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Opting-in to Prosocial Incentives

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Abstract

Prior work has demonstrated that prosocial incentives – where individuals' effort benefits a charitable organization – can be more effective than standard incentives, particularly when the stakes are low. Yet, little is known about the effectiveness of prosocial incentives on people's decisions to participate or opt-in to the incentivized activity in the first place. We examined the effectiveness of prosocial incentives on people's participation decisions using two distinct field experiments, one that sought to encourage recycling and the other that incentivized completion of effortful tasks. Across both studies, we found that individuals were more likely to avoid activities that involved prosocial incentives, compared to standard incentives, regardless of incentive size, and even when the donation was optional. Our results identify a significant limit for the scope of prosocial incentives as effective motivation tools.

Keywords: decision making, incentives, prosocial behavior, field experiments.

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Opting In to Prosocial Incentives

1. Introduction

Designing effective incentives is of critical importance for organizations, managers and policy makers. Each year, U.S. organizations spend over $90 billion on incentive programs that offer rewards or recognition to employees in exchange for performance (Intellective Group 2016). Standard, self-benefiting monetary incentives have been used to motivate behavior in domains such as health (Volpp et al. 2008), education (Fryer 2011, Fryer et al. 2012), and prosocial behavior (Exley 2017). However, standard incentives have also been shown to backfire, for example, by "crowding out" intrinsic motivation (e.g., Deci 1971, 1972, Gneezy and Rustichini 2000, Schwartz et al. 2015) or discouraging cooperative behavior (Ariely et al. 2009).

Recent work has proposed designing and implementing prosocial incentives—where a worker's effort benefits a charitable cause—to circumvent the downsides of standard monetary incentives (Imas 2014). Consistent with the model of "warm glow" (Andreoni 1990, 1993), prosocial incentives have been shown be particularly effective for motivating performance—significantly more so than standard monetary incentives—when stake sizes are relatively low. This has launched a now sizable literature exploring the motivational effects of prosocial incentives on improving outcomes of interest (Cassar 2014, Charness et al. 2016, DellaVigna and Pope 2017, Dijk and Holmén 2017, Kajackaite and Sliwka 2017, Koppel et al. 2015, Tonin and Vlassopoulos 2015, Yang et al. 2014).

Importantly, to the best of our knowledge, the literature examining prosocial incentives has considered situations where individuals have already agreed to participate in the broader activity (e.g., a lab study), and then decide how much effort to exert (i.e., how hard to work, or whether to continue working on a task). However, an equally important question is the extent to which prosocial incentives are effective in prompting

individuals to participate or opt-in to an activity or task in the first place, particularly in contexts where the focal activity, and incentive associated with it, could easily be avoided.[1]

Recent research suggests that prosocial incentives may have different effects along the two decisions: whether to participate versus how hard to work. Individuals may be reluctant to select into situations involving prosocial opportunities, yet expand significant effort once they opt into those situations. Research on "moral wiggle room" (Dana et al. 2006, 2007) suggests that individuals may systematically steer clear of prosocial opportunities, or information about prosocial opportunities, to avoid putting themselves in situations where self-image concerns (Grossman and van der Weele 2017), guilt (Gneezy et al. 2014), negative feelings (Berman and Small 2012), or social pressure (DellaVigna et al. 2012) would prompt them to act more prosocially than they would otherwise prefer.[2] For example, numerous studies have found that when asked to divide a pie of money between themselves and an anonymous partner, individuals share 30% of the amount, on average (see Camerer (2003) for a review). Dana et al. (2007) show that a large proportion of individuals who part with 30% of the pie to benefit others, are willing to *pay* 10% of the total amount to avoid participating in the interaction—keeping 90% of the pie for themselves and leaving their partner with nothing. Similarly, Dana et al. (2006) show that people choose to not receive information about the consequences of their actions for others, even when the information is free and easy to get. However, when the information is forced upon them, the majority of people act prosocially. In a similar vein, Andreoni et al. (2017) show that customers avoid supermarket entrances that have a Salvation Army volunteer soliciting donations. Finally, research shows that overall giving decreases significantly when individuals can easily avoid the solicitation (DellaVigna et al. 2012, Knutsson et al. 2013).

Considered in the context of the present research, these findings give rise to the proposition that if permitted, individuals may avoid selecting into a task that involves prosocial incentives. The implications of

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[1] These two types of decisions—whether to participate or not versus how hard to work (conditional on participation)—are typically referred to as choices on the *extensive* or *intensive* margin, respectively. While prior work has focused primarily on choices on the intensive margin, the current paper can be seen as examining the effectiveness of prosocial incentives on the extensive margin.

