

## RESEARCH ARTICLE



# Effects of donation collection methods on donation amount: Nudging donation for the cause and overhead

Kwanho Suk<sup>1</sup> | Triza Mudita<sup>2</sup>

<sup>1</sup>School of Business, Korea University, Seoul, Korea

<sup>2</sup>Faculty of Economics and Business, Universitas Indonesia, Depok, Indonesia

## Correspondence

Triza Mudita, Faculty of Economics and Business, Universitas Indonesia, UI Campus, Depok 16424, Indonesia.  
Email: [triza.m@ui.ac.id](mailto:triza.m@ui.ac.id)

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## Abstract

This research examines the influence of donation collection methods on the amounts of donation, focusing on donations for the cause and overhead. This research examines the effects of the three donation collection methods (allocation, cause-first addition, and overhead-first addition) that vary in terms of the procedure through which the donation amount is decided. The results of three empirical studies indicate that the donation collection method affects the amounts donated for the cause and overhead, in addition to the total donation amount. Study 1 shows that donors tend to donate more for the cause when the collection method asks them to add an extra amount for overhead to the amount donated for the cause (i.e., cause-first addition) than when the collection method asks donors to allocate their total donation amounts to the cause and overhead (i.e., allocation), which also affects the total donation amount. Studies 2 and 3 test the effects of the donation collection order by comparing between the cause-first and the overhead-first addition methods. Results show that donors tend to donate more to the cause and overhead when the donation amount for overhead is asked first (i.e., overhead-first) than when the donation amount for the cause is asked first (i.e., cause-first). Furthermore, in all three studies, donors' satisfaction with the donation is not affected by the collection methods.

## KEYWORDS

choice architecture, donation, nudging, overhead aversion

## 1 | INTRODUCTION

Charitable organizations spend donated funds for programs (i.e., helping the cause) and for their operations (i.e., overhead). There have been increasing interests and concerns among donors, charities, and the public regarding charitable organizations' overhead spending. Donors tend to respond negatively to charities with a high overhead ratio, which is called overhead aversion (Gneezy et al., 2014). For instance, a survey showed that nearly 6 out of 10 American donors believe that a typical charity spends more than a reasonable amount of overhead (Grey Matter Research & Consulting, 2018), which has a detrimental influence on charitable donations (Charles et al., 2020; Gneezy et al., 2014; Karlan & List, 2007).

Because overhead is inevitably necessary for nonprofit organizations' ongoing operations to accomplish their missions, warnings about the excessively negative attitude toward overhead have been raised (Bowman, 2006; Qu & Daniel, 2021). Given that the negative attitude toward overhead can damage charity's operations, several ways to reduce overhead aversion or to increase donations for the overhead have been proposed. For instance, previous research showed that addressing the importance and necessity of overhead can be a remedy (Keenan & Gneezy, 2016; Qu & Daniel, 2021). Another stream of research presents that raising separate funds to cover operating expenses can reduce overhead aversion (Charles et al., 2020; Gneezy et al., 2014; Karlan & List, 2007).

This research applies choice architecture to mitigate overhead aversion. Choice architecture refers to influencing people's decisions and behaviors by changing the design and contextualization of choice structure, which is also called nudging (Thaler & Sunstein, 2008). A property of choice architecture is influencing decisions and behaviors without incentives, coercion, or rational persuasions (Ruehle et al., 2021; Thaler & Sunstein, 2008). This research examines the influences of the designs of donation collection methods on donation to the cause and overhead. Donation collection methods refer to the procedures that donors go through at the stage of donation closing, mostly at the charities' websites. For example, Appendix A presents examples of donation collection methods. Some charitable organizations receive a separate donation for the overhead by asking donors to add either a fixed percentage of their donation to a charitable program for the overhead (Figure A1) or a separate amount for the overhead (Figure A2).

This research compares donation collection methods in terms of their influence on people's decisions about how much they donate to the cause and overhead. Figure 1 presents the donation collection methods that are examined in this research, and the result of three empirical studies. The allocation method asks donors to determine the total amount first and then to allocate the total into the amounts for the cause and the overhead. The addition method measures the amount donated to the cause and the overhead sequentially. There are two types of addition methods depending on which is asked first: cause-first and overhead-first. It is hypothesized that the amount donated to the cause and overhead differ depending on the donation collection method, and the results of three empirical studies support the hypotheses. Study 1 tests the allocation and the cause-first addition donation collection methods. Studies 2 and 3 compare the cause-first and the overhead-first addition methods. We also examine the donation collection methods in terms of their influence on real monetary donation (Study 2) and their underlying process (Study 3). Last, we also confirm that the use of choice architecture involving the donation collection method does affect donor satisfaction, which is an important downstream consequence of donation.

This research expects to contribute to charitable donation literature by suggesting that the donation collection method can be an effective nudging tool. Several types of choice architecture tools have been widely used, including default options, changing the presentation order of choice options, and composition of decision sets (Hummel & Maedche, 2019; Johnson et al., 2012, for reviews).

These choice architecture tools have also been widely applied in various domains, such as environmental protection (Pichert & Katsikopoulos, 2008), personal financing (Madrian & Shea, 2001), and donations (Johnson & Goldstein, 2003). However, few attempts have been made to apply choice architecture to influence donation to charitable organizations' overhead (except for Altmann et al., 2019). Moreover, despite the use of various nudging tools in the literature, the measurement method (i.e., donation collection methods) that we propose has not been applied in the charitable donation domain.

This research also expects to contribute to overhead aversion research and practice. This work employs the donation process as an unobtrusive nudging tool to avoid overhead aversion. This research also presents important practical implications for nonprofit organizations by proposing a simple choice architecture technique to increase donors' contributions with minimal backfire effects (e.g., reduced satisfaction).

## 2 | THEORETICAL BACKGROUND

### 2.1 | Choice architecture and donation

Various choice architecture tools have been applied to the donation context as an intervention for influencing donation decisions and behaviors, such as charity selection and donation amount (Goswami & Urmsky, 2016; Schulz et al., 2018; Zarghamee et al., 2017). Table 1 presents a summary of the related literature.

In this section, we focus our discussion on the influence of choice architecture on the donor's decision about the donation amount, which is more relevant to this research. One of the nudging tools that affect donation amount is option framing. People are more likely to stick to the status quo when the option is presented as an opt-out (i.e., eliminating from the total) than an opt-in (i.e., adding from the baseline). For instance, Zarghamee et al. (2017) showed that how much individuals donate from their total incomes differs depending on whether the donation decision is presented as an opt-in or an opt-out option. People tend to donate more when donating all income is the default option and they decide how much to keep themselves (i.e., opt-out) than when zero donation is the default option and they decide how much to donate from their income (i.e., opt-in). This result shows that the option framing effect that is commonly used in

| Donation collection methods |                | Donation decisions |                 | Study results |          |          |
|-----------------------------|----------------|--------------------|-----------------|---------------|----------|----------|
|                             |                | 1st phase          | 2nd phase       | Total         | Cause    | Overhead |
| Allocation                  |                | Total amount       | Cause, Overhead |               |          |          |
| Addition                    | Cause-first    | Cause              | Cause, Overhead | ^ S1          | NS1      | ^ S1     |
|                             | Overhead-first | Overhead           | Cause, Overhead | ^ S2, S3      | ^ S2, S3 | ^ S2, S3 |

**FIGURE 1** An overview of the donation collection methods and study results. S1, S2, and S3 refer to Studies 1, 2, and 3, respectively.

