

Image Concerns in Pledges to Give Blood: Evidence from a Field Experiment*

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Abstract

We use a field experiment to study how social image concerns affect pledges to engage in a charitable activity. We work with two different blood banks and a municipal government in Germany to offer sign-ups for human whole blood donations. Motivated by a simple signaling framework, we randomly vary the type of organization to donate to and the visibility of the pledge. Our setting also provides natural variation in the group of people that form the “audience” for social image concerns. We find evidence for strong social image concerns when subjects are asked in public whether they would like to pledge a donation with a well-known charity. Pledges of our subjects do not to induce any charitable giving. Almost all subjects renege on their pledge, with no detectable differences between treatments.

Keywords: prosocial behavior, social image, commitment, incentives, field experiment.

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1 Introduction

We want to be seen by the people around us as doing good, as being generous and altruistic. Costly prosocial behavior such as donations of time, money, or body tissue, can act as a signal to others that demonstrates such generosity (Benabou & Tirole, 2006). Conversely, social image concerns can be used to induce individuals to give more to charity (Ariely, Bracha, & Meier, 2009; Meyer & Tripodi, 2017). Social pressure might even induce some individuals to give not because they would like to, but simply because they dislike saying no (Andreoni, Rao, & Trachtman, 2017; DellaVigna, List, & Malmendier, 2012).

In many settings, however, prosocial actions themselves cannot be made public. One way for individuals to still benefit from public recognition of their prosocial activities is to demonstrate proof of contribution ex-post, for example by wearing a lapel pin for blood donors or sharing a picture of volunteer activity on social media. Ex-ante, social pressure can be leveraged by encouraging public pledges to act charitably in the future. Such pledges can be used to rally individuals to contribute to future charitable activities, for example through public calls for action in online and offline social networks.

Two steps are involved for a pledge to increase contributions to a charitable activity: First, individuals need to take up the initial commitment. Second, individuals need to follow through and fulfill their pledge. In this paper, we set out to study how social image concerns affect both of these steps.

In the first step, an observable promise to do good – similar to an observable act of doing good – can be used to signal generosity to others.¹ This signaling process will be the focus of our field experiment. Building on a simple theoretical framework, we study three channels through which social image effects can affect the uptake of pledges: the degree to which an individual cares about being seen by others as “doing good” by taking a pledge, the expectation that an individual has over how socially-desirable others around her perceive her pledge, and the ability of others to update their beliefs about an individual, given her pledge.

In the second step, various mechanisms can explain why individuals would renege or follow through. A pledge can produce an internal commitment that individuals with preferences for moral consistency (Cialdini & Trost, 1998; Cioffi & Garner, 1996) or guilt-aversion (Charness & Dufwenberg, 2006) might not want to break. Increasing the costs of reneging could then increase follow up (Andreoni & Serra-Garcia, 2017). Conversely, if the costs of reneging are low, one would expect that few individuals

¹ Andreoni and Serra-Garcia (2017) provide an alternative explanation and illustrate how people may want to substitute immediate donations with pledges to donate to help overcome pressure to give (Andreoni et al., 2017; DellaVigna et al., 2012) and time inconsistency in their preferences for giving (Dreber, Fudenberg, Levine, & Rand, 2016; Saito, 2015). Although individuals in our study may want to use pledges as an internal commitment device to donate, we do not consider time-inconsistent preferences for charitable giving.

follow through on their pledges. [Lacetera, Macis, and Mele \(2016\)](#) conduct an experiment in an online social network and provide evidence that individuals may broadcast pledges to donate money in order to signal generosity. While broadcasting appears to be correlated with donations, a separate field experiment finds that very little stated support (in the form of costless “likes”) translates into actual donations. Through a different mechanism, pledges could also induce introspection that makes individuals form a subjective value for the prosocial activity ([Stutzer, Goette, & Zehnder, 2011](#)). Given the various potential explanations, we decided to study the second step empirically.

