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Improving Blood Donor Retention and Donor Relationships with Past Donation Use Appeals

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Abstract

Blood donation services seek new strategies to improve donor relationships and increase donor retention. In this study, we propose a novel strategy that employs appeals with feedback on the use of blood donors' past donations. We theorize that this feedback increases the perceived relationship investment and, subsequently, the quality of the relationship with the blood donation service, thereby increasing redonations. An online experiment shows the positive effect of past donation use appeals on donation intention and transmission through perceived relationship investment and relationship quality. Three field studies with Red Cross Blood Donation Services confirm the effectiveness of past donation use appeals on redonation behavior compared with thank-you appeals and with a future donation use appeal. Past donation use appeals are effective for retention purposes, especially for more experienced donors and when sent shortly after the donation. Such appeals also lead to higher reactivation rates of inactive donors. In addition to having practical implications, the study contributes to the relationship and nonprofit service literature.

Keywords

nonprofit services, donor management, donation appeals, timing, retention, reactivation relationship marketing, relationship quality, perceived relationship investment

Every two seconds, someone in the United States needs blood, resulting in a total need of 36,000 blood units per day in the US alone (American Red Cross 2022a). Given this constant need, and the fact that not all individuals can donate, donor retention is critical for blood donation services, which must ensure that blood is available (American Red Cross 2022a). Yet, nearly a quarter of blood donors in the Netherlands, United Kingdom, and United States do not make a second donation (Van Dongen 2015). Consequently, blood banks around the world are seeking strategies to strengthen donor relationships (Leipnitz et al. 2018). Improving donor retention not only reduces high acquisition costs (Masser et al. 2012), but also increases the effectiveness of marketing communications due to greater responsiveness from repeat donors (e.g., Karlan, List, and Shafir 2011; Sargeant, Jay, and Lee 2006). As such, blood donation services in particular and nonprofit service organizations in general strive to find effective donor retention strategies (Boenigk and Helmig 2013).

To improve retention, nonprofit services often use donation appeals that typically consist of thank-you messages and requests for redonations. However, research has shown that when nonprofits provide more detailed information on how a donation could be used in the future, donors' willingness to donate increases (Cryder, Loewenstein, and Scheines 2013). In the case of blood donations, the use of blood is regulated exogenously and determined by market factors, such as demand for specific

blood types. If a blood donation is not used within six weeks, it must be discarded (American Red Cross 2023). Therefore, future donation use appeals are only hypothetical scenarios and do not provide information about actual use. The uncertain promise associated with future blood donation use appeals is consistent with studies showing no effect of future blood donation use appeals (e.g., "save a life"; Moussaoui et al. 2019). In addition, the recipients of blood donations are anonymous, in contrast to some forms of monetary donations, such as those given to SOS Children's Villages (SOS 2023), where the purpose and use of the donation is well-known to the donor. As such, blood donors do not know the outcome of their donation unless blood donation services utilize strategies that go beyond thank-you and future use promise appeals.

We propose a donor retention strategy that informs donors that their past donation was indeed used. Although blood donors are the most important factor for blood supply and have a unique

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role in the cocreation of the service chain (Vargo and Lush 2008), they have no information about what happens with their donated blood. Blood donation services have a unique intermediary role in linking blood donors, who cocreate the service, with recipients. We propose that blood donation services should not only provide the focal service of collecting and delivering blood donations to hospitals but also inform donors that their donation was used as intended (i.e., to help a person in need). Thus, the donor is informed about the end of the cocreated service loop that started with the donation and ends with the blood being used to help a patient. Drawing on social exchange theory and relationship marketing (De Wulf et al. 2001), we develop a conceptual framework through which past donation use appeals improve donor retention. Specifically, we argue that donors appreciate knowing that their donation was indeed used, as this represents a significant effort to close the service loop and build and nurture a relationship with the donor. Consequently, past donation use appeals increase perceived relationship investment and relationship quality (De Wulf et al. 2001). As a result of this stronger donor relationship, we find that past donation use appeals increase redonation behavior (Cambra-Fierro et al. 2018a).

We test this retention strategy in a controlled online experiment and three large-scale field studies in collaboration with Red Cross Blood Donation Services in Germany and Austria. The controlled experiment confirms the proposed serial mediation: Donation use appeals strengthen perceived relationship investment, which increases the quality of the relationship between donors and a blood donation service and, ultimately, donors' redonation intention. Our results are robust to alternative mechanisms of warm glow (i.e., positive emotions about having donated blood; Ferguson et al. 2012) and perceived donation impact.

In the field studies, we compare the effectiveness of past donation use appeals with the commonly employed thank-you appeals as well as a future donation use appeal. The results show that information on past donation use increases redonations for active and inactive donors, confirming its effectiveness for donor retention and reactivation purposes. We also identify two relevant boundary conditions for the effect of past donation use on donor retention of active donors: donor experience and timing of the appeals. Past donation use appeals have a stronger effect on donors with a higher number of past donations. Having already established a relationship with a blood donation service, these donors are more appreciative of the organization's efforts to keep and strengthen the relationship (Sargeant 2001b) and respond more positively. In addition, the timing of the past donation use appeal matters. We test whether sending the appeals shortly before the next eligible donation date (late timing), instead of the date when the donation was used (early timing), influences the effect of past donation use. The results show that when past donation use appeals are sent closer to the next eligible date, their positive effect is reduced. This reduction from late timing may occur because donors perceive the past donation use appeal as a marketing tactic rather than an investment in strengthening the relationship. Consequently, the relationship in

donors' minds may shift from a relational to a transactional perspective (Sargeant 2001b), reducing the positive past donation use transmission through the relationship route.

Our findings are managerially and theoretically relevant. Managerially, blood donation services can efficiently implement our proposed strategy, as information on blood use is mandatory per legislation and thus available without additional cost. In addition, we provide insights into both the target group and the timing of these messages. After conducting the field study, the Austrian Red Cross Blood Donation and German Red Cross Blood Donation Services adopted this strategy. We also enrich the literature by quantifying the effectiveness of this strategy in strengthening donor relationships and fostering retention and reactivation, compared with traditional donation acknowledgment strategies.

Theoretically, this research extends the literature in several ways. It adds to relationship literature in service research (e.g., Cambra-Fierro et al. 2018a; Zeithaml et al. 2020) and more specifically in the realm of nonprofit services (Sargeant and MacQuillin 2016; Shabbir et al. 2007). Our research adds empirical insights into nonprofit services, and specifically blood donation services. Prior research has largely focused on the potential impact of future donation use information in donation appeals to first-time donors in a monetary donation context (e.g., Cryder et al. 2013). However, given the unique factors of blood donations, information on a future donation use is an uncertain promise. Consequently, in the blood donation context, future donation use appeals are not effective (Moussaoui et al. 2016; Shehu et al. 2013). In Study 4, as well as in a post-test study, we show that past donation use appeals are more effective than future donation use appeals. The effect of past donation use appeals compared with thank-you or future donation use appeals is uniquely important for blood donation services not only because of the uncertainty of blood donation use, but also because of the anonymity between donors and recipients. For donations of money, time, or goods, donors may sometimes know the recipients and thus have information on the use of the donation. For other donation types when the donor and recipient are anonymous, as is always the case in blood donations, information on past donation use should also be effective, which we demonstrate in an online experiment reported in the [Web Appendix](#). In identifying the novel strategy of past donation use appeals to strengthen relationships and improve donor retention, we confirm the role of donor relationships for blood donation services and suggest that blood donation services should put effort into nurturing relationships with their donors.

