Journal of Behavioral
Public Administration
Vol 3(1), pp. 1-19
DOI: 10.30636/jbpa.31.93

Research Article

Breaking the nonprofit starvation cycle? An experimental test

Yuan Tian[*], Chiako Hung[†], Peter Frumkin[‡]

Abstract: Donors' overhead aversion leads to a starvation cycle that hampers the ability of nonprofits to fulfill their missions. This study provides new evidence and suggests possible solutions to break the starvation cycle. Drawing on agency theory, this study adopts a between-subject experimental design to test two strategies for nonprofits with high overhead that seek to overcome donors' overhead aversion. The results suggest that donors are indeed troubled by high overhead ratios. However, charitable contributions to high-overhead nonprofits could be significantly increased if the nonprofits provide information regarding their organization's performance and transparency. The study contributes to the literature in two ways: It analyzes the starvation cycle from the donors' perspective rather than nonprofits' perspective, and it tests proactive strategies in response to overhead aversion. This study concludes that breaking the nonprofit starvation cycle could begin with nonprofits taking a more open and direct stance when confronting the issue of overhead aversion.

Keywords: Charitable giving, Overhead aversion, Fundraising strategy, Agency theory, Information asymmetry

Supplements: Open data, Open materials

The nonprofit starvation cycle describes the dynamics of how overhead spending by nonprofits is constrained by donors' unrealistic expectations (Gregory & Howard, 2009; Hager, Pollak, Wing, & Rooney, 2004; Lecy & Searing, 2015; Schubert & Boenigk, 2019; Steinberg & Morris, 2010; Wing & Hager, 2004). The cycle contains three phases. First, donors have a tendency to fund nonprofit programs with low overhead spending since many of them expect that all of their contributions should go directly to causes that maximize the impact of their donations (Gneezy, Keenan, & Gneezy, 2014). Second, donors' aversion towards nonprofit overhead spending puts nonprofits increasingly under pressure to spend less on overhead and more on program services (Krishnan & Yetman, 2011). Third, nonprofits respond to the pressure by misreporting their spending on overhead and program services (Krishnan, Yetman, & Yetman, 2006; Trussel, 2003). Donors' aversion towards overhead spending creates a cycle that threatens to compromise nonprofit effectiveness and leads to "an underdeveloped nonprofit sector and a loss of community trust and confidence in philanthropy" (Hager, 2004, p. 4).

A couple of theories have emerged in an attempt to explain the causes of the nonprofit starvation cycle. Surysekar, Turner, & Wheatley (2014) discuss mechanisms used by donors to monitor nonprofit spending through agent theory. They argue that donors face an agency problem because nonprofit managers have the discretion to spend contributions on programs that donors do not value and donors lack information to assess how nonprofits use their contributions. Thus, donors constrain managerial discretion by either imposing restrictions on nonprofit spending or expecting

* School of International and Public Affairs at Shanghai Jiao Tong University
† Public Administration Program at the University of Hawai'i at Mānoa
‡ Center for Social Impact Strategy at the University of Pennsylvania
Address correspondence to Yuan Tian at (yuantian@sjtu.edu.cn)

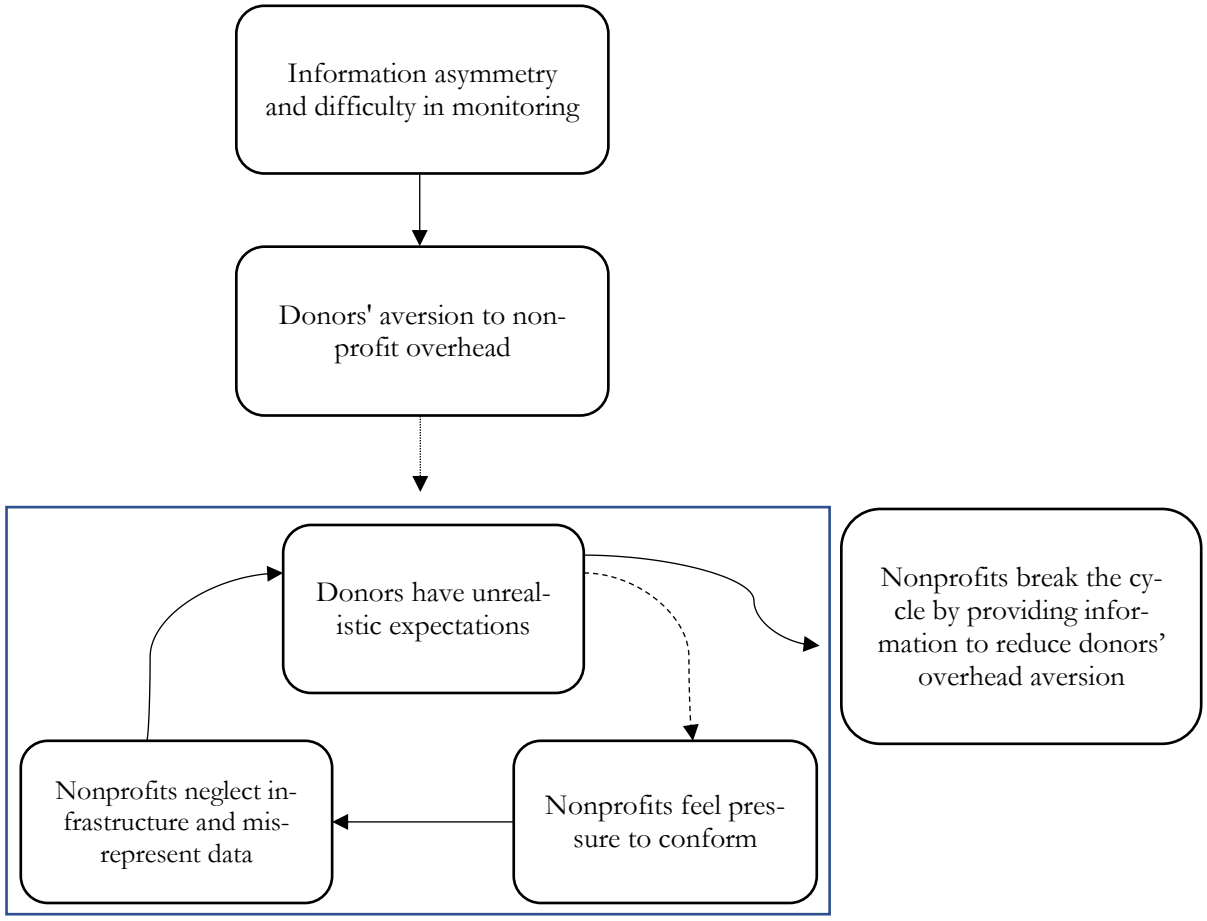
nonprofits to keep overhead spending as low as possible (Shon, Hamidullah, & McDougle, 2018; Surysekar et al., 2014; Yermack, 2017). Others look at the starvation cycle phenomenon through the lens of institutional theory, which focuses on how mimetic, normative, and coercive pressures that arise from external environments influence organizational survival (DiMaggio & Powell, 1983). From the perspective of institutional theory, reducing overhead spending is a strategy to meet expectations of donors and watchdog organizations in order to survive what is often a turbulent and competitive institutional environment (Hager et al., 2004; Lecy & Searing, 2015; Schubert & Boenigk, 2019). Still others explain the starvation cycle phenomenon through resource dependency theory, which emphasizes how organizations manage their dependence on the external environment (Pfeffer and Salancick, 1978). Resource dependency drives nonprofits to reduce overhead spending as they struggle to survive and secure more donations, become more competitive, and rely less on other resource providers (Parsons, 2007; Schubert & Boenigk, 2019).

