

## **It is not just about the price: Matching subsidies fail when the ask can be avoided**

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**Abstract:** Economists usually endorse the efficacy of price mechanisms, such as matching subsidies, to foster philanthropic contributions. Our experiments, however, show that the match only increases donations when avoiding the ask is not possible. Our data are consistent with a behavioural hypothesis of a “norm-signalling mechanism,” positing that a match increases the psychological cost of deviating from the norm of giving but only when the ask cannot be avoided. We show that indeed, giving zero, but not avoiding the ask, is perceived as less socially desirable under a match. Our findings highlight the possible limits and potential welfare losses of matching subsidies.

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## 1. Introduction

Matching subsidies are used extensively to encourage charitable giving. A matching subsidy sees the original donation supplemented by a third party (e.g., individual donors, governments, or employers). According to DoubletheDonation.com, 65% of Fortune 500 companies offer matching gift programs. Matching subsidies have been found to increase private contributions net of the subsidy relative to a no subsidy condition, although the effect size varies across field and laboratory studies (Eckel and Grossman, 2003, 2006a, 2006b, 2008, 2017; Eckel et al., 2007; Karlan and List, 2007; Huck and Rasul, 2011; Karlan et al., 2011; Gneezy et al., 2014; Huck et al., 2015; Gee and Schreck, 2018; Helms McCarty et al., 2018; for comprehensive reviews, see Epperson and Reif, 2019; Vesterlund, 2016).

The literature on matching subsidies, however, does not provide for or consider that some individuals are reluctant givers (Dana et al., 2006; DellaVigna et al., 2012; Lazear et al., 2012; Andreoni et al., 2017; Damgaard and Gravert, 2018; Exley and Petrie, 2018; Adena and Huck, 2020). When provided with the opportunity to circumvent the donation request, some may strategically opt to avoid the ask, thus relieving themselves of guilt and shame associated with a direct refusal. The strategic choice of avoiding the ask raises an important question: If avoiding the ask is possible, do individuals, even when giving is matched, exploit the opportunity, resulting in the match becoming inconsequential in the decision to donate?

According to neoclassical theory, a matching subsidy of rate  $m$  reduces the effective price of charitable giving from \$1 to  $\$1/(1+m)$ . We refer to this as the *effective price mechanism*. Under this mechanism, knowing there is a match reduces the effective price of giving, leading to greater incentives for giving whether or not one can avoid the ask.<sup>1</sup> To examine whether donation behaviour is consistent with the prediction of the effective price mechanism, we

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<sup>1</sup> Note that there is a difference between avoiding the ask and avoiding the information regarding the matching subsidy. We study the setting where the ask can be avoided; however, individuals still have full information about the match.

partner with the Salvation Army and conduct an experiment (hereafter, Experiment 1) in which donations are solicited for unemployed and disadvantaged individuals.

We design four treatments that vary along two dimensions: whether donations will be matched (\$1: \$1: Match vs. No Match) and whether participants have the opportunity to avoid the donation request by skipping the donation decision-making screen (Avoid vs. No Avoid). To obtain clean evidence of the tendency to avoid the ask when there is a match, we design the experiment such that participants are aware of the match in both Avoid and No Avoid conditions. In contrast to the prediction of the effective price mechanism, we find that although the match significantly increases both the frequency of giving (by 23.0%) and average giving (by 29.3%) in the No Avoid condition, it is ineffective in the Avoid condition.

To explain the null effect of a matching subsidy under the Avoid condition, we turn to a behavioural framework to better understand how matching works. Research on altruistic behaviour suggests that many people give to avoid guilt or shame associated with the deviation from the norm of giving (DellaVigna et al., 2012). It has been argued that a match signals to potential donors that their peers are willing to give and share the burden. Giving by one person has been shown to influence giving by others, suggesting interdependence of preferences (Vickrey, 1962; Bryan and Test, 1967; Schwartz and Howard, 1981; Eckel and Grossman, 2003). Matching can also signal that the charity is worth supporting (Huck and Rasul, 2011; Gneezy et al., 2014; Huck et al., 2015). We propose that these signals can raise the expectation that one should give and increase the psychological cost of deviating from the norm of giving. We refer to this as the *norm-signalling mechanism*. We put forward a simple conceptual framework to help understand the interaction between the match and avoidance opportunity under the norm-signalling mechanism.

Previous research on matching subsidies has emphasised the effective price mechanism, with less attention paid to the norm-signalling mechanism. In contrast to the effective price

mechanism, the norm-signalling mechanism suggests that the ability of a matching offer to increase donations depends on the ability to avoid the ask. We posit that a match will *not* increase giving in our Avoid condition. The intuition for this is that the norm of giving only affects behaviour when one is directly confronted by a giving request. Consequently, if the ask can be avoided, the match cannot influence the psychological cost associated with not giving.

To provide direct evidence for the norm-signalling mechanism, we conduct a second experiment (hereafter, Experiment 2), comprised of two incentivised online surveys that elicit normative beliefs (Bicchieri and Xiao, 2009) about the actions taken in Experiment 1. Participants are first asked to rate the “desirability” of skipping the donation page (only asked in the Avoid condition), giving \$0, and giving various positive amounts. We then elicit the second-order normative belief about the social desirability of each donation behaviour; participants make incentivised guesses as to the most popular rating for each of these behaviours.

The norm-signalling mechanism generates three predictions. First, if the ask cannot be avoided, giving \$0 should be viewed as less socially desirable when a match is offered than when the match is not offered. Second, the opportunity to avoid the ask allows individuals to opt out of situations in which the norm of giving applies. Thus, the normative belief about the social desirability of avoidance should be the same, irrespective of the presence of a match. Finally, regardless of whether a match is offered, choosing not to avoid the ask and then giving \$0 should be considered less socially desirable than giving \$0 by avoiding the ask altogether.<sup>2</sup> Results from Experiment 2 are consistent with all three predictions.

