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Is “overhead” a tainted word? A survey experiment exploring framing effects of nonprofit overhead on donor decisions

Abstract

Nonprofit overhead ratios (i.e. proportion of funds spent on fundraising and/or management) have long been used as a proxy for nonprofit efficiency. Prior studies find that donors negatively respond to charities with higher overhead. Using a survey experiment, we explore whether providing different types of information about overhead alleviates this donor aversion. When asked to choose between two organizations as donation recipients, donors preferred the organization with lower overhead. However, when presented with information that described the purpose of higher overhead as building long-term organizational capacity, an increased proportion of donors chose to give to the organization with higher overhead. Omitting the word “overhead” further increased the proportion of donors choosing the organization with higher overhead. This study adds to our understanding of overhead aversion and has practical implications for nonprofits that rely on voluntary private contributions to achieve their missions.

Keywords: overhead, charitable giving, framing, survey experiment, starvation cycle

Introduction

Overhead is a catchall term for nonprofit non-program expenses. Scholars have long used various forms of overhead ratios (i.e. fundraising and/or management expenses to total expenses) as a proxy for nonprofit efficiency (e.g., Frumkin & Kim, 2001). Charity watchdogs, such as Charity Navigator and CharityWatch, use some form of overhead to evaluate a nonprofit's financial efficiency and inform donor decisions. Articles appear in popular media, such as *Forbes* (2016), encourage overhead minimization. Even nonprofits themselves often attempt to appeal to donors by emphasizing low overhead. For example, Women's Cancer Research Foundation (WCRF) states "WCRF overhead is only 10%...Our only major expenses are those directly related to our research team" (WCRF, n.d.).

In recent years, many have raised concerns on the over-emphasis of overhead ratios. In 2013, GuideStar, the BBB Wise Giving Alliance, and Charity Navigator launched the Overhead Myth (n.d.) campaign to address "the false conception that financial ratios are the sole indicator of nonprofit performance." More recently, the CEOs of five major foundations announced a joint effort to fund overhead, recognizing the constraints current funding practices place on nonprofits (Di Mento, 2019). However, as Keenan Wellar writes for *Nonprofit Quarterly* (2018), "Despite many efforts to generate a more reasoned dialogue, there is a continuing and powerful mindset that charities are routinely 'wasting money on overhead.'"

Some scholars argue that donors should not care about overhead ratios because they present donors with little useful information (Bowman, 2006; Steinberg, 1986; Meer, 2017). However, prior studies find that donors negatively respond to charities with high overhead (Bowman, 2006; Gneezy, Keenan, & Gneezy, 2014; Metzger & Günther, 2019; Portillo and Stinn, 2018; Tinkelman & Mankaney, 2007). A recent survey from Grey Matter Research reports

that nearly 60% of American donors believe that charities spend too much on overhead; donors have increasingly demanding expectations for what constitutes a reasonable overhead ratio, dropping from an average of 22% in 2012 to 19% in 2018 (Grey Matter Research & Op4G, 2018).

Facing pressure to conform to such expectations, many nonprofits enter a starvation cycle by underinvesting in organizational infrastructure, which limits organizational effectiveness (Gregory & Howard, 2009; Lecy & Searing, 2014; Wing & Hager, 2004). Alternatively, they resort to ratio management by under-reporting their fundraising and/or management expenses (and thus over-reporting program expenses) on the IRS Form 990 (e.g. Qu, Steinberg, & Burger, 2020; Eckerd, 2014; Froelich, Knoepfle, & Pollak, 2000; Keating, Parsons, & Roberts, 2008; Krishnan, Yetman, & Yetman, 2006; Urban Institute and the Center on Philanthropy at Indiana University, 2004), raising concerns about the sector's financial accountability and transparency.

Therefore, understanding and addressing donors' overhead aversion is important. In this study, we explore donor perceptions of overhead and examine if *framing* overhead information can help alleviate donor overhead aversion. Framing refers to the process by which people develop a particular conceptualization of an issue or reorient their thinking about an issue. Framing theory suggests that different wordings or settings of message delivery may affect people's decisions (Chong & Druckman, 2007). Overhead aversion may reflect a lack of understanding regarding what overhead is. Will donors be less averse to higher overhead spending when its purpose is explained? Maybe "overhead" is a tainted word with negative connotations. If so, will donors be less sensitive to higher overhead when the word "overhead" is not mentioned (i.e. when the concept is reframed and presented in a new way)? Specifically, we explore these questions through a survey experiment that varies overhead information across four

treatments. Our findings suggest that both framing overhead spending positively and omitting the tainted word can significantly decrease overhead aversion.

The rest of the article proceeds as follows. First, we define overhead, provide an overview of framing theory, and review existing studies on nonprofit overhead. Second, we introduce our experiment design and present findings. We conclude this article with a discussion of theoretical and practical implications for demystifying overhead.

Literature Review

Nonprofit expenses are generally categorized as program, fundraising, or administrative costs. The latter two categories are commonly combined and termed as nonprofit overhead costs (e.g.: National Council of Nonprofits, n.d.; Bowman, 2006; Coupet & Berrett, 2019; Newman, et al., 2019). Overhead costs are also often referred to as indirect costs that are not readily identified with a specific program but benefit more than one cost objective (CalNonprofits, n.d.). Because the goal of this study is to examine if framing overhead costs, as well as removing the label of “overhead” itself, affects donor decisions, we first lay the groundwork for our study by introducing the concept of framing, and then present our hypotheses drawing on research on nonprofit overhead.

What is framing?

Framing can influence people’s decisions. As Chong and Druckman (2007, p.104) note, “[O]ften small) changes in the presentation of an issue or event produce (sometimes large) changes of opinion. Tversky and Kahneman (1986, p. S257) explain that people undertake a preliminary analysis of the choice problem before making decisions, during which “[f]raming is controlled by the manner in which the choice problem is presented as well as by norms, habits,

and expectancies of the decision maker.” In other words, the way in which a decision problem is presented influences how people summarize and ultimately act upon the problem.

Research on framing effects originates from prospect theory (Kahneman & Tversky, 1979). Framing effects have been documented in many areas, such as political preferences, consumer choices, health communication, among others. In the context of charitable giving, prior experimental studies have explored the relationship between the framing of fundraising appeals and donation behavior. For example, Chang and Lee (2009) explore the interactions among message framing, story or image framing, and statistical information framing in fundraising appeals, suggesting that these frames can be properly combined to enhance framing effects and promote more donations. Sussman, Sharma, & Alter (2015) find that framing donations as exceptional (uncommon and infrequent) expenses increases donations, compared to framing donations as common (frequent) expenses.

