, it can diminish cognitive functions, increase the risk of infections, and, over the long term, cause permanent losses in productive capacity (Haas and Brownlie 2001; Horton and Ross 2003). In 2014, dietary supplements in the form of micronutrient powders were introduced in the country through the Salud Mesoamerica Initiative (SMI) as a preventive treatment for anemia in children. The first stage of the micronutrient intervention, which ended in 2015, took a traditional approach focusing on the distribution of the micronutrient treatment. While it was effective in ensuring children in the target area received the micronutrients (64 percent), only 15 percent of those who received them consumed the full recommended regimen of 60 packets for 60 days every six months.

## THE PROJECT

**Building on the first stage, the intervention was redesigned in 2016. To help track adherence to treatment, researchers developed tools and strategies for community health workers and caregivers.** They also added home visits by community health workers to provide encouragement and counseling to caregivers and to monitor adherence, and they gave caregivers a calendar for tracking their children's progress over the course of the treatment.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Cognitive overload
- Hassle factors
- Optimism bias
- Present bias
- Salience

See definitions

### Behavioral Tools

- Feedback
- Peer mentoring
- Simplification

See definitions

## BEHAVIORAL BARRIERS

**Cognitive overload:** Caregivers may be aware of the consequences of untreated anemia but may not have a clear understanding of how to avoid the preventable illness.

**Hassle factors:** Children may not like the taste of the micronutrients or may not want to take them at all. In such situations, caregivers may try just a few times and then give up.

**Optimism bias:** Since caregivers cannot perceive the symptoms of anemia until the condition is diagnosed, they may believe the probability of their children getting sick is lower than it actually is.

**Present bias:** Caregivers may value present gratification (for example, avoiding upsetting their children with medicine that tastes bad) more than greater benefits in the future (for example, reaping the improved health conferred by the micronutrients).

**Salience:** Caregivers may be not fully aware of the potential problems and threats related to anemia. This is plausible because symptoms of anemia can easily go unnoticed.

## BEHAVIORAL TOOLS

**Feedback:** Increasing availability of anemia testing in primary care units and communicating results might increase caregivers' awareness of the severity of the disease and the urgency to provide the full micronutrients treatment to their children.

**Peer mentoring:** Having an experienced caregiver walk a new caregiver through the steps necessary to get their children to consume the micronutrients treatment can decrease the perceived cognitive load necessary to do the task.

**Simplification:** Providing information through text messages might be a great way to increase awareness of the severity of a disease, especially when getting health information is perceived as difficult.

## INTERVENTION DESIGN

**Researchers conducted semi-structured interviews in the catchment area of four SMI community health teams in El Salvador with a total of sixteen caregivers who had recently received the packets of micronutrients, along with instructions for their use.** The interviews were designed based on the existing literature pertaining to nonadherence data (Al-Ubaydli et al. 2017; Banerjee et al. 2010) and the analyses of the medical records of the primary care units, as well as household surveys conducted for another study (Bernal and Martinez 2020). Supported by knowledge about the context derived from previous field visits, these interviews explored bottlenecks in adhering to treatment. Health workers from each community health team selected the women to be interviewed after being provided with a few guideline characteristics regarding caregivers' adherence to the treatment.

Based on the interviews, some trends emerged. First, most nonadherence was found to be related not to lack of attention, cognitive overload, or lack of information about treatment procedures. Rather, most mothers struggled with the "physical" barriers of treatment administration: the children did not like the taste, or the caregivers thought certain undesirable symptoms (diarrhea, vomiting) in their children might be linked to the micronutrients.

Second, these small barriers sometimes prevented caregivers from providing their children with the micronutrients, but only when they saw no short-term benefits or immediate need to administer them (that is, their children were not visibly unhealthy). If they did see improvements (in most cases, precisely because the child had been visibly unhealthy), they would find ways to overcome the child's resistance.

Finally, most caregivers were not clear in their understanding of anemia and its consequences. The prevalence of anemia among preschool-age children in the Latin America and Caribbean region is close to 33 percent (Vásquez et al. 2019), and the fact that most caregivers did not see it as a pressing health issue (even when advised by health workers) probably meant they underestimated the likelihood of their own children eventually acquiring the illness. They seemed to be concerned only when their children were diagnosed with anemia or when they perceived their children were unhealthy.

Based on these insights, SMI considered ten different intervention options (see table 3.6.1), assessing them for impact and feasibility by calculating the cost to implement each. Three intervention ideas were deemed feasible to implement and test: (1) a text message information campaign; (2) peer support from successful caregivers; and (3) more visits for anemia testing in primary care units. Of these, screening children for anemia in primary care units was expected to have the highest impact, although with low to medium scalability, depending on available screening technology.

**TABLE 3.6.1 Summary of Intervention Ideas**

| Mechanism | Intervention idea |
|---|---|
| **Short-term interventions** | |
| Nonfinancial and financial rewards | 1. Public recognition for caregivers and community health workers<br>2. Small incentives or lottery rewards for completing 90 days |
| Clear instructions, reminders, and support for caregivers | 3. "Implementation intentions" and social comparison feedback provided by community health workers to caregivers<br>4. Text message information campaign<br>5. Peer-mentor support provided by successful caregivers |
| Improved feedback for caregivers and clinics | 6. Increased testing of children for anemia at clinics<br>7. Feedback sent to clinics on local anemia rates |
| **Longer-term interventions** | |
| Changes to the physical environment | 8. Redesign of micronutrients to make taking them easy, attractive, and fun<br>9. Creation of micronutrient dispenser |
| Changes to procedures | 10. Increase to recommended dosage of micronutrients |

## CHALLENGES

» No challenges were reported for this intervention.

## RESULTS

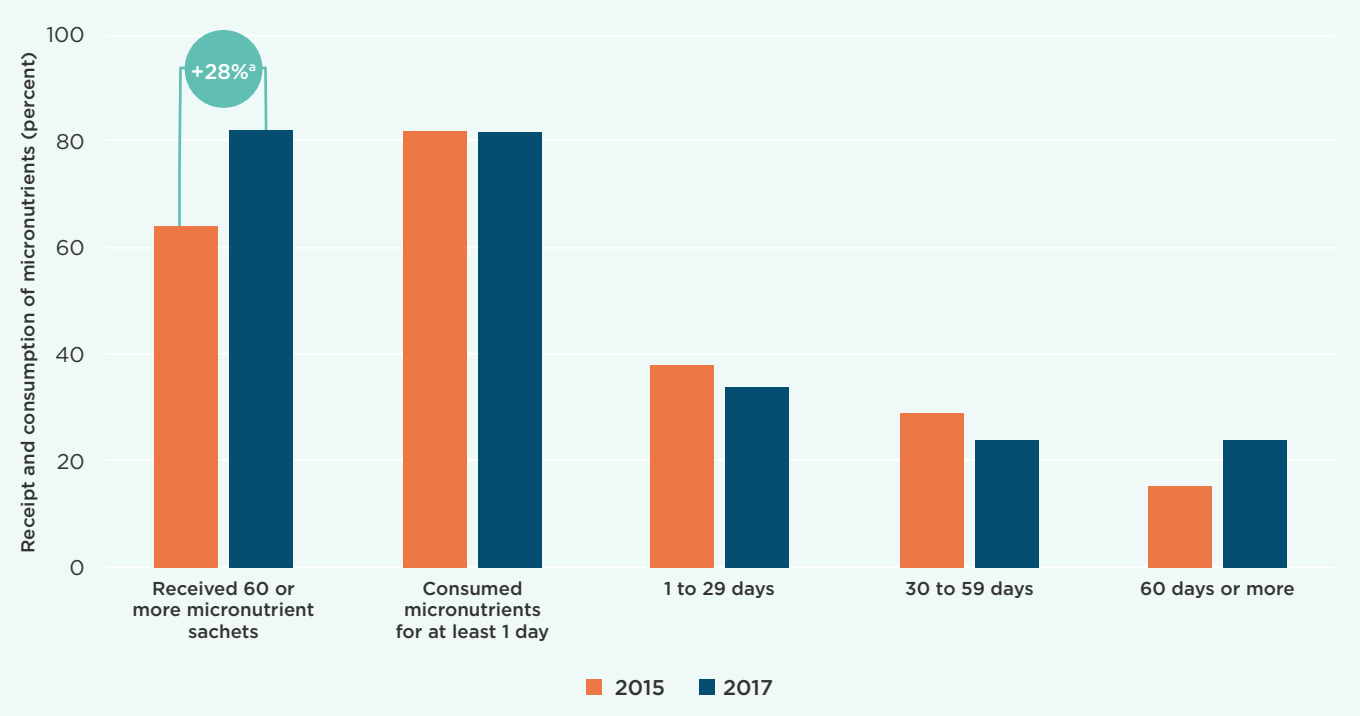
**With the redesigned intervention, the share of children receiving the full set of micronutrients increased to 82 percent, while the share of those adhering to treatment increased to 24 percent** (an increase of 9 percentage points from baseline; see figure 3.6.1).

Despite the substantial progress, challenges remained to full adherence, as 76 percent of children still fell short of completing the treatment, which is essential to reducing the prevalence of anemia.

## POLICY IMPLICATIONS

» **The traditional approaches to public health issues for which clinically proven treatments exist are to focus, first, on distributing the treatment widely in the health systems and, second, on developing communications campaigns to influence the knowledge and attitudes of both health workers and the population at risk regarding the benefits of the treatment.** Both approaches are key building blocks for a solution, but they are not enough. Behavioral sciences can complement these approaches by focusing on key decisions to participate and redesigning the context to encourage such decisions.

### FIGURE 3.6.1 Reception and Consumption of Micronutrients among Infants and Children Younger than 24 Months




[a] Statistical significance level of 5%.

# 3.7. Social Norm Feedback to Reduce the Unnecessary Prescription of Drugs

**COUNTRY** Argentina

**YEARS** 2019–20

**TEAM** Nicolás Ajzenman, Julián Bustin, Fernando Torrente, Florencia López-Bóo, Ricardo Mastai, Ailin Tomio, and Fabián Triskier

## CONTEXT

**The frequent overprescription of drugs without supporting evidence for their use has become a major public health issue.** The resulting polypharmacy (that is, the use of multiple prescription drugs) among elderly patients and the adverse effects of continued drug use impose a burden on the health system without providing benefits to patients. To improve patients' health and relieve health systems stressed by high operational costs, exploration is needed of ways to reduce non-recommended prescriptions. In Argentina, up to 45 percent of drugs prescribed for cognitive impairment are not recommended. Among them, nimodipine is the most frequently used.

## THE PROJECT

**In the past, various strategies have been tested to reduce non-recommended prescriptions, such as increasing awareness through education.** Many of these strategies are expensive, however, and they have not proved highly efficient. In contrast, behavioral interventions, such as nudges, have demonstrated a high potential for low-cost effectiveness in many policy domains. Using a randomized controlled trial, this project tested a behaviorally informed intervention to reduce the prescription of nimodipine within the National Institute of Social Service for Retired and Pensioners (INSSJP-PAMI), which provides free medical care to older Argentinians. Conducted mainly in 2019, the study tested if emails including a social norm intervention improved prescription practices by physicians. It also assessed participants' perception of the intervention after its completion.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Overconfidence
- Optimism bias
- Social norms
- Status quo

See definitions

### Behavioral Tools

- Descriptive social norms
- Feedback
- Reminders


See definitions

## BEHAVIORAL BARRIERS

**Optimism bias:** Physicians may, for instance, underestimate possible side effects of nimodipine and overestimate its potential benefits for their patients.

**Overconfidence:** Physicians may overestimate their knowledge of the efficiency and side effects of nimodipine.

**Social norms:** Physicians may see that their colleagues prescribe nimodipine frequently and feel affirmed in their prescription practices.

**Status quo:** Physicians may be used to prescribing nimodipine and reluctant to adopt different treatments.

## BEHAVIORAL TOOLS

**Feedback:** Physicians may, for instance, receive information on how frequently they prescribe the drug compared to the medically approved standard.

**Reminders:** Physicians may, for instance, receive a reminder of the potential risks of prescribing a drug.

**Social norms:** Presenting the descriptive social norm that most physicians prescribe the drug less frequently than themselves can improve individual behavior.

## INTERVENTION DESIGN

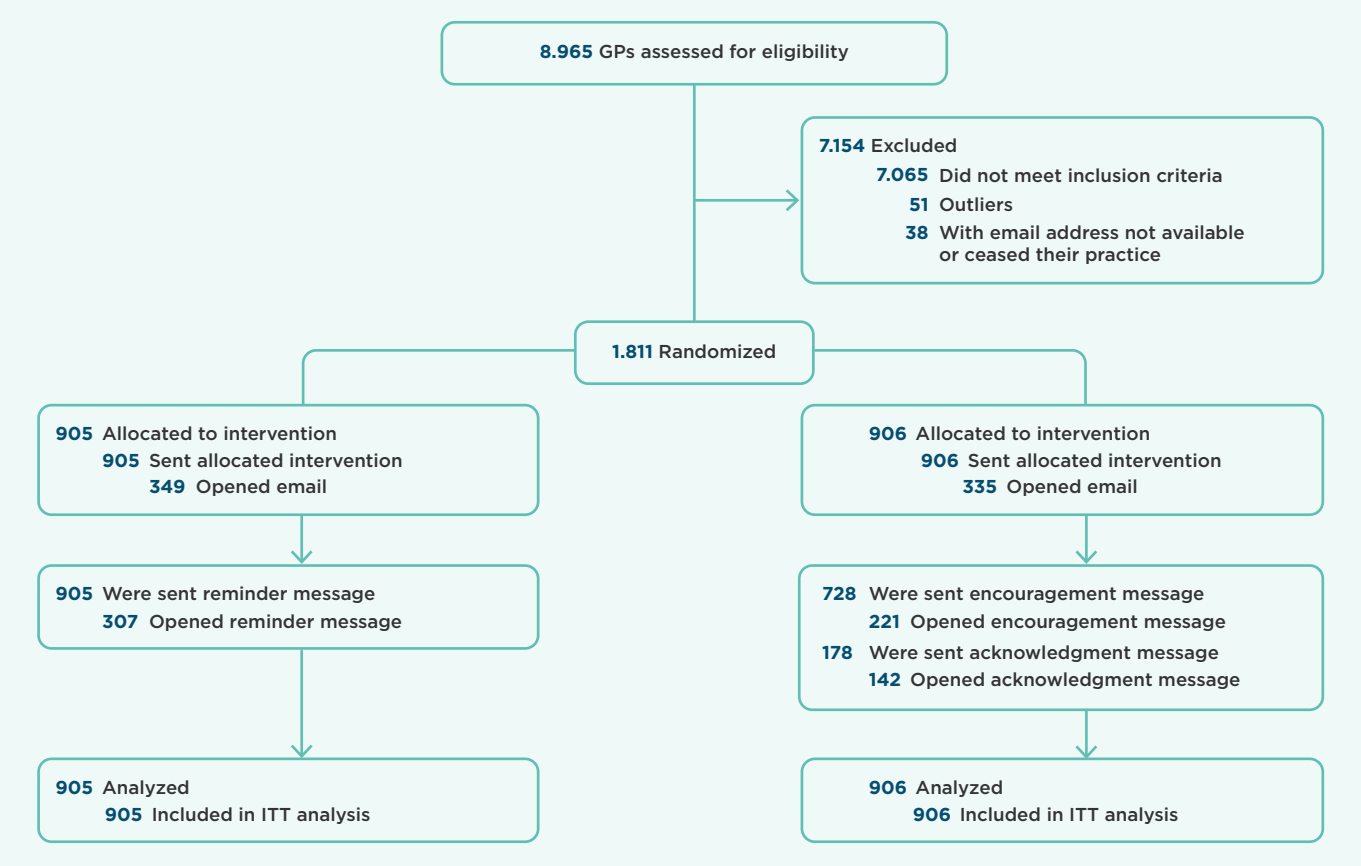
**The study was conducted with 1,811 physicians in the INSSJP-PAMI system who were within the top quartile of nimodipine prescriptions** (figure 3.7.1). Physicians were randomly allocated to the treatment or control group. The main dependent variable was the physician's ratio of nimodipine prescriptions to all prescriptions. Following assessment of the baseline for one year, the intervention period extended from May to October 2019.

Both groups received two emails, each framed as part of a communications campaign for improving pharmacological practice quality. The treatment group's first email made use of social norms and feedback by including information on the correct use of nimodipine and a comparison between the physician's number of prescriptions and those of his or her peers. The second email, sent three months after the first, also included information on the drug's correct use. Additionally, it provided feedback on prescription changes; the version sent to physicians who reduced their prescriptions of nimodipine by 10 percent or more included a component that acknowledged their progress, while those who did not meet the target received a component that encouraged them to change their practices. Participants in the control group obtained two emails at the same times as the treatment group, one containing information on unnecessary drug prescription and polypharmacy in older adults and another including information about the risks of benzodiazepines (a class of drugs primarily used to treat anxiety) for older patients.

In designing the intervention for the treatment group, researchers carefully selected wording that focused on the descriptive social norm component instead of trying to induce a deterrence effect, as often attempted by regulatory authorities.

After the intervention was completed, individuals in the treatment group received an anonymous, voluntary survey to learn about their perceptions of it.

## FIGURE 3.7.1 Flowchart of Study Recruitment




## CHALLENGES

» **The intervention presented several challenges.** First, since it only targeted those physicians who were part of the top quartile of nimodipine prescribers, it was difficult to generalize the findings for physicians in the lower three quartiles.

» **Second,** the rate of unopened emails in the treatment group was relatively high (around 60 percent for email 1 and 20 and 70 percent, respectively, for the two versions of email 2).

» **Third,** interactions might have taken place between the treatment and the control groups, which would have confounded the effect of the treatment.

» **And, finally,** the research design did not allow the study to control for whether physicians used a non-recommended drug other than nimodipine. Similarly, it did not enable investigation of long-term effects of the intervention.

## RESULTS

**The study found that the social norm intervention led to a statistically significant and meaningful reduction of 5.7 percent in nimodipine prescriptions among the treatment group as compared to the control group (ITT)**, as shown in figure 3.7.2. Looking at subgroup effects, physicians who opened either the first or the second email in the treatment group prescribed 11.1 percent fewer nimodipine units than the control group physicians.

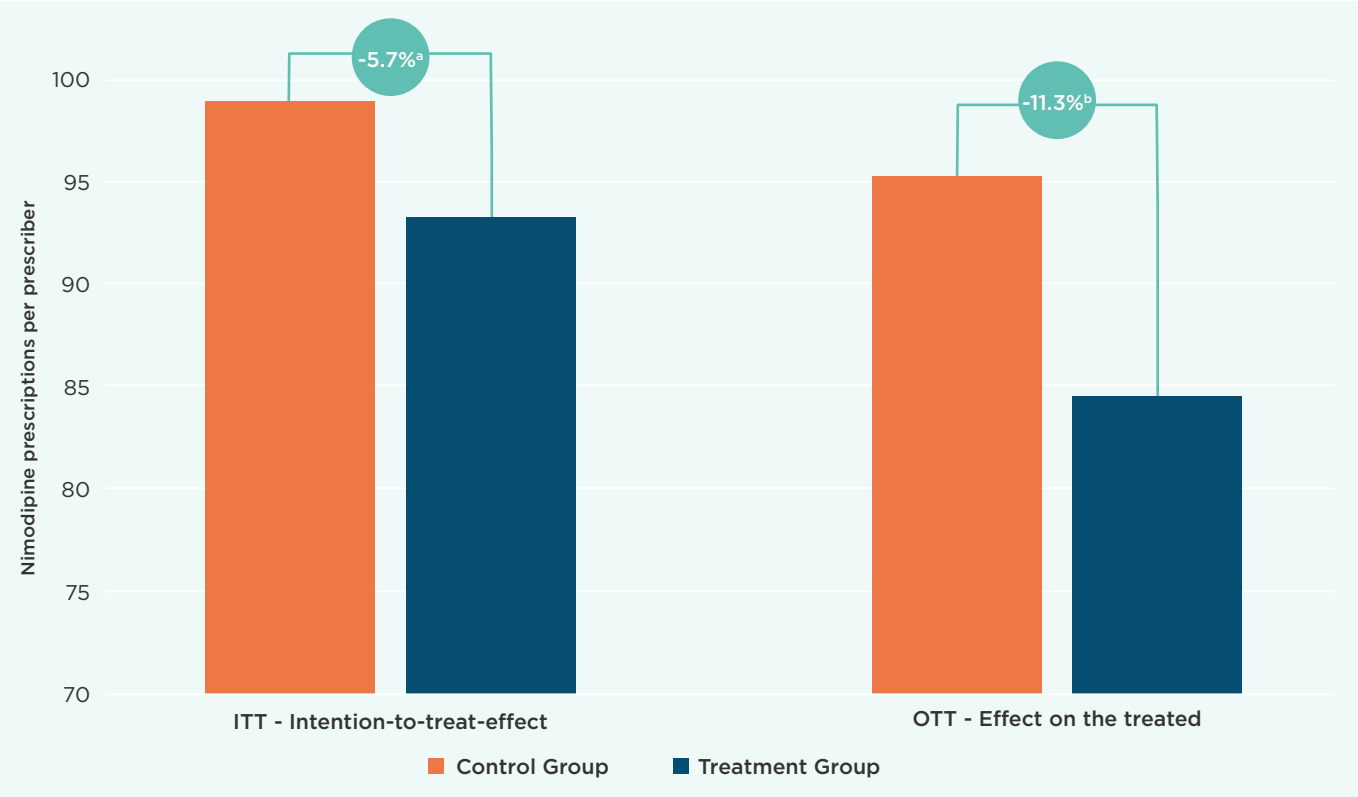
In addition, the cost-benefit analysis revealed that the expenditures for the treatment group were approximately 7 percent lower than for the control group. Extrapolating to all physicians in the country for one year, this would amount to a savings of approximately US$235,000.

The post-intervention survey revealed that physicians who read the emails considered them useful, and the messages encouraged them to modify their prescription behavior. In particular, more than nine out of ten of those completing the survey considered the information on overprescription and polypharmacy important, more than four-fifths did so for the information on the scientific evidence, and close to three-quarters did so for the social comparison information.

## POLICY IMPLICATIONS

» **In this study, emails containing a behaviorally informed intervention served as a cost-efficient tool to reduce the prescription of non-recommended drugs for cognitive impairment, and descriptive social norms, feedback, and reminders proved to be important tools for policy interventions in the health sector.** Policymakers could consider other ways to increase the acceptance of information sent by email to raise further the effectiveness of this means of communication.

### FIGURE 3.7.2 Nimodipine Prescriptions in Control and Treatment Groups




[a] Statistical significance level of 5%. [b] Statistical significance level of 1%.

**Note:** The lower prescription in the OTT control group can be attributed to physicians reacting to the email they received about general practices of overprescription.

# COVID-19

# COVID-19

**The IDB has devoted an important part of its knowledge and efforts to mitigating the negative consequences of the novel coronavirus pandemic. These efforts have included providing support to governments in the fight against COVID-19 through the implementation of five interventions.**

Among these were explorations of the concepts of default options and priming to increase the use of contact tracing and diagnostic applications in several countries in Latin America, with good results.

In Brazil, the sending of behavioral text messages helped increase awareness about the behaviors required to reduce the transmission of COVID-19. In Colombia and Mexico, the use of social norms to discourage social gatherings was tested. Experiments implemented in Argentina, Mexico, and Uruguay found that partisanship could affect beliefs about the severity of the pandemic.

Table 4.1 lists the behavioral barriers observed and the tools used in interventions in the area of COVID-19.

**TABLE 4.1 Behavioral Barriers and Tools Relevant to COVID-19**

| Behavioral Barriers | Behavioral Tools |
|---|---|
| » Availability heuristic | » Anchoring |
| » Cognitive overload | » Framing |
| » Hassle factors | » Defaults |
| » Motivated reasoning | » Feedback |
| » Optimism bias | » Salience |
| » Overconfidence | » Social norms |
| » Partisanship | |
| » Present bias | |
| » Reciprocity | |
| » Social norms | |
| » Status quo | |

See definitions

# 4.1. Increasing Acceptance of a COVID-19 Contact Tracing App Using Default Options

**COUNTRIES** 10 Latin American countries

**YEAR** 2020

**TEAM** Cynthia Boruchowicz, Florencia López Bóo, Benjamin Roseth, and Luis Tejerina

## CONTEXT

**The high contagiousness of COVID-19 exposes citizens to infection risks in a variety of circumstances in which they are not aware of contact with infected people.** Thus, in addition to social distancing protocols, contact tracing constitutes a decisive strategy in limiting the spread of the virus. In Latin America, where the economic and health-related consequences of the pandemic have been severe, the following study sought to provide findings on how to increase the acceptance of COVID-19 tracing applications on smartphones.

## THE PROJECT

**Behaviorally informed studies using default options—that is, studies using software applications that automatically establish courses of action while leaving the option open to do otherwise—have a proven record of successfully influencing behavior without limiting an individual's freedom of choice.** Uses include influencing behaviors related to health, saving money, and protecting the environment. This project tried to explore the impact of default modes on the acceptance of contact tracing apps. Conducted in 10 countries of Latin America in the third quarter of 2020, it used an experimental design to elicit participants' rate of accepting contact tracing apps that would notify them of their exposure to the virus.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Hassle factors
- Mistrust
- Optimism bias
- Overconfidence
- Present bias
- Reciprocity
- Status quo

See definitions

## Behavioral Tools

- Defaults
- Feedback


## BEHAVIORAL BARRIERS

**Hassle factors:** The effort to download and set up an app may prevent people from using it in spite of their general interest in doing so.

**Mistrust:** Individuals who distrust their government or their fellow citizens may abstain from using an app—for instance, because they fear misuse of their personal data.

**Optimism bias:** People may underestimate the risk of contagion and of becoming ill.

**Overconfidence:** Individuals may overestimate their immune response to the COVID-19 virus and underestimate the potential severity of symptoms.

**Present bias:** People may prefer spending their time on something more enjoyable than downloading and setting up an app, notwithstanding the health benefits it might have for them in the future.

**Reciprocity:** The efficiency of tracing apps is influenced by their overall acceptance by the population as well as the rate at which people report their infections to the app.

**Status quo:** More established hygiene measures to deal with COVID-19 may be preferred to the new tracing app.

## BEHAVIORAL TOOLS

**Defaults:** The default options allow the selection of alternatives beneficial to public health. In this case, they involved the automatic installation of a contact tracing app with the ability to opt out.

**Feedback:** Contact tracing apps could send weekly summaries on the numbers of and risk of exposure to people who had tested positive for COVID-19.

## INTERVENTION DESIGN

**Researchers gathered random samples of approximately 1,000 adults (over age 18) from a phone number database for 10 Latin American countries: Chile, Costa Rica, Ecuador, El Salvador, Honduras, Mexico, Panama, Paraguay, Peru, and Uruguay. A phone survey was conducted with people in these samples between July 29 and September 27 of 2020.**

The survey included eight modules. Participants were randomly assigned to a treatment or a control group. Treated respondents were asked about their acceptance of an automatically installed COVID-19 tracing app with exposure notification that could be uninstalled (*opt-out*), while the rest of respondents were asked about an app they could voluntarily install (*opt-in*). The underlying assumption to explain variance was based on previous empirical studies that showed changing the default mode to an opt-out regime would significantly increase participation and acceptance.

The rest of the survey modules covered technology use, trust, and COVID-19, among other questions, in addition to sociodemographic indicators. Participants were, on average, 39 years old, and half of the participants were female. No statistically significant differences in covariates occurred between the treatment and control groups.

## CHALLENGES

- **The study was limited in that it presented participants with a hypothetical scenario rather than implement an experiment with real default options.** Thus, while the study could yield an understanding of the general acceptance of different default regimes, the responses may have differed from those of people who were actually part of either the opt-in or opt-out regime. Seeing an automatically installed app on one's phone, for instance, might cause a stronger reaction than imagining such a hypothetical scenario in a phone survey.
- In addition, a contact tracing app's contribution depends not only on adoption in terms of downloads and accepting the terms of reference, but also on how often citizens report COVID-19 cases to the app. While this study contributed to an understanding of what might help foster the first aspect, the second was not explored.

## RESULTS

**The study found average acceptance rates significantly higher under the opt-out than the opt-in regime.** The probability of accepting contact tracing apps with exposure notification with the former was 22 percentage points (pp) higher than with the latter. This translated into an average increase of approximately 40 percent. The covariates showed significant, positive effects for trust in the government (+5.0 pp), belief that sharing personal data has more benefits than disadvantages (+7.7 pp), regular social network use (+7.4 pp), and online shopping (+4.6 pp) but negative effects for people with lower educational status (–6 pp; see figure 4.1.1).

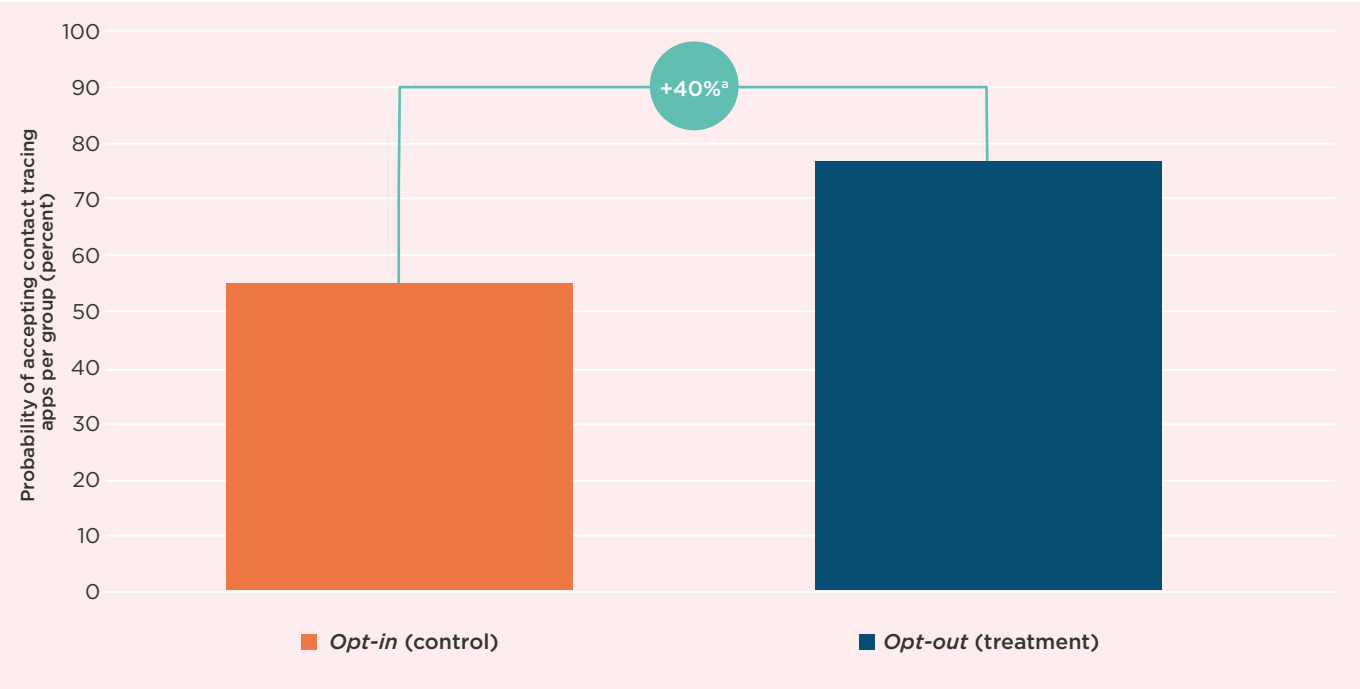
Heterogeneous effects also were observed. In regard to regional differences, average acceptance under the opt-out regime in Central America and Mexico increased by 20.4 pp, in contrast to 22.8 pp in South America, a difference significant at the 5 percent level.

Finally, the difference between the opt-in and opt-out regimes was reduced if respondents were asked to think about (1) being positive for COVID-19 themselves or (2) a family member's being COVID-positive and (3) when the app was not designed by the national government but by an international company, such as Apple or Google.

## POLICY IMPLICATIONS

- **The balance between the need for high acceptance of tracing apps and responsible use of the data they collect is particularly relevant in countries where levels of trust in the government are low.** While high acceptance is desirable in the short term, misuse of data may have consequences that decrease trust, as well as the cooperation of citizens with the government, in the long run. Thus, the use of default modes to increase acceptance should be accompanied by transparent and accountable data protection regulations.
- The study found acceptance of default modes for contact tracing app variations across regions. While previous studies in Europe showed citizens preferred opt-in scenarios, the opposite was indicated for Latin America. Thus, policymakers have to bear in mind contextual factors, such as trust and data concerns, when considering defaulting citizens into a policy.

## FIGURE 4.1.1 Main Effects of the Opt-Out Regime




[a] Statistical significance level of 1%.

**Note:** Base categories: Opt-in, 61+ years of age, more than high school education; male; no children in the house; no elderly people in the house. National-level fixed effects.

# 4.2. Promoting Compliance with COVID-19 Measures with Behaviorally Informed Texts

**COUNTRY** Brazil

**YEAR** 2020

**TEAM** Cynthia Boruchowicz, Flora Finamor Pfeifer, Guilherme A. Russo, and Tainá Souza Pacheco

## CONTEXT

**In the course of the COVID-19 pandemic, behavioral science has been part of the toolkit in the quest for solutions to guide the reopening efforts by boosting preemptive actions like keeping proper social distance, wearing masks, and washing hands.** Previous work across disciplines has shown that text message reminders are particularly powerful behavioral tools for addressing limited attention, limited information-processing capabilities, and present bias. Moreover, because mobile phones are relatively cheap and widely available, the use of text messages has become an efficient channel of communication with the general public. As governments around the globe were faced with new and unexpected challenges, this study contributed to understanding the extent to which a messaging campaign based on behaviorally informed texts could be effective in dealing with the pandemic.

## THE PROJECT

**The City of São Paulo, which uses mobile technology[2] extensively, implemented a behaviorally informed text message intervention to encourage people to stay at home, wear face masks, and maintain a safe distance from others. Five different versions of motivational messages were sent, based on five different concepts:**

1. Reciprocity toward health workers
2. Social norms
3. Civic duty
4. Risk perception
5. Self-efficacy and collective identity

These messages were later tested to see which were more efficient in eliciting the desired change in self-reported behavior. For that purpose, following the delivery of the text messages, self-reported changes in behavior were recorded for 10.4 percent of the sample through a phone survey.

[2] https://cidades.ibge.gov.br/brasil/sp/pesquisa/44/47044.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Cognitive overload
- Overconfidence
- Salience
- Status quo

### Behavioral Tools

- Moral suasion
- Reciprocity
- Social norms

See definitions

## BEHAVIORAL BARRIERS

**Cognitive overload:** In the initial months of the pandemic, the amount of new information and guidelines people had to retain was substantial.

**Overconfidence:** Particularly in young populations, people tend to believe they will not become infected.

**Salience:** At the time of the study, some measures, such as social distancing and handwashing, were more salient than others, such as properly wearing a facemask.

**Status quo:** People may know about the importance of, for example, wearing a mask but have a hard time incorporating new behaviors into their daily routines.

## BEHAVIORAL TOOLS

**Moral suasion:** The incorporation of a "duty" in the design of the messages was meant to prime the recipient's relationship with and responsibility toward a group—in this case, friends and family.

**Reciprocity:** The messages used language involving the good deeds of health professionals to elicit a positive reaction that might make people more likely to follow the health recommendations.

**Social norms:** Because, in theory, people do what is expected of them and what others do, the messages suggested that others were already following public health recommendations during the pandemic.

## INTERVENTION DESIGN

**The pilot study began with a sample of 75,351 citizens who had contacted the city of São Paulo's e-government platform.** Together with the IDB, São Paulo's government innovation lab—the Laboratório de inovação em governo, known as (011). lab—randomly assigned individuals from this sample either to a treatment group whose members would receive a text message (63,438 individuals) or to a control group whose participants would not. The treatment group was divided into five arms that received slightly different motivational messages. **Their content varied to highlight distinct behavioral science principles:**

1. Reciprocity toward health workers: "*Health care professionals are risking their lives to combat the coronavirus. DO YOUR PART TO HELP THEM.*"
2. Social norms: "*The majority of people are already wearing masks. BE LIKE THEM.*"
3. Civic duty: "*Avoiding deaths of family and friends is YOUR DUTY.*"
4. Risk perception: "*People might be infected without knowing. ONE OF THEM COULD BE YOU.*"
5. Self-efficacy: "*With everyone doing their part, we will defeat the coronavirus. YOUR ACTION MATTERS.*"

Following the delivery of the text messages, all 75,351 citizens participating in the experiment

were contacted by phone between June 12 and July 3, 2020, to answer a survey to test the effect of those messages. Of these, 7,825 (10.38 percent) responded, with response rates not correlated with treatment status. The survey asked questions about social distancing policies, awareness of appropriate behavior, and self-reported behavior, such as leaving the house, keeping distance from others, and mask wearing, as well as about sociodemographic characteristics.

## CHALLENGES

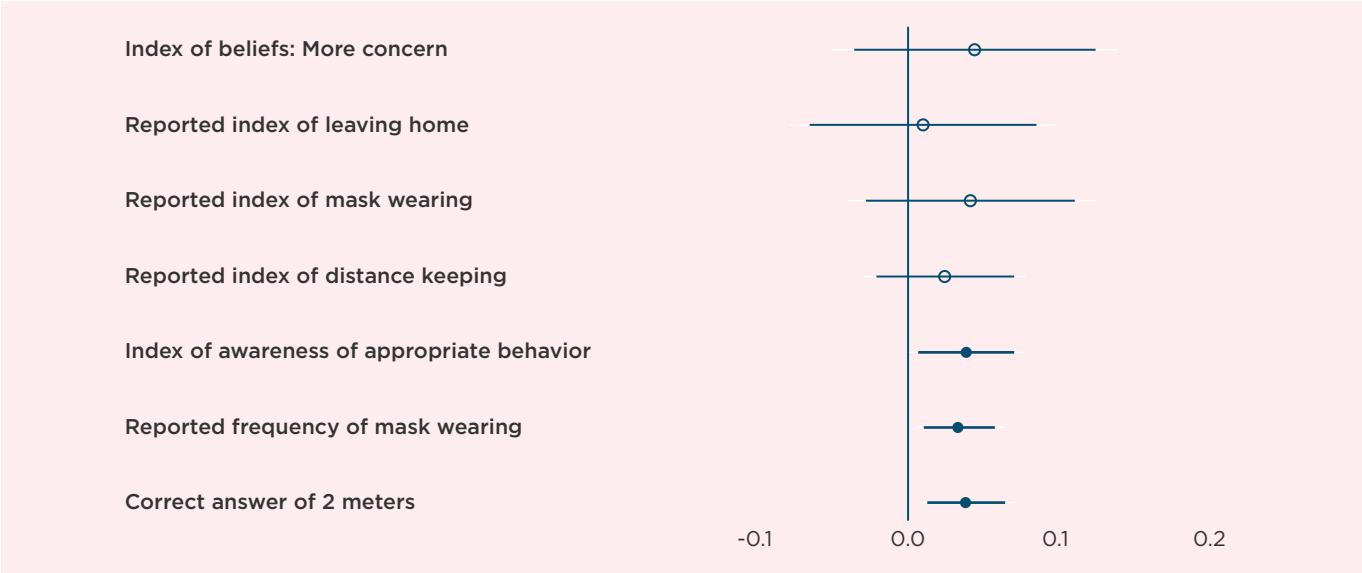
» **This pilot study was limited in its capacity to have a large effect on the population.** To make a real impact in the city, the intervention would need to be scaled to a larger portion of the population. For this reason, São Paulo's government lab later additionally partnered with the IDB and Vital Strategies, a leading global public health organization, to scale up the text message intervention using a broader database of contacts. The results of that scale-up project were not reported.

## RESULTS

**The experiment found text messages to be an effective tool for informing the population during a pandemic.** In a comparison of respondents who were assigned to receive any of the text messages to those who were not, statistically significant differences in knowledge about recommended behaviors were observed (figure 4.2.1).

Respondents who received the message based on the "civic duty" principle, designed to prime a sense of duty to protect family and friends, were consistently better informed than the control and more likely always to wear a mask. They were also 12.75 percent more likely to choose the right answer on the distance to keep from others and 3 percent more likely to report always wearing a mask (an increase of 2.3 percentage points). In an analysis of the results by treatment arm on social distance policy knowledge, three versions of the messages showed significant effects: those based on the civic duty, self-efficacy, and risk perception principles. (figure 4.2.2).