Empirical studies have demonstrated that donors penalize nonprofits with high overhead spending (Gneezy et al., 2014; Greenlee & Brown, 1999; Kinsbergen & Tolsma, 2013; Krawczyk, Wooddell, & Dias, 2017; Steinberg, 1986; Marudas, Hahn, & Jacobs, 2014). A strong overhead aversion exists among potential donors primarily because they deem the costs as "a diversion of funds from program expenses" (Tinkelman & Mankaney, 2007, p. 42) and oversimplify overhead ratios[1] as a proxy for nonprofit efficiency (Lecy & Searing, 2015). Donors expect most financial resources should be devoted to program services to maximize social impact rather than overhead expenses for facilities, equipment, and staff support (Bowman, 2006; Buchheit & Parsons, 2006; Hager et al., 2004; Keating & Frumkin, 2003; Parsons, 2007). Another line of literature has investigated whether reported overhead ratios decreased among nonprofit organizations over time (Lecy & Searing, 2015; Schubert & Boenigk, 2019). Despite the popularity of research on nonprofit overhead, existing studies have rarely examined strategies to break the nonprofit starvation cycle. To our knowledge, Gneezy et al.'s, (2014) study is the only one in the literature to explicitly address the nonprofit starvation cycle issue. They found informing donors that 100 percent of their donations will be used for program expenses, while using donations from other sources of support to cover overhead expenses, is an effective strategy to avoid overhead aversion and increase donations (Gneezy et al., 2014). The 100 percent program donation strategy, however, might not be feasible for many nonprofits if they cannot secure major donors to cover overhead expenses. More importantly, the strategy reinforces donors' false perceptions that nonprofit overhead expenses should be reduced or eliminated if at all possible. In other words, it is an avoidance strategy.

Our study aims to present other ways to break the starvation cycle by testing two theory-based non-avoidance strategies to overcome donors' overhead aversion. Current empirical research relies on institutional theory and resource dependency to explain the starvation cycle from nonprofits' rationale to minimize overhead spending, which leads to a downward spiraling of overhead rates throughout the sector (Schubert & Boenigk, 2019; Lecy & Searing, 2015). However, both theories are insufficient to explain why donors hold an overhead aversion in the first place (Shon et al., 2018; Surysekar et al., 2014). From a lens of agency theory, the starvation cycle starts with donors' unrealistic expectations of low overhead rates which stems from (1) information asymmetry between donors and nonprofits and (2) difficulty for donors to monitor nonprofits (Mitchell & Calabrese, 2018; Schubert & Boenigk, 2019; Surysekar, Weismann, Forgione, & Carmenate, 2015). Thus, we argue that breaking the starvation cycle should focus on the roots of the cycle; that is, to overcome donors' overhead aversion, the solution might lie in alleviating information asymmetry and monitoring issues. Based upon agency theory and the existing literature, we argue that breaking the nonprofit starvation cycle could start with nonprofits providing more information to respond to the concerns that donors might have when they are aware of high overhead ratios (See Figure 1 and Figure 2).

In response to concerns about nonprofit effectiveness, we propose to examine a performance strategy in which nonprofits present overhead ratios and indicators of effective performance to donors in their fundraising campaigns. An effective performance strategy may help donors understand that a reasonable amount of overhead is essential for nonprofits to deliver program services and fulfill their missions (Kinsbergen & Tolsma, 2013; Nikolova, 2014). We expect that donors are willing to support nonprofits with higher overhead expenses

Figure 1
Theoretical Framework of Breaking the Nonprofit Starvation Cycle



as long as they realize that the nonprofits effectively deliver program services.

H1: Individuals' aversion towards overhead expenses is reduced when they are informed that nonprofits are effective organizations.

Additionally, in response to individuals' concerns about nonprofit reputation, we propose to investigate a transparency strategy in which nonprofits build a reputation of transparency by disclosing their true overhead ratios and other organizational information to donors (Mitchell, 2014; Parsons, 2007; Saxton, Neely, & Guo, 2014). Transparency not only allows donors to understand how nonprofits use their contributions, but also makes them aware that nonprofits need their support to survive (Gregory & Howard, 2009). The transparency strategy may deliver a signal to donors that the recipient organizations are reliable, and that donors' money is spent in a trustworthy way. We, therefore, expect that donors are willing to support nonprofits with higher overhead expenses as long as they know that the nonprofits are fully transparent organizations.

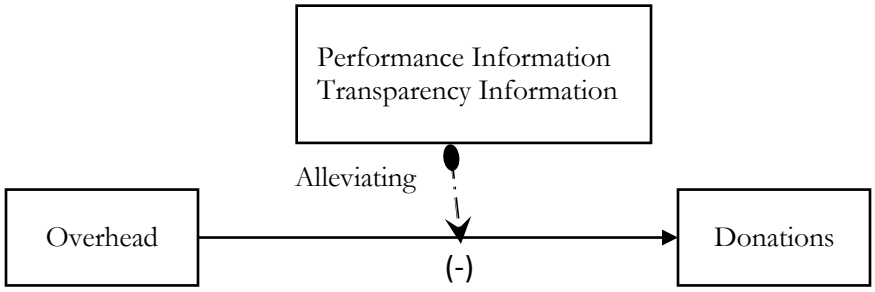
H2: Individuals' aversion towards overhead expenses is reduced when they are informed that nonprofits practice transparency.

Method

Participants and Design

Following an IRB-approved protocol, we recruited fluent English-speaking college students from a Midwestern urban university in the United States in

Figure 2
Relationship of Key Variables



December, 2017 for a between-subject design lab experiment to examine (1) whether individuals are less likely to donate or donate less to a nonprofit with a high overhead ratio (i.e., the inhibition effect of donors' overhead aversion on donations) and (2) whether the solicitation information regarding the nonprofit's effective performance or high transparency effectively promotes donations (i.e., the promoting effect of high performance and high transparency) (see Figure 3). The final sample included one hundred and fifty-four participants (mean age=21, SD=4.68, range=18 to 54, 59% female, with an ethnic distribution of 39% Caucasian, 26% African-American, 12% Hispanic/Latino, 7% Asian, and 16% others[2]).

Power Analysis

We used the G*Power 3.1 software to conduct a priori power analysis to pre-determine our sample size. In order to detect an intermediate effect size f=.25 or larger with a power of 0.80 at α=.05, we would need at least one hundred and twenty-eight participants for a pair-wise group comparison. According to the sensitivity power analysis, our final sample of one hundred and fifty-four participants enables us to detect a smaller effect size f=.23 with the same pre-determined power and alpha level, which means if the study is replicated again, there will be an 80% chance of finding a significant difference between two condition groups if the size of the detected effect is greater than f=.23.

Procedures

Cover Story

To enhance the internal validity, we used a cover story to inform participants that the purpose of the study was to fundraise for an environmental nonprofit organization, EnviroCare, and provide feedback to enhance its fundraising capacity by testing the effectiveness of its solicitation letter. During the debriefing process, all participants reported that they believed the cover story.

Experimental Manipulation

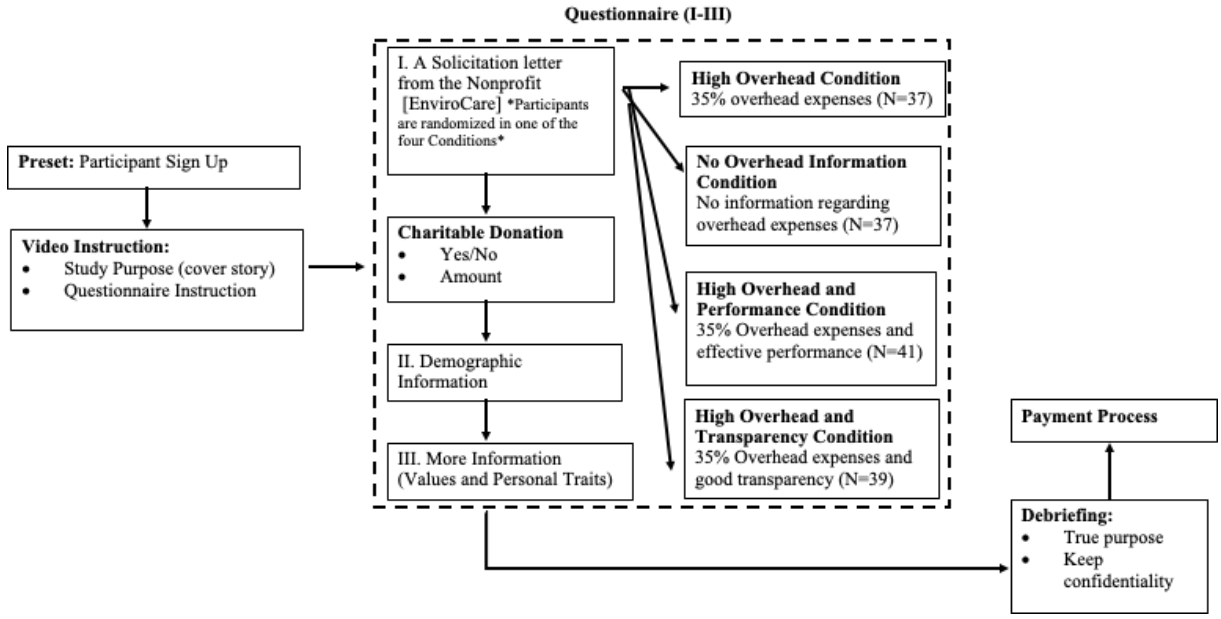
We manipulated four experimental conditions using different solicitation letters in the first section of the questionnaire (see Appendix 1). In short, these four experimental conditions are summarized below:

- High Overhead condition- A norm that nonprofits usually spend 20% on overheads with the information that 35%[3] of the nonprofit's revenue was spent on overhead expenses.
- No Overhead Information condition- No norm and no information regarding the proportions of the nonprofit overhead expenses was present.
- High Overhead and Performance condition- A norm that nonprofits usually spend 20% on overheads with the information that 35% of the nonprofit's revenue was spent on overhead expenses, and the information regarding good performance of the nonprofit.
- High Overhead and Transparency condition- A norm that nonprofits usually spend 20% on overheads with the information that 35% of the nonprofit's revenue was spent on overhead expenses, and the information regarding good transparency of the nonprofit.[4]

Study Flow

Preset. Participants were recruited in December 2017 for a 30-min survey experiment in a reserved

Figure 3
Study Design and Procedure



classroom on campus with a capacity of fifty people[5]. The research team (two Caucasians and one Asian) signed the participants up 15 mins ahead of a session to randomly assign them a questionnaire in one of the experimental conditions and ask them to quietly wait in the classroom for the session to start.

Video Instruction. When a session started, all the participants in the session watched a three-minute video[6], which included a brief instruction on the purpose of the study (using our cover story) and detailed instructions on how to complete the questionnaires. Then, participants were given an opportunity to ask questions before they started completing the questionnaires.

Questionnaire. Participants were randomly assigned to take a questionnaire in one of the four experimental conditions. The questionnaire included three different sections: a solicitation letter, demographic information, and additional information sections[7].

Post-study. After participants completed the questionnaires, they came to the research team to process their study payment outside the classroom. Participants were given the debriefing form to read and check the follow-up questions and return them to get compensated. The debriefing form revealed that the real purpose of the study was to investigate nonprofit overhead aversion instead of the cover letter story and that the recipient organization (EnviroCare) was, in fact, a hypothetical organization; therefore, we did not actually collect their donations and they would be fully compensated. Participants were also required to keep the debriefing information confidential to prevent the future participants from being contaminated. All participants revealed in the follow up question that they believed they would only be given a study payment amount that included a deduction for their pledged donation.

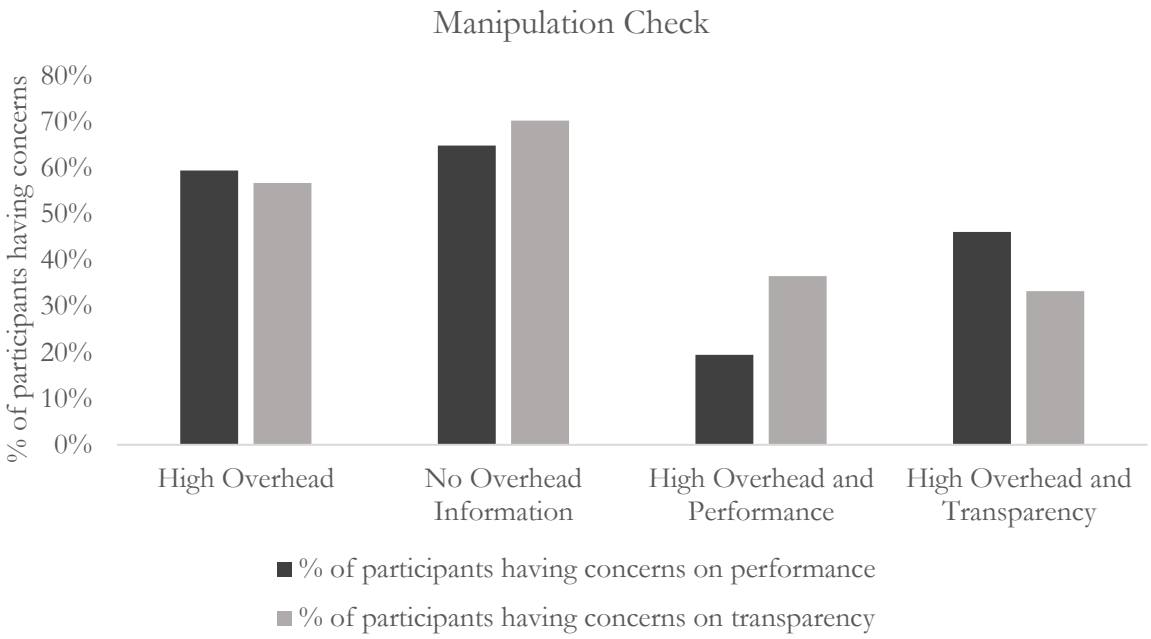
Measures

Dependent variables. This study measured small charitable donations through the following question:

> Now, we are asking you to consider supporting EnviroCare's work of protecting our environment by using your study compensation that you will receive later today. Please indicate from $0 to $10, in 25 cent increments, how much you would like to donate to support EnviroCare. Make your donation pledge now and leave the pledged donation in the donation box anonymously later when you receive your study payment.

Since participants believed that they would donate the pledged amount by the end of the study using their study compensation, it was reasonable to

Figure 4
Manipulation Check on Performance and Transparency



assume that their giving pledge was an accurate proxy of their actual donation behavior in response to the solicitation letter in a real donation scenario.

Then, we constructed two measures of charitable donations based upon the participants' answers to the question of the voluntary donations. The first measure, *Decision to Donate*, was measured as a binary variable on whether participants pledged to make a donation (0= "No," 1= "Yes"). The second measure, *Donation Amount*, was a continuous variable to measure the pledged donation amount.

Independent variable. We manipulated four *Experimental Conditions* (1= "No Overhead Information," 2= "High Overhead condition," 3= "High Overhead and Performance condition," and 4= "High Overhead and Transparency condition").

Manipulation check variables. *Nonprofit Overhead Ratio* was designed for the manipulation check on the overhead ratio and assessed through the question, "What percentage of its funds did EnviroCare spend on overhead (non-program) expenses in 2016?" (1= "no information", 2= "0%", 3= "1% to 10%", 4= "11%-20%", 5= "21% to 35%", 6= "31% to 40%", or 6= "41% to 50%") in only the three experimental conditions that contained the manipulation on a high overhead ratio.

Concern about Nonprofit Performance/Transparency were coded as binary variables (0="no concern expressed", 1=" expressed concerns") and assessed whether participants expressed concern regarding the nonprofit's *performance* or *transparency*, based upon coding their answers to the following four open questions [8]: "What additional information would you need to rate the organization's mission agreement/ effectiveness/efficiency/association between overhead and effectiveness?"

Potential covariates. *Mission Agreement* measured participants' agreement with the nonprofit mission to protect the environment using a Likert scale (which ranged from 1= "very low" to 7= "very high").

Effectiveness/Efficiency were measured separately in the questionnaire: "*Nonprofit Effectiveness* (referring to effectiveness in terms of achieving its mission through its programs)" or "*Nonprofit Efficiency* (referring to the efficiency of allocating its expenses)" using a Likert scale (1= "very low" to 7= "very high").

Association between Overhead and Effectiveness was measured through the question "Do you think EnviroCare's level of administrative and fundraising expenses contributed to its program's effectiveness?" using a Likert scale (1= "very low" to 7= "very high").