The type of framing used in our study is informed by attribute framing, in which a single attribute of an object or event is framed in either a positive or negative light (Levine, Schneider, & Gaeth, 1998). Specifically, objects described positively are generally evaluated more favorably than those described negatively. For example, ground beef labeled as “75% lean” was rated higher than beef labeled as “25% fat” (Levin & Gaeth, 1988). Fuzzy-trace theory provides an explanation for the underlying mechanism of the framing bias. It suggests that people tend to base their reasoning on a simple and imprecise gist extraction of an event rather than detailed and precise verbatim information (e.g. numerical values) (Reyna & Brainerd, 1991). Reyna and Brainerd (1991) demonstrate that the framing effect size was comparable when presenting people with precise numerical information (e.g., “200 will die”) versus relatively vague language (e.g., “some people will die”). They suggest that individuals interpret numbers vaguely in semantic

terms even when precise numerical information is provided. More recently, Gamliel and Kreiner's (2020) confirm that the attribute-framing bias is driven by gist representations. Given this, we expect positive framing (i.e. describing the positive attribute of overhead costs) to reorient people's attitudes and decisions about nonprofit overhead.

Framing overhead costs

Many studies have demonstrated donors' negative responses to overhead. Using donor-level data, Bowman (2006) finds an inverse relationship between changes in overhead ratios and changes in giving. Using organizational-level data, Tinkelman and Mankaney (2007) report that nonprofit administrative expense ratios are negatively associated with donations. Through their lab and field experiments, Gneezy, et al. (2014) show that donors decrease donations as overhead level increases, but only if they themselves have to pay for this overhead. Portillo and Stinn's (2018) lab experiments confirm the existence of overhead aversion, and also find that donors are more willing to support fundraising expenses rather than salary-related costs when there is no overhead-free option. Using an online survey experiment, Charles, Sloan, and Schubert (2020) also find that overhead aversion exists and that having another donor covering overhead costs does not always increase the likelihood of giving. Similarly, Tian, Hung, and Frumkin's (2020) confirm overhead aversion in their lab experiment and find providing additional information on a nonprofit's performance and transparency can alleviate the aversion. In line with previous studies, we start with this hypothesis:

H1: Lower overhead will lead to higher willingness to give.

Overhead costs are essential for building organizational infrastructure and increasing organizational effectiveness in mission achievement (e.g. Wing & Hager, 2004). Therefore, overhead costs are not actually *separate* from program costs, but necessary for nonprofit

organizations to do their jobs and do them well. Although higher overhead spending may imply waste or low organizational efficiency, studies have also found it to predict lower financial vulnerability (Tuckman & Chang, 1991; Greenlee & Trussel; 2000) and greater financial capacity (Chikoto & Neely, 2014). In addition, scholars noted that the overhead ratios do not necessarily measure efficiency because they fail to capture the degree to which nonprofits transform inputs into outputs (Coupet & Berrett, 2019).

Prior literature has found the effect of framing on human judgement and decision-making in many domains. In particular, objects described in a positive light are generally evaluated more favorably than those described in a negative light (e.g. Levin & Gaeth, 1988). Therefore, we test if framing overhead costs *positively* can affect donors' giving decisions. Unlike many framing studies that manipulate the presentation of numerical information (e.g., 80% success vs. 20% failure), our framing focuses on semantics. Building on the aforementioned studies that address the misconceptions about nonprofit overhead costs, our experiment describes overhead costs as essential to nonprofit capacity building, and we hypothesize:

H2: A positive framing of overhead will lead to higher willingness to give.

Removing the word overhead itself may increase willingness to give for two reasons. The first is that the omission of the word, which may have negative connotations (e.g. waste, inefficiency), creates a gist representation that may leave the decision-maker more open to a positive framing of overhead. Removing the word may also help appeal directly to what Duncan (2004) terms "impact philanthropists," people who are "motivated by their desire to personally 'make a difference'" (p.2159-2160). Impact philanthropists derive utility from *directly* increasing the supply of a public good. Connecting program and capacity-related expenses may lead to the donor perception that donations are going to support the program. Thus, removing "overhead"

entirely from a fundraising message while retaining explanations of these expenses may further help overcome overhead aversion.

H3: Omission of the word “overhead” will lead to higher willingness to give.

Method

We conducted a survey experiment consisting of four treatments with between-subject design to examine whether framing alleviates donors’ overhead aversion. We worked with Qualtrics to recruit a national panel of 1,801 participants,¹ each of whom was randomly assigned to one of the four treatments and then asked to fill out a survey consisting of 37 questions. The first question was the experiment question, and the remaining questions were consistent across treatments. Because of our focus on donor decisions, we restrict the sample to those who have donated within the past five years.² All procedures were approved by the Institutional Review Boards at [redacted].

Experiment design. The survey started with the experiment question: “If you were approached by the following two nonprofit organizations after a natural disaster, to which organization would you donate \$100?” Participants were presented with mission and overhead information of two hypothetical disaster relief nonprofits. Specifically, Organization A focused on addressing immediate needs, “responding to the urgent needs of disaster-affected communities by supplying food, water, and emergency medical services, constructing shelters, and helping individuals cope with trauma.” Organization B focused on longer-term recovery, “serving disaster-affected communities through rebuilding homes and other community infrastructure, as well as implementing disaster risk reduction initiatives to prepare for future events.”

While mission information was kept constant across treatments, program and overhead spending information varied across treatments. In Treatment 1, the two organizations had the same low level of program and overhead spending: “In the past three years, on average, Organization A/B spent approximately 95% of total expenses on its *programs*, and 5% on *overhead*.” In Treatment 2, Organization A’s overhead spending ratio increased to 26% (thus decreasing program expense to 74%), while Organization B’s overhead ratio remained at 5%. Treatment 3 was the same as Treatment 2 except for additional brief descriptions explaining the purpose of overhead. For A, overhead was “to build long-term organizational capacity”. For B, overhead was “to maintain a functioning organization.” Treatment 4 was the same as Treatment 3 except that the word “overhead” was omitted. We chose 26% as the higher overhead ratio because it 1) exceeds the overhead level of the Charity Navigator endorsed disaster relief nonprofits (e.g. Heart to Heart International: 1%; All Hands and Heart Smart Response: 6%; ICNA relief USA: 9%), and 2) exceeds the average level that American donors find reasonable (19%) and is close to what they believe a typical charity spends (28%) (Grey Matter Research & Op4G, 2018). Table 1 summarizes the experiment design.