### FIGURE 4.2.1 Effects of Receiving a Text Message: Overall

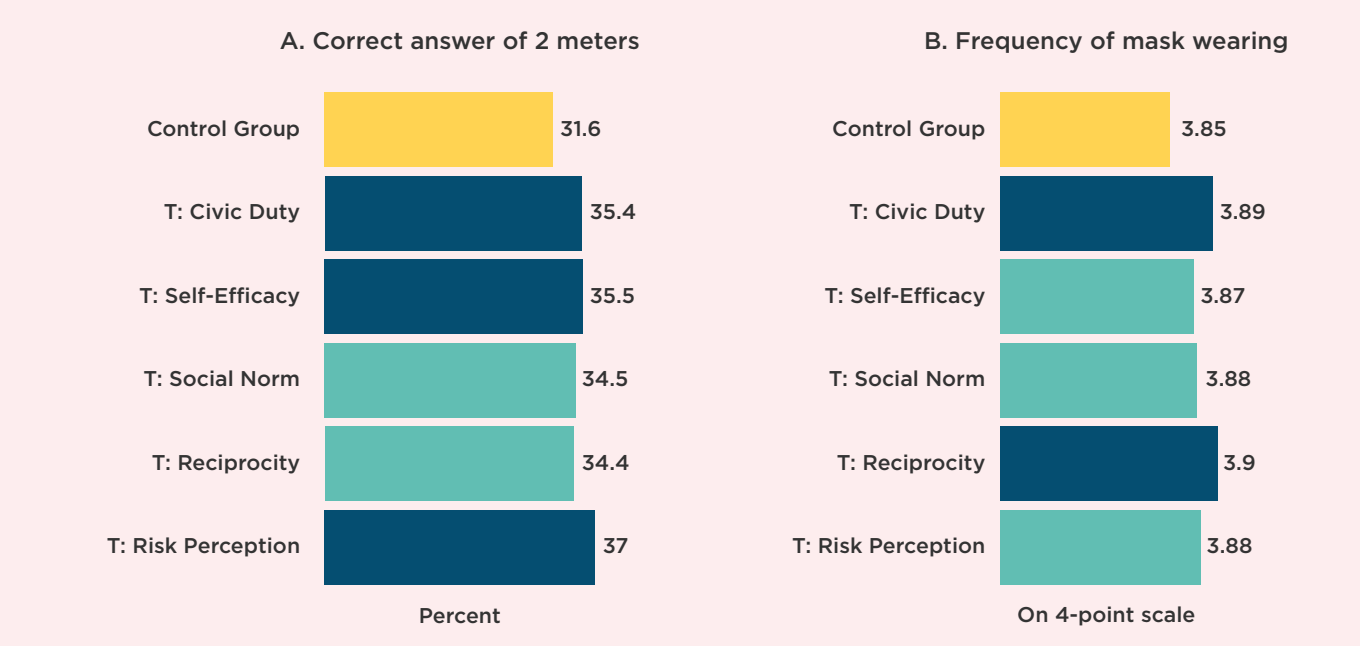



**Note:** Circles indicate the beta coefficient associated with being in the treatment groups in comparison to being in the control group. Filled circles indicate statistically significant differences based on the two-sided 90% confidence intervals. Thin lines around the circles indicate the two-sided 95% confidence intervals, and the thick lines indicate the two-sided 90% confidence intervals.

## POLICY IMPLICATIONS

- **An understanding of the potential effects of government text messages sent to citizens has important implications in the fight against COVID and the reopening strategies of countries.**
- The results of this project informed a scaled-up intervention in which, between August 10 and 14, 2020, approximately 8.24 million messages were sent to more than 2.7 million citizens in the city of São Paulo, nudging them to follow the new behavioral requirements. Given that the "civic duty" message had the most consistent results in the pilot trial, it was the motivational message chosen for the scaled-up intervention.

### FIGURE 4.2.2 Effects of Receiving a Text Message on Social Distancing Knowledge and Mask Wearing, by Treatment Arm




**Note:** The figure presents predicted scores generated from the multivariate regressions. The graph on the left represents the probability of a correct answer to the question about what distance should be kept from others (2 meters). The graph on the right presents the predicted score to the question about how often the respondent wears a mask, using a 4-point score where 1 is "Never" and 4 is "Always." The yellow bar shows the score of the control group; the light blue shows the scores of treatment groups when the difference was not distinguishable from 0; and the dark blue shows the scores of treatment groups when the coefficients were statistically significant.

# 4.3. Let's (Not) Get Together! The Role of Social Norms in Social Distancing during COVID-19

**COUNTRY** Mexico

**YEAR** 2021

**TEAM** Déborah Martínez, Cristina Parilli, Carlos Scartascini, and Alberto Simpser

## CONTEXT

**Since the start of the COVID-19 pandemic in early 2020, knowledge on how infection can be prevented has increased significantly.** Social distancing and avoidance of indoor gatherings, for example, have emerged as two of the most powerful and effective preventive behaviors. Yet, despite the strength of the evidence on the dangers of close social contact, many people have continued to gather with friends and participate in social events, which has helped the virus to spread.

The problem does not appear to be one of information or credibility, as survey evidence shows most people agree that social gatherings ought to be avoided. As far back as May 2020, the same survey indicated 79.5 percent of respondents in the United States agreed that gatherings of 10 or more people should not be allowed (CDC 2020). In Mexico, the country where this study was conducted, 82 percent of those surveyed in April 2020 approved of the public health guidelines in place, which included restrictions on mass gatherings (Buendía & Laredo 2020). According to data collected for this study (Martinez et al. 2021), 73 percent of people in the sample recognized that gathering in enclosed spaces, such as restaurants, represented a high risk for contracting COVID-19. Still, about 43 percent reported having visited friends and family in their homes during the previous week.

## THE PROJECT

**This project, conducted in Mexico in the summer of 2020, explored one possible explanation for this apparent gap between knowledge and behavior: the impact of social norms.** The project aimed to examine what kind of norms might make people deviate from public guidelines by conducting a survey experiment with more than 23,000 individuals in Mexico. Survey subjects were presented with a vignette depicting a fictional character, Mariana, who has been invited to a friend's birthday gathering and must decide whether or not to attend. The story portrayed a situation to which most Mexicans could relate (a birthday celebration), involving social networks that the literature highlighted as relevant to individuals during the current pandemic (family and friends). These social gatherings are also relevant because they have been shown to become superspreading events.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Optimism bias
- Social norms
- Status quo

### Behavioral Tools

- Social norms

See definitions

## BEHAVIORAL BARRIERS

**Optimism bias:** Those attending a party may underestimate the risk of getting sick.

**Social norms:** People are less prone to adhere to public health recommendations if they believe others are not adhering to them.

**Status quo:** In the COVID pandemic, people may continue to engage in behaviors such as attending birthday celebrations despite the potential risks because they are used to doing so and do not want to change habits.

## BEHAVIORAL TOOLS

**Social norms:** In the context of the COVID-19 pandemic, prescriptive and descriptive social norms play an important role. Specifically, people may believe that everyone should comply with social distancing (prescriptive social norms) while also believing that no one actually does (descriptive social norms). In that case, presenting the belief that most people comply with public health guidelines as the descriptive social norm can improve individual behavior.

## INTERVENTION DESIGN

**Embedded in a larger survey dedicated to the outbreak of COVID-19, this survey experiment was conducted in Mexico between July 7 and July 21, 2020.** Participants were above the age of 18, were living in the Mexican states of Guanajuato and Sonora, and were recruited via Facebook and email. The final sample consisted of 23,184 respondents.

As noted above, the experiment used a vignette to describe a fictional character, Mariana, who received an invitation to a friend's birthday gathering, along with 20 other friends. The character was described as following public health guidelines for the pandemic. After this initial description, the vignette varied according to four different conditions (displayed in table 4.3.1), which were generated from a two-by-two design by randomizing the empirical and normative expectations prompts. The normative expectations condition alluded to prescriptive social norms, while the empirical expectations condition alluded to descriptive social norms. Mariana was described under one condition as believing her friends perceived attending the party as appropriate and under another as believing they perceived it as inappropriate (normative expectations), and that either few or most of her friends would be attending themselves (empirical expectations). **The variations of the sentence that created the four conditions were as follows:**

> Mariana knows that her friends think that [*it is/it is not*] right to attend,
> [*and/but*] [*only a few of them/most of them*] will show up.

After being exposed to their respective conditions, participants were asked to answer two questions that would produce the main outcomes of the study: their beliefs as to whether Mariana *would be* attending the birthday as well as if she *should be* attending. Additionally, the survey gathered individual information on, among other characteristics, respondents' gender, education, risk perceptions, experiences with social distancing behavior of neighbors, and previous exposure to COVID-19, which served as control variables in the estimations.

**TABLE 4.3.1 Conditions of the Experimental Design**

| | | Friends who will attend the party (empirical) | |
|---|---|---|---|
| | | Few | Most |
| Friends believe attending the party is appropriate (normative) | No | T1 (High/High) | T2 (High/Low) |
| | Yes | T3 (Low/High) | T4 (Low/Low) |

## CHALLENGES

» **As the experiment asked participants to infer the behavior of a third person, it could not ensure they would act similarly if they found themselves in a similar position.**

## RESULTS

**The study results indicated that social norms significantly affected people's beliefs about whether Mariana would be attending the gathering. They did not, however, make a difference in beliefs on whether she *should* be attending it.**

In comparison to the baseline category (T1: Attending is inappropriate, and few friends will be going), T2, T3, and T4 significantly increased people's beliefs that Mariana would be going, on average, by 7 percentage points (pp). This was equivalent to 28 percent of the predicted probability of attendance in T1. Surprisingly, effect sizes for condition T2 were consistently higher than and statistically different from T4, with T2 increasing attendance by approximately 10 pp over all models and T4 by 7 pp (figure 4.3.1).

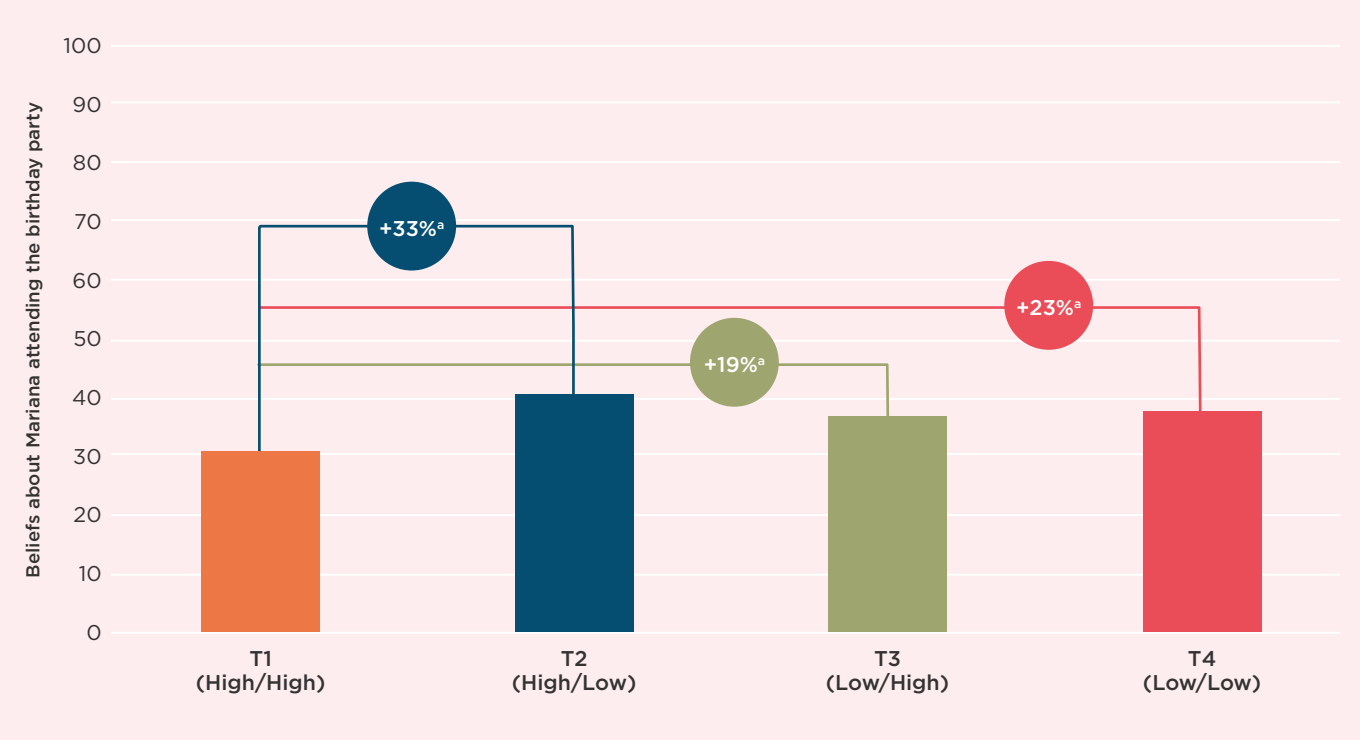
The probability of responding that Mariana would attend the party decreased with respondent age. It was also lower for female respondents and for those who reported that their neighbors practiced social distancing. In contrast, the predicted probability that Mariana would attend increased for respondents who reported having attended a party themselves in the previous week or who reported having visited friends or family.

## POLICY IMPLICATIONS

» **The study results suggest a policy approach engaging social norms would be effective in increasing voluntary compliance with public health guidelines.** High empirical and high normative expectations appear to be necessary to elicit social distancing behavior through information campaigns based on social norms. Hence, information highlighting others' compliance while targeting normative expectations are likely to play an essential role in any successful information campaign seeking to encourage individuals to adopt preventive behaviors.

» Conversely, highlighting that others are not complying is likely to reduce compliance, which could be an unintended byproduct of news coverage about noncompliance. Politicization of the guidelines and active, public repudiations of norms can lead to further erosion of compliance.

## FIGURE 4.3.1 Treatment Effects of Social Norms on Beliefs about Mariana Attending the Birthday Party




[a] Statistical significance level of 1%.

**Note:** Differences between treatment group T2, on the one hand, and T3 and T4, on the other, are significant (but not between T3 and T4).

# 4.4. Increasing the Use of Diagnostic and Contact Tracing Apps

**COUNTRY** Mexico

**YEAR** 2020

**TEAM** Déborah Martínez, Cristina Parilli, Ana María Rojas, Carlos Scartascini, and Alberto Simpser

## CONTEXT

**The COVID-19 pandemic has demonstrated the extent to which the effectiveness of public policies depends on the willingness of citizens to undertake measures whose individual private costs outweigh individual benefits but whose societal benefits outweigh public costs.** One such instance of positive externalities is the use of self-diagnostic apps and contact tracing apps. The former help individuals identify a potential infection, while the latter inform them about contact with known third-person virus carriers, followed by a recommendation to self-isolate. While individuals may benefit if they are alerted to possible infection and take curative measures earlier than they might have if they had noticed a condition on their own, the primary benefit accrues to societies, since apps facilitate contact tracing and the interruption of chains of infection.

One frequent citizen concern regarding the apps relates to data privacy and protection. Policymakers often directly address these concerns by assuring citizens they have undertaken all necessary measures to reduce such risks. Whether this straightforward approach resolves doubts and overcomes citizens' hesitancy, however, is unclear.

## THE PROJECT

**Although research has indicated that overcoming data privacy concerns could lead to a strong increase in the acceptance of diagnostic and tracing apps, literature in some fields indicates that an explicit strategy to address such concerns might backfire.** This study, therefore, set out to test the impact of different messages on willingness to adopt diagnostic and contact tracing apps—specifically, whether explicit strategies to deal with data privacy concerns are, indeed, helpful or if they might be counterproductive, further decreasing willingness to download and use the apps.

The study took the form of an online experiment that was conducted in 2020 with more than 23,000 participants from the Mexican states of Guanajuato and Sonora.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Availability heuristic
- Mistrust
- Priming
- Salience

### Behavioral Tools

- Feedback
- Framing

See definitions

## BEHAVIORAL BARRIERS

**Availability heuristic:** Citizens may, for instance, have recently heard about issues involving data protection, based on which they may overestimate the probability of problems again arising.

**Mistrust:** Individuals who distrust their government or their fellow citizens may refrain from using an app because, for instance, they do not attribute benefit to it or they fear misuse of their data.

**Priming:** In the moment after reading about measures to prevent data abuse, for example, an individual may be inclined to think about the possible consequences of data abuse instead of the benefits of the app.

**Salience:** Explicit mention of a sensitive topic such as concerns about data may be salient to citizens in a way that produces an aversion to engaging further with the topic.

## BEHAVIORAL TOOLS

**Feedback:** The app may, for instance, provide individuals with feedback on their health and their contact points, helping them adjust their behavior following possible contact with people carrying the virus.

**Framing:** Information on the benefits of COVID-19 tracing or of diagnostic apps, for example, can be presented in ways that, to varying degrees, explicitly or implicitly address data concerns, eliciting different respective responses from participants.

## INTERVENTION DESIGN

**This study embedded a survey experiment within a larger survey dedicated to COVID-19.** It consisted of four groups, one control and three treatment groups, to which individuals were randomly assigned. Participants in the treatment groups were presented with a priming vignette—a different vignette for each group (table 4.4.1)—and a follow-up question that tested the effectiveness of the prime.

The prime for one of the vignettes (T3) followed the traditional approach of assuring citizens of the government's data privacy efforts. In contrast, T1 stated the usefulness of Facebook as a social network, while T2 underscored the convenience of using online services and apps to conduct business with the government.

Subsequently, individuals in all four groups were asked two questions concerning the two dependent variables: their willingness to download a COVID-19 diagnostic app and their willingness to download a contact tracing app. Answers could be given according to four response categories that were later dichotomized for the analysis. The study assumed that explicitly addressing data protection concerns, as in T3, might backfire, since this strategy could make data protection concerns more salient and prime individuals for the issue in ways that could evoke more negative associations with than possible benefits of the apps.

Participants over age 18 were recruited via advertisements on the IDB Facebook page and via email lists provided by the Mexican states of Guanajuato and Sonora. The Facebook recruitment generated 15,542 usable surveys, and 7,642 were obtained from the email recruitment process. Jointly, the sample consisted of over 23,000 individuals.

## CHALLENGES

» Over 90 percent of the sample indicated they would likely or surely download a tracing app (88 percent for the diagnostic app), responses that possibly were driven by the social desirability effects often seen in surveys—that is, the tendency of subjects to give responses based on what they think will be acceptable to others rather than truthfully. This represented two challenges. First, these percentages were considerably higher than in other surveys, potentially indicating this sample would not allow for significant generalizations. Second, "ceiling" effects limited the ability to increase acceptance and thus achieve significant effects.

**TABLE 4.4.1 Experimental Vignettes**

| Condition | Prime | Text |
|---|---|---|
| Control | --- | --- |
| T1 | Usefulness of Facebook | *Facebook is the most popular social networking tool in Mexico and in the world. It allows its users to share pictures, news, and personal information with their friends. In addition, through its mobile app, it allows frequent contact with loved ones.*<br>**Follow-up question:** *Do you agree that the Facebook mobile app increases contact with your loved ones? [Yes/No]* |
| T2 | Convenience of online services via apps | *The government of Mexico has shifted many in-person bureaucratic procedures to online platforms. In addition, thanks to mobile apps, some of those procedures can be carried out from any location. For example, Mexicans can now pay fines online at any time and from any location.*<br>**Follow-up question:** *Do you agree that online services increase the welfare of Mexicans? [Yes/No]* |
| T3 | Government efforts to address data privacy concerns | *Online platforms and mobile apps, which we can use to shop online and pay for services, can have security issues. The government of Mexico is working very hard to protect data privacy so no Mexican is worried about or affected by it.*<br>**Follow-up question:** *Is data protection an important issue for you? [Yes/No]* |

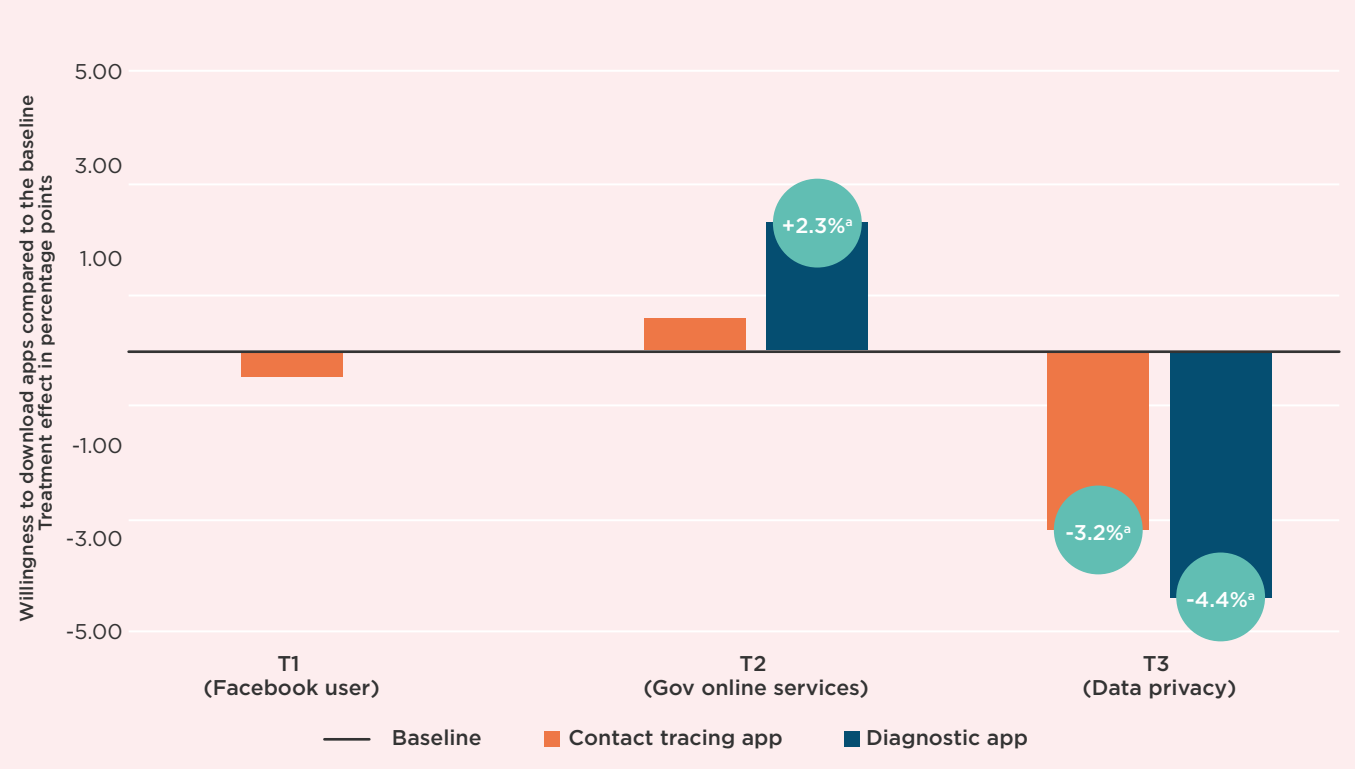
## RESULTS

**Results of the study were obtained from linear regressions with three parameters of the conditions T1 to T3 and the control group as the baseline category.** They indicated, first, that traditional approaches explicitly addressing data protection efforts might backfire (figure 4.4.1). Individuals assigned to T3, which referred to government efforts to ensure data privacy, were 4 percentage points (pp) less likely to indicate a willingness to download the diagnostic app and 3 pp less likely to download the contact tracing app. Similarly, while individuals who were successfully primed for conditions T1 and T2 indicated a higher willingness to download both apps than those who were not, successful primes for T3 (government efforts for data protection) led to a lower share of respondents indicating they were very likely to download the apps.

T1, which referred to the usefulness of Facebook, did not have any significant effect. In contrast, T2 significantly increased participants' willingness to download the diagnostic app by 2 pp, suggesting that a strategy that indirectly addressed the issue by outlining benefits of apps in other fields might be more promising than a direct one.

Control variables pointed out baseline differences across subpopulations. Older and more educated individuals were less likely to indicate willingness to download the apps. In contrast, women and those who had direct or indirect experiences with COVID-19 were more likely to download the app. Finally, people in the survey who responded that they perceived themselves as likely to require hospitalization if infected by COVID-19 and who perceived indoor activities as risky displayed greater willingness to download the apps.

### FIGURE 4.4.1 Willingness to Download COVID Diagnostic and Tracing Apps by Treatment




[a] Statistical significance at the 1%.

**Note:** This graph reflects model specifications with control variables and fixed state effects.

## POLICY IMPLICATIONS

» **Policymakers often must contend with citizen concerns on issues such as data privacy. This study showed that directly addressing such concerns might lead to a knee-jerk reaction, triggered by the prime that brings them up.** Instead of ameliorating the concerns, the prime brings them to the top of the citizens' minds. A strategy that indirectly addresses the issue by outlining benefits of apps in other fields might be more promising than a direct one.

# 4.5. The Interplay of Partisanship, Beliefs about COVID-19, and Support for Policy Interventions

**COUNTRIES** Argentina, Brazil, United States, and Uruguay

**YEAR** 2020

**TEAM** Cynthia Boruchowicz, Lucía Freira, Florencia López-Bóo, Joaquín Navajas, and Marco Sartorio

## CONTEXT

**The COVID-19 pandemic has caused major disruptions, as much to macro phenomena such as the global economy as to our everyday lives and habits.** Policymakers have, consequently, needed to take strong and wide-reaching measures to contain the spread of the virus. At such times of crisis, citizens—overwhelmed by the complexity and uncertainty of the situation—turn to their political leaders for reassurance and guidance. Yet, in the current environment of increased polarization, political elites often have not managed to reach consensus on an appropriate response. In the United States, this has led to a partisan divide on policy preferences, with significant impact on compliance with public health guidelines.

The cognitive mechanisms underlying this trend remain largely unexplored. A better grasp of the interplay among policy preferences, perceptions of the severity of the pandemic, and response policies would help policymakers understand when and why citizens oppose their strategies and what could be the best way of increasing compliance with health guidelines.

## THE PROJECT

**This project examined the explanatory validity of two partisan models.** *The rational partisanship model* explains opposing judgments of policies related to COVID-19 arising from dissimilar perceptions of its severity. The *tribal partisanship model* assumes that different reactions emanate from social identity motives that are not affected by such perceptions.

To test these models, experiments were conducted in Argentina, Brazil, the United States, and Uruguay in 2020, dedicating special attention to the interplay among partisanship, perceptions of severity, and policy preferences.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

» Partisanship

» Scarcity mindset

### Behavioral Tools

» Anchoring

See definitions

## BEHAVIORAL BARRIERS

**Partisanship:** In the absence of other information, people may be led to make decisions against their own best interests by the political rhetoric of the party to which they belong.

**Scarcity mindset:** The demands of daily life reduce cognitive capacity, which leads people to make decisions about their health that are less than optimal.

## BEHAVIORAL TOOLS

**Anchoring:** Exposure to a number of deaths from COVID-10 could unduly influence the actual estimate of deaths from the virus.

## INTERVENTION DESIGN

**The study consisted of four experiments. Experiment 1** took place in Argentina in May 2020, with a sample of 640 students from four Argentinian universities.

**For experiment 2** in Uruguay and **experiment 3** in Brazil, both conducted in June, convenience samples of 372 and 353, respectively, were obtained through Offerwise, a market research company specializing in Latin American countries. For **experiment 4** in the United States, data were collected through Prolific, an online platform for recruiting human participants in scientific research, resulting in a sample size of 615.

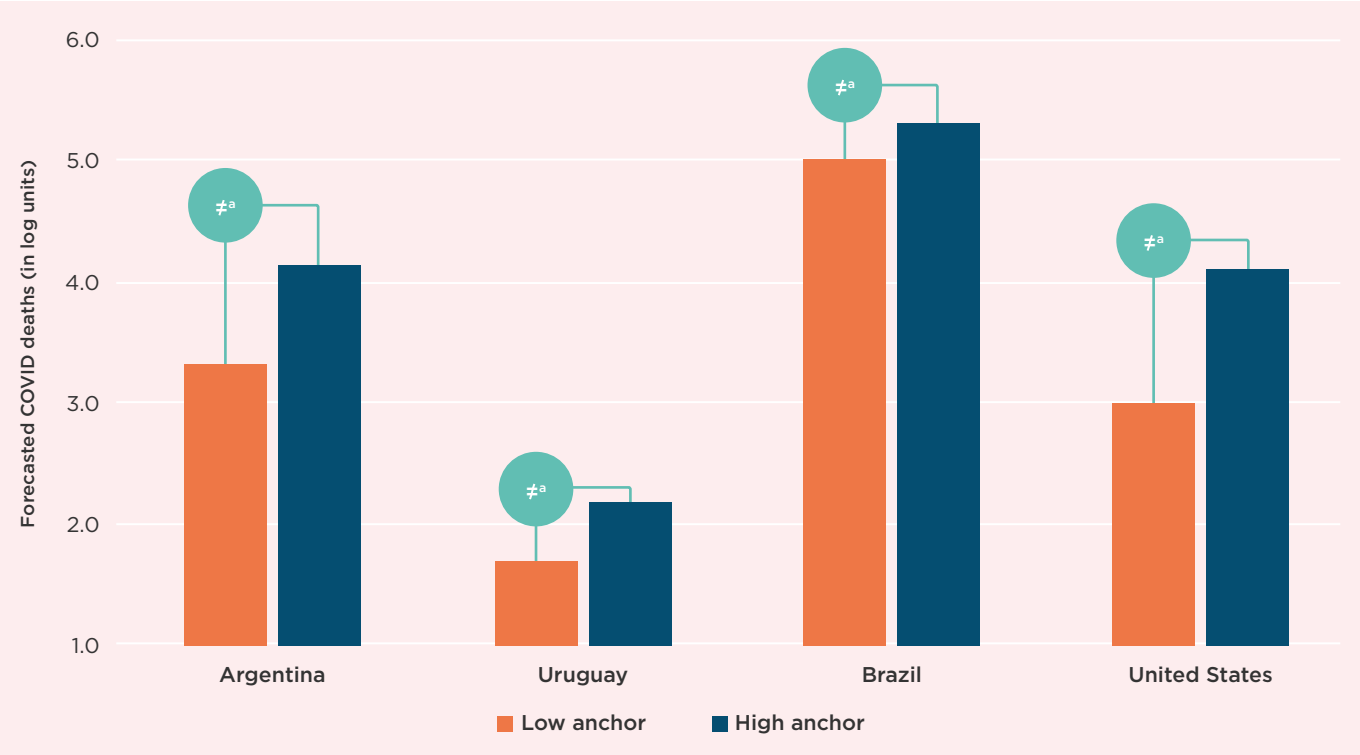
**In the three experiments in Argentina, Brazil, and Uruguay, procedures followed the same sequence:**

1. All participants were asked for general information about their age, gender, and educational level.
2. This was followed by questions about their approval of the ruling political party and the party they voted for in the last election.
3. To manipulate beliefs experimentally through "anchoring," the participants were randomly assigned to one or two conditions. Some were asked to forecast the number of COVID-19 deaths in the country after considering an extremely low number, and the rest were asked to consider an extremely high number.
4. In the last stage, participants were asked for their level of agreement on a seven-point Likert scale with nine public policies representing responses to the pandemic. The policies applied to school openings, freedom of movement in public spaces, and the obligatory use of COVID tracing apps.

## CHALLENGES

» **As the four countries in the sample have presidential systems of government, any assumptions emerging from the study regarding the interplay among partisanship, beliefs, and policy support may not apply equally to countries with parliamentary political systems.**

## FIGURE 4.5.1 Effect of Anchoring on Prediction of Deaths Related to COVID-19




[a] Statistical significance level of 1%.

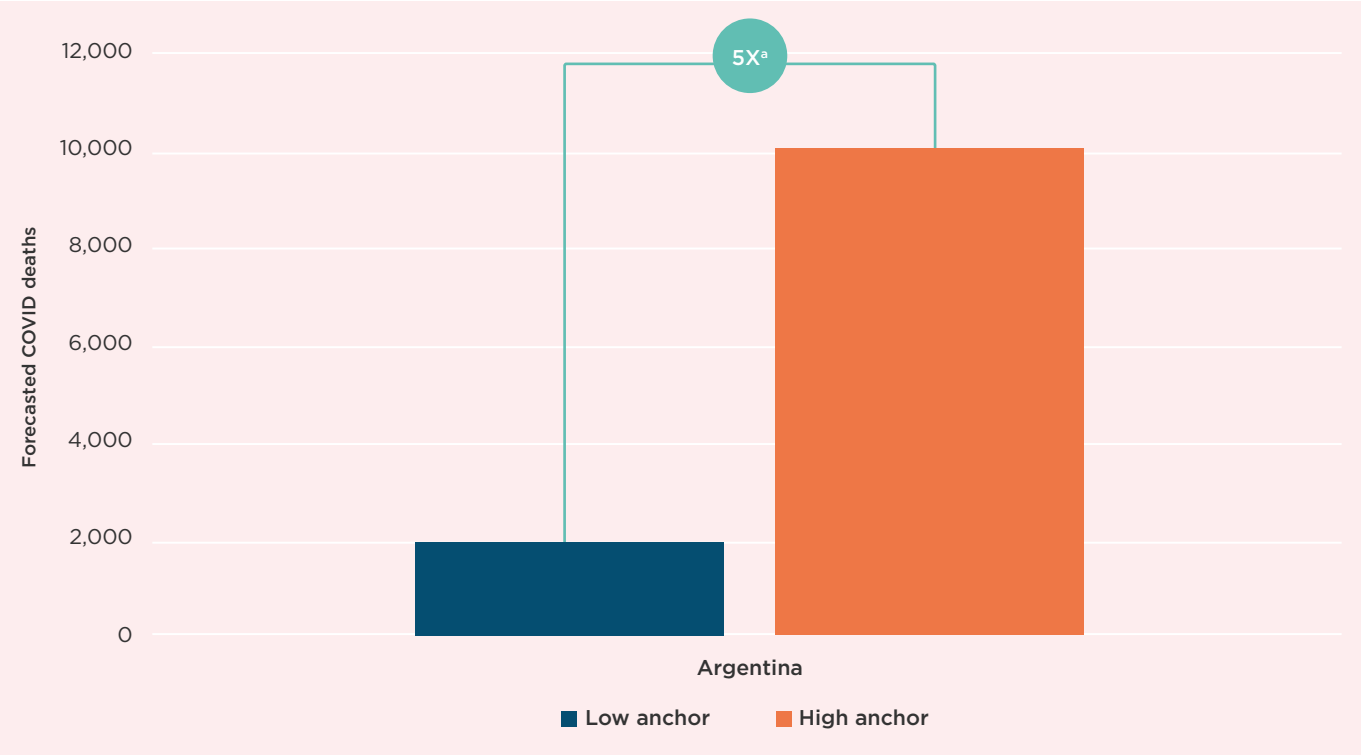
## RESULTS

**Across all four countries, the experimental manipulation of the anchor had a significant impact on the forecasts (figure 4.5.1). In Argentina, for example, the median number of estimated deaths was five times higher in the high anchor condition than in the low anchor condition (figure 4.5.2).**

Different predictions for COVID-related deaths and cases did not explain the differences in approval of public policies. The correlations between the forecasted number of deaths and policy support were persistently insignificant. Across all the experiments, participants supporting the government reported lower levels of severity of the crisis.

Partisanship was strongly correlated with the approval of public policies. Positions varied among countries, however, depending on the national government's position on the pandemic. In Brazil and the United States, where the two presidents downplayed it, support for the government was correlated with disapproval for public policies aimed at stopping the spread of the virus. In contrast, in Argentina and Uruguay, where the heads of state stood firmly in favor of public policies against the virus, government supporters also supported public policies to contain the spread.

## FIGURE 4.5.2 Forecasted Number of COVID-19 Deaths by Anchoring Group in Argentina




[a] Statistical significance at the 1%.

## POLICY IMPLICATIONS

» **The results of this research suggest that perceptions of a current situation, such as the COVID-19 pandemic, might not factor into preferences for certain policies.** Rather, preferences seem to be driven by partisanship. This finding aligns with previous research indicating that individuals often abandon their beliefs in favor of those of the political party they support.

» Communicating the severity of the current situation might not increase approval of or compliance with policies designed to mitigate and eventually overcome the pandemic. Instead, governments may need to focus on building a consensus across the spectrum of political elites, which seems essential to achieving a coordinated response by citizens.

# SOCIAL SECURITY AND PENSIONS

# Social Security and Pensions

**In research conducted by the IDB, present bias, cognitive overload, hassle factors, and the status quo came up as the main barriers to desired behaviors in the field of social security, pensions, and savings.** Consequently, interventions in Brazil and Mexico were designed to use reminders, salience, simplification, and planning tools to help contributors to social security overcome these barriers. In Brazil, a booklet that included a reminder and highlighted the benefits of saving increased the contributions of the self-employed to social security. In Mexico, the combination of a national campaign that showed how to use savings points easily and an increase in these points helped to bring up levels of private voluntary saving.

Table 5.1 lists the behavioral barriers observed and the tools used in interventions in the area of social security and pensions.

**TABLE 5.1 Behavioral Barriers and Tools Relevant to Social Security and Pensions**

| Behavioral Barriers | Behavioral Tools |
|---|---|
| » Cognitive overload | » Planning tools |
| » Hassle factors | » Reminders |
| » Optimism bias | » Salience |
| » Present bias | » Simplification |
| » Status quo | |

See definitions

# 5.1. Nudging the Self-Employed into Contributing to Social Security

**COUNTRY** Brazil

**YEAR** 2015

**TEAM** Mariano Bosch, Danilo Fernandes, and Juan M. Villa

## CONTEXT

**Understanding how to promote retirement saving and social security contribution successfully is crucial for economic development and stability.** In 2010, half of salaried workers contributed to social security, but only 16 percent of the self-employed did (Bosch et al. 2013). In addition, it is estimated that by 2050 the population of retirement age will double to comprise 18 percent of the total population, adding to the stress of an already deficient pension system (Álvarez et al. 2020). The region faces the challenge of providing adequate income to the more than 140 million expected retirees (UN 2019); using behavioral economics tools such as reminders, defaults, and commitments can facilitate this task.

## THE PROJECT

**In 2009, Brazil's Ministry of Social Security launched a program (MEI) to reduce the burden of social security and tax on independent micro-entrepreneurs from 20 percent to 7 percent of their average net incomes (Bosch et al. 2015), while increasing compliance rates.** It also simplified payment by combining municipal and state levels. Yet, two years into the program, only 2 million of Brazil's 9 million self-employed workers had enrolled in it; of these, only 45 percent made regular payments (Rocha et al. 2014). Moreover, in response to a survey conducted in 2013 by the program administrator, 20 percent of the workers affiliated with social security said they were not aware that registration in the MEI required their monthly contributions (Bosch et al. 2015).

To increase contributions from the self-employed, Brazil's Ministry of Social Security and the IDB mailed a booklet to 3 million self-employed workers, reminding them of their obligation and highlighting the benefits of contributing to social security. To make the contributions, all MEI beneficiaries had to go online and either make the payment through an online banking system or print a voucher (*boleto bancário*), a Brazilian payment order accepted by all banks.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Cognitive overload
- Hassle factors
- Present bias
- Status quo

### Behavioral Tools

- Reminders
- Simplification

See definitions

## BEHAVIORAL BARRIERS

**Cognitive overload:** The limited link between attention and memory prevents individuals from processing all available information at the same time. This leads, for example, to forgetting to pay bills.

**Hassle factors:** Self-employed workers may, for example, have a hard time accessing their online banking systems or printing vouchers.

**Present bias:** People may value present gratification more than greater benefits conferred in the future—for example, they may prefer to spend time and money on things they want now instead of saving for their future selves.

**Status quo:** Currently, for instance, the self-employed may not contribute to social security, so deviating from this status is hard.

## BEHAVIORAL TOOLS

**Reminders:** Drawing attention to an issue might help fight the inertia of not thinking about solutions to problems.

**Simplification:** Providing tools to make an action easier—in this case, providing vouchers that could be used to pay for contributions—can change the perception of a task from hard to simpler than previously thought.

## INTERVENTION DESIGN

**The booklet sent to potential beneficiaries of the MEI offered the following explanation of social security:**

> Keeping up with the monthly payments, you are protected in case of an accident [and] entitled to an old-age pension, a disability pension, [and/or] maternity leave (in the case of pregnant women and adoptions) after a minimum number of contributions. Your family will have the right-of-survivorship pension and pension-grant.

The booklet could be understood as a composite of several behavioral interventions. First, it acted as a reminder, drawing attention to the issue and highlighting information related to compliance with social security and tax authorities. It also highlighted the importance of the contribution in becoming eligible for a series of benefits.

Second, the booklet could be perceived as a monitoring tool, as it bore the seals of both the Ministry of Finance (Ministerio da Fazenda) and the Ministry of Social Security to reinforce the urgency of the matter.

Finally, the booklet also offered a simplification tool, as it contained 12 blank vouchers (*boletos bancários*) to provide for a year's worth of monthly installments.

The intervention staggered implementation over a four-month period across four states and resulted in an experiment where the allocation process was exogenous, or as if it were random, involving 3 million self-employed workers across 5,396 municipalities.

## CHALLENGES

» No challenges were reported for this intervention.