In addition, our work extends research on donor retention (e.g., Bijmolt et al. 2010; De Wulf et al. 2001; Flynn, Salisbury, and Seiders 2017; Polo and Sese 2016). Blood donation services often rely on messaging (i.e., donation appeals) as an instrument to strengthen donor relationships. In the realm of monetary donations, studies have shown that communicating the amount from past donations (Verhaert and Van den Poel 2011) or the last donation date (e.g., Kessler and Milkman 2018) improves donor response. We complement these studies by showing how past donation use information, which is a key piece of data relevant

Table 1. Donation Appeals Based on Donation Use.

Article	Donation Type	Donation Measure	Donation Use			Moderators	Mediators	Donor Segment		Main Finding
			Future	Past	Baseline			Potential	Active	
Cryder, Loewenstein, and Scheines (2013)	Monetary	Donation intention	x		Thank-you appeal		<ul style="list-style-type: none"> • Vividness • Sympathy • Impact 	x		Tangible information about charity increases donations through sympathy, perceived impact, or vividness
Fuchs, de Jong, and Schreier (2020)	Monetary	Donation behavior and intention	x		Thank-you appeal	<ul style="list-style-type: none"> • Autonomy (ns) • Egalitarianism (ns) 	<ul style="list-style-type: none"> • Perceived impact • Self-expression • Vividness 	x		Earmarking increases willingness to donate through perceived impact and vividness
Moussaoui et al. (2016)	Blood	Donor behavior and intention	x		Thank-you appeal				x	Future use ("save lives") message does not increase intention to donate and return rate
Shehu, Langmaack and Clement (2013)	Blood	Donor intention	x		Thank-you appeal	<ul style="list-style-type: none"> • Guilt/innocence attribution (n.s.) 		x		Future use (emergency) does not increase intention to donate
Gemelli et al. (2018)	Blood	Donation behavior		x	None	<ul style="list-style-type: none"> • Gender (n.s.) • Donor status • Age (n.s.) 			x	Post-donation message increases donor behavior of novice donors but not of experienced donors compared with no message (no baseline)
Moussaoui et al. (2019)	Blood	Donation behavior		x	None			x		Post-donation message increases donor retention compared with no message (no baseline)
This study	Blood	Donation behavior and intention	(x)	x	Thank-you appeal Future use appeal (x)	<ul style="list-style-type: none"> • Donor experience • Timing of appeals 	<ul style="list-style-type: none"> • Perceived relationship investment • Relationship quality 	x	x	Past donation use increases perceived relationship investment and improving donor retention

Note. n.s. denotes non-significant effects; (x) indicates that we test the future donation use in Study 4.

to donors' perceptions of their relationship with nonprofit services (Sargeant 2001a), can improve retention of blood donors. We also add to the literature on recognition in prosocial behavior (Wang and Tong 2015; Winterich et al. 2013) by demonstrating that, in the redonation context, past donation use appeals are more effective than donation acknowledgment alone.

Literature Review of Donation Appeals

While strategies on donor retention are still scarce, research emphasizes the need for nonprofit organizations to focus on donor relationships throughout the donor lifetime (Sargeant and MacQuillin 2016; Taylor and Miller-Stevens 2019). As such, some studies have tried to understand how to frame donation appeals to increase redonations, personalizing donation appeals by incorporating elements from a donor's history. These studies have mostly focused on the amount of money or giving options (i.e., scales) displayed on donation appeals to improve redonation response (e.g., Desmet and Feinberg 2003) or used past monetary donation amounts as anchors in donation appeals (e.g., De Bruyn and Prokopec 2017; Goswami and Urminsky 2016). An exception is Kessler and Milkman (2018), who show that incorporating the date of the last donation positively affects redonation behavior. However, although these studies consider past donation information in the design of appeals, they do not consider past donation use, which is an important element, as it reflects when and how an individual past donation was used.

Table 1 provides an overview of research examining the impact of donation appeal factors, including donation use, on redonation behavior. In general, research finds that people are more willing to donate money when an appeal emphasizes a future donation use. For example, in lab experiments Cryder et al. (2013) manipulate a potential future donation use by providing more details on how the money would be spent (e.g., to build a well in a specific location). They show that providing more details increases intention to donate money through greater perceived impact, vividness, and sympathy. More recently, Fuchs et al. (2020) use field and lab experiments to understand how offering donors the option to choose the use of their future donation influences giving. Specifically, they test a setting in which donors can choose which organizational project their donation will be used for and identify a positive effect on donation behavior, transmitted through vividness, self-expression, and impact.

Although future use donation appeals may be practical in donation contexts in which the use is visible or is not subject to exogenous market factors, future use of blood donations can only be hypothetical, because use is determined not by the blood banks but by market needs. Yet, some field studies on blood donation examine how stating the use of a future blood donation affects donation intention. For example, Moussaoui et al. (2016) inform donors that their blood donation will be used to "save a life" but find no significant effect of this future appeal on redonation. Similarly, Shehu et al. (2013) state that blood donations will be used to save victims in emergency situations but

also do not find a significant effect. The absence of a significant effect suggests that blood donors are well aware that the future use promise does not necessarily mean that their blood donation will actually be used to help a person in need, in contrast with monetary donations (Fuchs et al. 2020), for which nonprofits can directly make decisions on use.

Recently, research has begun examining appeals with past donation use information for blood donors (e.g., Gemelli et al. 2018; Moussaoui et al. 2019). Critically, however, these studies do not have a control group; that is, they examine the effect of an appeal with past donation use information compared with a group that did not receive any appeal. Thus, any identified effects could be simply because the donors received a message from the blood bank and not necessarily because of the past donation use information. To date, research has not disentangled the effect of past donation use from the positive effect of direct marketing (independent of its content) or shown whether this effect leads to an uplift. In addition, research has not analyzed the mechanism or boundary conditions for past donation use appeals, resulting in uncertainty about (1) whether past donation use is effective, (2) what drives this effect, and (3) under which conditions such appeals are more effective.

We address these gaps by personalizing the appeal with information on past donation use, comparing it with thank-you appeals commonly used in practice and a future donation use appeal and analyzing the underlying mechanism and its boundary conditions for redonation behavior. In doing so, our research complements the literature: First, we test a strategy that focuses on past donation use, which is critical for blood donation services, thus moving beyond ineffective future blood donation use appeals. We quantify past donation use in field studies by comparing it with a sound control group. Second, we analyze the underlying mechanism of past donation use appeals and identify two important boundary conditions: donor experience and timing of appeals. Third, we focus on active and inactive donors. Together, our insights complement literature on donor retention strategies and donor appeals and show when and for which donors these appeals are most effective.

Conceptual Framework and Hypothesis Development

The Past Donation Use Effect

We ground our model in social exchange theory to help explain the relationship developing over time between individuals (e.g., customers, donors) and an organization (e.g., firm, nonprofits; Cambra-Fierro et al. 2018b; De Wulf et al. 2001; Ferguson et al. 2012). We focus on efforts from the nonprofit organization to improve its relationship with donors. Prior research indicates that when an organization interacts with customers, customers' perceptions that the company is investing in their relationship increases, enhancing their feelings of reciprocity and loyalty (Bolton et al. 2004; Cambra-Fierro et al. 2018b).

In our framework, we analyze how communication based on past donation use influences redonation behavior through

perceived relationship investment of blood donation services and perceived relationship quality. Following De Wulf et al. (2001, p. 35), we define the perceived relationship investment as the “consumer’s perception of the extent to which a retailer [or blood donation service] devotes resources, efforts, and attention aimed at maintaining or enhancing relationships with regular customers that do not have outside value and cannot be recovered if these relationships are terminated.” Perceived quality refers to the “overall assessment of the strength of a relationship” (De Wulf et al. 2001, p. 36).