Table 1

The dependent variable in the main analyses is the proportion of participants choosing to donate to A. By design, we examine if there is any difference *between* treatments in the proportion of participants choosing to donate to A. Treatment 1 provides a baseline for participants’ mission preference. Because the only change between Treatment 1 and Treatment 2 is A’s overhead level, a comparison between these two treatments allows us to test if overhead aversion exists. Because the only change between Treatment 2 and Treatment 3 is the brief explanation about overhead, a comparison between these two allows us to test if the positive

framing of overhead has any effect on donation choice. Finally, because the only change between Treatment 3 and Treatment 4 is the presence or absence of the word “overhead,” a comparison between these two allows us to test if omitting the word “overhead” has any effect on donation choice. Note that the experimental design requires sequential comparisons from one treatment to the next instead of overall comparisons across treatments. The sequential comparisons allow us to cleanly test one factor at a time, from which we can directly attribute the change in dependent variable to the one-and-only change in the independent variable (i.e. overhead information).

Post experiment questions. Following the experiment question, we asked respondents in treatments 2 to 4 to choose the most important factor influencing their donation choice from the following randomized options: organization’s mission and purposes, proportion of spending on programs and overhead expenses, explanations on overhead expenses, and other.³ Answers to this question allows us to distinguish those choosing the lower-overhead charity (Organization B) due to overhead aversion from those due to mission preference. We also asked respondents to give examples of overhead expenses in all treatments (supporting expenses in Treatment 4). This allows us to gauge if they had any prior impression or understanding about overhead.

In addition, respondents answered questions about whether and how much they donated to a nonprofit within the past year and whether they had worked with a nonprofit before (e.g.: volunteer, employee, board member, etc.). Next, participants answered four sets of questions based on scales developed by Oosterhof, Heuvelman, & Peters (2009), Sargeant & Lee (2002), and Webb, Green, & Brashaer (2000) to assess their attitude toward charities (5 items, $\alpha = .81$), attitude toward helping others (5 items, $\alpha = .89$), familiarity with charity work (4 items, $\alpha = .57$),⁴ and satisfaction from giving (4 items, $\alpha = .65$). Scale items were randomized and some were reverse worded to control for order biases and inattentive responses (Bishop, 2007; Curran,

2016). The detailed scale items are reported in the supplemental materials. Finally, participants answered questions about demographics that are generally associated with giving patterns, including age, gender, ethnicity/race, level of education, religiosity, marital status, employment status, and household income level.

Results

In the following, we first present the descriptive statistics for the whole sample. We focus our main analysis on a comparison of the proportions of respondents choosing A between treatments. We also conduct a logistic regression on the likelihood of choosing A, which allows us to examine treatment effects when controlling for the various participant characteristics that may affect their responses. In order to dig deeper into respondent overhead aversion, we perform tests of proportions comparing the proportion of respondents demonstrating overhead aversion in the three higher-overhead treatments (T2-T4, 848 respondents), and also conduct a logistic regression on the likelihood of having overhead aversion. Finally, we compare the proportions of participants choosing A between treatments by their pre-existing perceptions of overhead (i.e. types of overhead examples provided). We then report results from a logistic regression on the likelihood of having overhead aversion, additionally controlling for the type of overhead examples and its interaction with treatments 2-4.

The Respondents

The whole sample includes 1482 responses after excluding invalid data.⁵ About 84% of respondents donated in the past year, among whom over a third gave to a disaster relief organization (Table 2 Panel 1). The median giving level was below \$100. About 60% worked with a nonprofit before (e.g. volunteer, board member, employee). The average score was 5.4 on a scale of 1 to 7 for attitude to charities, 6.15 for attitude to helping others, and 5.31 for

satisfaction with charity work. Based on the complete responses for each demographic variable, the majority of respondents in our sample were female (80%), white (73%), religious (62%), and educated (75% had at least some college education and above), with an average age of 42 (SD=14.11). About half of the respondents were married, 58% were employed,⁶ and the median income level range was \$35,000-\$50,000.

Table 2

Main Analyses

Tests of proportions. Figure 1 shows the differences in the proportion of participants choosing Organization A across treatments. We found that the majority of respondents chose to donate to immediate relief when the overhead ratio was low and the same for both organizations, with 72% choosing A in Treatment 1 (treatment n=383). Compared to Treatment 1, the proportion of respondents choosing A fell to 39% in Treatment 2 (n=374), when A's overhead level was higher than B (one-tailed test $p < 0.001$), supporting Hypothesis 1. When presented with a brief explanation of the purpose of overhead in Treatment 3 (n=362), the proportion of respondents choosing A increased to 48% compared to Treatment 2 (one-tailed test $p = 0.006$), supporting Hypothesis 2. When "overhead" was omitted in Treatment 4 (n=363), the proportion of respondents choosing A further increased to 55% compared to Treatment 3 (one-tailed test $p = 0.034$), supporting Hypothesis 3.

Figure 1

Logistic regression. To see if the treatment effects still remain once everything else is held equal, we conducted a logistic regression on the likelihood of choosing Organization A controlling for various covariates that prior literature suggested may affect individual giving (e.g. Bekkers & Wiepking, 2011). Including covariates (some of which have missing responses) in the

logistical regression reduces the sample size to 1131.⁷ Table 3 reports the average marginal effects of variables. As in the tests of proportions, we compare the marginal effects from one treatment to the next. Specifically, the probability of choosing A in Treatment 1 was 35% higher than Treatment 2 (one-sided $p < 0.001$), supporting Hypothesis 1. Moreover, Treatment 3 increased the probability of choosing A by 9% compared to Treatment 2 (one-sided $p = 0.018$), supporting Hypothesis 2. Finally, the probability of choosing A in Treatment 4 was about 6% higher than Treatment 3, and the difference was marginally significant (one-sided $p = 0.060$) using a post-regression Wald test, supporting Hypothesis 3. The regression results are consistent with those from the tests of proportions, showing that the treatment effects remain even when controlling for covariates.

