Social Innovation and Teamwork Within Organizations: Lab-in-the-Field Evidence on Recognition and Cooperation

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October 20, 2017

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Abstract

This economic lab in the field experiment tests the effects of recognition on voluntary contributions to a public good at the onset of a behavioral intervention. Using a within-subjects design to look at the behavioral differences between no recognition, group and private recognition, three hundred employees of a large Colombian corporation participated in an online public goods game before the intervention. After the intervention, a new selected sample was part of the same design. Recognition has a sizable effect on contributions. The intervention improves the response to private recognition but, strikingly, it has a distributional effect on the cooperative response to the group recognition.

1 Introduction

Social recognition is abundant and efficient (Akerlof, 1982; Frey, 2005). What others think, expect, and do influence our own preferences and decisions (WDR, 2015). Recognition creates a competitive environment, and provides contractually unenforceable material and non-material benefits even if there is no impact on employee's income or future career opportunities (Auriol & Renault, 2008; Besley & Ghatak, 2008; Dur, 2009; Ellingsen & Johannesson, 2007; Frey, 2007; Frey et al., 2009; Moldovanu et al., 2007).

The study of monetary rewards on teamwork consists on relative and absolute monetary rewards (Dickinson & author Mark Isaac R., 1998), rewards and punishment (Andreoni et al., 2003; Choi & Ahn, 2013), and endogenous material rewards using a cultural evolutionary theory approach (Bruni et al., 2014). Despite that contributions as Frey & Neckermann (2009) stress the complementary role played by awards and prizes in order to foster cooperative behaviors. As they suggest, "these kinds of social incentives derive their value from the combination of status and esteem, positive feedback and material benefit that they offer" (Frey & Neckermann, 2009), non-monetary rewards have proven been more effective than monetary incentives in promoting prosocial behavior (Bowles & Polania-Reyes, 2012; Frey, 2007; Frey et al., 2009; Judge et al., 2010; WDR, 2015). As recognition and intrinsic motivation are important to employee engagement and performance, but the key is finding effective, scalable solutions to create a positive and engaged workforce.

Because recognition constitutes an incentive, it has major implications for optimal reward policies (Bradler et al., 2016; Kosfeld & Neckermann, 2011; Markham et al., 2002). However, there is no consensus on the effects of non-monetary recognition on performance or prosocial behavior (Ariely et al., 2009; Ashraf, Bandiera, & Jack, 2014; Ashraf, Bandiera, & Lee, 2014; Charness et al., 2011; Markham et al., 2002). This is due in part to the difficulty of disentangling pure symbolic rewards from current and future material benefits, which is the aim of this paper: to investigate whether symbolic awards improve teamwork in the workplace, when reputation, status and social recognition alone are ruled out[1].

This study designs and implements an impact evaluation of a social innovation intervention on cooperation within an organization in Colombia. For the first time, an economic experiment to study social innovation and cooperation within an organization is used. Prior evidence has shown the role of experiments as tools for measuring social preferences in business management. However, they have not been used as an instrument for impact evaluation of behavioral interventions despite their potential implications for the design of efficient and effective incentives to promote cooperation (WDR, 2015).

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[1]See Guttman & Goette (2015) for a theoretical review of the reputational motive for public good contributions as a taste for prestige or social esteem or social approval into the utility function of individuals (i.e."non-instrumental social esteem motive"), or cooperation motivated by material returns that accrue to individuals who demonstrate their trustworthiness (i.e. "instrumental reputational motive"(Ariely et al., 2009)). For a recent empirical review of reputation and cooperation see Rogers et al. (2016).

The public goods game is a stylized model of situations that require cooperation to achieve socially beneficial outcomes in the presence of free-rider incentives. Examples abound: warfare, cooperative hunting, voting, paying taxes, fighting corruption, contributing to public goods, teamwork, work morale, neighborhood watch, common pool resource management, recycling, tackling climate change, and so on (Herrmann et al., 2008). These are frequent situations with the common feature that cooperation leads to a group-beneficial outcome but is jeopardized by selfish incentives to ride free on others' contributions.

In order to capture the impact of the intervention on the cooperative response to teamwork under recognition, we use an on-line public goods game with three treatments: no recognition, private recognition and group recognition before and after the intervention. Each experimental session included these three conditions: in the first stage, every participant decided how much to contribute to the project; in the second stage, if a participant contributed the maximum amount possible, she received a private message acknowledging the contribution; and in the third stage, if a participant contributed the maximum amount possible, everyone in the team received a group message acknowledging that at least one person in the team contributed the highest amount. At each stage, we ask participants their beliefs about what others will do.

The measurement outcomes are unconditional and conditional cooperation and first order beliefs about other's behavior in the team. The social innovation intervention comprised a set of actions implemented between September 2016 and January 2017 to target the following: i) alignment of expectations, ii) leadership and iii) equality. Since we are not able to implement a random control trial in the organizations, we use a quasi-experimental approach to examine the effect of the intervention on the cooperative response to recognition. The intervention improved the positive response to private recognition on cooperation and changed the distribution of cooperative responses to group recognition. The intervention had no effect on empirical expectations.

The paper is organized as follows. Section 2 offers a brief description of the intervention. Section 3 presents the economic game and explains the treatments. Section 4 introduces the experimental procedures, and characterizes the data before and after the intervention. Section 5 quantifies the relation between the cooperation and recognition. Section 6 examines the impact of the intervention on the cooperative response to recognition. The last section concludes.

2   A social innovation intervention

Corpovisionarios[2] is a Colombian think-tank in social innovation and cultural change. They were contacted in 2016 by a private organization whose executive board is concerned with motivating cooperation among its employees. Before the intervention, *Corpovisionarios* used

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[2]http://corpovisionarios.org.

a survey to concur that teamwork was weak, suggesting that the issue was linked to lack of proper recognition among employees. They designed an intervention, "a set of creative, non-monetary, communicative and pedagogical tools" to change employees' mindsets and organizational culture towards teamwork.

The main goal of the intervention was to motivate teamwork using three creative tools. First, "t minus zero" or aligning expectations (Figure 1a) is a meeting where all employees are informed about a collective commitment to improve teamwork. The meeting aims to reset empirical expectations (i.e. beliefs about other's behavior) and normative expectations (i.e. beliefs about what others think I should do)(Bicchieri, 2017). Second, using art and communication to establish a first team of leaders called *first cooperators* who will communicate a new signal (Figure 1b) that represented approval when an employee had a good performance. These leaders also taught others how to use a touchstone (Figure 1c) or a stone where any anonymous message related to any acknowledgment about the employee or recognition could be introduced. Finally, the third tool, called the *Pentagon* (Figure 1d) aimed to increase awareness of the importance of teamwork, commitment and fair treatment.
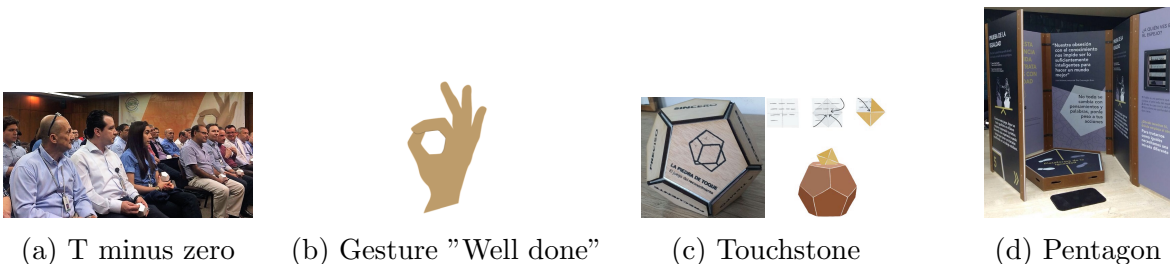

| (a) T minus zero | (b) Gesture "Well done" | (c) Touchstone | (d) Pentagon |

Figure 1: Social Innovation intervention to promote teamwork

3   Experimental design in the lab

Economic experiments give prominence to non-economic motivations using a decision-driven economic incentives in a controlled environment. They are a useful tool for measuring and evaluating impact as it captures individual and group preferences before and after the intervention[3].