## RESULTS

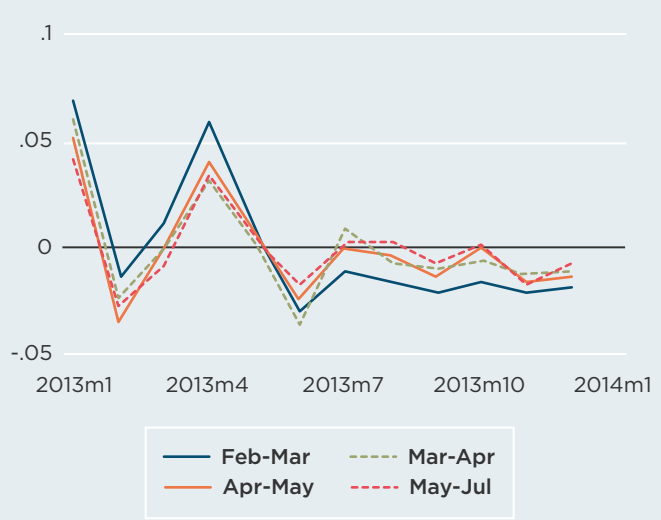
**Reminders appear to have had a significant impact on savings decisions and to have increased saving for retirement dramatically.** Figure 5.1.1, which shows data on payments per municipality, indicates that all the municipalities' payments followed the same trend. Figure 5.1.2, however, shows clear evidence that the month a group of states started receiving the booklet brought a notable hike in overall payment rates. A differences-in-differences analysis showed that sending the booklet increased social security payments by 15 percent and tax compliance rates by 7 percentage points (from 40 percent to 47 percent). Workers affiliated with social security increased contributions markedly the month they received the booklet, although these immediate gains decreased rapidly, disappearing after three months.

## POLICY IMPLICATIONS

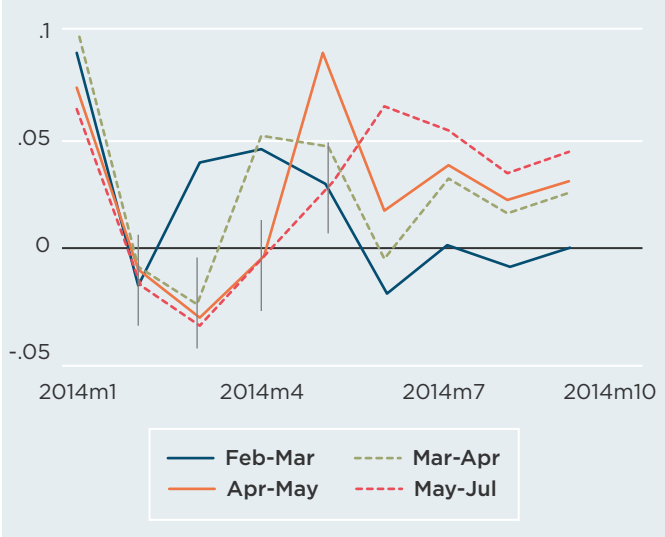
» **As this intervention demonstrated, behavioral tools, such as reminders, can have a significant impact on financial decisions and dramatically increase saving for retirement. Since self-employed workers are not enrolled in the social security system by default, reminders and other tools of behavioral economics are an alternative instrument that can help policymakers increase the coverage of the system.** As policy instruments, such tools could be many times more cost effective than price incentives and subsidies in increasing social security contributions, even in a context of low enforceability.

» Despite being cost effective in the short run, however, the impacts of some behavioral interventions can decrease after a single treatment. To affect compliance rates in the long term, policymakers should consider testing and implementing multiple treatments.

### FIGURE 5.1.1 Trends in Pre-Treatment Compliance Rates, 2013




### FIGURE 5.1.2 Trends in Post-Treatment Compliance Rates, 2014




**Source:** Administrative data from the Ministry of Social Security.

# 5.2. Increasing Retirement Saving through Access Points and Persuasive Messages

**COUNTRY** Mexico

**YEAR** 2019

**TEAM** Mariano Bosch and Adrian Rubli

## CONTEXT

**Private savings are an increasingly important complement to public pension funds. Low rates of private saving, however, are a concern to policymakers in various regions.** In 2014, the estimated income replacement rates at retirement age in Mexico was around 40–50 percent (Villagómez 2014), which might have significant social and micro- and macroeconomic implications. Many studies have tackled transaction costs and psychological barriers that might prevent individuals from saving. Little research, however, is known to address transaction costs and psychological barriers jointly.

Mexico introduced a privatized pension system in 1997, which consisted of a defined contribution plan. Additionally, savers could keep voluntary savings separate. Low private saving rates led the Mexican government to implement a series of interventions to increase them.

## THE PROJECT

**The aim of this project was to identify the causal and quantitative impact of measures designed to increase voluntary private saving in Mexico.** Data included in the analysis spanned from early 2013 to mid-2016. For this project, the IDB partnered with Mexico's National Commission of the Retirement Savings System (CONSAR) and 7-Eleven stores in the country.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Cognitive overload
- Hassle factors
- Optimism bias
- Present bias

See definitions

## Behavioral Tools

- Planning tools
- Reminders
- Simplification

See definitions

## BEHAVIORAL BARRIERS

**Cognitive overload:** The frequent complexity of pension and savings systems may overload the cognitive capacity of citizens.

**Hassle factors:** In the case of private saving, the process to deposit the money may be too complicated and time consuming.

**Optimism bias:** People often underestimate potential risks in the future, such as the risk of illness, accidents, or job loss, for which they may need to save now to have a cushion later.

**Present bias:** People may prefer to spend US$100 today instead of spending US$110 after a few years of saving.

## BEHAVIORAL TOOLS

**Planning tools:** A media campaign, for instance, can suggest concrete steps for saving—for example, "Save 10 pesos a day."

**Reminders:** Such a media campaign can also provide persuasive reminders to save.

**Simplification:** Providing actionable steps and information about payment locations may simplify the process of depositing savings.

## INTERVENTION DESIGN

**The study combined two common interventions to increase private, voluntary savings. The first intervention sought to lower transaction costs by expanding locations for easily making savings deposits.** From October 2014 onward, people could engage in voluntary saving at all 7-Eleven convenience stores, simply by providing their national ID numbers. The second intervention provided reminders to save. A national media campaign conducted between July and December 2015 (see figures 5.2.1 and 5.2.2) urged workers to increase their voluntary saving, presenting television ads that promoted the opportunity to deposit savings at 7-Eleven stores.

The data for the analysis provided by CONSAR were anonymized, and they covered the period from January 2013 to July 2016. Individual characteristics, such as gender and age, were identified. Out of a population of 19 million active worker accounts with CONSAR, those with at least one voluntary contribution between 2013 and 2016 and consistent file data were selected (n=195,811). In later stages of the analysis, the accounts were split between those of workers who had made deposits before the intervention ("early savers") and those who had made deposits during the intervention ("treatment savers"). Additionally, a random sample of noncontributing account holders was used in a differences-in-differences design, with one predictor for increased access (a), one predictor for the combination of access *and* media campaign (b), and one predictor for the effect after the media campaign had ended (c).

The data were analyzed by month per municipality, to be matched with geographical information indicating the presence of 7-Eleven stores. **The analysis considered three outcomes:**

1. The total number of accounts with at least one voluntary contribution per municipality-month
2. The total number of voluntary contributions in a municipality-month
3. The total contribution amount in a municipality-month

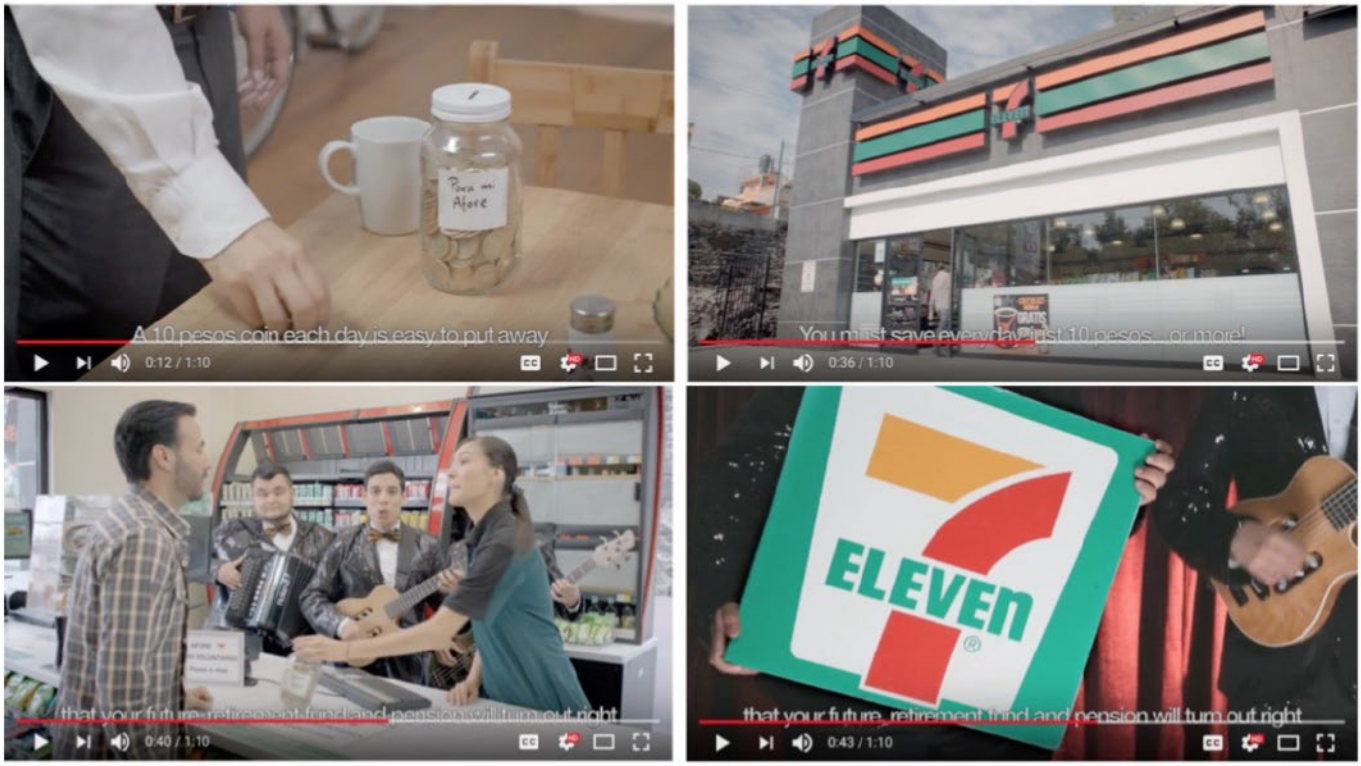
The fact that the people who did deposit savings were not all from areas with 7-Eleven stores facilitated the identification in the analysis of causal effects.

## FIGURE 5.2.1 Text of Media Campaign Jingle

A 10 pesos coin each day is easy to put away
And little by little a better retirement will come your way
10 bucks, 10 clams, whatever you call them,
Are easy to save, it's no burden on your pocket
It's just 10 pesos (ten, ten), for your retirement fund (ten, ten)
Save today, it's just right, for a future that's bright
It's just 10 pesos (ten, ten), for your retirement fund (ten, ten)
You must save every day, just 10 pesos or more
Add 10 pesos each day in order to ensure
That your future, retirement, and pension will turn out right
At your Seven Eleven and Telecomm you can save
Deposit without charge from 50 pesos or more
It's just 10 pesos (ten, ten) for your retirement fund (ten, ten)
Save today, it's just right, for a future that's bright
It's just 10 pesos (ten, ten) for your retirement fund (ten, ten)
You must save every day, just 10 pesos or more
That's a big wad of money, so now you can go and save
Your best ally and guard for your retirement fund, without doubt, is CONSAR.

**Note:** For more information, see https://www.youtube.com/watch?v=uSdOpwVJy1o.

## FIGURE 5.2.2 Images from Media Campaign Spots



## CHALLENGES

» **Causal identification might have been hampered by factors that confounded effects. Besides 7-Eleven, two other localities started to accept voluntary savings, namely, Telecomm[3] in June 2015 and Circle-K in February 2016.** The high percentage of contributions through 7-Eleven and the media campaign's focus on 7-Eleven made confounding unlikely, however.

## RESULTS

**Three main outcomes for which results were generated were the number of savers, the total amount of contributions, and the number of contributions overall** (see figure 5.2.3). Municipalities with 7-Eleven stores showed a significant 5 percent increase in the number of voluntary savers before the media campaign, relative to those without 7-Eleven stores (a), reaching 12 percent during the campaign (b). The months after the media campaign showed a 15 percent increase in treated municipalities relative to the baseline (c). Tests showed that all three coefficients were statistically different, implying that the effect of the bundle of measures was larger than that for the first measure focused on transaction costs alone.

With regard to the total amount of contributions, the change before the media campaign was insignificant (a) but reached statistical significance for 2 and 3, with an increase of 10 percent during the campaign and 12 percent after the campaign. Differences between b2 and b3 were not statistically significant.

The number of contributions overall increased by 8 percent during the campaign (b), with the other coefficients not reaching statistical significance before b1 or after b3. Overall, the total amount of savings remained unchanged, implying that while more deposits were made, their average amount decreased.

Further analysis of underlying mechanisms suggested the media campaign did not exercise an effect solely through the diffusion of information but also through the reminders and persuasive elements it contained.

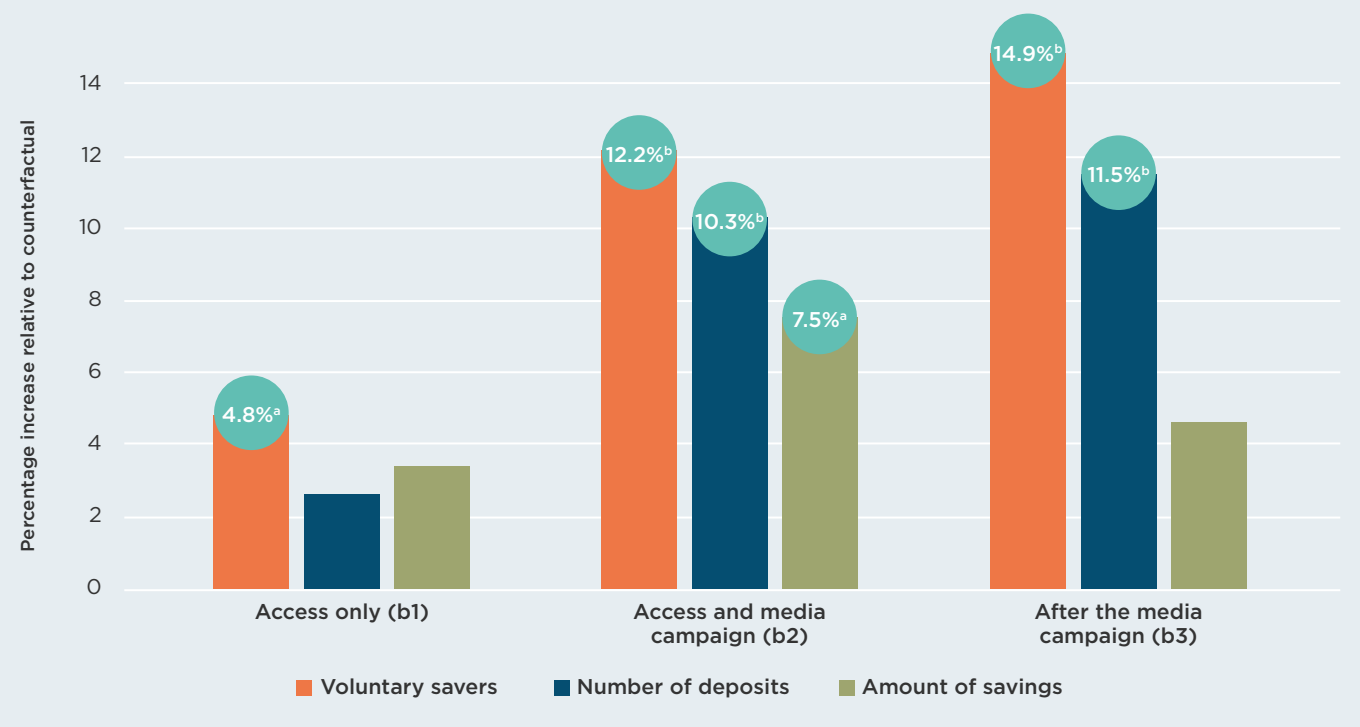
## POLICY IMPLICATIONS

» **The study emphasized how well-planned policy interventions can have a significant and positive impact on saving behavior, with the potential to alleviate major policy concerns, such as high rates of poverty among the elderly.** It demonstrated in, particular, how a bundle of initiatives can contribute to the formation of saving habits that are maintained after the intervention. Future studies might extend the exploration to determining how to achieve an increase in the number of deposits without a reduction in the average deposit amount.

» Finally, the findings of the study suggest that complementary policies, such as those jointly tackling opportunity cost (through increased accessibility) and behavioral barriers (by using reminders) seem to exercise a positive effect on saving behavior. For policymakers, this underscores the value of observing more systematic interactions between structural and behavioral components to craft powerful solutions.

[3] A government agency that operates telegraphic and satellite services and offers basic financial services.

## FIGURE 5.2.3 Effects of Two Interventions to Increase Private Voluntary Savings in Mexico




[a] Statistical significance level of 5%. [b] Statistical significance level of 1%.

# TAXES

# Taxes

**In Latin America and the Caribbean, tax evasion is a serious issue. An IDB publication in 2015, for example, cited avoidance at a rate of around 50 percent for most countries and taxes (Ardanaz et al. 2015).** For this reason, the IDB has undertaken various projects to reduce tax evasion and to boost tax collection and the registry of taxpayers in the region. By far, some of the most important tools used have been moral suasion, signaling, and simplification. Among the barriers encountered have been present bias, negative social norms, and cognitive overload. Another important barrier to note in the case of tax collection is mistrust, as it has had an important presence in most contexts where these interventions were implemented.

In Argentina, a reduction of cognitive load in tax amnesty notifications and property tax invoices helped increase contributions from taxpayers. In Colombia, the use of behaviorally informed phone calls and messages, together with visits from fiscal inspectors, also yielded favorable results. Behavioral reminders were also powerful in Brazil, where the registration of taxpayers was increased. Another set of interesting results came from Argentina, where the use of a lottery incentive for good behavior led to increased tax payments from the winners and their neighbors.

Table 6.1 lists the behavioral barriers observed and the tools used in interventions in the area of taxes.

**TABLE 6.1 Behavioral Barriers and Tools Relevant to Taxes**

| Behavioral Barriers | Behavioral Tools |
|---|---|
| » Availability heuristic | » Framing |
| » Cognitive overload | » Lottery |
| » Hassle factors | » Moral suasion |
| » Limited attention | » Planning tools |
| » Mistrust | » Salience |
| » Optimism bias | » Signaling |
| » Present bias | » Simplification |
| » Status quo | |

See definitions

# 6.1. Calling Delinquent Taxpayers: A Good Tactic to Collect Debts

**COUNTRY** Colombia

**YEAR** 2019

**TEAM** Mónica Mogollón, Daniel Ortega, and Carlos Scartascini

## CONTEXT

**Tax delinquency poses a major problem to most tax administrations in the world.** Conservative estimates suggest that Colombia's annual tax evasion represents 6.5 percent of the country's GDP (DIAN 2021). Finding ways to encourage taxpayers to pay up is paramount for both fiscal and equity reasons. A previous IDB study on delivery methods used to remind taxpayers of their obligations focused on three channels—letters, emails, and in-person visits—for communicating with delinquent taxpayers (Ortega and Scartascini 2015). The present study explored the use of personal phone calls, a method extensively used for political canvassing.

## THE PROJECT

**This study analyzed the results of a communications campaign launched by DIAN to encourage tax compliance.** Under the slogan "Colombia, a commitment we can't evade," the campaign centered on phone calls to delinquent taxpayers with outstanding liabilities, who were asked for their verbal commitment to pay. The phone calls were made between April 24 and May 10, 2014.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Availability heuristic
- Mistrust
- Optimism bias
- Present bias
- Social norms

### Behavioral Tools

- Moral suasion
- Planning tools
- Signaling

See definitions

## BEHAVIORAL BARRIERS

**Availability heuristic:** Individuals tend to estimate the probability of a future event based on how readily representative instances of such an event come to mind—in this case, punitive actions that have been taken against delinquent taxpayers in the past.

**Mistrust:** Taxpayers who do not trust a government administration may use their mistrust as a justification for tax evasion.

**Optimism bias:** Taxpayers with optimism bias may, for example, underestimate the possibility that the government will detect their tax delinquency.

**Present bias:** People may value present gratification more than benefits in the future—for example, they may want to spend the money they owe now rather than avoid the risk of being penalized for not paying their taxes later.

**Social norms:** In the context of this study, the acceptable behavior is to pay taxes when they are due to the government.

## BEHAVIORAL TOOLS

**Moral suasion:** The script used in this design reminded taxpayers about their responsibility to their country.

**Planning tools:** Several options were given to the taxpayers, and they were asked to commit to paying by a certain date. This was likely to increase the probability of payment by the taxpayers.

**Signaling:** A phone call by the government might signal that officials are on top of things, and that they mean to sanction those who break the law.

## INTERVENTION DESIGN

**DIAN randomly assigned a sample of 34,783 taxpayers with outstanding tax liabilities either to receive a phone call (treatment group) or not to receive any notification (control group).**

**Each caller followed a detailed script once a phone connection had been established:**

- The caller reminded the taxpayer of outstanding debts to DIAN, without mentioning the specific amount.
- The caller mentioned possible legal and financial sanctions.
- The caller attempted to schedule the taxpayer for an appointment at the DIAN office, where the taxpayer would be offered the opportunity to clarify current account delinquencies, resolve any disputes, and arrange payment. Alternatively, the taxpayer could commit to paying by a certain date.
- At the end of the call, the agent thanked the taxpayer for his or her time and mentioned the campaign slogan, "Colombia, a commitment we can't evade."

The contents of the script focused on deterrence and moral suasion. Importantly, the script unfolded as a conversation rather than a rigid text, with multiple exchanges between the agent and the taxpayer to foster personal interaction (see figure 6.1.1). The invitation to attend a meeting at the tax agency further emphasized personal interaction. The call was intended to produce one of two main outcomes: an appointment at the local agency office or a verbal commitment to pay.

## FIGURE 6.1.1 Example of Script Used for Treatment Group

**DIAN**
**Strengthening Persuasive Collection Scheduling Contact Center**

1. Script for the call

**HEADER FOR ALL CALLS:**
**CONTACT CENTER AGENT:** "Good morning, my name is _____. I am calling from the DIAN National Tax and Customs Directorate. Could you put me in contact with the Legal Representative?
**CLIENT:** Option 1: Agree. Continue with the message.
Option 2: Not found. They cannot be put in touch with the Legal Representative. Request to be put in contact with a person with the authority to receive a message from DIAN.

**CONTACT CENTER AGENT:** Mr(s)./Ms. Taxpayer my name is _____ _____, from the Directorate of National Taxes and Customs DIAN. I am calling to invite you to visit the SECTIONAL DIRECTORATE OF TAXES and/or TAXES AND CUSTOMS OF _____, since, according to the available data in the system, you owe tax.

This is a good opportunity to have your account statement cleared with the tax administration, and may prevent them from decreeing precautionary measures, such as seizure of personal property, real estate, and bank accounts. If you do not report, we will proceed with the collection process.

For this purpose, an official of the Sectional Directorate will meet with you personally.

Who answered the call:
Who will attend the meeting (must be the taxpayer and/or Legal Representative):
Meeting venue:
Town:
Date:
Time:
Name of the official who will meet with you:
Can I confirm your appointment?

Remember, if you are a legal person, you can report personally or through a legally authorized attorney. If you are a legal entity, the legal representative or the legally authorized attorney must attend. (Private information).

**SITUATION 1:** The taxpayer reports that he/she is up to date. Reluctant to attend the meeting.

**CLIENT:** I am up to date (states that he/she should not attend).

**CONTACT CENTER AGENT:** Thank you very much for the information; however, the meeting is a good opportunity to clarify your account statement with the tax administration, which may prevent precautionary measures, such as seizure of personal property, real estate, and bank accounts. If you do not report, we will proceed with the collection process.

**For this purpose, an official of the Sectional Directorate will meet with you personally.**

Who answered the call:
Who will attend the meeting (must be the taxpayer and/or Legal Representative):
Meeting venue:
Town:
Date:
Time:
Name of the official who will meet with you:
Can I confirm your appointment?

**CLIENT:** yes / no
**CONTACT CENTER AGENT:** Sir/Madam, thank you very much for your time. Remember: "*Colombia, a commitment that we can't evade.*"

**SITUATION 2:** The taxpayer reports that he/she really owes.

**CLIENT:** I did not make the payment or paid partially.

**CONTACT CENTER AGENT:** DIAN requests that you settle your past due obligations. Please confirm when you will make the payment.

**CUSTOMER:** Payment date information - Does not inform payment date
**CONTACT CENTER AGENT:** To serve you better, we want you to take advantage of this opportunity and visit the Tax Department of _____ so your account statement can be clarified before the tax administration, learn about payment alternatives and, if possible, avoid precautionary measures, such as seizure of personal property, real estate, and bank accounts. If you do not report, we will proceed with the collection process.

For this purpose, an official of the Sectional Directorate will meet with you personally.

Who answered the call:
Who will attend the meeting (must be the taxpayer and/or Legal Representative):
Meeting venue:
Town:
Date:
Time:
Name of the official who will meet with you:

**RECOMMENDATIONS:**
• Report only what is established in this protocol.
• If the taxpayer asks how much they owe, that information will be provided to them on the day of the appointment.

## CHALLENGES

» **This intervention presented three main challenges. First, phone call campaigns, like others, have some limitations.** If databases are not up to date, for example, the contact rate could be low. Chronic debtors may find ways to avoid being contacted as technology progresses, and phone calls may be less effective with certain groups, such as businesses. Combining relatively expensive initiatives with cost-effective interventions targeted to the majority of taxpayers might be the best strategy. This would involve phone calls for most tax delinquents and in-person visits with harsher threats of prosecution for a small set of chronic debtors.

» Second, although the initial distribution was of 24,870 subjects in the treatment group and 9,913 in the control group, the tax agency decided to stop the intervention once 12,853 calls had been made (a little over half the total originally planned). Out of the universe of taxpayers called, 5,267 were contacted (21 percent of the total and about 40 percent of the calls made). The contact

rate (share of effective contacts over the number of calls made) was similar to contact rates from specialized phone banks in recent get-out-the-vote interventions (Mann and Klofstad 2015).

» Finally, since levels of debt can change, even from the moment a notice is issued to the moment a call takes place, tax administrations prefer to avoid mentioning the specific amount outstanding to avoid false expectations. This makes information less salient for the taxpayer.

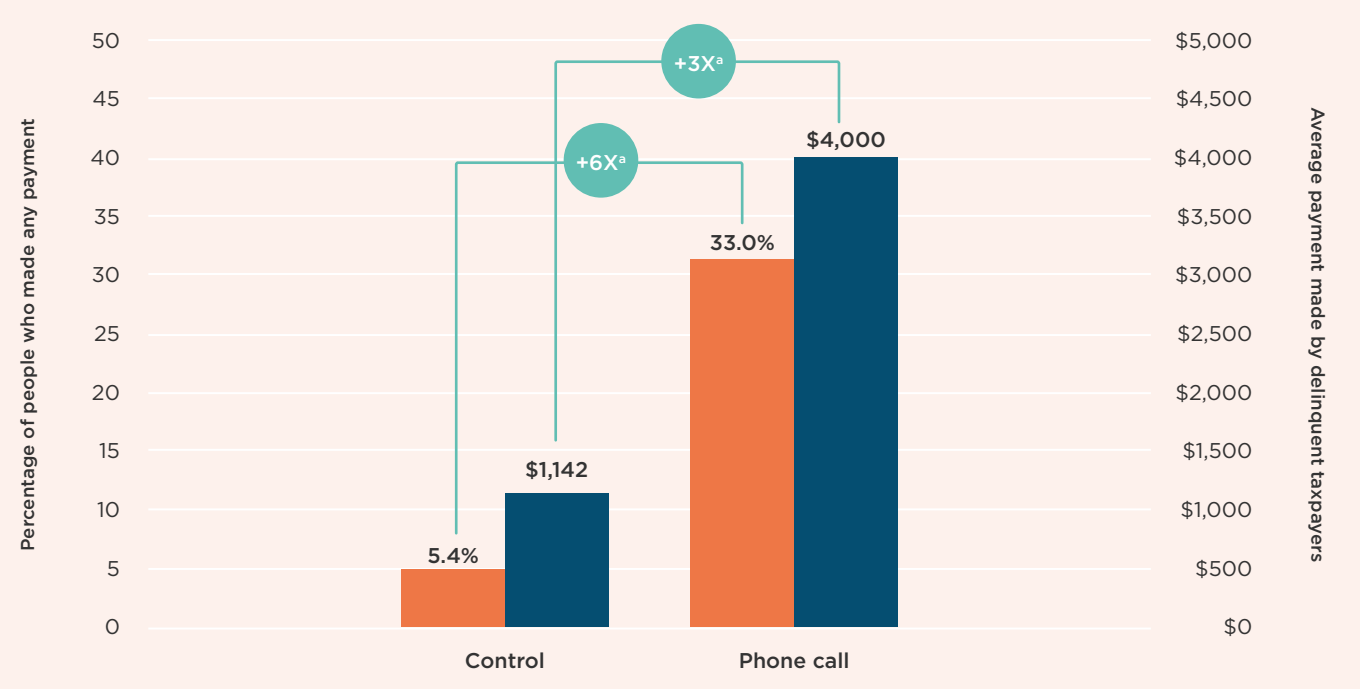
## RESULTS

**The study results, summarized in figure 6.1.2, indicated that personal phone calls were very effective in increasing the collection of unpaid taxes.** In the control group, whose members did not receive any calls or notifications, only about 5.4 percent of individuals with outstanding tax liabilities at the beginning of the year made any payment by the end of the year. By contrast, 11 percent of the taxpayers assigned to the intervention made a payment. Their payments were 50 percent higher, and the agency recovered 6 percent of the total debt, on average. Among the taxpayers who received a phone call, the payment rate was about 25 percentage points higher than among the control group, and the average payment was about three times that of the control group.

The intervention appeared to be relatively more or less effective depending on various taxpayer characteristics. First, the probability of payment was greatest for those with the lowest levels of debt. Second, phone calls were less effective for businesses than for individuals. Third, value-added tax (VAT) and income tax debtors seemed to respond more readily than wealth tax debtors. Finally, there was some evidence that the phone calls had a negative effect among chronic debtors.

Although 94 percent of the people who were reached by phone agreed to meet with an agent at the DIAN office, only 69 percent did so. Of those who attended their scheduled meetings, 50 percent committed to pay, and half of these actually did. Among those who did not agree to attend a meeting (only 6 percent), half committed to pay, and 39 percent of these actually did.

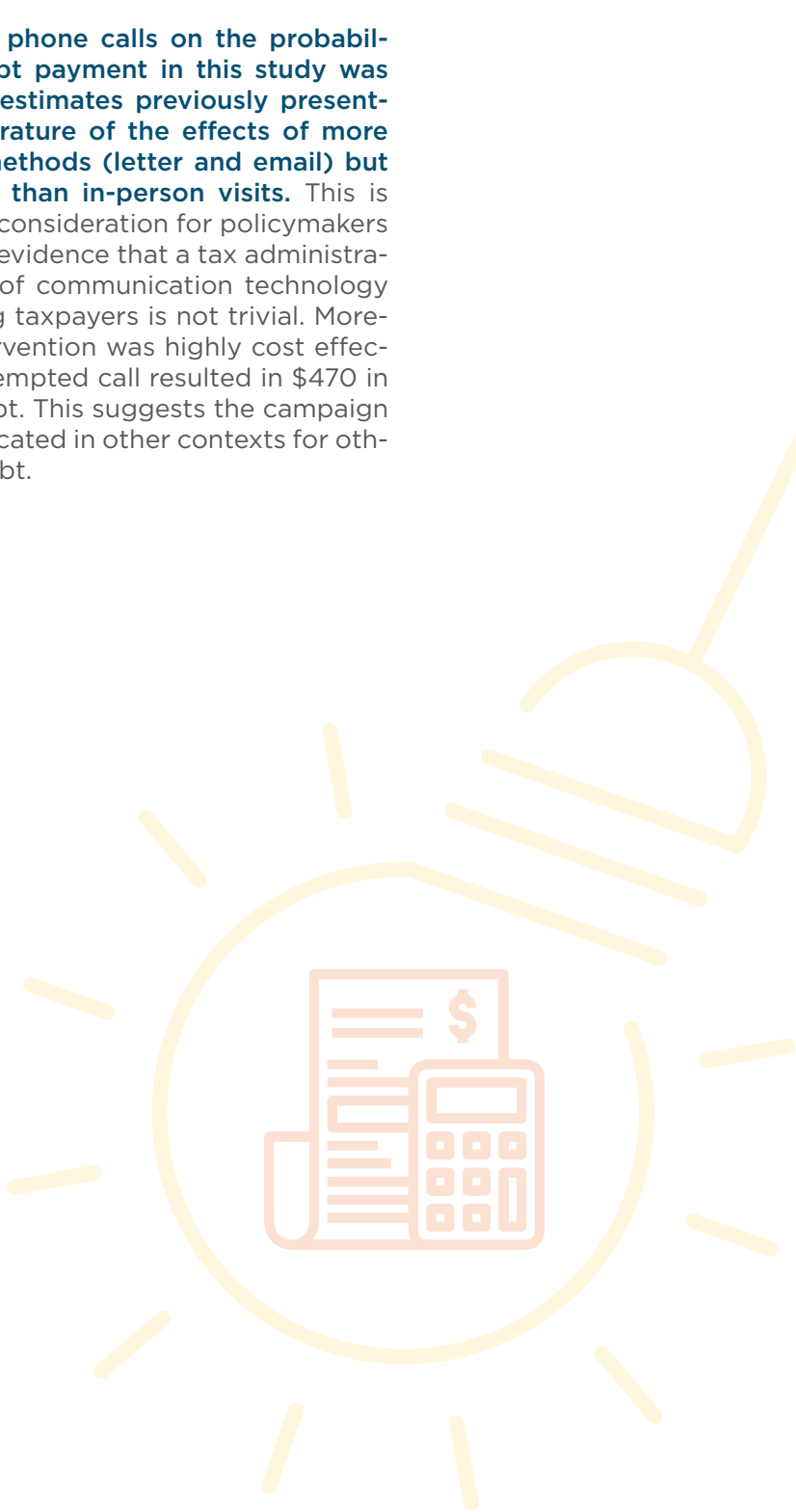
### FIGURE 6.1.2 Impact of Phone Calls on Debt Collection




[a] Statistical significance level of 1%.

## POLICY IMPLICATIONS

» **The effect of phone calls on the probability of tax debt payment in this study was greater than estimates previously presented in the literature of the effects of more impersonal methods (letter and email) but less effective than in-person visits.** This is an important consideration for policymakers and provides evidence that a tax administration's choice of communication technology for contacting taxpayers is not trivial. Moreover, the intervention was highly cost effective: each attempted call resulted in $470 in recovered debt. This suggests the campaign could be replicated in other contexts for other kinds of debt.



# 6.2. Tax Amnesties and Better Notice Letters

**COUNTRY** Argentina

**YEAR** 2019

**TEAM** Edgar Castro and Carlos Scartascini

## CONTEXT

**Tax amnesties are broadly applied across countries because they generate short-term revenue gains.** Many governments grant tax amnesties from time to time to collect taxes from delinquent taxpayers, who are given a time-limited opportunity to file late tax returns, regularize their outstanding tax liabilities, and come into compliance. During tax amnesties, governments usually offer the enticing benefits of reduced or waived interest or penalties on late taxes.

While amnesty programs are successful in collecting taxes from noncompliant taxpayers in the short run and tend to be particularly fruitful as complements to tougher enforcement campaigns, existing evidence suggests they fail to have long-term effects, and, in some cases, they generate negative effects on compliance.

## THE PROJECT

**To evaluate the impact of tax amnesties, this experiment considered the behavioral principle of limited attention by looking at a redesign of the communication notices sent to taxpayers by the city of Santa Fe, Argentina.** The effort aimed to reduce cognitive effort and increase understanding of the benefits of participating in tax amnesties.

In the intervention, communication notices were redesigned and sent to taxpayers to evaluate whether increasing salience (through the use of color and visual elements) and reducing cognitive costs (by an explanation of payment plans and payment calculations) increased the probability that taxpayers would pay attention to the messages and attain a better understanding of the benefits of the tax amnesty. More than 54,000 taxpayers were randomized, and the intervention was conducted in May 2017. A control group of taxpayers received the standard messages that had been sent during the preceding amnesties (in September 2013 and June 2015), while a treatment group received the redesigned communications.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Cognitive overload
- Limited attention
- Salience

### Behavioral Tools

- Framing
- Salience
- Simplification

See definitions

## BEHAVIORAL BARRIERS

**Cognitive overload:** Information about tax amnesties may be confusing and hard for individuals to process.

**Limited attention:** The attention of taxpayers to information received about tax amnesties may be limited by several factors, including complexities in the explanations offered.

**Salience:** A lack of color and visual information may have a negative effect on taxpayers' actions by not sparking curiosity to learn what the letter is intended to communicate, but rather by doing the opposite.

## BEHAVIORAL TOOLS

**Framing:** The way information is presented affects the level at which the information attracts people. In this intervention, different frames were tested.

**Salience:** Including a variety of colors that highlight the important parts of a written communication increases the likelihood that people will internalize that information.

**Simplification:** The simplification of information reduces the cognitive load necessary to understand communications.

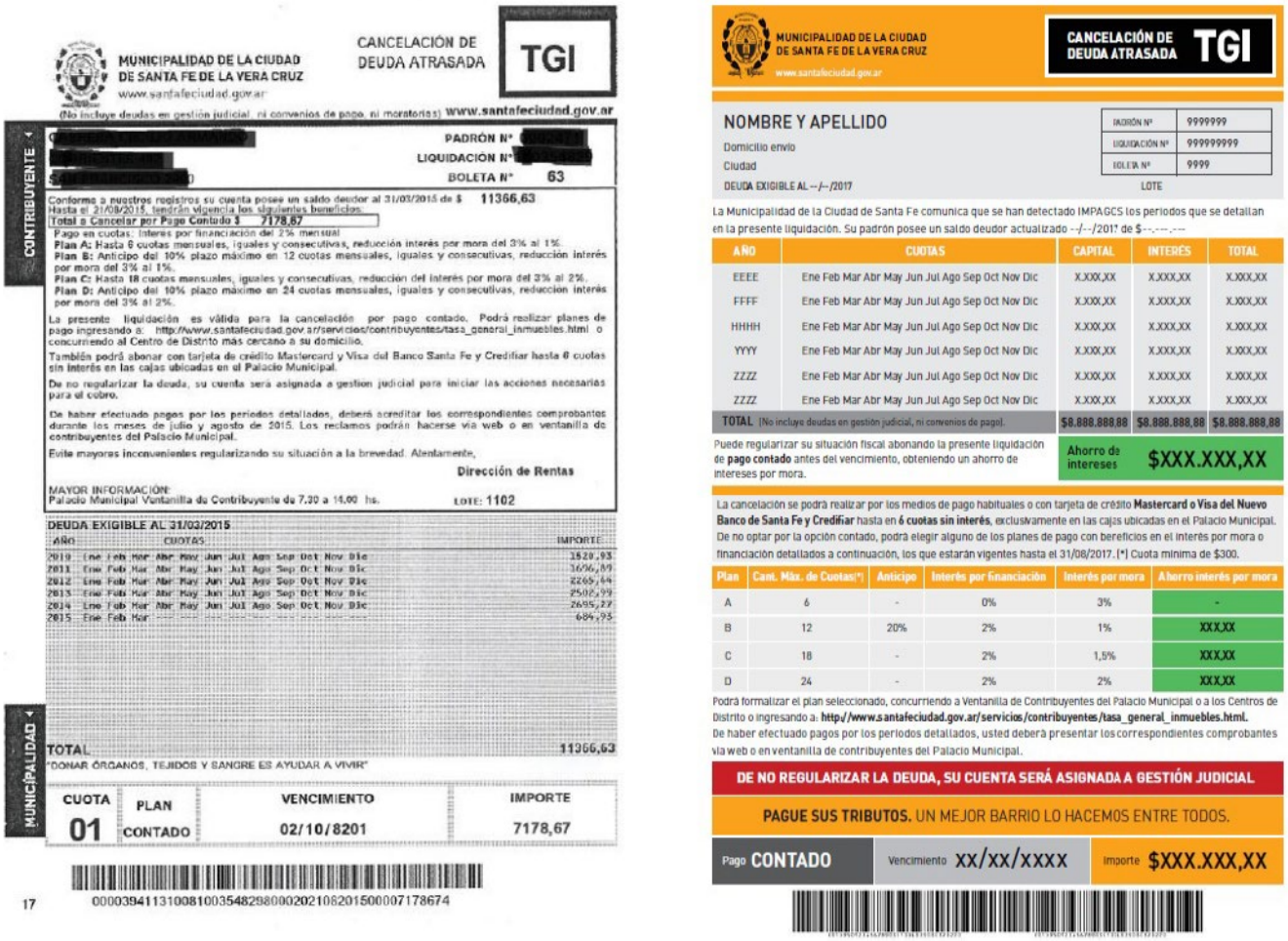
## INTERVENTION DESIGN

**Two field experiments were run during a tax amnesty period in May 2017 in the city of Santa Fe, Argentina, with more than 54,000 taxpayers who had failed to pay their property tax bills.** The first experiment included about 16,000 taxpayers who owed bills from January 2011 to December 2012. The second involved about 37,000 taxpayers who had accumulated debts between January 2013 and March 2017. The age of the debt was relevant, since debts become unenforceable after five years if the government fails to initiate the legal process, so authorities are likely to direct resources to older debtors and take enforcement steps in the absence of any action.