Although not the main focus of this study, we also discuss covariates that are statistically significant at the 5% level.⁸ First, everything else being equal, the probability of choosing A was 9% lower for those who made some donations (under \$100) in the past year than those who did not. Second, for every one unit increase in the attitude toward charities (more positive attitude), the probability of choosing A was about 6% higher. However, the probability was 6% lower for those with one unit higher satisfaction from giving and charity work. Finally, having at least some college level education was associated with a 7% lower probability of choosing A than having lower levels of education. Being religious was associated with a 6% higher probability of choosing A than being non-religious.

Table 3

Overhead Aversion

Tests of proportions. To further examine if our framing alleviates overhead aversion, we compared the differences in the proportion of participants demonstrating overhead aversion

between Treatment 2 to 4. As described previously, we asked respondents to choose the most important factor that made them pick the organization they had chosen. The overhead spending information was not the only reason for choosing B over A in these treatments. In fact, some respondents chose B due to their mission preference rather than overhead aversion. Therefore, we further define overhead aversion more precisely as: choosing B instead of A primarily due to information on program and overhead expenses in Treatment 2 to 4, where B's overhead was lower than A's.

As Figure 2 shows, only about 28% of respondents chose B in Treatment 1, when A and B had the same overhead and the overhead information should not affect their decisions. However, 61.5% of respondents chose B in Treatment 2, when B's overhead was much lower than A's. In particular, 45% showed an aversion to higher overhead, indicating that they chose B mainly due to the proportion of program/overhead expenses. Compared to Treatment 2, the percentage of respondents demonstrating overhead aversion was significantly lower in Treatment 3, when the purpose of overhead was explained (32%, one-sided test $p < 0.001$). The percentage of overhead aversion further declined in Treatment 4, when "overhead" was omitted (24%, one-sided test $p = 0.015$).

Figure 2

Logistic regression. Table 4 Column (1) presents the results from the logistic regression on the likelihood of having overhead aversion in Treatment 2-4, controlling for covariates. With all else being equal, compared to Treatment 2, the probability of having overhead aversion was 13% lower in Treatment 3 (one-sided $p < 0.001$). Moreover, Treatment 4 further decreased the probability of having overhead aversion by about 6% compared to Treatment 3, and a post-

regression Wald test showed that the difference was marginally significantly (one-sided $p=0.058$). The regression results support the findings from the tests of proportions.

As for covariates that are statistically significant at the 5% level, first, the probability of having overhead aversion was about 9% lower for those who gave to a disaster relief nonprofit in the past year, compared to those who did not. Second, those with a more positive attitude to charities were less likely to show overhead aversion, with one unit increase in the attitude associated with a 7% lower probability of having overhead aversion. Third, age, being white, and having some college or higher levels of education were all significantly associated with a higher probability of overhead aversion, everything else being equal. Specifically, being one year older was associated with a 0.5% increase in the probability of having overhead aversion. Being white was associated with a 15% higher probability of having overhead aversion compared to being non-white. Finally, those with some college or higher levels of education was associated with a 10% higher probability of having overhead aversion than those with less education.

Table 4

Pre-existing perceptions of overhead

Prior experimental studies on overhead usually explain overhead as “administrative and fundraising costs” in their instructions to participants (e.g. Gneezy, et al., 2014; Portillo & Stinn, 2018). On the one hand, this procedure ensures that participants all respond to the same definition of overhead. On the other hand, it may replace participants’ pre-existing perceptions of overhead (or lack thereof), which in turn may affect their donation decisions. Therefore, instead of giving participants a standard definition of overhead beforehand, we asked them to provide

examples of overhead costs after they made their decisions. This allows us to further examine if people with different overhead perceptions respond to our treatments differently.

About 28% of the respondents provided non-salary related examples (e.g. utilities, rent), 24% mentioned salary-related examples (e.g. wages, employee, CEO), yet nearly half failed to provide a somewhat close answer, who either answered “I don’t know” or confused allocable program expenses with overhead expenses. Shown in Table 2 Panel 2, the percentage of people who could provide some examples of overhead expenses also differed significantly across treatments ($\chi^2(6) = 148.77, p = .000$). The differences may reflect the salience of overhead information when participants were making decisions. Particularly, Treatment 1 did not differentiate the two organizations’ overhead levels, so participants might not have paid much attention to it in their decision-making process. In Treatment 4, participants were not presented with the word “overhead,” possibly making it harder for participants to identify “supporting expenses.”

Tests of proportions. We compare the proportions of those choosing A between treatments by the type of overhead examples provided (Table 5). Across all three types, we find that a significantly higher proportion of respondents choosing A in Treatment 1 than in Treatment 2. Particularly, for those who provided salary related examples, the proportion of respondents choosing A drastically decreased from Treatment 1 (76.7%) to Treatment 2 (20.8%, one-tailed $p < .0001$). For those who provided non-salary related examples, the proportion dropped from 71.3% in Treatment 1 to 39.1% in Treatment 2 (one-tailed $p < .0001$). For those who could not provide an example, the difference between Treatment 1 (70.0%) and Treatment 2 (57.7%) was much smaller (one-tailed $p < .05$). In other words, those to some degree understood

overhead “punished” the higher-overhead organization more than those who could not provide an overhead example.

In comparing Treatment 2 and 3, providing an explanation describing the purpose of overhead worked for those who could not provide an example as well as those who provided salary examples. Specifically, compared to Treatment 2, the proportion of those choosing A increased by 10% in Treatment 3 for the former (67.7%, $p < .10$), and it increased by about 13% (T3: 34.2%, $p < .05$) for the latter. However, the framing did not make a difference for those who provided non-salary examples.

Finally, when comparing Treatment 3 and 4, further omitting the word “overhead” worked only for participants who provided non-salary examples, with a 12% increase in the proportion of respondents choosing A in Treatment 4 (52.8%, $p < .05$) compared to Treatment 3.

Table 5

Logistic regression. Table 4 Column (2) reports the results from the logistic regression on the likelihood of having overhead aversion in Treatment 2-4, additionally controlled for the type of overhead examples (as a proxy to respondent pre-existing perception and understanding of overhead), as well as its interactions with treatments. The probability of having overhead aversion was 12% lower in Treatment 3 (one-sided $p < 0.01$) and 9% lower in Treatment 4 (one-sided $p < 0.05$), compared to Treatment 2. However, the difference between Treatment 3 and 4 was not statistically significant. Moreover, those who were able to provide some examples of overhead/supporting expenses were significantly more likely to have overhead aversion than those who were not, confirming the negative stereotypes associated with nonprofit overhead spending. Specifically, the probability of having overhead aversion was 19.5% higher for those giving non-salary examples and 26.7% higher for those giving salary-related examples. This is

consistent with prior research reporting that people have stronger aversion to expenditures on salaries than fundraising (Portillo & Stinn, 2018). The results of other covariates are similar to the baseline specification in Column (1). The positive association between higher levels of education and overhead aversion reduced to non-significance once we controlled for overhead examples.

