Journal of Behavioral
Public Administration
Vol 4(2), pp. 1-19
DOI: 10.30636/jbpa.42.254

Research Article

Tangible information and charitable giving: When (does) nonprofit overhead matter?

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Abstract: Nonprofit organizations in the U.S. have been under pressure to demonstrate their "worthiness" by minimizing overhead costs. Prior experiment studies find that donors respond negatively to high overhead costs when overhead information is highlighted. In reality, donors receive all sorts of information about nonprofit organizations from various channels. While high overhead has been found to reduce donors' perceived impact and charitable giving, providing other types of tangible information can increase giving by enhancing donors' perceived impact. When other types of information are available, to what degree overhead aversion still exists? We use two online survey experiments to examine how information on overhead costs and donation use affect giving intentions to a hypothetical charity in a single-organization and two-organization evaluation setting. Only a small proportion of people demonstrated overhead aversion when presented with a single organization. There was stronger evidence of overhead aversion when participants were asked to compare and choose between two organizations. Providing tangible information about what donations can buy mitigated overhead aversion among male donors. This study contributes to the growing experimental research on the relationship between overhead ratios and charitable giving, and provides practical insights for nonprofits hoping to ameliorate overhead aversion and increase donations.

Keywords: overhead, tangible information, perceived impact, charitable giving, fundraising

Introduction

Nonprofits in the U.S. have been under pressure to demonstrate their "worthiness" by minimizing overhead costs (Mitchell & Calabrese, 2019). Government agencies and foundations routinely set a low overhead spending cap for grants (Gregory & Howard, 2009). Charity watchdogs often use overhead ratios (e.g. fundraising and/or administrative expenses to total expenses) to evaluate nonprofit financial performance and inform donor decisions. Facing this pressure, many nonprofits resort to underinvesting in organizational infrastructure. However, this limits organizational effectiveness (Gregory & Howard, 2009; Wing & Hager, 2004). Indeed, lower overhead has been associated with lower financial capacity (Chikoto & Neely, 2014; Lecy & Searing, 2014) and increased financial vulnerability (Tuckman & Chang, 1991; Greenlee & Trussel; 2000).

Although overhead ratios are not useful for donor decisions because they present information about average rather than marginal costs and benefits (Bowman, 2006; Steinberg, 1986), studies show that donors react negatively to nonprofits with higher overhead (organizational-level data: e.g. Bowman, 2006; Tinkelman & Mankaney, 2007; experiments: Gneezy, Keenan, & Gneezy, 2014; Portillo & Stinn, 2018; Metzger & Günther, 2019; Charles, Sloan, & Schubert, 2020; Tian, Hung, & Frumkin, 2020; Qu & Levine Daniel, 2020). Some argue

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that this overhead aversion stems from information asymmetry between nonprofits and donors (Tian et al., 2020). Others suggest that it may be due to donors not understanding what overhead is (Qu & Levine Daniel, 2020). This study follows the line of research suggesting that overhead aversion comes from donors' perception of diminished personal impact (Gneezy et al., 2014; Duncan, 2004).

Most overhead experiments lead participants to focus on overhead information, asking them to compare between charities with different overhead levels (e.g. Gneezy et al., 2014) or to evaluate an organization's overhead against a benchmark (Tian et al., 2020). In reality, donors receive all kinds of information about nonprofits from different channels and they are likely to make decisions based on the information that matters to them, which may not be overhead costs. For nonprofits, although they have little control over the information that third parties share, they can decide what information to be highlighted in their own fundraising appeals. Particularly, research shows that providing certain tangible information, such as who are the recipients and how donations will be used, can increase giving by enhancing donors' perceived impact (Cryder, Loewenstein, & Scheines, 2013; Cryder & Loewenstein, 2010). What is less clear, however, is the effect on donations when both overhead and these other types of information are available.

Therefore, we investigate whether donors still respond negatively to high overhead when presented with other information that is designed to increase their perceived impact. We conducted two online survey experiments with a two-by-two design to examine the effects of *both* overhead levels *and* the tangibility of information about donation use (i.e., what donations can buy) on donors' giving intentions. Study 1 asked participants to evaluate a single hypothetical charity, similar to the scenario where donors receive information directly from a charity. Study 2 asked participants to compare two hypothetical organizations, similar to the scenario where donors seek information about different charities from third parties. In the single-organization study, only a small group of participants focused on overhead information. In the conventional two-organization study where participants were led to focus more on overhead, there was significant evidence of overhead aversion, particularly among donors. More importantly, providing tangible information about donation use mitigated overhead aversion among male but not female donors.

Our findings contribute to the growing experimental research on the relationship between overhead and charitable giving. We provide insights into the prevalence of overhead aversion when other types of information are also available. Building on the psychology literature on tangibility and generosity, we demonstrate relationships between tangible information, perceived impact, and giving intentions. This study also provides practical implications about how organizations can target their information sharing practices. In the following, we first review the literature that informed our hypotheses. Next, we describe our experiment design and present findings. Finally, we conclude with a general discussion.

Literature and Hypotheses

Research on tangibility and generosity generally finds that fundraising appeals can increase donations by increasing the tangibility of various types of information. Tangible information "is specific and concrete as opposed to general and abstract" (Cryder & Loewenstein, 2010, p.241). Different types of tangible information have different impacts on donations (Barros, Von Schuckmann, & Araujo, 2019). Providing tangible information about recipients increases donations (Bachke, Alfnes, & Wik, 2017). People are more generous towards an individually identifiable recipient than towards their counterparts described statistically as a group (e.g. Schelling, 1968; Kogut and Ritov, 2005; Small, Loewenstein & Slovic, 2007; Sah & Loewenstein, 2012). People also donate more when receiving specific information about a charity's intervention, such as how donations will be used (Cryder et al., 2013). Moreover, donors respond positively to specific outcome and impact information (Karlan & Wood, 2017; Metzger & Günther, 2019; Levine Daniel & Eckerd, 2019; Bodem-Schrötgens & Becker, 2020).