**TABLE 1** Past literature on nudging tools that affect donation decisions

| Authors                     | Nudging tool                        | Key findings   |
|-----------------------------|-------------------------------------|--|
| Altmann et al. (2019)       | Default amount                      | The donation amount was affected by the default amount presented on the donation decision screen.                                      |
| Doob and McLaughlin (1989)  | Default amount                      | People tended to donate more when the request amount was larger (vs. smaller).   |
| Ghesla et al. (2019)        | Default amount                      | Setting a high default amount increased donation.  |
| Goswami and Urminsky (2016) | Default amount                      | Individuals' decisions about the donation amount were strongly influenced by the default amount, which affected the charity's revenue. |
| Schultz et al. (2018)       | Default option                      | In charity choice, donors tended to donate to one of the default charitable organizations (i.e., status quo bias).                     |
| Zarghamee et al. (2017)     | Option framing (opt-in vs. opt-out) | Individuals tended to donate more when the decision about the donation amount is presented as opt-out than opt-in.                     |

marketing settings (Levin et al., 2002; Park et al., 2000) can be applied to donation settings.

Another nudging technique that influences donation amount is changing the default donation amount (Altmann et al., 2019; Doob & McLaughlin, 1989; Ghesla et al., 2019; Goswami & Urminsky, 2016). For example, Goswami and Urminsky (2016) showed that when the default donation amount is lower (vs. higher), more people participate in donation, but they tend to donate lesser amounts (see also Altmann et al., 2019).

## 2.2 | Remedies for overhead aversion

Although overhead spending is essential for charities' operations to help the cause, donors respond negatively to the overhead spending because donors tend to perceive that their donated money that is supposed to help the cause is wasted by charities. This negative evaluation of overhead is called overhead aversion (Gneezy et al., 2014). Given that overhead spending is essential for charities' ongoing operations, several methods have been proposed to overcome overhead aversion or to increase donors' donations for the overhead. First, past research showed that covering the overhead expenses by a third party can be a way to reduce the negative influence of overhead. Gneezy et al. (2014) showed that donors are more willing to donate when all of the donors' donation money can be used to help the cause because charities' overhead has been covered by a third party's donation. Charles et al. (2020) re-examined the findings of Gneezy et al. (2014) and found that the influence of the third party's payment on the reduction of overhead aversion was stronger (weaker) when the charity's overhead ratio is high (low). However, this situation (i.e., a third party pays for overhead) is difficult to expect for every fundraising situation. Second, informing donors of the importance of overhead is another way to overcome overhead aversion (Keenan & Gneezy, 2016; Qu & Daniel, 2021). Past research showed that overhead aversion can be reduced by addressing the importance and necessity of overhead (Keenan & Gneezy, 2016) or by presenting the purpose of overhead as building

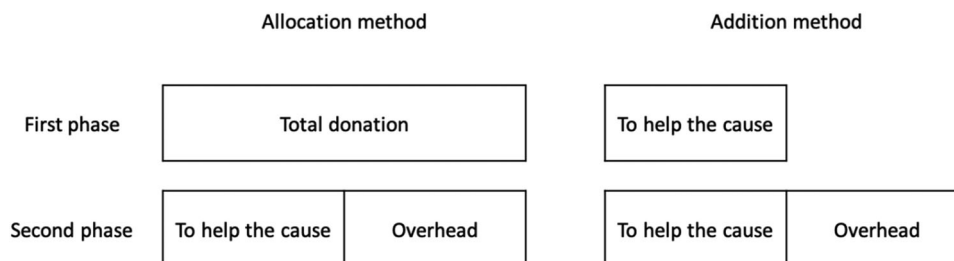
long-term organization capacity instead of as operating expenses (Qu & Daniel, 2021). Third, having donors to decide how to allocate a donation for the overhead is another way to increase donations for charities' overhead (Keenan et al., 2017). Finally, choice architecture can also be applied to affect the amounts donated to overhead. Applying the default amount effect, Altmann et al. (2019) showed that donations for overhead are affected by default percentage, that is, donors are more likely to select the overhead percentage presented as a default (e.g., 15% of the donation amount for the cause).

## 3 | DONATION COLLECTION METHOD AND DONATION TO THE CAUSE AND OVERHEAD

A review of the past literature on overhead aversion and choice architecture in the donation domain suggests the uniqueness of our approach, which uses the donation collection method as a choice architecture tool to affect donations to the cause and overhead. First, past research that has applied choice architecture mostly focused on charity selection and the total donation amount. Despite the importance of overhead in donation decisions, little attempt has been made to apply choice architecture techniques for nudging the amount donated to the cause and overhead. Second, although several ways to reduce overhead aversion have been proposed in the literature, less intrusive nudging tools are not commonly applied as a remedy for overhead aversion. Below, we propose that the ways by which the amounts of donation are measured can affect donation decisions.

### 3.1 | Allocation and addition as donation collection methods

Several different procedures or methods are available for collecting donations for overhead, and this research focuses on the allocation and the addition methods. The allocation method is a sequential process, in which one first determines the total donation amount and



**FIGURE 2** Donation collection procedures of the allocation and the addition methods

then decides how to split it into the donation for the cause and overhead (e.g., Keenan et al., 2017).

The addition is another sequential donation collection method in which one determines how much to donate to the cause and then decides the amount donated for the overhead. As shown in Appendix A, some charitable organizations employ the addition method, in which the donor decides the amount donated to the cause first and then decides the amount donated to overhead. The procedures of the allocation and the addition methods are presented in Figure 2.<sup>1</sup>

We propose that donations for the overhead and the total donation amount differ depending on whether the method to collect donations is allocation or addition. Specifically, we predict that the total donation amount is greater when the donation is collected using the addition method than the allocation method and that the difference is due to the greater amount donated for the cause, rather than that for the overhead.

The two collection methods differ in terms of the donor's decision in the first phase. The allocation method asks donors to decide on the total amount that includes the amounts for the cause and overhead combined.<sup>2</sup> The addition method asks only the amount donated for the cause. In the second phase, however, both collection methods ask donors to decide on the amount they will give for the overhead. Therefore, we expect that the difference between the two methods occurs in the first phase of the decision-making process.

A key difference between the two donation collection methods in the first phase is the extent of unpacking the cause and overhead. Allocation asks donors to think of the total donation amount with little separate thoughts for the cause and overhead. Meanwhile, the addition method asks donors to decide on the amount to donate to the cause. This decision reminds people of the two different domains in which charities spend their collected funds. Unpacking the total tends to increase the sum of the unpacked elements. This reasoning is in line with support theory (Rottenstreich & Tversky, 1997; Tversky & Koehler, 1994), which posits that unpacking the total into elements or subcategories increases elaboration on the unpacked elements, increasing the estimation of each element. This results in

the decision outcome wherein the sum of the unpacked elements is greater than the estimation of the packed total. For instance, the estimation of the likelihood of cancer is smaller than the sum of the estimation of the likelihood of several cancer categories.

We expect a similar unpacking effect for the addition method because it asks donors unpack the total donation into the amounts assigned for the cause and overhead in the first phase. Because of the unpacking effect, donors elaborate on the two different domains of charity spending, resulting in an increase in the sum of donations. However, when allocation is used, donors are more likely to think about charity spending in a packed way, resulting in a smaller total amount compared with the addition method.

Furthermore, we expect a greater total amount for the addition (vs. allocation) method because of the amount donated for the cause, rather than the amount donated for the overhead. We expect that the amount for the overhead is not different between the two collection methods because both methods ask people to make similar decisions on the overhead amount in the second phase. On the basis of our discussion, we propose the following hypotheses:

- H1:** *The total donation amount is greater for the addition method than the allocation method.*
- H2:** *The donation amount for the cause is greater for the addition than that for the allocation method, whereas the donation amount for overhead does not differ between the two methods.*

### 3.2 | Donor satisfaction: Can nudging backfire?

Although nudging has been widely applied in prosocial domains, concerns about potential backfiring effects have been raised (Hummel & Maedche, 2019). For an accurate assessment of nudging, one should examine not only the direct effect on the present decision but also the potential adverse spillover effects. This is because if a negative spillover effect exists, then the total net effect can be less positive or even negative.

One potential adverse effect is on donor satisfaction. The choice architecture technique can affect not only donors' donation amount decisions but also their satisfaction with their donation. One potential direction is that donors are less satisfied with their donations when they donate more because of the choice architecture. First, donors may notice the intentional use of nudging tools by the charity to

<sup>1</sup>The other type of addition method wherein the amount donated to overhead is asked first is examined in Studies 2 and 3.