[2] Gneezy et al. (2014) show that such behavior represents a dynamic inconsistency in social preferences. Prior to being confronted with the opportunity to give, the individual would like to contribute x. However, when confronted with the opportunity, guilt or social pressure may prompt her to give y, where $x < y$. Anticipating this preference reversal, individuals choose to avoid the prosocial opportunity altogether.

such avoidance are of paramount importance for organizations aiming to use prosocial incentives in practice, as well as policy makers considering their use for interventions.

We explored the effectiveness of prosocial incentives for motivating participation decisions across two field experiments using unique, naturalistic settings. In the first experiment, we delivered invitations to residents from numerous apartment buildings to participate in a recycling campaign. Residents were randomly assigned to one of seven different incentives to participate: either a standard, self-benefiting incentive or a prosocial incentive, varying in size (low, medium, or high). A seventh control condition did not offer a financial incentive. To generate the most conservative test for the efficacy of prosocial incentives, we made the charitable component of the prosocial incentive *optional*—residents were told that they could choose to donate the financial incentive if they participated in the campaign.[3]

From the perspective of both neoclassical economics and models of warm glow, the optional prosocial incentive should yield the highest compliance rates, because it allows individuals who are attracted to the prospect of exerting effort for charity to do so, while others can instead choose to keep the payment. By this account, compared with either a mandatory prosocial incentive or a standard, self-benefiting incentive, the *optional* prosocial incentive should generate the highest (or at least the same) rate of compliance: it should attract both people who are motivated by the charitable incentive and people who are motivated by the self-benefiting gain. However, if as the research discussed above suggests, individuals prefer to avoid situations in which they may be prompted to behave more prosocially than they otherwise would, they may choose to avoid the activity altogether, resulting in lower participation rates compared to individuals offered standard, self-benefiting incentives.

Indeed, contrary to prior studies demonstrating the effectiveness of prosocial incentives, we found that standard incentives are more effective in motivating participation. In particular, our results show that standard incentives are more effective in prompting individuals to opt into the recycling campaign across all incentive

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[3] Studies that examined effort *following* a decision to participate found that providing the option to donate was more effective than standard, self-benefiting incentives (Mellström and Johannesson 2008, Yang et al. 2014). One observational study that did not used random assignment found that including an optional prosocial contribution reduced recycling (Knutsson et al. 2013).

sizes: at low stake sizes, standard incentives are directionally superior, though not significantly so; at medium to high stakes, standard incentives significantly dominate prosocial ones, despite the fact that the charitable contribution was optional.

Our second field experiment tested the effectiveness of prosocial incentives on participation decisions for jobs on an online crowdsourcing platform. In this experiment, we posted a job described as helping to improve a database of images. Potential workers were randomly assigned to one of six conditions varying the type and size of the incentive associated with the job. As in Experiment 1, we included standard, self-benefiting incentives and optional prosocial incentives. In this study, we also included mandatory prosocial incentives, where all earnings were donated to charity. Each incentive type varied in magnitude (low versus high). Similar to the results of Experiment 1, the standard incentive generated higher participation for both low and high stakes. Consistent with the proposition that optional prosocial incentives are a more conservative examination of mandatory prosocial incentives, participants in the optional prosocial incentives conditions were more likely to opt into the task compared with those in the mandatory prosocial conditions. In fact, mandatory prosocial incentives were least effective in motivating participation than any of the other incentive schemes across both high and low stakes. Finally, using a hurdle model, we find that conditional on opting-in, effort is higher under prosocial incentives when the reward size is low. This result is consistent with prior work on the effectiveness of prosocial incentives along the effort margin (e.g., Koppel et al. 2015, Tonin and Vlassopoulos 2015, Yang et al. 2014).

Combined, the results of our experiments show that individuals are less likely to opt into an activity under prosocial incentives than under standard ones. This effect holds even when the prosocial incentives are *optional*, contradicting the neoclassical economic prediction of individuals positively self-selecting into the most preferred incentive type. Our results may help explain why some research has not found prosocial incentives to be more effective than standard incentives—specifically, because participants can easily avoid the prosocial contract (e.g., DellaVigna and Pope 2017). Additionally, our findings suggest that contrary to prior arguments (e.g., Imas 2014), effort under prosocial incentives may not be motivated by feelings of

"warm glow." Our findings highlight the importance of assessing the effectiveness of prosocial incentive schemes depending on whether they are applied on the participation margin or effort conditional on participation. From a practical standpoint, our results have implications for the design of optimal contracts in managerial and organizational settings, as well as the structure of policies aimed at driving behavior change.