We conduct a field experiment in a mid-sized German city where various organizations compete for prospective blood donors. In the service center of the municipal government, we approach customers waiting for their appointment with a short questionnaire and an offer to sign up for blood drives scheduled in the city over the following weeks. The experiment randomly varies treatments over two dimensions: In the first dimension, we vary the organization holding the blood drive. We work with the German Red Cross, which generally never pays its donors, and a private commercial blood bank, which remunerates donors with 20 euros per donation. In the second dimension, we vary whether the sign-up is offered in private on a tablet computer only visible to our subject, or in public by our enumerator. Other customers as well as friends and family members coming along to the appointment serve as a natural “audience” for the public pledge. The sign-up is not binding, but represents a pledge vis-à-vis the blood collector. In the months after the survey, we observe whether our subjects indeed choose to donate by matching their names with the databases of the two collectors.

We find evidence for strong social image concerns when subjects are asked in public whether they would like to pledge a donation with the Red Cross: When subjects are accompanied by friends and family members, public offers significantly increase the likelihood of pledging to come to a donation drive. When subjects are not accompanied by anyone, but just surrounded by other customers waiting in the city hall, we do not find significant differences between public and private offers. Similarly, social image concerns do not appear to play a role when subjects are offered to sign up for a remunerated donation with the commercial blood bank. These findings are consistent with a theoretical framework in which social image concerns are amplified when subjects care more about being perceived in a positive light by a reference group of people and when pledging to donate to a more socially-desirable organization. At least in our particular context, we find that pledges do not appear to induce any charitable giving. Almost all subjects renege on their pledge, with no detectable differences between treatments. We explore potential explanations and consider implications for charitable organizations seeking to use pledges to incentive giving.

The rest of this paper is structured as follows. Section 2 presents a simple theoretical framework to guide our empirical analysis of the uptake of pledges. Section 3 details our experimental design, including the local context and the procedures that we used

to sample and survey subjects in the city hall. Section 4 presents empirical results while 5 concludes.

2 Theoretical Framework

To fix ideas for our empirical analysis of how social image concerns can affect the act to pledge a later donation, we rely on the theoretical framework by [Benabou and Tirole \(2006\)](#), in which the decisions of agents to participate in some prosocial activity carry reputational costs and benefits. We abstract from any direct payoffs from intrinsic and extrinsic motivations that agents might have to participate in the prosocial activity. Instead, we restrict our attention to social image concerns. To do so, we use the adapted version of the framework by [Bursztyn and Jensen \(2017\)](#).

Formally, each agent i in our environment can undertake a binary action, say a pledge to donate, $p_i \in \{0, 1\}$. This action may be visible to a reference group j . Taking the action is informative about the type of agent $\sigma_i \in \{l, h\}$, where to her reference group j type h is seen as more socially-desirable by others than type l . Utility from social image to agent i is then

$$S_i = \lambda_{i,j} E_i [\omega_j] \Pr_i(\sigma_i = h|p_i) \quad (2.1)$$

where $\lambda_{i,j}$ is the degree to which the agent cares about being perceived as socially desirable in her reference group j . $E_i [\omega_j]$ is the expectation that agent i has about how socially-desirable it is to be seen as a high type by other agents in her reference group j , measured by $\omega_j > 0$. Finally, $\Pr_i(\sigma_i = h|p_i)$ is the probability that taking action p_i reveals agent i to be of type h to others in the reference group.

Following this framework, we can empirically detect social image effects in at least three ways. First, and maybe most obviously, social image concerns depend on whether other agents can update their beliefs about the type of agent i , $\Pr_i(\sigma_i = h|p_i)$. When pledges are not observable, agents in the reference group cannot update their beliefs and social image concerns vanish. Conversely, the easier it is for agents in the reference group to observe the actions of agent i , the more salient social image concerns become. Most of the literature has tested for social image concerns by exogenously varying whether actions are observable ([Ariely et al., 2009](#); [DellaVigna et al., 2012](#); [DellaVigna, List, Malmendier, & Rao, 2017](#)), we vary the visibility of the pledge to donate.