<sup>2</sup>Previous survey results show that donors have some expectations about the percentage of the donation money to be used for overhead (Charity Navigator, 2008; van Iwaarden et al., 2009). Therefore, it is reasonable to assume that donors are aware that a certain percentage of their donation money will be used to cover overhead expenses.

generate large donations. This recognition can activate persuasion knowledge (Friestad & Wright, 1994), which can generate a negative impression about the charity and reduce satisfaction with their donations. Second, donors may realize that they donate more than they usually do just because of the way the donation is collected. If it occurs, then the donation collection methods that are used in this research are not as effective in the long run.

Although many scholars have raised the possibility of the negative consequences of nudging, most empirical studies on the topic did not present evidence of the backfire effects. First, prior research showed that people's awareness of the potential influence of a nudging tool or recognition of its purpose does not affect prosocial behaviors (Bruns et al., 2018; Kroese et al., 2016; Loewenstein et al., 2015; Steffel et al., 2016). For example, Bruns et al. (2018) showed that informing the participants about the uses and potential influences of default nudge did not significantly influence the default option effect. Second, research also shows that nudging may not have a negative long-term effect. Ghesla et al. (2019) examined the influence of default nudge and found that it does not result in adverse spillover effects on later, subsequent prosocial behaviors. One potential reason for this insignificant influence is because the goal of the nudging is for goodwill (e.g., improving the self, others, or the environment), which does not generate strong reactance to nudging.

Like previous literature, we also expect that the choice architecture used in our study does not have a significant negative influence on satisfaction with a donation. First, we do not explicitly inform the participants about the use of nudging or its potential influence. Second, even if they recognize this influence on donations, we expect that its adverse effect does not exist, in line with the findings of the relevant literature.

## 4 | STUDY 1: ALLOCATION VERSUS ADDITION METHODS

Study 1 compares allocation and addition methods in their influence on the donation amount. As suggested by H1 and H2, it is predicted that donors donate more in total and to help the cause when the collection method is addition than allocation. We also test whether satisfaction with the donation is affected by the donation collection methods.

### 4.1 | Method

A total of 119 participants residing in the United States (26.9% female,  $M_{\text{age}} = 35.76$ ) were recruited from Amazon Mechanical Turk. They participated in a single-factor 2-condition (donation collection method: allocation vs. addition) between-subjects design experiment. The median effect size (i.e., Cohen's  $d = 0.50$ ) was used to determine the sample size (i.e., approximately 65 participants per cell) to have a statistical power that was about 80%.

The participants were presented with a situation in which they were to donate to the Salvation Army. First, the participants were informed that the Salvation Army, an international charitable organization, was currently running a donation campaign to support the daily needs of those who lived in poverty because they have been hit especially hard by the COVID-19 pandemic. Following this information, the participants were asked to imagine a situation in which they had saved up to \$20 USD to donate to the charity's donation campaign. The participants were also informed that the Salvation Army receives donations separately for its own operating costs (i.e., overhead). This information was presented to the participants in all conditions so that they would expect to be asked to donate for the overhead.

The donation collection procedure differed between the allocation and addition methods. The procedures of the two donation collection methods are presented in Figure 2. In the allocation condition, participants first indicated the total amount of money they would like to donate to the Salvation Army on a slider scale ranging from \$0 to \$20. On the next page, they were asked to allocate the total amount of money into the donation for the cause and for covering Salvation Army's operating expenses (i.e., overhead), as shown in Appendix B. In the second phase, the participants were allowed to change the total donation amount they put in the first phase if they wanted to make a change.<sup>3</sup> In the addition condition, the participants were first asked to indicate how much money they would like to donate to the cause on a sliding scale ranging between \$0 and \$20. On the next page, they were asked to indicate how much money they wanted to add to cover Salvation Army's operation expenses, given the amount of money donated for the cause that they answered on the previous page. The participants in the addition condition were also allowed to change the amount they wrote down in the first phase if they wanted to make a change in the second phase. The total amount was automatically calculated. In both conditions, the total donation amount could not exceed \$20.

The dependent variables in both conditions were the total donation amount (sum of the money donated for the cause and overhead), the donation amounts for the cause, and the donation amount for the overhead. We also measured how much they were satisfied with their donation on a 7-point scale (1 = *not at all*, 7 = *very much*). The participants were also asked to indicate their own donation experience with the question "I usually donate to charity" on a 7-point scale (1 = *not at all*, 7 = *very much*). Donation experience was included to examine its potential influence on donation decisions (e.g., Suk & Mudita, 2021). Finally, demographic variables were measured.

<sup>3</sup>The participants were allowed to change the amount in the second phase for two reasons. First, this is more similar to a real donation situation in which the donors can change the amounts they have indicated during the donation process. Second, there might be some participants who wanted to change the donation decision that was made in the first phase, given the additional information in the second phase.

**TABLE 2** Regression analysis results on donation amount in Study 1

| Predictor                     | Total (\$)<br><i>b</i> (SE) | Cause (\$)<br><i>b</i> (SE) | Overhead (\$)<br><i>b</i> (SE) |
|-------------------------------|-----------------------------|-----------------------------|--------------------------------|
| Donation collection: Addition | 2.411 (0.703)               | 2.346*** (0.480)            | 0.065 (0.400)                  |
| Donation experience           | 2.292*** (0.367)            | 1.404*** (0.250)            | 0.888*** (0.209)               |
| Addition × Experience         | 0.298 (0.367)               | 0.236 (0.251)               | 0.062 (0.209)                  |
| Gender: Female                | -2.308 (1.591)              | -0.757 (1.087)              | -1.550* (0.906)                |
| Age                           | 0.131** (0.060)             | 0.066 (0.041)               | 0.065* (0.034)                 |
| Constant                      | 5.395** (2.245)             | 4.614*** (1.533)            | 0.781 (1.278)                  |
| <i>R</i> <sup>2</sup>         | 0.330                       | 0.334                       | 0.181                          |

Note: Ordinary least square (OLS) estimates. Standard errors are in parentheses.

\* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

## 4.2 | Results

### 4.2.1 | Total donation amount

The influence of donation collection method on total donation amount was tested using multiple regression with donation collection method ( $-1 = \text{allocation}$ ,  $1 = \text{addition}$ ), mean-centered experience in donation, the interaction between donation collection method and donation experience,<sup>4</sup> gender ( $0 = \text{male}$ ,  $1 = \text{female}$ ), and age as the independent variables. The result showed that donation collection method was significant ( $t[113] = 3.43$ ,  $p = 0.001$ ), indicating that people tended to donate more when the collection method was addition ( $M = \$11.48$ ,  $SD = 10.61$ ) than allocation ( $M = \$7.37$ ,  $SD = 6.73$ ; Cohen's  $d = 0.55$ ). Donation experience was also significant ( $t[113] = 6.25$ ,  $p < 0.001$ ), suggesting that people with more donation experience tended to donate more in the total amount. The interaction between collection method and donation experience was not significant ( $t[113] = 0.81$ ,  $p = 0.418$ ), implying that the influence of donation collection method on total donation occurred regardless of donation experience. In addition, age was significantly related to donation amount ( $t[113] = 2.21$ ,  $p = 0.029$ ). The results are presented in Table 2.

### 4.2.2 | Donation for the cause and overhead

The total donation amount was divided into donation amounts for the cause and overhead. For each type of donation, we regressed the donation amount on independent variables. The results are presented in Table 2.

For the donation for the cause, the influence of donation collection method was significant ( $t[113] = 4.89$ ,  $p < 0.001$ ). The donation amount to help the cause was greater when the donation collection method was addition ( $M = \$8.91$ ,  $SD = 6.88$ ) than allocation

( $M = \$4.56$ ,  $SD = 4.58$ ;  $d = 0.85$ ). The influence of donation experience was also significant ( $t[113] = 5.61$ ,  $p < 0.001$ ), indicating that people with more experience tend to donate more to the cause. No other variable was significant.