Even though avoiding the ask is an important reality in all practical implementations of charitable giving, no study thus far has systematically examined the effect of the efforts to

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<sup>2</sup> The third prediction has been tested and validated in a context without a match, in which a participant may choose a costly opt-out option to avoid playing the role of the dictator in the dictator game (Krupka and Weber, 2013).

promote giving with an unequivocal opportunity to avoid the ask in a controlled environment. We show that the failure to account for avoidance behaviour in actual fundraising efforts could potentially undermine the effectiveness of matching grants. Our findings highlight the norm-signalling mechanism as an important driver of charitable behaviour in the presence of matching subsidies and show that this mechanism leads to different implications for giving when avoiding the ask is possible.

Our results help reconcile evidence on matching subsidies from laboratory and field experiments, that is, the effect size is typically much larger in the lab than in the field (20-30% and 2-4%, respectively). Moral appeal (and guilt and shame) may be more salient and malleable in the lab, hence increasing psychological costs associated with non-giving. By comparison, many field experiments employ the direct mail solicitation method: Avoiding the ask in such cases is as simple as setting aside the solicitation (after having opened the mail) or refusing to open it at all. Even when door-to-door solicitation methods are used, the person solicited can often elect when to make the donation decision, immediately or at a later, more “convenient” time, thus creating an opportunity to avoid an ask. Previous field experimental studies on matching subsidies generally ignored the issue of avoidance behaviour.

One argument for introducing a matching subsidy is that it increases the likelihood of donating, and this effect is important because people who donate once are more likely to donate in the future (Adena and Huck, 2020; Landry et al., 2010). Direct mail solicitations have a new donor acquisition rate of less than 2%, while the first-time renewal rate is approximately 20% (Levis et al., 2018). However, our findings suggest that these new donors may not give in the future if they have an opportunity to avoid the ask. As a result, the matching subsidy may be futile in the long run. This implication resonates with field experimental evidence reported by Meier (2007), who found that while a match increased immediate donation rates, its removal led to a negative net effect on long-term donation rates compared to the control group in which

the match was never introduced. Our norm-signalling mechanism offers a potential explanation: When individuals are confronted with the matching scheme for the first time (i.e., those randomly assigned to the matching treatments), they feel “forced” to give due to the high psychological cost associated with not donating. Now aware of the potential for such matching solicitations, they might seek to avoid future donation opportunities.

Recent studies have also called attention to the welfare impacts of policy instruments (Allcott and Kessler, 2019; Bulte et al., 2020; Butera et al., 2022; Costa and Gerard, 2021). Our findings suggest that while matching may promote the welfare of the charities and likely also the big donors who offer the match, those who would only give under the matching subsidy are probably worse off.

## **2. Experiment 1**

### **2.1 Design**

We design a 2 x 2 experiment. The first dimension varies whether the participant’s donation is matched by the experimenter (Match and No Match); we match donations \$1:\$1. We chose a relatively high matching rate of 1 as previous research has shown this to be effective ( Karlan and List, 2007; Karlan et al., 2011). The second dimension varies the opportunity of avoiding the donation ask (Avoid and No Avoid). We partner with the Salvation Army’s Melbourne 614 Project, with participants’ donations directed to its clients. All recipients are unemployed and disadvantaged residents of Melbourne.

In all four treatments, participants are initially informed that they will complete a survey consisting of two questionnaires (see the Online Appendix, Fig. S2 for an outline of procedures in each treatment). They are told that they will receive \$1 for completing Questionnaire 1 (two questions about charities) and \$18 for completing Questionnaire 2 (questions about their giving decisions, psychometric measures, and demographics). While we use some of the responses to

inform our analysis, Questionnaire 2 is less relevant for our research and its main purpose is to reduce the focus on the first giving decision. In the No Avoid condition, participants are told that, at the start of Questionnaire 1, they will first be asked if they wish to donate (any amount between \$0 and \$19, inclusive) to the Salvation Army from their \$19 compensation. In the Avoid condition, participants are told that, at the start of Questionnaire 1, they may be asked if they wish to donate. In both conditions, participants are informed that the clients will receive any donation they should make. In the Match condition, participants are further informed that: *“For every \$1 that you donate, we will also match it by donating another \$1.”*

In the No Avoid condition, participants make their donation decisions and then complete Questionnaire 1. In the Avoid condition, before starting Questionnaire 1, participants are given the option to click either a “Go to the donation page” button or a “Go directly to the survey questions” button. If they click the former button, they proceed to the donation page, followed by Questionnaire 1. Importantly, all participants, regardless of their choices, are presented with the matching subsidy information on the same page. On the donation page, participants indicate how much they wish to pass to the recipient; note that they can still choose to give \$0. If they click the latter button, the donation page is bypassed, and they proceed directly to Questionnaire 1.

## **2.2 Procedures**

Upon arriving at the laboratory, participants are seated according to randomly allocated ID numbers. The experimental instructions, a consent form, and a letter from the Salvation Army are provided in paper form (see the Online Appendix for instructions and questionnaires). At the end of a session, participants see their earnings and are instructed to write them on their receipts. Because we adopted a double-blind procedure, we ask for neither names nor signatures. The experimenter reads the data from the monitor’s computer, matches them with

participants' ID numbers, and places the individuals' cash payments in sealed envelopes. One by one, participants privately collect their envelopes and leave the lab.