Discussion

Consistent with prior research (e.g.: Gneezy et al., 2014; Portillo & Stinn, 2018), we found that individuals reacted negatively to nonprofits with higher levels of overhead spending. Moreover, the so-called overhead aversion was confirmed by the fact that a significant proportion of individuals indicated their primary reason for choosing the lower-overhead organization was its program/overhead expenses.

One of our key findings was that a simple message describing the purpose of overhead can help alleviate the overhead aversion to some degree. Explaining higher overhead as building long-term organizational capacity and lower overhead as maintaining a functioning organization in Treatment 3 led to a 10% increase in the percentage of individuals choosing A, and a 14% decrease in the percentage of those demonstrating overhead aversion. Moreover, simply omitting the word “overhead” in Treatment 4 further increased the percentage of those choosing A by 7%, and the respondents demonstrating overhead aversion decreased by 7%.

Another interesting finding was that people with different pre-existing perceptions and understandings about overhead reacted differently to our treatments. When asked to give an example of overhead/supporting expenses after the experiment question, nearly half of the respondents failed to provide a somewhat close answer. The percentage of people who were able to provide examples of overhead expenses also differed significantly across treatments. While

not necessarily accurate according to the IRS or accounting guidelines, the examples were reflective of individuals' prior impression and understanding about overhead and likely to affect their choices when overhead was salient. We found evidence of overhead aversion even among those who were not able to provide overhead examples, but those who provided some examples demonstrated a higher degree of aversion. Framing overhead costs as supporting capacity building worked for those who could not provide examples as well as those who provided salary examples, while omitting the word "overhead" worked for those who provided non-salary examples.

Our results show that framing overhead in terms of connections to organizational capacity appears to address some donors' concerns, but it did not fully overcome overhead aversion. Our framing implicitly emphasized that overhead spending was not a waste, targeting donors whose primary concern was the efficiency of nonprofits. However, this might not work for people who had a desire to personally make an impact, preferring to support the programmatic part of the production process (i.e. buying water and food) or who do not buy the explanations connecting overhead to capacity building. Therefore, future research should explore additional frames that may appeal to impact philanthropists.

In addition to the experiment effects, we included a range of covariates that may affect individual giving behavior in logistic regressions. We note the significant results of some covariates, including recent giving to a disaster relief nonprofit, a more positive attitude to charities, race (being white or not), age, and education. Although it was not the focus of our study, future research may further explore the demographic differences related to overhead aversion.

Our study contributes to the existing literature on overhead aversion in several ways. Besides confirming the existence of overhead aversion, we apply framing to the qualitative nature of overhead information beyond numerical ratios and find a cost-effective strategy that nonprofits may use to ameliorate overhead aversion. Compared to prior overhead experimental studies (e.g. Gneezy et al., 2014; Portillo & Stinn, 2018), this study also has two methodological innovations that allow for nuanced analyses. One innovation is clearly defining overhead aversion, differentiating those choosing the low-overhead organization due to overhead information from those due to mission preference. The other innovation is that we examine people's pre-existing perceptions of overhead using a post-experiment question rather than leading their choices by giving a formal definition of overhead in the experiment question.

We also acknowledge and address the limitations of this study. On the one hand, compared to prior experiments that recruited university students as participants (e.g. Portillo & Stinn, 2018), we were able to draw a random sample from a donor population. We collected data on a range of characteristics that may affect donor decisions and controlled for these characteristics in the regressions. On the other hand, nearly 80% of our final sample comprised women. Nonetheless, we note that the gender-unbalanced sample does not affect the results of this study for several reasons. First, we included an indicator variable for female in the regressions to control for the potential gender differences. The treatment effects remained significant and the female variable was not significant in the regressions. Second, we conducted proportion tests and regression analyses for female and male subsamples separately as additional robustness checks. The results were largely consistent with those using the whole sample.⁹ Third, research shows women tend to demonstrate more philanthropic behavior than men (Bekkers,

2003; Women's Philanthropy Institute, 2015) and are more risk-averse than men (Müller & Rau, 2016), so our imbalanced panel is grounded in some aspect of reality.

Additionally, letting participants' pre-existing perceptions come into play in their donation decisions by not giving them a formal definition of overhead was innovative. However, there might be concerns that the overhead bias as well as the framing effects differed by those who had a basic understanding about overhead and those who did not. We addressed this concern through additional sub-sample analyses. We found consistent evidence of overhead aversion across groups, but different treatment effects among groups with different overhead perceptions.

Moreover, our experiment examines donors' willingness to donate, like the lab experiments by Gneezy et al (2014) and Portillo and Stinn (2018). We recommend future replications of our study to examine levels of donations and use a design that links participants' donation decisions with their self-interest.

Finally, to address the reliability issue of self-reported data,¹⁰ we carefully screened inattentive responses using three criteria: response time, string answers, and open-ended responses. In addition, we recognize that while people can possess multiple - and potentially conflicting - opinions, these opinions are grounded in real considerations (Zaller & Feldman, 1992). While this can be a limitation for self-reported data, in our case it serves our research question in that we were deliberately exploring people's varying conceptualization of overhead.

Conclusion

Nonprofit organizations need unrestricted funds to cover overhead expenses related to running an organization and delivering their goods and services effectively. However, donors have demonstrated aversion to nonprofit overhead spending. We find that positive framing of

overhead mitigated overhead aversion to some degree. Particularly, offering explanations of the *purpose* of overhead helped donors to overcome aversion, demonstrating an increased support to the organization with higher overhead that was explained as building long-term organizational capacity.

Our study confirms the existence of negative stereotypes associated with overhead spending and contributes to the growing literature of overhead bias by exploring a low-cost solution to addressing overhead aversion. Increasing public understanding towards nonprofit overhead spending, or using a different terminology that gives nonprofit costs a new meaning, may help dissociate with these negative stereotypes. Nonprofits with comparatively higher overhead may consider including a short message explaining the purpose of the overhead in their fundraising appeals or websites. Strategies may also be adjusted towards different groups of people that have different prior impressions or knowledge about this subject.