According to social exchange theory, each interaction generates a social exchange, provides customers with valuable information, and may indicate that the organization is making an effort to maintain the relationship (Bagozzi 1995; Yoon et al. 2008). Investing time, effort, or other resources in creating and maintaining relationships creates psychological bonds that encourage donors to stay in a relationship and also sets an expectation of reciprocity (De Wulf et al. 2001; Gremler et al. 2020), which can lead to greater repurchase or, in our case, redonation. That is, donors may feel that they are important to blood donation services and will be more likely to reward these organizations in the future (Cambra-Fierro et al. 2018b; Gremler et al. 2020; Groth 2005).

Relationships with customers are even more important for service providers given the intangible features of services (Palmatier et al. 2006). In a blood donation context, past donation use information represents an effort from the blood donation service provider to fulfill its role as an intermediary and close the service loop by informing donors that their donation was used. Blood donors may perceive this effort as greater than simple thank-you appeals, which show appreciation but do not fulfill the specific service of blood banks to donors. In addition, past donation use appeals contain information that is specific to a person’s past donation—donors may perceive this as a greater intercommunication effort from the nonprofit service (De Wulf et al. 2001). Thus, we argue that past donation use information drives the relationship quality and motivates donors to reengage with the blood donation service. This effect is specific to blood donation services because the recipient of the blood is anonymous, which is not always the case for donations of money, time, or goods, and because there is no guarantee that the donated blood will be used to help someone in need depending on demand (American Red Cross 2023).

As Figure 1 shows, we expect a serial chain of effects from past donation use to redonation through perceived relationship investment and perceived quality. Several studies confirm the effective impact of communication (e.g., mailings, interpersonal emails) on perceived relationship investment (e.g., De Wulf et al. 2003; Yoon, Choi, and Sohn 2008). This higher perceived investment positively affects the strength of the relationship (i.e., relationship quality; De Wulf et al. 2001; Palmatier et al. 2006). Meta-analyses find that relationship quality is a relevant driver of customer loyalty (Palmatier et al. 2006), particularly for service firms (Gremler et al. 2020).

In the realm of service research, studies have demonstrated the serial mediation of firm-initiated communication activities

on customer loyalty through perceived relationship investment and relationship quality (e.g., Cambra-Fierro et al. 2018b; Shi et al. 2016). However, marketing research has not examined this effect empirically in the nonprofit realm, in terms of the relationships between nonprofit services and their donors. Nonetheless, most nonprofits understand the value of maintaining relationships with donors and know that retaining donors is easier than constantly recruiting new donors.

In practice, nonprofit services often use appeals that thank donors for their past support. Research has identified recognition as an important motive of charitable behavior (Fang et al. 2021; Minguez and Sese 2023; Winterich et al. 2013). Merchant et al. (2011) show that acknowledging a past donation is an essential part of the donor-nonprofit relationship. In the context of blood donation services, appeals that integrate past donation use give donors feedback and, at the same time, fulfill the service provider’s role by informing donors that their donation was used as intended. Consequently, donors will recognize the past donation information as an investment of the blood donation service in building a relationship, which in turn will increase the perceived quality of the relationship and, ultimately, redonation behavior (Sargeant 2001b). Thus,

H1. Past donation use appeals influence redonation behavior positively.

H2. The past donation use effect on redonation occurs through higher perceived relationship investment and, subsequently, relationship quality.

Moderating Role of Donor Experience

Although we expect past donation use information to increase redonation through relationship investment and relationship quality, the impact of this information is likely to depend on the donor. Prior research has identified the relationship life-cycle stage as a key moderator, revealing that in the maturity stage, the value of relationships on customer cocreation and loyalty is most important (Cambra-Fierro et al. 2018b). Indeed, more experienced donors have already established a relationship with the organization (Minguez and Sese 2022a, b). Thus, we expect them to perceive higher value from the feedback in the past donation use appeal (McGrath Simon, 1997). While the first donation may be triggered by altruistic or social motivations, subsequent donations are often influenced by the value donors received from their last donation and their relationship with the blood donation service (Chell and Mortimer, 2014; Simon, 1997; Sargeant and MacQuillin, 2016). In contrast with novice donors, experienced donors actively evaluate the quality of their relationship with the blood donation service and the efforts the service is investing to maintain this relationship. Past donation use appeals contain specific information on a donor’s past donations; therefore, these appeals increase the perceived relationship investment and quality especially for experienced donors, who have a relationship with the service (De Wulf et al. 2001; De Wulf et al. 2003). Thus:

H3. The positive influence of past donation use appeals is stronger for more experienced donors.

Moderating Role of Appeal Timing

Blood services can determine *when* to send past donation use appeals to achieve the greatest effect: They can send the information shortly after the blood donation is used (early timing) or shortly before the next eligible donation (late timing), so that the positive effect of the past donation use is closer to the next possible donation date and does not weaken over time. However, the late timing risks donors perceiving the past donation use information as a marketing tactic rather than an effort to build relationships. Consequently, the donor's perception might switch from a relational to a transactional perspective (Sargeant 2001b), which might impair the positive past donation use effect (Heyman and Ariely 2004). Thus,

H4. The positive influence of past donation use appeals weakens when the appeal is sent closer to the next donation possibility.

Overview of Studies

We analyze the effect of donation use appeals on donor retention in one controlled online experiment and three field studies. In Study 1, using a representative sample of active and inactive donors, we show that appeals with donation use feedback increase redonation intention and that this effect occurs from increased perceptions of relationship investment and relationship quality. In Studies 2 and 3, we show that a past donation use appeal increases actual redonations for active donors, and we identify the positive moderating effect of donation experience (Studies 2 and 3) and the negative moderating effect of the late timing of messages (Study 3). Study 4 demonstrates that the positive effect of past donation use holds when compared with future donation use and also highlights the relevance of past donation use for reactivation purposes.¹

Study I: Mediating Roles of Perceived Relationship Investment and Relationship Quality

We build on the theory of relationship investment and relationship quality and test the mechanism empirically. To this end, we conducted an online experiment in which we manipulated donor appeals along three conditions: past donation use appeal with hospital name, past donation use appeal without hospital name, and a thank-you appeal (see Web Appendix A). We included the second condition to ensure that any effect found is not due to a higher degree of specificity of the past donation use appeal compared with the thank-you appeal (Cryder, Loewenstein, and Scheines 2013). The comparison between the past donation use appeal with and without the name of the medical facility tests the effect of the specificity degree. We expect both past donation use conditions to have a more positive effect than thank-you appeals. We randomly assigned participants to one of the three message conditions and analyzed the effects on perceived relationship investment, relationship quality, and redonation intention.

Participants and Procedure

Participants were 483 German blood donors ($M_{\text{age}} = 43.55$ years, 49.69% female, 52.59% active [47.41% inactive] donors; see Web Appendix B1). The survey was administered by an independent online panel organization. All participants were ensured anonymity.