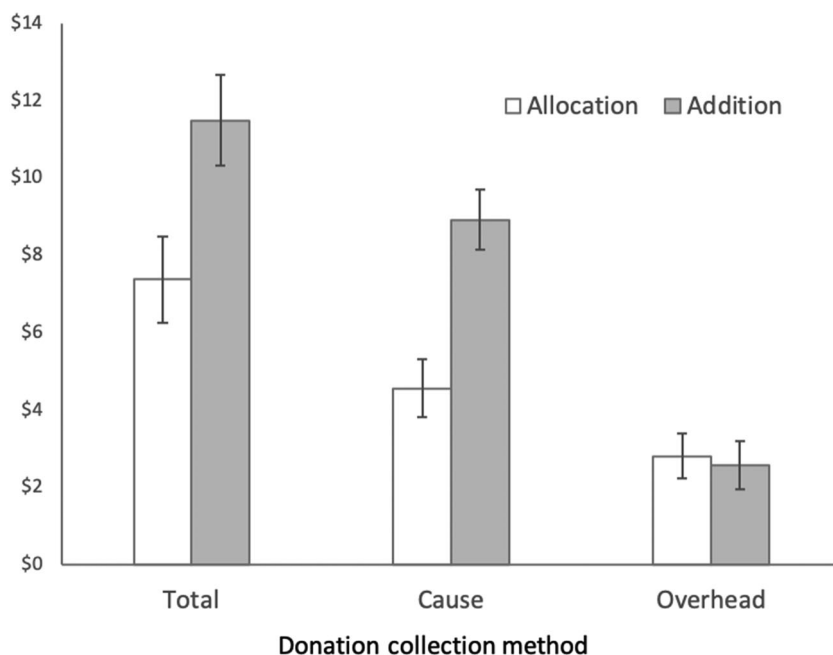
A regression analysis on the donation for the overhead showed that only the influence of donation experience was significant ( $t[113] = 4.26$ ,  $p < 0.001$ ). The influence of donation collection method was not significant ( $t[113] = 0.16$ ,  $p = 0.872$ ;  $M_{\text{allocation}} = \$2.81$ ,  $SD = 3.51$  vs.  $M_{\text{addition}} = \$2.57$ ,  $SD = 5.65$ ;  $d = 0.06$ ). Figure 3 presents the results.

### 4.2.3 | Satisfaction with the donation

We also tested whether the donation collection method has a significant influence on satisfaction with the donation. Table 3 presents the results. The simple regression analysis using donation collection method as an independent variable (Step 1) revealed that the effect was not significant ( $t[117] = 0.36$ ,  $p = 0.717$ ), showing that the donation collection nudging technique did not affect the satisfaction level ( $M_{\text{allocation}} = 4.76$ ,  $SD = 1.65$  vs.  $M_{\text{addition}} = 4.65$ ,  $SD = 1.62$ ;  $d = 0.07$ ). The second model (Step 2) added the influences of donation experience and demographic variables. The result indicated that the influence of the donation collection method was not significant ( $t[113] = 0.17$ ,  $p = 0.868$ ). The only significant effect was the influence of donation experience ( $t[113] = 5.13$ ,  $p < 0.001$ ), indicating its positive relationship with the overall satisfaction level. Lastly, we also included the amounts donated for the cause and overhead as additional independent variables (Step 3). The results showed that the amounts donated for the cause ( $t[111] = 2.95$ ,  $p = 0.004$ ) and the overhead ( $t[111] = 1.92$ ,  $p = 0.058$ ) were significant at the alpha levels of 0.05 and 0.10, respectively. These results indicated that people's satisfaction increased along with the amounts of their donations. The influence of donation collection method was still not significant ( $p = 0.147$ ). Consequently, the results showed that donors' satisfaction with their donation decisions was not significantly affected by the donation collection methods.

<sup>4</sup>The interaction between the donation collection method and donation experience was added to examine whether the nudging effect was weaker for those with more donation experiences (Alba & Hutchinson, 1987).





**FIGURE 3** Donation amounts by donation collection method in Study 1. Error bars represent standard errors.

**TABLE 3** Regression analysis results on satisfaction with the donation in Study 1

|                               | Step 1<br><i>b</i> (SE) | Step 2<br><i>b</i> (SE) | Step 3<br><i>b</i> (SE) |
|-------------------------------|-------------------------|-------------------------|-------------------------|
| Donation collection: Addition | −0.054 (0.150)          | −0.023 (0.138)          | −0.210 (0.144)          |
| Donation experience           |                         | 0.369*** (0.072)        | 0.205** (0.072)         |
| Addition × Experience         |                         | −0.091 (0.072)          | −0.113* (0.068)         |
| Gender: Female                |                         | −0.077 (1.087)          | 0.147 (0.298)           |
| Age                           |                         | 0.009 (0.012)           | 0.000 (0.011)           |
| Donation for the cause (\$)   |                         |                         | 0.078*** (0.011)        |
| Donation for overhead (\$)    |                         |                         | 0.061* (0.032)          |
| Constant                      | 4.704*** (0.150)        | 4.379*** (0.441)        | 3.971*** (0.431)        |
| <i>R</i> <sup>2</sup>         | 0.001                   | 0.209                   | 0.312                   |

Note: Ordinary least square (OLS) estimates. Standard errors are in parentheses.

\* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

### 4.3 | Discussion

The results of Study 1 showed that the choice architecture of donation collection methods affects the donation amount. The participants donated more when the donation collection was made using the addition method than the allocation method. The difference between the two methods is mostly due to the different amounts donated to help the cause. The donation collection method, however, did not have a significant influence on the amount donated for the charity's overhead.

Another important finding is that the nudging tool used in our study did not affect donors' satisfaction with the donation. The participants in the addition condition donated more because of the collection method, and they were as satisfied as those in the

allocation condition. Donation satisfaction was only affected by donation experience and general donation amount. This must be good news for nonprofit organization managers who plan to implement the addition method to collect separate funds for their own overhead.

Although Study 1 showed the effects on total donation and donation for the cause, the choice architecture technique used in Study 1 did not affect the donation amount for the overhead. The next part (and Studies 2 and 3) presents another choice architecture tool that can influence the amount donated for the overhead, in addition to the total donation amount. Therefore, we expect that Studies 2 and 3 can provide important implications for overhead aversion, in addition to the total donation amount.

## 5 | RESPONSE ORDER EFFECT IN THE ADDITION METHOD

There can be different types of addition methods that vary in measurement order. The method used in Study 1 measured the amount donated for the cause first, and then the additional amount donated for the overhead. We call this conventionally used method as the cause-first addition method. An alternative method is changing the order of measurement. One determines the amount donated for the charity's overhead first and then decides how much to donate to the cause, which is referred to as the overhead-first addition method. The two types of addition methods are displayed in Figure 4.

Although both collection methods use addition methods, we expect that the donation amount may differ depending on the measurement order because the order can influence the elaboration of a certain donation domain. Specifically, we posit that donors elaborate more on the donation target of the first phase. According to the primacy effect in impression formation, individuals tend to elaborate more on the first presented information, and the evaluation is more strongly influenced by the information presented first than last. This primacy effect is known to affect impression formation about people when personality traits are serially presented (Asch, 1946) and attitudes toward the products that are formed based on the attributes that are sequentially presented (Carlson et al., 2006; Haugtvedt & Wegener, 1994). The primacy effect also occurs in judgments of importance. For example, Krosnick and Alwin (1987) examined the influence of the order of 13 children's traits (e.g., manners and honesty) on the judgments of importance. A trait was judged to be more important when it is presented earlier than later.

We expect a similar primacy effect in the donation amount decisions, but the impact of the primacy effect differs for the decisions on overhead and the cause. Specifically, we posit that the elaboration in the first (vs. second) phase has a greater impact on the decision about the overhead than that about the cause.