Certain types of tangible information promote generosity by increasing the feeling that one's contribution will make an impact, or simply put, perceived impact (Cryder and Loewenstein, 2010; Cryder et al., 2013). This is in line with Duncan's (2004) impact philanthropy model, in which some donors give because they want to "personally make a difference" (p.2160). Cryder et al. (2013) have shown that enhanced perceived impact is the main mechanism for the relationship between tangible information and donations. Similarly, Aknin et al. (2013)

found that the participants reported higher perceived impact when provided with detailed information about what their donations can buy (e.g. every $10 collected purchases a bed net for a child in Africa). Therefore, we hypothesize:

H1a: Tangible information on what donations can buy will increase giving intentions, compared to general information on what donations can buy (Study 1).

H1b: Perceived impact mediates the positive relationship between tangible information about what donations buy and giving intentions (Study 1).

Although tangible information generally increases donations (Bachke et al, 2017; Barros et al., 2019), Cryder et al. (2013, p.21) noted that "[d]etails about interventions only mattered to the extent that they promoted a sense of impact" and that highlighting details about overhead costs may decrease perceived impact and thus decrease donations. Indeed, donors react negatively to high overhead, which is partly because overhead detracts from perceived impact or efficacy (Gneezy et al., 2014; Bekkers & Wiepking, 2011). The "impact philanthropists," so named by Duncan (2004), may only prefer to fund the organizational activities perceived to benefit beneficiaries directly than non-programmatic expenses.

H2a: Tangible information on high overhead will decrease giving intentions, compared to tangible information on low overhead (Study 1 & 2).

H2b: Perceived impact mediates the negative relationship between tangible information about high overhead and giving intentions (Study 1).

Nonprofits may provide additional information to counterbalance the overemphasis on overhead costs. Using agency theory, Tian et al. (2020) argue that overhead aversion stems from information asymmetry and monitoring issues between donors and nonprofits, and show that providing additional information on a nonprofit's performance and transparency helps alleviate the aversion. Applying framing theory, Qu & Levine Daniel (2021) suggest that overhead aversion reflects a lack of understanding about what overhead is, and find that donors are more willing to give to a high-overhead charity when presented with information explaining the purpose of higher overhead as building long-term organizational capacity. Drawing upon the literature on tangibility and generosity, we propose that what donations can buy is another type of information that may help alleviate overhead aversion as it improves donors' generosity through enhanced perceived impact:

H3: Tangible information on what donations can buy will mitigate the negative effect of high overhead on giving intentions (Study 2).

Experiment Overview

We conduct two online survey experiments to examine how information about an organization's overhead and donation use affects giving intentions. Study 1 asks participants to evaluate a single hypothetical charity. It allows us to examine to what degree overhead aversion exists when participants are not led to focus on overhead and to test the mediating effect of perceived impact on the relationship between tangible information and giving intentions. Study 2 asks participants to compare two hypothetical organizations. This design leads participants to focus more on overhead as they choose between two charities with different overhead levels and allows us to examine if providing tangible information about donation use alleviates overhead aversion.

Each study consists of four conditions using a two-by-two factorial design that varies tangible information on overhead ratios (low vs. high) and the tangibility of information on what donations can buy (specific vs. general). A factorial design allows estimating the effect of one factor at different levels of the other, as well as testing the potential interaction effect where the effect of one factor depends on the level of the other. In short, this design allows us to examine how both factors *simultaneously* cause changes in giving intentions.

Both studies were conducted in June 2020. To reflect the reality of the pandemic, we focused on charities providing COVID-19 relief. We recruited samples that were representative of the U.S. general population through Qualtrics. The sample size for each study was pre-determined through a power analysis.[1] Participants were randomly assigned to one of the four conditions in each study (between-subject design). All procedures were approved by the Institutional Review Boards at Texas A&M University and IUPUI. See Supplemental Materials for experimental texts.

Study 1

Participants and Procedure

There were 737 respondents who provided valid responses (see sample statistics in Supplemental Material Table S1 Panel 1).[2] All participants read about a hypothetical charity whose current "domestic COVID-19 relief effort focuses on delivering food to senior citizens and other struggling individuals and families." Participants in low overhead conditions (C1 and C2) read that the organization spent 1% of its total expenses on overhead costs on average, while those in high overhead conditions (C3 and C4) read that 28%[3] on overhead costs. Moreover, participants in general information conditions (C1 and C3) read that "donations can help provide meals to people in need," while those specific information conditions (C2 and 4) read that "every 1 dollar donated can help provide 5 meals to a person in need[4]" (Table 1).

Table 1
Study 1 Experiment Design

Conditions		Overhead ratio	
		Low: 1%	High: 28%
Donation information	General: *Donations can help provide meals to people in need.*	C1	C3
	Tangible: *Every 1 dollar donated can help provide 5 meals to a person in need.*	C2	C4

After reading about the nonprofit, participants decided how much they would donate to this organization (between 0-$100). Following the decision, they ranked the following information (randomly ordered) by its importance to their decisions, including the organization's mission, COVID-19 response, program and overhead costs, and how donations can help. Participants also completed a four-item measure of perceived impact on a 7-point scale (1=strongly disagree, 7=strongly agree), modified after Grant et al. (2007): "I felt that my donation will have a positive impact on someone," "I did not feel capable of benefiting someone through my donations," "I was focused on benefiting someone," and "I was trying to make someone better off" ($\alpha = .77$). This measure provided a manipulation check on the effectiveness of the conditions in differentiating different levels of perceived impact and also on the mediating process.

