The effect of perceived prosocial impact on the relationship between monetary incentives and prosocial work – preregistration of experiment

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This document outlines the experimental design for a proposed survey experiment that examines how monetary incentives influence individuals' willingness to engage in prosocial work. The study also seeks to uncover the underlying motivations driving participation decisions.

Introduction, Background, and State of the Art

Social organizations increasingly seek strategies to sustain or enhance contributions from employees, volunteers, and funders (Gallus 2016). While many of these actors are driven by prosocial motivations, such drivers may not always suffice to ensure high levels of participation or effort. As a result, organizations often turn to monetary incentives as a complementary motivational tool. However, decades of research have shown that the interaction between monetary incentives and prosocial motivations is complex and, at times, counterintuitive. In certain contexts, monetary rewards appear to decrease the effort and participation of agents in socially beneficial work (Frey 1997, Frey and Jegen 2001, Heyman and Ariely 2004, Bénabou and Tirole 2006, Besley and Ghatak 2018). At the same time, a growing body of empirical studies has documented cases where monetary incentives increase participation and performance (Carpenter and Myers 2010, Bellé 2015, Carpenter and Gong 2016), or have no significant effect at all (Mellström and Johannesson 2008). This inconsistency points to a central, unresolved question: under what conditions do monetary incentives enhance prosocial behavior, and when do they backfire? While economists have identified some of the mechanisms that may drive crowding out, such as loss of autonomy or moral disengagement Bowles and Polania-Reyes (2012), the literature still lacks a generalizable model that explains *when and why* these effects occur. In particular, we know relatively little about the psychological mechanisms that mediate the relationship between external incentives and internal motivations in prosocial contexts.

In this project, we propose a theoretical extension to existing models of motivation and incentive design, with the aim of explaining when monetary incentives are likely to enhance an agent's willingness to engage in prosocial work, and when they risk crowding out underlying motivations. By offering a unified framework, our approach seeks to reconcile the disparate empirical findings that have emerged across disciplines over the past several decades. Of particular interest is the possibility that, under certain contextual conditions, monetary incentives may not merely coexist with prosocial motivations but actively reinforce them. Identifying these conditions would constitute a significant theoretical and practical advance, offering a more nuanced understanding of how external rewards can be aligned with intrinsic and prosocial orientations. Capturing this dynamic could provide both a conceptual breakthrough and actionable insights for organizations seeking to mobilize prosocial behavior at scale.

We argue that the effects of monetary incentives on prosocial motivation are moderated by the perceived prosocial impact of the activity—that is, the extent to which individuals believe their actions will meaningfully benefit others (Grant 2007). Our framework posits that crowding out occurs primarily in contexts where the perceived prosocial value of the setting is moderate to low. In such cases, the introduction small incentives may signal that the task lacks inherent social value, thereby diminishing motivations to help others. In contrast, when perceived prosocial impact is high—when individuals recognize the clear benefit their actions provide to others—external incentives are less likely to undermine motivation, and may even amplify it. However, in cases where the need of the beneficiary is especially urgent or morally salient, agents may already be fully motivated by internal values. In these high-impact scenarios, the offer of a monetary incentive risks appearing inappropriate or morally incongruent, thereby crowding out the external regulation motivations. This non-linear relationship between incentives and perceived prosocial impact offers a novel theoretical lens through which to interpret conflicting empirical findings in the literature.

Furthermore, we aim to deepen the analysis by uncovering the psychological mechanisms that cause crowding out (or in) by applying self-determinism theory (Ryan and Deci 2000), which breaks down human motivations to intrinsic motivation, identified regulation, introjected regulation, and external regulation.

Experimental Design

This is a survey-experiment examining how monetary incentives and perceived prosocial context jointly shape judgments about others' willingness to help. Participants are randomly assigned to one of 12 conditions in a 4×3 between-subject design. The first dimension manipulates monetary incentives for helping (no incentive, $0.50, or $5). The second dimension manipulates the perceived prosocial need of the person receiving help: (1) a neutral, unspecified beneficiary (replicating Heyman and Ariely, 2004), (2) a wealthy individual, (3) an elderly person from a poor part of town, or (4) an elderly person in a wheelchair.