For the decision on the amount of money donated for the cause, we expect that the amount is less affected by whether the decision is made in the first phase (i.e., cause-first) or the second phase (i.e., overhead-first), because it is already the default donor consideration. In typical donation decisions, donors are more likely to think about how much their donation can help the cause, because having an

impact (or making a significant difference) on the cause is one of the most important concerns of the donors. In other words, contemplating how much one can help the cause is most likely a default, implying that the elaboration about helping the cause can have limited effects on the decision about the amount. Therefore, we assume that whether the decision about the donation for the cause is made in the first phase or the second phase has a limited influence on the donation amount.

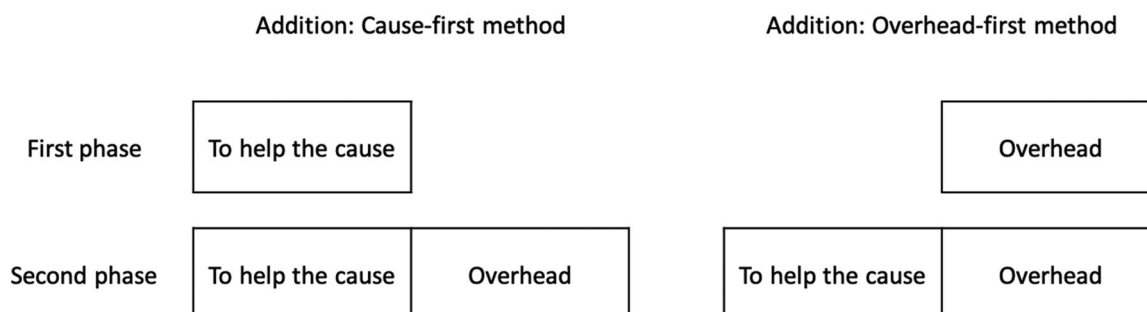
Decisions on overhead, however, are expected to be strongly affected by the decision order. Donors usually do not fully consider charities' overhead spending in making donation decisions, although they expect that some of their donation money is used as overhead. Thus, the elaboration on reasons to donate for the overhead because of the primacy effect should have a greater impact on the overhead-first addition method, resulting in an increased donation amount for overhead. In a decision consisting of two phases, the primacy effect indicates that one should elaborate less on the decision in the second phase than in the first phase. Therefore, for the second-phase decision about the overhead in the cause-first method, the amount donated for the overhead should be lower than that in the overhead-first condition. Consequently, we expect that the overhead donation amount is greater for the overhead-first task than for the cause-first task, which in turn, leads to a greater total amount for the overhead-first (vs. cause-first) donation collection method.

**H3:** *The total donation amount is greater for the overhead-first addition method than for the cause-first addition method.*

**H4:** *The donation amount for the overhead is greater for the overhead-first addition than the cause-first addition method, whereas the donation amount for the cause does not differ between the overhead-first and the cause-first addition methods.*

## 6 | STUDY 2: CAUSE-FIRST VERSUS OVERHEAD-FIRST IN REAL DONATION DECISION

Study 2 tests the difference in donation amount between the cause-first and the overhead-first addition methods. As suggested by H3 and H4, we assume that the total donation amount and donation



**FIGURE 4** Donation collection procedures of the cause-first and overhead-first addition methods



for the overhead are larger in the overhead-first than in the cause-first addition method. Another important goal of Study 2 is to test the influence of donation nudging on actual donation decisions. Unlike Study 1 in which the participants indicated their donation intention in a hypothetical situation, Study 2 tests the influence of the donation choice architecture on the decision about real money.

## 6.1 | Method

A total of 143 adults (72.0% female,  $M_{\text{age}} = 30.0$ ) were recruited from Prolific Academic online panel, and most participants were residents of the United Kingdom. The sample size was determined based on the effect sizes of Study 1 to have a statistical power greater than 80%. The participants were originally recruited for an unrelated survey. After the original survey was completed, the participants were invited to an extra study with a small monetary compensation and with a chance to win an extra £6. They were informed that 20% of the randomly selected participants would receive an extra £6. Participation in this extra study was on a voluntary basis, and 91.7% of the 156 original respondents agreed to participate.

The extra study consisted of questions about how much they wanted to donate if they would win the money prize. The participants were informed that they would have a chance to donate if they won £6. The donation was completely voluntary, and the participants were asked to write down £0 if they wanted to keep all the bonus prize money without donation. This procedure was used to study people's decisions on real donations in a laboratory experimental setting (e.g., Young et al., 2012).

First, all the participants were presented with overall information about how charitable organizations spend and collect donation money. They were informed that charitable organizations use donated money for (1) helping the cause and (2) covering the organization's operations (i.e., overhead). They were also informed that some charity organizations receive donations separately for the cause and the overhead. This information was presented in both conditions to ensure that the participants would expect that they could donate separately for the cause and the overhead. Then, they were presented with a donation campaign for supporting disabled children who were born with a disability in arms or legs in an Asian country. Unlike Study 1, we only informed the participants that the campaign was run by a trustworthy charity without specific charity information to avoid potential influence of participants' attitude toward existing charities.

Then, the participants were randomly assigned to either the cause-first or the overhead-first conditions. The cause-first condition was the same as the addition condition of Study 1. The participants first indicated how much they wanted to donate to the cause. On the next page, they indicated how much they wanted to donate for the overhead. On this page, the amount donated for the cause was shown in the box, and the participants were allowed to change the amount if they wanted to. The total was automatically computed and shown on the screen. Appendix C shows the screen in the cause-first

condition. The participants were reminded that they could donate as little or as much as they want as long as the sum did not exceed £6, and that they would receive the non-donated amount. In the overhead-first condition, the order was the opposite. The participants indicated how much they wanted to donate for the overhead first, and then how much they wanted to donate for the cause. Except for the order, the procedure was the same as that of the cause-first condition.

The total donation amount was computed by adding the amounts for the cause and overhead. In addition to the donation amount, we also measured how much they were satisfied with their donation decision by using the same item used in Study 1.

After completing the study, 20% of the participants ( $n = 29$ ) were randomly selected as prize winners. The total donation amount of the winners (approximately £78) was donated to a real charity's campaign for supporting children overseas, and each winner was paid the nondonation amount that they wanted to keep. All the participants received a feedback message that explained whether they won the prize, how much money was awarded to winners as monetary credit, and how the sum of the donation amount was donated to a charity.

## 6.2 | Results

### 6.2.1 | Donation amounts

On average, the participants donated £2.67 ( $SD = 2.13$ ), and the contribution ranged from £0 to £6. A regression analysis of the total donation amount showed that only the effect of donation collection method was significant ( $t[139] = 2.52$ ,  $p = 0.013$ ). The participants tended to donate more when the overhead (vs. the cause) donation was collected first ( $M_{\text{overhead-first}} = £3.10$ ,  $SD = 2.27$  vs.  $M_{\text{cause-first}} = £2.24$ ,  $SD = 1.88$ ;  $d = 0.41$ ). This result supported H3. The influences of gender and age were not significant ( $p > 0.394$ ). Table 4 presents the results.

Then, we tested the effects on the donations for the overhead and cause by conducting separate regression analyses. A regression analysis on the donation for the overhead showed that only the effect of donation collection method was significant ( $t[139] = 2.11$ ,  $p = 0.037$ ), indicating that the participants in the overhead-first condition ( $M = £1.06$ ,  $SD = 1.03$ ) donated more for the overhead than those in the cause-first condition ( $M = £0.69$ ,  $SD = 1.07$ ;  $d = 0.35$ ). This result supported H4.