Second, the degree to which an agent i cares to be perceived in a positive light by others in a reference group j , $\lambda_{i,j}$, amplifies the effect of any social image concerns that might be operative. A test for social image concerns that exogenously varies visibility should thus find a greater effect in when the agent cares more about being perceived in a positive light in group j , i.e. when $\lambda_{i,j}$ is bigger. This can be due to personal preference, the setting in which actions are taken, or the composition of the reference group. We might, for example, care more about how our actions are perceived when

reference group consists of close friends and family and more generally to people with whom we prospect future interactions as opposed to complete strangers. Funk (2010) finds evidence that social pressure to vote in Swiss elections is stronger in smaller and more close-knit communities.

Third, the expectation of agent i about social desirability in the reference group j of taking an action and being seen as the high type, $E_i [\omega_j]$. Similar to concern for being perceived in a positive light by the reference group, the expectation about social desirability amplifies any social image effects that might be at work. Social desirability depends both on the underlying value that the group attaches to being a high type, and the agent’s expectations thereof. The former could differ, for example, for different charities. The latter could be affected by social norms. We are not aware of any empirical tests of how the social desirability of taking an action shapes the effect of social image concerns.

3 Experimental Design and Procedures

Our experimental setup lets us study the three factors that shape social image concerns in a natural setting. Our experiment uses a 2×2 between-subject design. In the first dimension, we randomly vary the visibility of actions (*PUBLIC* or *PRIVATE*). In the second dimension, we randomly vary the organization that agents can pledge to donate to (*CHARITABLE* or *COMMERCIAL*).² The two organizations that we work with, a well-known charity and a commercial blood bank that pays its donors for giving blood, are likely perceived differently in terms of social desirability in the sample of people in our study. We offer donations to each of these organizations to separate, random subsamples of subjects.

Within this 2×2 design, we have natural variation in the reference groups of prospective donors, which should by construction be orthogonal to our treatments. This variation informs how a change in how much agents care about the opinions of others may shape social image effects.

3.1 Local Context and Partner Organizations

We conduct our field experiment in Germany, which stands out among high-income countries in that a sizable share of human whole blood donations are incentivized with cash payments. Germany is the fifth-largest blood supplier in the world (Paul Ehrlich Institut, 2015) and has the highest per capita rate of donations among all countries reporting to the World Health Organization (World Health Organization, 2017). Of the

²The initial design has a third treatment in which agents could chose between a charitable pledge and a commercial pledge to donate. The data for this treatment is made available from the authors, but we do not present it in this paper due to various differences between the collecting institutions that make this treatment uninformative and difficult to interpret.

4.4 million whole blood donations collected in 2014, about 71 percent were collected by the German Red Cross, which never pays its donors. The remaining 29 percent represent the military, private donors, and larger hospitals. The latter two groups commonly pay their donors, sometimes up to about 30 euro per donation.³ The German legal framework (*Transfusionsgesetz* §10) recommends unpaid donations but allows for an unspecified monetary “compensation” (*Aufwandsentschädigung*).⁴

The fact that paid and unpaid incentive schemes coexist in Germany’s market for blood enables us to vary incentives to donate blood in a natural setting. We conduct our field experiment in Bonn, a city of about 310,000 people in the populous Rhine-Ruhr region in the west of Germany. We chose Bonn for its competition among various blood collectors in a well-defined geographic area.⁵ In Bonn, prospective donors can donate blood in three different ways: First, in periodic mobile donation drives of the German Red Cross, held in public squares in the city center. The German Red Cross never pays its donors. Second, during fixed business hours at a commercial blood bank in the city center, which pays 20 euro per donation. Third, during fixed business hours at Bonn University Hospital located about 6km outside the city. The hospital pays 25 euro per donation. Figure 1 shows the location of all donation points on a map. The Red Cross locations represent mobile donation drives during the period of the field experiment (April to May 2017).