2. Experiment 1: Recycling Campaign in the Field

2.1 Experimental Design and Procedure

Our first experiment incentivized individuals to participate in a recycling campaign. The experiment was run in a neighborhood with almost no recycling collection, meaning that households wishing to recycle needed to travel to a nearby recycling collection point. Prior to the start of the experiment, we surveyed concierges from 94 buildings to determine the number of apartments in each building (52 on average), whether we would need to obtain permission to drop-off envelopes in residents' mailboxes, and the extent to which there was recycling collection in the building (most apartments did not recycle at all).[4] Using the information obtained in the survey, we selected twenty-five buildings, and assigned each to one of two recycling drop off points (ranging from 0.1 to 0.7 miles away). Of the 1202 apartments identified in the 25 buildings, we randomly selected 1000 to participate in our experiment.

We delivered invitations to participate in a recycling campaign—"R-cicla"—to each apartment's personal mailbox. Envelopes contained a letter inviting the household to bring recycling items to its assigned collection point on a specified recycling collection day (10-14 days after letters were delivered). Invitations provided a website to contact with any questions, indicated that all information would be treated confidentially, and that a reminder would be delivered a few days before the recycling collection day. In addition to the letter, the envelope contained a flyer with a map to the recycling point and a magnet with the name of the program that participants could use to place the flyer on their refrigerators (this was suggested in the letter). Importantly,

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[4] Thirty buildings reported having no recycling options, 3 buildings reported recycling any recyclable items, and the remaining buildings reported recycling one or two items, mainly newspapers and glass.

the letter provided information about the incentive offered (see Appendix Figure A.1). Reminder letters, containing the same letter as the original invitation, were delivered to the same mailboxes a couple of days before the recycling collection day.

Using a block randomization procedure by building, we randomly assigned households to one of six conditions varying the type of incentive (standard versus optional prosocial), and incentive level ($2.5, $12.5, or $25).[5] The text of all invitations was identical, including the incentive text ("As a thank you, if you recycle you will receive [amount] in cash"), with the exception of a phrase the we added to the prosocial incentive conditions stating, "if you prefer, you can also donate this money to an environmental cause." A seventh Acknowledgment condition did not offer cash or a donation option ("As a thank you, if you recycle you will receive an acknowledgement and will be able to know about easy ways you can help by recycling").

On collection day, each collection point displayed a large banner with the name of the program. A research assistant recorded each participant's ID (linked to their address, which was requested after asking whether they received an invitation to the recycling campaign) and the weight of the recyclables delivered. Participants were rewarded according to their assigned experimental condition. Those in the prosocial incentive treatment were also presented with flyers featuring different environmental organizations that they could donate to.

Forty-nine households still had the initial invitation letter in their mailboxes when we delivered the reminder letter. We excluded these households from our analyses since we could not verify they were exposed to our manipulation. The analyses were conducted with the remaining 951 households.[6]

2.2 Results

Figure 1 shows the proportion of households that participated in the recycling campaign. Using a two-sided fisher-exact test, we find that across incentive levels, fewer residents participated in the recycling

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[5] Amounts were in local currency. We show amounts in USD, adjusted by Purchasing Power Parity and using conversion rates at the time of the experiment.
[6] Results did not vary when we included the entire sample in the analyses (see Online Appendix).

camping when offered the optional prosocial incentive (1.64%) as compared to those who were offered the standard incentive (5.32%; $p < 0.01$). A pair-wise comparison analysis indicates that at \$25, participation likelihood was *dramatically* lower under the optional prosocial (0%) versus standard incentive (13.0%; $p = 0.01$). For the medium-size (\$12.5) incentive, again, people were less likely to participate in the campaign under the optional prosocial than under the standard incentive (2.6% vs. 7.2%, respectively; $p = 0.06$). There was no significant difference in participation likelihood under the low (\$2.5) incentive (Optional Prosocial = 1.1% vs. Standard = 1.6%; $p > 0.99$).

Incentive size influenced behavior only in the standard incentive conditions: More households participated when the campaign included a \$12.5 and \$25, compared to \$2.5 incentive ($p = 0.01$ and $p < 0.01$, respectively). The difference in participation likelihood between \$12.5 and \$25 standard incentives was not statistically significant ($p = 0.23$). In contrast, analyses among households in the optional prosocial incentive treatments revealed no differences in participation likelihood (\$2.5 vs. \$12.5, $p = 0.45$; \$2.5 vs. \$25, $p > 0.99$; \$12.5 vs. \$25, $p = 0.59$). Note that this pattern is consistent with prior work showing a lack of responsiveness to incentive size, or scope insensitivity, in the prosocial domain (DellaVigna and Pope 2017, Imas 2014). Among households assigned to the control acknowledgment treatment, 3.3% participated, which was only significantly different from participation likelihood in the \$25 standard incentive condition ($p = 0.06$).