Volunteering/Donation Experiences were binary variables measured by the question, "In the past 12 months, have you ever volunteered for (or made a charitable donation to) a non-profit organization? (Yes/No)"

The questionnaire also contained questions regarding other demographic information, such as age, gender, race, religion, religious attendance, political affiliation, and nonprofit working experiences, and personal traits, such as empathy, narcissism, etc.

Results

Manipulation and Randomization Check

In order to ensure that our manipulations on high overhead ratio, effective performance, and high transparency were effective, we conducted manipulation checks on four variables, *Nonprofit Overhead Ratio*, *Concern about Nonprofit Performance*, *Concern about Nonprofit Transparency,* and perceived highest acceptable overhead, across conditions. Our study recruited two hundred participants but forty-six failed the screening and manipulation check[9]. Since this meant a large proportion of participants were excluded, we checked the differences in donations across the conditions before and after excluding and found no significant difference[10]. Among the one hundred and fifty-four participants that remained, the likelihood of participants having concerns about the nonprofit's performance was statistically lower in the *High Overhead and Performance* condition compared to the *No Overhead Information* and *High Overhead* conditions ($p<.02$). And the likelihood of participants having concerns about the nonprofit's transparency was statistically lower in the *High Overhead and Transparency* condition than in the *No Overhead Information* and *High Overhead* conditions ($p<.05$). The percentage of participants having concerns are presented across the conditions in Figure 4. In short, the results indicated that our final sample of one hundred and fifty-four participants were aware of the correct overhead information in the non-control conditions, and the add-on information of performance and transparency, in the *High Overhead and Performance* condition and *High Overhead and Transparency* condition respectively, can lower participants concerns. However, we did not find that participants in the high overhead information condition were more concerned than the control group.

We then examined whether our randomization process was effective by checking the following variables across experimental conditions: *Mission Agreement* and 17 demographic characteristics[11] and found no statistical differences ($p>.12$), except that *age* was marginally significant ($p=.07$)[12]. Overall, the results of the randomization check indicated that our randomization was effective.

Descriptive Statistics

Decision to Donate. Among our final sample of one hundred and fifty-four participants, ninety-nine (64%) pledged to donate and fifty-five (36%) did not. There were no gender differences in *the decision to donate* ($\chi(1)=.26$, $p=.61$, Males=62%, Females=66%); however, there were statistical differences by ethnicity in the donation decision ($p=.02$). The percentages of donating participants in the ethnic groups that had over 10 participants were ordered as follows: Asian American/Asian=82%, Caucasian=72%, African-American=68%, and Hispanic/Latino=58%.

Donation Amount. Among the 154 participants, an average of $3.21 out of the $10 study payment was donated. There were no gender differences in *donation amount* ($p=.97$); on average, males donated $3.23 and females donated $3.20. However, the donation amount did vary by ethnicity ($p=.02$). The average donation amounts of the ethnic groups that had over 10 participants were ordered as follows: Asian Americans/Asians donated $6.36, African-Americans donated $3.50, Caucasians donated $3.13, and Hispanics/Latinos donated $3.05.

Effects of Condition on Decision to Donate

The results are presented in a descending percentage order of participants who donated in different experimental conditions: *High Overhead and Transparency* (76.92%), *No Overhead Information* (70.27%), *High Overhead and Performance* (63.41%), and *High Overhead* (45.95%).

Based upon the results from a binomial logit model (see Table 1, Model 1) and its post-hoc pairwise comparisons, the probability of donating was statistically lower in the *High Overhead* condition than in the *No Overhead Information* condition ($p=.04$), indicating that the overhead aversion existed and negatively affected the donation propensity. Additionally, Hypothesis 1 suggested that people's aversion towards overhead could be reduced when they were informed that nonprofits were effective organizations. We found that there were no

Table 1
Regression Results

	Decision to donate (Whether pledged a donation?)				Donation amount (How much pledged?)				Conditional Donation amount (How much pledged by donors?)			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Different Conditions												
High Overhead (Base)												
Control	1.02*	1.03*	0.96~	0.96~	0.99	0.99	0.84	0.86	0.11	-0.09	0.09	-0.1
	(0.49)	(0.49)	(0.50)	(0.50)	(0.81)	(0.79)	(0.80)	(0.78)	(0.99)	(0.97)	(0.99)	(0.97)
High Overhead and High Performance	0.71	0.7	0.51	0.51	2.44**	2.38**	2.15**	2.12**	2.82**	2.52**	2.77**	2.48**
	(0.46)	(0.46)	(0.48)	(0.48)	(0.79)	(0.77)	(0.79)	(0.77)	(0.99)	(0.97)	(0.99)	(0.98)
High Overhead and High Transparency	1.37**	1.34**	1.29*	1.27*	2.41**	2.26**	2.23**	2.10**	1.63	1.28	1.62	1.28
	(0.50)	(0.51)	(0.52)	(0.52)	(0.80)	(0.78)	(0.79)	(0.08)	(0.96)	(0.95)	(0.96)	(0.95)
Asian		0.92		0.79		3.17**		3.02**		2.66*		2.62*
		(0.82)		(0.83)		(1.06)		(1.05)		(1.09)		(1.10)
Perception on Association between Overhead and Efficiency/effectiveness			0.41**	0.40*			0.50*	0.45			0.19	0.14
			(0.16)	(0.16)			(0.24)	(0.24)			(0.29)	(0.28)
Constant	-0.16	-0.21	-2.18*	-2.16*	1.72**	1.55**	-0.71	-0.63	3.74***	3.74***	2.74	2.97
	(0.33)	(0.33)	(0.86)	(0.86)	(0.57)	(0.56)	(1.31)	(1.28)	(0.77)	(0.75)	(1.72)	(1.68)
N	154	154	154	154	154	154	154	154	99	99	99	99

*Note: coefficients of the logit and OLS regressions are reported in the table with the statistical significance: ~ (p< .10), *(p< .05), **(p< .01), and ***(p<.001). Standard errors are reported in the parentheses. Non-significant Income categories are omitted to reduce the length of the table.*

statistically significant differences in the donation propensity between the *High Overhead* and *High Overhead and Performance* conditions (p>.12), suggesting that participants' donation propensity did not increase as a result of receiving effective performance information. Hypothesis 2 suggested that people's aversion towards overhead could be reduced when they were informed that the nonprofits practiced transparency. We found that there were statistically significant differences in the donation propensity between the *High Overhead* and *High Overhead and Transparency* conditions, suggesting that participants' donation propensity increased as a result of receiving organizational transparency information (see Table 1, Model 1-4).[13]

After the logit regression, we conducted a post-hoc test of the condition effect on the *decision to donate* and report the pair-wise marginal odds ratios in Table

Table 2
Post-hoc Results on Condition Effects

Pairwise comparisons	Marginal odds ratios
High Overhead (Base) VS No Overhead Information	2.78*
High Overhead (Base) VS High Overhead and Performance	2.04
High Overhead (Base) VS Overhead and Transparency	3.92**

*Note: ~ (p< .10), *(p< .05), and **(p< .01)*

2. The factor change in odds was increased by 2.78 (*p*=.04) in the *High Overhead* condition from the *No Overhead Information* condition. However, the factor change of odds was increased by 3.92 (*p*=.007) in the *High Overhead and Transparency* condition, compared to the *High Overhead* condition[14].

Effects of Condition on Donation Amount among Full Sample

We then used an ANOVA to investigate the effects of condition on *donation amount* and the results indicated that the highest average donation amount was statistically significantly different from the lowest donation amount across conditions (*p*<.01). The average donation amounts, in decreasing order, across conditions are: *High Overhead and Performance*, M=4.16, SD=4.16; *High Overhead and Transparency*, M=4.12, SD=3.55; *No Overhead Information*, M=2.70, SD=3.02; and *High Overhead*, M=1.72, SD=2.91. The post-hoc pairwise comparison analysis indicated that the average donation amounts in the *High Overhead and Performance* and *High Overhead and Transparency* conditions were statistically significantly higher than in the *High Overhead* condition (*ps*<.003), suggesting that providing information on either effective performance or high transparency could effectively promote small donations for a nonprofit with a high overhead ratio. Hypothesis 1 and 2 were supported (see Table 1, Model 5-8).