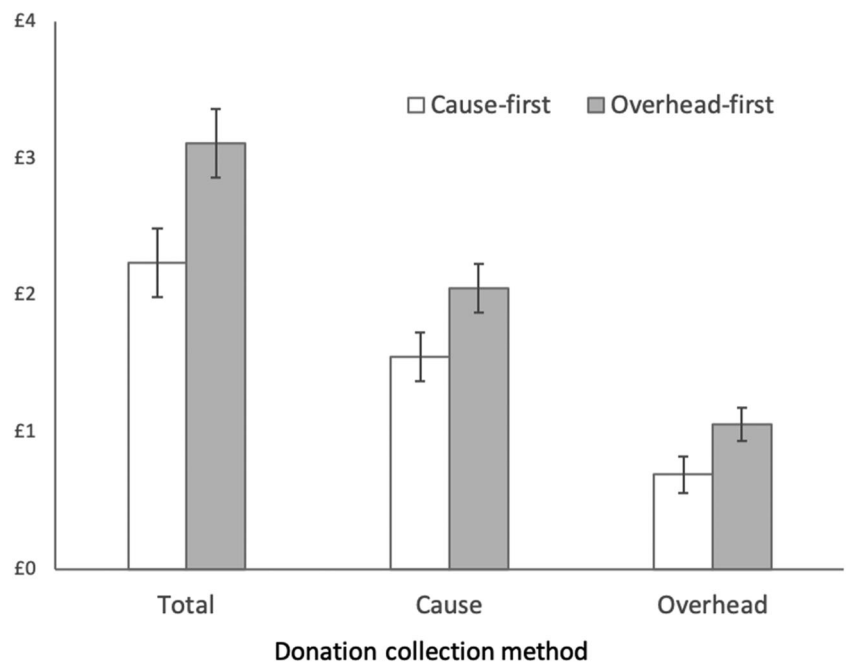
Last, a test on the donation for the cause also revealed that the effect of donation collection method was significant ( $t[139] = 2.09$ ,  $p = 0.039$ ). The amount donated for the cause was greater in the overhead-first (vs. cause-first) condition ( $M_{\text{overhead-first}} = £2.05$ ,  $SD = 1.76$  vs.  $M_{\text{cause-first}} = £1.55$ ,  $SD = 1.19$ ;  $d = 0.33$ ). This finding was unexpected because we did not predict that the order would have a significant effect on the donation for the cause. Potential reasons for this finding are elaborated in the Discussion section. Figure 5 presents the results of the donation amounts.

**TABLE 4** Regression analysis results on donation amount in Study 2

|                                     | Total (£)<br><i>b</i> (SE) | Cause (£)<br><i>b</i> (SE) | Overhead (£)<br><i>b</i> (SE) |
|-------------------------------------|----------------------------|----------------------------|-------------------------------|
| Donation collection: Overhead-first | 0.445** (0.186)            | 0.264** (0.127)            | 0.187*** (0.089)              |
| Gender: Female                      | -0.211 (0.396)             | -0.180 (0.284)             | -0.022 (0.200)                |
| Age                                 | 0.014 (0.016)              | 0.017 (0.012)              | -0.003 (0.089)                |
| Constant                            | 2.400*** (0.624)           | 1.428*** (0.448)           | 0.967*** (0.315)              |
| $R^2$                               | 0.049                      | 0.045                      | 0.032                         |

Note: Ordinary least square (OLS) estimates. Standard errors are in parentheses.

\*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

**FIGURE 5** Donation amounts by donation collection method in Study 2. Error bars represent standard errors.

### 6.2.2 | Donation satisfaction

The influence of donation collection methods on donation satisfaction was tested using a series of regression analyses. A simple regression using donation collection method as an independent variable (Step 1) yielded that the effect was not significant ( $t[141] = 1.34$ ,  $p = 0.184$ ), indicating that the satisfaction level did not differ between the cause-first condition ( $M = 5.33$ ,  $SD = 1.68$ ) and the overhead-first condition ( $M = 4.97$ ,  $SD = 1.50$ ;  $d = 0.22$ ). In Step 2, the demographic variables were added, and the result showed that only age was significant ( $t[139] = 2.35$ ;  $p = 0.020$ ). The influence of donation collection method was not significant ( $t[139] = 1.26$ ;  $p = 0.208$ ). In Step 3, the donation amounts for the cause and overhead were added. The influences of amounts donated for the cause ( $t[137] = 2.54$ ,  $p = 0.012$ ) and for the overhead ( $t[137] = 2.32$ ,  $p = 0.022$ ) were significant, suggesting that the more the participants donated, the higher their satisfaction levels. In Step 3, donation collection method was also significant ( $t[137] = 2.20$ ,  $p = 0.030$ ). This finding indicated that

the participants in the cause-first condition were more satisfied only when the donation amount was controlled.<sup>5</sup> These results are presented in Table 5.

### 6.3 | Discussion

The results of Study 2 also presented that donation collection method affected the donation amount. Specifically, the participants donated more in terms of the total amount and the amounts for the overhead and the cause when they were asked to indicate the amount donated for the overhead (vs. the cause) first. The influences on the donation for the overhead and the total

<sup>5</sup>A post hoc interpretation of this result is as follows. When the influence of donation money was controlled, the baseline satisfaction level was higher for the participants in the cause-first condition. However, their overall satisfaction was not significantly affected by the collection method because, although the donors' baseline satisfaction level in the overhead-first condition was low, their satisfaction level increased because they donated more for the cause and overhead.

**TABLE 5** Regression analysis results on satisfaction with the donation in Study 2

|                                     | Step 1<br><i>b</i> (SE) | Step 2<br><i>b</i> (SE) | Step 3<br><i>b</i> (SE) |
|-------------------------------------|-------------------------|-------------------------|-------------------------|
| Donation collection: Overhead-first | −0.178 (0.133)          | −0.167 (0.132)          | −0.282** (0.128)        |
| Gender: Female                      |                         | 0.024 (0.297)           | 0.071 (0.282)           |
| Age                                 |                         | 0.029** (0.012)         | 0.026** (0.012)         |
| Donation for the cause (£)          |                         |                         | 0.226** (0.089)         |
| Donation for overhead (£)           |                         |                         | 0.294** (0.127)         |
| Constant                            | 5.151*** (0.133)        | 4.267*** (0.468)        | 3.660*** (0.466)        |
| $R^2$                               | 0.013                   | 0.051                   | 0.159                   |

Note: Ordinary least square (OLS) estimates. Standard errors are in parentheses.

\*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

were consistent with H3 and H4. An unexpected additional advantage of the overhead-first addition method was that the participants also donated more for the cause, although we expected that the order of the addition method would not affect the donation amount for the cause. Our expectation was based on the notion that the decision about the donation for the cause was more central, being less affected by choice architecture. However, the result showed that the decision order also affected the donation amount for the cause. One potential explanation is the anchoring effect in sequential decision making that the decision in the first phase influences the decision in the second phase (e.g., Mochon & Frederick, 2013). In the case of the cause-first condition, the decision about the cause was not affected by the preceding one. However, in the overhead-first condition, the decision about the cause was affected by the decision about the overhead in the first phase. As suggested by H4 and the empirical results, the participants tended to decide more on the overhead in the first phase. In deciding the amount for the cause in the overhead-first condition, the relatively higher amount donated for the overhead could have served as an anchor for the second-phase decision, thereby resulting in a higher amount donated for the cause as well. However, our explanation is post hoc, and additional studies may be required to test this conjecture.

## 7 | STUDY 3: UNDERLYING PROCESS OF CAUSE-FIRST VERSUS OVERHEAD-FIRST METHODS

Study 3 intends to test the underlying process of the cause-first and the overhead-first donation collection methods. As the primacy effect suggests, it is expected that the overhead spending is perceived to be more important when the donation for overhead (vs. cause) is asked first. Study 3 measures the perceived importance of overhead for operating charitable organizations and tests its mediation effect in the influence of the donation collection method on the donation amount.

## 7.1 | Method

A total of 427 participants residing in the United States (40.7% female,  $M_{\text{age}} = 38.3$ ) were recruited from Amazon Mechanical Turk. They participated in a single-factor 2-condition (donation collection method: cause-first addition vs. overhead-first addition) between-subjects design study. The sample size was determined based on the effect sizes of Studies 1 and 2 to have a statistical power greater than 80%.