Our findings have practical implications for donors, nonprofits, and watchdogs. Donors should be given the opportunity to understand the full picture of organizational costs in order to make informed donation decisions. Nonprofit directors and officers, board members, and staff need to underscore the need to fund total costs and talk about overhead as part of the total costs (Knowlton, 2018). Watchdogs may avoid overemphasis on low overhead ratios and help contextualize full organizational costs. Understanding and addressing overhead aversion will help nonprofits acquire much needed financial resources and avoid kicking off a starvation cycle.

Notes

1. The sample size was determined in advance. Based on a power analysis, we aimed to recruit 450 respondents per treatment for a power of 80% and a confidence level of 95%, allowing for

potential data loss due to careless or inattentive reporting (1%-30%). This loss is not uncommon in self-reported surveys (Curran, 2016).

2. We restricted our sample to donors with recent giving experience using a filter question before entering our survey: “Have you donated to a nonprofit organization within the last five years?” If they answered yes, the respondent continued with the survey. If they answered no, the survey closed for the respondents, and they were not included in the final sample.

3. The options varied slightly differently depending on treatments. In Treatment 4, “overhead expenses” was worded as “supporting expenses” because the treatment did not use the word “overhead.” The option of “explanations on overhead expenses” appeared only in Treatment 3 and 4 because Treatment 2 did not provide any explanations on overhead. Participants in Treatment 1 did not answer this question because the only information that differed between A and B was their missions.

4. The Cronbach’s alpha for familiarity with charity work is below 0.65, indicating poor internal consistency of the scale items. Therefore, we did not include this variable in the regressions. Nonetheless, regressions with this variable did not change the main results.

5. Based on the original sample response time (mean=7 minutes, median=5 minutes), we excluded observations whose response time was at the bottom 1% (less than 2 minutes) and top 1% (about three standard deviations above the mean; over 42 minutes). We also excluded those who chose the same answer for all the scale questions, and those who provided meaningless answers to the open-ended question.

6. In addition, there were 351 missing responses for the demographics variables, which were omitted from the regressions. Nonetheless, these responses were included in the tests of proportions, and the results from the tests of proportions were consistent with the regression

results. Moreover, the missing responses demonstrated a similar pattern to that in the full sample analysis. Therefore, it should not be a concern that the missing responses drive the treatment effects in the regressions.

7. The sample composition does not appear to drive the main results. We conducted a chi-square test on the relations between employment status and donation choice and found no significant difference: $\chi^2(1, N=1131)=1.57, p=.21$. Similarly, the chi-square test for the relations between marital status and donation choice was also not significant $\chi^2(1, N=1131)=0.62, p=.43$.

Moreover, we included employment status and marriage status in regressions and found that these covariates were not statistically significant but the main treatment effects were robust.

8. One should be cautious in interpreting these covariates. The dependent variable in this specification is choosing A or not. However, choosing A in Treatment 1 is different from choosing A in Treatment 2-4, where the overhead levels are higher.

9. Specifically, about 72% of females chose A in Treatment 1, 39% in Treatment 2, 46% in Treatment 3, and 56% in Treatment 4. For females, the differences between treatments were all statistically significant. Similarly, 71% of males chose A in Treatment 1, 34% in Treatment 2, 51% in Treatment 3, and 53% in Treatment 4. For males, the differences were significant between treatments 1 and 2, between treatments 2 and 3, but not significant between treatments 3 and 4. Moreover, a lower proportion of females had overhead aversion in Treatment 4 (23%) than Treatment 3 (34%) and Treatment 2 (45%), and the differences between treatments were statistically significant. About 49% of males had aversion in Treatment 2, significantly higher than that in Treatment 3 (24%). And the proportion was higher in Treatment 4 (29%) than Treatment 3, but the difference was not statistically significant. Logistic regressions using gender subsamples also showed similar patterns. Note that the sample size is much smaller for the male

(N=287) than female participants (N=1156). Not included in the analyses were 30 participants who did not report their gender and nine who reported as nonbinary.

10. Another issue with self-reported data is the common source bias. However, as George & Pandey (2017) argue, common source bias concerns may be exaggerated and “the self-report nature of a dependent variable is less of a problem if a survey experiment is used” (p.264).

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Table 1 Experimental Design

Treatment	Organization A Short-Term Relief	Organization B Longer-Term Relief	Hypothesis
Treatment 1	Short –Term Relief; 95% on programs, 5% on overhead	Longer-Term Relief; 95% on programs, 5% overhead	
Treatment 2	74% on programs, 26% overhead	95% on programs, 5% overhead	H1 Overhead aversion: a lower proportion of people will choose A, compared to T1
Treatment 3	74% on programs, 26% on overhead to build long-term organizational capacity	95% on programs, 5% on overhead to maintain a functioning organization	H2 Framing: a higher proportion of people will choose A, compared to T2
Treatment 4	74% on programs, 26% on building long- term organizational capacity	95% on programs, 5% on maintaining a functioning organization	H3 Framing: a higher proportion of people will choose A, compared to T3

Table 2 Descriptive statistics for the whole sample

Panel 1

<i>Variables</i>	<i>Proportion/Mean/Median</i>	<i>N</i>
Made any donations past year	84.14%	1,482
Level of giving past year: 0, under \$100, \$100-\$500, \$500+	Median: under \$100	1,482
Gave to disaster relief past year	37.72%	1,482
Worked with a nonprofit before	59.24%	1,482
Attitude to charities ¹	Mean: 5.40 (SD: .96)	1,482
Attitude to helping others ¹	Mean: 6.15 (SD: .97)	1,481
Satisfaction from giving/charity work ¹	Mean: 5.32 (SD:1.08)	1,482
Gave examples of overhead/supporting expenses	52.09%	1,482
Female	79.61%	1,452
White	72.70%	1,421
Some college education or above	74.83%	1,438
Religious	61.56%	1,475
Married	50.01%	1,435
Employed	58.01%	1,410
Level of household income	Median: \$35,000 to \$49,999	1,366
Age	Mean: 41.71 (SD: 14.11)	1,343

Notes: 1. Scales range from 1 to 7.