Teamwork can give rise to social dilemmas in the context of production (Holmstrom, 1982; Itoh, 1991). We use a public goods game, which represents a social dilemma between the profits of individual work and the profits of teamwork while assuming the individual cost of doing so. The decisions of the participants reveal individual availability to cooperate when there's a single monetary incentive to do otherwise. The game design is derived from

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[3]Economic experiments are not hypothetical like qualitative tools such as surveys or focus group. They lead to monetary profits, which depend on the decisions of each participant (and of the other participants). This type of experiment provides the appropriate incentive to the participant so they deliberately make the decision that best suits them, thus reducing the social desirability bias.

literature on the "voluntary provision mechanism" or VCM very well documented by Ledyard (1995). The version proposed here is adapted from Fehr & Gachter (2002) and is one of the most known and tested in laboratories and in the field (Cárdenas & Ostrom, 2004; Herrmann et al., 2008; Marwell & Ames, 1981).

In this experiment we will simulate the dynamics of a working day, where employees participate in a group of people who represents a team. In this day, employees must choose how many hours of effort it takes to develop a task, which can be carried out individually or as a team. It is a social dilemma since the earnings are defined in such a way that the individual work generates an individual return per hour higher than the return of that hour if it is dedicated to teamwork. However, when all team members contribute to group work, the group's individual gains are higher. That is, the activity is designed in such a way that the return of working as a team when every team member is evolved is greater than if they did individually.

For each round, each participant belongs to a randomly assigned group of $N = 4$ people. Each member received an endowment of 4 tokens. Participants had to decide how many to contribute to a group project, x_i, and how many tokens to keep for themselves, $4 - x_i$. Each of the four group members earned \$1.6 tokens for each token invested in the project, regardless of whether he or she contributed any. The earnings are compose of two parts: (1) For each token the participant keeps she earns \$4, and (2) for each token invested to the project by any member of the group, each member receives \$1.6. The project earnings for each member is calculated in the same way: everyone in the group receives the same earnings from the project. Therefore, the π gains of the participant i in a period are given by

$$\pi_i = \$4(4 - x_i) + \$1.6 \sum_{j=1}^{N=4} x_j, \tag{1}$$

where $x_i \in \{0, 1, 2, 3, 4\}$ is the number of tokens that the participant i decides to contribute to the group account. [4]. Because the cost of contributing one token in the project was exactly \$4 whereas the return on that token was only \$1.6, keeping all one's own tokens is always in any participant's material self-interest, irrespective of how much the other three group members contributed. Yet, if each group member retained all of her tokens, there were no earnings to be shared; on the other hand, each member would earn \$1.6x16 = 25.6 tokens if each of them invested their entire 4-token endowment. Table 1 shows the possible earnings according to the individual contribution to the project and the number of tokens contributed to the project by the other three members in a group. Note that the game features a unique Pure Nash Equilibrium $x^{NE} = 0$ and a social optimum $x^{SO} = 4$.

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[4]This gives a Marginal per capita return (MPCR) of 0.4

Table 1: Earnings table[*]

		Tokens you contribute to the project				
		0	**1**	**2**	**3**	**4**
Average tokens others contribute to the project	**0**	16.0	13.6	11.2	8.8	6.4
	1	20.8	18.4	16.0	13.6	11.2
	2	25.6	23.2	20.8	18.4	16.0
	3	30.4	28.0	25.6	23.2	20.8
	4	35.2	32.8	30.4	28.0	25.6

[1] Thousands of Colombian pesos. The columns are "Tokens that you contribute to the project". The rows are "Average of tokens that the others contribute to the project", which can be of 0 tokens when none of the others members contributed, up to a maximum of 4 tokens, when the other three members contributed their 4 tokens. If a participant contributes 3 tokens and the average contribution of the other members of the group is 2 tokens, the participant will earn $18.4.

The design implemented is a *within-subjects* design in the lab, in which the same subjects participate in different treatments. The advantages of using this design are given in terms of statistical power and reduction in the variance of the error associated with individual differences that affect the dependent variable. The conditions are always exactly equivalent with respect to the variables that differ at the individual level since the participants are the same in the different conditions or treatments. The disadvantage of this design lies in the "drag" effect in which participation in one treatment may affect behavior under other conditions. This effect may occur in terms of practice and fatigue. To solve the first, we ensure that the participants understand clearly the game instructions before they start. For the second one, since there are only three rounds or stages, the possibility that the participant gets tired is very low. Participants did not know that after a control stage there would be two recognition stages.

The activity is divided into three stages or days of work.

Day 1: Control On this day, each participant decides whether to keep his tokens or contribute them to the project. The four participants in the group decide simultaneously.

Day 2. Non-monetary private recognition. Same instructions as on day 1. However, if the participant contributes 4 tokens to the group project, she will receive a private non-monetary recognition:

Thanks to you the total project contribution increased in four tokens. This means each group member (including you) increased its earnings by 4 tokens ×$1.6 = $6.4!

In addition, if we add the total earnings of each group member, they increased by 4 people ×$6.4 = $25.6!

On the other hand, if the participant contributes 0,1, 2 or 3 tokens, she will not receive any message.

Day 3. Non-monetary group recognition. Same instructions as on day 1. However, if at least one participant in the group contributes four units to the group project, all members of the group will receive a note that at least one of the members contributed four tokens to the project:

One of the group members contributed her 4 tokens to the project!
Thanks to her, the total contribution to the project increased by four tokens. That means each of the group members (including you) increased her earnings by 4 tokens $\times\$1.6 = \$6.4$!
In addition, if we add the total earnings of each group member, they increased by 4 people $\times\$6,4 = \$25.6$!
None of the other members of the group will know the identity of the contributor.
On the other hand, if the participant and everyone else in the group contributes 0, 1, 2 or 3 tokens, none of the participants will receive the note.

An on line platform[5] was used in order to minimize the influence that external variables may have on participant's individual decision. Controlling the environment in which decisions are made is paramount to ensure the reliability of results and to facilitate comparison and duplicability. A participant could access the experimental session at any time from her office computer. Before the first round, each participant should have had answered correctly a set of control questions to ensure she understood the instructions. Table 2 summarizes the methodology of the economic experiment.

To minimize the experiments costs, not all decisions will be paid, but one at random. Each participant faces three different scenarios in which he has to make decisions and is informed that only one will be put into practice, without telling him which one. At the end, one of the three days (control, private recognition or group recognition) is selected for payment. Likewise, one in four participants are randomly selected to receive payment for their earnings. For these participants one of the three days will be chosen at random and he will receive profits for that particular day. Earnings were given up to two weeks after the decisions were made. Except for the headquarters (Bogotá), payments were made as a deposit or delivery.

Table 2: Methodology summary

Universe	Organization employees from the six main cities
Duration	30 minute on-line session that was accessible for 8 days
Decisions	Individual unconditional cooperation, empirical expectation and individual conditional co-operation
Incentive	Money. One round selected randomly to be paid. No show-up fee: during working hours. One of 4 participants is randomly chosen to receive earnings. If the participant guessed others' behavior, she received $3 more
Treatments	Control, non-monetary private recognition, non-monetary group recognition. Before and after the intervention.
Context	Neutral*

* The language, formats, procedures, etc. affect the subjects decisions. The experimental session does not have a specific vocabulary that provides the participant with a normative framework. No words related to cooperation, trust, community, equipment or related are used to not influence the behavior.

[5]We used the on-line platform Survey Monkey Inc (https://www.surveymonkey.com/) and guaranteed anonymity of the decisions. Each participant knew the results of her decisions. The identity of the participant is never disclosed to avoid any negative behavior within the organization. Nobody in the entity knew her decisions, nor knew if she participated in the experiment. Only the coordinator of the project had access to the data (see the detailed instructions in the appendix).

A session was designed in such a way that on average one participant would receive thirteen Colombian Pesos (COP) ($13.0) or 1 minimum wage for two hours (see Table **??** in the appendix). In the baseline, one participant earned on average $23.5 (a minimum of $11.0 and a maximum of $35.0). In the follow up stage, a participant earned on average $26.0 (a minimum of $13.0 and a maximum of $39.0).