The experiment was conducted using Qualtrics at the Monash Laboratory for Experimental Economics (MonLEE). A total of 403 participants participated in a total of 34 sessions ranging in size from 5 to 24. The treatments were randomised at the subject level and each session contained two different randomly selected treatments to reduce any session effects. A session lasted about 45 minutes with an average payment of \$15. The Online Appendix Table S2 reports the descriptive statistics. A multinomial logit regression of treatments on all participants' characteristics and a joint orthogonality test suggest that an overall balance is achieved (chi-squared test,  $p=0.316$ ).

### **3. Experiment 1 Results**

Previous research on matching subsidies assesses the effect of the match mainly on four outcome variables: 1) giving on the extensive margin, i.e., the frequency of giving denoted by the percentage of potential donors who donate; 2) out-of-pocket (or checkbook) giving, i.e., the donor's contribution, including \$0 donations; 3) giving on the intensive margin, i.e., the average amount donated by individuals who donate; and 4) charity receipts, i.e., the total amount received by the charity including any matching contributions. Note that, under our \$1:\$1 match, the final outcome variable (charity receipts) doubles the second variable by definition.

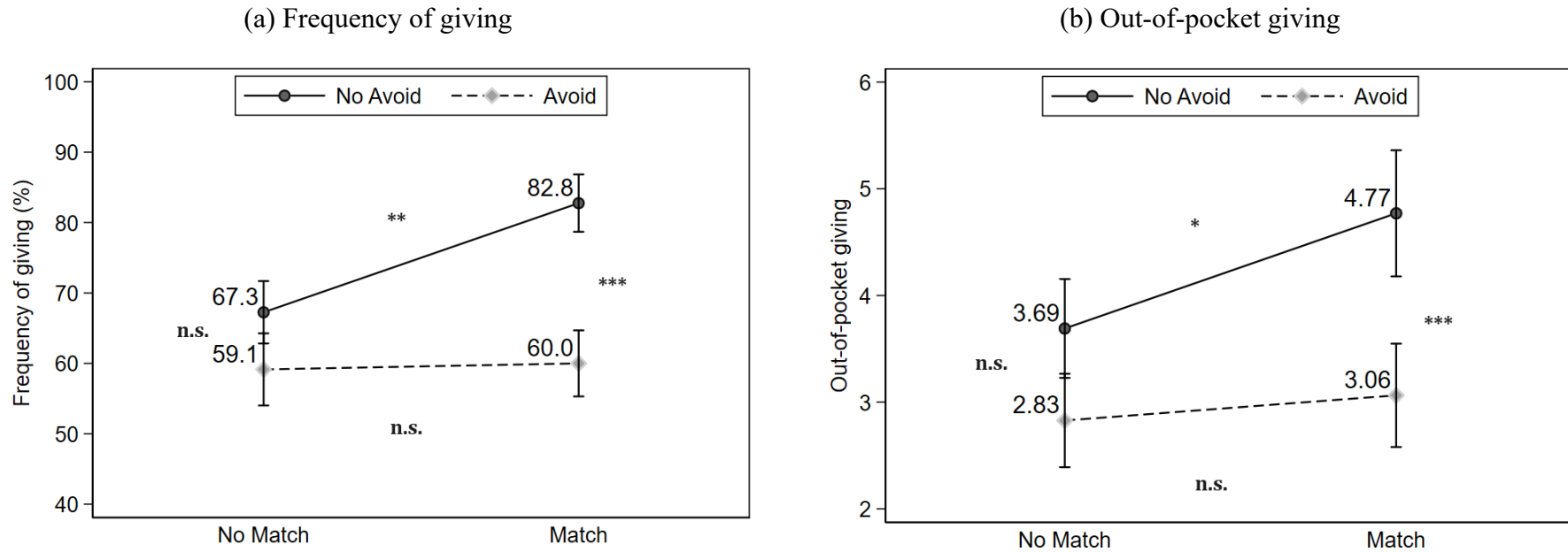
Fig. 1(a) presents the frequency of giving across all four treatments. Comparing across the two No Avoid treatments, we find that introducing the match significantly increases the frequency of giving by 15.5 percentage points (67.3% vs. 82.8%,  $p=0.015$ , Fisher's exact test). In contrast, comparing across the two Avoid treatments, introducing the match has no effect on the frequency of giving (59.1% vs. 60.0%,  $p=1.000$ , Fisher's exact test). The Probit regressions

reported in Online Appendix, Table S3 show that the findings are robust when we control for demographic variables.

A similar pattern is observed for average out-of-pocket giving (see Fig. 1(b)). Although the match significantly increases average out-of-pocket giving by 29.3% in the No Avoid condition (\$3.69 vs. \$4.77,  $p=0.064$ , Wilcoxon rank-sum test), it has a small and insignificant effect in the Avoid condition (\$2.83 vs. \$3.06,  $p=0.859$ ). Online Appendix, Fig. S3 further reveals that average giving on the intensive margin does not significantly differ in any treatment comparisons. Thus, the overall pattern of average out-of-pocket giving is mainly driven by the pattern of giving on the extensive margin. Moreover, the distribution of out-of-pocket giving across all treatments indicates that the match mainly decreases the frequency of \$0 donations and increases the number of small (between \$1 and \$4) donations in the No Avoid condition (Online Appendix, Fig. S4).

Our finding that the match is ineffective in the Avoid condition is inconsistent with the effective price mechanism. In our experiment, participants were fully informed about the matching subsidy, i.e., the price of giving was known. Thus, it is reasonable to argue that simply knowing that the effective price of giving is halved by the match should increase the frequency of giving in both the Avoid and No Avoid conditions. In particular, if the price mechanism is the main driver of donation decisions and the match affects decisions via the change in effective price, individuals who are willing to donate at the full price (without the match) should also be willing to donate when a match reduces their cost of donating by half, even if they have the option to avoid the ask. In other words, the attractiveness of the better donation “deal” created by the match should not depend on whether the ask itself can be avoided.