The method of Study 3 was similar to that of Study 2. However, unlike Study 2, the participants in Study 3 made decisions in a hypothetical donation situation. The participants were given the information that they had saved \$50 for donation and were considering donating to a campaign that supported disabled children who were born with a disability of arms or legs. The amounts of money to be donated to the cause and overhead were measured using the same procedure and measures as those used in Study 2. We also measured the perceived importance of the overhead using the question asking “the extent to which you believe covering the charity's overhead expense is important?” on a 7-point scale (1 = *not at all*, 7 = *very much*). In addition, we also measured donation experience and donation satisfaction using the scales that were used in our previous studies.

## 7.2 | Results and discussion

### 7.2.1 | Donation amounts

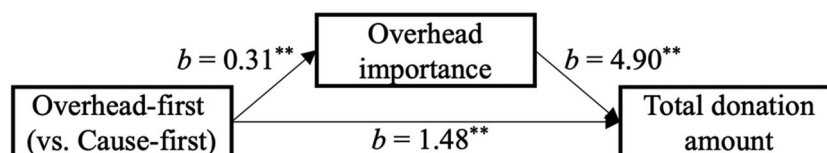
The effects of donation collection method on the donation amounts (i.e., total, the cause, and overhead) were tested using a series of multiple regression analyses, in which donation collection method (−1 = cause-first, 1 = overhead-first), mean-centered experience in donation, the interaction between donation collection method and donation experience, gender (0 = male, 1 = female), and age were used as the independent variables. Overall, the effects of donation collection methods on the donation amounts were statistically identical to those of Study 2. Table 6 presents the results.

**TABLE 6** Regression analysis results on donation amount in Study 3

| Predictor                           | Total (\$)<br><i>b</i> (SE) | Cause (\$)<br><i>b</i> (SE) | Overhead (\$)<br><i>b</i> (SE) |
|-------------------------------------|-----------------------------|-----------------------------|--------------------------------|
| Donation collection: Overhead-first | 2.981*** (0.799)            | 1.164* (0.676)              | 1.817*** (0.435)               |
| Donation experience                 | 2.715*** (0.448)            | 1.444*** (0.379)            | 1.272*** (0.244)               |
| Overhead-first × Experience         | -1.075** (0.445)            | -1.167*** (0.376)           | 0.092 (0.242)                  |
| Gender: Female                      | -1.419 (1.625)              | -1.114 (1.376)              | -0.305 (0.884)                 |
| Age                                 | 0.188** (0.073)             | 0.144** (0.062)             | 0.044 (0.040)                  |
| Constant                            | 30.030*** (3.625)           | 21.304*** (3.067)           | 8.726*** (1.971)               |
| <i>R</i> <sup>2</sup>               | 0.150                       | 0.084                       | 0.107                          |

Note: Ordinary least square (OLS) estimates. Standard errors are in parentheses.

\* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

**FIGURE 6** Mediation test result in Study 3

The results showed that donation collection method was significant for the total donation amount ( $t[421] = 3.73$ ,  $p < 0.001$ ), indicating a greater donation amount when the collection method was overhead-first ( $M = \$38.16$ ,  $SD = 16.21$ ) than cause-first ( $M = \$32.20$ ,  $SD = 18.59$ ;  $d = 0.36$ ). The influence of donation collection method on the donation to the cause was significant at the alpha level of 0.10 ( $t[421] = 1.72$ ,  $p = 0.086$ ), indicating that the amount was greater in the overhead-first ( $M = \$26.35$ ,  $SD = 14.90$ ) than the cause-first ( $M = \$24.02$ ,  $SD = 13.94$ ) condition ( $d = 0.17$ ). The influence of donation collection method on the donation to the overhead was also significant ( $t[421] = 4.18$ ,  $p < 0.001$ ), showing a greater amount donated to overhead when the method was overhead-first ( $M = \$11.81$ ,  $SD = 8.95$ ) than cause-first ( $M = \$8.06$ ,  $SD = 9.50$ ;  $d = 0.42$ ). These results replicated the findings of Study 2.

The results further revealed that the influence of donation experience was significant for all dependent variables ( $t[421] > 3.08$ ,  $p < 0.001$ ). Notably, the interaction between donation collection method and donation experience was significant when the dependent variables were the total donation amount ( $t[421] = -2.42$ ,  $p = 0.016$ ) and the donation to the cause ( $t[421] = -3.81$ ,  $p < 0.001$ ). However, for the amount donated to overhead, the interaction was not significant ( $t[421] = 0.38$ ,  $p = 0.704$ ). These results indicated that, when the participants made decisions on the donation for the cause, the influence of donation collection methods (i.e., overhead-first vs. cause-first) was weaker for the participants with more donation experiences. This can be interpreted that people with more donation experiences have their own decision criteria in deciding the amount donated to the cause. However, the nonsignificant interaction effect on the donation amount to overhead yielded that the measurement

order affected the amount donated to overhead regardless of the donation experience level, which was in line with our theory.

## 7.2.2 | Mediation test

We tested the mediating role of the perceived importance of overhead in the influence of donation collection method ( $-1 = \text{cause-first}$ ,  $1 = \text{overhead-first}$ ) on the donation amount using the Hayes (2017) method (Model 4). In the analysis, we also included donation experience, the interaction between donation collection method and donation experience, gender, and age as covariates. Figure 6 shows the mediation test result. First, the influence of overhead importance on the total donation amount was significant ( $b = 4.90$ ,  $SE = 0.46$ ,  $t[420] = 10.65$ ,  $p < 0.001$ ). The indirect effect that was mediated by overhead importance was also significant ( $b = 1.51$ ,  $SE = 0.38$ , 95% CI: [0.79, 2.30]). This result indicates that the influence of the donation collection method on the total donation amount can be explained by the increase in the perceived importance of the overhead in the overhead-first (vs. cause-first) method condition. The direct effect of donation collection method on the total donation amount was also significant ( $b = 1.47$ ,  $SE = 0.72$ ,  $t[420] = 2.04$ ,  $p = 0.042$ ).

We also conducted separate mediation tests on the donation amount to the cause and the donation amount to the overhead. The results showed that the indirect effect of the perceived importance of the overhead was significant for the donation to the cause ( $b = 1.01$ ,  $SE = 0.27$ , 95% CI: [0.51, 1.57]) and the donation to overhead ( $b = 1.32$ ,  $SE = 0.43$ , 95% CI: [0.25, 0.78]). These results implied that the perceived importance of overhead spending for

charitable organizations increased donations to both the cause and overhead.

### 7.2.3 | Donation satisfaction

Tests on the influence of donation collection method on donation satisfaction showed similar results to those of earlier studies. A simple regression testing the influence of donation collection method (Step 1:  $R^2 = 0.004$ ) showed that the effect was not significant ( $b = 0.10$ ,  $SE = 0.08$ ,  $t[425] = 1.33$ ,  $p = 0.175$ ), revealing no significant difference between the cause-first ( $M = 5.32$ ,  $SD = 1.63$ ) and the overhead-first ( $M = 5.52$ ,  $SD = 1.50$ ;  $d = 0.13$ ) conditions. In Step 2 ( $R^2 = 0.135$ ), donation experience and demographic variables were added, and the result showed that only donation experience ( $b = 0.28$ ,  $SE = 0.40$ ,  $t[421] = 7.05$ ,  $p < 0.001$ ) and age ( $b = 0.02$ ,  $SE = 0.01$ ,  $t[421] = 2.25$ ,  $p = 0.025$ ) were significant. The influence of donation collection method was not significant ( $b = 0.07$ ,  $SE = 0.07$ ,  $t[421] = 1.02$ ,  $p = 0.307$ ). In Step 3 ( $R^2 = 0.280$ ), the donation amounts for the cause and overhead were added. The influences of amounts donated for the cause ( $b = 0.04$ ,  $SE = 0.01$ ,  $t[419] = 8.49$ ,  $p < 0.001$ ) and for the overhead ( $b = 0.03$ ,  $SE = 0.01$ ,  $t[419] = 3.55$ ,  $p < 0.001$ ) were significant, suggesting that the more the participants donated, the higher their satisfaction levels. Donation experience was also significant ( $b = 0.19$ ,  $SE = 0.04$ ,  $t[419] = 4.99$ ,  $p < 0.001$ ). However, the influence of donation collection method was not significant ( $b = 0.02$ ,  $SE = 0.07$ ,  $t[419] = 0.31$ ,  $p = 0.757$ ), which was consistent with our earlier studies. These results also showed that donation collection methods affect donation decisions without having significant influences on donors' satisfaction levels.