To further explore the effect of incentive size on participation likelihood, we used regression models treating the incentive as continuous, ranging from \$0 to \$25. We present the results (Table 1) using a linear probability model (I and II)[7], and a logit regression (III, IV, V and VI), assuming the probability of recycling to be a rare event for our logit estimation. This estimation penalizes the likelihood produced by a potential bias from a small sample (King and Zeng 2001). Results from the first two models indicate that when the campaign offered standard incentives, households were 0.5% more likely to recycle for every dollar increase ($p < 0.01$). In contrast, for the optional prosocial incentive, households were *less* likely to recycle as the reward increased ($p < 0.01$). This produced a significant interaction, suggesting that household participation

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[7] We use a linear probability model because it provides a direct interpretation for the interaction terms (Ai and Norton 2003).

responded more positively to the size of standard incentives than the optional prosocial ones. Results from the logit estimation are qualitatively similar with those of the linear probability models (results with building fixed effects are in the Online Appendix).

Figure 1 Participation rates Experiment 1. Error bars represent ±1 SE.
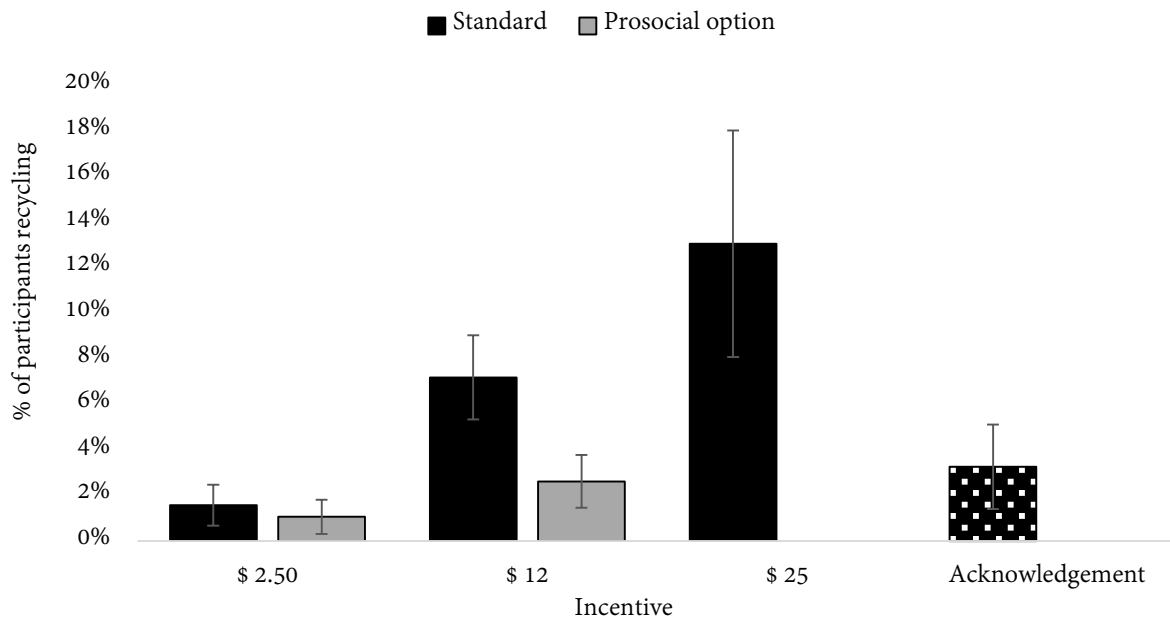
The findings from our recycling experiment suggest that prosocial incentives are ineffective on the participation margin. Notably, these results are also inconsistent with neoclassical and "warm glow" models of decision-making, which would predict that the option to donate should lead to positive selection of individuals motivated by both the prosocial opportunity and by self-serving motives.

Building on the results of Experiment 1, we designed Experiment 2 to a) test the robustness and replicability of our results in a setting closer to a labor market context, and b) test our proposition that making the prosocial contribution optional offers a conservative examination of the effectiveness of prosocial incentives on the participation margin.

Table 1. Treatment effect on the probability of recycling.

DV: Pr(Recycling)	I (all)	II (all)	III (all)	IV (all)	V (no donation message)	VI (donation message)
Donation option message	-0.038***	0.001	-1.210***	-0.324		
	(0.012)	(0.018)	(0.422)	(0.707)		
Monetary reward (in USD)	0.003***	0.005***	0.066***	0.081***	0.081***	0.009
	(0.001)	(0.001)	(0.021)	(0.024)	(0.024)	(0.050)
Donation option × Reward		-0.005***		-0.072		
		(0.002)		(0.055)		
Constant	0.030***	0.015	-3.55***	0.015	-3.727***	-4.051***
	(0.010)	(0.011)	(0.315)	(0.011)	(0.354)	(0.612)
N	951	951	951	951	524	427

*$p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Models I and II are linear regression models. Models III to VI are logit regressions, considering: $logit(Y_i) = \alpha + \beta X_i + \gamma Z_i + \varepsilon_i$ or $logit(Y_i) = \alpha + \beta X_i + \gamma Z_i + \beta X_i Z_i + \varepsilon_i$, where Y_i is a dichotomous variable indicating if household i participated in the recycling program, X_i indicates whether the household was assigned to an optional donation condition, and Z_i is the incentive level, from \$0 to \$25.
Note: Standard errors in parentheses.