4   Experimental design in the field

Experiments carried out in the field with a specific community, in this case the employees of this particular organization, allow to explore the implications and opportunities that emerge from the characteristics typical of the economic, social and political process of the entity (Harrison & List, 2004)[6]. On the other hand, as the experiments reflect the teamwork social dilemma, we expect that after the experiment the participants continue to make similar decisions and social interactions continue to occur, with the difference that those participants have been exposed to a reflection on their behavior[7].

Every employee from six chosen cities[8] was exposed to the social intervention at the same time. Therefore, there is no untreated group. The application of economic experiments in two phases, the baseline and the follow up phase, provides an *between-subjects* experimental design with the potential to impact the behavior of organization employees and eventually it could be used as a pedagogical and participatory tool facilitating conflict resolution, construction of agreements and promotion of organizational change.

Participants were selected randomly from the registry provided by the Department of Human Resources, and received an invitation to participate in the study. Participants in the baseline phase were not able to participate in the follow-up phase in order to avoid learning bias. In addition, the study faced a methodological constraint: since the experiment aims to mirror reality, the effects and consequences will keep on affecting the participants even when the thirty-minute experimental session is over. In other words, aspects such as learning and knowledge of individual and aggregated results, will affect the participants individual decisions in and out of the session.

For the baseline sample, 538 employees were randomly selected from a universe of 2,150 employees[9]. For the follow-up sample, 366 employees were randomly selected from a universe

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[6]In Harrison & List (2004)'s typology this is a field contextualized experiment, given the decisions characteristics, the institutional framework, and the available information on the part of the participants.

[7]Then, economic experiments are also considered tools for learning, in which the presentation and discussion of experimental results allow the target population to internalize the positive aspect of teamwork and build formal and informal cooperation agreements. This approach will be considered in the second stage of the project in 2018.

[8]Headquarters in Bogotá, and Bucaramanga, Cali, Ibagué, Barranquilla (only Follow-up), and Medellín.

[9]Although the organization is present in a total of 29 cities in Colombia, the six main cities conform 85% of the total number of emloyees (2,559).

of 1,157 employees who did not receive an invitation to participate in the baseline phase. Potential participants had to be employed at the time of the intervention. At baseline, 298 employees participated and for follow-up, 299 employees (See Table 3).

Table 3: The field: Recruitment and sample

	Base line	**Follow-up**
	Sep-2016	Feb-2017
Universe[*]	2,150	1,157
Sample size		
Expected	538	366
Effective	298	299
Response rate	55%	81%

[*] Sample design was stratified by city with 4% error per stratum and 95% confidence level.

Lastly, participants answered a survey on basic socioeconomic and work related characteristics (sex, age, number of siblings, if the participant is the head of the household and number of dependents). Human Resources provided information on participant's gender, age, position, dependency and city, among others.

Table 4 shows participants' characteristics in both phases before and after intervention, baseline and follow-up. For each characteristic we present the mean and the standard errors clustered at the city level in parenthesis. We observed in some characteristics small significant differences between participants at each phase. The proportion of participants who are head of household is 33 p.p higher in the baseline ($p.value < 0.01$). In addition, the proportion of participants who are supervisors is 50 p.p higher in the baseline ($p.value < 0.01$), compared to a difference of 1.7 p.p, $p.value < 0.1$ for the percentage of supervisors according to Human Resources (12%).

On average, the participants are 40 years old, have 3 siblings and 46.1% of the participants are women. In addition, participants are on average 14.6 years old and have two reports. On the other hand, 89.8% work in the headquarters in Bogotá. On the other hand, there is no difference between the participants with respect to the job position they occupy with the exception of the managers who participated more in the baseline (1.7 p.p, $p.value < 0.01$)[10].

We also examined the differences between participants who had computer access in their workplace and those who had no diurnal shifts. Although during the follow-up phase an extra effort was made so those who did not have access to a computer could participate, the

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[10]We classify participants into 4 categories: job type 1, with a 10.4% participation, corresponds to positions as warehouseman, assistant, driver, messenger and caretaker. The job type 2 position or professional corresponds to lawyer, system administrator, analyst, archaeologist, architect, auditor, librarian, cashier, conservator, consultant, coordinator, delegate, draftsman, economist, engineer, inspector, dentist, officer, operator, payer, machinist, professional, promoter, rector, restorer, secretary, technician, and utility. The job type 3 position or assistant manager are positions as advisor, deputy director, deputy manager, deputy chief, supervisor, and deputy manager. The type 4 position corresponds to positions as director, manager and section chief.

baseline has more participants who have different shifts (7 p.p., $p.value < 0.01$).

Although the initial sample or expected sample ensured that the sample of participants was representative at the city level, the effective sample sizes in the two phases do not allow representativity. Therefore, the effective sample is representative only for Bogotá in the baseline with an error of 5% and in the follow-up phase with error of 4.2%[11].

Table 4: Participants' characteristics

Variable	Follow-up	Baseline	Difference
Average age	40.2	40.3	-0.1
	(0.6)	(0.5)	(0.4)
Female percentage	45.5	46.6	-1.2
	(3.4)	(2.2)	(1.5)
Average number of siblings	2.9	2.8	0.1
	(0.2)	(0.0)	(0.1)
Head of household percentage	33.1	66.4	-33.3***
	(1.3)	(1.2)	(2.3)
Duration of employment (years)	14.4	14.7	-0.2
	(0.7)	(0.7)	(0.3)
Percentage of Supervisors	12.0	13.8	-1.7*
	(2.9)	(2.6)	(0.9)
Percentage of Supervisors (self reported)	12.0	62.4	-50.4***
	(2.9)	(2.8)	(1.2)
Average number of reports (self reported)	2.2	1.7	0.5**
	(0)	(0.2)	(0.2)
Job with night shifts	7.4	8.1	-0.7***
	(1)	(1)	(0.2)
With PC access	92.6	92.6	0.0
	(0.6)	(0.9)	(0.4)
Position. Assistant	11.4	9.4	2.0
	(2.3)	(0.8)	(1.7)
Position. Professional	73.6	74.8	-1.3
	(5.4)	(2.9)	(2.6)
Position. Assistant manager	5.0	4.0	1.0
	(1)	(0.5)	(0.7)
Position. Manager	10.0	11.7	-1.7***
	(2.3)	(2)	(0.6)
Location: City headquarters	89.0	90.6	-1.6
	(11.6)	(10.3)	(2.2)
Observations	299	298	597

Robust cluster-level standard errors. Significance level *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

[11]The sample of participants presents the same statistically significant biases (1%) in both stages (baseline and follow-up).

5 Individual cooperation and recognition

For each round, three measures on individual behavior were collected. First, *unconditional contribution* that is the number of tokens the participants invests on the project regardless of what others do. Second, *empirical expectations* or number of tokens the participant expects others in the group will invest on the project regardless of what others do. For this measure, unlike a hypothetical question, the participant makes a prediction that if true the participant will receive \$3 more and we are able to obtain an incentivized measure of first order beliefs (Gächter & Renner, 2010). Third, *conditional contribution* that is the number of tokens the participant invests in the project for each possible number of average tokens invested by other members of the group (Fischbacher et al., 2012). The purpose of collecting these measures of individual willingness to cooperate at baseline and follow up is to study i) the effect of a non-monetary incentive such as recognition, and ii) the effect of the intervention on the response to that incentive.

Result 1. Recognition improves unconditional cooperation

Table 5 shows the average percentage of individual unconditional cooperation[12]. For each level we present the mean and the standard errors clustered at the city level in parenthesis. The average levels for unconditional cooperation in control were 43.2% and 45% for baseline and follow up respectively. The difference between this two is statistically significant (1.8 p.p., $p-value < 0.1$). Levels of unconditional cooperation under private recognition were 54.8% and 60.1% for the baseline and follow up respectively and their difference is statistically significant (5.3 p.p, $p.value < 0.01$). On the other hand, levels of unconditional cooperation under group recognition were 73.2% and 67.1% for baseline and follow up respectively and their difference was statistically significant (6.1 p.p, $p.value < 0.01$).