In both experiments, standard notices mailed by the government to inform taxpayers about the tax amnesty opportunity were redesigned to reduce information processing or cognitive costs by making important information more prominent. Color and other visual techniques were used, along with an explanation of the different payment plans, including a detailed computation of the reduction in interest (*Ahorro de intereses* in figures 6.2.1 and 6.2.2) provided by each payment plan.

In the first experiment, the redesigned letter also increased the salience of a deterrence message. The second experiment included two treatment groups that received two slightly different versions of the redesigned letter, the only difference being that one version added a column with the computation in monetary terms of interest saved under each plan, as opposed to showing just a percentage calculation. Control groups in both experiments received the original notices without redesign.

## FIGURE 6.2.1 Original Notice and Redesigned Letter, Experiment 1



MUNICIPALIDAD DE LA CIUDAD DE SANTA FE DE LA VERA CRUZ
www.santafeciudad.gov.ar

CANCELACIÓN DE DEUDA ATRASADA **TGI**

(No incluye deudas en gestión judicial, ni convenios de pago, ni moratorias) www.santafeciudad.gov.ar

CONTRIBUYENTE

PADRÓN Nº
LIQUIDACIÓN Nº
BOLETA Nº 63

Conforme a nuestros registros su cuenta posee un saldo deudor al 31/03/2015 de $ 11366,63
Hasta el 31/08/2015, tendrán vigencia los siguientes beneficios:
Total a Cancelar por Pago Contado $ 7178,67
Pago en cuotas: Interes por financiación del 2% mensual
**Plan A:** Hasta 6 cuotas mensuales, iguales y consecutivas, reducción interés por mora del 3% al 1%.
**Plan B:** Anticipo del 10% plazo máximo en 12 cuotas mensuales, iguales y consecutivas, reducción interés por mora del 3% al 1%.
**Plan C:** Hasta 18 cuotas mensuales, iguales y consecutivas, reducción del interés por mora del 3% al 2%.
**Plan D:** Anticipo del 10% plazo máximo en 24 cuotas mensuales, iguales y consecutivas, reducción interés por mora del 3% al 2%.

La presente liquidación es válida para la cancelación por pago contado. Podrá realizar planes de pago ingresando a: http://www.santafeciudad.gov.ar/servicios/contribuyentes/tasa_general_inmuebles.html o concurriendo al Centro de Distrito más cercano a su domicilio.

También podrá abonar con tarjeta de crédito Mastercard y Visa del Banco Santa Fe y Credifiar hasta 6 cuotas sin interés en las cajas ubicadas en el Palacio Municipal.

De no regularizar la deuda, su cuenta será asignada a gestion judicial para iniciar las acciones necesarias para el cobro.

De haber efectuado pagos por los periodos detallados, deberá acreditar los correspondientes comprobantes durante los meses de julio y agosto de 2015. Los reclamos podrán hacerse vía web o en ventanilla de contribuyentes del Palacio Municipal.

Evite mayores inconvenientes regularizando su situación a la brevedad. Atentamente,

**Dirección de Rentas**

MAYOR INFORMACIÓN:
Palacio Municipal Ventanilla de Contribuyente de 7.30 a 14.00 hs. LOTE: 1102

DEUDA EXIGIBLE AL 31/03/2015

| AÑO | CUOTAS | IMPORTE |
|---|---|---|
| 2010 | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | 1520,93 |
| 2011 | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | 1696,89 |
| 2012 | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | 2265,64 |
| 2013 | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | 2502,99 |
| 2014 | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | 2695,27 |
| 2015 | Ene Feb Mar | 684,93 |

MUNICIPALIDAD

TOTAL 11366,63

"DONAR ÓRGANOS, TEJIDOS Y SANGRE ES AYUDAR A VIVIR"

| CUOTA | PLAN | VENCIMIENTO | IMPORTE |
|---|---|---|---|
| 01 | CONTADO | 02/10/8201 | 7178,67 |

17 00003941131008100354829800020210820150000717867 4

MUNICIPALIDAD DE LA CIUDAD DE SANTA FE DE LA VERA CRUZ
www.santafeciudad.gov.ar

CANCELACIÓN DE DEUDA ATRASADA **TGI**

NOMBRE Y APELLIDO
Domicilio envío
Ciudad
DEUDA EXIGIBLE AL --/--/2017

| | |
|---|---|
| PADRÓN Nº | 9999999 |
| LIQUIDACIÓN Nº | 999999999 |
| BOLETA Nº | 9999 |
| LOTE | |

La Municipalidad de la Ciudad de Santa Fe comunica que se han detectado IMPAGOS los periodos que se detallan en la presente liquidación. Su padrón posee un saldo deudor actualizado --/--/2017 de $--.---.---

| AÑO | CUOTAS | CAPITAL | INTERÉS | TOTAL |
|---|---|---|---|---|
| EEEE | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| FFFF | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| HHHH | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| YYYY | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| ZZZZ | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| ZZZZ | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| TOTAL | (No incluye deudas en gestión judicial, ni convenios de pago). | $8.888.888,88 | $8.888.888,88 | $8.888.888,88 |

Puede regularizar su situación fiscal abonando la presente liquidación de **pago contado** antes del vencimiento, obteniendo un ahorro de intereses por mora.

Ahorro de intereses **$XXX.XXX,XX**

La cancelación se podrá realizar por los medios de pago habituales o con tarjeta de crédito **Mastercard o Visa del Nuevo Banco de Santa Fe y Credifiar** hasta en **6 cuotas sin interés**, exclusivamente en las cajas ubicadas en el Palacio Municipal. De no optar por la opción contado, podrá elegir alguno de los planes de pago con beneficios en el interés por mora o financiación detallados a continuación, los que estarán vigentes hasta el 31/08/2017. (*) Cuota mínima de $300.

| Plan | Cant. Máx. de Cuotas(*) | Anticipo | Interés por Financiación | Interés por mora | Ahorro interés por mora |
|---|---|---|---|---|---|
| A | 6 | - | 0% | 3% | - |
| B | 12 | 20% | 2% | 1% | XXX,XX |
| C | 18 | - | 2% | 1,5% | XXX,XX |
| D | 24 | - | 2% | 2% | XXX,XX |

Podrá formalizar el plan seleccionado, concurriendo a Ventanilla de Contribuyentes del Palacio Municipal o a los Centros de Distrito o ingresando a: **http://www.santafeciudad.gov.ar/servicios/contribuyentes/tasa_general_inmuebles.html.**
De haber efectuado pagos por los periodos detallados, usted deberá presentar los correspondientes comprobantes vía web o en ventanilla de contribuyentes del Palacio Municipal.

**DE NO REGULARIZAR LA DEUDA, SU CUENTA SERÁ ASIGNADA A GESTIÓN JUDICIAL**

**PAGUE SUS TRIBUTOS.** UN MEJOR BARRIO LO HACEMOS ENTRE TODOS.

Pago **CONTADO** | Vencimiento **XX/XX/XXXX** | Importe **$XXX.XXX,XX**

**Note:** The image on the right has been redesigned to make important parts of the letter salient. The most important part, in red, says, "If the debt is not settled, your account will be assigned to judicial management."

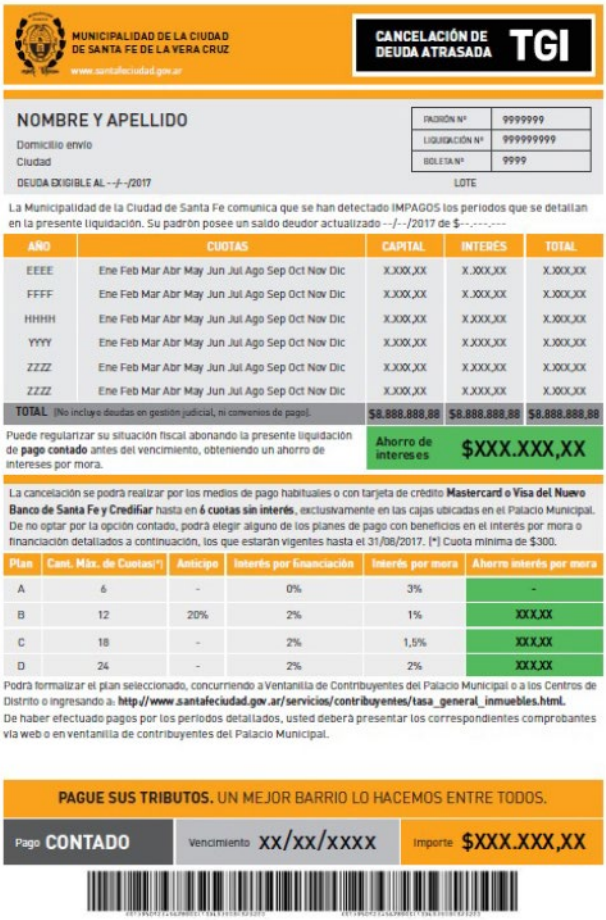
## CHALLENGES

» **The taxpayers involved in the study were highly heterogeneous. Researchers addressed this challenge by dividing the sample into strata according to compliance during the period of interest (2011–17).**

## RESULTS

**Overall, the results of the study suggested that the way in which a government communicates about a tax amnesty has a significant effect.** The redesigned notice was found to provide substantial encouragement to taxpayers to join the amnesty program (see figure 6.2.3). Among debtors reaching the five-year debt limit (in the first experiment), the redesign encouraged a 30 percent higher participation rate than the original notice. Among those with more recent debts (the second experiment), receiving either version of the redesigned letter led to a 7 percent higher rate of participation than the original.

## FIGURE 6.2.2 Redesigned Letters, Experiment 2



MUNICIPALIDAD DE LA CIUDAD DE SANTA FE DE LA VERA CRUZ
www.santafeciudad.gov.ar

CANCELACIÓN DE DEUDA ATRASADA **TGI**

NOMBRE Y APELLIDO
Domicilio envío
Ciudad
DEUDA EXIGIBLE AL --/--/2017

| | |
|---|---|
| PADRÓN Nº | 9999999 |
| LIQUIDACIÓN Nº | 999999999 |
| BOLETA Nº | 9999 |

LOTE

La Municipalidad de la Ciudad de Santa Fe comunica que se han detectado IMPAGOS los periodos que se detallan en la presente liquidación. Su padrón posee un saldo deudor actualizado --/--/2017 de $--.---,---

| AÑO | CUOTAS | CAPITAL | INTERÉS | TOTAL |
|---|---|---|---|---|
| EEEE | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| FFFF | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| HHHH | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| YYYY | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| ZZZZ | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| ZZZZ | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| TOTAL (No incluye deudas en gestión judicial, ni convenios de pago). | | $8.888.888,88 | $8.888.888,88 | $8.888.888,88 |

Puede regularizar su situación fiscal abonando la presente liquidación de **pago contado** antes del vencimiento, obteniendo un ahorro de intereses por mora.

Ahorro de intereses **$XXX.XXX,XX**

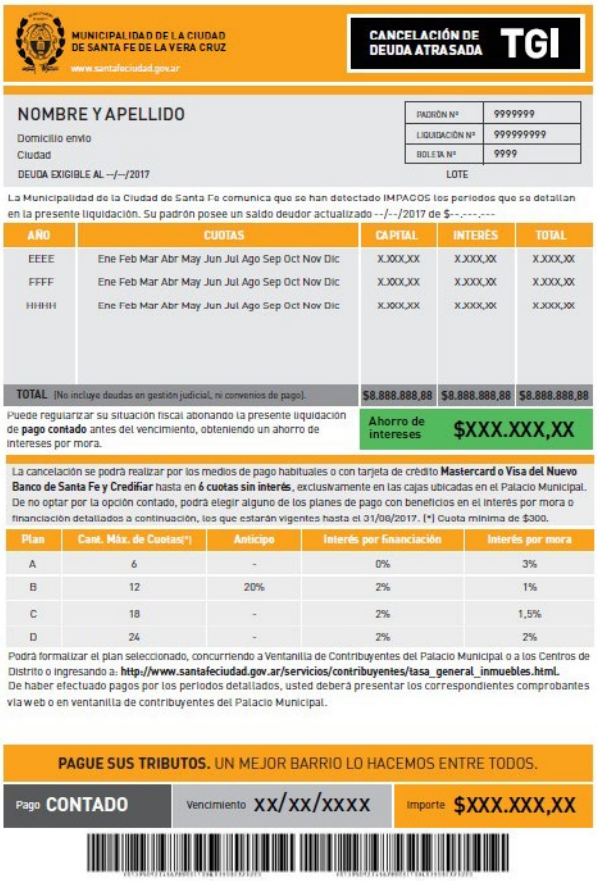
La cancelación se podrá realizar por los medios de pago habituales o con tarjeta de crédito **Mastercard o Visa del Nuevo Banco de Santa Fe y Crediñar** hasta en **6 cuotas sin interés**, exclusivamente en las cajas ubicadas en el Palacio Municipal. De no optar por la opción contado, podrá elegir alguno de los planes de pago con beneficios en el interés por mora o financiación detallados a continuación, los que estarán vigentes hasta el 31/08/2017. (*) Cuota mínima de $300.

| Plan | Cant. Máx. de Cuotas(*) | Anticipo | Interés por financiación | Interés por mora | Ahorro interés por mora |
|---|---|---|---|---|---|
| A | 6 | - | 0% | 3% | - |
| B | 12 | 20% | 2% | 1% | XXX,XX |
| C | 18 | - | 2% | 1,5% | XXX,XX |
| D | 24 | - | 2% | 2% | XXX,XX |

Podrá formalizar el plan seleccionado, concurriendo a Ventanilla de Contribuyentes del Palacio Municipal o a los Centros de Distrito o ingresando a: **http://www.santafeciudad.gov.ar/servicios/contribuyentes/tasa_general_inmuebles.html.**
De haber efectuado pagos por los periodos detallados, usted deberá presentar los correspondientes comprobantes vía web o en ventanilla de contribuyentes del Palacio Municipal.

**PAGUE SUS TRIBUTOS.** UN MEJOR BARRIO LO HACEMOS ENTRE TODOS.

Pago **CONTADO** | Vencimiento **XX/XX/XXXX** | Importe **$XXX.XXX,XX**



MUNICIPALIDAD DE LA CIUDAD DE SANTA FE DE LA VERA CRUZ
www.santafeciudad.gov.ar

CANCELACIÓN DE DEUDA ATRASADA **TGI**

NOMBRE Y APELLIDO
Domicilio envío
Ciudad
DEUDA EXIGIBLE AL --/--/2017

| | |
|---|---|
| PADRÓN Nº | 9999999 |
| LIQUIDACIÓN Nº | 999999999 |
| BOLETA Nº | 9999 |

LOTE

La Municipalidad de la Ciudad de Santa Fe comunica que se han detectado IMPAGOS los periodos que se detallan en la presente liquidación. Su padrón posee un saldo deudor actualizado --/--/2017 de $--.---,---

| AÑO | CUOTAS | CAPITAL | INTERÉS | TOTAL |
|---|---|---|---|---|
| EEEE | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| FFFF | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| HHHH | Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic | X.XXX,XX | X.XXX,XX | X.XXX,XX |
| TOTAL (No incluye deudas en gestión judicial, ni convenios de pago). | | $8.888.888,88 | $8.888.888,88 | $8.888.888,88 |

Puede regularizar su situación fiscal abonando la presente liquidación de **pago contado** antes del vencimiento, obteniendo un ahorro de intereses por mora.

Ahorro de intereses **$XXX.XXX,XX**

La cancelación se podrá realizar por los medios de pago habituales o con tarjeta de crédito **Mastercard o Visa del Nuevo Banco de Santa Fe y Crediñar** hasta en **6 cuotas sin interés**, exclusivamente en las cajas ubicadas en el Palacio Municipal. De no optar por la opción contado, podrá elegir alguno de los planes de pago con beneficios en el interés por mora o financiación detallados a continuación, los que estarán vigentes hasta el 31/08/2017. (*) Cuota mínima de $300.

| Plan | Cant. Máx. de Cuotas(*) | Anticipo | Interés por financiación | Interés por mora |
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| C | 18 | - | 2% | 1,5% |
| D | 24 | - | 2% | 2% |

Podrá formalizar el plan seleccionado, concurriendo a Ventanilla de Contribuyentes del Palacio Municipal o a los Centros de Distrito o ingresando a: **http://www.santafeciudad.gov.ar/servicios/contribuyentes/tasa_general_inmuebles.html.**
De haber efectuado pagos por los periodos detallados, usted deberá presentar los correspondientes comprobantes vía web o en ventanilla de contribuyentes del Palacio Municipal.

**PAGUE SUS TRIBUTOS.** UN MEJOR BARRIO LO HACEMOS ENTRE TODOS.

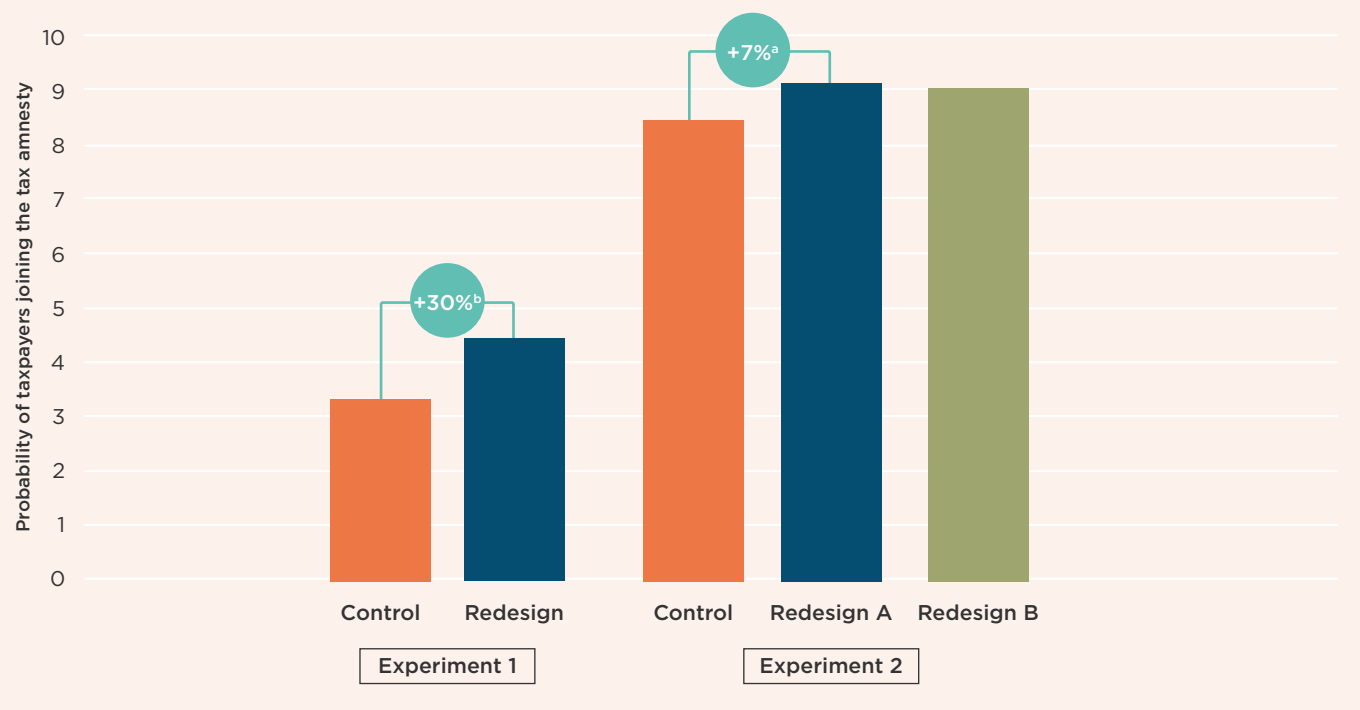
Pago **CONTADO** | Vencimiento **XX/XX/XXXX** | Importe **$XXX.XXX,XX**

**Note:** These designs differ in terms of the framing of the second part of the letter, which explains different repayment plans. The letter on the left shows only the accumulated interest of each plan, and the one on the right includes the interest savings part of that plan.

Furthermore, the evidence indicated that taxpayers who received the redesigned tax amnesty notices also paid significantly higher amounts than those who received the old form—8 percent higher than the control group in the first experiment and approximately 6 percent higher in the second. The stronger results for the redesigned letter in the first experiment were consistent with findings in related tax literature that the threat of judicial actions can effectively increase tax compliance.

The study also revealed, however, that tax amnesties have a negative spillover effect. An analysis of the behavior of the neighbors of taxpayers who received the intervention letters found that having more detailed information about the existence of an amnesty program and its benefits may actually discourage prompt payments among previously compliant taxpayers in the area.

## FIGURE 6.2.3 Probability of Taxpayers Joining the Tax Amnesty




[a] Statistical significance level of 10%. [b] Statistical significance level of 1%.

## POLICY IMPLICATIONS

» **The results of this study suggest that reducing taxpayers' cognitive costs of processing information can increase the collection of current due taxes, a measure that can be undertaken without making substantial investments.**

» In line with the nonexperimental literature, however, it also found that amnesties have a detrimental effect on the compliance of previously compliant taxpayers, with a negative spillover effect generating negative incentives for tax compliance in the overall population. In light of this finding, tax amnesties should be used sparingly, in the context of fundamental reforms that provide a rationale for opening an amnesty, and only if the governments that use them can ensure that the consequences of not meeting commitments are real.

# 6.3. How Best to Remind Taxpayers of Their Obligations

**COUNTRY** Colombia

**YEAR** 2013

**TEAM** Daniel Ortega and Carlos Scartascini

## CONTEXT

**Interest is growing among governments in explaining what motivates individuals to pay their taxes in full and on time, and what is the best way to deal with tax delinquency.** While many studies have evaluated the comparative effect of sending deterrence and moral suasion messages to taxpayers, an experiment conducted with the national tax agency of Colombia (Dirección de Impuestos y Aduanas Nacionales, or DIAN) analyzed how different methods of delivering the same message might affect tax compliance. The agency contacted taxpayers with outstanding tax liabilities through in-person inspector visits, as well as by using cheaper methods, such as email and letter. Since the tax inspectors' visits were expensive, they signaled the severity of the consequences of noncompliance.

## THE PROJECT

**Once every few months, DIAN contacts taxpayers with outstanding liabilities (declared but unpaid taxes) by mail and email, sometimes also making in-person visits.** For this study, the agency agreed to randomize the delivery mechanism of such messages to test their comparative efficiency.

The messages were sent out in the form of both a physical letter and an email, which were identical. They included moral suasion and information on the pending payment, as well as an explanation of the consequences of sustained tax delinquency. More than 20,000 taxpayers were included in the experiment.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Availability heuristic
- Mistrust
- Optimism bias
- Present bias
- Social norms

### Behavioral Tools

- Moral suasion
- Signaling

See definitions

## BEHAVIORAL BARRIERS

**Availability heuristic:** Individuals tend to estimate the probability of a future event based on how readily representative examples of such an event come to mind—for instance, punitive actions taken against delinquent taxpayers in the past.

**Mistrust:** In response to corruption scandals, citizens may mistrust their representatives in the government and may use their mistrust to justify tax evasion.

**Optimism bias:** Taxpayers may underestimate the possibility that the government will detect their tax delinquency.

**Present bias:** People may choose not to pay taxes, using that money to meet more urgent needs in the present and ignoring the consequences of this action in the future.

**Social norms:** In the context of the study, the acceptable behavior was to pay taxes when they were due to the government.

## BEHAVIORAL TOOLS

**Moral suasion:** Taxpayers are reminded, for example, that they are part of a group and have a responsibility to pay their taxes for the benefit of that group.

**Signaling:** Understanding of the severity of the consequences of tax evasion is greater when a government worker visits the taxpayer than when the same information is received by letter or by email.

## INTERVENTION DESIGN

**For this study, the agency randomly assigned a subset of taxpayers with overdue tax payments to four main groups.** One group was to be contacted via email and the second by physical letter. Members of the third group were to be visited by a tax inspector. The fourth group was left as a control group. The population of this experiment included all taxpayers with unpaid liabilities from their income, wealth, or sales taxes for the years 2011–13.

The population that remained eligible consisted of 20,818 taxpayers. Among them, 5,000 were assigned to standard mail, 5,000 to email, and 4,042 to personal visits; the remaining 6,776 taxpayers comprised the control group. The randomization was performed in six blocks according to the size of the debt and whether it was recent or not.

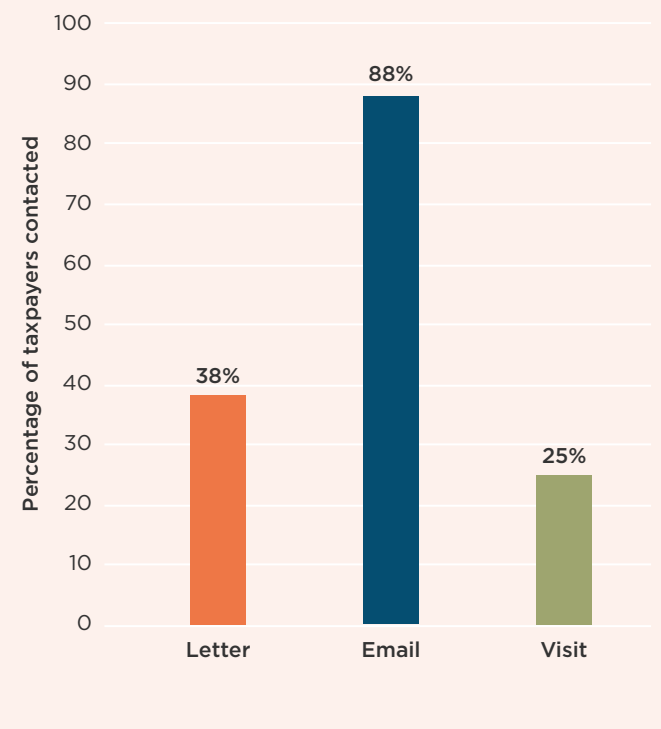
The message included in both the physical letter and the email was exactly the same. It stated the account balance on July 31, 2013, the type of tax, and the year or month it was supposed to have been paid. It also included information on methods of payment and the cost the taxpayer was incurring by not paying (interest and penalties, potential legal action, and possible effect on credit history). Finally, it provided a moral suasion message ("Colombia, a commitment we can't evade"). The message concluded with the contact information for a tax agency authority. In this way, although the content of the message was not the subject of the evaluation, careful steps were taken to include all the components that had been identified in the literature as crucial to increasing compliance.

During the in-person visits, inspectors followed a protocol aligned with the written communications: the taxpayer was informed about his or her standing tax delinquencies and urged to pay. Inspectors mentioned the penalties the taxpayer was incurring and the possibility of further legal actions in case of noncompliance. The visit was closed with the verbal delivery of the moral suasion message.

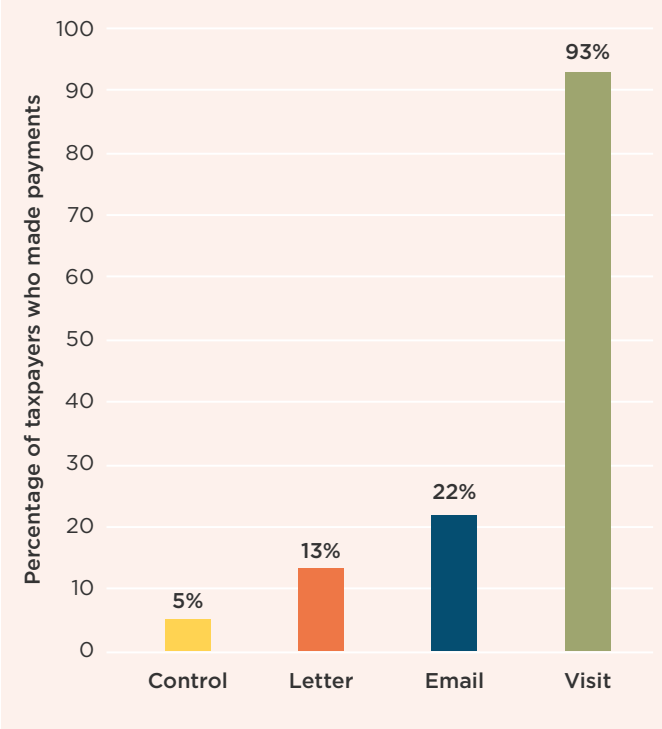
## CHALLENGES

- **One challenge presented by the study was the limited time available from the personnel involved and out-of-date contact information.** This caused difficulties to the agency in delivering its messages to subjects across the different treatment groups, which translated to fewer subjects reached per treatment, as shown in figure 6.3.1.
- It should also be noted that, although the relative difference in marginal cost between an inspector's visit and sending a letter is generally high (about 16 times), in Colombia, the absolute cost of an inspector's visit is relatively low. This might not be the case in other contexts.

### FIGURE 6.3.1 Share of Taxpayers Reached by Assigned Treatment




### FIGURE 6.3.2 Share of Taxpayers Who Made Payments




## RESULTS

**The experiment found large and highly significant effects, as well as sizable differences across delivery methods.** Analysis of each communication channel revealed that the payment of outstanding debt was about 8 percentage points higher among those who received a letter than for the control group (figure 6.3.2). For recipients of emails, payments were 17 percentage points higher, and for those who received in-person visits, 88 percentage points. Thus, almost every person who received a visit from a tax inspector made some kind of payment.

These results suggest that a visit from a tax inspector is more effective than a physical letter or an email, an outcome that is conditional on delivery. Email, however, tends to reach its target recipients more often than regular mail.

## POLICY IMPLICATIONS

» **The results of this intervention suggest that informational taxpayer campaigns on pending liabilities are good mechanisms for increasing compliance.** While sending tax inspectors for in-person visits is significantly more expensive than sending letters or emails, it is a more effective way of signaling to taxpayers the severity and the consequences of noncompliance. This is likely the reason those who received visits also cancelled other pending obligations.

» The research also demonstrated the importance to running interventions like this one of maintaining a clean, up-to-date database of taxpayers that includes physical and electronic addresses. Having valid addresses for more citizens could have doubled tax collection in this intervention.

# 6.4. Can Rewards Improve Tax Compliance?

**COUNTRY** Argentina

**YEAR** 2009

**TEAM** Paul Carrillo, Edgar Castro, and Carlos Scartascini

## CONTEXT

**A pivotal challenge for policymakers has been establishing adequate incentives to encourage good citizenship, in particular incentives to motivate tax compliance.** While literature in behavioral and tax compliance suggests a reward system can be useful, this type of intervention can bring undesired results, and even when they seem successful, the impacts are short-lived. As rewards increasingly are used as an instrument by policymakers, it is important to find a mechanism that does not negatively affect intrinsic motivation, is long lasting in its effects, and has positive spillover effects on third parties. A behavioral economics approach to the design of such incentives can result in better and longer lasting outcomes.

## THE PROJECT

**A policy innovation introduced in 2009 by the municipality of Santa Fe, Argentina, allowed researchers to evaluate a mechanism intended to improve tax compliance.** The project was based on a lottery organized by the municipal government in which winners would receive new or renovated public sidewalks in front of their homes. Citizens were eligible to participate in the lottery only if they did not have any outstanding debts on their property taxes at an established future date. This reward scheme differed from a traditional cash transfer lottery in that it incorporated elements that could mitigate the crowding-out effect. The lottery provided a financial motive to participate in the form of a public good that, as opposed to a cash transfer, would benefit not only the lottery winner but also the neighborhood at large. This meant other property owners would be made aware of the benefits that come with paying their property taxes, not only for them but for their neighbors, which would foster reciprocity and influence other peers to do the same. Furthermore, the visibility of this public good would convey a moral incentive to engage in the desired action, since a new sidewalk in front of a neighbor's house is a signal of good citizenship.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Present bias
- Social norms

### Behavioral Tools

- Lottery
- Signaling

See definitions

## BEHAVIORAL BARRIERS

**Present bias:** People may value present gratification more than greater benefits in the future—for example, they may avoid paying taxes even when presented with the possibility of winning a lottery.

**Social norms:** In the context of the study, the perceived acceptable behavior was to pay taxes when they were due to the government.

## BEHAVIORAL TOOLS

**Lottery:** The "Good Taxpayer Award" relies on a behavioral bias that leads people to overestimate the probability of winning a reward.

**Signaling:** By providing sidewalks to taxpayers, the government conveyed credible information about its responsibility and willingness to provide useful goods to taxpayers.

## INTERVENTION DESIGN

**In an effort to reward good taxpayers and improve property tax compliance, the municipal government of Santa Fe organized a lottery in January 2009 called the "Good Taxpayer Award," in which winners would receive new or renovated sidewalks in front of their homes.**

The lottery rules were straightforward, establishing that owners of residential units, commercial properties, and/or vacant lots were eligible to participate as long as they had met their 2008 property tax liabilities by January 12, 2009. Each eligible property received a unique number. The lottery took place on February 27, 2009, when 400 properties were randomly chosen from a total of 72,742 participating properties. Winners were contacted by city officials, and the results were published in local newspapers.

## CHALLENGES

- **Among the challenges presented by this intervention were the costs associated with the construction and renovation of sidewalks.** The renovations included the removal of any old sidewalk already present, sewerage adjustments, and the provision of convenient features, such as a trash receptacle that would not be accessible to animals and a section dedicated to plants and trees. The cost of all these renovations amounted to approximately Arg$5,250 (US$1,553) per sidewalk, which was equivalent to 14.4 times the average yearly property tax in 2008 (Arg$363.50, or US$107.50) and 9.7 times the average yearly tax payment in 2009 (Arg$539.50, or US$159.6).[4] Given the cost of the intervention, the impact needed to be high to offset it.

[4] The reference exchange rate for Arg$ to US$ was 3.38, as established by the Central Bank of the Republic of Argentina for the end of 2008 when the intervention was designed. This information can be found at http://www.bcra.gov.ar/PublicacionesEstadisticas/Evolucion_moneda_2.asp.

## RESULTS

**To evaluate the impact of the reward mechanism used in this intervention, we compared the tax compliance of winners and nonwinners during the three years, approximately, after the lottery took place (February 2009–December 2011).** The results indicate that receiving a reward in the form of a public good had a substantial positive and persistent effect on the lottery winners, increasing the likelihood of their meeting tax obligations in subsequent years. Winners were 3.1 percentage points more likely than nonwinners to comply with their tax obligations on time; in addition, they were more likely to pay within three and six months past the due date by 2.3 and 2.1 percentage points, respectively. Lottery winners were also 3 percentage points more likely than their peers to continue paying their taxes on time over the next few years.

Given that not all the sidewalks were constructed at the same time or immediately after the lottery winners were announced, we can observe how much of the effect came from the public recognition and how much from the construction of the sidewalk. In the cases where the winners had not yet received their sidewalks, the effects of public recognition faded away after a few months. A completed sidewalk renovation increased payment rates by 7.1 percentage points, and the likelihood that the tax obligations were met within three to six months of the due date increased by 5.5 and 4.8 percentage points, respectively; again, this effect persisted over time. The result for the effects both of winning the lottery and of building the sidewalk are presented in figure 6.4.1.

## POLICY IMPLICATIONS

» **This study provides evidence that behavioral tools can improve features of reward-based interventions, influencing citizens' decision making and promoting good citizenship.** In this case, a reward intervention designed to take behavioral barriers into consideration was successful in enhancing tax compliance. The use of durable, high-visibility rewards in such interventions may help to crowd in intrinsic motivation and achieve positive spillover effects on third parties.

### FIGURE 6.4.1 Effect of Intervention on Share of Payments Made


[a] Statistical significance level of 5%. [b] Statistical significance level of 1%.

# 6.5. Testing Fiscal Exchange Appeals

**COUNTRY** Argentina

**YEAR** 2019

**TEAM** Huáscar Eguino and Simeon Schächtele

## CONTEXT

**Tax noncompliance hinders the financing of public services for citizens. Enforcement, a crucial tool for any tax administration, has its limits—technical, legal, moral, and political.** In the face of the present severe economic crisis in Argentina, the local government made a priority of persuading citizens to comply voluntarily with meeting their tax obligations. This decision coincided with a growing interest on the part of officials and researchers alike in explaining what motivates individuals to pay their taxes and how a culture of compliance can be created by cost-effective complements to enforcement actions.

The starting point for the project was the absence from tax bills of a persuasive and salient explanation of why and how to pay taxes. If mere wording differences in the presentation of the tax bill could increase tax revenues during an economic crisis, tax authorities might be able to increase revenues by offering the prospect of better public services and improving communication.

## THE PROJECT

**The project sought to provide the Municipality of Mendoza, Argentina, with tools and a methodology to test and implement administrative changes to improve tax compliance.** The municipality and the IDB team redesigned the tax bills for the local property tax (*tasas*). In line with the municipality's priority to make interventions amicable, the redesign centered on simplifying information and appealing to the fiscal exchange inherent in taxation—that is, on making salient the idea that, with tax monies, the administration would be able to provide taxpayers with valued public services. The experimental treatments (tax bills) were delivered in November 2019.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Limited attention
- Mistrust
- Present bias

### Behavioral Tools

- Reciprocity
- Simplification


See definitions

## BEHAVIORAL BARRIERS

**Limited attention:** Taxpayers who in principle are willing to consider the social benefits of taxation in their compliance decisions may fail to do so under standard circumstances—that is, without an explicit reminder of these benefits.

**Mistrust:** Taxpayers who do not trust a government administration may use this as a justification for tax evasion.

**Present bias:** People may value present gratification more than greater benefits in the future—for example, they may avoid paying taxes even when presented with possibility of winning a lottery.

## BEHAVIORAL TOOLS

**Reciprocity:** Showing taxpayers how their money is invested in the public good might give them satisfaction and incline them to pay their taxes so they can continue receiving public services.

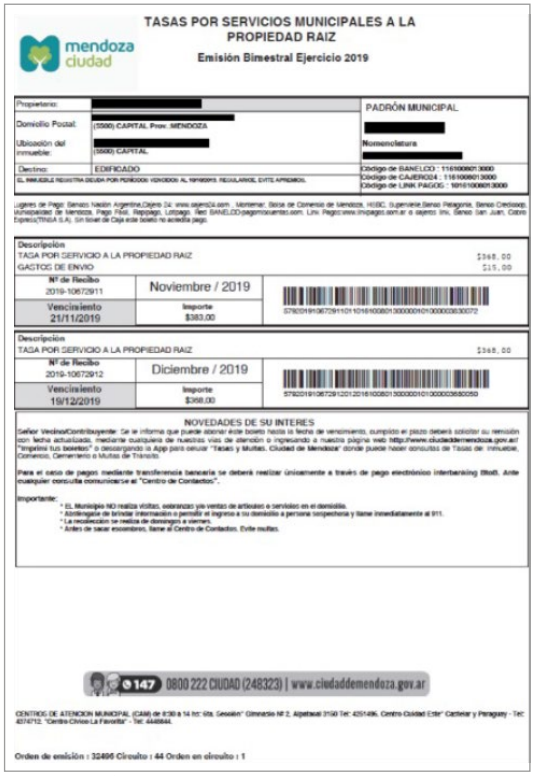
**Simplification:** Because their attention may be limited, taxpayers may not go out of their way to look for information about where to pay their taxes; thus, simplifying the process and adding information to their tax bills may be beneficial.

## INTERVENTION DESIGN

**The project tested three different designs of a municipal property tax bill. At the municipality's request, researchers randomized the treatments to small geographical zones.** For a clean analysis, they considered 22,119 taxpayers in 1,593 zones that had not also participated in another intervention. Municipal agents delivered the tax bills between November 4 and November 11, 2019, and recorded the in-person deliveries. The bills featured two due dates (November 21 and December 19, 2019). The data used in the analysis included payments through January 9, 2020.

Figure 6.5.1 shows the control bill as previously designed (T1), a redesigned bill without a public service advertisement but with information on ways to pay (T2), and a redesigned bill with a public service advertisement (T3). The key element of fiscal exchange (T3) is shown in figure 6.5.2. The theory behind these changes proposed that the new, simplified bills, in color, would (1) capture the taxpayer's attention; (2) signal that the tax administration was giving renewed attention to the collection of this tax; (3) indicate more saliently where to pay the tax; and (4) enhance the taxpayer's perception of a fiscal contract, in which valued public services are provided in return for tax payments. Each of these four elements might lead to increased compliance. A comparison of T1 and T2 would isolate the effect of the fiscal exchange appeal, while the control (T1) provided a benchmark for the overall effects of the information on where to pay.