3. Experiment 2: Online Labor Market

3.1 Experimental Design and Procedure

Individuals ($N = 1,345$) were hired to work on a job using the Prolific Academic online labor market, a UK-based crowdsourcing platform.[8] The job was described as reviewing online image links for a database for a flat payment of £0.50 (see Online Appendix for experimental materials). The posting did not mention the possibility of an additional task nor of performance-based rewards. Workers (49.7% female; mean age = 32.9, SD=11.3) were instructed to test ten URLs of images and verify they were working properly, which would allow us to generate a research dataset of usable links. Once completed, workers received their payment code, and were informed that they have completed the task and could leave and collect their payment. At this point, all workers were offered the opportunity to work on an unrelated job that involved providing 25 images of

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[8] See Peer et al. (2017) for an analysis and description of this platform.

animals or wildlife (URL links) to add to our existing database, in exchange for payment. We used this job to

test the effectiveness of incentive type and magnitude on participation likelihood.

We randomly assigned workers to one of three incentive types: standard incentive ("If you complete this

bonus task, we will pay you an additional £[0.01/1.00] beyond what you have already earned"), a mandatory

prosocial incentive where the entire amount earned would be donated to a charity ("If you complete this

bonus task, we will donate £[0.01/1.00] to the Make-A-Wish Foundation, a major charity organization that

grants the wishes of children with life-threatening illnesses (http://wish.org/)"), or an optional prosocial

incentive, similar to the one used in Experiment 1, where workers could choose to donate their earnings to

charity ("If you complete this bonus task, we will pay you an additional £[0.01/1.00] beyond what you have

already earned and at the end of the task you will have the option to donate this £[0.01/1.00] to the Make-A-

Wish Foundation, a major charity organization that grants the wishes of children with life-threatening

illnesses (http://wish.org/)"). The mandatory prosocial incentive condition allowed us to directly test whether

the ineffectiveness of prosocial incentives observed in Experiment 1 was due to the fact that they were

optional. Also, similar to Experiment 1, each incentive type varied in incentive size: low (£0.01) and high

(£1.00). This resulted in a six treatment, between-subject design (Appendix Table A.1). Workers who chose

to accept the job were given the opportunity to quit and forfeit the additional incentive, or to continue

searching, after each URL they provided. Once finished, we asked workers assigned to the optional prosocial

incentive condition whether they wanted to donate, or keep, their payment.

3.2 Results

Figure 2 shows the percentage of workers who accepted the database job by incentive type and size.

Replicating the results of Experiment 1, our analyses show that when the incentive was high (£1.00), more

workers opted in when offered the standard (60.5%) versus optional prosocial (47.6%; $\chi^2(1) = 7.75, p < 0.01$)

and mandatory prosocial (21.1%; $\chi^2(1) = 70.50, p < 0.01$) incentives. We further found a significant

difference in participation likelihood between the optional and mandatory prosocial incentive conditions

$(\chi^2(1) = 33.71, p < 0.01)$, supporting our assertion that the former is a conservative test for the effectiveness of prosocial incentives on the extensive margin. Analyses of participation rates under the low incentive (£0.01) revealed similar patterns: Workers were more likely to opt-in when offered a standard (23.6%), compared to a mandatory, prosocial incentive (12.6%; $\chi^2(1) = 9.48, p < 0.01$). Note that this finding contradicts previous research discussed in the introduction showing that prosocial incentives dominate standard ones under small incentives. The difference in participation rates between the standard and optional prosocial (19.0%) incentives followed a similar pattern, though the difference was non-significant ($\chi^2(1) = 1.38, p = 0.24$). Finally, the optional prosocial incentive was again more effective than the mandatory prosocial incentive, with the difference being marginally significant, $\chi^2(1) = 3.62, p = 0.06$.

An analysis of participation rate as a function of incentive level showed that among workers in the standard incentive conditions, participation was greater under the high incentive than the low incentive ($\chi^2(1) = 62.4, p < 0.01$). Incentive size did not influence participation rates among participants in the mandatory prosocial incentive conditions ($\chi^2(1) = 1.6, p = 0.21$). Participation rates among participants in the optional prosocial incentive conditions were sensitive to incentive size ($\chi^2(1) = 41.1, p < 0.01$), though to a lesser magnitude than observed in the standard incentive conditions. Although speculative, we believe it is plausible that positive selection was more likely to operate when the incentive was high, a large majority of participants treated the optional prosocial incentive as if it were a self-benefiting one: conditional on opting in, a mere 7.2% of participants in the high optional prosocial incentive condition donated their earnings, versus 56.0% in the low optional prosocial incentive condition ($\chi^2(1) = 27.05, p < 0.01$).