The study was a one-factor, three-level between-subjects design. In each condition, participants saw a short “thank-you” text message referring to their past donation (see Web Appendix A for exact wording). The past donation use appeal with hospital name condition informed the donors that their blood donation was used to help a patient at a specific medical facility and, thus, had helped save a life. The past donation uses appeal without hospital name condition included the same past donation use information but without mentioning a medical facility. The thank-you-only condition served as a control. We used the University Clinic Charité Berlin in the past donation

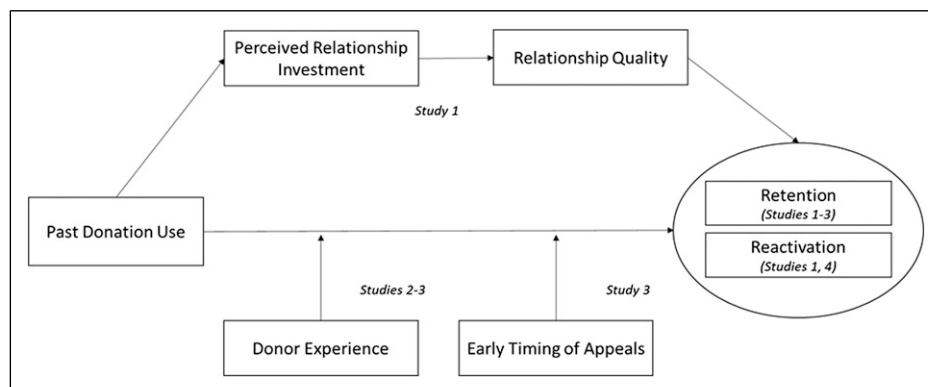


Figure 1. Conceptual framework.

use with hospital name condition because it is a well-known hospital in Germany. Note that all conditions (1) thanked donors for their last donation, (2) included the date of their last donation, and (3) included the date on which they could donate again. Moreover, we kept the temporal distance consistent across all three conditions; that is, the date of the past donation and the date of the next eligible donation were the same in all three conditions. The only difference between the experimental conditions and the control condition is the addition of past donation use information.

After participants viewed the text message, they were asked to report their redonation intention: "I intend to give blood at the next possible blood drive" (Lemmens et al. 2009). We measure perceived relationship investment with three items ("This blood donation service makes efforts to increase donors' loyalty," "This blood donation service makes various efforts to improve its tie with their donors," and "This blood donation service really cares about keeping donors"; Cronbach's $\alpha = .91$; De Wulf et al. 2001) and relationship quality with three items ("As a donor, I have a very good relationship with this blood donation service," "I am happy with the efforts this blood donation service is making towards donors like me," and "I am satisfied with the relationship I have with this blood donation service"; Cronbach's $\alpha = .92$; De Wulf et al. 2001). Furthermore, we measured warm glow with four items ("After reading this text message from the blood center, to what extent do you feel...?" "warm glow/satisfied with yourself/comfortable/positive about yourself"; Cronbach's $\alpha = .92$; Ferguson et al. 2012) and perceived donation impact with three items ("My blood donation is needed," "My blood donation makes a difference," and "My blood donation has an impact"; Cronbach's $\alpha = .80$; Cryder, Loewenstein, and Scheines 2013). All items are measured on a seven-point scale (1 = "strongly disagree," 7 = "strongly agree"; see Web Appendix B2). We randomized the order of donation intention and the mediators, and the order of items within each construct.

To test the manipulation in the past donation use conditions, we asked participants whether their past donation was used according to the text message they saw at the beginning of the survey (Web Appendix B3). The results show that the majority of participants assigned to the past donation use conditions confirmed that the donation was used accordingly (with hospital name: 81.12%; without hospital name: 74.42%); by contrast, only 19.64% of participants in the control group indicated such ($\chi^2(4, N = 483) = 156.14, p < .001$).

Results

Redonation Intention. For the effect of appeal type on donation intention, the results indicate that donation intention is higher for those receiving past donation use feedback (with hospital name: $M = 5.42, SD = 1.84$) than for those in the control thank-you condition ($M = 4.84, SD = 2.00; t(309) = 2.68, p < .01$). Donation intention is also higher for donors who received past donation use feedback not mentioning the hospital name ($M =$

$5.30, SD = 1.79$) than for those in the control condition ($t(338) = 2.28, p = .02$). Donation intention between the two donation use feedback (with and without hospital name) conditions does not differ significantly ($t(313) = .57, p = .67$). These results reveal the positive past donation use effect on donation intention. They also show that the effect is not driven by a higher specificity degree (i.e., inclusion of a hospital name).

Mediating Role of Perceived Relationship Investment and Relationship Quality. We predict that feedback on donation use increases donor retention because it enhances the donor's perception of the nonprofit service's relationship investment, which then leads to higher relationship quality and donation intention. Indeed, the results show that perceived relationship investment is significantly higher in the donation use feedback conditions (with hospital name: $M = 6.36, SD = .83; t(309) = 5.39, p < .001$; without hospital name: $M = 6.16, SD = 1.07; t(338) = 3.65, p < .001$) than in the control group ($M = 5.70, SD = 1.25$). Relationship quality is also higher in the past donation use feedback condition with hospital name ($M = 6.08, SD = 1.07$) than in the control group ($M = 5.48, SD = 1.34; t(309) = 4.34, p < .001$). However, there is no significant difference between the past donation use feedback condition without hospital name ($M = 5.68, SD = 1.41$) and the control group ($M = 5.48, SD = 1.34; t(338) = 1.35, p = .177$).

We next conducted a serial mediation to test the indirect effect through perceived relationship investment and relationship quality. The results show a positive total effect of past donation use feedback (with and without hospital name) on donation intention compared with the control thank-you condition ($b = .586, SE = .214, p < .01$; $b = .469, SE = .204, p = .02$; Table 2). We find that past donation use feedback significantly increases perceived relationship investment (with hospital name: $b = .663, SE = .122, p < .001$; without hospital name: $b = .461, SE = .177, p < .001$), which increases relationship quality ($b = .836, SE = .039, p < .001$) and, in turn, leads to higher redonation intention ($b = .864, SE = .080, p < .001$). Moreover, the indirect effect based on bootstrapping with 10,000 replications shows that serial mediation through perceived relationship investment and relationship quality is positive and significant (with hospital name: $b = .479, SE = .099, 95\%$ confidence interval [CI]: .296 to .656; without hospital name: $b = .333, SE = .097, 95\%$ CI: .148 to .531). The direct effect of past donation use on relationship quality is not significant (with hospital name: $b = .049, SE = .109, p = .654$; without hospital name: $b = -.182, SE = .102, p < .077$).

Robustness Estimations. Building on previous research that shows the effect of affective and cognitive mechanisms on donation intention (e.g., Fuchs et al. 2020; Lemmens et al. 2009), we tested an alternative model that includes warm glow and perceived donation impact as additional parallel mediators. Warm glow refers to the joy of giving (Andreoni 1990), and donation impact reflects the degree to which donors perceive their donation as making a difference (Cryder, Loewenstein, and Scheines 2013). The results reveal a mediation effect through

Table 2. Results of Serial Mediation Analysis Through Perceived Relationship Investment and Relationship Quality (Study 1).

	Perceived Relationship Investment (PRI)				Relationship Quality (RQ)				Donation Intention			
	b (SE)	p	2.5%	97.5%	b (SE)	p	2.5%	97.5%	b (SE)	p	2.5%	97.5%
X ₁ Past donation use (with hospital)	.663 (.123)	.000	.422	.904	.049 (.109)	.654	-.165	.263	.220 (.190)	.246	-.152	.593
X ₂ Past donation use (without hospital)	.461 (.117)	.000	.231	.690	-.183 (.102)	.075	-.384	.018	.402 (.179)	.025	.051	.753
PRI					.836 (.039)	.000	.759	.914	-.234 (.096)	.015	-.422	-.047
RQ									.864 (.080)	.000	.708	1.020
Constant	5.698 (.083)	.000	5.535	5.862	.711 (.236)	.003	.248	1.175	1.435 (.414)	.001	.622	2.248
Total effects												
X ₁									.586 (.214)	.006	.167	1.006
X ₂									.469 (.204)	.022	.069	.869
Indirect effects via PRI												
X ₁									-.155 (.075)		-.316	-.018
X ₂									-.108 (.059)		-.238	-.011
Indirect effects via RQ												
X ₁									.042 (.085)		-.119	.219
X ₂									-.158 (.095)		-.342	.021
Indirect effects via PRI & RQ												
X ₁									.479 (.099)		.296	.686
X ₂									.333 (.097)		.148	.531
R ²	.062				.503				.274			
df	2, 480				3, 479				4, 478			
F (p)	15.810	(.000)			161.267	(.000)			45.186	(.000)		

warm glow (with hospital name: $b = .167$, $SE = .069$, 95% CI: .046 to .318; without hospital name: $b = .095$, $SE = .053$, 95% CI: .015 to .217) but no mediation through perceived donation impact (with hospital name: $b = .043$, $SE = .037$, 95% CI: $-.019$ to .126; without hospital name: $b = .039$, $SE = .033$, 95% CI: $-.019$ to .122; [Web Appendix A4](#)). Importantly, the serial effect results for perceived relationship investment and relationship quality remain robust when we add the mediation through warm glow and perceived donation impact to the model. The serial indirect effect through perceived relationship investment and relationship quality is stronger than the indirect effect through warm glow (with hospital name: $b = .404$, $SE = .088$, 95% CI: .239 to .587; without hospital name: $b = .280$, $SE = .085$, 95% CI: .121 to .455; [Web Appendix A4](#)), thus providing support for H1 and H2; that is, the donor relationship route is the central mechanism for the past donation use effect.