## FIGURE 6.5.1 Tax Bill Control and Redesigns




Control: Old design (T1)


Redesign: Information on where to pay (“*¿Dónde pago*?”) is more salient (T2)


Redesign with information on where to pay (“¿Dónde pago?”) and public service advertisement (T3)

## FIGURE 6.5.2 Public Service Advertising (Key Element of Treatment Group T3)


**Note:** The translation reads from top to bottom: "Mendoza City. Let's go outside! Let's recover squares and parks. Exercise equipment and playgrounds for children. Your taxes are coming back to you."

## CHALLENGES

» **The experiment presented several challenges. First, it held a potential for confusion among neighbors receiving different-looking tax bills.** To alleviate it and to facilitate logistics, treatments were randomized to small geographical zones. To avoid contamination from another intervention, tax debtors affected by it were excluded from the analysis. And, finally, printing in color represented an additional cost compared to that of the standard black-and-white tax bills.

## RESULTS

**Figure 6.5.3 presents an overview of results, plotting the percentage of taxpayers in each treatment group who made payments on their November–December 2019 municipal property tax bills.**

For taxpayers not in arrears, the fiscal exchange bill (T2) increased payment rates from about 87 percent to more than 90 percent, if the bill was delivered in person (see figure 6.5.3, panel a). For taxpayers in arrears, payment rates increased from 38 percent with the old design to 50 percent with the fiscal exchange appeal, if the bill was delivered in person (figure 6.5.3, panel b). The payment rate for the new design without the fiscal exchange appeal was 41 percent in this group. Among all taxpayers—that is, in results not conditioned on in-person delivery—the treatment differences were qualitatively similar, albeit somewhat smaller (figure 6.5.3, panel c).

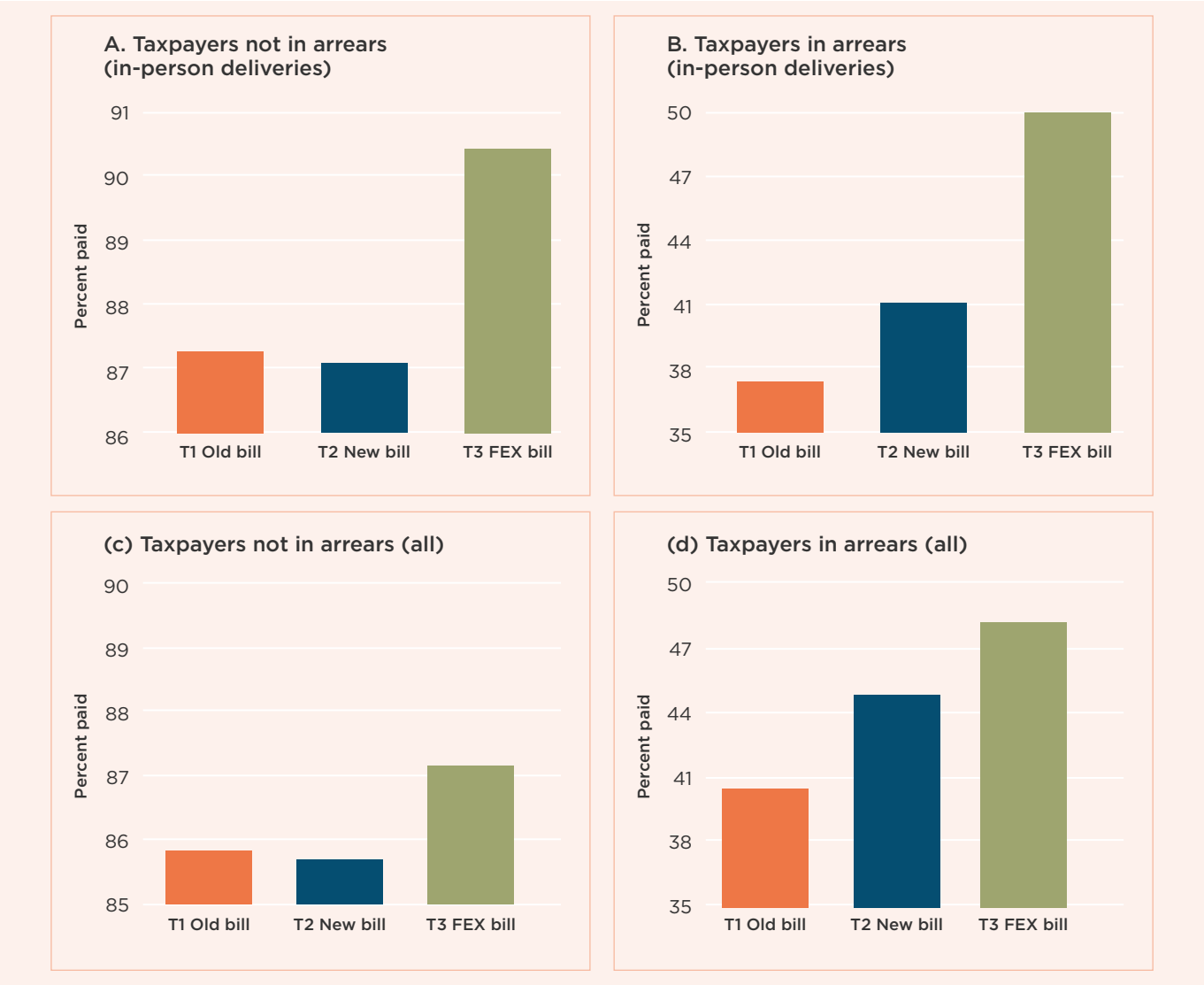
In addition to their effects on payment of the tax bill, the new bills (T2 and T3) increased the share of tax delinquents who paid arrears, from about 17 percent to about 22 percent (figure 6.5.3, panel d).

## POLICY IMPLICATIONS

» **Given the unfavorable context of an economic crisis and mixed prior findings in the literature, the small changes in communications had surprisingly positive effects on noncompliant taxpayers, suggesting similar interventions might increase tax compliance in a larger range of circumstances than previously thought.** Practitioners should consider that the effects likely diminish over time.

» The fiscal exchange appeal had a strong visual element, and it highlighted how public services benefit children—two nonstandard elements that may have contributed to the positive effect. Furthermore, the municipal setting may have helped because taxpayers may have seen and used the specific public goods advertised. Policymakers may want to tailor the content and delivery of the messages to local contexts.

## FIGURE 6.5.3 Treatment Effects as a Proportion of Paying Tax Bill




**Note:** T1 refers to the control group (old bill design) and T2 the redesigned tax bill. T3 is the redesigned tax bill that includes a public service advertisement ("FEX" stands for fiscal exchange).

# 6.6. The Role of Credit and Credibility in Tax Compliance

**COUNTRY** Argentina

**YEAR** 2019

**TEAM** Juan Martin Fernandez, Nina Rapoport, Carlos Scartascini, and Simeon Schächtele

## CONTEXT

**Tax noncompliance hinders the financing of public services for citizens. Amid a national economic crisis, an Argentinian municipality of 40,000 inhabitants tested two approaches to addressing nonpayment by local business taxpayers.** One was sending a redesigned tax dunning letter, inspired by the behavioral literature. The other involved adding a novel deterrence element: informing businesses that continued nonpayment might reduce their access to credit, as the municipality would forward nonpayment information to a major credit rating bureau.

## THE PROJECT

**The aim of the project was to evaluate changes in the collection of local business tax arrears implemented by an Argentinian municipality in the northwestern province of Corrientes in 2019.** To this end, the IDB collaborated with the municipality's public finance team. The IDB team randomized three different tax dunning letters, which were delivered by municipal agents to the businesses in arrears in June and again in September. The municipality subsequently informed the credit bureau about the delinquency status of 50 business taxpayers. The local team conducted a post-intervention survey between October and December.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Limited attention
- Mistrust
- Present bias
- Salience

### Behavioral Tools

- Moral suasion
- Planning tools
- Signaling

See definitions

## BEHAVIORAL BARRIERS

**Limited attention:** The attention of taxpayers to information received about tax amnesties may be limited by several factors, including a complex explanation of the process to follow.

**Mistrust:** Taxpayers who do not trust a government administration may use this as a justification for tax evasion.

**Salience:** The lack of color and visual information in communications to taxpayers may be an important barrier.

## BEHAVIORAL TOOLS

**Moral suasion:** In this case, the new dunning letters provided examples of public investments financed with tax revenues.

**Planning tools:** Prompts may encourage people to write down relevant information, such as instructions for making appointments with the tax administration.

## INTERVENTION DESIGN

**The project tested three different dunning letters regarding municipal tax payment:** the existing dunning letter (T1), a redesigned letter inspired by the behavioral literature (T2), and a second version of T2 with an additional element—deterrence—in the form of a warning to tax delinquents that their failure to pay may be reported to a credit bureau, limiting their access to credit (T3).

Researchers randomized the treatments to business taxpayers within five strata defined by combinations of debt amount and recent payment activity. In addition, a separate stratum was established for families that owned multiple businesses; to minimize treatment contamination in this case, the same letter design was delivered to family members. The sample consisted of 1,238 business tax delinquents.

Because of systematic differences in the delivery dates of the old versus the new letters, the study focused on comparing the two new redesigns. The unique difference between T2 and T3 (the deterrence element shown in figure 6.6.1) facilitated interpretation, unlike the multiple differences between the old and new designs. The theory of change in this case was that the threat of losing access to credit would prompt some businesses to repay part of their tax debts.

## CHALLENGES

- **The study presented four main challenges.** First, the population under study comprised those local taxpayers with the most extensive history of arrears, who were assumed to be least likely to make payments in response to an intervention.
- Second, the tax registry was badly outdated; of the sample of 1,238 business tax delinquents, about half were no longer active. The smaller sample reduced the already limited statistical power of the analysis.
- Third, systematic differences in the delivery dates of old versus new letters undermined identification of treatment effects with respect to the status quo (T1).
- Finally, as in many surveys, only a fraction of the sample participated (in this one, a third).

### FIGURE 6.6.1 Deterrence: How T3 Differed from T2

**We are sending information on delinquent debtors to one of the main financial information centers in the country. This can limit your access to credit, including credit cards, installment purchases, and mobile phone plans. Regularize your debt in the next 10 business days to avoid negative consequences to your access to credit.**

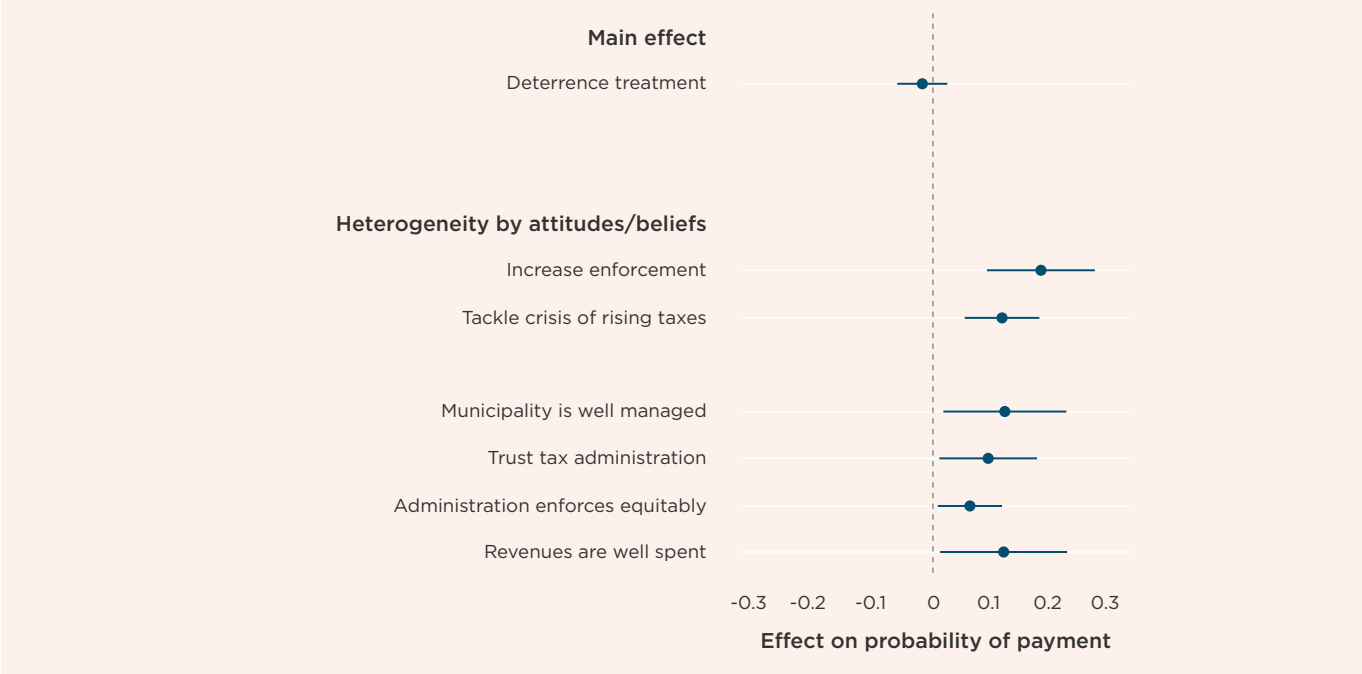
## RESULTS

**Figure 6.6.2 presents an overview of preliminary results, comparing the effects on the outcome (whether recipients made a debt repayment within 60 days of receipt) of T2 (the new design) and T3 (the new design plus deterrence [threat] language).**

The top element in the figure ("main effect") indicates repayment of tax debts was not significantly more or less likely in T2 versus T3. Was this because taxpayers did not care about the credit rating threatened in T3? Or because they doubted the local authorities would follow through? Data from the post-intervention survey provided insights: although a majority of respondents classified the credit rating as at least somewhat important, most believed tax noncompliance had no consequences whatsoever. These assessments did not differ significantly between T2 and T3. Also, across all treatments, about 90 percent of those surveyed indicated that many, if not most, taxpayers were waiting for an amnesty to pay their tax debts. Only 10 percent of taxpayers in T3 believed the municipality reported tax delinquents to a credit bureau. In other words, credibility regarding the municipality's enforcement ability seemed low.

The heterogeneous effects of T3 regarding attitudes and beliefs were suggestive. For those taxpayers expressing a preference for stronger enforcement or increased taxes to tackle revenue shortcomings during a crisis, the deterrence treatment had significantly more positive effects on payment. The same held true for taxpayers with a positive assessment of municipal management and how revenues are spent and with trust in the local tax authorities. These heterogeneities suggest those more supportive of enforcement, and with a more positive view of the government administration, were more likely to repay debt in response to the deterrence message, despite low overall credibility.

### FIGURE 6.6.2 Main and Heterogeneous Effects of Deterrence (T3)



## POLICY IMPLICATIONS

- **Although an overall effect of the threat of informing a credit bureau about delinquency status was lacking and credibility was low, taxpayers with a more positive opinion of the local administration and more supportive of enforcement appeared more inclined to make a debt payment in response to T3. Most taxpayers, however, seemed to prefer waiting for an amnesty to pay their debts.**
- These results suggest, first, that the effectiveness of enforcement actions hinges on their credibility; second, that a positive assessment of government performance and enforcement may complement each other in prompting compliance; and, third, that improving tax administration fundamentals, such as the tax registry, may be a priority for obtaining payments from tax delinquents.

# 6.7. Nudging Taxpayer Registration

**COUNTRY** Brazil

**YEAR** 2019

**TEAM** Huáscar Eguino, Soraya Roman, and Simeon Schächtele

## CONTEXT

**Governments in Latin America raise comparatively little revenue from property taxation, partly because they lack adequate registry information.** A major obstacle for governments to creating and maintaining taxpayer registries is cost. Even when the tax administration of Fortaleza, Brazil, overcame the barrier of cost and created an online taxpayer registry and service platform for citizens, however, few taxpayers used it. The project focused on behaviorally inspired low-cost strategies to update registry information through the online system.

## THE PROJECT

**The aim of the project was to update the online taxpayer registry and service platform of the tax administration of Fortaleza, Brazil, by increasing property taxpayers' rate of registration.** In collaboration with the IDB, the tax administration of Fortaleza designed two different email communications and agreed to send them randomly to property taxpayers in October 2019. In November, it invited the experimental participants to fill out an online survey to provide insights into the mechanisms behind the registration results.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Hassle factors
- Scarcity mindset
- Status quo

### Behavioral Tools

- Lottery
- Moral suasion

See definitions

## BEHAVIORAL BARRIERS

**Hassle factors:** Joining the online registry required uploading documents, such as the national ID, that were verified by municipal agents.

**Scarcity mindset:** Taxpayers' attention to information received about taxes could be limited by several factors, including the low cognitive capacity people had left for it after dealing with many other concerns during the day.

**Status quo:** Asking people to change the way they pay taxes can be perceived as too great an emotional burden.

## BEHAVIORAL TOOLS

**Lottery:** Prospect theory suggests that probabilities of winning something are perceived as larger than they are; thus, adding a lottery as a reward can attract taxpayers to pay their bills so they can enter the lottery.

**Moral suasion:** Receiving an email from the government can pressure tax delinquents and remind them of their responsibility as citizens to pay their bills.

## INTERVENTION DESIGN

**The tax administration of Fortaleza designed two email communications to prompt taxpayers to join the online taxpayer registry.** It randomized the approximately 163,000 property taxpayers for whom it had email addresses into two treatment groups and a control group: status quo (T1), request email (T2), and request + reward email (T3).

**The first group (T1)** was a holdout group that did not receive an email but might have learned about the online registry through other means.

**The second group received the request email (T2, see figure 6.7.1, panel a)** which informed its recipients about the online tax registry and asked taxpayers to join. The ways in which this email could be expected to increase registration included filling an information gap and suggesting an obligation to register.

**The third group received the request + reward email (T3, see figure 6.7.1, panel b)** which repeated the text of T2 but also offered a lottery ticket for successful registration. This incentive was intended as a means of overcoming inertia. A graphical display of coins drew attention to the possibility of monetary rewards, and the email mentioned the number and range of prizes, including a first prize of approximately US$7,200. The comparison with T2 isolated the effects of these reward advertisement elements, providing insight into whether the added incentive would be cost effective.

Both emails mentioned that registration had to be done by October 31, 2019, which marked the end of the data collection period for the registration data.

## FIGURE 6.7.1 Emails Sent to the Treatment Group

A. Request email (treatment T2)


**Note:** The text in this figure translates as follows: "Make or update your registration! The Municipal Finance Department of Fortaleza is carrying out a cadastral updating process. We ask you to make or update your registration in the system by 10/31/2019. Registration must be done through the following link. More information on the website."

B. Request + reward email (treatment T3)


**Note:** The text in this figure translates as follows: "Do not miss the opportunity to win R$30,000 in prizes by making or updating your registration. The Municipal Finance Department of Fortaleza is carrying out a cadastral update process. We ask you to make or update your registration in the system, by 10/31/2019. Registration must be done through the folllowing link. By making this simple update, you will be competing in the drawing of the Nota Fortaleza Program, with 114 prizes ranging from R$500 to R$30,000. More information on the website. The update is only valid after approval."

## CHALLENGES

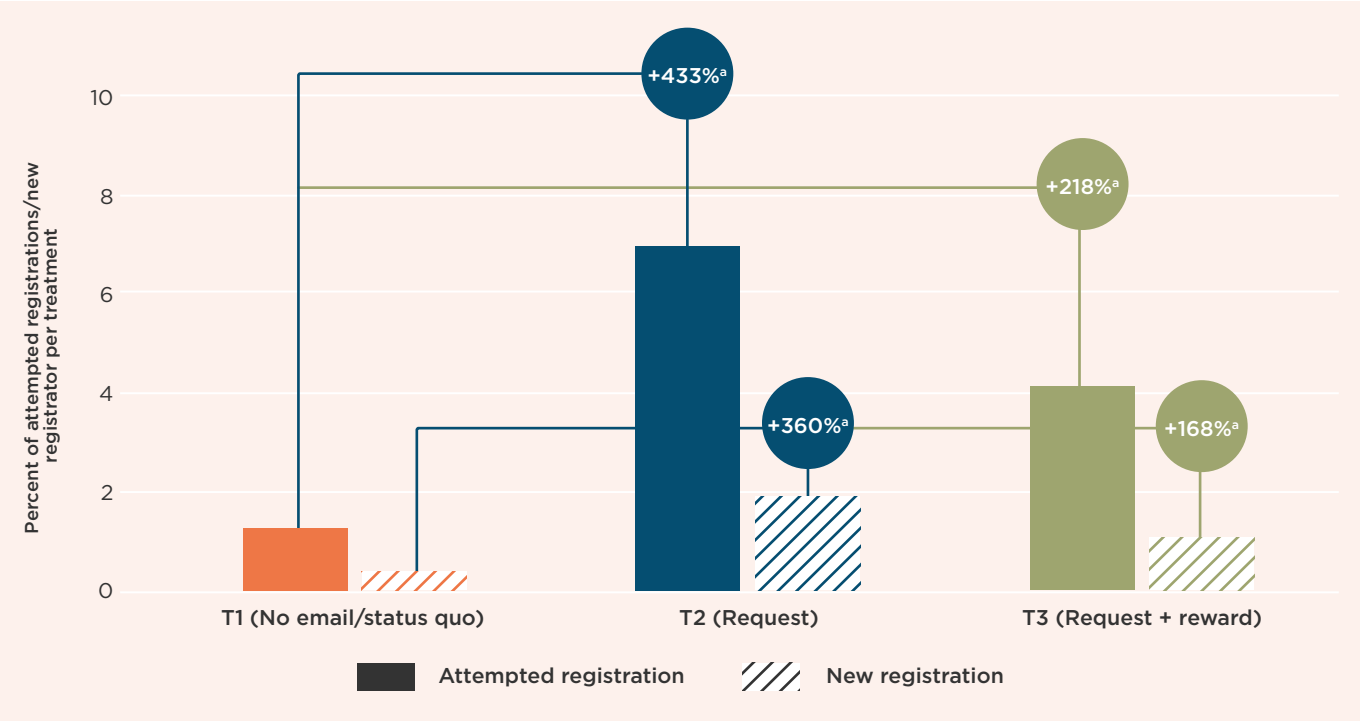
» **The late identification of a data error cost time and required additional labor to fix. The team eventually detected and confirmed that a technical error in the processing of opened emails was the source of the anomaly.** The information on opened emails thus had to be discarded, forestalling use of an instrumental variable strategy to estimate the effects of opening the emails.

## RESULTS

**Figure 6.7.2 provides an overview of the registration results, plotting the percentage of taxpayers who attempted to register (solid bars) and those who registered successfully (patterned bars) in each treatment group.** As the figure shows, both emails significantly increased registration relative to the status quo, on the order of 160 to 450 percent. The effects were largest for compliant taxpayers, men, and middle-aged taxpayers and for those with intermediate property values. The lottery incentive, on the other hand, backfired: registration rates in T3 were significantly lower than in T2.

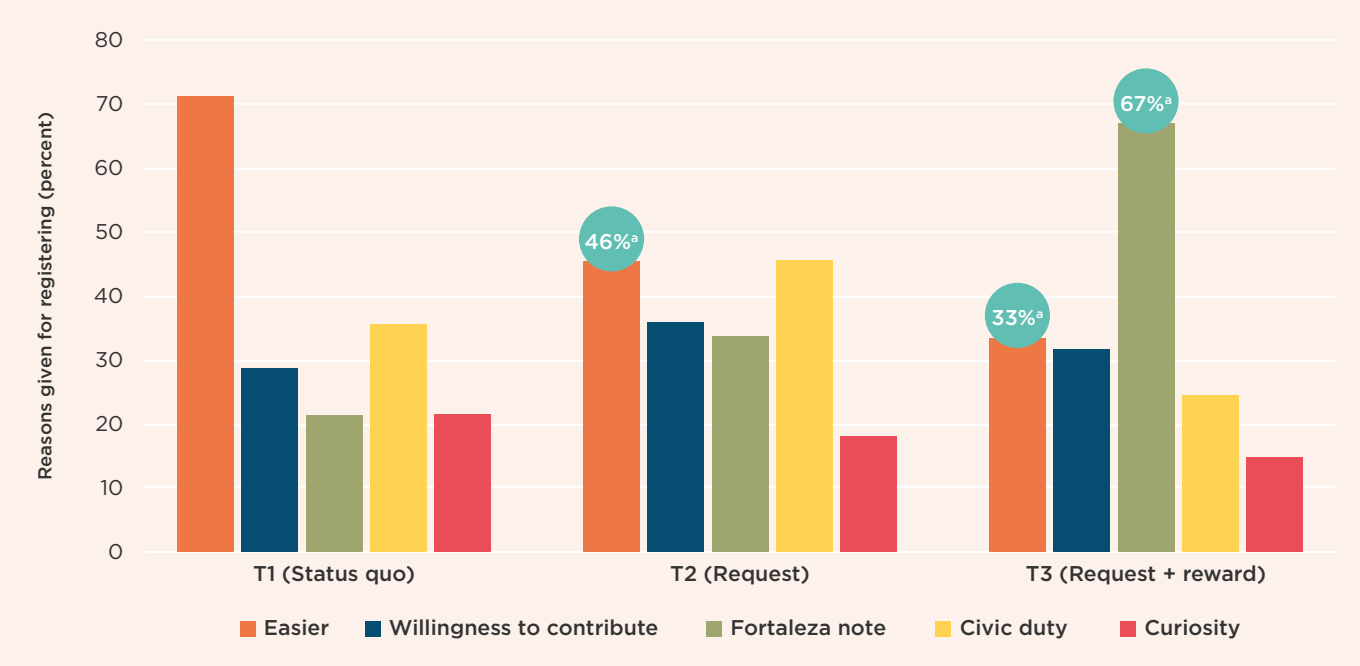
The post-experimental survey responses suggested both emails successfully increased awareness of the tax registry. The responses were also consistent with the lottery incentive's having inadvertently signaled that registration was voluntary. Significantly fewer taxpayers who received the request + reward email than those who received the request email cited complying with civic duties and simplifying transactions as reasons to join the registry (see figure 6.7.3).

## FIGURE 6.7.2 Treatment Effects on Registration




[a] Statistical significance level of 1%.

## FIGURE 6.7.3 Reported Reasons for Registering (Survey Results)




[a] Statistical significance level of 1%.

**Note:** Differences between T2 and T3 are statistically significant at least at the 5 percent level for the categories "Easier," "Fortaleza note," and "Civic duty."

## POLICY IMPLICATIONS

- **Based on the results of the study, tax administrations would be well-advised to use a layered approach to increasing registration. Prompting voluntary registration through emails can be a cost-effective intermediate step.** Benefit may also be derived from using a mixture of communication methods and targeting different types of taxpayers, considering the heterogeneous effects by age, gender, compliance status, and property values.

- The use of incentives and enforcement require further consideration, however. Tax administrations should consider what the use of rewards and other actions might signal to taxpayers. If they infer from the use of rewards that compliance is voluntary or poorly enforced, for instance, compliance might drop rather than increase. If registration is a legal requirement, on the other hand, credibly communicating the assuredness of enforcement can increase compliance. Arguably, the most sustainable incentive is increasing the functionality and net benefits of the online tax registry and service tool for taxpayers.

# PUBLIC ADMINISTRATION

# Public Administration

**The field of public administration is fertile ground for interventions in Latin America. The IDB has worked in a multitude of fields within this area, including retirement saving, crime, trade, incentives, and transparency.**

In Chile, researchers found that providing information to trigger empathetic identification with incarcerated persons increased people's preference for social policies over punitive ones to combat crime. In addition, overconfidence was identified in six countries in the Americas as an important factor in the preference to carry guns. Framing was also seen to be an important component in the preference for punitive policies in Panama, for increasing perceptions of trust and transparency in government in Argentina, and for increasing support for foreign trade in several countries in the region. In-kind incentives and behaviorally informed letters were observed to improve public servants' and health workers' performance in Argentina and El Salvador, respectively. In Brazil and Mexico, contributions to social security and private savings were increased by reminders, simplification, and planning tools.

Table 7.1 lists the behavioral barriers observed and the tools used in interventions in the area of public administration.

**TABLE 7.1 Behavioral Barriers and Tools Relevant to Public Administration**

| Behavioral Barriers | Other Barriers | Behavioral Tools |
|---|---|---|
| » Availability heuristic | » Lack of information | » Empathetic identification |
| » Cognitive overload | | » Feedback |
| » Hassle factors | | » Framing |
| » Loss aversion | | » Loss aversion |
| » Mistrust | | » Micro-incentives |
| » Optimism bias | | » Salience |
| » Overconfidence | | » Simplification |
| » Present bias | | » Social norms |
| » Status quo | | |

See definitions

# 7.1. A Tip to Increase Trust in Government

**COUNTRY** Argentina

**YEARS** 2017–18

**TEAM** Martín Alessandro, Bruno Cardinale Lagomarsino, Carlos Scartascini, and Jerónimo Torrealday

## CONTEXT

**Over the past few decades, corruption scandals and the poor performance of democracies in Latin America have eroded public confidence in institutions.** Meanwhile, numerous studies have found that if citizens do not believe a government will fulfill its promises, they will lower their demand for public goods—which, in turn, reduces welfare. This experiment measured how various framings of performance information affected perceptions of government transparency and trustworthiness in Buenos Aires, Argentina.

## THE PROJECT

**Researchers designed an online questionnaire to elicit information about citizens' perceptions of the transparency, competence, benevolence, and honesty of the government of Buenos Aires, along with their confidence in it.** The study aimed to test how information affected perceptions by, first, disclosing information about government performance, and, second, by revealing some specific findings over others.

Data collection took place between December 2017 and January 2018, covering a total of 1,999 participants living in Buenos Aires, Argentina. The sample was stratified with quotas by gender, age (18 years or older), socioeconomic status, and commune.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Availability heuristic
- Mistrust

### Behavioral Tools

- Feedback
- Framing

See definitions

## BEHAVIORAL BARRIERS

**Availability heuristic:** Individuals tend to estimate the probability of a future event based on recent events—for instance, the revelation of corrupt or dishonest politicians—that quickly come to mind.

**Mistrust:** Citizens may distrust their government representatives' actions in response to, for example, corruption scandals.

## BEHAVIORAL TOOLS

**Feedback:** Providing evaluative information on government actions can make people more aware of the importance of the work public officials do.

**Framing:** Since people are influenced by the way in which information is presented, an empathy framing may lead to different decisions than an efficiency framing. Similarly, people may make different decisions depending on whether they are given negative versus positive information on the same topic.

## INTERVENTION DESIGN

**The 1,999 participants were assigned to randomized treatments twice during the survey.** First, they were randomized between treatment and control.

- Those in the treated group received information about government commitments and then were asked about their perceptions of government transparency.
- Those in the control group were asked about their perceptions of the government before they were given the information. All were contacted by phone.

**All participants were assigned at random to three different informational treatments (figure 7.1.1) with the same structure. The three treatments were the following:**

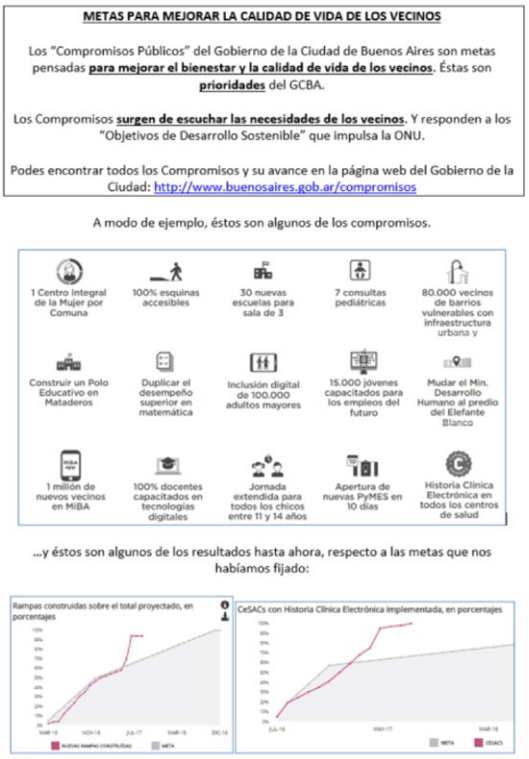
1. T1: Empathy and positive results
2. T2: Efficiency and positive results
3. T3: Empathy and negative results

The treatment referring to "empathy" highlighted how government policies improve the lives of many people and how government goals come from listening to the population, while the one referring to "efficiency" underscored the government's commitment to improving efficiency and public management. The frame with positive results used real data to describe a situation in which the government exceeded expectations regarding its public commitments; data were also used to frame negative results.

## CHALLENGES

- No challenges were reported for this intervention.

## FIGURE 7.1.1 Informational Treatments




**Note:** Key design elements: The "Public Commitments" of the Government of the City of Buenos Aires are goals designed to improve the well-being and quality of life of residents. These are priorities of the GCBA. The Commitments arise from listening to the needs of the neighbors. And they respond to the "Sustainable Development Goals" promoted by the UN. The positive outcome can be seen in the graphs, where the actual outcome is above the goal, which is the shaded part of the graph.

T1: Empathy message and positive outcome


**Note:** Key design elements: The Public Commitments of the Government are precise goals for which the Government of the City is accountable, so that we can all measure how we are doing. Commitments are a way to optimize management. They facilitate the fulfillment of objectives and efficiency in government work. The Commitments respond to the "Sustainable Development Goals" promoted by the UN. The positive outcome can be seen in the graphs, where the actual outcome is above the goal, which is the shaded part of the graph.

T2: Efficiency message and positive outcome

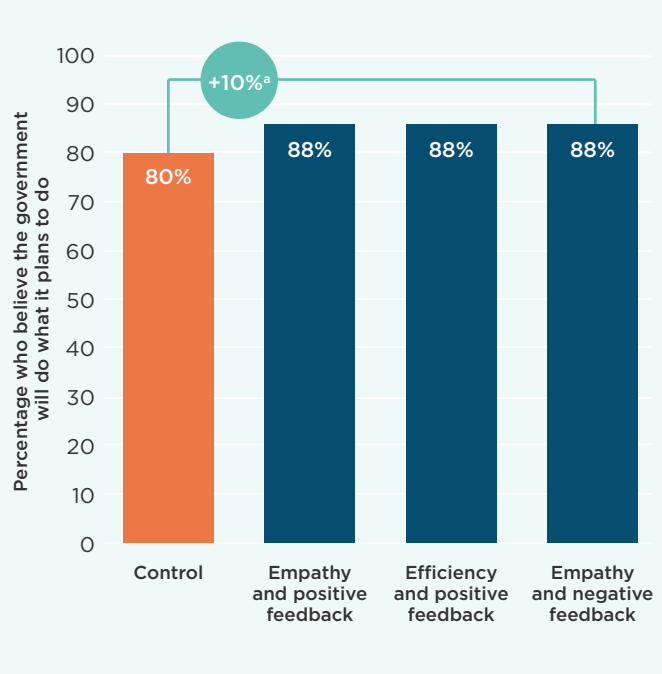

T3: Empathy message and negative outcome


**Note:** Key design elements: The "Public Commitments" of the Government of the City of Buenos Aires are goals designed to improve the well-being and quality of life of residents. These are priorities of the GCBA. The Commitments arise from listening to the needs of the neighbors. And they respond to the "Sustainable Development Goals" promoted by the UN. The negative outcome can be seen in the graphs, where the actual outcome is under the goal, which is the shaded part of the graph.

## RESULTS

**The results of this study highlighted the importance of actively providing information to citizens to enhance their perceptions of government transparency.** Providing or disclosing information increased the perception that the government was transparent by about 8 percentage points, implying a rise of more than 10 percent (figure 7.1.2). On the question of whether the framing or the content of the information does more to change perceptions about the government, the results indicated no differences in trust between an "efficiency-based" framing and an "empathy-based" framing. The disparate descriptions in performance seemed to matter, however; the participants who received information suggesting the government was exceeding its goals expressed significantly more trust in government than those who were told it was underperforming. The difference was equivalent to about 0.10 of a standard deviation.

### FIGURE 7.1.2 Information and Trust in Government




[a] Statistical significance level of 1%.

The effects were more than double for participants exposed to this information for the first time than for those who were already familiar with government performance. In addition, a message of empathy proved just as trustworthy as one of government efficiency, suggesting individuals may not care greatly about the framing of messages. In sum, this study showed that raising perceptions of transparency involves more than simply providing information on a website; the link between transparency and trust is mediated as well by several factors, including government performance.

## POLICY IMPLICATIONS

- **This study suggests that seeking feedback on government performance is important for instilling trust in the government.** Thus, efforts to provide information on good performance to citizens is an effective tool for maintaining civic engagement. If citizens believe only the best results are revealed, however, or that the information constitutes "fake news," the value of communication falls and may even disappear altogether. This confirms that trust is conferred on honest public policymakers who are deemed competent.
- At the time of this study, more than 40 percent of respondents had never seen the city government website nor heard about the commitments it features. To improve their perceptions of transparency, governments should provide relevant information to all citizens through available communication tools.

# 7.2. Can There Ever Be Good News on Crime?

**COUNTRY** Panama

**YEAR** 2020

**TEAM** Daniel Gingerich and Carlos Scartascini

## CONTEXT

**Policies are often subject to "intertemporal stickiness"—that is, they change too slowly to address promptly the public's changing needs.** Anticrime policies in Latin America are no exception to this tendency, and they are particularly interesting because of the high stakes and public finance costs associated with them.

Specifically, mass incarceration gained support in the region as a response to public concern about drug use at a time when violent crime was at a historic peak. Crime rates have subsequently declined; meanwhile, evidence suggests mass incarceration has negative spillover effects on society. Anticrime policies have, nonetheless, remained unchanged, which suggests an information-processing problem may be involved.

## THE PROJECT

**This experiment sought to shed light on how positive or negative news on crime affects demand for anticrime policies.** It involved presenting different framings of information on crime to participants in the 2017 Latin America Public Opinion Project (LAPOP) survey in Panama.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

» Availability heuristic

### Behavioral Tools

» Framing

See definitions

## BEHAVIORAL BARRIERS

**Availability heuristic:** People tend to estimate the probability of a crime or of being a crime victim based on recent events that quickly come to mind.

## BEHAVIORAL TOOLS

**Framing:** Judgments about crime, which require information processing, can be strongly influenced if negative versus positive information is communicated on the topic.

## INTERVENTION DESIGN

**IDB researchers designed and embedded an information experiment in the 2016/2017 round of the Americas Barometer Survey conducted by LAPOP in Panama.** The survey provided a nationally representative, stratified sample of Panamanians, with interviews conducted in a face-to-face format using electronic tablets.

The experiment consisted of presenting two different informational messages to survey respondents, each of which was factually accurate and based on crime statistics for the country. Each of a total of 1,521 respondents was randomly assigned to one of three different experimental conditions. Respondents assigned to the first two conditions were shown graphical displays describing the homicide rate in Panama in recent years (see figure 7.2.1). The third condition, the control, received no such information.

### FIGURE 7.2.1 Information Processing for Two Treatment Groups (T1 and T2)

**Treatment 1: Increase in homicides**


**Note:** The text in the figure translates as follows: "Did you know that the homicide rate in Panama HAS ALMOST DOUBLED in recent years? It increased by 75 percent. International homicide rate, per 100,000 inhabitants. Source: United Nations Office on Drugs and Crime (UNODC)."

**Treatment 2: Decrease in homicides**


**Note:** The text in the figure translates as follows: "Did you know that the homicide rate in Panama HAS DECREASED in recent years? It decreased by almost 25 percent. International homicide rate, per 100,000 inhabitants. Source: United Nations Office on Drugs and Crime (UNODC)."

## CHALLENGES

» **Adding policy questions to opinion surveys can provide a better understanding of how policy is formulated.** Traditionally, divergences between the policies implemented by countries and those recommended by technocrats have been explained by the incentives of politicians. Policy choices in competitive political environments also reflect citizens' demands, however, which may differ greatly from those anticipated by the accountability framework and present a challenge to effective policymaking. A better understanding of how citizens acquire, maintain, or shift their preferences in specific areas of public policy is an essential component of any assessment of the performance of a country's democratic system.

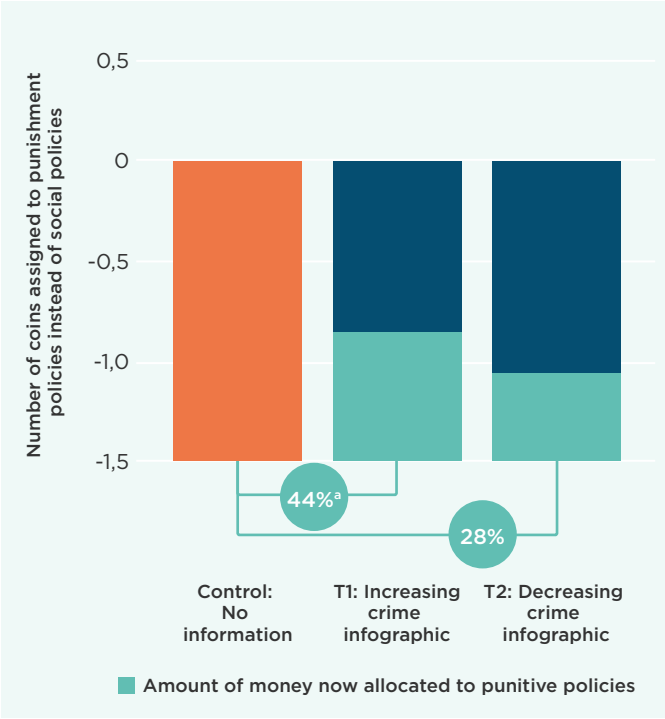
» Adding policy instruments to the traditional analytical model of crime enables better explanation of actual anticrime policy choices across democracies. In the future, researchers may want to extend these models further to capture the greater complexity faced by policymakers and citizens when constructing policy on this issue.