Additionally, respondents answered questions about whether and how much they donated to any nonprofit in the past year, and whether they worked with a nonprofit before. Participants also answered questions about demographics that are generally associated with charitable giving, including age, gender, ethnicity/race, marital status, level of education, religiosity, employment status, and household income level (Bekkers & Wiepking, 2011).

Main results

Intended donations. On average, participants were willing to donate between $41 and $46, but there were no significant differences in average donations across conditions, $F(3,733)=0.74$, $p>.10$ (Table 2).

Perceived impact. There were significant differences in perceived impact across conditions, $F(3, 733)=3.13$, $p<.05$ (Table 2). A two-way ANOVA found a significant main effect of tangible information about donation use on perceived impact, $F(1, 733)=8.93$, $p<.01$. Specifically, participants in specific information conditions (C2 & C4: M=5.43, SD=1.84) reported higher average perceived impact than those in general information conditions (C1 & C3: M=5.15, SD=1.29), suggesting that the conditions distinguished between high and low impact giving opportunities. The main effect of overhead levels on perceived impact and the interaction effect were non-significant.

Overhead focus. We did not find overhead bias in the whole sample. Moreover, only a small proportion of participants indicated that overhead was the primary factor influencing their decisions (Table 2). The proportion of overhead focus did not significantly differ across conditions ($\chi^2(3)= =1.28$, $p>.10$).

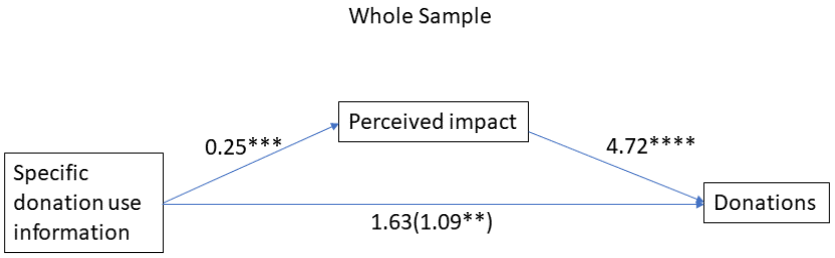
Table 2
Study 1 Summary Results

Condition	Intended donations		Perceived impact		% of overhead focus	N
	Mean	*SD*	*Mean*	*SD*		
C1	41.37	30.39	5.11	1.34	12.85	179
C2	45.93	31.21	5.44	1.20	15.87	189
C3	43.84	30.64	5.20	1.25	16.58	187
C4	45.16	33.04	5.41	1.17	16.48	182
	$F(3,733)=0.74$, $p>.10$		$F(3, 733)=3.13$, $p<.05$		$\chi^2(3)= 1.28$, $p>0.10$	

Tobit regressions. Regressions allow us to control for sampling variations that may affect the main results and examine the unique influence of key variables. We used tobit regressions to account for censoring of the dependent variable between 0 and $100. Shown in Table 3 Model 1-3, while average donations did not significantly vary by conditions, both perceived impact and having an overhead focus significantly predicted higher donations regardless of conditions. When adding covariates[5] in Model 4, perceived impact remained significant but overhead focus became marginally significant.

As an exploratory analysis, Model 5 further added the interactions between overhead focus and the two conditioning factors. For those without an overhead focus, the conditions were still non-significant. For those with an overhead focus, there were significant treatment effects. Being presented with low overhead and specific information about donation use each significantly increased intended donations.

Figure 1A
Mediation Analysis, Whole Sample



Notes: N=732. Indirect effect in the parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$, $^{****}p < 0.001$.

Table 3
Study 1 Tobit regression on intended donations

	(1)	(2)	(3)	(4)	(5)
Specific donation information	1.854	0.676	0.573	-0.266	-2.750
	(3.772)	(3.729)	(3.714)	(3.606)	(3.761)
Low overhead	-2.584	-2.041	-1.769	-1.524	-4.671
	(3.785)	(3.739)	(3.727)	(3.621)	(3.746)
Specific donation information × Low overhead	3.406	2.637	2.461	4.089	4.379
	(5.326)	(5.260)	(5.240)	(5.099)	(5.066)
Perceived impact		5.787****	6.116****	6.515****	6.249****
		(1.085)	(1.092)	(1.103)	(1.100)
Overhead focus			7.929**	7.062*	-10.54*
			(3.700)	(3.629)	(6.120)
Specific donation information ×Overhead focus					15.88**
					(7.100)
Low overhead levels× Overhead focus					19.54***
					(7.156)
Covariates	No	No	No	Yes	Yes
Constant	44.56****	14.33**	11.34*	5.207	10.36
	(2.656)	(6.244)	(6.378)	(6.997)	(7.089)