Overall, in Study 1 we demonstrate the positive direct effect of past donation use appeals on retention. We show that past donation use feedback increases perceived relationship investment, which in turn increases relationship quality and, ultimately, redonation intention. This mechanism is also valid independent of whether the appeal mentions the specific medical facility where the donation was used, and it is stronger than affective or cognitive mechanisms of warm glow or perceived donation impact, respectively. In Study 2, we aim to replicate the past donation use effect in the field with actual

redonations and examine the moderating role of donor experience.

Study 2: Retention of Active Donors and the Role of Donor Experience

Setting

We investigate the effect of past donation use appeals on redonation behavior of active blood donors in a field study in collaboration with the Austrian Red Cross Blood Donation Services. The Austrian Red Cross's policy is to send short text messages to each donor within three weeks after a donation, thanking them for their last donation. In June 2016, the organization changed the text message content, such that if the donation was sent to a hospital for use, donors received a text message with information on that use and the date when they could make their next donation. Donors whose donation was not used within that time frame received a thank-you message (the previously used default message) and the date of the next possible donation. Thus, the only difference in the text messages sent after June 2016 was the inclusion of information on the donor's last donation, if it was used (see [Web Appendix B](#) for exact wording). We use this quasi-experimental design to analyze the past donation use information effect on donor retention.

In our analysis, we considered the 52 weeks after the policy change to measure the effect of the past donation use appeals on redonation behavior. The reason for considering a time window of 52 weeks is to capture yearly seasonality effects. We only considered donors who had received at least one text message and donated at least once during this time. We compared the redonation behavior of donors who received past donation use appeals with those who received thank-you appeals. Past donation use appeals can only be sent to donors whose donation was actually used in the three weeks after a donation. Although, as mentioned, the usage of blood donations is not determined by the blood donation service but rather by exogenous factors related to blood demand, we cannot exclude the possibility of some systematic differences—for example, effects related to blood groups that may be needed more often (American Red Cross 2022a). To reduce these possible systematic differences, we matched donors with past donation use and those with thank-you appeals.

Results

We compared the number of donations in the 52 weeks after the policy change (i.e., June 2016–June 2017) of donors who received messages about donation use in the past period with donors whose blood was not used and who consequently received the standard thank-you text message. This left us with 74,914 donors, 59,934 of whom had received at least one past donation use appeal, and the remaining 14,980 who had received at least one thank-you appeal. To avoid confounding, we considered only donors who exclusively received past donation use or thank-you appeals.

Donors with past donation use appeals made 1.84 donations on average ($SD = 1.09$), which is 1.7% more than that for donors with thank-you-only appeals ($M = 1.81$, $SD = 1.16$; $t = 3.60$, $p < .01$). To control for potential systematic differences, we matched both donor groups via propensity score matching (Heckman et al. 1998).

For all donors, we calculated a propensity score of receiving past donation use appeals based on whether they received a past donation use message (i.e., that their blood was used in the 52 weeks after the policy change), conditional on donor characteristics. To this end, we estimated a probit model in which the dependent variable is binary, coded as 1 if a donor

received a donation use message and 0 if a donor received a thank-you message. We controlled for age, gender, blood group, and number of years since first donation and applied nearest-neighbor with common support matching (Smith and Todd 2005). The results show that age, gender, blood group, and rhesus factor² significantly affected the group membership (see Table C1 in Web Appendix C for matching results). We extensively tested the robustness of our results to other matching methods (see Web Appendix C2). Post-matching, in our final sample consisting of 74,877 observations, the effect of past donation use on the number of donations, remains significant and corresponds to a 2.8% uplift (treatment group: 1.86, control group: 1.81; $t = 3.12$, $p < .01$). We calculated the standardized mean and media bias to assess covariate balance pre- and post-matching (Rosenbaum and Rubin 1985). The results show that covariate imbalance was substantially reduced from matching: The mean standardized bias was reduced from 9.2 (pre-matching) to .5 (post-matching). Similarly, the median standardized bias dropped from 6.9 to .3. In addition, the standardized difference in the means of the propensity scores was less than 25%, and the variances of the propensity score in the treated and control groups was 1.02 (i.e., between .5 and 2, as defined by Rubin [2001] to indicate satisfactory covariate balance).

We estimated a linear regression model with the number of donations as the dependent variable in the matched sample. The focal independent variable depicts whether a donor received a past donation use appeal. We measured donor experience as the number of past donations before the policy change ($M = 4.85$, $SD = 5.06$) to test H3.

The results show a positive effect of the past donation use appeal ($b = .713$, $SE = .007$, $p < .01$; Model 1, Table 3), in support of H1. To test H3, we add the interaction with the past number of donations. The results show that the past donation use effect increases with donor experience ($b = .072$, $SE = .004$, $p < .01$; Model 2, Table 3), providing support for H3. In other words, more experienced donors are more motivated to engage when they receive feedback on the use of their last donation.

Robustness Estimations

We conducted comprehensive robustness checks to test the validity of our results. First, we tested our results against a

Table 3. Past Donation Use Effect on Redonation Behavior of Active Donors (Study 2).

	Model 1			Model 2		
	Coefficient	SE	<i>p</i>	Coefficient	SE	<i>p</i>
Past donation use	.713	.007	.000	.237	.013	.000
Number of previous donations				.051	.004	.000
Past donation use × number of previous donations				.072	.004	.000
Constant	1.237	.006	.000	1.038	.012	.000
N	74,877			74,877		
R ²	.048			.360		

different operationalization of the past donation use variable—namely, the number of past donation use messages instead of the dummy (Table C2.1 in Web Appendix C). All effects remain substantively consistent. Second, we tested the robustness of our results to different matching methods. To this end, we estimated six matching models (radius, Mahalanobis, kernel, nearest neighbor with caliper, XGBoost matching, and doubly robust XGBoost). Tables C2.2 and Figure C2.1 confirm that each of these matching methods reduces covariate imbalance substantially; Table C2.3 shows the regression results after each matching and confirms that our main results are robust to different matching procedures. Third, we tested the robustness of our results by considering a different time window, 26 weeks instead of 52 (Table C2.4). The results confirm the positive effect of past donation use and the positive interaction with the number of past donations. Fourth, we estimated a difference-in-differences model (Table C2.5), which also confirms the validity of all effects. Finally, we tested our results against a different operationalization of the dependent variable. To this end, we used weekly donation data for each donor (vs. aggregated data at a donor level, as in our main analysis) and estimated the effect of past donation use appeals on donation likelihood with a probit model with donor-specific random intercepts. The effects are in line with the results in Table 2: Past donation use appeals increase the likelihood to donate again, and this effect increases with donor experience (Table C2.6). Overall, our comprehensive robustness estimations give us confidence in the positive past donation use effect, given the quasi-experimental nature of our study.