## 8 | GENERAL DISCUSSION

The results of three empirical studies presented that the procedure through which a donation amount is decided can change donation decisions. Study 1 indicated that people tended to donate more (especially for the cause) when the addition method rather than the allocation method was used. Studies 2 and 3 which compared the two addition methods, showed that the overhead-first (vs. cause-first) method generated more donations for both the cause and overhead. The donation collection methods that we used in three studies did not affect donors' satisfaction with their donations, indicating that there no backfiring effect occurred when the donation collection nudging tools were used.

### 8.1 | Theoretical contributions

This research contributes to the choice architecture literature. There have been many attempts to design choice architecture to change people's behaviors in the desired way using various tools, such as default nudge (Schulz et al., 2018), asking the donation amount

(Goswami & Urminsky, 2016), presenting the donation option as opt-in (i.e., not donating is the default) or opt-out (i.e., donation is default) (Zarghamee et al., 2017), and partitioning beneficiaries (Fox et al., 2005). The current research shows that the changes in the measurement method can also be an effective nudging tool. Our method is in line with the existing research on measurement effect that one's decision or preference can change depending on how the preference is measured. In other words, preference for an option differs depending on measurement scales or procedures (Grether & Plott, 1979; Lichtenstein & Slovic, 1971; Tversky et al., 1988). The current study suggests that the measurement effect can apply to prosocial domains, especially for measuring donation amount decisions. Although the same donation targets (i.e., donations for the cause and overhead) were measured, the donation outcome can differ drastically depending on the structures and processes of the measurements.

The current research also contributes to the research on overhead aversion. Previous research has attempted to find ways to reduce overhead aversion. Several methods have been examined, such as having a third party cover the overhead expenses, changing donors' attitudes toward overhead by informing the importance of overhead, or giving donors authority to determine the overhead percentage (Gneezy et al., 2014; Keenan & Gneezy, 2016; Keenan et al., 2017; Qu & Daniel, 2021). The present research presents that simple changes in the way to ask donors to decide the donation amount is an unobtrusive and useful tool for attenuating overhead aversion, which is achieved by affecting the donation amount for the cause and overhead.

### 8.2 | Practical implications

Our results provide ample practical implications for nonprofit organizations in designing their donation collection procedures. When a charity intends to receive a separate donation for its overhead, our research results recommend the use of the addition method rather than the allocation method. When the addition method is used, a charitable organization can expect a greater donation amount by asking the amount for overhead first. Our method can be easily adopted by nonprofit organizations because implementing or modifying their donation collection method is not difficult. Given that many donations are collected online, changing the design of the charity website for collecting donations can alter the donation amount, without damaging donors' satisfaction with their donations.

The influences of donation experience on donation decisions that we found in our Studies 1 and 3 also present important implications for donor relationship management (Study 2 did not measure donation experience). Although donation experience was not the main focus of our research, the study results showed that donor experience was strongly related to the donation amount and satisfaction. People with more donation experience not only tended to donate more for the cause and overhead but also were more



satisfied with their donations. This finding suggests the importance of targeting donors with past donation experiences. It also highlights the importance of building and maintaining strong relationships with past or existing donors (Sargeant & Lee, 2004).

### 8.3 | Limitations and future research

One direction for future research is examining the long-term effects of the choice architecture of donation collection methods. One possible effect is that the increase in the donation amount that is affected by the choice architecture can lead to higher satisfaction and more donations in the future. According to our results and prior research on the relationship between donation and happiness (Dunn et al., 2008, 2014), people tend to be happier when they donate more. Although an increased donation amount is due to a donation nudge, the increased donation amount can result in positive long-term effects. However, it is also possible that the collection method nudges can have negative long-term effects (Sunstein, 2017). One possibility is the ethical issue regarding the use of nudging (Bovens, 2008, 2018; Ruehle et al., 2021). A warning about charitable nudging that has been raised is that it can be a kind of manipulative or deceptive trick that can undermine donors' freedom of choice (Bovens, 2018). If the public has the sentiment that nudging is not an ethical intervention with manipulative intention, then the use of choice architecture can have negative long-term effects, such as decreased trust or preference for the charities.

Another direction for future research is testing the boundary conditions in the influence of the donation collection methods on the donation amount. One potential moderator is the donation experience. In Studies 1 and 3, we tested the potential moderation effects the donation experience because numerous studies on consumer expertise have shown that the framing effects tend to be weaker for decision-makers with higher-level knowledge or experience (Alba & Hutchinson, 1987). This may imply that the influence of the donation collection method on donation decisions can vary depending on the donation experience level. However, the results of our empirical studies showed mixed results. In Study 1, we did not find any significant moderating influence of the donation experience. However, Study 3 showed that the interaction between donation collection method and donation experience was significant for the total donation amount and donation for the cause, showing the weaker influences of the choice architecture tools for the participants with higher level experiences. Therefore, our research does not present converging evidence on the moderating role of the donation experience. Therefore, this warrants future research that investigates the conditions in which the interaction between the donation experience and collection method is either weaker or stronger.

### CONFLICT OF INTEREST

The authors declare no conflict of interest.

### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

### ORCID

Kwanho Suk  <http://orcid.org/0000-0003-4438-4811>

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## APPENDIX A: EXAMPLES OF DONATION COLLECTION METHODS USED BY CHARITABLE ORGANIZATIONS

See Figures A1 and A2.

**FIGURE A1** An example of donation collection by adding a fixed percentage to the donation

END Fund's deworming program \$ 50

GiveDirectly \$

☒ Add 10% for GiveWell's unrestricted use (likely to support GiveWell's operating expenses)

Total: \$ 55.00

**FIGURE A2** An example of donation collection by adding a transaction fee to the donation amount

By clicking GIVE NOW!, I agree to the [Terms of Service](#) and [Privacy Policy](#).

☒ I'd like to cover all transaction fees so 100% of my donation goes to Evidence Action.

**GIVE NOW!** One-time donation \$52.10 USD

## APPENDIX B: MEASUREMENT OF DONATION AMOUNT IN STUDY 1 (ALLOCATION CONDITION)

See Figure B1 and Figure B2.

**FIGURE B1** Measurement of the total donation amount during the first phase under the allocation condition (Study 1)

Please indicate how much money you would like to donate in total.

0 5 10 15 20

Total donation (\$)

**FIGURE B2** Allocation of the donation amount during the second phase under the allocation condition (Study 1)

Referring to your previous answer of your total donation. Please show your donation allocation breakdown below.

[The total of the two parts should be the same with the amount you put on the earlier slider]

|   |       |
|---|-------|
| For the cause                                   | \$ 10 |
| For covering Salvation Army's operating expense | \$ 5  |
| Total   | \$ 15 |

## APPENDIX C: MEASUREMENT OF DONATION AMOUNT IN STUDY 2 (CAUSE-FIRST CONDITION)

Figure C1.

|  |   |     |
|--|---|-----|
| For the cause  | £ | 1.2 |
| For covering charitable organization's operating expense | £ | 0.8 |
| Total  | £ | 2   |

**FIGURE C1** Measurement of donation amount in the cause-first condition (Study 2)