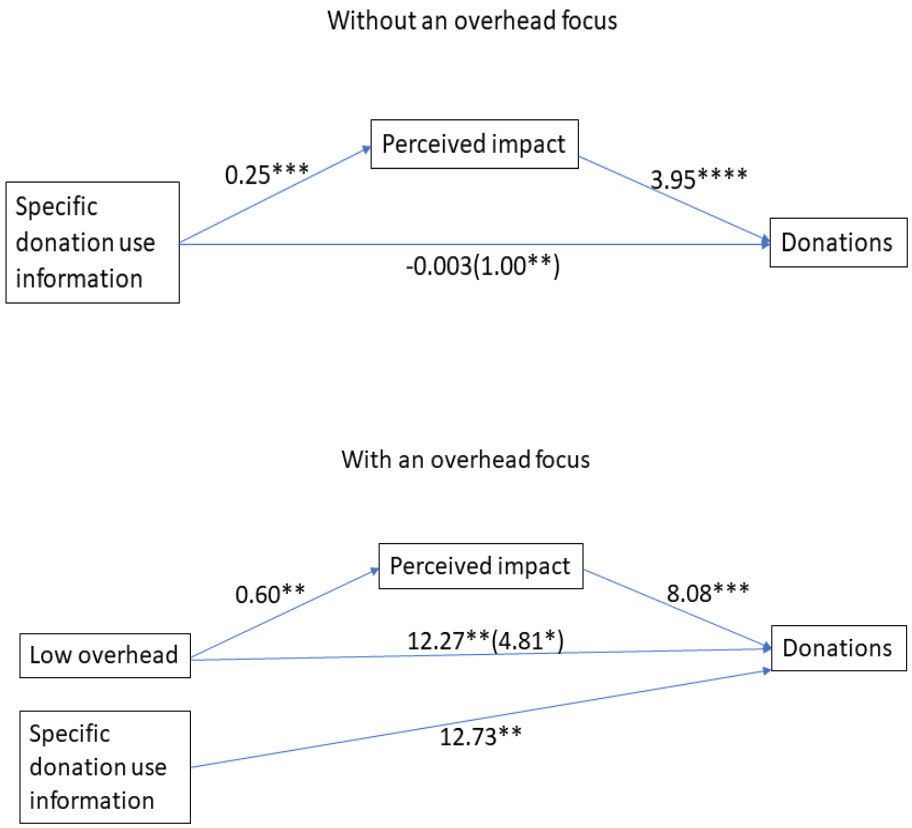
N=732. The regressions are left censored at 0 and right censored at $100. The covariates include gave last year, worked with nonprofits before, female, and age. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Mediation analyses. Following Cryder et al. (2013), we further tested if perceived impact is a mediator underlying the relationship between the conditions and donations, controlling for overhead focus and covariates. Using the method by Preacher and Hayes (2014) and 1000 bootstrapped samples, we found an indirect-only mediation for the whole sample (Zhao, Lynch, & Chen, 2010), where there was a significant indirect effect of specific donation information conditions on donations via perceived impact (B=1.09, p<.05) but no significant direct effect (Figure 1A).[6] There was no significant indirect or direct effect of low overhead conditions.

As an exploratory analysis, we then tested whether the mediation differed by those with and without an overhead focus (Figure 1B). For those without an overhead focus, specific donation information conditions had an indirect effect on donations through perceived impact (B=1.00, p<.05) but no significant direct effect, similar to the whole sample. For the small sample of overhead-focused participants, specific donation infor-

mation conditions had a significant direct effect on donations (B=12.73, p<.05) but no indirect effect. In contrast, low overhead conditions had a marginally significant indirect effect on donations via perceived impact (B=4.81, p<.10), as well as a significant direct effect (B=12.27, p<.05).

Figure 1B
Mediation Analyses, Subsamples



Notes: Mediation analyses by those without an overhead focus (N=620) and those with an overhead focus (N=112). Indirect effect in the parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$, $^{****}p < 0.001$.

Discussion

Study 1 asked participants to evaluate a single charity given its mission, overhead, and how donations will be used. Unlike previous overhead experiments, we did not find overwhelming evidence of overhead aversion. Even in the high-overhead conditions, only 16.5% of the participants indicated that overhead was the primary decision factor. This is consistent with experiments reporting that many individuals do not actively seek overhead information in making donations (Metzger & Günther, 2019; Buchheit & Parsons, 2006).

Although intended donations did not differ across conditions in the whole sample, participants in specific donation information conditions reported significantly higher perceived impact compared to those in general information conditions. Moreover, higher perceived impact significantly predicted more donations, even when controlling for covariates in regressions. Specific donation information significantly increased donations indirectly through increased perceived impact, particularly for those without an overhead focus. This is consistent with Cryder et al. (2013), who found an indirect-only mediation of impact across three experiments. It suggests

that for those who did not focus on overhead, specific donation use information only matters to the extent they promote impact.

On the other hand, those with an overhead focus demonstrated a different pattern from the rest of the sample. Lower overhead increased their donations through enhanced perceived impact, suggesting they derive perceived impact from low overhead. The mediating effect of perceived impact on the relationship between overhead levels and donations provides evidence that is consistent with Gneezy et al. (2014), who suggests that observed overhead aversion is driven by decreased perceived impact. Although specific donation use information increased donations directly, it did not operate via perceived impact. Perhaps for those who care about overhead, specific donation use information signals other aspects of an organization, such as efficiency. Due to the small sample size of those with an overhead focus, these analyses were only exploratory. Future research may examine these differences using a larger sample.

Our findings differ from Caviola et al. (2014), who found that people were willing to donate more to a charity with low overhead ratios when presented with a single charity. The timing of the study might have prompted genuine emotional responses to the organization's mission and COVID-19 relief effort, which diverted participants' attention from overhead costs. Therefore, we further examined if tangible information about donation use would reduce overhead bias in Study 2, where the salience of overhead information was increased through a joint evaluation of two organizations.