Discussion

Study 2 provides evidence that communicating past donation use information increases repeat donations compared with thank-you appeals for active donors. This effect is substantial, as the increase translates into a 9.8% increase in redonations yearly. We also find that the positive effect is stronger for more experienced donors with a higher number of past donations. This finding is in line with research showing that relationship quality is less important in the initial life-cycle stages (Cambra-Fierro et al. 2018b). However, the results in Table 3 show that past donation use appeals are still effective for novice donors, even after their first donation, which is important because these donors tend to have higher lapse rates (Leipnitz et al. 2018; Van Dongen 2015) and thus are typically more challenging to retain (Piersma et al. 2019). Overall, we conclude that past donation use appeals are an effective strategy to improve donor retention, even in the early stages of the donor life cycle, though this effect is strengthened as donor experience increases.

Study 3: Retention of Active Donors and The Role of Appeal Timing

We conducted the second field experiment in collaboration with the Austrian Red Cross Blood Donation Services to assess whether the timing of messages is relevant for the past donation

use effect. Because people can only donate blood four to six times a year, blood donation services set automatic breaks in communication between the weeks in which donors are eligible to donate. Thus, blood donation services can send past donation use appeals closer to or further from the next eligibility to donate. We theorize that an earlier past donation use appeal will be more effective than a late past donation use appeal and test this effect.

Participants and Procedure

The default policy of the Austrian Red Cross Blood Donation Services is to send a past donation use message if the blood donation was used within a three-week period after donation. We created a condition in which the message was sent 10 days before the next eligible date to donate, such that we had two timing conditions in which past donation use messages were sent: three weeks after a donation occurred and 10 days before the next eligible date. In both settings, we consider only the first three weeks after a donation to determine whether it was used. The content of the message remained identical to that in Study 2 (with hospital name); the only difference was the timing of the message.

We randomly assigned donors whose donation was used within the first three weeks after their donation to the early or late-timing condition. Donors whose blood donation was not used received a thank-you message three weeks after the donation. The field study started in August 2019; our data cover the period August 2019–July 2020. We compared the number of donations among the early timing, late-timing, and thank-you groups. To reduce confounding, we only considered donors who received just one donation appeal type.

The assignment of participants to a past donation and thank-you donation condition could be affected by factors such as blood group. To reduce these potential systematic differences, we matched donors whose donation was used within the three weeks after their donation to those whose donation was not used (thank-you group).

Results

First, we applied nearest-neighbor matching between donors who received a past donation use message and those who received the thank-you message. We used the same independent variables as in Study 2 (i.e., age, gender, blood group, rhesus factor, and number of weeks since the first donation; see Web Appendix D). In a second step, we applied regression analysis to the matched sample. The focal variable is an indicator variable showing whether a donor received a past donation use message in the early or late-timing group. The baseline is donors who received only the thank-you message. The matching process substantially decreases the covariate imbalance between groups: The mean standardized bias is reduced from 3.9 to .1, and the median standardized bias is reduced from 2.6 to 0. The standardized difference in the means of the propensity scores is less than 25%, and the variance of the propensity score in the treated

and control groups is 1.6—between .5 and 2, indicating good covariance balance post-matching (Rubin 2001).

The results show that, compared with the thank-you message, the effect of early timing (corresponding to the default past donation use setting from Study 2) is positive and significant ($b = 1.256$, $SE = .076$, $p < .01$; Table 4). However, when the messages were sent shortly before the next possible donation (i.e., donor is eligible to donate again), the past donation use effect attenuates and is even less effective than the thank-you message ($b = -.030$, $SE = .013$, $p < .018$; Table 4), confirming H4. Our data do not contain information on the number of past donations before the field study, but we know whether a donor donated for the first time during the field study. Thus, we analyze whether the timing effects vary between novice and established donors. We find that the positive effect of past donation use (early timing) is weaker for novice donors ($b = -.514$, $SE = .009$, $p < .001$). This finding is consistent with Study 2, in which the past donation use effect is stronger for more experienced donors with a higher number of past donations, providing further support for H3. For late timing, we observe no differences between novice ($b = .059$, $SE = .032$, $p = .067$) and established donors; that is, such timing is equally ineffective for both groups.

Robustness Estimations

We conducted comprehensive robustness checks to test the validity of our results in terms of different matching methods. To this end, we estimate six matching models: radius, Mahalanobis, kernel, nearest neighbor with caliper, XGBoost matching, and doubly robust XGBoost. Web Appendix D (Tables D2.1 and D2.2) shows the regression results and confirms that our main results are robust to different matching procedures. In addition, Figure D2.1 confirms the covariate imbalance reduction.

Discussion

Overall, the results show that timing is important when providing donors feedback on the use of their past donation. Sending this feedback shortly before the next donation

attenuates the positive past donation use effect and even negatively affects future donor engagement compared with a thank-you appeal. One explanation is that donors may perceive the late timing as a marketing tactic intended to encourage redonations rather than as an effort to build relationships, which might switch their perceptions from relational to transactional, lowering their redonation behavior. This negative effect of late timing holds for both established and novice donors. As long as the past donation use message is sent early, the results replicate the substantial effect found in Study 2. This study also replicates the effect of donor experience, such that the positive effect of past donation use appeals is stronger for donors who have donated more than once in the past.

Study 4: Past Donation Use Appeals and Reactivation of Inactive Donors

To further test the effectiveness of past donation use appeals on donor retention, we conducted a field experiment in cooperation with the German Red Cross focusing on reactivating inactive donors. The practice of the German Red Cross at the time of the study was to acknowledge the past donation without mentioning donation use. Thus, the key experimental condition is past donation use appeals, which we compare with a thank-you appeal. We also include a future donation use appeal to empirically demonstrate the benefit of a past donation use appeal in the blood context.

Participants and Procedure

The field experiment included 16,701 randomly selected, inactive blood donors (55% female; $M_{\text{age}} = 36.93$ years, $SD = 13.01$). None of the donors in this sample had made a blood donation to the German Red Cross in the past two to four years. The study was a one-factor, three-level design (donation appeal: thank-you vs. past use vs. future use). We randomly assigned participants to one of the three conditions and sent a mailing with the randomly assigned blood donation appeal letter. In the thank-you condition, we used the current appeal used by the German Red Cross for reactivation purposes at the time of this study; in the experimental condition (i.e., past donation use), we thanked donors for their last donation and included information

Table 4. Timing Effects (Study 3).

	Model 1			Model 2		
	Coefficient	SE	<i>p</i>	Coefficient	SE	<i>p</i>
Past early timing	1.256	.076	.000	1.353	.087	.000
Past late timing	-.030	.013	.018	-.462	.112	.000
Novice × past early timing				-.514	.009	.000
Novice × past late timing				.059	.032	.067
Novice donor				-.041	.017	.014
Constant	1.821	0.004	0.000	1.894	.004	.000
N	67,747			67,747		
R ²	.01			.03		

on the use of this donation (see [Web Appendix B](#) for exact wording). We used the actual name of the medical facility and date of use of a specific donation. In the future use condition, we informed donors that their next donation would be used to save a life. To keep the same level of concreteness as in the past donation use condition, we named the organization facility nearest to the place of residence of each donor (see [Web Appendix B](#)).

In line with the current reactivation practices of the German Red Cross, all participants received the randomly assigned appeals two weeks before a mobile blood drive in their respective neighborhood. The dependent variables are whether inactive donors donated blood and the number of donations they made one year after receiving the appeal.