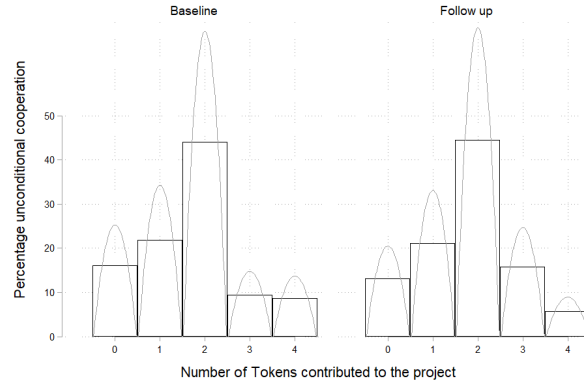Table 5: Individual Unconditional Cooperation. Baseline and Follow up

Treatment	Panel	Follow-up	Baseline	Difference
Control	44.1	45.0	43.2	1.8*
	(0.7)	(1)	(0.7)	(1)
Private recognition	57.5	60.1	54.8	5.3***
	(0.2)	(0.4)	(0.8)	(1.1)
Group recognition	70.2	67.1	73.2	-6.1***
	(0.6)	(0.3)	(1.1)	(1)

Robust cluster-level standard errors. Significance level *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

There is a significant increase in contributions from control to private and from control to group recognition. The economic prediction states that individuals are only interested in their individual earnings and therefore will have a cooperation level of 0%. Figure 2 presents the distribution of contribution for control, private and group recognition. In total only 14.8% contributed 0 units under control, indicating that 84% of the participants presented a

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[12]If the participant contributed to the project four, three, two, one or zero tokens the level of contribution will be 100%, 75%, 50%, 25% or 0% of cooperation level respectively.
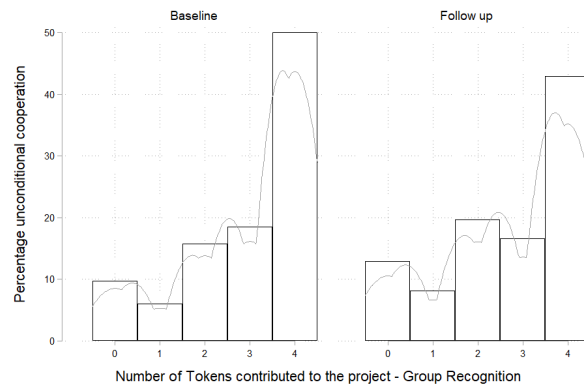
cooperative or teamwork attitude. The economic prediction that participants are interested only in their individual gains is not met since only 13% of the participants chose not to contribute anything (see Figure 2) under private recognition and only 11.28% of the participants contributed zero units under group recognition.

(a) Control

(b) Private Recognition

(c) Group Recognition

Figure 2: Unconditional cooperation distribution. Baseline and Follow up

Result 2. Recognition adjusts expectations accordingly

Table 6 show the average percentage of expected individual contribution. For each characteristic we present the mean and the standard errors clustered at the city level in parenthesis. There is an expected average level of cooperation of 43.4% for the control group. Second, we note that expectations about what others will do are consistent with cooperative decisions (Table 5), indicating that the community within the organization knows each other or shares a descriptive standard of cooperation. Empirical expectations about the level of cooperation in the group also change with recognition. A significant change ($p.value < 0.01$) in both decision and expectations between control and private recognition (43.4% vs. 58.4%) and control and group recognition (43.4% vs. 70.9%).

In addition, Table 6 indicates that the intervention had no effect on the expectations of what the majority in the group does. This is because the purpose of the intervention was to modify normative expectations or beliefs about what the group should do, while the experiment measures the empirical expectation. The descriptive or empirical norm is modified when the available information on the levels of cooperation of the employees of the organization allows each individual to update its norm to the present value. The empirical expectation of cooperation under group recognition was higher at the baseline than in the follow up stage (1.5 p.p., $p - value < 0.05$).

Table 6: Individual Empirical Expectations

	Panel	Follow-up	Baseline	Difference
Control	43.4	43.4	43.5	-0.1
	(0.2)	(0.3)	(0.4)	(0.5)
Private recognition	58.4	58.3	58.5	-0.2
	(0.8)	(0.9)	(0.8)	(0.3)
Group recognition	70.9	70.1	71.6	-1.5**
	(1)	(1.1)	(1)	(0.8)

Robust cluster-level standard errors. Significance level *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Result 3. Group and private recognition improve conditional cooperation

Conditional cooperation is the decision to cooperate conditioned to the decisions of the others in the group. A conditional cooperator will contribute zero tokens when others contribute zero, one token when others in average contribute one, and so on. Table 7 indicates the percentage of cooperation for each of the possible levels of cooperation of the others. Both private and group individual recognition increased conditional cooperation levels and group recognition had a positive and higher effect than private recognition at all cooperation levels, which is consistent with literature on recognition in the lab. However, when comparing the response to recognition between baseline and follow-up, we observed a significant (5.8 and 4.1 $p.value < 0.01$) improvement in the response to private recognition for low levels of cooperation by others and a decrease in the response to group recognition (-3.6 and -2.2 $p.value < 0.01$). Under control, participants with high levels of cooperation when others do the same are less follow up (42.1%) than in the baseline (46.4%), (difference of 4.3 p.p.,

$p.value < 0.1$). If the participants perceived the intervention as a sign that the others would cooperate more, the participants' response was to cooperate less. On the other hand, the intervention affects the response to private and public recognition by non-cooperators when they believe that no one else will cooperate. This result may indicate that the intervention also signaled the importance of leadership in the need to "cooperate when no one else does."

Table 7: Individual Conditional Cooperation. Baseline and Follow up

Value	Control			Private recognition			Group Recognition		
	Follow-up	Baseline	Diff.	Follow-up	Baseline	Diff.	Follow-up	Baseline	Diff.
0%	27.3	26.3	1.1	38.2	32.4	5.8***	37.9	41.5	-3.6***
	(0.4)	(1.3)	(1.3)	(0.5)	(1.1)	(1.4)	(0.8)	(1.3)	(1.1)
25%	32.4	30.7	1.7*	40.5	36.4	4.1***	41.6	43.8	-2.2***
	(0.4)	(0.9)	(0.9)	(0.8)	(0.7)	(1.2)	(0.7)	(0.9)	(0.8)
50%	35.6	37.9	-2.3*	44.6	43.2	1.4	47.1	47.3	-0.2
	(0.4)	(1)	(1.2)	(0.8)	(0.9)	(1.5)	(0.9)	(1.1)	(1)
75%	38.5	42.7	-4.2***	47.4	47.7	-0.3	50.5	50.5	0
	(0.8)	(0.9)	(1.5)	(0.9)	(0.8)	(1.6)	(1)	(0.9)	(1.1)
100%	42.1	46.4	-4.3**	49.5	52.1	-2.6	57	55.3	1.7
	(1.1)	(1.5)	(2.1)	(1.6)	(0.8)	(2)	(1.7)	(1)	(2.2)

Percentage. If majority contributes X% how much would you contribute?. Robust cluster-level standard errors. Significance level *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Figure 3 compares the pure conditional cooperation with cooperation for each treatment and translates details from Table 7 to another result. It shows the percentage of individual cooperation as a function of the cooperation of others in the group. We call pure conditional cooperators those individuals who contribute exactly the number of tokens contributed by the others (line with a 45 degree angle). Participants are not pure conditional cooperators. Supporting the existing evidence on conditional cooperation, there's a positive slope between participants and conditional cooperation: the greater the contribution of others, the greater the individual contribution (Fischbacher & Gachter, 2010).
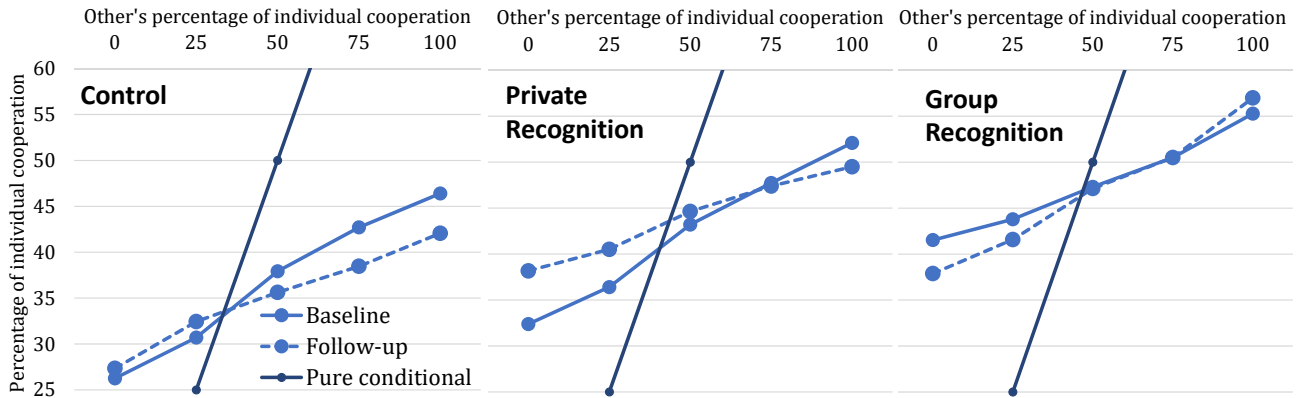