Study 2

Participants and Procedure

Study 2 examines if providing specific information about donation use will help alleviate overhead aversion using a design that contrasts two charities with different levels of overhead and tangibility of donation use information. The whole sample included 870 respondents who provided valid responses (Supplemental Material Table S1 Panel 2).[7] Respondents received information about two hypothetical charities. Organization A was the same as in Study 1, whose overhead and donation use information varied across conditions. Organization B's information remained constant across all conditions.[8] Specifically, Organization B "focuses on delivering personal protective equipment and essential medical items to health workers." It had a low overhead ratio (1%) and a general description on donation use ("Donations can help provide PPE to safeguard health workers"). After reading about the two organizations, participants first chose an organization they would donate to and then decided how much they would donate out of $100. The post-experiment questions were the same as those in Study 1.

Main results

Proportion of choosing Organization A over B. The proportion of participants choosing A over B differed significantly across conditions, $\chi^2(3) = 20.98$, $p < 0.001$ (Table 4). As a statistical test, a factorial logistic regression was used to examine the effects of the two conditioning factors as well as their interaction on the probability of choosing A over B. The main effect of low overhead was significant and positive (B=.60, p<.01), providing evidence of overhead aversion. Specifically, 66.42% of participants in low overhead treatments (C1 & C2) chose A, compared to 51.95% in high overhead treatments (C3 & C4). There were 5% more participants choosing A in specific (C2 & C4) than general donation use information conditions (C1 & C3), but the difference was not significant. The interaction effect was also nonsignificant. It is worth noting that the percentage of participants choosing overhead as the most important decision factor in the high-overhead treatments in Study 2 (32.5%) is higher than that in Study 1(16.5%).

Table 4
Study 2 Summary Results

Condition	% of A	% of B	Intended donations to A		Intended donations to B		Perceived impact if A		Perceived impact if B		N
			M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	
C1	64.00	36.00	51.77	29.72	59.76	31.75	5.30	1.12	5.64	0.90	200
C2	68.75	31.25	52.12	30.97	54.18	31.76	5.54	1.13	5.36	1.23	208
C3	49.36	50.64	52.48	28.91	56.97	30.48	5.31	1.12	5.53	1.03	233
C4	54.59	45.41	52.37	27.76	51.65	31.64	5.14	1.13	5.59	0.88	229
	$\chi^2(3)$= 20.98, p< 0.001		F(3, 511) =0.01, p>.10		F(3, 359) =1.09, p>.10		F(3, 511) =2.82, p<.05		F(3, 359) =1.02, p>.10		

Perceived impact. Overall, participants choosing B (M=5.54, SD=1.00) reported significantly higher average impact than those choosing A (M=5.33, SD=1.13). Per organization, perceived impact significantly varied across conditions among those choosing A, F(3, 511)=2.82, p<.05. The main effect of tangible donation use information was not significant, but that of overhead was marginally significant, F(1, 511)=4.65, p=.056, with those in low overhead conditions (M=5.42, SD=1.13) reporting higher perceived impact than those in high overhead conditions (M=5.22, SD=1.13). The interaction effect between the two factors was significant, F(1, 511)=5.24, p<.05, suggesting that specific information about donation use had opposite effects on perceived impact depending on overhead levels. The perceived impact was the highest in C2 (M=5.53, SD=1.13) and the lowest in C4 (M=5.14, SD=1.13). As expected, perceived impact did not differ significantly across conditions among those who chose B.

Logit regressions on the probability of choosing Organization A over B. Logistic regressions were then conducted to examine the probability of choosing A. Shown in Table 5 Model (1), the probability of participants selecting A in low overhead treatments was about 15% higher compared to high overhead conditions (p<.001). However, the effect of specific donation information was not significant. When controlling for perceived impact and covariates in Model (2), the average marginal effect of low overhead was still significantly positive (14%, p<0.001). Moreover, the effect of specific donation information became marginally significant, with the probability of choosing A over 5% higher than general information conditions (p<.10).

Table 5
Study 2 Logistic regressions on the probability of choosing Organization A over B