Results

In total, 1,973 of the inactive donors in our sample donated blood in our observation period (i.e., from the moment they received the appeal mailing until one year after); this corresponds to an overall reactivation rate of 11.814%. The highest reactivation rate was in the past donation use condition (12.863% vs. 11.147% for the future donation use condition and 11.598% for the control group with the past donation acknowledgment). A chi-square test shows that the differences between groups are statistically significant ($\chi^2 = 9.048, p = .011$). Specifically, past donation use leads to a significantly higher reactivation rate and thus is more effective than both the future donation use ($\chi^2 = 7.739, p = .005$) and the control appeal that simply acknowledges past donation ($\chi^2 = 5.395, p = .020$). By contrast, the number of reactivated donors in the future donation use and that in the thank-you condition do not differ significantly ($\chi^2(1) = .220; p = .639$). These results show that receipt of the past donation use appeal increased the likelihood that an inactive donor would donate again, while the future donation use did not improve donor reactivation. In addition, this positive effect of past donation use compared with both the future donation use and thank-you conditions indicates that the effect is not due to the “save-a-life” wording in general or to specific information about the hospital or use of a future donation; instead, it stems from the feedback about the use of donors’ past donation.

To analyze the effect of donation use appeal on the number of donations, given that a lapsed donor reactivated, we apply a Tobit type II model ([Franses and Paap 2007](#)). We jointly estimate the effect of the donation use appeal on the reactivation probability and on the number of donations, conditional on reactivation with correlated error terms.

We specify the redonation probability as a probit model:

$$P_{re} = \begin{cases} 1 & \text{if } P_{re}^* > 0 \\ 0 & \text{otherwise} \end{cases}, \quad (1)$$

where P_{re}^* is a latent variable defined as a function of the past donation and future use treatments, as well as the following control variables:

$$P_{re}^* = \alpha^p + \beta_1^p Past + \beta_2^p Future + \delta^p X + u^p. \quad (2)$$

The focal variable of interest is the “past” dummy, which takes the value 1 if an inactive donor received the past donation use appeal and 0 otherwise. Consequently, β_1^p is the relevant parameter for capturing the past donation use effect, and X is a matrix of control variables. We control for gender, age, the number of years since the first donation ($M = 4.464, SD = 5.551$), the blood group, and the number of previous donations ($M = 7.247, SD = 10.442$).³ Conditional on reactivation, we assess how many times an inactive donor donated blood in our observation period after receiving the appeal letter in a linear equation:

$$Number_donations = \alpha^n + \beta_1^n Past + \beta_2^n Future + \delta^n X + u^n. \quad (3)$$

The results presented in [Table 5](#) show that, as expected, the past donation use appeal significantly increases the probability to donate compared with the thank-you control condition ($b = .069, p = .031$). By contrast, the future donation use appeal does not show a significant effect compared with the thank-you control condition ($b = -.016, p = .602$). When we keep all other variables at the sample mean, past donation use appeals again increase the average individual likelihood to donate by 11.9% (from 10.4% to 11.9%). This increase translates to 236 additional blood donations each year from our sample of 16,701 inactive donors, which results in 708 additional units of life-saving blood, as one donation can serve up to three people in need.⁴

For the control variables, we observe a positive effect of age and the length of donor relationship. When an inactive donor returned, the number of donations made during our collection period did not differ by appeal type ([Table 5](#)). In other words, with the reactivation of a donor, the past donation use appeal does not further affect donation frequency.

Discussion

Study 4 again finds that a past donation use appeal increases the likelihood of redonation, in support of H1. This effect is substantial, as it means more than 230 additional blood donations yearly just from our limited sample of inactive donors. More important, the past donation use condition shows an uplift compared with a future donation use appeal. By contrast, the future donation use condition does not show an effect beyond the simple “thank-you” appeal, in line with previous research ([Shehu, Langmaack and Clement 2013](#)). Thus, the past donation use condition is the only effective strategy in this setting.

We recognize that the results from Study 4 seemingly differ from those from Studies 2 and 3, which also show an effect on the number of donations. One reason for this is the procedural differences between these field studies. Specifically, in Study 2, the organization changed the policy for all donors, such that donors now receive a past donation use appeal after every donation that is used. In Study 3, appeals are also sent to donors

Table 5. Past Donation Use Effect on Redonation Behavior of Inactive Donors (Study 4).

Variables	Reactivation (Yes/No)			Number of Donations When Reactivated		
	b	SE	p	b	SE	p
Past donation use	.069	.031	0.025	-.0366	.059	.535
Future donation use	-.016	.031	0.602	-.052	.059	.381
Gender (female)	.013	.025	0.216	-.015	.048	.746
Age	.002	.001	0.052	.007	.002	.003
Number of years since first donation	.027	.001	0.000	-.000	.007	.923
Blood group A	-.027	.028	0.332	.071	.053	.187
Blood group B	-.001	.039	0.973	.109	.072	.128
Blood group AB	.004	.053	0.939	.101	.098	.303
Number of previous donations	.003	.001	0.019	.010	.002	.000
Constant	-1.454	.049	0.00	1.467	.499	.003
N	16,701					
Log-likelihood	-8,834.820					

after every donation (only the timing differs according to the experimental conditions). However, in Study 4, the past donation use appeal was a one-time mailing in the randomized field experiment, which would account for the null effect on the number of donations following the one-time appeal. Another potential reason for these differences is the slightly dissimilar wording used in the studies. Because we developed the study stimuli around the current appeal used by the blood donation service, the wording of the stimuli varied between Study 4 and Studies 2 and 3. However, a post-test study analyzing these effects (see [Web Appendix E](#)) shows that these differences are not the driver behind the past donation use effects.

We also conducted an online randomized experiment that compares the effect of past donation use appeals with future donation use appeals for blood and monetary donations ([Web Appendix F](#)). The results confirm that the past donation use leads to higher donation intention than the future donation use for both blood and money donations. This finding is important because it shows that the effectiveness of past donation use is greater than that of future donation use, underscoring the relevance of past donation use appeals. Overall, the results provide additional support that incorporating information on the use of a past donation increases reactivation likelihood more than a simple acknowledgment of past donation, improving retention of inactive donors.

General Discussion

This research demonstrates that blood donation services should frame donation appeals to highlight the effort they are investing to build and maintain donor relationships, in turn increasing relationship quality and boosting donor retention. Our online study demonstrates the serial mediation and shows its robustness over the alternative mechanisms of warm glow and perceived donation impact. In three field studies, we show the effectiveness of past donation use appeals for retention and reactivation purposes, even

when compared with future donation use appeals. For active donors, experience with a specific blood donation service and the timing of the message moderate this effect.

Theoretical Contributions

Our results contribute to the literature on relationship management for service providers, and specifically for blood donation services. Prior research has shown the role of perceived relationship investment and relationship quality for customer loyalty and behavior ([Coviello et al. 2006](#); [Dong and Sivakumar 2017](#); [Gremler et al. 2020](#)). We complement these findings by showing that this sequential effect also applies to blood donation services and that such service providers can use relationship-enhancing measures to improve the blood supply. Our suggested strategy is novel and cost-efficient because blood donation services are required to track the path of blood donations. By providing past donation use information to their donors, blood donation services close the service loop toward the donors, as central cocreators in the blood donation process, and improve donor relationships and retention. These insights are novel and add to the literature on charitable-giving relationships ([Fang et al. 2021](#); [Garbarino and Johnson 1999](#); [Iacobucci and Hibbard 1999](#); [Khodakarami, Petersen, and Venkatesan 2015](#); [Minguez and Sese 2023](#); [Thomas et al. 2015](#)).