Figure 2 Participation rate in Experiment 2. Error bars represent ±1 SE.
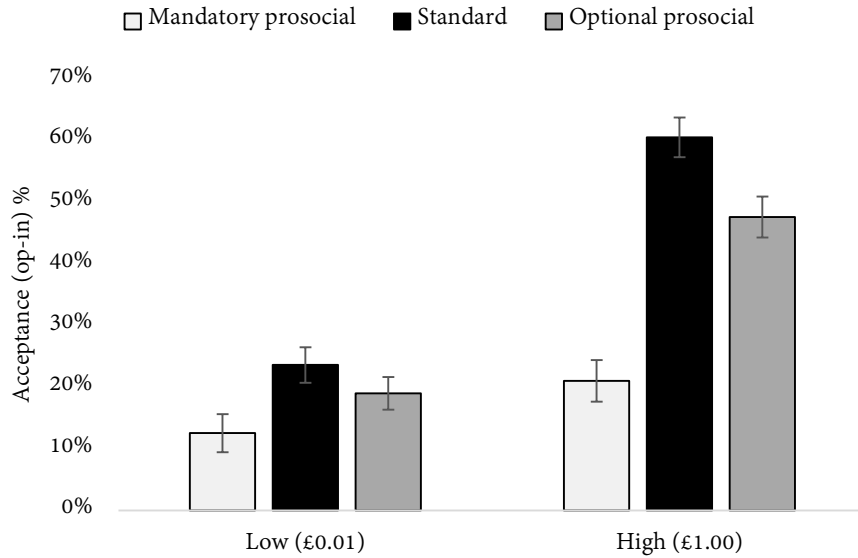
Recall that participants who opted in could quit before completing the entire job. This allowed us to measure effort/motivation, even though payment was fixed and contingent on completion.[9] While the analysis conditional on opting-in may be subject to self-selection, it can be informative in comparing the effectiveness of incentives along the participation and effort margins.

To examine decisions on both margins, we use a truncated-normal hurdle model (Burke 2009, Cragg 1971). This model is especially useful in our case, because workers deciding to quit mid-task are forfeiting payment (i.e., it is a different decision process than whether to opt-in in the first place). Another benefit of this model is that Tobit models are nested in the hurdle model. Formally, the model can be represented by:

$$y^*_{i1} = w_i\alpha + v_i \quad \text{Opt-in decision}$$
$$y^*_{i2} = x_i\beta + u_i \quad \text{Effort decision}$$
$$y_i = x_i\beta + u_i \quad \text{if } y^*_{i1} > 0 \text{ and } y^*_{i2} > 0$$
$$y_i = 0 \quad \text{otherwise}$$

where the latent variable y^*_{i1} represents peoples' decision to participate in the task, and w_i is a set of factors affecting that decision (in our case, incentive type and size). The latent variable y^*_{i2} represents participants'

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[9] We considered all URLs with "http" or "data:image" as part of the link, and subtracted repetitions.

effort (i.e., whether they stop or continue searching), and x_i is also a set of factors, which now affect effort. The variable y_i is the number of URL searches observed.

Results from the model are shown in Table 2 below. The upper part of the table shows the analysis of participation decisions, as reported above, but in a regression framework. As can be seen, relative to a standard incentive, workers in the high incentive condition were less likely to opt-in under an optional ($\beta = -0.33$, $p < 0.01$), or mandatory prosocial incentive ($\beta = -1.07$, $p < 0.01$). Participation likelihood was significantly higher under the high optional prosocial incentive than under the high mandatory prosocial incentive condition ($\beta = -0.74$, $p < 0.01$). At the low incentive level, workers were also less likely to opt-in under mandatory prosocial incentives than standard incentives ($\beta = -0.43$, $p < 0.01$), and there was no significant difference between optional prosocial and standard incentives, though the direction was the same ($\beta = -0.16$, $p = 0.24$). The difference in participation rates between optional and mandatory prosocial incentives was marginally significant ($\beta = -0.27$, $p = 0.06$).