We exclude Bonn University Hospital for three reasons. First, it takes about 30 minutes to reach the hospital using public transport from the city center. In comparison, the commercial blood bank and the Red Cross donation drives are all in walking distance of the city hall.⁶ Second, the comparison between the German Red Cross, a well-known charity, and a commercial blood bank presents a starker contrast in terms of social desirability of the donation. This is less clear for the University Hospital, which is in public ownership. Third, our enumerators were clearly identifiable as affiliates of the University of Bonn. Including blood drives at the university-owned hospital could have induced significant experimenter demand effects for those offers.

Before the experiment, we reached cooperation agreements with regional chapter of the German Red Cross and the commercial blood bank to cooperate in advertising and data sharing. Subjects are informed that we formally cooperate with both organizations. Accordingly, the survey consent form reflects legal requirements of both

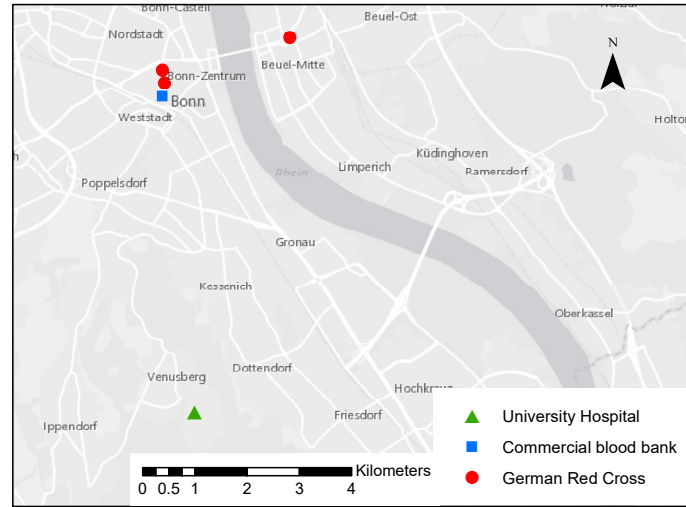
³It is difficult to estimate exact numbers because the German government does not publish data on blood donations by type of remuneration, while the relevant WHO database on blood donations is not nationally representative.

⁴It is interesting to note that the German Red Cross, as quasi-monopolist, has unsuccessfully taken legal action to stop remunerated donations. Most recently in 2012, the Higher Administrative Court of Rhineland-Palatinate (*Oberverwaltungsgericht Rheinland-Pfalz*) dismissed legal action of the German Red Cross against the university hospital in Mainz, who regularly pays its donors. The court found the payment to be lawful. See also [Oberverwaltungsgericht Rheinland-Pfalz \(2013\)](#).

⁵The authors considered various German cities and chose Bonn after studying local competition and after conversations with various actors in the market for blood.

⁶We use the Google Maps Distance Matrix API to calculate travel times from the city hall at 8am on a Tuesday morning.

Figure 1: Map of Blood Collection Points in Bonn, Germany



Sources: Esri, DeLorme, HERE, OpenStreetMap contributors.

Notes: German Red Cross locations represent mobile donation drives during the period of the experiment (April and May 2017). The University Hospital (green triangle) is not part of this experiment.

organizations. The survey software and the “thank you” notes given to subjects use the official logos of our partners.⁷

We recruit subjects among customers of the service center of the Bonn municipal government. The service center, centrally located in the city hall, provides a wide range of in-person administrative services such as applications for official documents, driver’s licenses, registration of motor vehicles, and payments for city services. Customers arrive at the service center for appointments that they have previously scheduled online or via telephone. After signing in with the front desk, they wait for their appointment in a designated waiting area.⁸

We choose to conduct the experiment in the municipal service center for three reasons: First and most importantly, the population that we can sample from is highly diverse and relevant to study the behavior of potential blood donors. Second, the service center lends itself to an intercept survey because almost all customers have to wait for a few minutes, often with little to do. Third, the physical space of the waiting area with many other people standing and sitting around provides a natural “audience” that we can use to make social image concerns salient. Before the experiment, we agreed with the municipal government on suitable time periods and procedures. Staff of the service center was briefed on our experiment.