Figure 3: Conditional Cooperation for each treatment. Baseline and Follow up

However, the slope is not greater than or equal to, but very low. On average, participants cooperate more than conditional co-workers at low levels of cooperation. This means that

individuals have an altruistic preference to contribute even though others in the group contributed little. When levels of cooperation are high, participants cooperate less than perfect conditional cooperators, acting opportunistically and maximizing their individual gain. Individuals are somehow keeping a certain norm of cooperation when they compensate the lack of cooperation and free-ride when that norm of cooperation is reach. For example, in the control group (or contribution in the absence of recognition) the average cooperation when others 0% members of the group cooperate is 26.8%. A perfect conditional cooperator contributes 0 if others contribute 0. When others contribute 100%, a perfect conditional cooperator would contribute 100%. On average, participants cooperated 44.2%, 66% less than a pure conditional co-worker. This means that, in the absence of any incentive, the participants cooperate more when no one else will cooperate and cooperate less when they know that there is cooperation. *Result 4. There are heterogeneous effects of the intervention on conditional cooperation response to recognition* Recognition works both as an individual non-monetary incentive and as a signal that gives the participant the information regarding a desired behavior. Figure 4 allows to explore better the effect of the intervention on the response to recognition. Figure 4 compares the percent difference between control and recognition for baseline and follow-up. Under the private recognition treatment there is a positive, and significant parallel shift for all levels of cooperation by others (the slopes are not significantly different). Instead, under group recognition there is a change in the conditional response function. There is an emergence of a reciprocal norm: Before the intervention, the response function under group recognition had a negative slope, that is compensating low levels of contribution by others when needed. After the intervention, the response function is closer to the one provided by the literature and imitates a conditional reciprocator as for low levels of cooperation participants cooperate less and for high levels of cooperation participants cooperate more, providind a virtuous cycle of reciprocity.
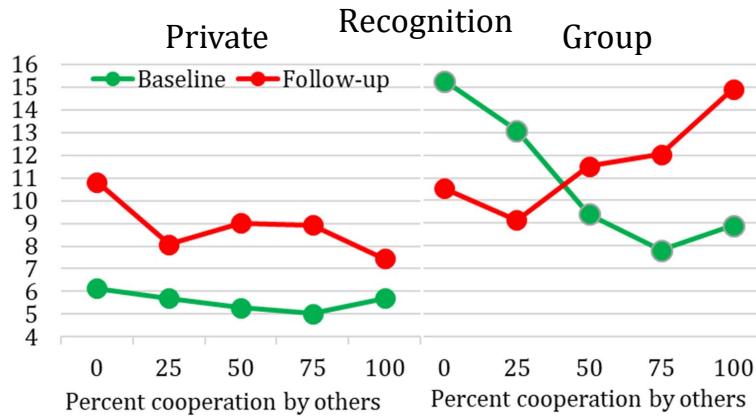

Figure 4: Percent difference on conditional cooperation between recognition and control.

5.1 Determinants on the decision to cooperate

We use an ordinal choice model to test the hypothesis that recognition and expectation are relevant to the availability to cooperate. Our empirical specification has as its unit of observation individual i at time t in city k. We estimated a logistic regression model ordered with 5 categories of the ordinal dependent variable, X_{itk}, or number of tokens contributed to the project, the observed value of the unobserved individual decision regarding cooperation, a continuous latent variable X^*_{itk}. Individual cooperation is a parametric function, which depends on what the individual thinks the majority of the group would do x^e_{itk} at time t in city k. The invariable individual characteristics in the 3 stages or periods, P_i, the fixed effect of the participants' city, θ_k, if the decision faced private or group recognition at time t,R_{pt} and a error term, ϵ_{itk}.

$$X^*_{itk} = \alpha + \gamma x^e_{itk} + \beta P_i + \delta_p R_{pt} + \delta_g R_{gt} + \theta_k + \epsilon_{itk} \tag{2}$$

The probability that the number of units to contribute, x_{itk}, takes a particular value is given by

$$P(X_i > j) = \frac{\exp(\alpha_j + \gamma x^e_{itk} + \beta P_i + \delta_p R_{pt} + \delta_g R_{gt} + \theta_k + \epsilon_{itk})}{1 + \exp(\alpha_j + \gamma x^e_{itk} + \beta P_i + \delta_p R_{pt} + \delta_g R_{gt} + \theta_k + \epsilon_{itk})}, j \in 0, 1, 2, 3, 4 \tag{3}$$

Result 5. Expectations determine unconditional cooperation

Table 8 presents the relationship between individual cooperation and private and group recognition for the baseline and follow up. Each specification includes additional features that may explain individual behavior towards contribution. The first specification (I) includes only experimental variables such as expectations and recognition treatments. In both stages expectations about what others will do, will explain positively and significantly the individual contribution, confirming the literature results (Fischbacher & Gachter, 2010). On the other hand, recognition helps to explain cooperation. At the baseline, group recognition has a greater effect than private recognition on contribution levels.

There is a positive relationship between expectations, recognition and cooperation across specifications. In both stages recognition has a negative effect on the probability of contributing at low levels, and positive effect on the probability of contributing in high levels. The second specification (II) includes socio-economic characteristics of participants such as age, sex, number of siblings and whether the participant is head of household. In the baseline age and being head of the household positively affect the cooperation; while in the follow up stage, the number of siblings affects negatively the cooperation. The third and four specifications (III and IV) include the participants' job characteristics, such as the number of years employed, if the participant is a supervisor, whether she has a night shift, computer access at work, whether the participant is an assistant, a professional, an assistant manager

or a manager. We also included a variable that indicates whether you had at least one inconsistency in online activity decisions, as an indicator that the participant fully understood the activity. In both stages, those who have night shifts and have work computers showed higher cooperation rates; while age decreased willingness to cooperate. Also, the higher the job rank the higher the probability of cooperation. In the baseline, the decision to cooperate was negatively related to fully understanding the activity while in the follow-up if a participant did not understand fully the activity the would increase the likelihood to cooperate. At the follow up stage, those who did not fully understand the activity cooperated more. The latter result may indicate the presence of a clue on how to behave when instructions are not understood. Before the intervention, the expected default behavior was not to contribute but after the intervention this behavior became cooperative.

Table 8: Regression Analysis. Determinants of individual cooperation. Baseline and Follow-up.