As shown in the lower part of Table 2 and in Figure 3, the analyses of effort conditional on opting-in reveal that when the incentive was low, participants assigned to both the mandatory and the optional prosocial incentives worked harder ($M = 17.8$, SD $= 10.9$, and $M = 15.5$, SD $= 11.3$, respectively) than under standard incentives ($M = 10.5$, SD $= 11.4$) ($\beta = 25.62$, $p = 0.03$ and $\beta = 19.34$, $p = 0.06$, respectively). As previously discussed, this result replicates previous research showing that prosocial incentives are more effective than standard incentives when the stakes are low. When incentives were high, there were no significant differences in effort between standard ($M = 17.8$, SD $= 10.5$) and mandatory prosocial ($M = 17.2$, SD $= 11.1$; $p = 0.56$) incentives, or between the standard and optional prosocial incentive ($M = 16.1$, SD $= 11.4$; $p = 0.24$). We acknowledge that due to differences in participation rates, this last result should be treated with caution.[10]

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[10] Given that research on prosocial behavior suggests that guilt and/or image concerns may affect people's effort under prosocial incentives, we included some exploratory measures intended to assess the extent to which guilt and image concerns played a role in workers' decisions. See the Online Appendix for a description of the exploratory measures and analyses.

Table 2. Effect of incentives on participation likelihood and exerted effort

Opt-in decision Probit model	I (Low incentive)	II (High incentive)	III (all)
High (amount)			0.986***
			(0.125)
Prosocial option	-0.159	-0.327***	-0.159
	(0.135)	(0.118)	(0.135)
Prosocial	-0.429*	-1.071***	-0.429***
	(0.152)	(0.128)	(0.140)
High × Prosocial option			-0.169
			(0.179)
High × Prosocial			-0.642***
			(0.190)
Constant	-0.719***	0.267***	-0.719***
	(0.103)	(0.083)	(0.094)
Number of searches Truncated regression model			
High (amount)			17.387***
			(4.634)
Prosocial option	19.339*	-2.838	13.077**
	(10.381)	(2.408)	(5.403)
Prosocial	25.615**	-0.872	17.532***
	(11.669)	(0.784)	(5.705)
High × Prosocial option			-16.170***
			(6.102)
High × Prosocial			-18.480***
			(6.763)
Constant	-21.738	13.310***	-5.507
	(17.372)	(1.956)	(5.014)
Sigma	20.481***	14.229***	15.428***
	(4.311)	(1.096)	(1.131)
N	676	669	1,345

*$p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Note: Standard errors in parentheses.

Figure 3 Mean links searched in Experiment 2. Error bars represent ±1 SE.
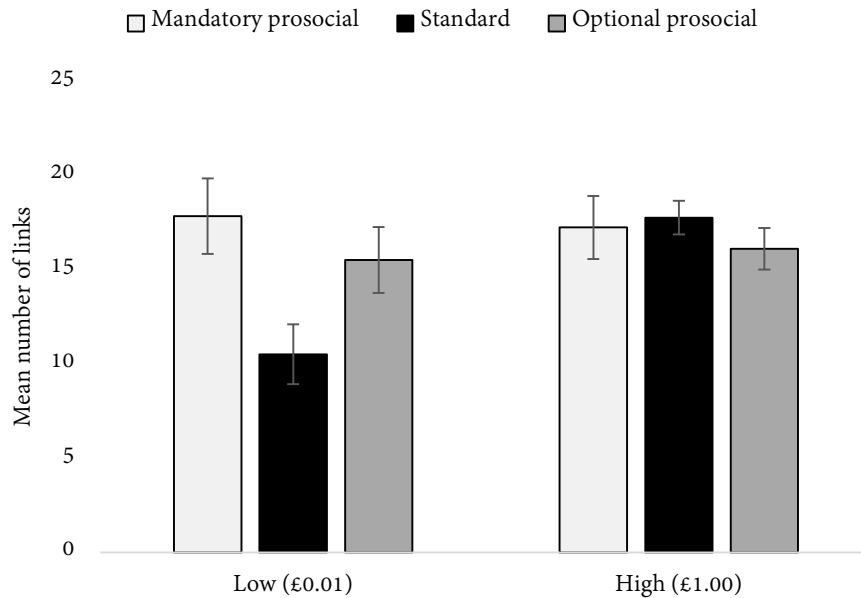
4. Discussion

Prior work has primarily explored the effectiveness of prosocial incentives for motivating performance after individuals had already agreed to participate in the task or activity. This literature has shown that, in those settings, prosocial incentives can outperform standard incentives. The current work takes a step back, and tests the effectiveness of prosocial incentives on people's decisions to engage with an activity or task – their willingness to participate in the activity in the first place. Results obtained across two field experiments suggest that prosocial incentives may not be an effective tool on the participation margin; individuals are more likely to avoid activities and tasks that are coupled with prosocial incentives relative to standard incentives across all incentive levels. Residents invited to take part in a recycling campaign, as well as individuals invited to complete a job on an online crowdsourcing platform, were less likely to opt-in when offered prosocial incentives compared to those offered standard incentives.