**Fig. 1:** The effect of a \$1:\$1 match on giving



Note: The error bar denotes  $\pm$ SEM. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ , n.s.  $p > 0.1$ .

Further, it is worth noting that the standard models augmented with distributional concerns such as inequality aversion are also not consistent with our results; these considerations are silent about the impact of the avoidance opportunity. Next, we propose a norm-signalling mechanism to explain the findings. To focus on the norm-signalling mechanism, our analysis below abstracts from the impact of the effective price mechanism. We do not claim that the price mechanism is irrelevant. Indeed, one may speculate that its effects could be observed under the Avoid condition when different matching rates are used. We elaborate on this possibility, and how it relates to our findings in the Discussion section.

#### **4. Norm-Signalling Mechanism**

The norm-signalling mechanism suggests that the opportunity to avoid the ask will have a different impact on donating behaviour depending on whether or not a matching offer is available. Following previous literature (e.g., DellaVigna et al., 2012), we consider an individual who is endowed with wealth,  $w$ , that can be allocated between the consumption of private good,  $x$ , and a donation to the charity,  $g$ . Assume that the individual's utility has two components. The first component is the consumption utility  $v(x, g | a)$ , which combines the influence of material and altruistic preferences. The individual's donation to the charity is determined by  $a$ , the altruism parameter. This component focuses only on the consequence of and thus the cost and benefit of a donation decision. As a concrete example,  $v(x, g | a)$  could be additively separable, consisting of the utility derived from private consumption  $u_c(x)$  and from altruism  $a \cdot u_a(g)$ . The altruism parameter determines the relative weight placed on altruistic utility, i.e., how much an individual cares about the charity. To simplify the notation, we refer to this component as  $v(g)$  in the following discussion. The second component is the

psychological cost  $h(g | s, m)$ , such as guilt or shame, associated with the deviation from the social norm of giving, determined by the decision context.<sup>3</sup>

The context in our Experiment 1 is influenced by  $s$  ( $= 1$  if the donation ask is avoided, and  $0$  otherwise) and  $m$  ( $= 1$  if donation is matched, and  $0$  otherwise).<sup>4</sup> Let  $v(0)$  be the consumption utility of giving  $0$ . Note that since  $v(0)$  only captures the consequence of not giving, it does not differ between the individual explicitly choosing not to give when there is no opportunity to avoid the ask and the individual choosing to avoid the ask when possible. Let  $h(0 | s, m)$  be the psychological cost of giving  $0$  and its value may depend on whether the individual is able to avoid the ask and chooses to do so and whether there is a match. When there is no match ( $m = 0$ ) and the donation ask is not avoided ( $s = 0$ ), some individuals incur a positive psychological cost of not giving when asked,  $h(0 | 0, 0) > 0$ , while others suffer no psychological cost of not giving,  $h(0 | 0, 0) = 0$ .

A key aspect of our hypothesis is that an individual with  $h(0 | 0, 0) > 0$  may incur lower psychological cost when the solicitation can be avoided (Andreoni et al., 2017). For our theoretical predictions, without loss of generality, we normalise this cost to  $0$  when the ask is avoided ( $s = 1$ ), i.e.  $h(0 | 1, 0) = 0$ . For simplicity, we also assume  $h(g) = 0$  for  $g > 0$ . This means that any positive donation makes an individual compliant with the norm of giving and therefore incurs no psychological costs. Thus, our analysis focuses on the frequency of giving, rather than the absolute level of giving. In the Online Appendix, we modify this assumption and show that the intuition and hypothesis related to the treatment differences in the frequency

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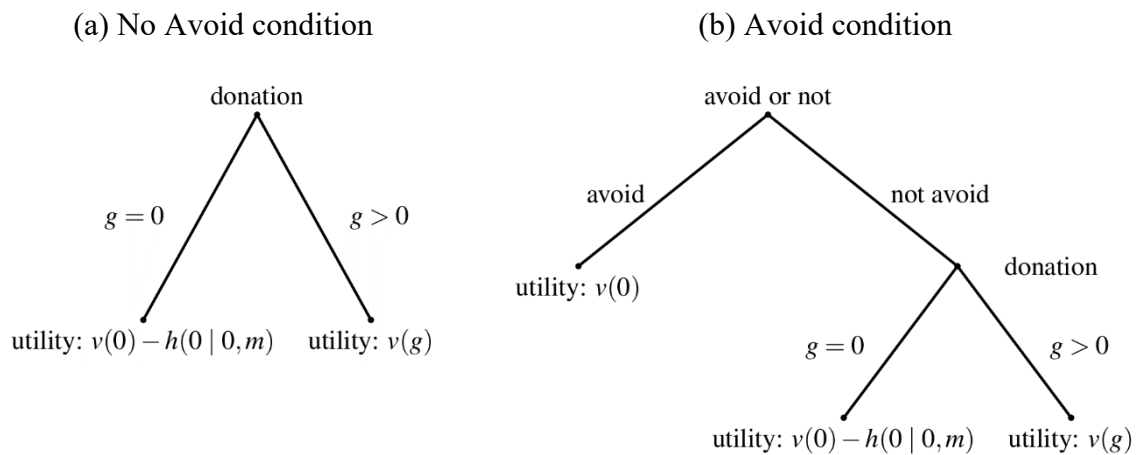
<sup>3</sup> In section 4.1 we present data from a belief-elicitation experiment in which the social norm is measured as a second-order belief, following established approaches in the literature (Bicchieri, 2006). Note that norm compliance in this case does not necessarily require one's behaviour to be publicly observed. According to the norm framework, individuals may experience disutility or incur psychological costs simply from believing that they are deviating from what others think they ought to do. Such psychological costs can serve as a deterrent to norm violation, even in the absence of direct observation, or repeated donation requests (Bicchieri and Xiao, 2009; Allcott, 2011; also see a review by Bicchieri and Dimant, 2025).