## RESULTS

**The main finding of the study was that respondents' preference for punitive policies increased with the introduction of information indicating an increase in crime (see figure 7.2.2).** The converse, however, was not true: preference for punitive policies did not decrease with the introduction of information indicating a decrease in crime. If anything, relative to a no-information scenario (the control group), those informed of a decrease in crime also skewed toward punishment, although the effect was not statistically significant.

These findings suggest that all news about crime, regardless of whether it is good or bad, tends to elicit punishment-oriented responses from the public. The effects of information vary depending on individuals' previous level of news consumption, however. Those survey respondents with low access to information reacted much more strongly to the new information presented than those who were better informed.

### FIGURE 7.2.2 Impact of Crime Information on Policy Preferences




[a] Statistical significance level of 1%.

## POLICY IMPLICATIONS

» **Political communication about crime, in and of itself, tends to lead citizens to favor punitive policies, and reversing policies in favor of more effective strategies to combat crime is likely to be quite difficult.** The results of the study highlight the relevance of information, particularly one-sided "if it bleeds it leads" journalism, since it can easily drive policy preferences. They also underscore the importance of institutions that promote political competition and reduce the incentives of news organizations and social media to exploit individuals' biases and cognitive limitations.

» These results are consistent with observational and experimental research showing that threat-inducing stimuli on topics such as terrorism can generate knee-jerk responses in favor of punitive policies.

# 7.3. In-Kind Incentives and Health Worker Performance

**COUNTRY** El Salvador

**YEAR** 2020

**TEAM** Pedro Bernal and Sebastian Martinez

## CONTEXT

**While the provision of better health care is a global challenge, the need is particularly acute in the poorest and hardest to reach areas in low- and middle-income countries.** Starting in 2010, El Salvador implemented needed reforms of its public health system through the creation of community health teams, funded and managed by the government. The reforms were rolled out first in the poorest municipalities. The government's health teams comprised seven to ten members each and covered the primary care needs of the population in predefined geographical catchment areas.

Given the documented deficiencies in health worker performance around the world, which have included failures to meet coverage targets, absenteeism, noncompliance with clinical guidelines, and even malpractice, the challenge in El Salvador was to make its new health teams perform well. In this intervention, in-kind pay-for-performance was used to motivate health teams and improve quality of service, but the effects of those incentives were difficult to tease out from other incentives, like feedback and public recognition ceremonies. Evidence of their effect on small teams, with circumscribed roles and interdependent activities, was also scarce.

## THE PROJECT

**El Salvador health authorities evaluated the reforms over a 12-month period, assessing the effects of in-kind incentives on the performance of health workers on 38 out of 75 community health teams.** The teams were randomly assigned performance incentives, and all were monitored for the effects of performance feedback and recognition for team achievement. This exercise allowed researchers to isolate the effect of the incentives.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Present bias
- Status quo

See definitions

## Behavioral Tools

- Feedback
- Micro-incentives


See definitions

## BEHAVIORAL BARRIERS

**Present bias:** Health workers may not, for example, want to put more effort into their performance today because they cannot see the rewards their efforts will bring in the future.

**Status quo:** Health workers accustomed to certain protocols at work may be reluctant to change.

## BEHAVIORAL TOOLS

**Feedback:** Listening to how individuals' job performance is perceived can be helpful in improving their behavior.

**Micro-incentives:** The provision of small prizes can inspire health care professionals to put more effort into their work.

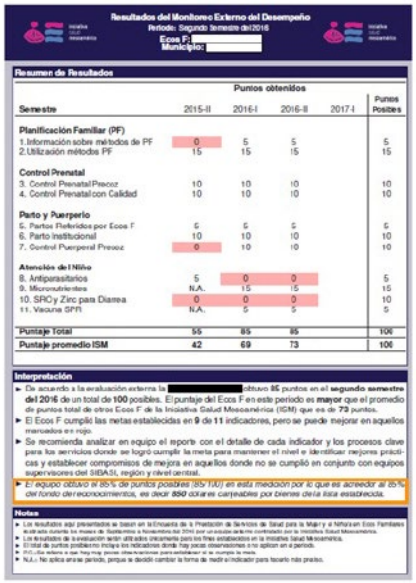
## INTERVENTION DESIGN

**The intervention consisted of providing in-kind group incentives to health care professionals instead of monetary incentives, based on the theory that the in-kind incentives would elicit a greater team effort and be less likely to crowd out intrinsic motivation.** In-kind incentives were linked to eleven key maternal and child health indicators that covered outcomes related to family planning, prenatal and postnatal care, and child care. The indicators were designed to promote community outreach, increase the utilization of care, and improve its timeliness and quality. Each indicator was assigned a performance target. A community health team that met a target would receive points redeemable for in-kind incentives.

Teams were assigned at random to one of two phases. Those in phase 1 (treatment group) were eligible for the incentive scheme during verification cycles of six, twelve, and eighteen months, whereas those in phase 2 (control group) would only be eligible for the incentive scheme during the eighteen-month verification cycle. Every team was given a performance feedback report and public recognition for achievement, regardless of its experimental assignment, every six months. The reports were all designed in the same way, except that those for the treatment group described the incentive amount for that cycle (see figure 7.3.1). Teams that were part of the control received only a description of the points obtained overall, with no mention of incentives. All teams attaining 60 or more points per verification cycle got public recognition and a certificate in front of their peers (see figure 7.3.2), along with earning the minimum incentive of $650 worth of goods; those reaching 90 or more points received up to $1,000.

## FIGURE 7.3.1 Team Performance Reports and Certificates

### A. Treatment



Resultados del Monitoreo Externo del Desempeño
Periodo: Segundo Semestre del 2016
Ecos F: [redacted]
Municipio:

Resumen de Resultados

| Semestre | 2015-II | 2016-I | 2016-II | 2017-I | Puntos Posibles |
|---|---|---|---|---|---|
| | Puntos obtenidos | | | | |
| **Planificación Familiar (PF)** | | | | | |
| 1. Información sobre métodos de PF | 0 | 5 | 5 | | 5 |
| 2. Utilización métodos PF | 15 | 15 | 15 | | 15 |
| **Control Prenatal** | | | | | |
| 3. Control Prenatal Precoz | 10 | 10 | 10 | | 10 |
| 4. Control Prenatal con Calidad | 10 | 10 | 10 | | 10 |
| **Parto y Puerperio** | | | | | |
| 5. Partos Referidos por Ecos F | 5 | 5 | 5 | | 5 |
| 6. Parto Institucional | 10 | 10 | 10 | | 10 |
| 7. Control Puerperal Precoz | 0 | 10 | 10 | | 10 |
| **Atención del Niño** | | | | | |
| 8. Antiparasitarios | 5 | 0 | 0 | | 5 |
| 9. Micronutrientes | N.A. | 15 | 15 | | 15 |
| 10. SRO y Zinc para Diarrea | 0 | 0 | 0 | | 10 |
| 11. Vacuna SPR | N.A. | 5 | 5 | | 5 |
| **Puntaje Total** | 55 | 85 | 85 | | 100 |
| **Puntaje promedio ISM** | 42 | 69 | 73 | | 100 |

Interpretación

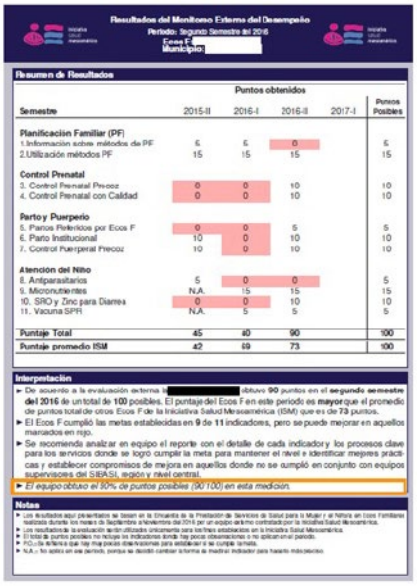
► De acuerdo a la evaluación externa la [redacted] obtuvo **85** puntos en el **segundo semestre del 2016** de un total de **100** posibles. El puntaje del Ecos F en este periodo es **mayor** que el promedio de puntos total de otros Ecos F de la Iniciativa Salud Mesoamérica (ISM) que es de **73** puntos.
► El Ecos F cumplió las metas establecidas en **9** de **11** indicadores, pero se puede mejorar en aquellos marcados en rojo.
► Se recomienda analizar en equipo el reporte con el detalle de cada indicador y los procesos clave para los servicios donde se logró cumplir la meta para mantener el nivel e identificar mejores prácticas y establecer compromisos de mejora en aquellos donde no se cumplió en conjunto con equipos supervisores del SIBASI, región y nivel central.
► *El equipo obtuvo el 85% de puntos posibles (85/100) en esta medición por lo que es acreedor al 85% del fondo de reconocimiento, es decir **850** dólares canjeables por bienes de la lista establecida.*

Notas

► Los resultados aquí presentados se basan en la Encuesta de la Prestación de Servicios de Salud para la Mujer y el Niño en Ecos Familiares realizada durante los meses de Septiembre a Noviembre del 2016 por un equipo externo contratado por la Iniciativa Salud Mesoamérica.
► Los resultados de la evaluación están utilizados únicamente para los fines establecidos en la Iniciativa Salud Mesoamérica.
► El total de puntos posibles no incluye los indicadores donde hay pocas observaciones o no aplican en el periodo.
► P.C.: Se refiere a que hay muy pocas observaciones para establecer si se cumple la meta.
► N.A.: No aplica en ese periodo, porque se decidió cambiar la forma de medir el indicador para hacerlo más preciso.

**Note:** The highlighted section reads: "The team obtained 85% of the possible points (85/100) in the cycle and has therefore obtained 85% of the performance fund, that is 850 dollars interchangeable for goods on the established list."

### B. Control



Resultados del Monitoreo Externo del Desempeño
Periodo: Segundo Semestre del 2016
Ecos F:
Municipio:

Resumen de Resultados

| Semestre | 2015-II | 2016-I | 2016-II | 2017-I | Puntos Posibles |
|---|---|---|---|---|---|
| | Puntos obtenidos | | | | |
| **Planificación Familiar (PF)** | | | | | |
| 1. Información sobre métodos de PF | 5 | 5 | 0 | | 5 |
| 2. Utilización métodos PF | 15 | 15 | 15 | | 15 |
| **Control Prenatal** | | | | | |
| 3. Control Prenatal Precoz | 0 | 0 | 10 | | 10 |
| 4. Control Prenatal con Calidad | 0 | 0 | 10 | | 10 |
| **Parto y Puerperio** | | | | | |
| 5. Partos Referidos por Ecos F | 0 | 0 | 5 | | 5 |
| 6. Parto Institucional | 10 | 0 | 10 | | 10 |
| 7. Control Puerperal Precoz | 10 | 0 | 10 | | 10 |
| **Atención del Niño** | | | | | |
| 8. Antiparasitarios | 5 | 0 | 0 | | 5 |
| 9. Micronutrientes | N.A. | 15 | 15 | | 15 |
| 10. SRO y Zinc para Diarrea | 0 | 0 | 10 | | 10 |
| 11. Vacuna SPR | N.A. | 5 | 5 | | 5 |
| **Puntaje Total** | 45 | 40 | 90 | | 100 |
| **Puntaje promedio ISM** | 42 | 69 | 73 | | 100 |

Interpretación

► De acuerdo a la evaluación externa la [redacted] obtuvo **90** puntos en el **segundo semestre del 2016** de un total de **100** posibles. El puntaje del Ecos F en este periodo es **mayor** que el promedio de puntos total de otros Ecos F de la Iniciativa Salud Mesoamérica (ISM) que es de **73** puntos.
► El Ecos F cumplió las metas establecidas en **9** de **11** indicadores, pero se puede mejorar en aquellos marcados en rojo.
► Se recomienda analizar en equipo el reporte con el detalle de cada indicador y los procesos clave para los servicios donde se logró cumplir la meta para mantener el nivel e identificar mejores prácticas y establecer compromisos de mejora en aquellos donde no se cumplió en conjunto con equipos supervisores del SIBASI, región y nivel central.
► *El equipo obtuvo el 90% de puntos posibles (90/100) en esta medición.*

Notas

► Los resultados aquí presentados se basan en la Encuesta de la Prestación de Servicios de Salud para la Mujer y el Niño en Ecos Familiares realizada durante los meses de Septiembre a Noviembre del 2016 por un equipo externo contratado por la Iniciativa Salud Mesoamérica.
► Los resultados de la evaluación están utilizados únicamente para los fines establecidos en la Iniciativa Salud Mesoamérica.
► El total de puntos posibles no incluye los indicadores donde hay pocas observaciones o no aplican en el periodo.
► P.C.: Se refiere a que hay muy pocas observaciones para establecer si se cumple la meta.
► N.A.: No aplica en ese periodo, porque se decidió cambiar la forma de medir el indicador para hacerlo más preciso.

**Note:** The highlighted section reads: "The team obtained 90% of the possible points (90/100) in this cycle."

## FIGURE 7.3.2 Team Performance Certificates

### A. Treatment

EL SALVADOR

Vale de Reconocimiento al Desempeño

Se felicita al Ecos-F:

*UCSFB* [redacted]

Por su esfuerzo en el cumplimiento de los Indicadores Salud Mesoamérica,

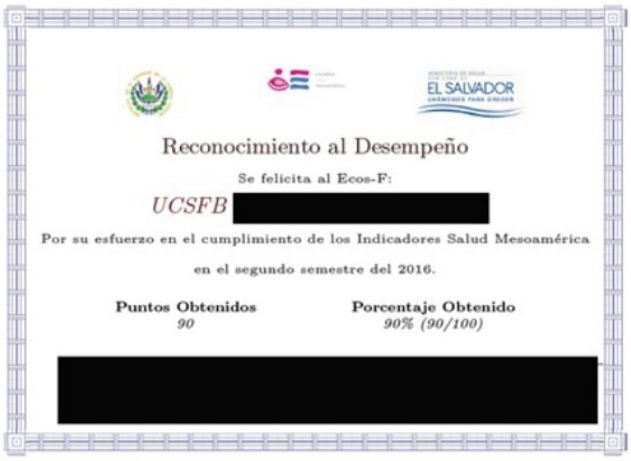
en el segundo semestre del 2016 que lo hace acreedor al siguiente

reconocimiento:

| Puntos Obtenidos | Porcentaje Obtenido | Monto Obtenido |
|---|---|---|
| *85* | *85% (85/100)* | *850 dólares* |

[redacted]

### B. Control



EL SALVADOR

Reconocimiento al Desempeño

Se felicita al Ecos-F:

*UCSFB* [redacted]

Por su esfuerzo en el cumplimiento de los Indicadores Salud Mesoamérica

en el segundo semestre del 2016.

| Puntos Obtenidos | Porcentaje Obtenido |
|---|---|
| *90* | *90% (90/100)* |

[redacted]

## CHALLENGES

» **The researchers were concerned about two issues. First,** they thought teams might have tampered with medical records to obtain short-term gains, particularly since the records were used to measure performance on seven out of the eleven performance indicators. If this were the case, then the effects of the intervention may, in part, have reflected changes in reporting, rather than improvement in the underlying population outcomes. **Second,** because teams in the control group knew they were eligible for incentives after the eighteen-month verification cycle, they had the opportunity to begin improving their performance at the outset of the experiment, which would attenuate the incentive effects.

## RESULTS

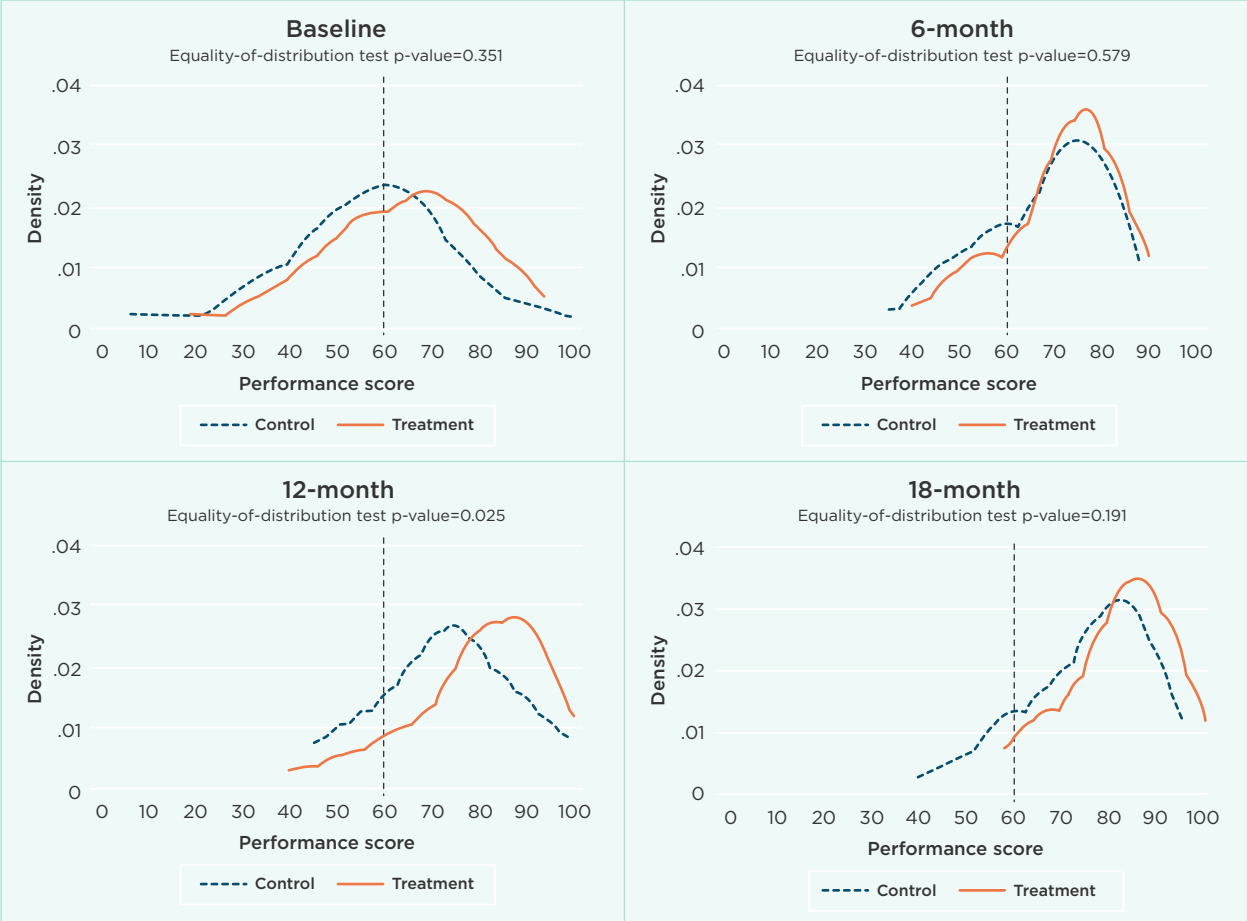
**While all the teams participating in the intervention improved their performance over time, those eligible to receive incentives improved at a faster rate by the end of phase 1, twelve months from baseline.** Figure 7.3.3 shows density plots of the overall performance scores (aggregated weighted measures of targets met by each health team, with weights equal to the points established for each indicator) by time period and treatment. As mentioned, teams in the treatment group that obtained more than 60 points got the in-kind incentive. As the figure shows, the distribution of performance scores between treatment and control teams at twelve months differed a great deal ($p<.05$).

The eleven health indicators used to measure performance were grouped into four domains: community outreach, quality of care, timeliness of care, and utilization. When analyzed independently by domain, the in-kind incentives significantly increased the average standardized treatment effects—by 0.17 standard deviations for community outreach, by 0.14 SD for quality of care, by 0.10 SD for timeliness of care, and by 0.096 SD for utilization of health services—compared to the control group. The largest effects occurred in domains that required less team coordination. This may have been because community outreach relies mostly on community health workers, while quality of care is the responsibility of physicians and nurses. The gains were concentrated among the lowest and (particularly) the highest performers at baseline. The teams exhibiting no response to the incentive scheme were those assessed with intermediate performance at baseline, who required little effort to meet the performance goals.

## POLICY IMPLICATIONS

» **Pay for performance is a promising tool for aligning incentives for health workers more closely with health outcomes.** The project provided evidence supporting performance-based, in-kind group incentives as an effective mechanism.

## FIGURE 7.3.3 Distribution of Performance Scores




| Kolmogorov-Smirnov test of equality of distributions between treatment and control by period | |
|---|---|
| Period | Value p |
| Baseline | 0.351 |
| 6-month | 0.579 |
| 12-month | 0.025 |
| 18-month | 0.191 |

# 7.4. Citizen Incentives for Urban Hygiene

**COUNTRY** Argentina

**YEARS** 2018–19

**TEAM** Nina Rapoport, Ana María Rojas, Carlos Scartascini, and Paula Zamora

## CONTEXT

**Keeping neighborhood streets and sidewalks clean is a typical civic activity requiring coordination and collective action among citizens.** While engaged neighbors will maintain these shared spaces, incentives will always be present *not* to undertake the work while waiting for someone else to do it (a phenomenon known as free riding). Aggregated to the community level, these incentives generate a "tragedy of the commons," in which individual users, acting independently according to their own perceived self-interest, produce consequences contrary to the common good of all users by spoiling—in this case—the public space.

To test different approaches to improving shared neighborhood communities and spaces, the city of Buenos Aires launched several programs to strengthen citizens' sense of belonging and commitment to the city and improve their relationships with the government. Incentive programs designed to recognize and motivate civic behaviors sought to promote teamwork and cooperation between citizens and the government, producing benefits for the entire community.

## THE PROJECT

**For one such incentive program, the city partnered with the Behavioral Economics Group at the IDB to determine if a neighborhood contest informed by behavioral insights could promote collaboration among neighbors to maintain the cleanliness of urban infrastructure.** The project, a program called "It's My Block," aimed to improve the maintenance of the streets and sidewalks of the city by promoting good-neighbor habits and behaviors. Of the blocks that participated, the cleanest ones were awarded exemptions from municipal fees for lighting, sweeping, cleaning, maintenance, and street drainage, as well as from real property tax. Residents already exempt from these fees and taxes received a high-value metro card.

A first iteration of It's My Block took place between February and September 2018 and a second between May and August 2019. The analysis presented here is from the second iteration of the program.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Social norms
- Status quo

### Behavioral Tools

- Gamification

See definitions

## BEHAVIORAL BARRIERS

**Social norms:** Standards that dictate that people do what others do are called descriptive social norms. If most neighbors on a block do not clean up after their dogs, for example, the probability of a dog owner's cleaning up after his or her dog decreases, contributing to the overall pollution of the block.

**Status quo:** Cleaning up after one's dog may be perceived as a waste of time or a loss of personal dignity.

## BEHAVIORAL TOOLS

**Gamification:** The contest design used gamification tools, such as prizes and scoring, to motivate neighbors to take action to reach a cleanup goal.

## INTERVENTION DESIGN

**After an outreach campaign, interested citizens were required to set up online accounts where they provided their personal data.** Limited logistical capacity led the city to narrow the selection of participating blocks. A total of 2,123 blocks was selected for participation, around 30 percent of which had also taken part in the first iteration.

As its measurement of street and sidewalk cleanliness, the contest used the Cleanliness Index (IDL, in Spanish) that is maintained by the Buenos Aires Ministry of Environment and Public Space. **The index considers five criteria:**

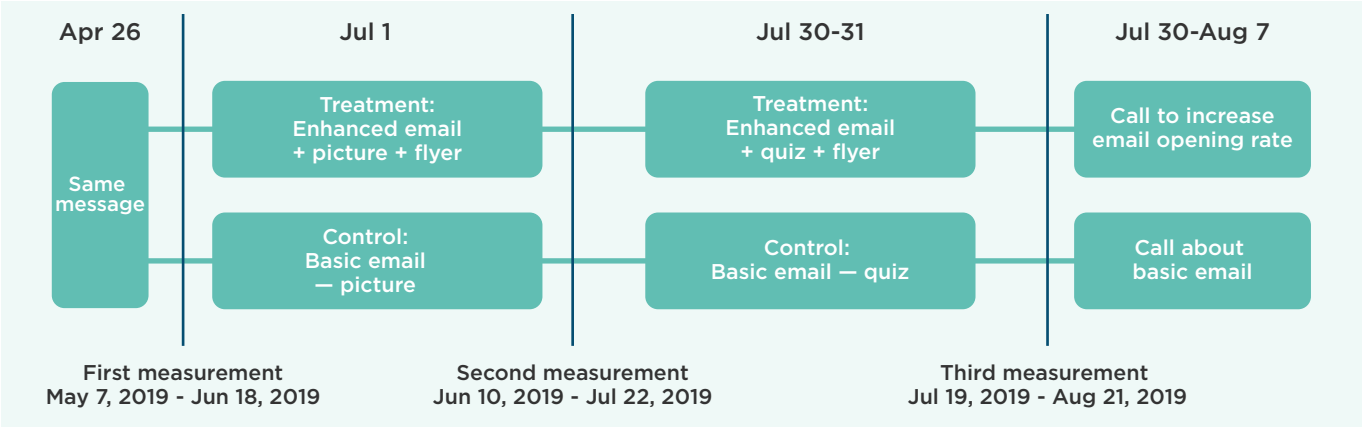
1. Urban furniture hygiene (public infrastructure conditions for urban sanitation services)
2. Separation and disposal of waste (dry, wet, special, and bulky)
3. Responsible pet ownership (unsatisfactory dog waste removal)
4. Cleanliness of sidewalks and streets (presence of wet and dry waste)
5. Graffiti, stickers, and bird excrement

To meet the cleanliness standard, a block had to achieve scores above a certain threshold on at least four of the five criteria. The performance of participating blocks was measured three times during the contest. The city determined the winning blocks by summing the three IDL measurements of blocks that had met the cleanliness standard.

To carry out the intervention, participating blocks were randomly selected to receive either an enhanced communications kit (provided to the treatment group, comprising 1,015 blocks) or a basic communications kit (provided to the control group, 985 blocks) for the duration of the program. The enhanced kit included emails, a flyer, a quiz, a neighborhood graphic, and a phone call, all reinforcing the notion of cooperation among neighbors. The control received an email, but not a flyer or a neighborhood graphic. Figure 7.4.1 shows the timeline of the intervention and treatments.

The program prize was awarded to the registered participant(s) of the winning block.

## FIGURE 7.4.1 Summary Timeline for the Treatment and Control Groups




## CHALLENGES

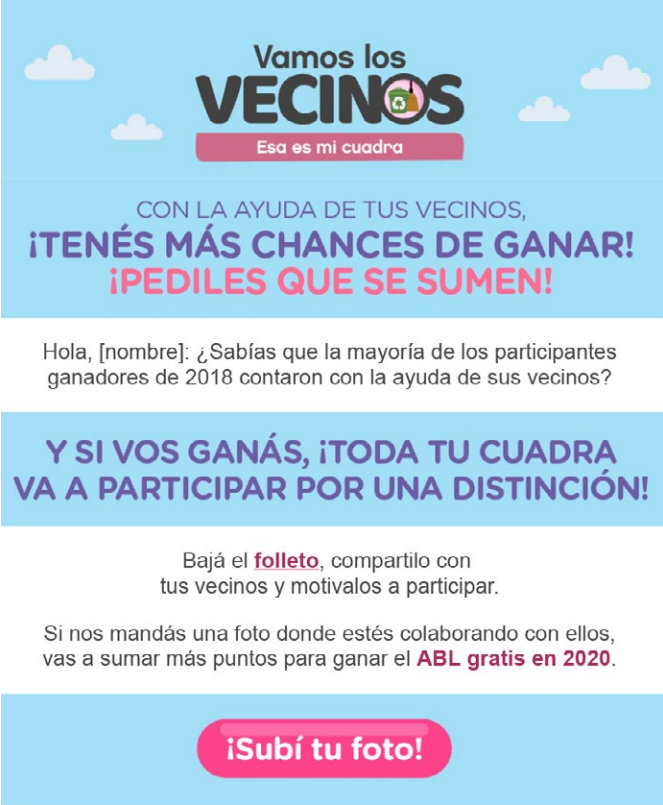
- **The intervention presented three main challenges. First, participating blocks were selected according to the number of registered people, location, and so forth rather than randomly. This produced small sample sizes less suitable for analysis and clear conclusions.**
- Second, large variations occurred over time in the cleaning index scores, leading researchers to question whether changes in personnel, inspectors' guidelines, or some other factor(s) could be driving them.
- Finally, implementation and coordination in terms of field measurements of performance were uneven. Some blocks were measured twice before they received the first treatment (see figure 7.4.2), while others were measured a third time before getting the second email (figure 7.4.3).

## FIGURE 7.4.2 Treatment Flyer


**Note:** The text in this figure translates as follows: "Hello! Our block participates in 'Esa es mi cuadra.' If we all pitch in to help clean up, we can earn a distinction for the whole block. These are the activities that score points: (i) sweeping and cleaning the sidewalk; (ii) checking that there is no dog poop; (iii) removing graffiti and stickers from walls and electrical posts; (iv) throwing garbage in the correct containers from 8 pm to 9 pm. The more neighbors from this block participate, the greater the chance that we will win!"

## FIGURE 7.4.3 Second Email

A. Treatment




**Note:** The text in this figure translates as follows: "With the help of your neighbors, you have a better chance of winning. Ask them to join in! Hello, [Name]: Did you know that most of the 2018 winning entries enlisted the help of their neighbors? And if you win, your entire block stands to earn a distinction! Download the brochure and share it with your neighbors and encourage them to participate. If you send us a photo of where you are collaborating with them, you will accumulate more points towards earning an exemption from lighting, sweeping, and cleaning tax in 2020. Upload your photo!"

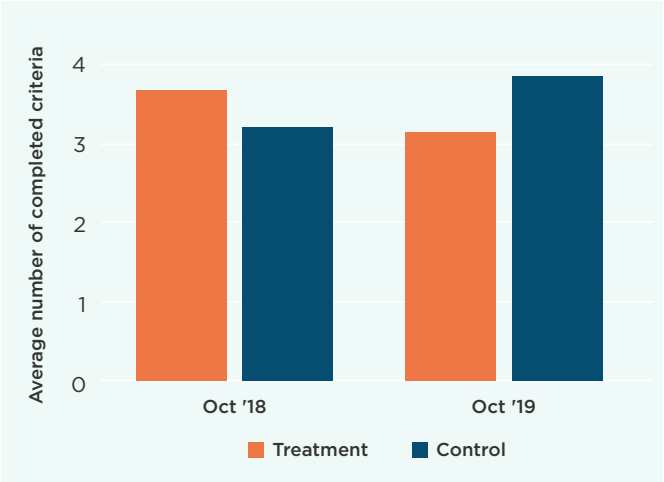
B. Control


**Note:** The text in this figure translates as follows: "With a photo, you have a better chance of winning! Hello, [Name]: If you send us a photo where you are helping to clean your block, you have a greater chance of earning an exemption from lighting, sweeping, and cleaning tax in 2020. Upload your picture! These are the activities that score points: (i) sweeping and cleaning the sidewalk; (ii) checking that there is no dog poop; (iii) removing graffiti and stickers from walls and electrical posts; (iv) throwing garbage in the correct containers from 8 pm to 9 pm. The more neighbors from this block participate, the greater the chance that we will win! In the next few days we will be judging your block again. Keeping your block clean has many benefits!"

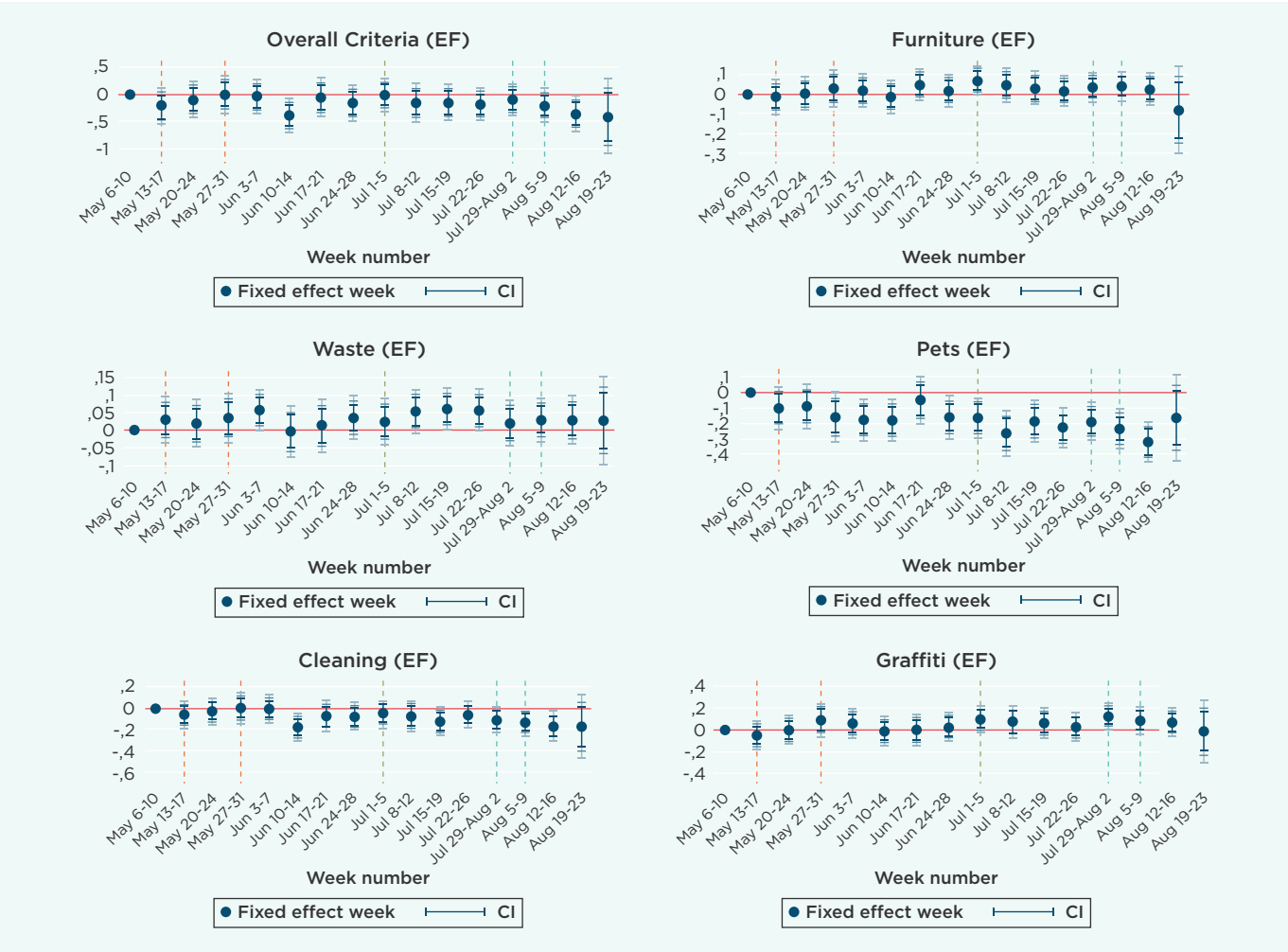
## RESULTS

**The program yielded positive but statistically insignificant trends in cleaning index scores (figure 7.4.4).** Statistically nonsignificant differences were found in the five indicators between measure 1, taken when the participants had not yet undergone an intervention regimen, and measure 2, after the first intervention (figure 7.4.5). Measure 3 showed a statistically significant positive effect of the intervention on the cleanliness index for dog droppings.

## FIGURE 7.4.4 Total Score by Participation in the Program



## FIGURE 7.4.5 Fixed Effect over 16 Weeks: Both Control and Treatment Groups Have a Fixed Effect




**Note:** First email (not in graph) on April 26, 2019. The dashed vertical lines illustrate the timing of the communications. Second notification and third notification in orange. Second and third email in green. Calls from July 30 to August 7, 2019 in blue.

## POLICY IMPLICATIONS

» **Policymakers use incentive programs to promote or discourage certain behaviors among citizens.** But some incentives achieve unintended results. In this study, the analysis found no statistically significant effect of the tax and fee exemption program on street and sidewalk cleanliness. By the end of the program, the behaviorally informed messages had had an impact only on the removal of dog waste in public areas.

» Keeping streets and sidewalks clean requires citizens to act collectively. Individual incentives like the fee and tax exemptions will most likely not promote behaviors like cooperation and collective action. Collective incentives—for instance, public recognition and acclaim for winning blocks—would probably achieve better results. Beyond incentives, governments could consider making use of group identity and social norms to reduce citizens' tendencies to act independently according to their own self-interest.

# 7.5. Safety and Behavioral Biases: Overconfidence and Gun Preferences

**COUNTRIES** Argentina, Brazil, Chile, Colombia, Mexico, and the United States

**YEAR** 2021

**TEAM** Fernando G. Cafferata, Patricio Domínguez, and Carlos Scartascini

## CONTEXT

**Overconfidence—people's tendency to overestimate or exaggerate their own capacity to perform a certain task—is a frequent source of risky behavior associated with adverse outcomes in areas such as health, finances, and politics.** It may also affect public policy, if political representatives and voters make decisions based not on their actual ability but on their biased self-perception. One such area is the possession and use of guns, both of which are associated with higher rates of fatal accidents, gun-related homicides, and suicides. This may suggest guns are too accessible. In Latin America, easy access to and an influx of guns are related to higher mortality rates and violence. These serious implications for welfare make important an exploration of how the preference for the accessibility of guns and their use might be a consequence of overconfidence.

## THE PROJECT

**To gain an understanding of the relationship between overconfidence and gun attitudes, the IDB conducted an online survey in six countries of the Americas.** The project explored correlations between two types of overconfidence, *overestimation* and *overplacement*, on the one hand, and attitudes toward guns and their use and resistance to crime, on the other. Data gathering took place in 2019.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Optimism bias
- Overconfidence

See definitions

## Behavioral Tools

» Feedback

See definitions

## BEHAVIORAL BARRIERS

**Optimism bias:** People may underestimate the risks involved in carrying and using guns and overestimate their potential benefit in scenarios of, among others, robbery.

**Overconfidence:** People may overestimate their ability and judgment when using guns.

## BEHAVIORAL TOOLS

**Feedback:** People who, for instance, receive feedback that they are overestimating their abilities may adjust their self-assessment for future occasions.

## INTERVENTION DESIGN

**To explore the link between overconfidence and gun attitudes, the IDB conducted an online survey in 2019.** The sample consisted of 7,298 individuals from Argentina, Brazil, Chile, Colombia, Mexico, and the United States, with each sample representative of the adult population in each respective country.

The first component of the survey addressed attitudes with regard to guns and the use of guns by security forces and civilians, as well as hypothetical reactions to a crime scene. Participants were asked, for instance, if they agreed that civilians should be able to carry weapons in the street and how they would react if they were robbed by a criminal at night.

A second component measured overconfidence. For that purpose, participants answered questions on general interest topics that were not related to gun preferences. Participants were asked, for instance, to indicate the men's winner of the Soccer World Cup in 2014 in Brazil, followed by a question on how sure they were to know the right answer. The difference between right answers and the respondent's score provided an index of *overestimation* as a measure for *absolute* overconfidence. Finally, a series of questions was included to compare the excess of confidence on the part of the participant (*overplacement*) with that of the average citizen in four dimensions: responsibility, decision making, morality, and weapons use. Regarding weapons use, participants were asked, "If you had a weapon, do you think you would use it more or less responsibly than the average citizen?"