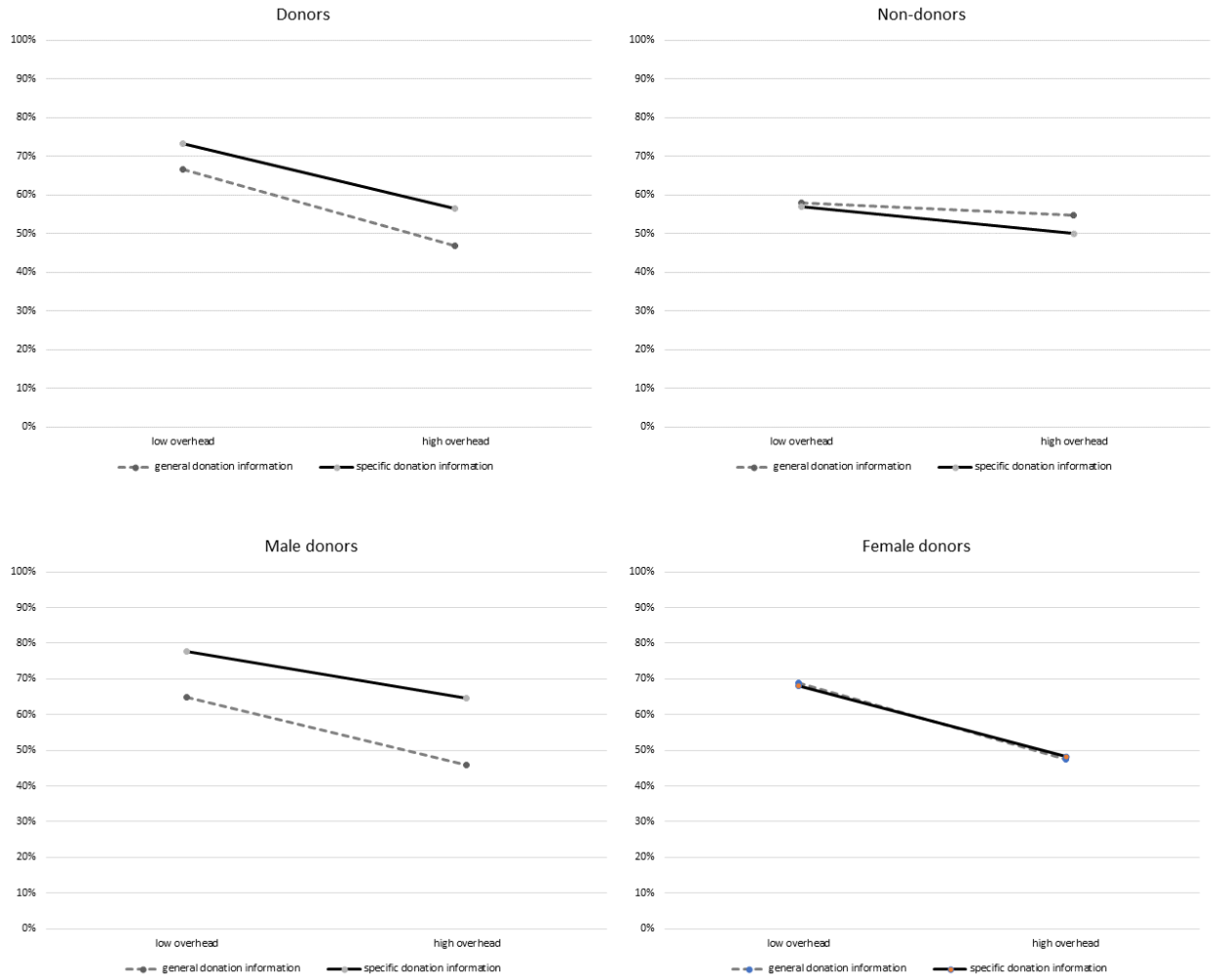
	(1)		(2)	
	Coef	Average marginal effects	Coef	Average marginal effects
Low overhead	0.613***	0.148****	0.612***	0.141****
	(0.199)	(0.0334)	(0.202)	(0.0331)
Specific donation information	0.225	0.0549	0.244	0.0552*
	(0.190)	(0.0334)	(0.193)	(0.0330)
Low overhead × Specific donation information	0.0134		-0.00997	
	(0.284)		(0.290)	
Perceived impact			-0.158**	-0.0363**
			(0.0705)	(0.0160)
Covariates	No		Yes	
Constant	-0.0531		1.155***	
	(0.133)		(0.431)	

N=848. The controls include gave last year, worked with nonprofits before, female, age, and college education or higher. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Because specific donation information became marginally significant when adding controls, we conducted exploratory investigations by subsamples. We found that providing specific information about donation use decreased overhead bias among recent donors (i.e., donated in the past year), particularly male donors. Shown in Figure 2, female donors (N=289) demonstrated an overhead bias, among whom the proportion of choosing A decreased by 20% from low to high overhead conditions, but they were non-responsive to specific information about what donations can buy. Male donors (N=314) also showed overhead bias, but specific donation information significantly reduced the gap between the high and low overhead conditions from 19% (from C1 to C3) to 13% (from C2 to C4). Those who did not give last year (N=261) demonstrated no significant reactions to either conditions. Results remain robust when controlling for covariates in logistic regressions (Supplemental Materials Table S2).

Intended donations to A or B. The experimental conditions did not significantly affect the average donations to A or B (Table 4). There were still no significant treatment effects on donations to A or B in in tobit regressions with covariates, but the effect of perceived impact was positive and significant (Supplemental Materials Table S3).

Figure 2
Study 2 Proportion of Choosing A by Subsamples



Discussion

Study 2 asked participants to compare two organizations, similar to the scenario where individuals seek information about different charities from a charity watchdog. Participants are led to focus more on overhead in this setting. Moreover, for donors deriving perceived impact from low overhead, Study 2 allowed them to switch to the low-overhead organization to maintain their perceived impact. Overhead levels became a significant factor that drove the choice between the two organizations. Participants were less likely to choose A in higher overhead conditions, even though A's mission was preferred. This is consistent with prior experiments that reported overhead aversion (Gneezy et al., 2014; Portillo & Stinn, 2018). Our exploratory analyses further showed that overhead aversion mainly existed among donors who gave in the past year, while non-donors were non-responsive to the treatments. Specific information about donation use helped mitigate the overhead aversion among male but not female donors. On the other hand, there were no significant treatment effects on average donations to A or B, but perceived impact was consistently associated with higher levels of donations to both A and B.

Although not directly comparable due to different designs and samples, providing tangible information on donation use appears to have a smaller effect on reducing overhead aversion compared to the strategies tested in prior studies (e.g. Gneezy, 2014; Tian et al., 2020; Qu & Levine Daniel, 2021). It is possible that even

general information on donation use may reduce overhead aversion. In a similar design using a donor sample, Qu and Levine Daniel (2020) found that the proportion of donors choosing the "preferred" charity decreased by about 33% when its overhead increased from 5% to 26%. In this study, when general information on donation use was presented in addition to overhead levels, it only decreased by 20% among past donors when A's overhead increased from 1% to 28%. Moreover, when overhead is the main decision-making factor, the negative impact of high overhead on giving seems to vary by student (Gneezy et al. (2014), Tian et al. (2020): 24% decrease) and donor samples (Qu & Levine Daniel (2021): 33% decrease). This study further demonstrated different effects by people's giving experience and gender. Further inquiries may explore how overhead aversion and potential information-based strategies vary across groups of the general population.