⁷All survey materials are available in the online appendix

⁸On an average day, the service center handles about 1,300 appointments during 10 business hours from 8am to 6pm. The average wait time between arrival at the service center and appointment is about 4.5 minutes.

3.2 Experimental Procedures

Subjects for our experiment are recruited using an intercept survey in the waiting area of the municipal service center. Throughout the operating hours of the service center, our enumerators wait for new customers to arrive in the waiting area. Given the large number of appointments, it was not feasible to interview all customers arriving for appointments. Instead, we opted for a procedure in which our enumerators are instructed to always approach the first new customer to arrive as soon as they have finished with the previous subject. This approach avoids that subjects are influenced by observing other interviews and maximizes the likelihood that our enumerators can complete the interview before subjects are called for their appointment. We restrict our sample to customers that have an appointment, are between 18 and 65 years of age, and are able to speak and read German.

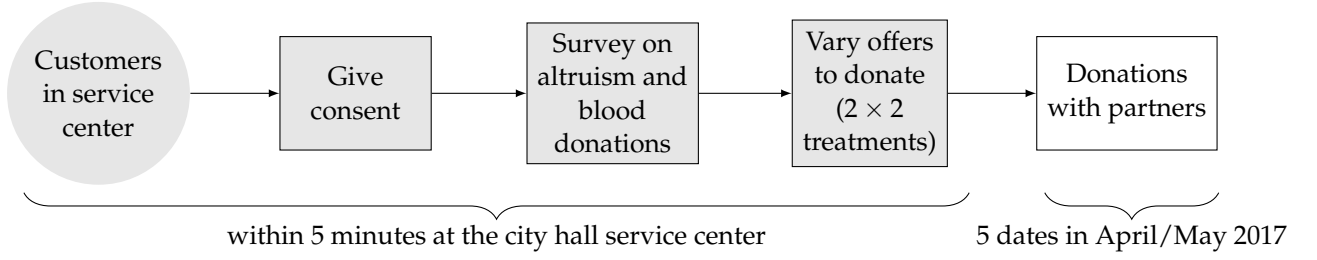
We use computer-assisted personal interviewing (CAPI) with a tablet computer.⁹ Enumerators can read instructions off the screen of their tablet. When approaching new customers using a rehearsed script, enumerators verbally ask for an initial consent to participate in a short survey. If customers agree, enumerators hand over the tablet to let customers read background information on the survey, a privacy notice, and to let them complete a written consent form. Once customers have completed the consent form with their personal details, we treat them as subjects. Subjects then use the tablet to complete a short self-administered questionnaire about prosocial behavior, perceptions and preferences related to donating blood, awareness of various ways to donate in Bonn, and number of years lived in Bonn. Finally, the survey software administers one of six treatments (see detailed description below). The order of questions is not randomized and the offer to sign up for a donation is always the last element of the survey. Answer choices for categorical questions are displayed on screen in a random order. When beginning the survey, subjects do not know that they will be offered to sign up for a donation at the end. Throughout the self-administered survey, enumerators stand by to guide and assist subjects in operating the tablet computer.¹⁰ Figure 2 summarizes the sequence of events in the experiment.

We recruited two student research assistants at the University of Bonn as enumerators. We require both enumerators to wear a visible photo ID badge that clearly identifies them as working for the University of Bonn, a large and well-known public

⁹Each enumerator uses a 10.1" Android tablet running the Qualtrics Offline Surveys app. Surveys are programmed online in Qualtrics and then downloaded to the tablets for offline use. Tablets are operated in a kiosk mode that does not permit operations other than answering the survey. Responses are stored on the tablet and regularly transmitted to the Qualtrics server using an encrypted connection over a WLAN network in the city hall.