Panel 2 Overhead expense examples by treatment

Treatment	Provided overhead examples		
	No	Yes: non-salary related	Yes: salary related
T1: Mission Preference	58.22	22.72	19.06
T2: Overhead Only	29.68	36.90	33.42
T3: Overhead Explanation	35.64	33.70	30.66
T4: Explanation Only	68.04	19.28	12.67
Total	47.91%	28.14%	23.95%

Table 3 Logistic regression on the likelihood of choosing organization A

	Average marginal effects
<i>(Reference: Treatment 2)</i>	
Treatment 1	0.351 ^{****} (0.0387)
Treatment 3	0.0855 ^{**} (0.0408)
Treatment 4	0.150 ^{****} (0.0413)
<i>(Reference: Did not donate last year)</i>	
Gave under \$100	-0.0913 ^{**} (0.0456)
Gave \$100-\$500	-0.0843 [*] (0.0474)
Gave over \$500	-0.0854 (0.0571)
Gave to a disaster relief nonprofit last year	0.0568 [*] (0.0308)
Worked with a nonprofit	0.00396 (0.0298)
Attitude to charities	0.0582 ^{**} (0.0234)
Attitude to helping others	-0.0247 (0.0213)
Satisfaction with giving	-0.0601 ^{**} (0.0248)
Female	0.0354 (0.0350)
White	-0.0470 (0.0338)
Age	-0.00209 [*] (0.00107)

College education and above	-0.0718** (0.0351)
Married	-0.0137 (0.0305)
Employ	0.00827 (0.0326)
Religious	0.0602** (0.0296)
<i>(Reference: Under \$15,000)</i>	
Income: \$15,000 to \$24,999	-0.00183 (0.0604)
Income: \$25,000 to \$34,999	0.0151 (0.0582)
Income: \$35,000 to \$44,999	0.0954* (0.0569)
Income: \$50,000 to \$74,999	0.0856 (0.0563)
Income: \$75,000 to \$99,999	-0.00466 (0.0626)
Income: \$100,000 and above	-0.00369 (0.0613)

Notes: The dependent variable is an indicator variable coded as 1 if the participant chose A and 0 otherwise.

N=1131. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

Table 4. Logistic regression on the likelihood of demonstrating overhead aversion in Treatment 2-4

	(1) Average marginal effects	(2) Average marginal effects
<i>(Reference: Treatment 2)</i>		
Treatment 3	-0.133**** (0.0389)	-0.120*** (0.0379)
Treatment 4	-0.192**** (0.0385)	-0.0863** (0.0410)
<i>(Reference: Could not provide overhead examples)</i>		
Gave overhead examples: non-salary		0.195*** (0.0706)
Gave overhead examples: salary		0.267**** (0.0709)
<i>(Reference: Did not donate last year)</i>		
Gave under \$100	0.0810 (0.0512)	0.0621 (0.0498)
Gave under \$100-\$500	0.0735 (0.0530)	0.0612 (0.0514)
Gave over \$500	0.0429 (0.0633)	0.0261 (0.0612)
Gave to a disaster relief nonprofit last year	-0.0871*** (0.0335)	-0.0565* (0.0325)
Worked with a nonprofit	0.0376 (0.0327)	0.0305 (0.0315)
Attitude to charities	-0.0727*** (0.0251)	-0.0708*** (0.0245)
Attitude to helping others	0.0115 (0.0232)	0.00756 (0.0228)
Satisfaction with giving	0.0338 (0.0271)	0.0275 (0.0262)
Female	-0.00690	0.0128

	(0.0394)	(0.0383)
White	0.148**** (0.0397)	0.124*** (0.0387)
Age	0.00508**** (0.00117)	0.00351*** (0.00116)
College education and above	0.0976** (0.0404)	0.0424 (0.0394)
Married	0.0220 (0.0337)	-0.0205 (0.0313)
Employed	0.0205 (0.0361)	0.0274 (0.0323)
Religious	-0.0416 (0.0323)	0.00810 (0.0350)
<i>(Reference: Under \$15,000)</i>		
Income: \$15,000 to \$24,999	-0.0186 (0.0672)	-0.0143 (0.0642)
Income: \$25,000 to \$34,999	-0.0567 (0.0667)	-0.0392 (0.0644)
Income: \$35,000 to \$44,999	-0.0811 (0.0649)	-0.0913 (0.0623)
Income: \$50,000 to \$74,999	-0.0167 (0.0622)	-0.0522 (0.0603)
Income: \$75,000 to \$99,999	0.00102 (0.0700)	-0.0280 (0.0678)
Income: \$100,000 and above	0.0764 (0.0666)	0.0378 (0.0640)

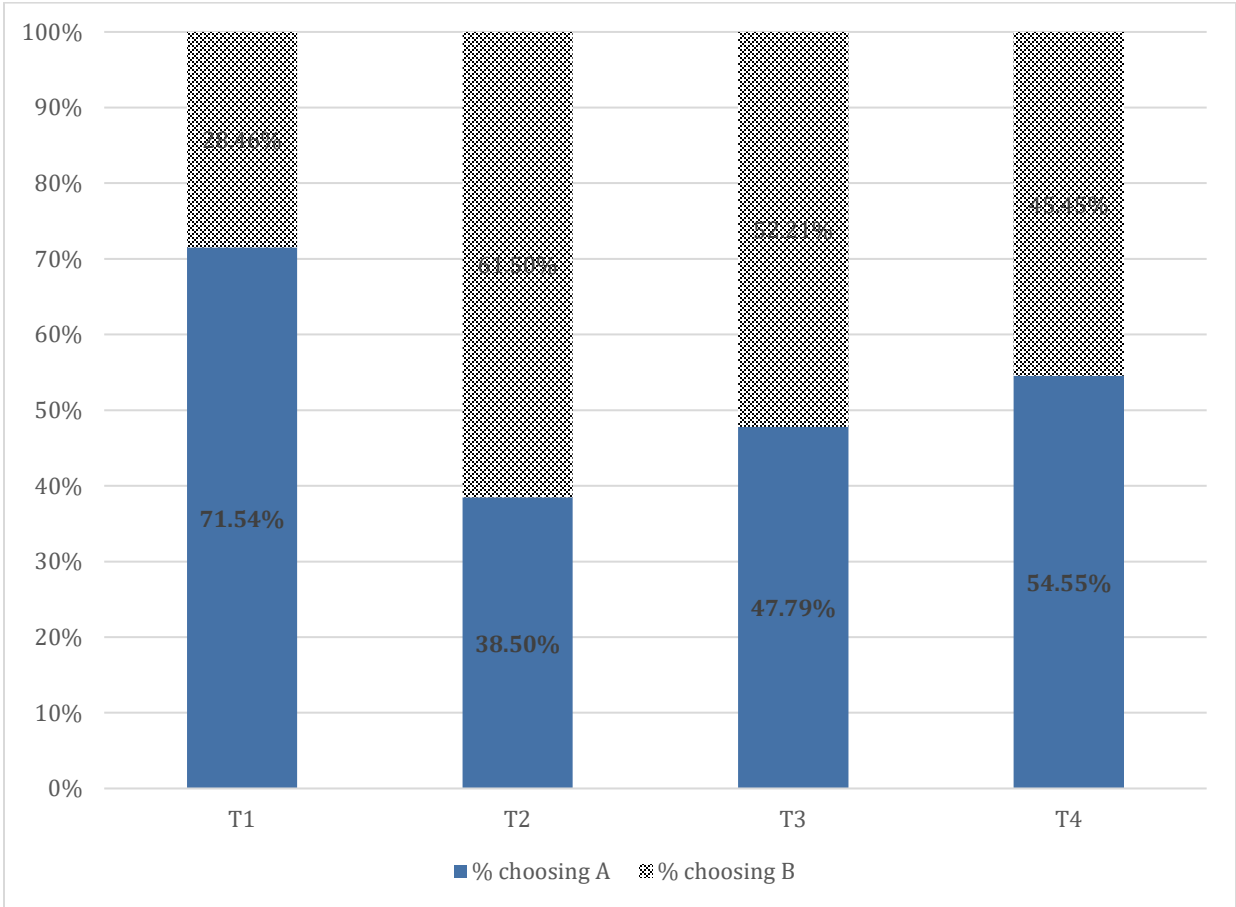
Notes: 1. The dependent variable is an indicator variable coded as 1 if the participant demonstrated overhead aversion and 0 otherwise. Overhead aversion is defined as choosing Organization B primarily due to the proportions of program/overhead expense in the three treatments (Treatment 2-4) where B's overhead was lower than A's. 2. The specification in Column (2) additionally includes the type of overhead examples provided and its interaction with each treatment.