General Discussion and Conclusion

In recent years, many have raised concerns about the overemphasis of nonprofit overhead. Several experimental studies have postulated different mechanisms behind donor overhead aversion and proposed corresponding strategies (Tian et al., 2020; Qu & Levine Daniel, 2021; Gneezy et al., 2014). We follow the line of research suggesting that overhead aversion comes from donors' diminished perceived impact (Gneezy et al., 2014; Duncan, 2004). Drawing upon the research on tangibility and generosity, this study adds to this literature by examining a low-cost strategy—providing additional tangible information that enhances donors' perceived impact.

Specifically, we examined the effect on giving intentions when different overhead levels were combined with information about donation use. When evaluating a single charity in Study 1, the majority of individuals focused on organizational mission and programs. Providing specific information about donation use significantly increased intended donations indirectly through increased perceived impact (H1a & b). Only a small proportion of people focused on overhead, and our exploratory analyses showed that tangible information about donation use directly increased their intended donations, while lower overhead had an indirect effect via enhanced perceived impact (H2a & b). When comparing two charities in Study 2, there was stronger evidence of overhead aversion as higher overhead significantly decreased the percentage of participants choosing Organization A, particularly among donors (H2a). Nonetheless, tangible information on what donations can buy significantly increased the likelihood of giving to A among male donors, providing some support for H3.

The seemingly contradicting results from both studies may be explained by different decision-making contexts. While Study 1 essentially allowed participants to use information that mattered to them, Study 2 led participants to focus more on overhead as they choose between two charities with different overhead levels. Taken together, the two studies suggest that most people value other types of information than overhead in making donation decisions, and overhead aversion may be more severe in some circumstances (e.g. comparing different organizations rated by charity watchdogs) than others (e.g. direct mail/email fundraising). More importantly, presenting alternative types of tangible information may increase giving either by enhancing people's perceived impact or by diverting their attention away from overhead.

We acknowledge several limitations of this study, which also offer pathways for future research. First, to make sure all treatments have the same amount of information in controlled experiments, we did not test the net effect of overhead levels in the absence of other information. It is possible that even general information on charity intervention may increase donations. Second, we mainly examined giving intentions by asking a hypothetical question about individuals' willingness to give. This simulated setting has been used in other studies. Although respondents may be more generous in terms of donation amount in a hypothetical setting than the real world, we would expect this upward bias to be constant in all treatments and be controlled via random assignments of participants. Moreover, the main decision in Study 2 involved choosing between two organizations, which might be less affected by the hypothetical setting compared to the decision on donation amount. Nonetheless, we recommend follow-up studies to use field experiments or naturally observed data to examine actual giving behavior.

Third, understanding donors' giving motivations and decision-making processes was beyond the scope of this study. Future research may take a deeper dive into how giving motivations drive the use of different types of tangible information to influence giving. Finally, we focused on organizations with human service missions in the context of the pandemic, and found that tangible information on what donations could buy worked

mainly for male donors. This invites inquiry into which types of information work more effectively for female donors, and what information can enhance perceived impact across all mission contexts and donor types.

Despite these limitations, this study contributes to the research on overhead aversion and offers important practical implications. We show that overhead aversion might not be as overwhelming when overhead information was not emphasized. For individuals who either chose to or were led to focus on overhead, providing tangible information on donation use might help alleviate the overhead bias. This matters in a practical sense. Donors rarely receive only one type of information about an organization. Therefore, organizations need to understand how these different types simultaneously impact giving. Even charity watchdogs have begun to recognize the need to deemphasize the focus on overhead. For example, Charity Navigator is shifting to evaluate nonprofits on impact and results, beyond just financial ratios and transparency. Overall, our work highlights the push and pull between different types of tangible information on donations and perceived impact, providing practical insights for organizations hoping to ameliorate overhead aversion and increase donation support.

Notes

1. For a power of 80% and a confidence level of 95%, Study 1 needs at least 176 respondents per treatment to detect an effect size of 0.3 using two-sample t-tests (e.g., d=0.37-0.42 in Cryder et al., 2013; d=0.23 in Tian et al., 2020), and Study 2 needs at least 171 respondents per treatment to detect a difference of 15% between proportions using tests of proportions (e.g., Gneezy et al., 2014; Qu & Levine Daniel, 2021). We aimed to recruit at least 200 respondents per treatment to also allow for potential data loss due to careless or inattentive reporting (1%–30%), which is not uncommon in self-reported surveys (Curran, 2016).
2. We excluded 63 inattentive responses in Study 1 that provided the same answer for all the scale questions or meaningless answers to open-ended questions.
3. We chose 28% as the higher overhead ratio because it 1) exceeds the overhead level of the Charity Navigator endorsed 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).
4. The number of meals per dollar provided by food banks varies by location. We modeled our example after the Food Bank for New York City, which specifies "$1 helps provide 5 meals" on their website.
5. Including demographic variables would reduce the sample by about 10% (N=72) due to "prefer not to answer" as missing responses, particularly religious status and household income. In fact, except for being Hispanic, none of the demographic variables were statistically significant. Main results remained similar if we used a smaller sample with all variables. Therefore, we reported the results with the largest sample size.
6. To rule out a reverse mediation, we ran a mediation analysis with donations as the mediating factor of the relationship between specific information and impact. It showed a non-significant mediational influence of donations (B=0.02, p>.10).
7. Beside 68 careless or inattentive responses in Study 2, we also excluded 61 participants who reported overhead as their primary reason for decisions in C1 and C2 when both organizations have the same and low levels of overhead. The main results remained robust even when we included these observations.
8. Organization A and B's missions were the same across conditions, meaning participant mission preferences were constant across conditions. Therefore, any observed differences in giving intentions across conditions can only be attributed to the differences in the independent variables.