Specification	Baseline				Follow-up			
	I	II	III	IV	I	II	III	IV
Empirical expectations	0.52***	0.53***	0.53***	0.53***	0.59***	0.59***	0.59***	0.59***
	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)
Private recognition	0.11***	0.12***	0.12***	0.12***	0.25***	0.26***	0.26***	0.26***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.08)	(0.08)	(0.08)	(0.08)
Group recognition	0.60***	0.60***	0.62***	0.62***	0.28***	0.28***	0.29***	0.30***
	(0.03)	(0.03)	(0.03)	(0.02)	(0.06)	(0.06)	(0.06)	(0.06)
Age		0.01***	0.03***	0.03***		0.01***	0.02***	0.02***
		(0.00)	(0.01)	(0.00)		(0.00)	(0.01)	(0.00)
Woman		0.01	-0.02	-0.03		-0.01	-0.04	-0.04
		(0.01)	(0.01)	(0.02)		(0.05)	(0.04)	(0.04)
Number of siblings		-0.01	0.01	0.01		-0.03**	-0.03*	-0.03**
		(0.01)	(0.02)	(0.01)		(0.02)	(0.02)	(0.02)
Household		0.13***	0.16***	0.15***		0.06	0.06	0.06
		(0.02)	(0.02)	(0.03)		(0.05)	(0.05)	(0.05)
Time employed			-0.03***	-0.03***			-0.01***	-0.01***
			(0.00)	(0.00)			(0.00)	(0.00)
Supervisor			-0.04	0.04			-0.13	-0.05
			(0.16)	(0.11)			(0.12)	(0.12)
Professional			0.05	0.06			0.02	0.03
			(0.03)	(0.05)			(0.14)	(0.13)
Assistant Manager			0.56***	0.63***			0.21	0.20
			(0.09)	(0.08)			(0.15)	(0.16)
Gerente			0.16***	0.14**			0.10	0.01
			(0.06)	(0.07)			(0.24)	(0.25)
Night shifts			0.48***	0.49***			0.37***	0.37***
			(0.02)	(0.02)			(0.04)	(0.04)
PC access			0.50***	0.52***			0.57***	0.57***
			(0.05)	(0.03)			(0.04)	(0.02)
Did not understand			-0.18***	-0.25***			0.10*	0.10*
the activity 100%			(0.04)	(0.04)			(0.06)	(0.05)
Observations		894				890		
Controls								
Experimental variables	Y	Y	Y	Y	Y	Y	Y	Y
Demographics	N	Y	Y	Y	N	Y	Y	Y
Job related variables	N	N	Y	Y	N	N	Y	Y
City fixed effects	N	N	N	Y	N	N	N	Y

Robust cluster-level standard errors. Significance level *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

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6 Impact on the cooperative response to recognition

In order to measure the effect on the individual cooperation response towards private or group recognition after the intervention, we will use the quasi-experimental technique of differences in differences (DID). Unlike an estimate effect of the intervention within the subject, through measuring the difference in cooperation levels before and after the intervention or an estimate measure between a control group and an intervention group; the DID model estimates the difference between time, pre and post intervention within the individual and the difference before and after private recognition (or group recognition).

The differences in differences methodology use these two variations. To calculate the intervention effect, first we must find the change in time of both the recognition group and the non-recognition group, and then we subtract these two results showcased in table 6, table 9 and figure 5. Figure 5 shows the percentage of cooperation before and after the intervention for the control and recognition groups. To obtain the impact of the interventions response, we compare the average recognition level of the baseline and follow up participant.

Result 8. The interventions impact on cooperative response was positive under private recognition and negative under group recognition

Table 9 shows that the intervention had on participants response a positive but no significant effect when faced to private recognition, and negative and significant effect when faced to group recognition. This result indicates that the intervention saturated the willingness of the participants to cooperate with group recognition.

We estimate the following logistic regression model:

$$X_{it} = \alpha + \gamma x_{it}^{\text{e}} + \delta_1 R_i + \delta_2 R_i * \text{Intervention}_t + \delta_1 \text{Intervention}_t + \beta P_i + \theta_k + \epsilon_{itk}. \quad (4)$$

R_i is a binary variable that indicates whether the participant received recognition (private or group), Intervention$_t$ is a binary variable that indicates the pre or post intervention period and δ_2 is the DID estimator of the interaction between being recognized and the follow up intervention stage. The reference period is when the participant has no recognition (Control). We assume that there are no unobservable variables that don't vary over time and that may affect the contribution nor have experienced the possibility of recognition. In equation (4), the coefficient of the treatment variable, δ_1, is the average of the estimated difference in contribution between the control stage and the pre-intervention recognition stage and represents the baseline differences that existed between Control and recognition before the intervention was implemented. The coefficient δ_3 is the expected change average in cooperation from before to after the intervention and reflects the pure effect of time passage in absence of the intervention. The coefficient δ_2, is the differences in differences estimator and indicates if the expected average change in cooperation before-after the intervention was different with or without recognition. In other words, δ_2 measures the impact of the intervention on the decision to cooperate expected average between control and recognition. On the other hand, $\delta_2 + \delta_1$ shows the estimated average difference in the cooperation between

control and recognition after the intervention. In both private and group recognition, we found that the difference was positive and greater in group recognition (15.1 p.p, $p-value < 0.01$ vs. 22.2 p.p, $p-value < 0.01$).
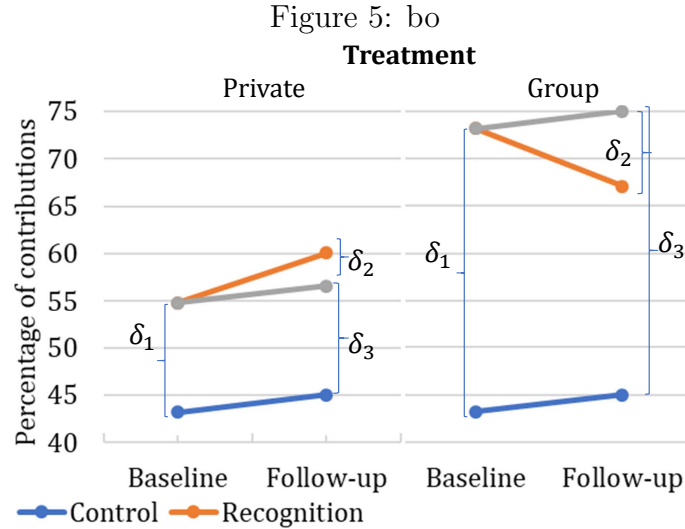
Figure 5: bo

Table 10 presents the results of the estimation equation (4) using a logistic regression model ordered to estimate the effect of the intervention on the cooperative response under private or group recognition. First, the empirical expectation of employee cooperation level is positively related to the individual cooperative decision. Second, the intervention positively affected the cooperative response to private recognition and negatively the response to group recognition.

Table A.4 of the appendix shows the ordinal logistic regression analysis for the Bogotá headquarters only. First, the impact of the intervention on private recognition disappears. The positive effects in the cooperation of the change of control to recognition after the intervention, the expectation, the age and being sub-manager are the only ones that are maintained. Second, the impact of the intervention on group recognition remains negative. The positive effects on the cooperation of the change of control to recognition after the intervention, the expectation, the age and being sub-manager are maintained. Job antiquity is still negatively related to cooperation, while access to computers at work and night shift are positively related to cooperation.

Result 5. The intervention interacted affected the response to effect on cooperation levels of the no-cooperators was positive under private recognition and negative under group recognition Result 6. The intervention didn't affect the descriptive norm or empirical expectation of neither the control group nor private recognition group. The expectation of cooperation of the group recognition cluster was higher in the baseline Result 9. The intervention produced a cooperation crowding-out under private recognition and cooperation crowding-in under group recognition

Figure 6 shows the interventions marginal effect on the probability of contributing each

possible unit for each recognition type. This is the marginal effect of the coefficient δ_2. It states the following prediction: whit recognition there's a lower probability of low cooperation levels, and higher probability of high cooperation levels. The impact of the intervention on the response to private recognition in each possible number of contributed units satisfies the prediction: the impact is $-3pp$ on the probability of contributing zero units and $3pp$ on the probability of contributing all possible units. On the contrary, the impact of the intervention on the response to group recognition in each possible number of units contributed does not satisfy the prediction: the impact is $4pp$ on the probability of contributing zero units and $-8pp$ on the probability of contributing all possible units.

$$X_{it} = \alpha + \gamma x_{it}^e + \delta_1 R_i + \delta_2 R_i * Intervention_t + \delta_3 Intervention_t + \beta P_t + \theta_k + \epsilon_{itk}$$

Result 4. Intervention Impact - Unconditional cooperation

Intervention improves positive response to private recognition while undermines response to group recognition

	Table 9	
	Treatment	
	Private	**Group**
Time effect, I_t	0.11***	0.10**
	(0.03)	(0.04)
Intervention effect on cooperative response to recognition, $R_i * I_t$	**0.16*****	**-0.32*****
	(0.06)	**(0.07)**
Recognition effect (Baseline), R_i	0.15***	0.59***
	(0.04)	(0.03)
Observations	1788	1784

Robust cluster-level standard errors

Significance level *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

7 Concluding remarks

Non-monetary incentives may generate reputational motives for cooperation (Rogers et al., 2016), but other mechanisms can lead to cooperation.