Our findings are important for the reactivation of lapsed blood donors. Previous research has shown that in the commercial context, information from the first lifetime behavior of lost customers (i.e., their history with a company before they become inactive) is valuable for winning them back ([Kumar et al. 2015](#); [Tokman et al. 2007](#)). We expand existing research by showing how blood donation services can leverage information from the first lifetime of their lost donors' pre-lapse to reactivate them.

We also contribute to prior research using field experiments to show how personalizing donation appeals affect redonation

behavior (e.g., [Kessler and Milkman 2018](#); [Verhaert and Van der Poel 2011](#)). We add to these findings by demonstrating how incorporating a key piece of information relevant to existing donors (i.e., use of their past donation) affects redonation, and we elaborate on the mechanism underlying this effect. The effect of donation use feedback goes beyond the date effect [Kessler and Milkman \(2018\)](#) identify in the context of monetary donations, as we include the last donation date in all conditions of Study 1.

Finally, we show that informing donors that their past donation was used increases donor retention beyond donation acknowledgment or even future donation use. Thus, we contribute to research on donor acknowledgment and recognition ([Fisher and Ackerman 1998](#); [Karlan and McConnell 2014](#); [Supphellen and Nelson 2001](#); [Wang and Tong 2015](#); [Winterich et al. 2013](#)) by demonstrating the benefit of moving beyond simple acknowledgment to actual donation use. Conceptually, we distinguish the unique aspects of blood donation use compared with other types of donations (i.e., money, time, or goods), which makes past donation use information more critical for blood donation services.

Practical Implications

The findings of this study also provide managerial and policy implications. For managers of blood donation services, our findings show that use of past donations is paramount. Tracking of donations' use is obligatory by legislation and is not related to additional costs or efforts for a blood donation service. The Blood Donation Service of the German Red Cross replaced its reactivation appeal using acknowledgment of past support with an appeal based on past donation use after reviewing the results of the field experiment in Study 4.

Our results reveal that incorporating past donation use increases both the probability of reactivating inactive donors by 11.98% and the number of donations of active donors by 9.8% yearly. Using conservative estimates of one annual donation on average, this translates into an additional 10,000-plus blood donations for a medium blood donation service organization with 100,000 blood donors, 20% of whom are assumed to be inactive. This effect is substantial, as each blood donation can meet the needs of up to three people ([American Red Cross 2022a](#)). [Sargeant Adrian, 2013](#) suggests that just a 10% increase in donor retention can increase the lifetime value of donors by as much as 200%. This reasoning emphasizes the effectiveness and relevance of strategies based on past donation use for retention purposes—especially as they are not costly. The variable costs of personalizing content are a matter of the interfaces between marketing and medical databases and are close to zero when digital communication channels are used.

Moreover, the societal impact of successfully improving retention of blood donors is high. The [American Red Cross \(2022a\)](#) reports that in the United States, someone receives blood every two seconds from one of the 37,000 blood donations collected every day. However, only a fraction of the

eligible population actually donates blood: 38% of the US population is eligible to donate, but only 10% actually do ([American Red Cross 2022a](#)). Thus, blood supply often falls below demand, leading to critical blood shortages. These shortages have become especially serious since the pandemic (e.g., [BBC 2022](#); [The Guardian 2022](#)). Hence, blood donation services need to use efficient retention appeals to prevent hospitals from postponing transfusions or surgeries ([American Red Cross 2022b](#)).

The generally accepted notion that acquiring new customers is more expensive than retaining existing customers ([Stauss and Friege 1999](#)) also applies to donors in the prosocial context. Our study shows how blood donation services can leverage available data from the donation history of existing donors to improve donor relationships, retention, and reactivation. Existing blood donors are an important segment because, unlike new donors, they are familiar with a blood donation service provider and have already overcome psychological barriers, such as fear of physical pain. In addition, in contrast with new donors, contact data of existing donors are available to the blood donation service, so they can be easily contacted with direct marketing actions. Finally, past blood donors are eligible to donate based on their health status, which reduces the need to attract new donors who might then have to be deferred for health reasons ([Custer et al. 2007](#)). Consequently, improving donor retention is managerially relevant from a cost-savings perspective, because retaining existing donors requires less time and financial efforts than finding new donors.

Limitations and Future Research Directions

This research has several limitations, which provide avenues for future research. First, we cannot access the underlying mechanism in the field studies. Thus, it is possible that other mechanisms play a role in addition to the identified effects of perceived relationship investment and relationship quality. Although warm glow and perceived donation impact did not have as strong an effect as relationship factors, subsequent research could explore the effect of these and other factors. In our field studies, we examined the donation use effect on redonation behavior for active and inactive donors but did so in three studies with different designs. Future research could further examine whether the effect size differs by donor status (active vs. inactive).

When considering the unique aspects of blood donation services, important questions are whether and how blood donation services should communicate the nonuse of donated blood. Given variation in demand, donated blood is not guaranteed to be used. In current practice, nonuse communication is sensitive because it may hurt the blood donation service's relationship with donors if they learn that their blood was not used. We did not address the communication of nonuse in our studies, but this would be an important topic in future studies. Future research could examine whether an explanation of why the donated blood was not used to help people in need might actually improve the donor relationship (e.g., increased trust in a

blood donation service) or identify other effective appeals in the case of nonuse. Although our research was specific to blood donations, a worthwhile question is whether our findings apply to donations of money, time, or goods. While blood donations are unique because of the uncertainty of donation use, they may also be unique because the recipients are unknown to donors. However, with many donations of money, time, and goods, recipients are also unknown to donors. In such cases, does past donation use information also increase redonation? An initial experiment exploring this effect (reported in [Web Appendix F](#)) indicates that past donation use appeals increase redonation intention for monetary donations. Future research could examine the conditions under which past donation use is particularly effective for other donation types, especially when the donation is not anonymous (e.g., in case of [SOS Children's Villages \[2023\]](#)).

As blood donation services have begun to implement past donation use appeals, future research should examine the long-term effects of past donation use. After donors have received past donation use information once, is a second appeal with past donation use information equally effective, or does the effectiveness attenuate over time? Alternatively, donors may come to expect this level of feedback from the blood donation service, and if it is not provided after a donation, it may negatively influence the perceived relationship investment and quality. These are important questions that blood donation services need to consider, and research addressing these questions would enhance theoretical insight into nonprofit donor relationships over time. A further avenue for future research assessing the long-term effects of past donation use information is the synergies between past donation use appeals and other marketing activities of blood donation services. The American Red Cross often employs promotional strategies such as T-shirt giveaways or ticket entries to increase donations, which can be costly. When past donation use information is employed, are such promotional strategies still effective, or can they be reduced? Future research should consider what marketing tactics can reinforce or enhance the effectiveness of past donation use and identify those that may weaken the effect for different donor groups, revealing other boundary conditions.

Conclusion

Blood donation organizations provide a life-saving service to those in need. However, securing a steady supply of blood has become increasingly challenging for these services. Thus, retaining existing blood donors is essential, since these donors have overcome many of the challenges that prevent others from donating blood. When communicating with prior donors, it is critical that blood donation services inform the donor about the use of their past donation. This information signals to blood donors that the blood donation service is invested in their relationship, enhancing perceived relationship quality and substantially increasing the likelihood that the donor will donate blood again, a life-saving act for society.

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. [Web Appendix A](#) shows the exact stimuli used in all studies.
2. Rhesus factor, which is a protein that can be either present or absent, further differentiates blood types (<https://www.redcrossblood.org/donate-blood/blood-types.html>).
3. We also estimated a model including the distance between the hospital where the donation was used and the donors' addresses. Although the distance shows a negative and significant effect (i.e., attenuates the repeat donation behavior), the past donation use effect remains robust in terms of size and significance.
4. The assumption of one average blood donation is conservative, as the average number of donations of reactivated donors in our sample is 1.73.

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