<sup>4</sup> In this case,  $s = 0$  includes both when the decision maker chooses not to avoid the ask in the Avoid condition and when the decision maker is assigned to the No Avoid condition.

of giving discussed here also apply to the pattern of average out-of-pocket giving (see the Online Appendix, Table S1 for a summary of the theoretical predictions).

To illustrate how individuals make decisions in this setting, we present a decision tree showing the choices and resulting utility outcomes for a decision maker. In the No Avoid condition (Fig. 2(a)), the decision maker chooses between donating a positive amount or donating \$0. If they donate a positive amount, they receive a utility of  $v(g)$ ; if they donate \$0, they receive a utility of  $v(0) - h(0 | 0, m)$ . In the Avoid condition (Fig. 2(b)), the decision maker first chooses whether to avoid the ask. If they avoid it, they incur no psychological cost and receive utility  $v(0)$ . If they do not avoid it, they can donate \$0 (and obtain  $v(0) - h(0 | 0, m)$ ) or donate a positive amount (and obtain  $v(g)$ ).

**Fig. 2:** Decision tree



Note: An individual's utility is  $v(g) - h(g | s, m)$ . The first component,  $v(g)$  is the consumption utility;  $h(g | s, m)$  captures the psychological cost associated with giving behaviour.  $s$  is an indicator of the donation ask being avoided;  $m$  is an indicator of the match.  $h(0 | 0, m) > 0$ ;  $h(0 | 1, m) = 0$ ;  $h(g) = 0$  for  $g > 0$ .

To derive predictions, we will first compare the No Avoid condition and the Avoid condition in the case of No Match,  $m = 0$ . Using the No Avoid - No Match treatment as the baseline, we can classify individuals into the following three general types:

- *Pure givers* for whom  $v(g) > v(0)$  for any  $g > 0$ . *Pure givers* derive positive consumption utility from donation and thus intrinsically enjoy supporting the charity.

- *Reluctant givers* for whom for any  $g > 0$ ,  $v(g) < v(0)$ , but  $h(0 | 0, 0) > 0$  such that  $v(g) > v(0) - h(0 | 0, 0)$ . *Reluctant givers* do not sufficiently care about the charity but they are “forced” to give to avoid the psychological cost associated with not giving.
- *Non-givers* who are otherwise similar to the *Reluctant givers* except that  $h(0 | 0, 0)$  is sufficiently small such that  $v(g) < v(0) - h(0 | 0, 0)$ . *Non-givers* would not give in the baseline treatment.

Now let’s consider each type’s behaviour in the Avoid - No Match treatment. *Pure givers* who intrinsically enjoy supporting the charity will continue to give. *Reluctant givers* will not give because  $h(0 | 1, 0) = 0$ . Lastly, for the *Non-givers*, the opportunity to avoid the ask will not affect their decisions to give zero; they may give zero either by avoiding the ask or by not avoiding and giving zero. However, since  $h(0 | 0, 0) > 0$  and  $h(0 | 1, 0) = 0$ , avoiding the ask tends to be a more attractive option. Thus, the opportunity to avoid the ask will reduce the frequency of giving if there is a significant number of *Reluctant givers*.

The novel contribution of this paper is to examine how the opportunity to avoid the ask may influence the effectiveness of the matching subsidy. Note that, since *Pure givers* already give a positive amount in the baseline treatment, by definition the match could exert no further influence on their propensity to give. In the following discussion, we focus only on the *Reluctant givers* and *Non-givers*.

Under the norm-signalling mechanism, the match heightens the emotional appeal to give by increasing the psychological cost associated with not giving, i.e.,  $h(0 | s, 1) \geq h(0 | s, 0)$ . However, this only matters when there is no opportunity to avoid the ask. When the opportunity to avoid the ask is available, the choice of giving zero could be made by avoiding the ask and thus the psychological cost of not giving remains zero. Therefore, we hypothesise that  $h(0 | 0, 1) > h(0 | 0, 0)$  and  $h(0 | 1, 1) = h(0 | 1, 0) = 0$ . The predictions of the effect of matching on giving behaviour under the Avoid and No Avoid conditions are as follows.

Lacking an opportunity to avoid the ask, *Reluctant givers* who give when there is no match will continue to give when there is a match. For *Non-givers*, if the increased psychological cost incurred from not giving in the presence of a match is sufficiently strong, such that  $v(g) > v(0) - h(0 | 0, 1)$ , they will find it worthwhile to give a positive amount; the psychological cost of not complying with the norm of giving overwhelms the forgone consumption utility. Under the Avoid condition, both *Reluctant givers* and *Non-givers* can take the opportunity to avoid the ask and reduce the psychological cost associated with not giving; hence they give zero regardless of whether there is a match. Table 1 summarises the predicted giving behaviour of each type in each treatment under the norm-signalling mechanism.

Table 1 shows that if there is a significant number of *Non-givers*, we should first expect that a significant number of participants would not give in the No Avoid - No Match baseline treatment of Experiment 1. We should also expect that the match increases the frequency of giving only when avoiding the ask is not possible. In the Online Appendix, Table S1, we show that, likewise, the opportunity of avoiding the ask can significantly diminish the effectiveness of the match on increasing out-of-pocket giving. These predictions are consistent with what we observed in Experiment 1, as reported in the section above.