N=848. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

Table 5. The proportion of respondents choosing A by the type of overhead examples provided

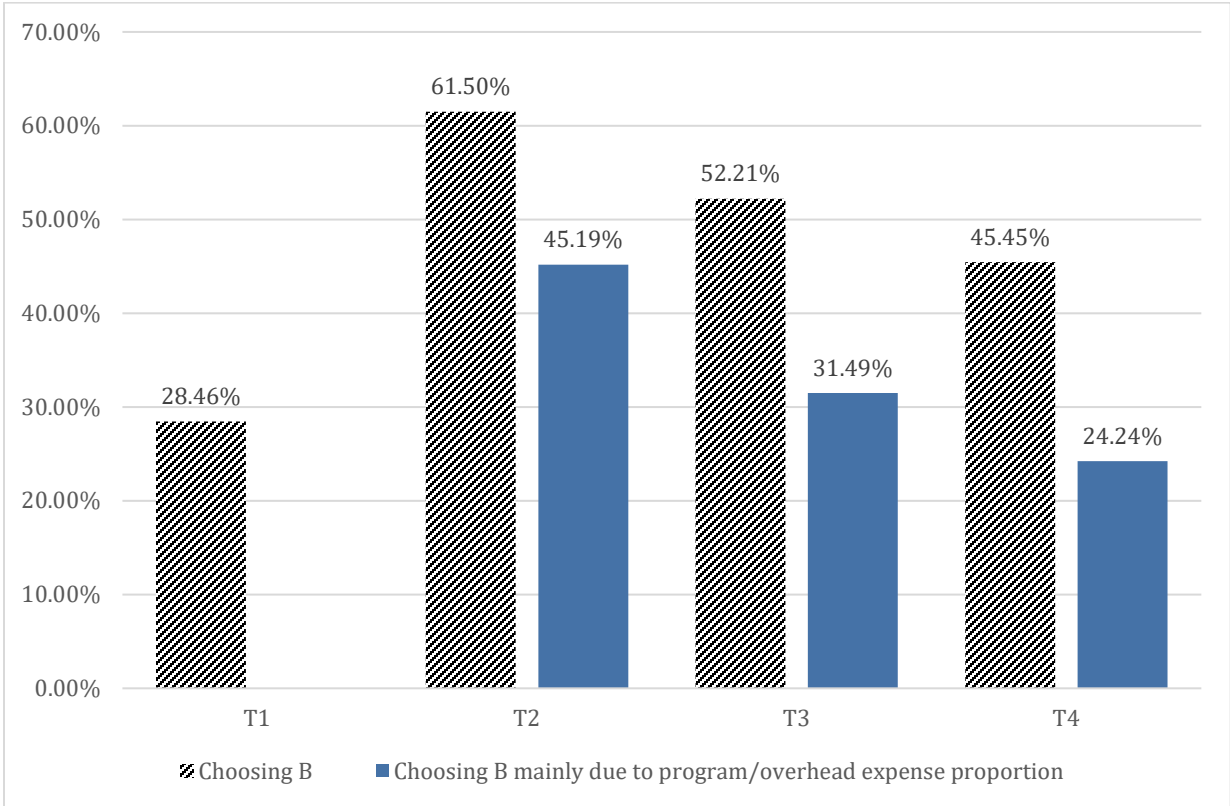
Treatments	Did not provide an example	<i>p-value</i>	Non-salary related examples	<i>p-value</i>	Salary related examples	<i>p-value</i>
T1 vs. T2	70.0% vs. 57.7%	<.05	71.3% vs. 39.1%	<.0001	76.7% vs. 20.8%	<.0001
T2 vs. T3	57.7% vs. 67.7%	<.10	39.1% vs. 40.2%	>.10	20.8% vs. 34.2%	<.05
T3 vs. T4	67.7% vs. 61.1%	>.10	40.2% vs. 52.8%	<.05	34.2% vs. 21.7%	>.10

Figure 1. Proportion of respondents choosing Organization A over B



Note: N=1,482. The proportion of participants choosing A and B equals to 100% in every treatment. The differences in the proportion of participants choosing A between T1 and T2, between T2 and T3, between T3 and T4 are all statistically significant.

Figure 2. Proportion of respondents choosing Organization B



Notes: N=1,482. Overhead aversion is defined as those choosing B mainly due to proportion of spending on program/overhead expenses in the three overhead treatments. The differences in the proportion of participants having overhead aversion between T2 and T3, between T3 and T4 are both statistically significant.