Economic experiments offer to study the validity of behavioral economic models when people face social dilemmas, coordination dilemmas and collective action problems. In addition, they provide detailed and verifiable information on people's decisions: they are rigorous and offer quantitative measures of qualitative information. Economic experiments are lenses that allow us to observe the importance of social norms and prosocial preferences in the behavior of people who interacts daily within a specific community. Our findings support

the view that recognition, seen as a symbolic (social) award for cooperation in teams within organizations, can be effective even if it has no impact on the recipient's income or future career opportunities. Moreover, we provide evidence that social innovation interventions may affect crowd out the beneficial effect of recognition to cooperation.

The economic experiment presents results that give internal validity to the measurement exercise of cooperation. Private and group recognition positively affected the expectation of the contribution level of the group and the individual contribution decision. However, we observed an unexpected outcome of the intervention: it improved individual response by including private recognition to improve unconditional cooperation, but deteriorated individual response to group recognition.

Economic experiments in the field have certain costs and limited duplicability. For example, the inability to access participants with similar characteristics requires that we collect key information from participants who explain their decisions, such as age, sex and education level. Our results are robust to different explanatory variables, that is, they are maintained when possible factors are included that can explain the cooperative behavior as socio-economic characteristics and job-related characteristics.

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A   Additional tables

Table 10: Payment to participants (in COP$)

Minimum wage Col 2016	$ 689,454
Minimum wage per hour	$ 64,309
Three minimum wages per hour	$ 12,927.26
One hour	$ 12,927
Rounded per person	$ 13,000

B   Ethical aspects

This experimental design complies with the 1998 United Kingdom [13] Data Protection Act Among others:

I Decisions and profits are anonymous. The identity of each participant is associated with a code. Participants are assigned in groups of four and do not know the identity or code of the other members of the group.

II The identity of the participants will not be disclosed to anyone under any circumstances. Only the coordinator of the experiment will have access to the identity of the participants who will be paid, for reasons of justification of expenses, and the information is deleted once all the participants have received their payments.

III Guests accept to participate in the exercise on a voluntary basis.

IV The results will be analyzed and presented aggregately.

V Participants attend the experimental sessions during working hours, the cost of the time they will incur on when participating is covered by

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[13]http://www.legislation.gov.uk/ukpga/1998/29/contents

C   Instructions

P1:Baseline activity invitation. Welcome!
*As you accessed this session through a link, we need to verify that you are an organization employee.
Your email_____
*Identification number for the activity (it is in the invitation, there are four digits) _____
This number ensures the anonymity of your personal data and decisions.

P2: Thank you for being part of this session
This session is for private use only.
Before we begin, please turn off your cellphone and make sure no one will interrupt or see your computer screen for the next 30 minutes, ensuring no one will interrupt your session.
*Can we begin? ___Yes ___No

P3: Introduction
Some of the people taking part in the study will receive an amount of money according to the decisions they make during the session. We use money because we want, as in everyday life, that your decisions have consequences on your pocket. In any case the money is not expected to be a payment for participating in the study, nor is it the only reason to participate.

The activity is divided into **three different periods**. Each period includes a decision. In each period, participants are divided into **groups of four**. Therefore, you will be in a group with 3 other participants. The composition of the groups will be different for all three periods. We have designed the exercise so that only you know your decisions.

At the end of the session, you will know if you were chosen to receive earnings. One of four participants will be randomly selected and will receive the cash from one of their decisions, randomly selected. Your total profits will be the rounded in thousands of pesos. This means that if you win $ 15,400 we will give you $ 15,000. If you win $16,600, we will give you $ 17,000. If you win $ 14,500 we will give you $ 15,000. Do you want to participate? ___Yes ___No

P4: Instructions
At the beginning of each period, each participant receives 4 tokens. We call this your endowment. Your task is to decide how to use your endowment. You have to decide how many tokens you want to contribute to a project and how many tokens you want to keep for yourself. Your winnings are made up of two parts:

1. **Earnings for kept tokens** For each token you save you earn $ 4,000.

2. **Project earnings = $1,600 * Total tokens contributed to the project** The project earnings for each group member are calculated in the same way: each member of the group receives the same project earnings

Therefore, your earnings for a period are: $4,000*(4−$ your contribution to the project $)+$1,600*$ (Total contributions to the project)

The following table lists possible payments according to your contribution to the project and the number of tokens contributed to the project by the other three members in your group. In the columns you have "Tokens you contribute to the project" that can be 0 to 4. In the rows has "Average of tokens that the others contribute to the project", which can be 0 tokens when none of the others contributed, up to a maximum of 4 tokens, when the other three contributed their 4 tokens.

		Tokens you contribute to the project				
		0	1	2	3	4
Average tokens others contribute to the project	0	16,000	13,600	11,200	8,800	6,400
	1	20,800	18,400	16,000	13,600	11,200
	2	25,600	23,200	20,800	18,400	16,000
	3	30,400	28,000	25,600	23,200	20,800
	4	35,200	32,800	30,400	28,000	25,600

Example Remember: You are in a four-group member and each one has a 4 tokens endowment.

1. For example, if you contribute 3 tokens in the project, then 1 token is saved for you. Depending on what the others in the group contribute, you can earn **$ 8,800, $ 13,600, $ 18,400, $ 23,200, or $ 28,000** If the average contributions of the other members of the group in 2 tokens, according to the table you win **$ 18,400** If the average contribution of the other members of the group is 1 token, according to the table you win **$ 13,600**

2. For example, if you contribute 2 tokens to the project, then, 2 tokens are saved for you. Depending on what the others in the group contribute, you can earn **$ 11,200, $ 16,000, $ 20,800, $ 18,400, or $ 30,400** If the average contribution of the other members of the group is 1 token, according to the table you win **$ 16,000** If the average contributions of the other members of the group are 3 tokens, according to the table you win **$ 25,600**

Now, answer all the control questions.

They work as a test that helps you understand how to calculate you winnings. When all the answers are correct, we will know that you understood the activity and proceed with the decisions.

The answers are in pesos. Do not put $, or period (.), Or comma (,) Remember: You are in a group of **4 people** and each one has a **4 tokens** endowment.
*Suppose no one (including you) contributes to the project.

- What are your earnings? ___

- What are the earnings of each of the other members of the group? ___

- Assume that you contribute 4 tokens to the project. Each of the other members in the group contribute 4 tokens to the project.

- What are your earnings? ___

- What are the earnings of each of the other members of the group? ___

- Suppose the other three members of the group contributed on average 2 tokens to the project.

  - What are your earnings if you contribute 0 tokens to the project? ___
  - What are your earnings if you contribute 2 tokens to the project? ___

- Suppose you contribute 2 tokens to the project.

  - What are your earnings if the other three members of the group contribute an average of 1 token to the project? ___
  - What are your earnings if the other three members of the group contribute an average of 3 tokens for the project? ___

P5: First period: decision You will decide if you keep your tokens or contribute them to the project. Select how many tokens you will contribute to the project and how many tokens you want to save. The tokens that I contribute to the project are ...
___0 and I'll stay with 4 tokens.
___1 and I'll stay with 3 tokens.
___2 and I'll stay with 2 tokens.
___3 and I'll stay with 1 tokens.
___4 and I'll stay with 0 tokens.

P6: First Period:How many tokens you think most will contribute to the Project?

First period: How many tokens you think most will contribute to the project? If you guess **$5.000** are added to your total earnings. Your answer will not affect the outcome or the decisions of others. I think most of the groups members will contribute to the project ...
___0 tokens and stay with 4 tokens. .
___1 tokens and stay with 3 tokens.
___2 tokens and stay with 2 tokens.
___3 tokens and stay with 1 tokens.
___4 tokens and stay with 0 tokens.

P7: First period: decision for each situation

First period: decision for each situation
As you don't know what others are going to do, on this page, you should write how many tokens you would contribute to the project and how many tokens would be saved for each of the possible contribution levels of the rest of the group.

How do you calculate your winnings in this period if it is selected? First the coordinator sums up the contribution of others in the project (individual response) and then looks at what you responded on this page, for that number of tokens contributed by the others in the group. For example, if the average token contributed by the others is 2, your winnings are calculated by the response you gave on this page, for the situation where the average token contributed by the other token was 2.