Moreover, our data show that making the charitable component of a prosocial incentive optional does not increase the effectiveness of prosocial incentives relative to standard ones. This is in contrast to predictions of

neoclassical and "warm glow" models of decision-making, which suggest that by appealing to a broader range of individuals—those interested in working for charity and those interested keeping the payment—the optional prosocial incentive should be the most effective relative to standard incentives. Rather, we find that optional prosocial incentives are significantly less effective on the participation margin than standard, self-benefiting incentives. It is possible that individuals offered an optional prosocial incentive avoid the activity because opting in would tempt them to donate the entire amount earned. If that were the case, then giving individuals an opportunity to donate only a portion of their payoff should increase participation compared to a standard incentive. We tested the idea of this "optional partial donation" in two separate experiments (see Online Appendix) that offered participants the option to donate 10% and 14% of their earnings to a charity. The results were largely the same—participation likelihood was lower when the task offered prosocial incentives compared with standard incentives.

One potential explanation for the ineffectiveness of prosocial incentives on the participation margin may be the negative feelings associated with making tradeoffs between the self and others. One way to mitigate the negative feelings associated with making tradeoffs between the self and others is to reduce the agency individuals feel over the choice between keeping and donating the incentive (Berman and Small 2012). For instance, instead of offering an optional or mandatory prosocial incentive, individuals could be offered a standard incentive where part of it is predetermined to go to charity (i.e., no "option"). However, we tested this alternative in a separate experiment (see Online Appendix), and found that participation rates were still higher under a standard incentive compared to an incentive of the same size in which one (larger) portion was predetermined to go to the worker and the other (smaller) portion was predetermined to go to charity.

The current research contributes to our understanding of the boundaries of economic incentives and human motivation. Despite the promise of prosocial incentives to bypass some of the downsides associated with standard monetary incentives, we show that one important factor in the effectiveness of a prosocial incentive is whether individuals have a salient opportunity to not participate in the first place. A second contribution of this research is methodological. In contrast to prior research in lab settings where the decision

to opt out or avoid participating may be awkward or costly—the individual has already opted in by showing up—we tested the incentive effects in field settings where the choice to not participate was a natural one.

Our research has significant implications for organizations, because many jobs and activities involve the decision to participate in the first place. As a result, organizations should evaluate the degree of flexibility for people to opt out from an activity in order to determine the potential effectiveness of prosocial incentives. In extending the current work, it would be valuable to see how combining the two types of incentives across margins would affect effort and performance. Standard incentives can be used on the participation margin—to encourage individuals to opt in to an activity—and prosocial incentives could be used conditional on participation—to encourage individuals to extend effort once they have opted in.

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Appendix

Figure A.1 Sample of recycling flyers (original and translation)

Standard Incentive	Optional Prosocial Incentive	Acknowledgment (no cash)
"We will wait for you in" [place] [Date and schedule] "As a thank you, if you recycle you will receive CLP$5.000 in cash." [Amount varied depending on the experimental treatment] "*This amount is for selected households, and it can be received only once" [Types of recycling]	"We will wait for you in" [place] [Date and schedule] "As a thank you, if you recycle you will receive CLP$5.000 in cash (if you prefer, you can also donate this money to an environmental cause)." [Amount varied depending on the experimental treatment] "*This amount is for selected households, and it can be received only once" [Types of recycling]	"We will wait for you in" [place] [Date and schedule] "As a thank you, if you recycle you will receive an acknowledgement and will be able to know about easy ways you can help by recycling" "*This acknowledgement is for selected households, and it can be received only once" [Types of recycling]

Table A.1 Treatments in the Experiment 2.

	Small incentive (£0.01)	Large incentive (£1.00)
Standard incentive	If you complete this bonus task, we will pay you an additional £0.01 beyond what you have already earned.	If you complete this bonus task, we will pay you an additional £1.00 beyond what you have already earned.
Optional prosocial incentive	If you complete this bonus task, we will pay you an additional £0.01 beyond what you have already earned and at the end of the task you will have the option to donate this £0.01 to the Make-A-Wish Foundation, a major charity organization that grants the wishes of children with life-threatening illnesses (http://wish.org/).	If you complete this bonus task, we will pay you an additional £1.00 beyond what you have already earned and at the end of the task you will have the option to donate this £1.00 to the Make-A-Wish Foundation, a major charity organization that grants the wishes of children with life-threatening illnesses (http://wish.org/).
Mandatory prosocial incentive	If you complete this bonus task, we will donate £0.01 to the Make-A-Wish Foundation, a major charity organization that grants the wishes of children with life-threatening illnesses (http://wish.org/).	If you complete this bonus task, we will donate £1.00 to the Make-A-Wish Foundation, a major charity organization that grants the wishes of children with life-threatening illnesses (http://wish.org/).