**Table 1:** Predicted giving behaviour of each type in each treatment under the norm-signalling mechanism

		<b>No Match</b>	<b>Match</b>
<i>Pure givers</i> $v(0) < v(g)$	<b>No Avoid</b>	+	+
	<b>Avoid</b>	+	+
<i>Reluctant givers</i> $v(0) - h(0   0, 0) < v(g) < v(0)$	<b>No Avoid</b>	+	+
	<b>Avoid</b>	0 (by avoiding)	0 (by avoiding)
<i>Non-givers</i> $v(g) < v(0) - h(0   0, 0) < v(0)$	<b>No Avoid</b>	0	+, if $v(g) > v(0) - h(0   0, 1)$ 0, if $v(g) < v(0) - h(0   0, 1)$

<b>Avoid</b>	0 (by avoiding)	0 (by avoiding)
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Notes: A positive amount of giving is indicated by +, an entry of 0 means explicitly giving zero and 0 (by avoiding) means giving zero through avoiding the ask.

An implication of the norm-signalling mechanism is that the higher the proportion of *Non-givers* in the baseline, the more likely will the effectiveness of the match differ between the Avoid and the No Avoid conditions. Using the Experiment 1 data from the No Match condition, we estimate the proportion of each type summarised in Table 1. The results are reported in Table 2. In our experiment, about 15% of the participants are *Non-givers* who would give under the matching scheme in the No Avoid condition but would choose to not give in the Avoid condition. When there is a greater proportion of *Non-givers*, we may expect the adverse effect of avoidance on the success of the match to be stronger.

**Table 2:** Estimated proportion of each type in Experiment 1

	<b>Proportion</b>
<i>Pure givers</i> $v(0) < v(g)$	59.1%
<i>Reluctant givers</i> $v(0) - h(0   0, 0) < v(g) < v(0)$	8.2%
<i>Non-givers</i> $v(g) > v(0) - h(0   0, 1): 15.5%$	
$v(g) < v(0) - h(0   0, 0) < v(0)$	$v(g) < v(0) - h(0   0, 1): 17.2%$

Note: We use the data from the No Match condition to estimate the proportion of each type. Under the Avoid condition, only *Pure givers* give. Their proportion (59.1%) is estimated by the frequency of giving in Avoid - No Match treatment. *Reluctant givers* are the only type responsive to the avoidance opportunity under No Match. Their proportion is given by the difference in the frequency of giving between No Avoid - No Match and Avoid - No Match. The estimate is  $67.3\% - 59.1\% = 8.2\%$ . *Non-givers* are the only type that give nothing in No Avoid - No Match. Their proportion is estimated by the frequency of non-giving in that treatment, which is 32.7%. Lastly, we can classify the *Non-givers* based on their predicted behaviour in response to the match (see Table 1). Since in the No Avoid condition, the effect of matching is driven by *Non-givers*, we can estimate the proportion of *Non-givers* whose behaviour is impacted by the match (i.e.,  $v(g) > v(0) - h(0 | 0, 1)$ ) to be  $82.8\% - 67.3\% = 15.5\%$ . This implies that the proportion of *Non-givers* who were actually not responsive to the match (i.e.,  $v(g) < v(0) - h(0 | 0, 1)$ ) is  $32.7\% - 15.5\% = 17.2\%$ .

Additionally, if there is a positive fraction of *Reluctant givers* in the population, the frequency of giving is predicted to be higher in the No Avoid condition than in the Avoid condition regardless of the presence of the match. In fact, Table 1 helps us to rank-order all treatments in terms of the frequency of giving; i.e., the frequency of giving across treatments should be:

$$\text{No Avoid - Match} \geq \text{No Avoid - No Match} \geq \text{Avoid - Match} = \text{Avoid - No Match}$$

Our Experiment 1 data is consistent with this prediction:

$$\text{No Avoid - Match (82.8\%)} \geq \text{No Avoid - No Match (67.3\%)} \geq \text{Avoid - Match (60.0\%)} = \text{Avoid - No Match (59.1\%)}$$

Finally, the norm-signalling mechanism also predicts that the match should have little effect on the frequency of avoiding the ask and that those who did not avoid the ask would give a positive amount. As predicted, Experiment 1 data show that the frequency of avoiding the ask in the presence of the match does not significantly differ from that in the No match condition (38.2% vs. 34.4%,  $p=0.661$ , Fisher's exact test). Probit regression analyses confirm this result (Online Appendix, Table S4). Further, only a negligible number of participants chose not to avoid the ask but gave nothing: 6.5% in the No Match condition and 1.8% in the Match condition, also consistent with the norm-signalling mechanism. Note, the price mechanism, in contrast, would predict that people are equally likely to avoid as to not avoid and donate \$0 under the Avoid condition, as net earnings are the same for these two decisions. However, this is not what we observe.

These findings suggest that matching incentives encourage some *Non-givers* to contribute, but only when they cannot avoid the solicitation. Matching subsidies may consequently result in welfare losses for these individuals as they feel pressured to give under the influence of a match.

While the data from Experiment 1 is consistent with the prediction of the norm-signalling mechanism, we conduct Experiment 2 to provide direct evidence for this mechanism.

#### 4.1 Experiment 2 Design

Experiment 2 is comprised of two incentivised surveys administered online. We recruited a new set of participants from the same subject pool as Experiment 1. In the first survey, 100 participants are presented with the experimental instructions for the two Avoid treatments. In the second survey, 61 participants received instructions for the two No Avoid treatments. We oversampled the *Avoid* condition, as behavior in this setting is more relevant for our test of the norm-signaling mechanism. For both surveys, the order in which the Match condition and the No Match condition is presented is randomized across participants.