- How many tokens does the project contribute to for each of the possible amounts? Enter a number from 0 to 4.

Remember that Saved Tokens + Contributed Tokens = 4
If the **average of tokens contributed by others** to the project is **0** tokens, the tokens **I** contribute to the project are ...＿＿
If the **average of tokens contributed by others** to the project is **1** tokens, the tokens **I** contribute to the project are ...＿＿
If the **average of tokens contributed by others** to the project is **2** tokens, the tokens **I** contribute to the project are ...＿＿
If the **average of tokens contributed by others** to the project is **3** tokens, the tokens **I** contribute to the project are ...＿＿
If the **average of tokens contributed by others** to the project is 4 tokens, the tokens **I** contribute to the project are ...＿＿

P8: Second period

Second period
The earnings of this period are completely independent of the previous one. The instructions and the earning table are the same.
However, in this period, if you contribute **4 tokens** to the project, you will receive the following thank-you message for your contribution to the project:
Thank you very much for your contribution to the project!
Thanks to you, the total contribution to the project increased by four tokens. That means each member of the group (including you) increased their earnings by 4 tokens x $ 1,600 = $ 6,400!
In addition, if we add the earnings of each member in the group, they increased by 4 people x $ 6,400 = $ 25,600!
You are the only one that can read this message. None of the other members of the group

will know what your decision was or know that you received the message. On the other hand, if you contribute **0, 1, 2 or 3 tokens**, you will receive no messages

P9: Second period: How many tokens you think most will contribute to the Project?

Second period: How many tokens you think most will contribute to the project? If you guess **$5.000** are added to your total earnings. Your answer will not affect the outcome or the decisions of others. I think most of the groups members will contribute to the project ...
___0 tokens and stay with 4 tokens. .
___1 tokens and stay with 3 tokens.
___2 tokens and stay with 2 tokens.
___3 tokens and stay with 1 tokens.
___4 tokens and stay with 0 tokens.

P10: Second period: decision

You will decide if you keep your tokens or contribute them to the project. Select how many tokens you will contribute to the project and how many tokens you want to save. The tokens that I contribute to the project are ...
___0 and I'll stay with 4 tokens.
___1 and I'll stay with 3 tokens.
___2 and I'll stay with 2 tokens.
___3 and I'll stay with 1 tokens.
___4 and I'll stay with 0 tokens.

P11: Thank you very much for your contribution to the project! Thanks to you, the total contribution to the project increased by four tokens. That means each member of the group (including you) increased their earnings by 4 tokens x $ 1,600 = $ 6,400!

In addition, if we add the earnings of each member in the group, they increased by 4 people x $ 6,400 = $ 25,600!

P12: Second period: decision for each situation As you don't know what others are going to do, on this page, you should write how many tokens you would contribute to the project and how many tokens would be saved for each of the possible contribution levels of the rest of the group.

How do you calculate your winnings in this period if it is selected? First the coordinator sums up the contribution of others in the project (individual response) and then looks at what you responded on this page, for that number of tokens contributed by the others in the

group. For example, if the average token contributed by the others is 2, your winnings are calculated by the response you gave on this page, for the situation where the average token contributed by the other token was 2.

- How many tokens does the project contribute to for each of the possible amounts? Enter a number from 0 to 4.

Remember that Saved Tokens + Contributed Tokens = 4
If the **average of tokens contributed by others** to the project is **0** tokens, the tokens **I** contribute to the project are ...___
If the **average of tokens contributed by others** to the project is **1** tokens, the tokens **I** contribute to the project are ...___
If the **average of tokens contributed by others** to the project is **2** tokens, the tokens **I** contribute to the project are ...___
If the **average of tokens contributed by others** to the project is **3** tokens, the tokens **I** contribute to the project are ...___
If the **average of tokens contributed by others** to the project is **4** tokens, the tokens **I** contribute to the project are ...___

P13: Third period

The earnings of this period are totally independent of the previous one.
The instructions and the profits table are the same.
However, in this period, if you or one of the group members contributes 4 tokens to the project, all members of the group will receive the following message:

One of the group members contributed their 4 tokens to the project!
Thanks to him, the total contribution to the project increased by four tokens. That means each of the group members (including you) increased their winnings by 4 tokens x $ 1,600 = $ 6,400!
In addition, if we add the earnings of each group member, it increased by 4 people x $ 6,400 = $ 25,600!

None of the other members of the group will know who it was.
On the other hand, if you and everyone else in the group contribute **0, 1, 2 or 3 tokens**, nobody will receives any messages.

P14: Third period: decision You will decide if you keep your tokens or contribute them to the project. Select how many tokens you will contribute to the project and how many tokens you want to save. The tokens that I contribute to the project are ...
___0 and I'll stay with 4 tokens.

___1 and I'll stay with 3 tokens.
___2 and I'll stay with 2 tokens.
___3 and I'll stay with 1 tokens.
___4 and I'll stay with 0 tokens.

P15: Third Period:How many tokens you think most will contribute to the Project? Third period: How many tokens you think most will contribute to the project? If you guess **$5.000** are added to your total earnings. Your answer will not affect the outcome or the decisions of others. I think most of the groups members will contribute to the project ...
___0 tokens and stay with 4 tokens. .
___1 tokens and stay with 3 tokens.
___2 tokens and stay with 2 tokens.
___3 tokens and stay with 1 tokens.
___4 tokens and stay with 0 tokens.

P16: Third period: decision for each situation As you don't know what others are going to do, on this page, you should write how many tokens you would contribute to the project and how many tokens would be saved for each of the possible contribution levels of the rest of the group.

How do you calculate your winnings in this period if it is selected? First the coordinator sums up the contribution of others in the project (individual response) and then looks at what you responded on this page, for that number of tokens contributed by the others in the group. For example, if the average token contributed by the others is 2, your winnings are calculated by the response you gave on this page, for the situation where the average token contributed by the other token was 2.

- How many tokens does the project contribute to for each of the possible amounts? Enter a number from 0 to 4.

Remember that Saved Tokens + Contributed Tokens = 4
If the **average of tokens contributed by others** to the project is **0** tokens, the tokens **I** contribute to the project are ...___
If the **average of tokens contributed by others** to the project is **1** tokens, the tokens **I** contribute to the project are ...___
If the **average of tokens contributed by others** to the project is **2** tokens, the tokens **I** contribute to the project are ...___
If the **average of tokens contributed by others** to the project is **3** tokens, the tokens **I** contribute to the project are ...___

If the **average of tokens contributed by others** to the project is **4** tokens, the tokens **I** contribute to the project are ...___

P17: Thank you so much for your participation

We appreciate the following information:

- How many siblings do you have?___

- Are you the head of your household?___Yes___If not

- How long have you been working, in total, for ? ___In years fulfilled.

- How many people are in charge of? ___

P18: Your payment If the last two digits of your ID are between **51 and 75**, one of your three decisions will be selected for payment.
Answer if this is the case. To claim payment for your winnings you must present your ID.

- The last two digits of your ID number end between 51 and 75?___Yes___If not

P19: You're winner! I.D number_____

P20: Period to be paid

If the day you were born is:	You will be paid period:
between 1 and 10	1
between 11 and 20	2
between 21 and 31	3

- Please write your birthday, to determine the period to be paid___

- How do you want to receive your earnings? The following are different ways to receive your earnings, please choose the one that suits you best:

  - ___My office is not in Bogotá. I will receive my profits through Efecty

  - ___as a deposit in my savings account (we need the account number and the) - is only possible for Bogota accounts

  - ___On Tuesday, March 7, 2017, from 12 a.m. to 2 p.m., I will go to an office in Bogotá where a person will give me the winnings in person. We will contact you to confirm the place.

- If you do not work in Bogotá, we will deliver your earnings to you through Efecty, which you will pick up within 5 days after our confirmation. We assume the cost of the transfer.

P21:Remember this information is confidential Savings account number:_____

P22: Again, thank you very much for your participation in this study Any comments or suggestion please write to decisiones.economicas@.org

P23: As you're not ready, please close this window You can participate before **Thursday 2 March 2017**

P24: Thanks for your response *We'd like to know why you're not going to participate.___