¹⁰Every time an enumerator approaches a customer of the service center, irrespective of whether the customer gives consent or completes the survey, the enumerator completes a short questionnaire designed to capture observable characteristics and environmental conditions. These include estimated age range, gender, whether customers came in a group, potential problems to complete the questionnaire, how crowded the waiting area was, and reasons for aborting the survey. This information serves to understand potential selection effects in our sample.

Figure 2: Sequence and Timeline of the Experiment



university. We conduct a detailed training of enumerators to make sure that the procedures are implemented as described above. In addition to the tablet computer, “thank you” notes, and randomization protocols, enumerators carry a copy of the survey protocols that they can refer to. Surveys were conducted in the municipal service center for 92 hours, spread out over 18 workdays in four weeks in March and April 2017.

3.3 Treatments

Our experiment offers to sign subjects up to donate blood with one of our partner organizations. We cannot legally require subjects to follow through on their pledge. Instead we explain that we pass on sign-up confirmations for a donation drive to the relevant partner organization, thus emphasizing that the sign-up represents a pledge vis-à-vis the partner organization.¹¹

We use a 2×2 between-subject design that varies the sign-up process over two dimensions: Along the first dimension, we vary the organization that subjects can pledge to donate to. This lets us manipulate incentives to donate in a natural way. In the first treatment, subjects can sign up for a donation with the local chapter of the German Red Cross, a well-known charity that does not provide monetary compensation for donations (*CHARITABLE* treatment). In the second treatment, subjects can sign up for a donation with a commercial blood bank, which provides a monetary compensation of 20 euros per donation (*COMMERCIAL* treatment). Subjects are informed about the compensation (or lack thereof) in their treatment but they do not learn about the other option to donate. Figure 3 illustrates the tablet screens for all three treatments.

Along the second dimension of the 2×2 between-subject design, we vary the visibility of the offer and sign-up process. In the *PRIVATE* treatment, subjects are presented with the offer to sign up privately on the screen of the tablet. After having completed the survey on altruism and preferences to donate blood, the software presents the offer to sign up for a donation as an additional, last screen. Subjects accept or decline

¹¹The exact phrasing is as follows: “We invite you to donate blood with [partner organization, depending on treatment, with further explanation]. If you are interested in donating, we would like to sign you up for a donation in [the next two months]. For this sign-up, we work with [partner organization]. Are you interested?”. Full experimental instructions are available in the online appendix.

using buttons on the screen. In the *PUBLIC* treatment, the software asks subjects to return the tablet computer to the enumerator after the survey has been completed. The enumerator then advances to a hidden next screen and reads out loud the same offer that in the *PRIVATE* treatment is presented on the screen. Instead of using buttons on the screen, subjects in the *PUBLIC* treatment are required to say out loud whether they would like to sign up for a donation. Other customers waiting in the service center and any friends and family who might be accompanying the subject serve as an “audience” for the public commitment.

All subjects who sign up for a donation receive a “thank you” card for the organization that they signed up with. The cards are printed on high-quality paper and are meant as a token of appreciation to remind subjects of their pledge to donate vis-à-vis the partner organization. They also provide information on where and when they can donate with the relevant partner. Figure 5 presents the card design for the German Red Cross (i.e. the card that is given out in the *CHARITABLE* treatment).¹²

The type of donation offer was randomized at the hourly level, i.e. over the 92 hours that enumerators were present in the municipal service center. We chose the hourly treatment assignment because it minimized the chance that subjects would see our enumerators offer donations with a different organization to later subjects (and thus potentially cause inquiries) and because it simplified administration of the survey, in particular the handling of “thank you” cards, for our enumerators. The visibility of the offer was randomly allocated between all subjects by our survey software.

3.4 Donation Drives and Tracking of Subjects

Our study design allows tracking of subjects from the municipal service center to blood drives of our two partner organizations in a period of two months after the initial interviews were conducted. Subject consent and personal information collected during the survey lets us match individual-level data for all subjects, irrespective of treatment, with donation records. For this purpose, the consent form included waivers of medical confidentiality so that both of our partner organizations could report donation status (and only donation status) back to us.