Following the norm literature (Bicchieri and Xiao, 2009), we first ask participants to rate the “desirability” of each of the following seven behaviours on a 7-point scale (1 = “Extremely undesirable” to 7 = “Extremely desirable”):<sup>5</sup>

- 1) skipping the donation page (only asked in the Avoid condition),
- 2) giving \$0,
- 3) giving \$1,
- 4) giving \$5,
- 5) giving \$10,
- 6) giving \$15, and
- 7) giving \$19.

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<sup>5</sup> In this context, “desirable” refers to what is considered personally appropriate or the correct/right way to behave. One may argue that participants may interpret “desirable” in terms of the cost of the donation (i.e., when the cost is low, it is more “desirable” to donate). If this is the case, people should not rate “skipping” and as a result passively donating \$0, different to “actively choosing to donate \$0”. However, as we report below, our data contradicts this conjecture.

Participants were then asked to make incentivised guesses about the most popular rating for each of the above behaviours (see the Online Appendix for instructions and screenshots). By doing so, we elicit the second-order normative belief about the social desirability of each donation behaviour. If individuals take actions that are less socially desirable, they could incur higher psychological costs. As the norm-signalling mechanism proposed above is based on the psychological cost incurred by not giving, our main variables of interest relate to giving \$0 and avoiding the ask (i.e., skipping the donation page). Online Appendix Table S5 reports the descriptive statistics. A multinomial logit regression of treatments on participants' characteristics and a joint orthogonality test suggest that overall balance is achieved across the surveys (chi-squared test,  $p=0.350$ ).

The norm-signalling mechanism makes the following testable predictions:

- P1: When  $h(0 | 0, 1) > h(0 | 0, 0)$ , in the No Avoid condition, giving \$0 should be viewed as less socially desirable (i.e., higher psychological cost associated with giving nothing) when the match is present.
- P2: When  $h(0 | 1, 1) = h(0 | 1, 0)$ , in the Avoid condition, the normative belief about the social desirability of avoiding the ask should not differ between the Match and the No Match conditions.
- P3: When  $h(0 | 0, 1) > h(0 | 1, 1)$  and  $h(0 | 0, 0) > h(0 | 1, 0)$ , in the Avoid condition, choosing not to avoid the ask and giving \$0 should be less socially desirable than giving \$0 by avoiding the ask, regardless of whether the match is present or not.

## 4.2 Experiment 2 Results

As reported in Table 3, the elicited normative beliefs indicate that giving any amount  $> \$0$  is always more socially desirable in the Match condition than in the No Match condition, and that

giving is more socially desirable than giving nothing or avoiding the ask ( $p < 0.001$ , Wilcoxon signed-rank test). Both are consistent with the norm-signalling mechanism.

Further, the elicited normative beliefs from Experiment 2 support predictions P1 – P3. First, concerning P1, in the No Avoid condition, giving \$0 is considered to be significantly less socially desirable in the Match condition than in the No Match condition (2.21 vs. 2.41,  $p = 0.024$ ). Second, concerning P2, in the Avoid condition, the normative belief about avoiding the ask does not significantly differ by the Match and the No Match conditions (3.27 vs. 3.36,  $p = 0.103$ ). Concerning P3, we observe that, in the Avoid condition, avoiding the ask is considered as more socially desirable than giving \$0 both when the match is not present (3.36 vs. 2.92,  $p = 0.027$ ) and when the match is present (3.27 vs. 2.81,  $p = 0.006$ ).

**Table 3:** Normative belief about social desirability of giving behaviour

Donation	No Avoid			Avoid		
	Mean (Std. Err.)		Wilcoxon signed-rank test p-value	Mean (Std. Err.)		Wilcoxon signed-rank test p-value
	No Match	Match		No Match	Match	
Skip	-	-	-	3.36 (0.19)	3.27 (0.19)	0.103
\$0	2.41 (0.23)	2.21 (0.21)	0.024	2.92 (0.19)	2.81 (0.18)	0.244
\$1 or more	4.85 (0.14)	5.02 (0.14)	0.035	4.79 (0.15)	4.95 (0.15)	0.023

Notes: Participants are asked to rate the “desirability” for each behaviour on a 7-point scale (1 = “Extremely undesirable” to 7 = “Extremely desirable”). The table reports the mean and standard error of each behaviour in each treatment. P-values are from the Wilcoxon signed-rank test that tests the difference in the rating of each behaviour under No Match and under Match.

In contrast, the observed belief pattern is inconsistent with the standard price mechanism which would predict no difference in the belief about the social desirability of giving \$0 by skipping in the Avoid condition, not skipping and giving \$0 in the Avoid condition, and giving \$0 in the No Avoid condition. As noted above, this is clearly not the case. In the

Avoid condition, as shown by the results relating to P3, skipping is significantly more socially desirable as compared to donating \$0, both when there is a match and when there is no match. Moreover, comparing across Avoid and No Avoid treatments, skipping is rated as significantly more socially desirable than donating \$0 in the No Avoid treatment, both when there is a match (3.27 vs. 2.21,  $p < 0.001$ , Wilcoxon signed-rank test) and when there is no match (3.36 vs. 2.41,  $p < 0.001$ ).

In summary, our results from Experiment 2 provide direct evidence for the norm-signalling mechanism. While the match makes giving \$0 more psychologically costly, it has little impact on participants' normative beliefs about the social desirability of avoiding the ask.