Effects of Condition on Donation Amount among Donor Sample Only

We also used an ANOVA to investigate the effects of condition on donation amount using the donor-only sample. The average donation amounts, in decreasing order, across conditions are: *High Overhead and Performance*, M=6.56, SD=3.36; *High Overhead and Transparency*, M=5.37, SD=3.10; *No Overhead Information*, M=3.85, SD=2.93; and *High Overhead*, M=3.74, SD=3.32. The post-hoc pairwise comparison analysis indicated that the average donation amounts in the *High Overhead and Performance* condition were statistically significantly higher than in the *High Overhead* condition(*p*=.005), suggesting that providing information on effective performance could effectively promote small donations for a nonprofit with a high overhead ratio for donors. Hypothesis 1 was supported. However, the average donation amounts in the *High Overhead and Transparency* condition were marginally significantly higher than in the *High Overhead* condition(*p*=.093), suggesting once individuals decides to give, providing information on transparency may not be as effective as information on performance to promote small donations for a nonprofit with a high overhead ratio. Hypothesis 2 was not supported. (see Table 1, Model 9-12).

Robustness Check of the Results

To identify potential covariates, we followed Darlington's (2018) approach on selecting covariates in randomized experiments[11]. The regression models indicated that our results on the condition effects on donations were robust when comparing the coefficients before and after adding the covariates (Table 1). We found that being an Asian was statistically significantly associated with a higher donation amount for small donations (*ps*<.014), but not statistically significantly associated with a high likelihood of donating (*ps*<.26). We also found that participants who were more likely to donate perceived a positive *association between overhead and effectiveness/efficiency* (*ps*<.01). The association between donation amount and participants' perception of the

association between overhead and effectiveness/efficiency was marginally significant (ps<.061).

Discussion and Conclusion

This paper examined donors' overhead aversion under different scenarios. Specifically, we tested (1) whether donors' aversion toward high nonprofit overhead expenses exists and (2) how nonprofits break the starvation cycle.

The results suggest that a weak donors' nonprofit overhead aversion existed with a small effect size in the donation propensity, but not in the amount given. The weak overhead aversion is partly due to our study design that constrains the donation to a fairly small amount (up to $10). Empirical studies that detect donors' overhead aversion adopt larger donation amounts in their research design. These amounts normally range from $50 to $100 (Gneezy et al., 2014; Portillo & Stinn, 2018). Also, it is possible that individuals making small-amount donations are less likely to spend their time and energy to process the meaning of nonprofit overhead and thus are less sensitive to a high overhead ratio (Hibbert & Horne, 1996; Tinkelman & Mankaney, 2007). Another possible explanation is that using windfall money or experimental compensation, instead of using money from the participants' own pockets, may make the participants less concerned about the overhead expenses (Carlsson, He, & Martinsson, 2009; Li, Liang, Xu, & Liu, 2018). Overall, our findings support the notion that donors avoid giving or give less to nonprofits with high overhead expenses.

More importantly, our findings on the effective performance strategy and high transparency strategy extend the prior research on overhead-free solicitation strategies to reduce donors' aversion to high overhead expenses. Specifically, we found that informing potential donors of the nonprofit organization's commitment to transparency was effective in increasing the propensity to give and the size of the donation, while informing potential donors of the nonprofit's mission-related performance shaped the amount of the donation offered.[16] Both performance and transparency strategies are effective in breaking the nonprofit starvation cycle as shown in our study, but seem to promote charitable giving in different ways (i.e. giving propensity vs giving amount). Gneezy et al. (2014) studied the overhead-free solicitation strategy. However, their proposed overhead-free strategy may not be the final word in overcoming overhead aversion. First, this strategy requires that nonprofits identify sufficient targeted funding sources to cover the overhead expenses. Second, this strategy makes an unnecessary assumption that donors will always and under all circumstances have an aversion towards nonprofits that have high overhead expenses. Our findings suggest that donors are willing to donate to high-overhead nonprofits as long as those nonprofits are effective and transparent.

When interpreting our results, readers should be aware that we only tested the two strategies with one type of nonprofit organization, one with an environmental protection mission. It is possible that donors might react differently to the same information if the recipient nonprofit organization were operating in a different field of nonprofit activity (e.g., human services, health, arts, education, etc.). Additionally, the current study tested both strategies using a sample of college students. We attempted to mimic a real donation situation by using the cover story and asking participants to make a charitable donation from their study payment. However, the charitable decision-making of college students could be different from other types of donors (e.g., high net worth individuals or elderly community members). Therefore, to provide a comprehensive understanding of the interactions among performance, transparency, and overhead expenses, future studies should test other types of nonprofit organizations and recruit different types of participants. The study is also limited by not being able to run a direct manipulation check on high overhead information for the control group because there is no overhead information provided in this group. In order to ensure the validity of our findings, we used a proxy measure, participants' perception of the highest overhead ratio, to run an indirect check on our manipulation of high overhead and excluded participants that failed our screening and manipulation check. The last limitation was that the current study was unable to deal with the potential interaction effects between Performance and Transparency, nor further investigate potentially different mechanisms of information of Performance and Transparency on giving. Future research could pursue this possibility and replicate our findings.

Even with these limitations, this study contributes to our understanding of donors' overhead aversion by showing that nonprofit organizations can take the lead in breaking the

starvation cycle by offering performance information to donors and being transparent. Based on the results reported, this study advances active strategies to handle donors' aversion towards nonprofit overhead. Second, this study contributes to the understanding of donors' overhead aversion primarily through agency theory by emphasizing the importance of nonprofit information provision to overcome information asymmetry and monitoring problems. It differs from previous studies that use either institutional or resource dependence theory to understand the aversion phenomenon.

Finally, this study has significant implications for nonprofits with high overhead expenses that struggle to effectively handle donors' overhead aversion. Our results suggest that potential donors care about a nonprofit's performance and transparency and are willing to look past a simple statistical ratio in their decision-making process for their charitable giving. Therefore, we conclude that nonprofits should consider in their fundraising appeals how best to communicate the impact that their organizations achieve while demonstrating a real commitment to transparency, rather than simply being drawn into a damaging and unsustainable race to the bottom on overhead spending.

Notes

1. The term "the overhead myth" refers to the false notion that overhead ratios are the best indicators of nonprofit efficiency.
2. Other categories include Arab American/Arabian (3%), Native Hawaiian or other Pacific Islander (1%), mixed race (6%), and unidentified others (6%).
3. We selected a ratio of 35 % to manipulate a high level of overhead expenses based upon the previous literature that states most donors believe that at least 80 % of a nonprofit's expenses should go to program services and an overhead ratio over 30 % is unacceptable (Williams, 2007). Also, according to the Princeton Survey Research Associates, an overhead ratio of 35% is considered a high expense allocation. The research also suggested that the reported overhead ratio gradually declined, due to the overhead myth, in the past twenty years, from around 30 % in 1985 to around 20 % in 2007 (Lecy & Searing, 2015). Therefore, it is reasonable to use a ratio of 35 % to manipulate a high level of overhead.
4. In order to rule out the potential confounding factors that might affect the donations due to adding a visual chart to manipulate the high overhead information to the three experimental conditions, we decided to add a similar-looking pie chart in the No Overhead Information condition to describe the nonprofit organization's program focus, which was already in the narratives in all four conditions.
5. The study was run on five different sessions from 9 am to 5 pm on three days. There were no statistically significant differences in donation decision across different sessions, $F(4,153) = 1.32$, $p = .26$, and no statistically significant differences in donation amount across different sessions, $F(4,153) = 1.9$, $p = .11$.
6. The video is available at https://youtu.be/hMuql7ydhmM
7. The list of measures in the demographic and additional information section includes: age, gender, race, type of current working institution, religious affiliation, political affiliation, nonprofit working experiences, volunteering and donation experiences, family income, marital/relationship status, number of children, personal traits, and social desirability.
8. Two researchers on the team independently coded the open answers into two dummy variables depending on whether they indicated concerns regarding nonprofit performance or transparency. The coding consistency reached 87%. An example coded as 1 for both performance and transparency concerns was "give specific examples of what you have done/achieved; other than issue grants". An example coded as 1 for only performance concern was "If your goal is 20% and you spent 35% that seems less efficient". An example coded as 1 for only transparency concern was "need to see ratio of donations versus other funding provided by other sources".
9. Our study had two screening questions that were designed to check whether participants paid attention to the study materials, which is critical to survey experiments. Among these forty-six participants, forty-four failed to pass the first screening question regarding the percentage of the funds that EnviroCare spent on the overhead expenses (also the manipulation checks on high overhead), six failed to pass the second screening question regarding the mission of the organizations, and forty-six participants got

either of screening questions wrong. And there is no statistical difference of the proportion of dropout with respect to condition (p=.39). In order to quality-control our data and analysis, we decided to exclude these participants for the report in main text. And we replicated the results using a sample of 200 and the results were not from the current analysis in our data. These results details are available based upon request.