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Supplemental Materials

Table S1
Sample Statistics

Panel 1. Study 1

Variables	*Proportion/Mean/Median*	*N*
Made any donations past year	77.61%	737
Level of giving past year: 0, <$100, $100-$500, $500+	Median: under $100	737
Worked with a nonprofit before	60.65%	737
Age	Mean: 41.73 (SD: 16.43)	735
Female	51.97%	735
Hispanic	13.50%	726
White	71.07%	726
College degree or higher	48.30%	737
Married	49.03%	724
Religious	58.25%	709
Employed	59.02%	737
Level of household income	Median: $40,000 to $59,999	709

Panel 2. Study 2

Variables	*Proportion/Mean/Median*	*N*
Made any donations past year	70.00%	870
Level of giving past year: 0, <$100, $100-$500, $500+	Median: under $100	870
Worked with a nonprofit before	57.13%	870
Age	Mean: 38.52 (SD: 15.42)	929
Female	49.65%	868
Hispanic	14.74%	855
White	69.58%	848
College degree or higher	40.58%	860
Married	39.56%	857
Religious	56.54%	833
Employed	57.93%	851
Level of household income	Median: $40,000 to $59,999	831

Table S2
Study 2 Logistic regressions on the probability of choosing Organization A over B by Subsamples

	Non-recent-donors		Recent donors		Female donors		Male donors	
	Coef	AME	Coef	AME	Coef	AME	Coef	AME
Low overhead	0.0829	0.0489	0.839****	0.180****	0.880**	0.195****	0.768**	0.160***
	(0.361)	(0.0618)	(0.245)	(0.0389)	(0.361)	(0.0574)	(0.338)	(0.0524)
Specific donation information	-0.106	0.00284	0.393*	0.0787**	0.0995	0.0135	0.727**	0.152***
	(0.356)	(0.0624)	(0.231)	(0.0387)	(0.325)	(0.0573)	(0.335)	(0.0527)
Low overhead × Specific donation information	0.255		-0.0972		-0.0974		-0.0474	
	(0.529)		(0.351)		(0.506)		(0.498)	
Perceived impact	-0.236*	-0.0561**	-0.128	-0.0285	0.0381	0.00877	-0.273**	-0.0576**
	(0.123)	(0.0286)	(0.0871)	(0.0193)	(0.129)	(0.0296)	(0.121)	(0.0248)
Covariates	Yes		Yes		Yes		Yes	
Constant	1.658**		1.199**		0.169		1.840**	
	(0.769)		(0.545)		(0.809)		(0.746)	
N	251		597		286		311	

Recent donors are those who gave in the past year. AME refers to average marginal effects. The covariates include gave last year, worked with nonprofits before, female, age, and college education or higher. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Table S3
Study 2 Tobit regressions on donations to Organization A and B

	Organization A	Organization B
Low overhead	-2.700	5.051
	(4.618)	(6.084)
Specific donation information	-1.094	-5.577
	(4.669)	(5.528)
Low overhead × Specific donation information	-0.143	2.072
	(6.402)	(8.975)
Perceived impact	4.012***	9.677****
	(1.484)	(2.229)
Covariates	Yes	Yes
Constant	22.58**	-0.417
	(9.119)	(13.71)
N	496	352

The regressions are left censored at $1 and right censored at $100. The covariates include gave last year, worked with nonprofits before, female, age, and college education or higher. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$.

Experimental Text

Study 1

The following summarizes information about a charity. If you were approached by this charity, would you make any donations? Please evaluate the information carefully and make your decision.

[*Varying overhead levels (low/high) and the tangibility of information about donation use (general vs. specific) across four conditions*]

RESPONSE is a nonprofit organization whose mission is to address the urgent needs of communities affected by disasters and crises through providing essential items and emergency medical services. In the past three years, on average, 99% [72%] of its total expenses were spent on programs and services, and 1% [28%] on overhead costs incurred for the operation of the organization. Currently, the organization's domestic COVID-19 relief effort focuses on delivering food to senior citizens and other struggling individuals and families. Donations can help provide meals to people in need. [Every 1 dollar donated can help provide 5 meals to a person in need.]

How much money would you donate out of $100? Move the slider to choose any amount between 0 and $100. Choose 0 if you would not donate to this charity.

Study 2

If you were approached by the following two nonprofit organizations, to which organization would you donate?

[*Varying A's overhead levels (low/high) and the tangibility of information about donation use (general vs. specific) while keeping B's information consistent across four conditions*]

Organization A is a nonprofit organization that addresses the urgent needs of communities affected by disasters and crises through providing essential items. In the past three years, on average, 99% [72%] of its total expenses were spent on programs and services, and 1% [28%] on overhead costs (such as fundraising and general management costs). Currently, the organization's domestic COVID-19 relief effort focuses on delivering food to senior citizens and other struggling individuals and families. *Donations can help provide meals to people in need. [Every 1 dollar donated can help provide 5 meals to a person in need.*]

Organization B is a nonprofit organization that aims to improve the lives of people affected by disasters and crises through providing emergency medical care. In the past three years, on average, 99% of its total expenses were spent on programs and services, and 1% on overhead costs (such as fundraising and general management costs). Currently, the organization's domestic COVID-19 relief effort focuses on delivering personal protective equipment (PPE) and essential medical items to health workers. *Donations can help provide PPE to safeguard health workers.*

To which organization would you donate?
o Organization A
o Organization B

Out of $100, how much would you donate to this organization?

$25 $50 $75 $100 Other amount___