## CHALLENGES

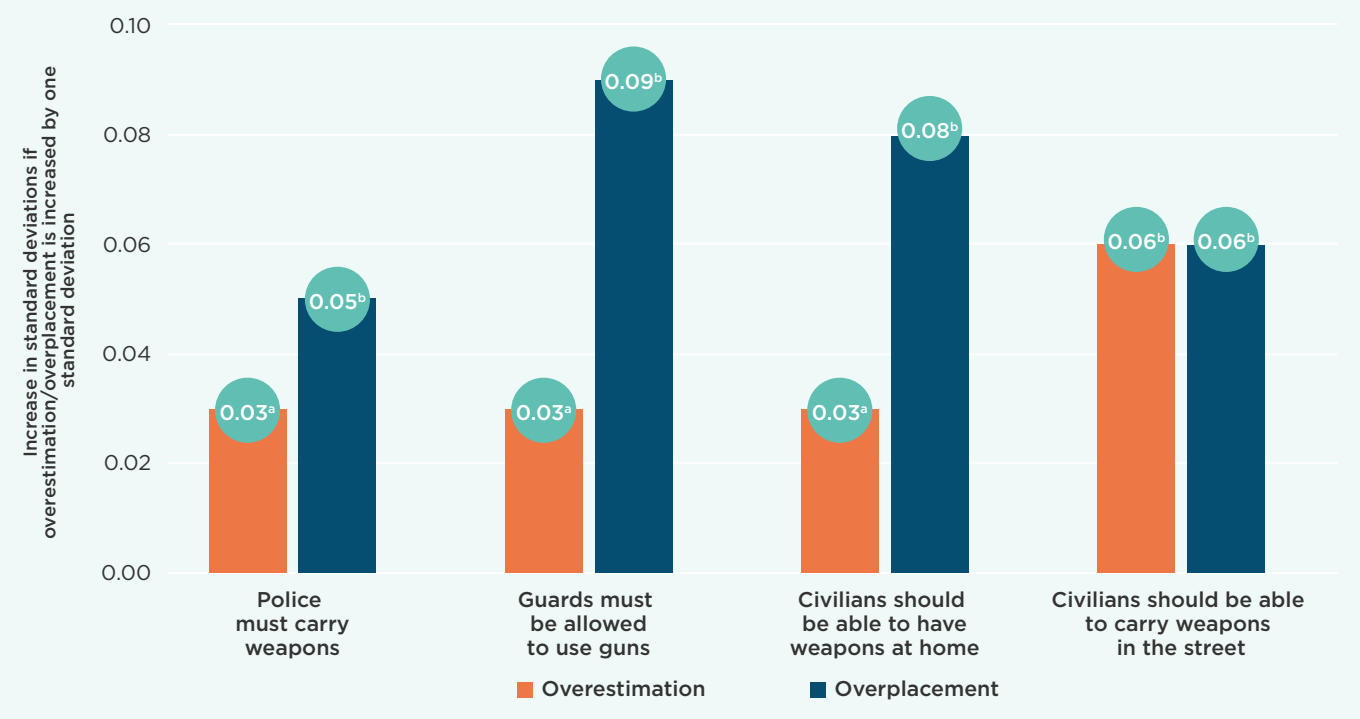
» The main challenge to the analysis was that the regression design did not allow for causal inference. While it could demonstrate correlations, it could not demonstrate causation.

## RESULTS

The analysis indicated that overconfidence was significantly and positively associated among participants with stronger preferences for carrying weapons and resisting hypothetical scenarios of robbery (figures 7.5.1 and 7.5.2). Results for overestimation—the measure of absolute overconfidence—were consistently associated with stronger gun carrying preferences. An increase in the overestimation index by one standard deviation (SD), for instance, increased the preference for police, guards, and civilians at home carrying or using guns by 0.03 SD and for civilians in the street by 0.06 SD, with all results significant at least at the 5 percent level.

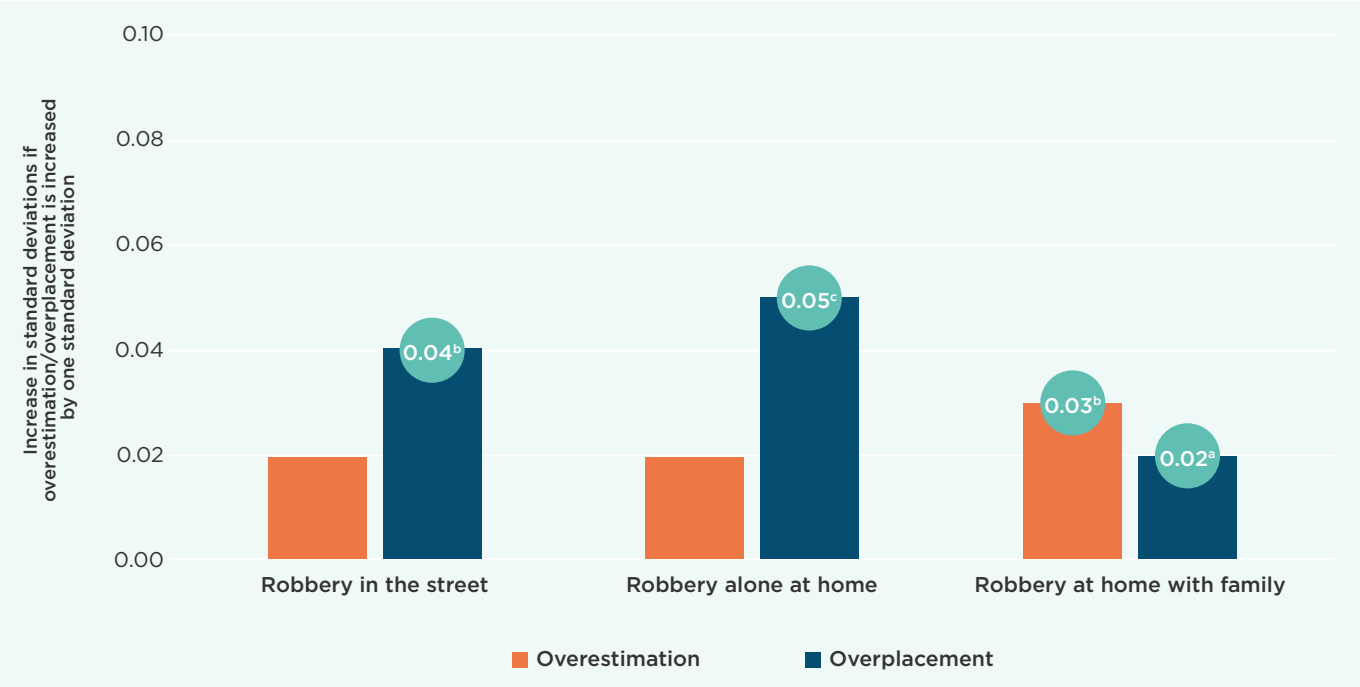
The positive relationship between the results for overplacement—the measure for relative overconfidence—and gun preferences, as well as crime resistance, was consistently significant in statis-

## FIGURE 7.5.1 Relationship between Overconfidence and Gun Preferences




[a] Statistical significance level of 5%. [b] Statistical significance level of 1%.

## FIGURE 7.5.2 Relationship between Overconfidence and Inclination to Resist a Robbery




[a] Statistical significance level of 10%. [b] Statistical significance level of 5%. [c] Statistical significance level of 1%.

tical terms. Detailed analysis of the individual dimensions indicated this effect might be driven by consistent overplacement with regard to the self-assessment of responsible weapons use and the ability to make decisions.

Significant control variables associated with overconfidence in the form of overestimation tended to be male gender and higher ages, while higher educational status seemed to be associated with less overestimation. For overplacement, the results tended to be different. Higher ages seemed to be associated with underplacement with regard to weapons use, and older people tended to overplace themselves relative to others when assessing their level of responsibility.

## POLICY IMPLICATIONS

- **This study showed that overconfidence is an important driver of attitudes associated with higher risks.** In the realm of public policy, these results may help explain why certain regulations in policy areas that entail risk assessments might be less stringent than would be best for society.
- Beyond enacting gun regulation, generally reducing the bias of overconfident agents who are in decision-making or legislative positions might help reduce the gap between the optimal policy and current legislative frameworks in a variety of areas. While making these changes will require serious efforts and time, stronger legislation regarding the use of seatbelts and the consumption of alcohol and cigarettes has demonstrated the potentially high welfare effects that policies less driven by overconfidence can have.

# 7.6. Tempering the Taste for Vengeance: Information about Prisoners and Policy Choices

**COUNTRY** Chile

**YEAR** 2020

**TEAM** Fernando G. Cafferata, Daniel Gingerich, and Carlos Scartascini

## CONTEXT

**Approximately 1.4 million people are held in penal institutions in Latin America, representing 12.6 percent of the world's detainees.** Out of every 100,000 inhabitants in the region, 241 are in prison, about twice as many as in the European Union. In the past decade, incarceration in Latin America has increased by over 75 percent. In Chile, incarceration rates are among the highest globally: 216 prisoners per 100,000 inhabitants in 2018. High incarceration rates not only incur economic costs to society; they also harm the imprisoned population through overcrowding, frequent riots, and poor living and health conditions that facilitate the transmission of diseases.

In a larger context, higher incarceration rates are seen as an expression of policy preferences for punitive approaches to crime, commonly referred to as *mano dura* ("firm hand"). Once these policies are in place, however, reversing them is often difficult, even if circumstances change—for example, if crime rates decline. Moreover, research has indicated that preferences for *mano dura* approaches are not necessarily correlated with actual levels of crime.

## THE PROJECT

**High incarceration rates, often misaligned with actual crime levels, underscore the need to weaken demand for punitive policies and shift preferences in favor of alternative strategies to reduce crime.** This study investigated the impact an informational intervention might have on public policy preferences for crime combatting strategies.

Researchers deployed a survey experiment as part of the Americas Barometer Survey in 2017 with Chilean participants. The objective was to explore if citizens might shift their preferences away from punitive strategies toward social policies that tackle root causes of crime.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Availability heuristic
- Optimism bias
- Present bias
- Status quo

### Other Barriers

- Lack of information

### Behavioral Tools

- Empathetic identification
- Framing
- Salience

See definitions

## BEHAVIORAL BARRIERS

**Availability heuristic:** *Mano dura* may be more appealing to individuals than less punitive approaches, since the attention crime receives in the media may bring associations with it readily to mind.

**Optimism bias:** Citizens may underestimate the harm to welfare from punitive approaches and overestimate their benefits.

**Present bias:** Citizens may prefer the instant benefits of punitive approaches to waiting for better outcomes from social policy or other long-term strategies.

**Status quo:** Citizens may, for instance, prefer to maintain current, less efficient crime-combatting policies to avoid change.

## OTHER BARRIERS

**Lack of information:** Citizens who lack knowledge about the educational and socioeconomic backgrounds of people who have committed crimes may hold preconceived notions about them.

## BEHAVIORAL TOOLS

**Empathetic identification:** Pairing educational information on criminals with visuals might induce people to identify with the criminals, which, in turn, might affect their policy preferences.

**Framing:** Complementing the question on policy preferences with such information might lead to different responses than presenting the question without it.

**Salience:** Colors and images might increase attention to the information, boosting cognitive and emotional processing.

## INTERVENTION DESIGN

**Researchers conducted an experiment as part of the Americas Barometer Survey 2017, administered by Vanderbilt University, using a stratified, nationally representative sample of 1,625 adult Chileans.** Each participant was assigned to one of two treatment groups or a control group. Since one of the treatment groups was part of a different research project, it was excluded from further analysis. Thus, the experiment essentially consisted of one control and one treatment group. Participants in the latter received the infographic presented in figure 7.6.1. Its content strongly focused on the educational background of criminals in Chile, posing the question (in Spanish), "Did you know that almost all of those who committed a crime in Chile did not complete 12 years of schooling, and half did not finish primary school?" The question was visually complemented by a bar chart with statistical information on the educational attainment of criminals, as well as two images, one clearly associated with schooling and one depicting an inmate in a difficult emotional state.

## FIGURE 7.6.1 Stimulus Material in the Treatment Group

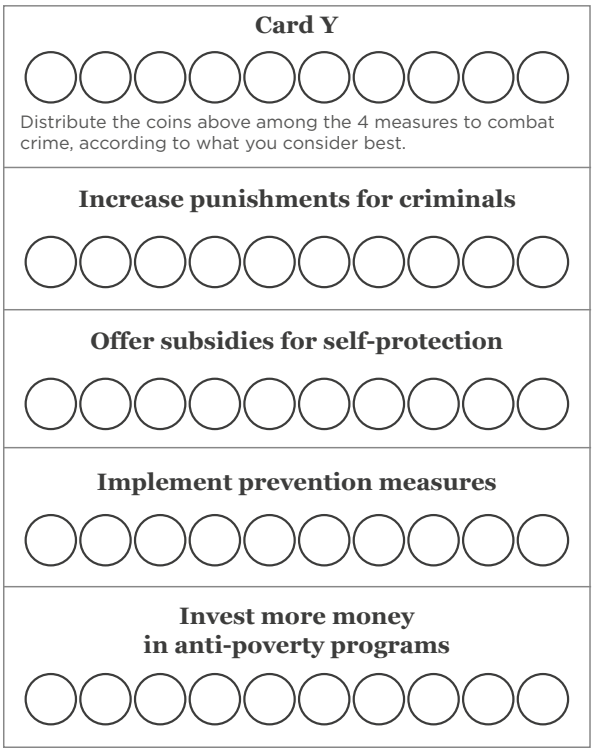

**Note:** The text in this figure translates as follows: "Did you know that almost everyone who commits crimes in Chile did not finish 12 years of schooling, and half did not finish primary school? 40.2% did not finish primary school. 60.4% did not finish 9 years of schooling. 84.4% did not finish 12 years of schooling. Source: United Nations Development Program's (UNDP) comparative study of imprisoned populations, published in 2013."

To elicit their priorities for strategies to address crime, participants were then provided with a second graphic of coins representing a fixed number of resources (approximating the resource limitations the government faces in many decision-making processes) and **were asked to distribute the coins among the four different policies (see figure 7.6.2):**

1. Increase the punishments given to criminals (punitive policy).
2. Offer subsidies/help people to buy security systems and other forms of self-protection (detective and protective policy).
3. Implement preventive measures, such as vocational training and rehabilitation programs (social policy).
4. Invest more money in antipoverty programs (social policy).

For the analysis, the third and fourth categories were collapsed, since both represented social policies. Differences among resource allocations for each of the three resulting categories were used as dependent variables. Since balance tests indicated a successful randomization of treatment and control groups, the data were analyzed with ordinary least squares (OLS) regressions, with the control group as an omitted category. Results were reported with different modifications, including the inclusion of covariates to control for, among other characteristics, sex, age, education, security perception, and political ideology. An alternative operationalization of the dependent variable asked for agreement or disagreement with the acceptability of police officers ignoring the law to punish criminals themselves.

## FIGURE 7.6.2 Dependent Variable: Policy Preferences among Crime-Combatting Strategies



## CHALLENGES

» The main challenge to the study was the inability of the experimental design to distinguish between the effects of the emotional component of the intervention (empathetic identification) that might result from the strong visual on the righthand side of the infographic and the informational component describing the educational background of inmates.

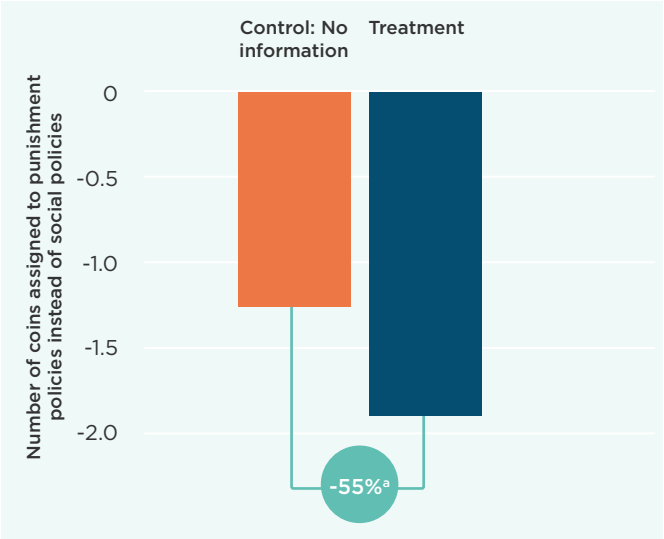
## RESULTS

**Analysis of the survey data showed that respondents in the treatment group displayed a stronger preference for social policies over punitive or detective policies relative to the control group.** These results were highly significant, and effects were strong, with the difference between resources allocated to social policies and those to punitive policies increasing by approximately 50 percent (figure 7.6.3). Treated participants also increased resource allocation to social policies over detective and protective policies by roughly 20 percent (figure 7.6.4).

In the dependent variable's alternative operationalization, support for *mano dura* approaches was reduced by 6 percent.

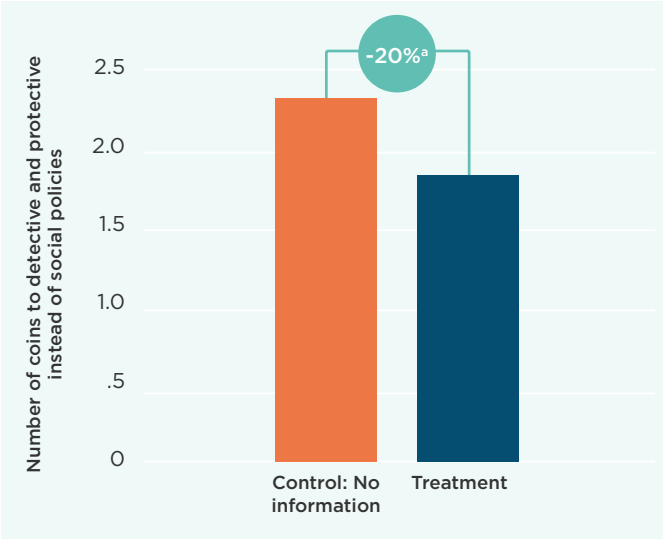
In terms of the resources allocated to each strategy, the results showed a significant decrease of 10 percent for punitive approaches and an 8 percent increase for social policies. The results were consistent when analyzing individual preferences instead of differences; the number of resources allocated to punitive strategies decreased by 10 percent.

### FIGURE 7.6.3 Treatment Effect: Allocation of Resources (Coins) among Punitive versus Social Policies




[a] Statistical significance level of 5%.

### FIGURE 7.6.4 Treatment Effect: Allocation of Resources (Coins) among Detective and Protective Policies versus Social Policies




[a] Statistical significance level of 1%.

## POLICY IMPLICATIONS

» **This study showed that preferences for crime-combatting strategies can be changed.** The results are particularly relevant in the Chilean context, where positions on police and the justice system were historically polarized after Pinochet's dictatorship. If a change of preferences is, indeed, possible in this relatively rigid environment, the potential for attitudinal changes should exist in other countries, as well.

# 7.7. Incentives for Civil Servants: The Role of Behavioral Insights

**COUNTRY** Argentina

**YEARS** 2017–19

**TEAM** Carlos Scartascini and Paula Zamora

## CONTEXT

**Good governance is seen as a pillar of democratic stability, economic growth, and welfare.** To exercise it, expanding the capacities and increasing the quality of the public sector are paramount. Well-functioning public sectors are equally important for a state's legitimacy vis-à-vis its citizens. One step in this direction consists of increasing task compliance and efficiency by civil servants. While private sectors frequently rely on economic incentives to achieve such outcomes, though, the public sector faces several limitations to such an approach, making it important to explore alternatives.

## THE PROJECT

From 2017 to 2019, the IDB conducted a project to explore alternatives to economic incentives to increase task efficiency and compliance among civil servants. The particular task to improve was compliance with requests under the Freedom of Information Act (Law 104),[5] which allows any person to obtain access to government records. Specifically, the research team evaluated the effect of redesigning the notice requiring civil servants in Buenos Aires to comply with citizens' requests under Argentina's Freedom of Information Act.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Cognitive overload
- Hassle factors
- Present bias

See definitions

[5] The text of the law can be found at https://www.buenosaires.gob.ar/gobierno/ley-ndeg-104.

### Behavioral Tools

- Feedback
- Loss aversion
- Salience
- Simplification
- Social norms

See definitions

## BEHAVIORAL BARRIERS

**Cognitive overload:** Civil servants often face many simultaneous tasks that consume a lot of their cognitive resources. Processing all of them with the same level of attention and timeliness may be difficult.

**Hassle factors:** In the case of citizens' requests, civil servants may be discouraged from responding to them on time by an inconvenient, complicated task structure.

**Present bias:** People may prefer focusing on easier and more convenient tasks in the moment, even if they risk a penalty or a larger penalty in the future, as was the case with continued noncompliance with requests under the Freedom of Information Act.

## BEHAVIORAL TOOLS

**Feedback:** Feedback was provided to civil servants in the treatment group on the percentage of requests that were not processed on time, thereby highlighting the undesired outcome.

**Loss aversion:** The civil servants were informed that a lack of response might trigger prosecution, with both human and economic resource losses. While the notifications to both the control and treatment groups contained this information, the treatment group's wording was designed to trigger loss aversion.

**Salience:** The notification of the information request to the treatment group was restructured, and key elements were made more salient.

**Simplification:** The restructuring also increased clarity, and tasks were broken down into simple steps, accompanied by icons providing visual support.

**Social norms:** The restructured notification highlighted that access to information is a human right that is up to everyone to defend.

## INTERVENTION DESIGN

**The project measured the effect of a redesigned letter to civil servants on compliance with requests under the Freedom of Information Act.** While the control group received the "traditional" notification request, the treatment group received the redesigned one (see figure 7.7.1). The redesign of the letter was based on a diagnostic concluding that civil servants might miss deadlines to answer the requests because they did not understand the deadlines and procedures well, nor were they aware that timely compliance was a priority for the city government. Thus, the letter attempted to exploit several behavioral insights by (1) increasing the visual salience of the request; (2) adding an element of deterrence in the form of loss aversion; (3) simplifying and (4) personalizing the information; (5) providing feedback; and (6) activating social (injunctive) norms.

The intervention used a stratified randomization procedure to assign 121 agencies to treatment and control groups; the control group comprised 62 agencies and the treatment group 59. The unit of observation was individual citizens' requests, with 3,785 observations before and 3,111 after the intervention began. The intervention occurred at the same time as a civil servant training program, and members of both the control and the treatment groups attended these sessions. This allowed the researchers to evaluate the effects of the workshop on both groups.

Since the intervention was implemented while requests continued to be processed and received, **the requests were classified into three different cases for the analysis that followed (see figure 7.7.2):**

1. **Case I.** Requests that were received and responded to before the intervention started
2. **Case II.** Requests that were received before the intervention but had not yet been responded to
3. **Case III.** Requests that were received after the intervention started

The requests that were received before the intervention started but had not yet been responded to (case II) allowed researchers to look at possible effects of the new notifications (case III) on compliance with older requests (cases I and II).

The overall period of observation began in January 2017 with the recording of preintervention baseline data. The intervention itself took place between September 6, 2018, and March 6, 2019, and the last date included for analysis was October 9, 2019. The dependent variables of the analysis included the number of business days needed by each agency to respond to requests.

## FIGURE 7.7.1 "Traditional" and Redesigned Notification Letters for Citizen Requests

### A. Control

Mr. / Madam Director General

1. The neighbor [_] made a request for public information within the framework of Law 104.

2. Law 104 establishes the right of every person to request and receive complete, truthful, adequate, and timely information from any government body, which must be provided within a period of fifteen (15) business days.

3. The response to the request for public information must be prepared in the form of a Report (IF) produced in GEDO and sent by your agency to the neighbor at the address that appears on the cover of this letter using certified mail. If applicable, please send a copy of the necessary documentation to the interested party.

4. The response drawn up in a Report (IF) and (b) supporting documents and (c) copy of the signed reliable notification must be linked to the Electronic File (a) the response to this DG (user DGSOCAI-03).

5. Access to information shall be denied only in those cases where (a) the information does not exist, and the official is not obliged to produce it and (b) when an exception provided for in Article 6 of Law 104 applies. If this is the case, the details and reasons have to be specified to the neighbor.

6. If you do not have the required information because it is not within your competence, you are requested to send the File to this DG (DGSOCAI-03) as soon as possible.

7. Use of the one and exceptional extension of ten (10) days must be communicated to the neighbor by means of reliable notification before the expiration of the term and to this DG through Official Communications (CCOO). The aforementioned notification must appear in the File as a graphic report (IFGRA).

8. Finally, we remind you that an official or responsible agent who arbitrarily obstructs access to information, supplies it incompletely—without justification—or obstructs in any way compliance with LAW 104 commits a serious offense without prejudice to the civil or criminal liability that may correspond. Lack of response or inadequate response can lead to prosecution.

9. If you have any questions, do not hesitate to contact this DG at dgsocai@buenosaires.gob.ar or at 5091-7301/7298.

### B. Treatment

**LAW 104 — URGENT**

1. The neighbor [_] made a request for public information within the framework of Law 104.

2. Law 104 establishes the right of every person to request and receive complete information from any government body within fifteen (15) business days.

3. An official or responsible agent who arbitrarily obstructs access to information or supplies it incompletely without justification commits a serious offense without prejudice to the civil or criminal liability that may correspond. Lack of response or inadequate response can lead to the judicialization of the request, with the consequent expense in economic and human resources.

**How to answer [the request]?**
4. The response must be sent to the address established in the CABA by the neighbor: _____.
It is requested that you:
(a) Write the response to the request within a Report (IF) produced in GEDO.
(b) Send the neighbor the response generated by means of a notification card to the address that appears on the cover of this document. If applicable, send a copy of the necessary documentation to the interested party.
(c) Link to the Electronic File:
(I) the response drawn up in the Report (IF) mentioned above;
(II) supporting documents, if applicable; and
(III) a copy of the notification document signed by the requesting party.
(d) Send to this DG (user DGSOCAI-03).

**5. Remember that the answers to the neighbors must be COMPLETE AND CLEAR.**

6. If you cannot respond because the information does not exist and you are not legally bound to produce it or it falls under the exceptions provided for in Article 6 of Law 104, you must detail the reasons in your response to the neighbor.

7. If you do not have the requested information as it is not within your competencies, please send the File to this DG (DGSOCAI-03) as soon as possible.

8. To make use of the single extension of ten (10) days, you must communicate it to the neighbor's email before the expiration of the term, with a copy to this DG. In the communication:
(a) Put as subject "Extension of Request for Public Information—Law 104."
(b) Attach the extension report.

9. Once the response has been sent, you must link to the Electronic File: (a) the extension report and (b) proof of the sending of the mail as a graphic report. Then send the Electronic File to this DG.

10. For inquiries, contact: dgsocai@buenosaires.gob.ar or at 5091-7301/7298.

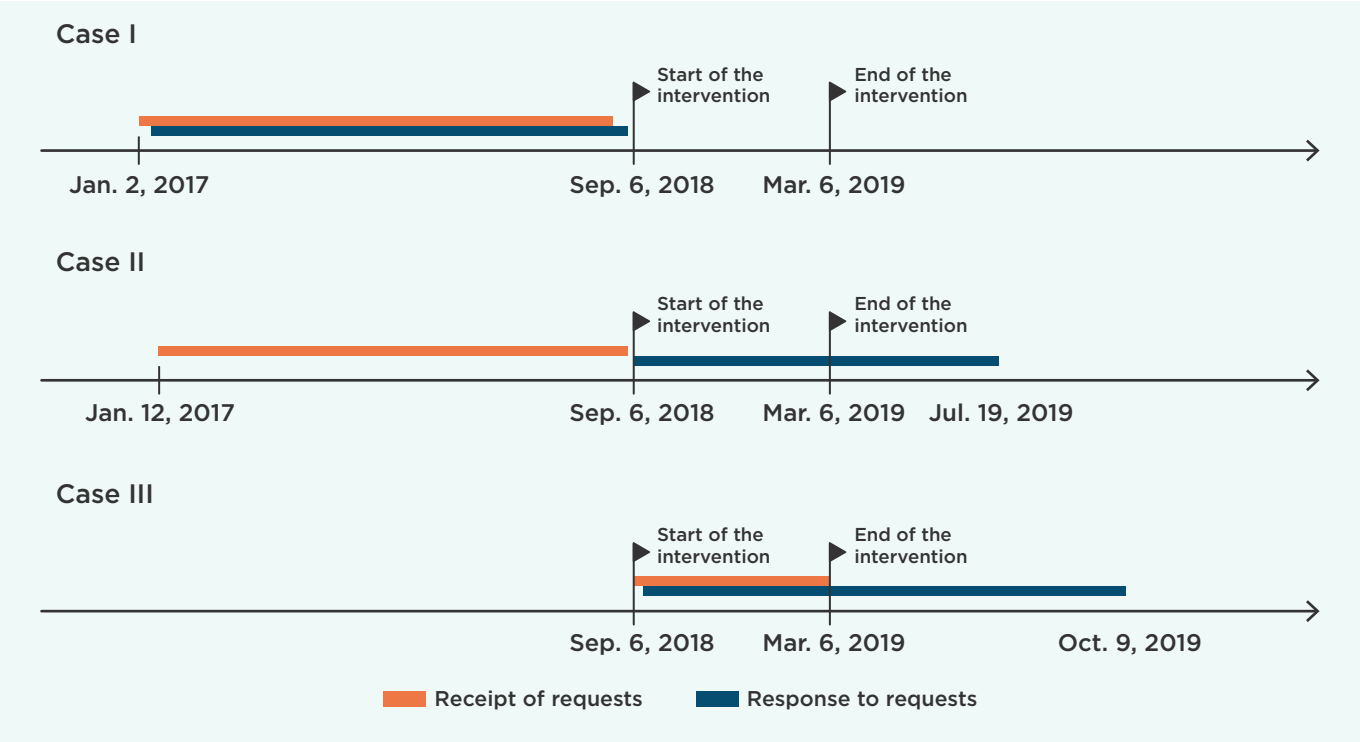
The Culture area responded to 40% of the requirements "out of term" in 2017. Information requests in the area: 100%.

**Culture**
Completed on time (60%)
Completed late (40%)

**Access to public information is a FUNDAMENTAL HUMAN RIGHT: let us work together to guarantee it.**

**Note:** The treatment image for Panel B was translated and adapted for this document.

## Figure 7.7.2 Different Cases and Timelines for Procedures




**Note:** This representation of the receipt of and response to requests omits those that remained open by November 27 and therefore did not have a date of completion.

## CHALLENGES

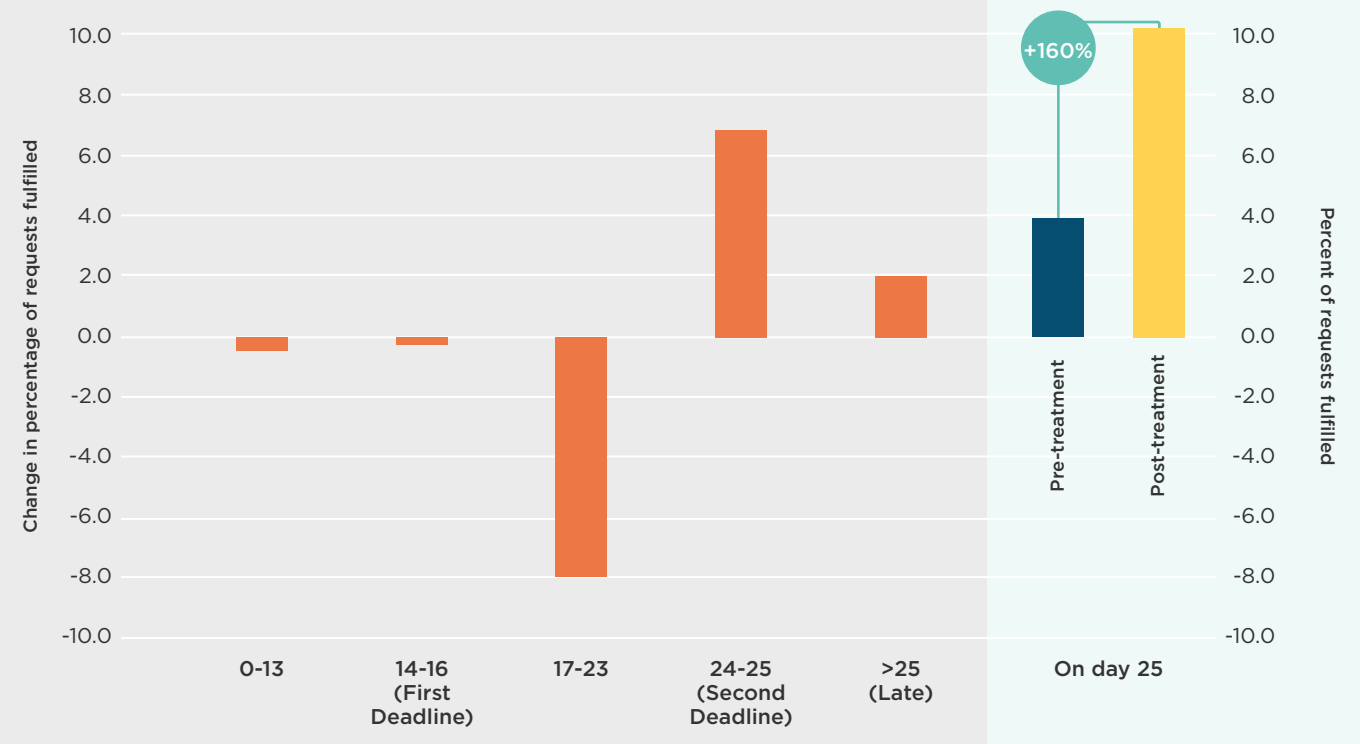
- **The study presented two challenges. First, although they were disentangled in the analysis,** the intervention occurred at the same time as a civil servant training program, and **the simultaneity of the two interventions might have confounded the results in unknown ways.**
- **Second, the longevity of the impact of behavioral interventions strongly depends on the context.** In this design, the period of observation post-intervention was six months, potentially limiting a generalization of sustained effects over a longer term.

## RESULTS

**The behavioral intervention (the redesigned letter) was successful in increasing the response to information requests exactly on the second deadline (day 25) by 6.1 percentage points (pp).** This represented an increase of 160 percent with respect to the mean in the pre-treatment stage.

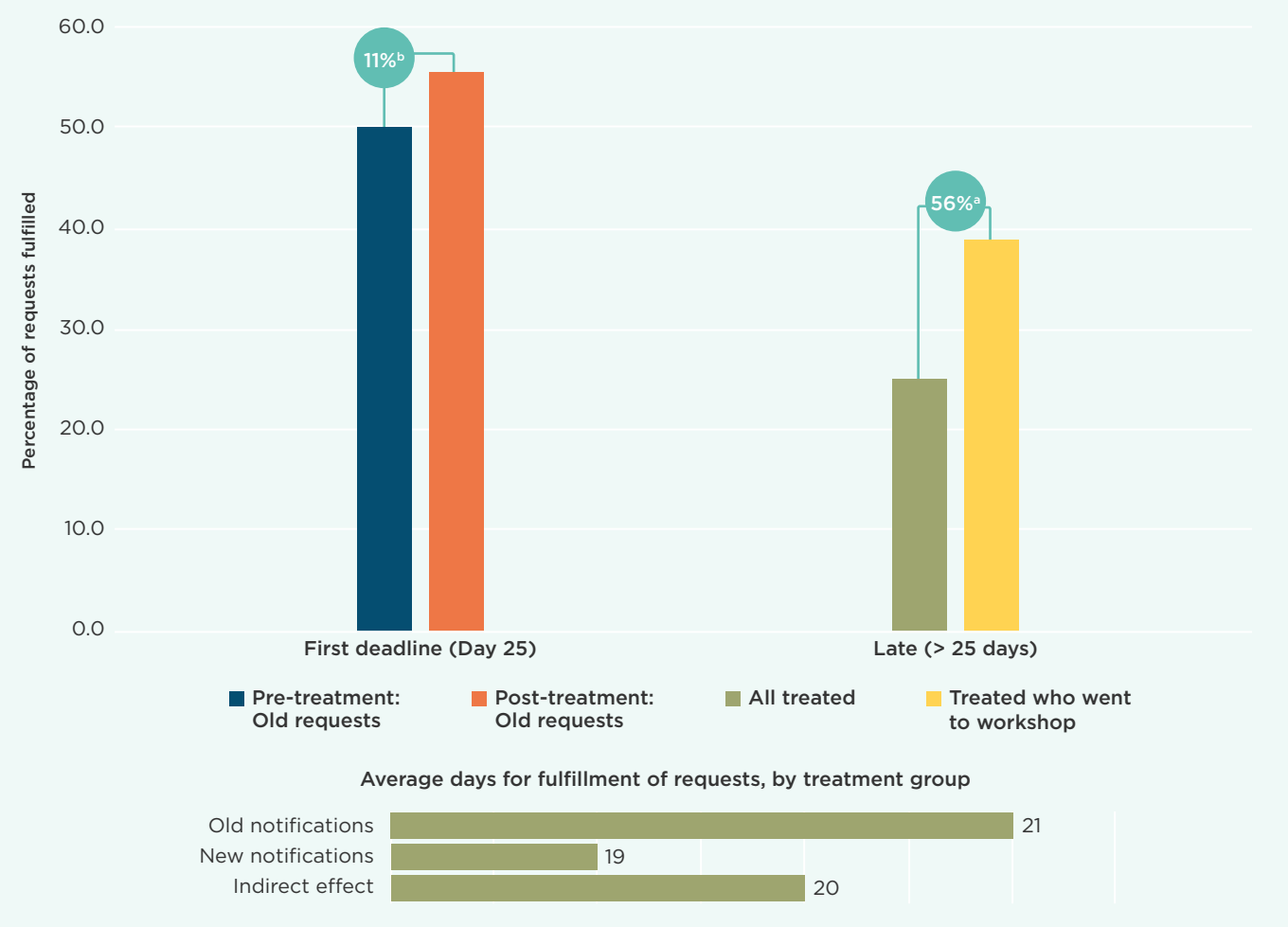
The results also indicated a substitution effect—that is, while fewer requests were answered during the extension period (between days 17 and 23), the numbers of answers increased for the second deadline (days 24 and 25; figure 7.7.3). This is evidence that, while the treatment did not alter the whole distribution, it made the second deadlines more salient, compelling civil servants adhere to them.

## FIGURE 7.7.3 Agencies' Responses to Requests, by Deadline




The treatment had positive spillover effects on older pending requests, whose probability of being fulfilled by the first deadline (day 15) increased by 5.5 percentage points (figure 7.7.4). On the other hand, attending a workshop significantly delayed responses to requests. For the control group, it raised the likelihood of responding late by 13.5 percentage points, increasing the average duration of processing a request by 7.8 days. Similarly, civil servants in the treatment group who attended the workshop saw an increase of 14 percentage points in the likelihood of responding late by 14 percentage points. Overall, these results indicate that workshop participation could explain later responses across groups and might counter positive effects of the redesigned letter.

## FIGURE 7.7.4 Spillover Effects on Old Requests and Effects of the Workshop on the Treated




[a] Statistical significance level of 10%. [b] Statistical significance level of 1%.

## POLICY IMPLICATIONS

» **This study showed that behavioral interventions can have a meaningful impact on improving civil servants' performance by making tasks easier to understand, more salient, and personalized.** Although civil servants' compliance with the specific task studied was already high (78 percent), possibly indicating ceiling effects, it might still be highly illuminating to explore the use of such interventions in contexts of lower compliance.

» The analysis further suggested that workshops may not be an efficient way to improve public servants' task performance. Given the absence of strong evidence in favor of workshops in the literature, this result also indicates a need to evaluate the conditions under which training could work.

» In summary, behavioral interventions may lead to an improvement in civil servants' task performance, but the effects could be overshadowed by another policy with adverse effects (workshops). The study demonstrated the need to understand the systemic contexts in which such interventions are conducted.

# 7.8. How Issue Framing Shapes Trade Attitudes

**COUNTRIES** 18 countries in Latin America

**YEAR** 2018

**TEAM** Marisol Rodríguez Chatruc, Ernesto Stein, and Razvan Vlaicu

## CONTEXT

**In recent years, trade policies have received renewed public attention.** While trade should have positive aggregate welfare effects, the distribution of benefits within the labor market varies. Some political campaigns in developed countries have used these inherent distributive tensions to demand swift changes to national trade policies. Political attention notwithstanding, the role of citizens' preferences regarding trade has remained largely unexplored. Notably, little knowledge exists on how beliefs shape policy preferences on trade and how issue framing around trade determines them. A better understanding of the interplay among framing, preferences, and beliefs could advance understanding of the trade policy outcomes currently observed.

## THE PROJECT

**IDB researchers implemented an experiment as part of the Latinobarómetro survey in 2018 that explored trade preferences and beliefs in Latin America.** The behaviorally informed component tested how framing questions on trade in different ways might affect an individual's trade preferences. The study further explored how beliefs help to explain preferences and the heterogeneous effects of trade preferences, with regard to country or level of education in particular. To the best of the researchers' knowledge, this was the first survey experiment conducted on trade with a representative sample for a large number of countries.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Limited attention
- Loss aversion
- Status quo

### Other Barriers

- Lack of information

### Behavioral Tools

- Framing
- Salience

See definitions

## BEHAVIORAL BARRIERS

**Limited attention:** Even when relevant information is, in principle, available, people's ability to process it is limited. As a result, they may ignore pieces of such information unless it is communicated clearly and simply. In this case, citizens may not be able to dedicate significant attention to processing information about trade and its potential impact on their everyday lives.

**Loss aversion:** A loss may cause distress that is greater than the happiness caused by a gain of the same magnitude. In this case, citizens may form antitrade preferences when information emphasizing potential losses weighs heavier than information underscoring potential benefits.

**Status quo:** People attached to the status quo may dread or overestimate the costs of taking action, despite actual or perceived benefits. The current trade policy may be preferred because it has been the status quo for a certain period of time.

## OTHER BARRIERS

**Lack of information:** People may lack relevant information—for instance, because it is difficult to obtain, scarce, or hard to understand. This problem informs policy preferences on trade.