10. We checked the differences in the donations across conditions between the final sample and the excluded sample, and did not find significant differences: (1) sample before excluding, F (3,199) =8.96, p<0.001 and (2) sample of excluded observations, F (3, 44) =12.17, p<0.001. The detailed results are available upon requests.
11. The statistics on the randomization check on demographic characteristics are reported by variables in order: age, F (3,153)=2.37, p=.07; gender, χ(3)=2.44, p=.49; ethnicity, χ(21)=26.04, p=.21; types of current working institution, χ(12)=13.78, p=.32; religious affiliation, χ(21)=19.07, p=.58; frequency of religious attendance, F (3,153) =.47, p=.70; political affiliation, χ(18)=15.55, p=.62; whether work for a nonprofit, χ(3)=1.07, p=.78; length of nonprofit work, F (3,153) =1.53, p=.21; whether volunteered, χ(3)=3.18, p=.36; volunteering frequency, F (3,153) =.33, p=.81; whether donated, χ(3)=5.56, p=.14; donation frequency, F (3,153) =1.69, p=.17; family income, F (3,153) =1.29, p=.28; current relationship, χ(9)=11.89, p=.22; number of children, F (3,153) =1.23 p=.30; and social class, F (3,146) =.41, p=.75.
12. Therefore, we checked the associations between age and *decision to donate* and *donation amount*, respectively, and the results indicated that age was not statistically associated with either of the measures on charitable donations (ps>.17), suggesting that age is unlikely to affect donations among the experimental group.
13. The results indicated that being an Asian (0=no and 1= yes) or being a Buddhist (0=no and 1= yes) were positively correlated with participants' charitable donation (ps<.003). Since being an Asian was highly correlated with being a Buddhist (r=.05, p<.001), we decided to include only one covariate in the analysis for the robustness check to avoid a collinearity issue. We chose to exclude Buddhist for the fact that only three people reported being Buddhists. Perceptions on association between overhead expenses and effectiveness/efficiency was also identified to be a potential covariate.
14. The sensitivity power analysis indicates that our study sample is capable of detecting an intermediate effect size, f=0.27, which can be transformed into an odd ratio=2.663 or η2=0.07. This means if the study is replicated, it would have 80% to detect the difference between two groups when the effect size is larger than f=0.27 or the transformed values.
15. Research has showed that some donors do not donate to high-performance nonprofits and prefer giving to vulnerable nonprofits that really need resources (Calabrese, 2011). This explains why there is no significance between the high overhead group and the high overhead and performance group when we measure the propensity to give. However, the amount of money donated to effective nonprofits is significantly higher when compared to that of high overhead group. These indicate that donors have dramatically different reactions to high-performance nonprofits.

Acknowledgement

We sincerely thank the reviewers and editor for spending time reviewing our manuscript and providing valuable feedback. In addition, we would like to acknowledge the Center for Social Impact Strategy, University of Pennsylvania, for providing a generous funding support to this research.

References

Bowman, W. (2006). Should donors care about overhead costs? Do they care? *Nonprofit and Voluntary Sector Quarterly, 35*(2), 288-310.

Buchheit, S., & Parsons, L. M. (2006). An experimental investigation of accounting information's influence on the individual giving process. *Journal of Accounting and Public Policy, 25*(6), 666-686.

Calabrese, T. D. (2011). Do donors penalize nonprofit organizations with accumulated wealth? *Public Administration Review, 71*(6), 859-869.

Carlsson, F., He, H., & Martinsson, P. (2009). Easy come, easy go-The role of windfall money in lab and field

experiments. *rapport nr.: Working Papers in Economics 374*.

DiMaggio, P., & Powell, W., (1983.) The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociology Review*. 48, 147-60.

Gneezy, U., Keenan, E. A., & Gneezy, A. (2014). Avoiding overhead aversion in charity. *Science, 346*(6209), 632-635.

Greenlee, J. S., & Brown, K. L. (1999). The impact of accounting information on contributions to charitable organizations. *Research in Accounting Regulation, 13*, 111-126.

Gregory, A. G., & Howard, D. (2009). The nonprofit starvation cycle. *Stanford Social Innovation Review, 7*(4), 49-53.

Hager, M., Pollak, T., Wing, K., & Rooney, P. (2004). *Getting what we pay for: Low overhead limits nonprofit effectiveness*. Nonprofit Overhead Cost Project, Brief No. 3 from the Center on Nonprofits and Philanthropy at the Urban Institute and the Center of Philanthropy at Indiana University.

Hager, M. A. (2004). *The pros and cons of financial efficiency standards*. Nonprofit Overhead Cost Project, Brief No. 5 from the Center on Nonprofits and Philanthropy at the Urban Institute and the Center of Philanthropy at Indiana University.

Hibbert, S., & Horne, S. (1996). Giving to charity: questioning the donor decision process. *Journal of Consumer Marketing, 13*(2), 4-13.

Keating, E. K., & Frumkin, P. (2003). Reengineering nonprofit financial accountability: Toward a more reliable foundation for regulation. *Public Administration Review, 63*(1), 3-15.

Kinsbergen, S., & Tolsma, J. (2013). Explaining monetary donations to international development organisations: A factorial survey approach. *Social science research, 42*(6), 1571-1586.

Krawczyk, K., Wooddell, M., & Dias, A. (2017). Charitable giving in arts and culture nonprofits: The impact of organizational characteristics. *Nonprofit and Voluntary Sector Quarterly, 46*(4), 817-836.

Krishnan, R., & Yetman, M. H. (2011). Institutional drivers of reporting decisions in nonprofit hospitals. *Journal of Accounting Research, 49*(4), 1001-1039.

Krishnan, R., Yetman, M. H., & Yetman, R. J. (2006). Expense misreporting in nonprofit organizations. *The Accounting Review, 81*(2), 399-420.

Lecy, J. D., & Searing, E. A. (2015). Anatomy of the nonprofit starvation cycle: An analysis of falling overhead ratios in the nonprofit sector. *Nonprofit and Voluntary Sector Quarterly, 44*(3), 539-563.

Li, H., Liang, J., Xu, H., & Liu, Y. (2018). Does windfall money encourage charitable giving? An experimental study. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 1-8.

Marudas, N. P., Hahn, T., & Jacobs, F. A. (2014). An improved model of effects of accounting measures of inefficiency on donations. *Journal of Finance and Accountancy, 15*, 1.

Mitchell, G. E. (2014). Creating a philanthropic marketplace through accounting, disclosure, and intermediation. *Public Performance & Management Review, 38*(1), 23-47.

Mitchell, G. E., & Calabrese, T. D. (2018). Proverbs of nonprofit financial management. *The American Review of Public Administration*, 0275074018770458.

Nikolova, M. (2014). Principals and agents: An investigation of executive compensation in human service nonprofits. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations, 25*(3), 679-706.

Parsons, L. M. (2007). The impact of financial information and voluntary disclosures on contributions to not-for-profit organizations. *Behavioral research in accounting, 19*(1), 179-196.

Pfeffer, J., (1973). Size composition and function of hospital boards of directors: A study of organization environment linkage. *Administrative Science Quarterly, 18*, 349-63.