## **5. Discussion**

We find that matching subsidies are effective in increasing charitable giving when individuals cannot avoid the solicitation. However, when the solicitation can be avoided, we find that matching subsidies are ineffective in increasing charitable giving. This raises an interesting question: Would the same result be observed for other fundraising schemes, in particular, in cases where there is a lead donor, such as in seed money schemes?

Standard economic theory implicitly assumes perfect information about the charity and ignores the possible influence of norms. Focusing on pure economic variables (i.e., the effective price mechanism), research suggests that there is no clear prediction with respect to whether a match or seed money is more effective (Guttman, 1978; Danziger and Schnytzer, 1991; Varian, 1994; Andreoni, 1998). Literature has also considered the signalling effect of seed money and matches (Vesterlund, 2003; Krasteva and Saboury, 2021). Experiments on the two schemes have similarly produced mixed results (Rondeau and List, 2008; Huck and Rasul, 2011; Gneezy et al., 2014; Huck et al., 2015; Saboury et al., 2022).

In general, the studies cited above attribute differences between the two fundraising schemes to differences in the price mechanism and quality signalling. In contrast, in our framework, the individual's utility has two components. The first component is the consumption utility  $v(x, g | a)$ , which combines the influence of material and altruistic preferences. The second component is the psychological cost  $h(g | s, m)$ , such as guilt or shame, associated with the deviation from the norm of giving, which is determined by the decision context. Within this framework, the price mechanism can affect utility via the first component. With respect to quality signalling, it may affect either the consumption utility or the psychological cost or both. Specifically, the signal of quality may increase the consumption utility by affecting altruistic preferences, i.e., how much the individual cares about the charity. In addition, the quality signal may affect the second utility component by increasing expectations that one should donate and thus increase the psychological cost associated with not giving.

If psychological costs associated with not giving in the presence of seed money contribute, at least in part, to increased donations, then our framework predicts that introducing opportunities to avoid the ask will also diminish the effectiveness of seed money. In fact, the avoidance condition offers a useful setting to examine the role of the norm-signalling mechanism across different charitable fundraising schemes. Since the consumption utility of giving associated with these schemes should remain constant across avoidance conditions, any observed changes in donation behaviour between the Avoid and No Avoid conditions can be credibly attributed to differences in the psychological cost of norm deviation.

It would be interesting to apply our experimental paradigm to compare the effect of different fundraising strategies, such as the seed money scheme, under the Avoid versus No Avoid conditions. For instance, if we find seed money is more effective than a matching subsidy in the No Avoid condition, but both schemes yield similar outcomes under the Avoid

condition, this suggests that the relative effectiveness of seed money is partly driven by stronger norm-signalling. Once the norm-signalling channel is removed or attenuated (through the provision of an avoidance opportunity), the two schemes may become behaviourally similar.

It is also worth noting that, in addition to the price mechanism and the norm signalling mechanism, previous research has also discussed the possibility that a match may increase the effort cost of giving, e.g. when a match is involved, donors may face an extra cognitive effort to determine the optimal donation amount (see Scharf and Smith, 2015). However, our data do not provide any evidence consistent with such a cognitive cost effect. For instance, if such a cognitive effort plays a role in the giving decisions, we may speculate that this would be especially true for donors of smaller amounts where the effort cost is more likely to exceed the benefits from donating. Conversely, we find number of people who give \$1 is actually significantly higher and the proportion of giving zero is significantly lower in the No Avoid - Match than the No Avoid - No Match treatment. Essentially, under the No Avoid condition, the match mainly increases the frequency of giving, which also seems to be inconsistent with the idea that people may forgo giving to avoid the cognitive effort cost. One possible reason that the effort cost does not influence giving in our setting might be that the 1:1 matching rate makes it particularly easy for people to determine the optimal donation amount. Exploring how avoidance interacts with cognitive effort under alternative matching rates is an interesting direction for future research.

## **6. Conclusion**

Matching subsidies are ubiquitous in practical applications of charitable giving. However, avoiding a donation request is easy in most naturally occurring environments. This paper examines whether matching subsidies are still effective in the presence of the opportunity to avoid the ask. We design treatments that vary whether the donation is matched and also vary the possibility of avoiding the donation request. While the effective price mechanism predicts

the match to have a positive effect both when the donation request can and cannot be avoided, we find that a \$1:\$1 match significantly increases the frequency of giving only when participants cannot avoid the ask. We show that the data instead is consistent with the norm-signalling mechanism.

Our findings highlight that the promise of a matching subsidy may be limited. The opportunity to avoid the ask could thwart traditional fundraising schemes and the efforts of charitable organizations. Charitable fundraising drives often declare the match explicitly, such as indicating the scheme on the envelope or in the subject of the solicitation emails (Online Appendix, Figures S5 and S6). As the match is clearly visible, individuals can avoid by not opening the envelope or deleting the email.

Furthermore, our paper highlights the importance of considering the long-run effect of fundraising schemes due to the possibility of avoidance in the future. Donors may give when initially confronted with a solicitation with matching. However, they may subsequently avoid future charity solicitations, as noted by Meier (2007). Similarly, public and community radio stations (e.g., National Public Radio in the USA or 89.9 TheLight – Positive Radio – Melbourne) often solicit donations at certain times, e.g., the end of the tax year or during the holiday season. Anticipating this, individuals may choose to avoid listening during those times.

Another important implication is that matching subsidies may lead to welfare losses for people who are pressured to give under the match. In our study, avoiding the ask is either not possible or incurs no cost and thus the net welfare impact may still be positive (since the charity receives higher donations facilitated by the matching subsidy). Nevertheless, in practice avoidance is often a viable option. Consequently, matching subsidies can potentially decrease social welfare when a significant number of people bear the cost of avoiding the ask.

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