## BEHAVIORAL TOOLS

**Framing:** People tend to draw different conclusions depending on how information is presented. Options can be presented in a way, for example, that highlights the positive or negative aspects of a decision, leading an option to be perceived as more or less attractive. In this case, information on trade was presented in different frames with positive, negative, or mixed aspects highlighted.

**Salience:** The principle of salience applies both to things that stand out and things that cease to stand out. Individuals tend to focus on points and information that stand out and ignore those that do not; this is also called "shiny object bias." In this study, the treatment conditions made different aspects of trade more salient.

## INTERVENTION DESIGN

**The study was included as one module in the Latinobarómetro survey in 2018, a representative survey of adult citizens from 18 Latin American countries that collected data between June and August 2018.** The overall sample size was 20,204. Nearly all participants were interviewed at their homes, and data were recorded either on paper or electronic devices. Other modules of the survey elicited preferences on a diverse range of topics, along with participants' socioeconomic data.

In the first part of the study, the experiment made use of different framing prompts to test how different informational frames might affect citizens' preferences regarding trade. The underlying theory of change assumed that different framings

| TABLE 7.8.1 Experimental Conditions | | |
|---|---|---|
| **Condition** | **Framing** | **Question** |
| Control | --- | *Are you in favor of or against [your country's] increasing trade with other countries?* |
| T1 | Positive framing | *Are you in favor of or against [your country's] increasing trade with other countries so that prices fall and the variety of products you may buy increases?* |
| T2 | Negative framing | *Are you in favor of or against [your country's] increasing trade with other countries even if increased trade causes employment losses in import-competing sectors?* |
| T3 | Mixed framing | *Are you in favor of or against [your country's] increasing trade with other countries so that prices fall and the variety of products you may buy increases, even if increased trade causes employment losses in import-competing sectors?* |
| Follow-up question for all groups | Consequences of increasing trade | *Which of the following do you think are consequences of increased trade with other countries? (Mention all the consequences you agree with.)* |

might lead to stronger or weaker preferences for trade. All participants were randomly assigned to one of four conditions. Besides one control group that was presented with a direct question about preferences on trade, the respondents in the three treatment groups were presented with a positive framing (T1), a negative framing (T2), and a mixed framing (T3) in the form of a question about preferences on trade, leading into a follow-up question on beliefs regarding the consequences of increased trade (see table 7.8.1). Answers within each condition were binary ("in favor of," "against"), with the possibility of responding "I don't know."

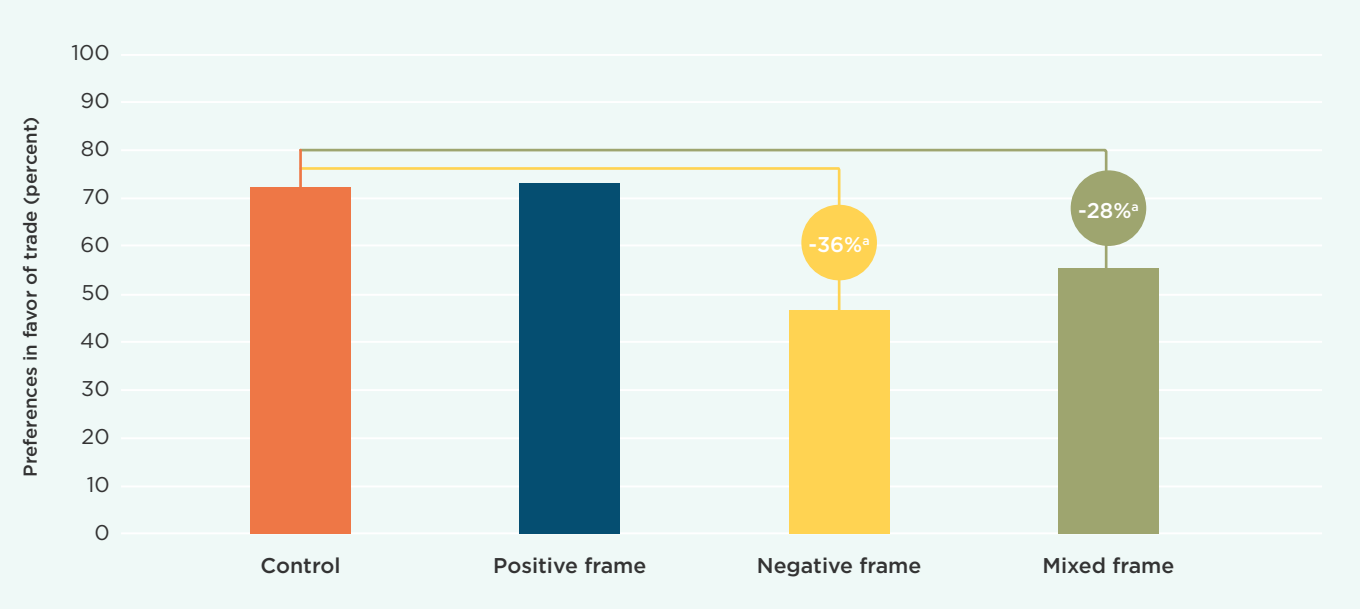
After the treatment exposure, participants were asked to select from among eight overall beliefs describing possible consequences of increased trade those with which they agreed. These were "higher employment," "higher wages," "product variety," "lower prices," "access to technology," "better personal economic situation," "lower wages," and "lower employment."

Data analysis mainly took the form of an ordinary least squares (OLS) regression, with the control group as the excluded category and coefficients for each treatment indicating the average treatment effect.

## CHALLENGES

- **The study presented two challenges. First,** while the question eliciting trade preference was intentionally formulated broadly, informed by previous research on framing, it was possible that the specific wording was seldom used in political contexts and might have triggered different answers than more frequent formulations involving "import," "export," and so on.
- **Second,** the study results indicated potential issues in implementing the experiment in the Dominican Republic, as only very small effects or no effects at all of framing were discernible.

## FIGURE 7.8.1 Effect of Framing on Trade Preferences




[a] Statistical significance level of 1%.

## RESULTS

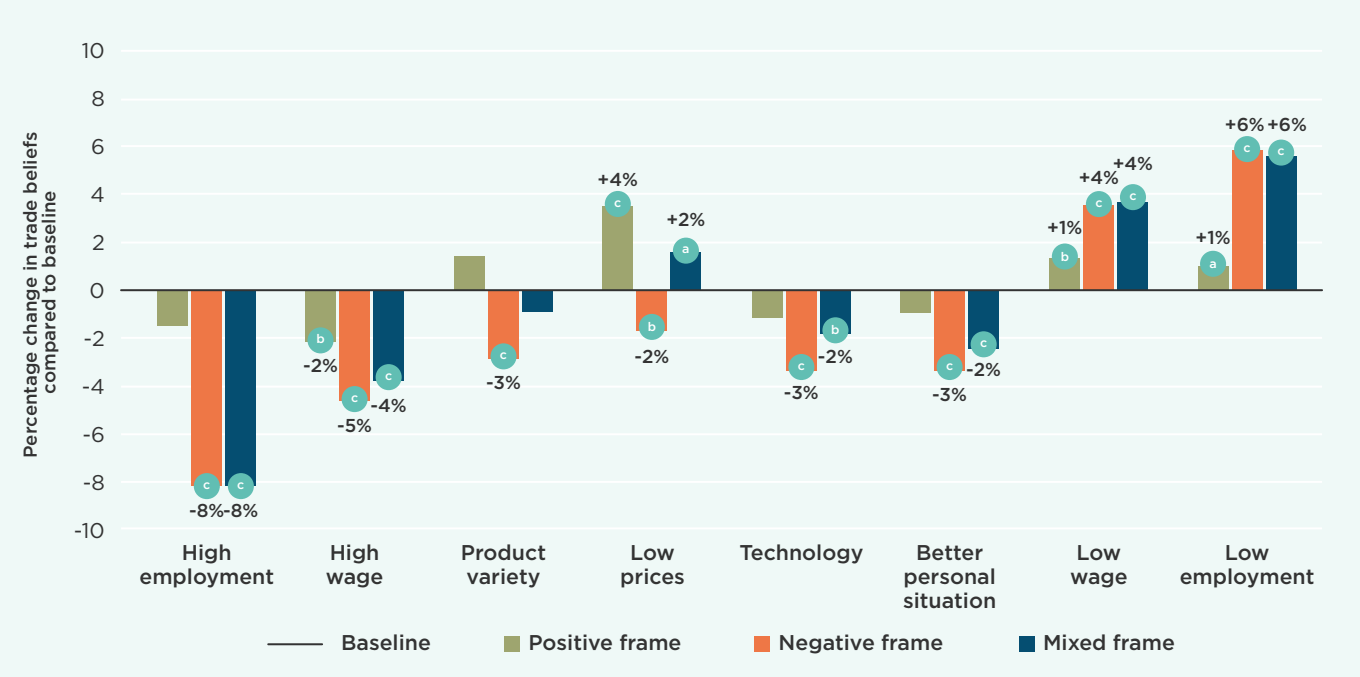
**The study found, first, that framing effects strongly affected trade preferences.** The share of participants with preferences for trade was 73.11 percent in T1 (positive frame), 72.64 percent in the control group, 46.33 in T2 (negative frame), and 55.10 percent in T3 (mixed frame). The effect for T2 was large, negative, and highly significant. It decreased trade preferences by about 26 percentage points (pp), accounting for a 36 percent decrease. For T3, results were equally negative and highly significant, indicating a reduction of approximately 17 pp in trade support, accounting for a 28 percent decrease (figure 7.8.1). The mixed framing results showed potential interactions between positive and negative framing, with negative information having a greater impact. This finding was in line with research on loss aversion.

Framing also seemed to have affected beliefs. For T1, beliefs on product variety and low prices were strengthened, which was in line with the information presented in this condition. In contrast, the six other beliefs were negatively affected across all three frames. The negative frame, for instance, reduced beliefs that trade increased employment by over 8 pp and the belief that it might increase wages by 4.5 pp (figure 7.8.2).

Regression analysis of the effects of beliefs on trade preferences found negative beliefs (low wages, low employment) always associated with lower trade support and positive beliefs (high wages, high employment, product variety, low prices) with higher support.

The study also elicited heterogeneous effects across various variables. Countries ranged from about 60 percent approval (Argentina, Peru) to over 85 percent approval for trade (Venezuela, Honduras, Uruguay, Nicaragua). Finally, individuals who were more educated were more supportive of trade but also more sensitive to framing effects.

## FIGURE 7.8.2 Effect of Framing on Trade Beliefs




[a] Statistical significance level of 10%. [b] Statistical significance level of 5%. [c] Statistical significance level of 1%.

## POLICY IMPLICATIONS

» **This study replicated results from previous research that emphasized the importance of informational frames in determining citizens' policy preferences.** For policymakers, this implies (1) the importance of validating policy messages across different wordings and (2) the need to be diligent and careful in wording messages about policy in general.

» The heterogeneous effects of education might contribute to a better understanding of trade policy outcomes. Since highly educated people are more likely to influence and determine these outcomes, their sensitivity to negative frames is likely to play a more prominent role when countries navigate a course that is rather antagonistic to increased trade.

# SMALL AND MEDIUM ENTERPRISES

# Small and Medium Enterprises

**For the promotion of small and medium enterprises, the IDB implemented two interventions that sought to improve corporate training, both of which took place in Ecuador.** When designing corporate training, researchers found that heuristics-based training that reduced cognitive load had a positive effect on both sales and profits for those who participated. They also observed how the context in which an intervention occurs can affect outcomes, as detailed in the second intervention presented below. Table 8.1 lists the behavioral barriers observed and the tools used in interventions in the area of small and medium enterprises.

**TABLE 8.1. Behavioral Barriers and Tools Relevant to Small and Medium Enterprises**

| Behavioral Barriers | Other Barriers | Behavioral Tools |
|---|---|---|
| » Cognitive overload<br>» Hassle factors | » Lack of information | » Commitment devices<br>» Micro-incentives<br>» Personalization<br>» Reciprocity<br>» Reminders<br>» Simplification |

See definitions

# 8.1. When the Context Backfires: Experimental Evidence on Reciprocity

**COUNTRY** Ecuador

**YEARS** 2015–16

**TEAM** Irani Arráiz, Syon P. Bhanot, and Carla Calero

## CONTEXT

**For many public policy issues, solutions exist, but take-up by citizens—that is, the extent to which they accept and adopt these solutions—is limited.** Typical examples range from free vaccination programs to offers of vocational training. Only two-thirds of micro-entrepreneurs, for instance, are reported to take advantage of free business training programs. Increasing take-up of these policies would not only benefit the individuals participating in the programs but would also produce societal benefits, with higher program efficiency and positive externalities.

Many explanations of low take-up revolve around limited knowledge, lack of trust, structural impediments, and behavioral barriers. Facilitating more effective policies to advance research on approaches that overcome these issues is essential.

## THE PROJECT

**This project addressed behavioral barriers to low take-up, using a behaviorally informed intervention intended to increase the participation rates in business training programs for micro-entrepreneurs by offering a gift to activate a norm of reciprocity.** The study took place in Ecuador between 2015 and 2016.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

» Hassle factors

### Other Barriers

» Lack of information

See definitions

## Behavioral Tools

- Personalization
- Reciprocity
- Reminders
- Simplification

See definitions

## BEHAVIORAL BARRIERS

**Hassle factors:** Micro-entrepreneurs may be deterred from participating in business training by the distance they need to travel to the training location or the time investment required.

## OTHER BARRIERS

**Lack of information:** Micro-entrepreneurs may be unaware of the benefits they can obtain from business training.

## BEHAVIORAL TOOLS

**Personalization:** The letters inviting the micro-entrepreneurs to the training were personalized to increase their interest and participation.

**Reciprocity:** A gift of chocolate offered to the treatment group was designed to activate positive reciprocity by increasing the micro-entrepreneurs' willingness to "return the favor" by participating in the training.

**Reminders:** The micro-entrepreneurs were contacted by phone and reminded of the upcoming training session.

**Simplification:** The business owners were provided with free rides to and from the training location to simplify the steps involved in participating.

## INTERVENTION DESIGN

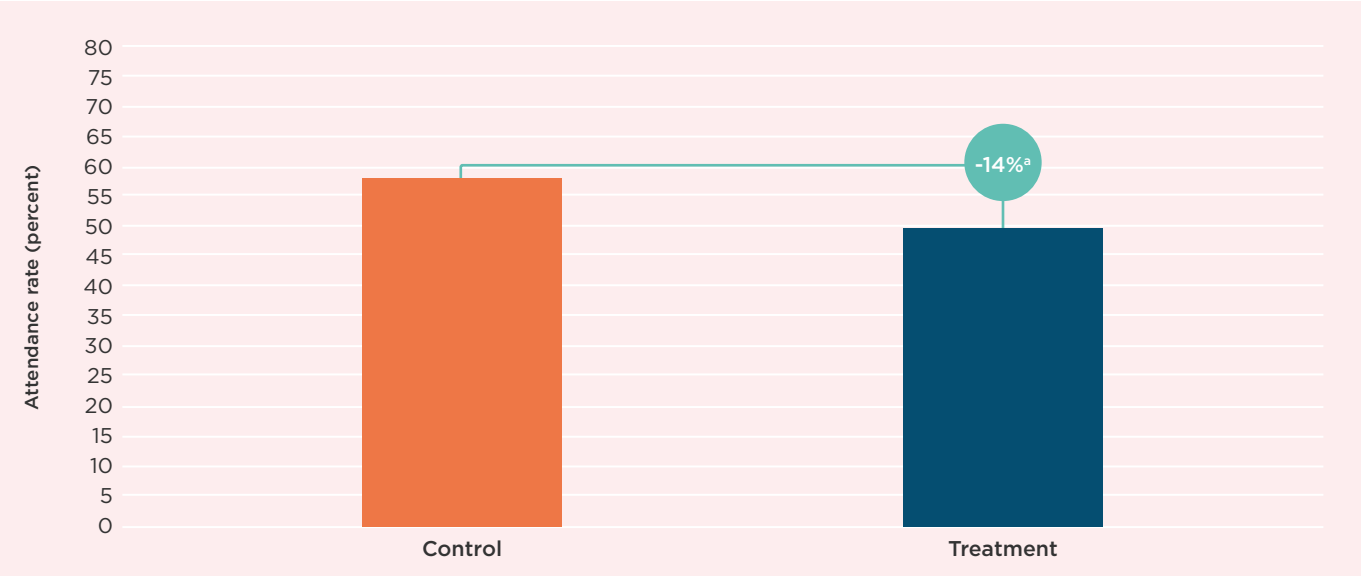
**This intervention was part of a wider effort to provide business training to micro-entrepreneurs in Ecuador.** The study used a sample consisting of 793 entrepreneurs from various economic sectors. All were non-bank correspondents, which means they were contracted by a financial institution to channel and process financial transactions of that bank's clients.

Participants were randomized into a control and a treatment group and stratified at the bank officer level. (There were 12 bank officers, each responsible for 66 micro-entrepreneurs). Baseline information on business characteristics and the businesses' current operations was gathered between August and October 2015. Ten days before the personalized training session, all 793 business owners received hand-delivered invitations from the bank officers that contained essential information on the training (date, time, address). Members of the treatment group received a chocolate gift with the invitation that was intended to signal appreciation and activate the norm of reciprocity. In addition, participants were offered free rides to and from the training location. They were also contacted by phone to confirm they had received the invitation and to remind them to participate. The training, free of charge and voluntary, took place in December 2015 and consisted of a single four-hour session. Finally, a follow-up survey was conducted one year after the training, between November and December 2016.

## CHALLENGES

- **One challenge presented to the intervention was an unexpected development that occurred shortly before the training session was scheduled to take place.** The financial institution had changed the electronic devices used to process financial transactions, which caused systemwide issues and income losses for the micro-entrepreneurs. The average number of transactions in November 2015, just a few weeks before the training, dropped by 8.9 percent. It is likely this issue and how it was dealt with by the bank officers created a tense, adversarial

## FIGURE 8.1.1 Effects of Treatment on Participation in Business Training Programs




[a] Statistical significance level of 5%.

relationship with the participants. In response to this challenge, an assessment of impulsivity was included in the study. Nevertheless, the changes in processing financial transactions constituted an important contextual event that seemed to have significantly affected the intervention's desired effect on participation in the business training sessions.

## RESULTS

**Results were reported from regression analysis, with strata at the bank manager level, and included several controls, such as the number of monthly transactions.** The findings showed a negative and statistically significant effect of the chocolate gift on rates of participation in the business training. The coefficient of the treatment was associated with a reduction in the participation rate of 8.3 percentage points (pp). This effect was robust to different model specifications, and it seemed to be driven by the reactions of business owners to the recent issues with processing financial transactions (figure 8.1.1).

Impulsivity of the business owners was also associated with lower rates of attendance, which can be interpreted as an inclination to react harshly to perceived unfairness (the income losses caused by changing the transaction processing devices).

For those who were in the treatment group (and thus received the chocolate gift), for an increase in one standard deviation in the reciprocity index, the likelihood to participate was reduced by 8.4 pp. These results were in line with previous research showing that high values of positive reciprocity are associated with strong reactions to perceived unfairness.

## POLICY IMPLICATIONS

- **This study demonstrated rather vividly that interventions do not take place in a vacuum but are always embedded in a context.** Specifically, recent events can be important in shaping the trajectory of an intervention and might limit the usefulness of behavioral interventions. Reciprocity, while mostly associated with beneficial tit-for-tat considerations, can also backfire.
- Furthermore, relationships are important. Particularly when triggering the social norm of reciprocity, interventions are not invulnerable to negative shocks in the personal relationships of the parties involved, which, in turn, might strongly affect the outcome.

# 8.2. Experimental Evidence on Heuristic-Based Business Training

**COUNTRY** Ecuador

**YEARS** 2015–16

**TEAM** Irani Arráiz, Syon P. Bhanot, and Carla Calero

## CONTEXT

**For many micro-entrepreneurs and small businesses in developing countries, a lack of business knowledge is a major obstacle to economic success.** In response, business training has become an essential strategy to foster growth and economic resilience. Evidence on these trainings is mixed, however, so it is important to explore when and how business training is successful in supporting small businesses.

## THE PROJECT

**To expand knowledge on business training in Latin America, this experiment tested its effectiveness in Ecuador in 2015–16.** Building on recent literature, researchers compared more traditional, information-heavy business training to behaviorally informed training that made use of heuristics to simplify information and cognitive processes. The project further explored the reasons that might have affected the success of the intervention, as well as gender dynamics.

The intervention used a randomized controlled trial, in which one group received a traditional business training, one received a behaviorally informed training, and one served as a control group.

## BEHAVIORAL ANALYSIS

### Behavioral Barriers

- Cognitive overload
- Hassle factors

### Behavioral Tools

- Commitment devices
- Micro-incentives
- Simplification

See definitions

## BEHAVIORAL BARRIERS

**Cognitive overload:** Traditional training may require more "bandwidth" and/or attention than trainees have available.

**Hassle factors:** In the case of business training, hassle factors may arise simply as a result of the way in which the information is presented, the length of the presentation, or additional actions that must be taken to execute a decision. Business owners might not use lessons they learn in a traditional training because the training does not provide clear guidance and actionable steps on concrete objectives, such as how to increase savings.

## BEHAVIORAL TOOLS

**Commitment devices:** The study asked participants to commit to a "30-Day Challenge," in which their adoption of the newly acquired heuristics would be tracked.

**Micro-incentives:** Entrepreneurs received stickers in their financial journals and were included in a lottery to win a cash register upon fulfilling certain implementation steps of the heuristics.

**Simplification:** The rules of thumb for business management are a perfect example of simplification.

## INTERVENTION DESIGN

**For the experiment, the IDB Lab partnered with Banco Pichincha to test and design two types of training in the Ecuadorian provinces of Guayas and Pichincha.** Overall, 2,408 micro- and small entrepreneurs participated in the randomized controlled trial. All 2,408 businesses initially also served as "non-bank correspondents," which means they were contracted by a financial institution to channel and process financial transactions of that bank's clients.

The traditional training covered three modules related to financial management and accounting: financial planning; credit; and saving and financial goals. The heuristics training was based on best practices identified in interviews with successful small business managers, packaged into four behavioral rules of thumb: *set up* (general structure for cash flow and expenses); *sell and tally* (daily operations); *pay out* (paying down debt); and *save up* (system for regular saving). The heuristics training also employed a nontraditional pedagogical approach.

The underlying theory of change of this intervention was based on the assumption that heuristics are highly efficient in reducing cognitive load. Furthermore, their simplicity allows business owners to recall them easily and to complete tasks in a few simple steps. The main outcome measures were the entrepreneurs' profits and sales.

Of the 2,408 entrepreneurs, 803 received traditional training and 801 the behaviorally informed heuristics training, and 804 served as a control group. The sample was stratified according to province and a measure related to the number of financial transactions. The baseline survey was conducted between August and October 2015, and the training started implementation in November 2015. A follow-up survey was conducted between November and December 2016 after the intervention was complete.

## CHALLENGES

- **The intervention presented several challenges. First,** the small entrepreneurs who participated were not randomly chosen. Rather, only entrepreneurs who functioned as non-bank correspondents participated, which might have limited the generalizability of the findings across all kinds of entrepreneurs.
- Like other experiments, this study was also confronted with exits of businesses due to bankruptcy and closures that reduced the sample. Exit rates were not, however, statistically different across the three groups.
- **Finally,** the costs for implementation and the design of the heuristics training were significantly higher than for the traditional training, necessitating higher investment in the first place.

## RESULTS

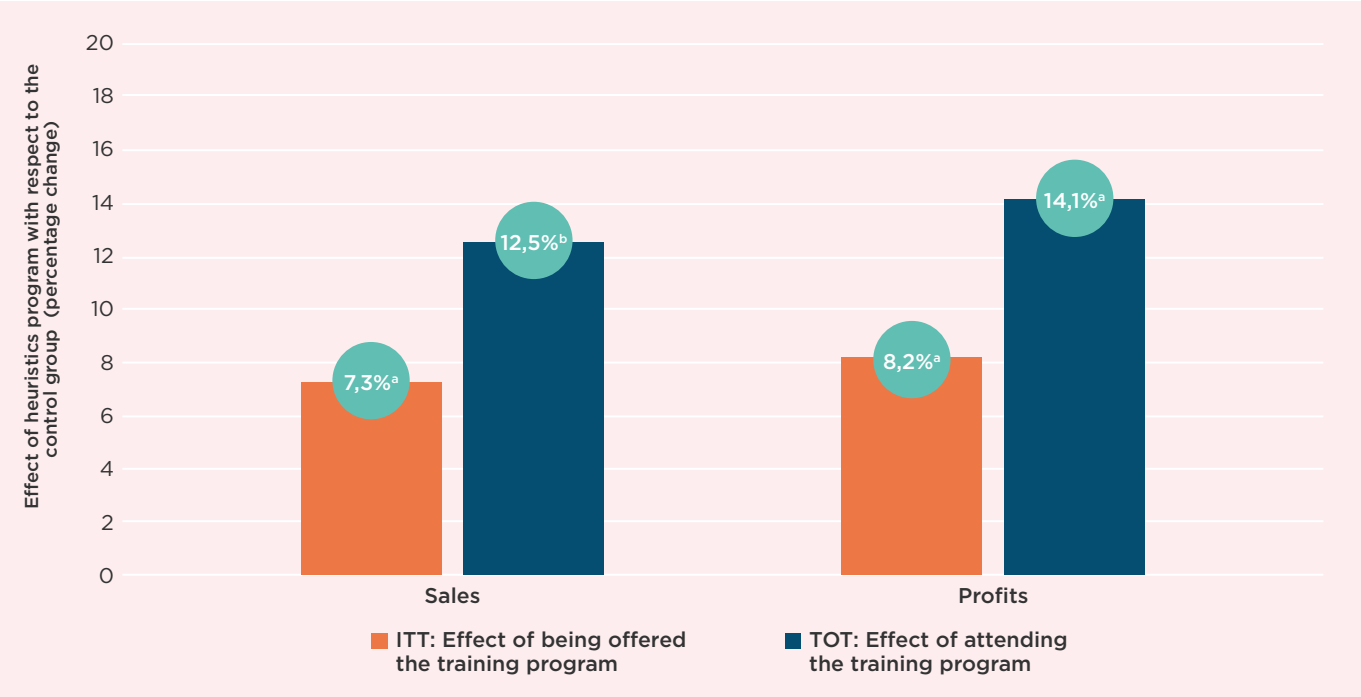
**Results indicated that the heuristics intervention had a significant and economically meaningful impact on sales and profits in comparison to the control group** (0.06 and 0.08 standard deviations, respectively), equivalent to increases of 7.3 and 8.2 percent, respectively, for the intention-to-treat effect (ITT). Effects on the treated (TOT) were higher, translating to a 12.5 percent increase in sales and 14.1 percent in profits (figure 8.2.1). The significant and positive impact of the heuristics-based training seems to have been driven by the training's effect on sales and profits for regular and good business days. In contrast, the effects of traditional training were not statistically different from those of the control group.

The study found that the major progress induced by the training was related to entrepreneurs' improved inventory management. In addition, the fact that individual attention span seemed to be a moderating factor indicated that heuristics-based training might be especially useful for people with a high cognitive load (high number of simultaneous duties) or with low ability to focus.

Cost-benefit analysis revealed that the rate of return for the heuristics training was high, amounting to 133 percent—or 37 percent, if the design cost were considered—estimated as an average extra profit of US$104 per month per participant (table 8.2.1).

Looking at subpopulation effects, the training had a larger impact for women and for people with low attention spans. Also, women seemed to apply the rules of thumb more often than men.

### FIGURE 8.2.1 Treatment Effects of the Intervention on Sales and Profits




[a] Statistical significance level of 10%. [b] Statistical significance level of 5%.

| TABLE 8.2.1 Cost-Benefit Analysis of the Intervention | | | | | | |
|---|---|---|---|---|---|---|
| | Day ($) | Month ($) | Average impact | Extra monthly profits ($) | Weight | Weighted extra monthly profit ($) |
| Profits on a good day | 68.63 | 2,087.41 | 10% | 208.70 | 10% | 20.87 |
| Profits on a normal day | 41.81 | 1,271.73 | 8.14% | 103.60 | 80% | 82.86 |
| Profits on a bad day | 23.03 | 700.49 | 5.64% | 0 | 10% | 0 |
| Weighted extra monthly profit | | | | | | 103.73 |

## POLICY IMPLICATIONS

- **In line with other recent work on behaviorally informed business training, the experiment demonstrated the high potential benefit of heuristics-based training for small business.** In this case, it led to sizable economic benefits for entrepreneurs.
- The intervention also demonstrated high cost effectiveness, and the targeted underlying cognitive mechanism (cognitive load and attention) seemed highly generalizable across different regions.
- If scaled successfully, this intervention might make a significant contribution to the stability of small business in the region.

# Conclusions

**The thirty-eight interventions presented in this document are not only a reference for decision makers in the public sector and civil society; they also draw an outline of the development of the field of behavioral economics in Latin America and the Caribbean.** They portray some of the difficulties with which most of the region's nations struggle and the behavioral science–based solutions that have been executed. In addition, they propose ways of rethinking the definition of many problems that have previously been seen as purely economic in nature.

In tax collection, for example, compliance was improved by simplifying the design of tax amnesty application forms, switching the mode of delivery of tax collection notifications, and sending reminders by email. Behaviorally informed reminders also proved powerful in improving school attendance, supporting vaccination efforts, and improving attendance at prenatal health appointments. Furthermore, the impact of defaults was seen to increase the acceptance of contact-tracing mobile apps designed to mitigate the transmission of COVID-19. Other behavioral tools, like the use of social norms and framing, also had a fundamental role to play throughout other areas of intervention that were presented.

More than just demonstrating solutions based on empirical evidence, the interventions described here point to future directions and problems that can be explored by institutions and organizations that decide to respond to the challenges imposed by the complex reality of the region. The evidence presented by these interventions also constitutes a call to action for institutions and countries that haven't adopted these tools yet to give serious consideration to their future use. **Behavioral economics is not a final answer to the problems of Latin America and the Caribbean, but it is one piece of the puzzle and one of the best tools that can be added to the range of options available to institutions in the region.**

# Glossary

**Anchoring:** See **priming**. A particular form of priming by which an initial exposure to a certain number of attributes serves as a point of reference that affects subsequent judgments. When faced with a decision under uncertainty, individuals attribute excessive weight to the initial exposure, which, without further awareness, distorts estimates and judgments.

**Availability Heuristic:** The tendency of individuals to estimate the probability of a future event based on how readily representative examples of such an event come to mind.

**Choice Complexity:** The complexity of a set of choices increases as the number of equally valued alternatives increases and/or the number of attributes used to describe those alternatives increases. As the complexity of the choice set increases, the amount of time the individual takes to choose one of the alternatives increases.

**Cognitive Overload:** Refers to the amount of mental effort and memory used at a given moment in time. Overload occurs when the volume of information provided exceeds an individual's capacity to process it. People have limited amounts of attention and memory, which means they are not able to process all the information available.

**Commitment Device:** A choice made in the present that restricts future options to those reflecting long-term objectives. Commitment devices, therefore, serve as mechanisms for mitigating future impulsive behavior. Based on people's tendency toward inertia, they can help address time inconsistency and cognitive overload.

**Defaults:** Automatically preset courses of desired action that are effective when the individual making the decision does not change them. This tool is generally used to address cognitive overload or present bias, supported by people's tendency to maintain the status quo.

**Descriptive Social Norms:** See **social norms**. Norms that describe how a social group behaves, without regard for whether the behavior is good or bad. Presenting people with norms can help change their behavior.

**Empathetic Identification:** Refers to the capacity of a person to imagine him- or herself living someone else's experience.

**Feedback Mechanism:** An effective tool to enhance awareness of the consequences of various choices by filling knowledge gaps and/or fostering the search for efficient alternatives.

**Framing:** The way in which information is presented, influencing people's conclusions. Options may, for example, be presented in a way that highlights their positive or negative aspects, leading each to be perceived as relatively more or less attractive.

**Gamification:** The use of game elements, such as challenges, accumulation of points, timely feedback, badges, and rewards, into a real-life experience. Once tuned into the game, nudges might prove more efficient for behavioral change.

**Group Identity:** Refers to people's innate sense of belonging. They have a need to belong to groups they identify with.

**Hassle Factors:** Seemingly small inconveniences, such as having to read a lot of information or take an extra small step to complete an action, that can hinder or disrupt decision-making processes.

**Identity Priming:** See **priming**. Provides a sense of one's self based on one's own physical characteristics, memories, experiences, relationships, group memberships, and values.

**Intention-Action Gap:** The idea that people do not always do the things that they intend to do, due either to failing to get started or getting derailed along the way.

**Lack of Information:** Refers to a lack of relevant information because, for instance, information is difficult to obtain, scarce, or hard to understand.

**Limited Attention:** People's limited ability to process information even when the relevant information is, in principle, available. As a result, they may ignore relevant pieces of information unless they are communicated clearly and simply.

**Loss Aversion:** Refers to the idea that a loss causes distress that is greater than the happiness caused by a gain of the same size.

**Lottery:** A contest involving winning a prize by a random drawing of a number. This tool is used in behavioral interventions relying on bias that leads people to overestimate the probabilities of winning a reward.

**Mental Model:** The way that people make sense of the world and simplify its complexity. It rules people's intuitive perceptions about their own acts and consequences.

**Micro-Incentives:** Rewards or punishments offered to decision makers with the aim of influencing their behavior or decisions. They may be tangible, such as food or money, or intangible, such as public recognition. In contrast to the incentives that form an integral part of policy design, these are small, low-cost, and easy-to-apply signals that complement the original design. Offering micro-incentives can thus help to mitigate loss aversion and present bias.

**Mistrust:** A lack of trust that occurs when one party is unwilling to rely on the actions of another party in a future situation.

**Moral Suasion:** The act of persuading a person or group to act in a certain way through theoretical appeals, persuasion, or implicit and explicit threats.

**Motivated Reasoning:** The tendency of people to interpret and process information in a way that conforms with preconceived beliefs and positions. Motivated reasoning is related to confirmation bias but describes cognitive processes more broadly, including information selection, memory encoding, attitude formation, judgment, and decision making, that are all influenced by motivations and goals.

**Nudge:** To make a change to the choice architecture of the decision maker without forbidding any other options or significantly changing economic incentives.

**Optimism Bias:** The tendency to underestimate the probability of negative events and overestimate the probability of positive ones.

**Overconfidence:** Also called superiority bias, the tendency for people to overestimate or exaggerate their own capacity to perform a certain task.

**Partisanship:** Attitude, feeling, or behavior of articulating support for a person, policy, organization, or party without further consideration for the concrete issue at hand. Partisanship is often a result of early learning or socialization.

**Peer Mentoring:** A form of mentoring that usually takes place between a person who has lived through a specific experience and a person who is new to that experience. An example would be an experienced student being a peer mentor to a new student—the peer mentee—in a particular subject or in a new school.

**Personalization:** A mechanism shown to improve responsiveness and outcomes by making information personal based on individual characteristics and traits of identity. This could take the form of approaching someone by using his or her name, nationality, or profession, among other characteristics.

**Planning Tools:** Prompts designed to encourage individuals to make a concrete action plan to achieve an important goal by helping them to break down the goal into a series of small, specific tasks and to anticipate unforeseen events. These prompts often encourage the individuals to write down relevant information, such as the date, time, and place of a commitment.

**Prescriptive Social Norms:** See **social norms**. Norms that describe what society approves or disapproves of—that is, what is considered to be right or wrong—regardless of how individuals actually behave. Such norms are useful for reaffirming or encouraging individual behaviors that are considered positive while discouraging negative ones.

**Present Bias:** The tendency to choose a smaller gain in the present over a large gain in the future. Also known as hyperbolic discounting, it is related to the preference for immediate gratification over the possibility of greater benefits in the future.

**Priming:** A phenomenon in which exposure to one stimulus influences how a person responds to a subsequent, related stimulus. These stimuli are often conceptually related words or images.

**Provision of Information:** A process where information is provided to subjects for decision making.

**Reciprocity:** A social norm of in-kind exchange among individuals, referring particularly to one person's action being met by an equivalent action from another person. While reciprocity is generally associated with positive reactions—for example, returning a favor with an equivalent favor—it can also involve negative reactions, such as punishing another individual for a negative action.

**Reminder:** Email, text message, letter, or personal visit to remind a person making a decision about some aspect of his or her decision or action. Reminders are used to mitigate procrastination, forgetfulness, and cognitive overload for those who must make decisions.

**Role Model:** A person other people look up to as a model for appropriate behaviors. Often, behavioral interventions use counter-stereotypical role models to show the target population who identify with them that achievements commonly assumed not to be attainable are within reach.

**Salience:** Refers to the importance of making key elements visible and prominent at the proper time and place. Salience is a key tool and just as important as the central content of the message itself.

**Scarcity Mindset:** A feeling a person may have of not having enough resources (like financial means or time), which in turn absorbs some of the finite cognitive resources, or "mental bandwidth," the person does have, limiting the ability to make good decisions.

**Self-Efficacy:** Self-assessment of abilities to meet challenges and fulfill tasks successfully.

**Signaling:** The act of conveying credible information to others about one's expected actions or behavior.

**Simplification:** Reducing the effort required to perform an action by making the message clearer, cutting the number of steps, or breaking down into simple, easier steps a complex goal.

**Social Norms:** The unwritten rules governing behavior within a society. A distinction is drawn between descriptive social norms, which describe the ways in which individuals tend to behave, and prescriptive social norms, which establish what is considered acceptable or desirable behavior, independent of how individuals actually behave.

**Status Quo:** The tendency to maintain the current state of affairs, even when change is clearly better. The status quo is used as a reference point, and any change with regard to this reference is seen as a loss.

**Stereotypes:** The roles each individual performs in society as defined by cultural beliefs, historical conditions, social norms, and social image.

**Structural Barrier:** A rule, law, policy, or physical structure (or lack there of) that makes it difficult or impossible for something to happen or a goal to be achieved.

**Sunk Cost Fallacy:** The tendency to follow through on an endeavor in which we have already invested time, effort, or money that we will not recover in the future (sunk costs), whether or not the current costs outweigh the benefits. This tendency is mediated by loss aversion and the status quo.

**Uncertainty Aversion:** A preference for known risks over unknown risks.

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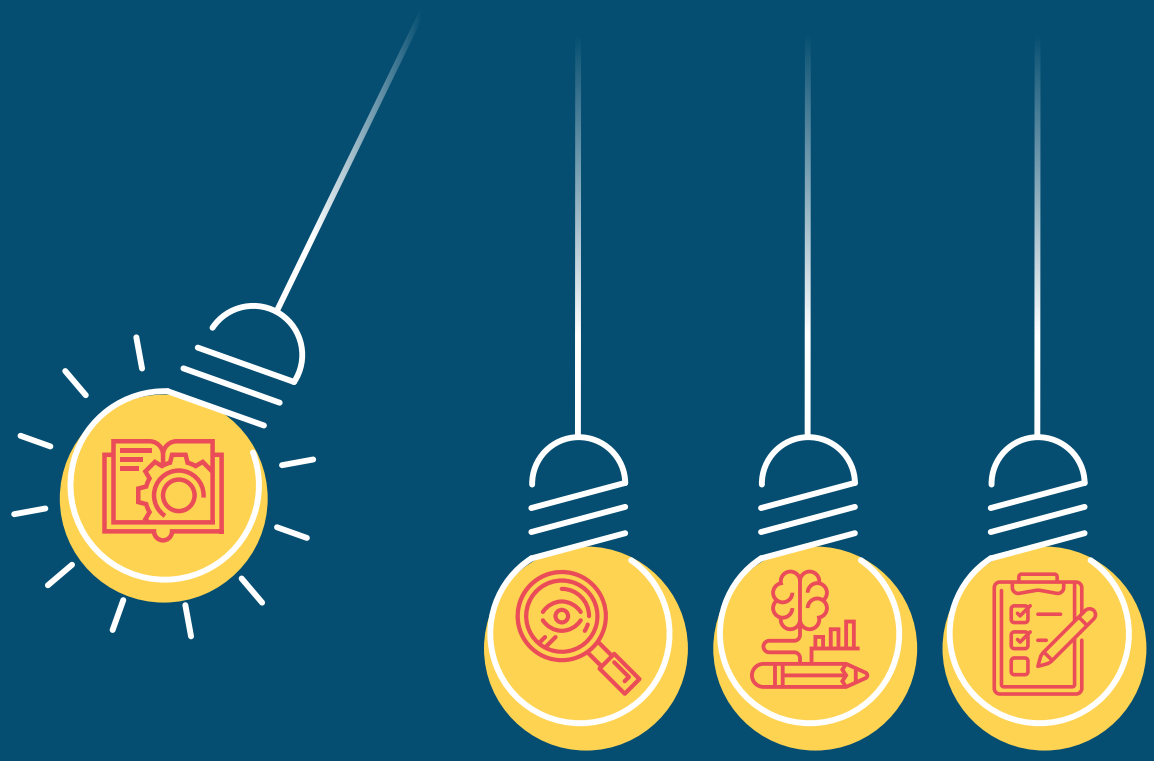

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