Portillo, J. E., & Stinn, J. (2018). Overhead aversion: Do some types of overhead matter more than others? *Journal of Behavioral and Experimental Economics, 72*, 40-50.

Saxton, G. D., Neely, D. G., & Guo, C. (2014). Web disclosure and the market for charitable contributions. *Journal of Accounting and Public Policy, 33*(2), 127-144.

Schubert, P., & Boenigk, S. (2019). The nonprofit starvation cycle: Empirical evidence from a German context. *Nonprofit and Voluntary Sector Quarterly, 48*(3), 467-491.

Shon, J., Hamidullah, M. F., & McDougle, L. M. (2018). Revenue structure and spending behavior in nonprofit organizations. *The American Review of Public Administration*, 0275074018804562.

Steinberg, R. (1986). The revealed objective functions of nonprofit firms. *The RAND Journal of Economics*, 508-526.

Steinberg, R., & Morris, D. (2010). Ratio discrimination in charity fundraising: The inappropriate use of cost ratios has harmful side-effects. *Voluntary Sector Review*, 1(1), 77-95.

Surysekar, K., Turner, E. H., & Wheatley, C. M. (2014). On the association between donor-imposed financial inflexibility and future donations to charitable organizations. *Journal of Management Accounting Research, 27*(1), 63-79.

Surysekar, K., Weismann, M. F., Forgione, D. A., & Carmenate, J. (2015). The legal environment of physician compensation. *Journal of Health Care Finance, 42*(2).

Tinkelman, D., & Mankaney, K. (2007). When is administrative efficiency associated with charitable donations? *Nonprofit and Voluntary Sector Quarterly, 36*(1), 41-64.

Trussel, J. (2003). Assessing potential accounting manipulation: The financial characteristics of charitable organizations with higher than expected program-spending ratios. *Nonprofit and Voluntary Sector Quarterly, 32*(4), 616-634.

Appendix

Table a1
Descriptive Summary of Donation Propensity and Donation Amount

Conditions	% of participants donated	Average donation amount	Total donation amount
High Overhead	45.9%	1.72	63.5
Control	70.2%	2.7	100
High Overhead and High Performance	63.40%	4.16	170.5
High Overhead and High Transparency	76.90%	4.12	161

Experimental Manipulation Messages

High Overhead Condition

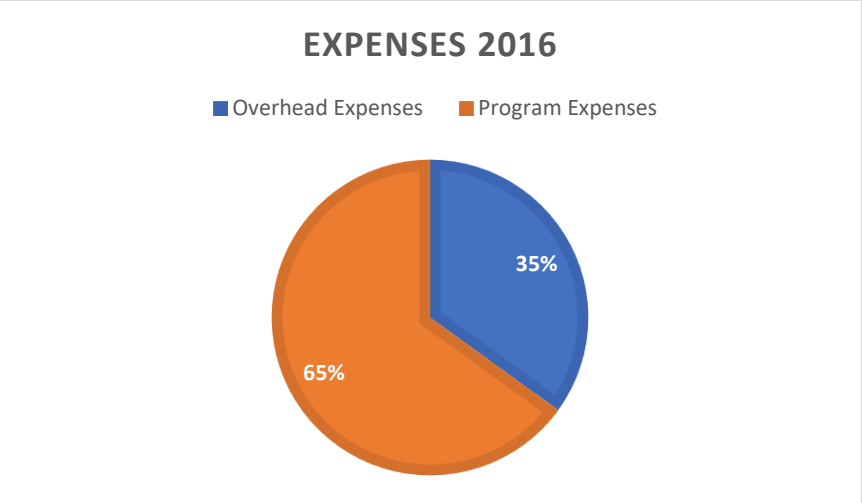
Dear participant,

Every day in newspapers and magazines, we are confronted with a single, daunting conclusion: human impact on our environment is becoming broader and more dangerous. We have systematically added 2.3 trillion tons of carbon dioxide into our atmosphere over the last 200 years, with half this amount added only in the past 30 years. These trends have not yet started to decrease, and are instead rising at an alarming rate that cannot be sustained indefinitely. The consequences of our growth have affected not only the quality of human life, but they have also impacted the many animals and organisms in our environment. Collectively, we have failed to both protect for our quality of life and that of the all the other species with whom we share this planet. As a result, our Earth is witnessing dying ecosystems, depleted habitats, and polluted water, which affect all of us.

Concerned citizens have grown increasingly aware of the growing human impact on the natural world, and many have become outspoken voices for change and reform. Our organization, EnviroCare, supports, through small grassroots grants, the projects initiated by environmentally aware citizens in their local communities. Since 2008, our organization has been focused specifically on local programs aimed at reducing carbon emissions and waste pollution *through implementing environment friendly protocols for major companies and organizing volunteer projects*. Our organization has grown up to be a mid-sized organization in 2017.

Below is a chart indicating EnviroCare's expenses allocation between overhead (non-program) and programs in 2016. The overhead number you see includes administrative and fundraising expenses, such as the salaries of staff members and the fundraising marketing expenses we incur as we raise money for the local programs we support. ***People believe*** that nonprofits make impact through their programs thus insist that ***the overhead (non-program) expenses should NOT exceed 20 percent of the total expenses***.

As the chart indicated, we spent 35 percent on overhead (non-program) expenses in 2016 and 65 percent on program expenses.



Our organization's programs have focused on the following environmental protection activities:

- Carbon emission
- Waste pollution

To continue fighting for our health and environment we need your help. We share this world and therefore we must all work together to preserve it for future generations. We ask you to consider making a donation to support our programs in environmental protection. Any amount, big or small, will help us to make the changes needed to give us all cleaner water, fresher air, and a healthier environment.

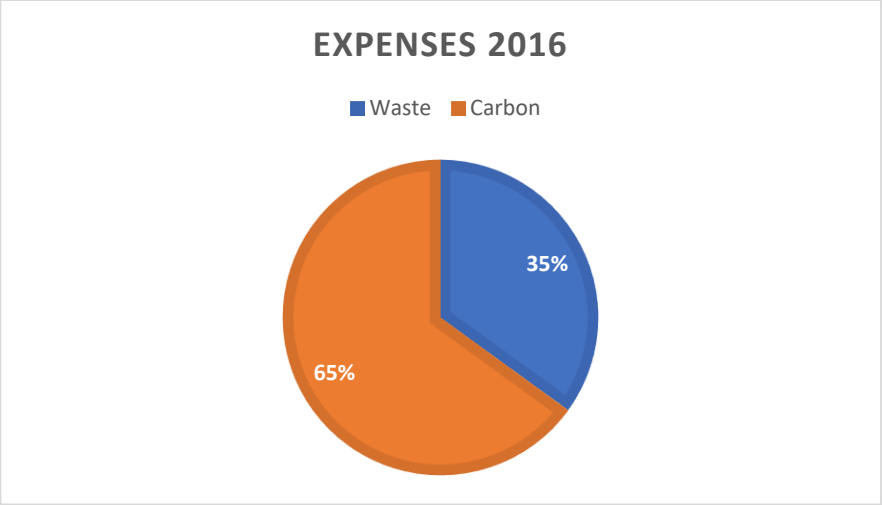
No Overhead Information Condition

Dear participant,

Every day in newspapers and magazines, we are confronted with a single, daunting conclusion: human impact on our environment is becoming broader and more dangerous. We have systematically added 2.3 trillion tons of carbon dioxide into our atmosphere over the last 200 years, with half this amount added only in the past 30 years. These trends have not yet started to decrease, and are instead rising at an alarming rate that cannot be sustained indefinitely. The consequences of our growth have affected not only the quality of human life, but they have also impacted the many animals and organisms in our environment. Collectively, we have failed to both protect for our quality of life and that of the all the other species with whom we share this planet. As a result, our Earth is witnessing dying ecosystems, depleted habitats, and polluted water, which affect all of us.

Concerned citizens have grown increasingly aware of the growing human impact on the natural world, and many have become outspoken voices for change and reform. Our organization, EnviroCare, supports, through small grassroots grants, the projects initiated by environmentally aware citizens in their local communities. Since 2008, our organization has been focused specifically on local programs aimed at reducing carbon emissions and waste pollution *through implementing environment friendly protocols for major companies and organizing volunteer projects*. Our organization has grown up to be a mid-sized organization in 2017.