Participants read a brief description of a scenario in which someone is asked to help load a sofa into a van. Based on the version they receive, they are asked how likely they think the average person would be to help, rated on a scale from 1 to 11. Asking about of the likelihood of others to help rather than the likelihood of the participants themselves is essential to potential reduce social desirability biases (Fisher 1993, Epley and Dunning 2000, Fisher and Katz 2000).

In a second step, participants are presented with a revised version of the scenario in which the monetary incentive changes (to one of the two conditions they did not initially receive), allowing us to examine how people believe willingness to help changes when financial rewards are added or removed. This step makes the experiment a within-subject experiment.

Between the two steps, all the participants answer a questionnaire about the motivations of the "average person" to help (or not) by adapting questions from the Multidimensional Work Motivation Scale (Gagné et al. 2015), as well as from questionnaires by Ryan and Connell (1989), Millette and Gagné (2008), Fenigstein et al. (1975), Grant (2008), Duffy and Kornienko (2010), Hartmann et al. (2017), Leuker et al. (2021), Bandura et al. (2006), (Cuddy et al. 2008), Erlandsson et al. (2015), Jie (2020), and others. The answers will be used to understand the mechanisms that explain the answers in the first stage, and are not part of the experiment itself.

The sample will consist of 720 participants 720 individuals living in the United Kingdom, aged 18-70. In the first step, participants will be randomly assigned to 12 experimental cells, with 60 individuals per cell. The original study by Heyman and Ariely (2004) did not report standard deviations, but the replication by Imada et al. (2022) found standard deviations ranging from 2.17 to 3.02 across treatments. These values are consistent with those observed in our pilot studies. Using a conservative estimate of a standard deviation of 3, this sample size provides sufficient power to detect a raw difference of approximately 1.55 points on a 1–11 scale between two groups. Based on our pilot results, this effect size is both realistic and substantively meaningful for our analysis. In the second step, each of the original 12 cells will

be split in half, yielding 30 participants per subgroup. At this smaller sample size, the minimum detectable raw difference increases to approximately 2.21 points.

Data will be collected in two waves of 360 participants each. After the first wave, we may examine descriptive patterns (e.g., variable distributions, drop-out rates, engagement levels) to determine whether to continue to full sample size. This interim inspection will not involve any changes to the study design or analysis plan. If data from the first wave indicate the experiment is infeasible or non-informative (e.g., due to extreme variance or floor/ceiling effects), the study may be terminated early for pragmatic reasons.

Emprical Analysis

The primary objective of the analysis is to test how monetary incentives influence participants' expectations about others' willingness to help (WTH) under varying prosocial contexts. The analysis is structured to detect whether incentive effects are positive, negative, or neutral, and how these effects differ across beneficiaries.

1. Step 1: Between-Subjects analysis

We will first analyze responses to the initial WTH question, using the following strategy:

- One-way ANOVA will be used to test whether WTH differs across the three incentive conditions (no payment, low payment, medium payment) within each of the four beneficiary settings. This tests for any overall differences in expected helping behavior across incentive levels.
- Planned contrasts will be used to test specific comparisons between incentive levels. These contrasts allow us to formally compare adjacent incentive conditions (e.g., no payment vs. low payment, low vs. medium payment), as well as to assess directional patterns in how willingness to help varies across incentive conditions. This method is particularly suitable for detecting structured differences that may not be captured by overall ANOVA significance tests, and allows for greater interpretability of group-level effects.
- Effect sizes (η^2) and 90% confidence intervals for pairwise comparisons will be reported to interpret the magnitude and uncertainty around effects.

2. Step 2: Within-Subjects analysis

In the second step, each participant sees a new incentive level for the same beneficiary and is asked the same WTH question.

We will conduct paired t-tests (within-subject comparisons) between the initial and follow-up WTH estimates to test whether incentive changes (e.g., low → medium, or medium → none) produce systematic increases or decreases in expected helping behavior.

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