Below is a chart that shows the distribution of our expense in programs. In 2016, 65 percent of the local projects we supported were focused on reducing carbon emission, while 35 percent focused on cutting the amount of unrecycled waste produced in the community.



To continue fighting for our health and environment we need your help. We share this world and therefore we must all work together to preserve it for future generations. We ask you to consider making a donation to support our programs in environmental protection. Any amount, big or small, will help us to make the changes needed to give us all cleaner water, fresher air, and a healthier environment.

High Overhead and Performance Condition

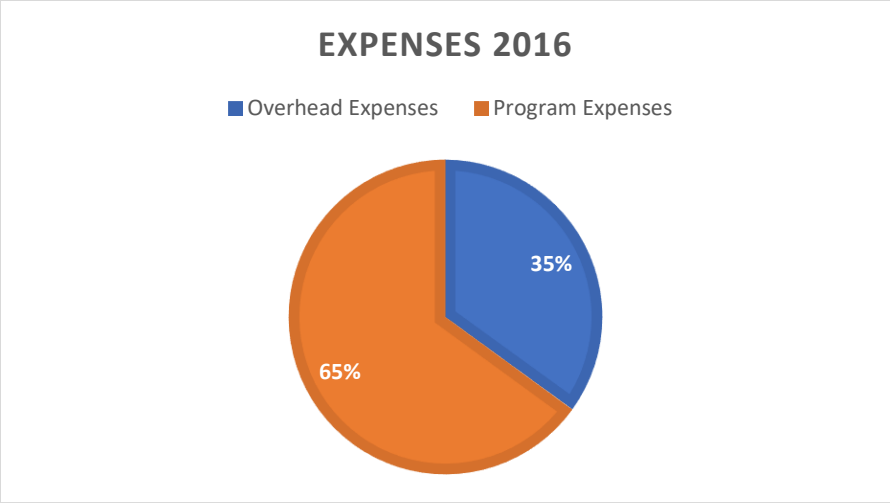
Dear participant,

Every day in newspapers and magazines, we are confronted with a single, daunting conclusion: human impact on our environment is becoming broader and more dangerous. We have systematically added 2.3 trillion tons of carbon dioxide into our atmosphere over the last 200 years, with half this amount added only in the past 30 years. These trends have not yet started to decrease, and are instead rising at an alarming rate that cannot be sustained indefinitely. The consequences of our growth have affected not only the quality of human life, but they have also impacted the many animals and organisms in our environment. Collectively, we have failed to both protect for our quality of life and that of the all the other species with whom we share this planet. As a result, our Earth is witnessing dying ecosystems, depleted habitats, and polluted water, which affect all of us.

Concerned citizens have grown increasingly aware of the growing human impact on the natural world, and many have become outspoken voices for change and reform. Our organization, EnviroCare, supports, through small grassroots grants, the projects initiated by environmentally aware citizens in their local communities. Since 2008, our organization has been focused specifically on local programs aimed at reducing carbon emissions and waste pollution *through implementing environment friendly protocols for major companies and organizing volunteer projects*. Our organization has grown up to be a mid-sized organization in 2017.

Below is a chart indicating EnviroCare's expenses allocation between overhead (non-program) and programs in 2016. The overhead number you see includes administrative and fundraising expenses, such as the salaries of staff members and the fundraising marketing expenses we incur as we raise money for the local programs we support. ***People believe*** that nonprofits make impact through their programs thus insist that ***the overhead (non-program) expenses should NOT exceed 20 percent of the total expenses***.

As the chart indicated, we spent 35 percent on overhead (non-program) expenses in 2016 and 65 percent on program expenses.



This year, our organization received a major international award for our **outstanding achievements in the environment protection**. This prestigious award recognized our contribution in the following activities:

- Effectively reduced carbon emission by 20% last year in the communities in which we worked;
- Successfully implemented environment friendly protocols for more than 100 major carbon emitting companies; and
- Efficiently organized more than 80 volunteer projects with over 5,000 volunteers that target areas of high waste pollution.

To continue fighting for our health and environment we need your help. We share this world and therefore we must all work together to preserve it for future generations. We ask you to consider making a donation to support our programs in environmental protection. Any amount, big or small, will help us to make the changes needed to give us all cleaner water, fresher air, and a healthier environment.

High Overhead and Transparency Condition

Dear participant,

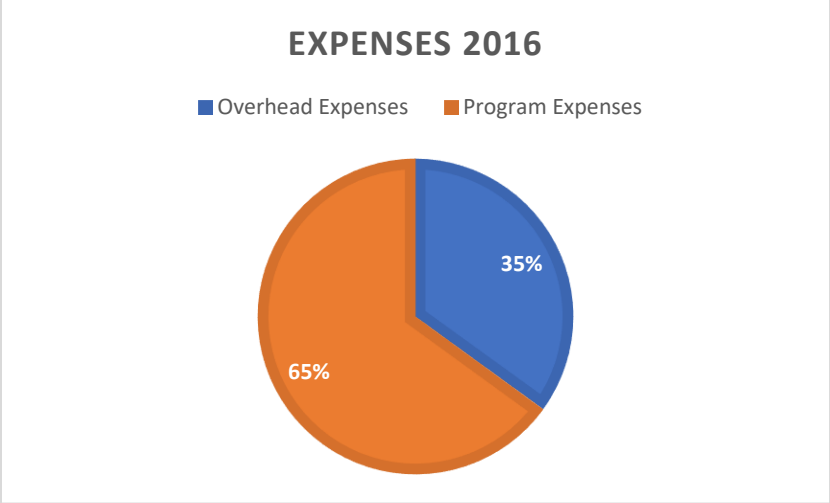
Every day in newspapers and magazines, we are confronted with a single, daunting conclusion: human impact on our environment is becoming broader and more dangerous. We have systematically added 2.3 trillion tons of carbon dioxide into our atmosphere over the last 200 years, with half this amount added only in the past 30 years. These trends have not yet started to decrease, and are instead rising at an alarming rate that cannot be sustained indefinitely. The consequences of our growth have affected not only the quality of human life, but they have also impacted the many animals and organisms in our environment. Collectively, we have failed to both protect for our quality of life and that of the all the other species with whom we share this planet. As a result, our Earth is witnessing dying ecosystems, depleted habitats, and polluted water, which affect all of us.

Concerned citizens have grown increasingly aware of the growing human impact on the natural world, and many have become outspoken voices for change and reform. Our organization, EnviroCare, supports, through small grassroots grants, the projects initiated by environmentally aware citizens in their local communities. Since 2008, our organization has been focused specifically on local programs aimed at reducing carbon emissions and waste pollution *through implementing environment friendly protocols for major companies and organizing volunteer projects*. Our organization has grown up to be a mid-sized organization in 2017.

Below is a chart indicating EnviroCare's expenses allocation between overhead (non-program) and programs in 2016. The overhead number you see includes administrative and fundraising expenses, such as the salaries of staff members and the fundraising marketing expenses we incur as we raise money for the local

programs we support. ***People believe*** that nonprofits make impact through their programs thus insist that ***the overhead (non-program) expenses should NOT exceed 20 percent of the total expenses***.

As the chart indicated, we spent 35 percent on overhead (non-program) expenses in 2016 and 65 percent on program expenses.



This year, our organization receives a notable international award for our **transparency**. This prestigious award recognizes our following activities:

- Constantly using external audits to ensure the organization adhere to the accounting principles;
- Having a clearly stated mission, programs, financial information, personnel information (board, employees, key officers, volunteers, etc.) in the annual report, IRS disclosure form, and official website;
- Having clearly articulated organizational strategies, ethical codes, values, and goals in the annual report and on the website; and
- Making it easy for stakeholders to get information about the organization in different ways, such as emails, apps, official website, and phone.

To continue fighting for our health and environment we need your help. We share this world and therefore we must all work together to preserve it for future generations. We ask you to consider making a donation to support our programs in environmental protection. Any amount, big or small, will help us to make the changes needed to give us all cleaner water, fresher air, and a healthier environment.