Our two partners pursue different strategies to collect donations. The Red Cross does not have a fixed donation center in Bonn, but offers widely-publicized mobile donation drives in public squares in the city center. The commercial blood bank has regular business hours every day during which it accepts walk-in donors. For the purpose of our experiment, we agreed with our partners on five fixed dates and times that were the same between both partners and that were highlighted on the “thank

¹²In the *PRIVATE* treatment, the enumerator learns about the subject choice when the tablet computer is returned to the enumerator. The survey software shows a small graphic at the top of the screen that enables the enumerator to quickly recognize whether the subject chose to sign up.

you” card.¹³ While we specifically invited subjects to come to one of these time slots (“we expect to see you at one of these donation drives”), our data also allows us to track subjects who chose to donate at other times or in other donation drives in the region.

4 Empirical Analysis

4.1 Sample Characteristics and Balance Across Treatments

Given the random sampling protocol adopted by our enumerators, we would expect our sample to be representative of the population of customers of the municipal service center. Over the four weeks of the study our enumerators approached a total of 1,072 individuals. From this random sample, 264 refused to participate and 194 dropped out during the survey. Our final sample of completed surveys consists of 614 responses and selects our population of interest by over-representing women, younger, and non-migrant individuals who come alone to visit the offices of the city-hall (see Table 2). In particular, older people have been more likely to drop out due to difficulties handling the tablet, while for migrants the language barrier has been an obstacle to both participation and completion of the survey. Encouragingly, sample selection affects our ability to make inference for the specific target population but does not undermine internal validity. In fact, we observe no differential abortion rates across treatment groups after treatment assignment. Table 5 presents summary statistics for the final sample of 614 individuals across different institutional elicitation assignments, which mostly confirm the quality of our randomization assignment across treatments.

4.2 Take-up of Pledges in City Hall Experiment

In this section, we study how social image effects shape the take-up of pledges to donate blood. We use the conceptual framework by [Bursztyn and Jensen \(2017\)](#), outlined above, to guide our analysis. Recall that our experimental design randomly varies whether survey respondents were offered to pledge a blood donation publicly in front of a natural audience, or privately on a tablet computer. We also vary randomly the organization that subjects can pledge to donate to. If subjects perceive these organizations to be different in their social desirability, this should change the strength of the social image effect. We then exploit the fact that a considerable share (30 percent in our sample) of customers of the municipal service center are accompanied by one or

¹³The times were 12.30pm to 5pm on April 7, April 20, April 21, May 12, and May 19, 2017. Due to existing arrangements, three of the Red Cross drives were scheduled to start an hour later and to last an hour longer than the time slots at the commercial blood bank.

more friends or family members. We assume that surveyed subjects care to be seen in a positive light by these people.

Through this design we are able to first identify social image effects in front of the natural audience, and then test the additional implication of the social signaling model, which predicts a stronger social image effect around people whose opinion matters more to the agent and for actions that are perceived to be more socially-desirable. For each of the three treatments that vary the offer under which the pledge is elicited e (*CHARITABLE*, or *COMMERCIAL*), we estimate a separate linear probability model with following specification:

$$P_{e,i} = \alpha_e + \beta_e \text{Public}_{e,i} + \mathbf{X}'_{e,i} \delta_e + \varepsilon_{e,i} \quad (4.1)$$

where $P_{e,i}$ is a binary variable indicating whether subject i pledged to donate under treatment e , $\text{Public}_{e,i}$ denotes the binary variable taking value 0 if i was asked to pledge a blood donation privately on a tablet and 1 if i was asked to pledge a blood donation out loud from the enumerator in front of the natural audience of the waiting area in the municipal service center. $\mathbf{X}'_{e,i}$ is a vector of controls for individual characteristics.

Table 6 presents OLS estimates for equation (4.1). We find that varying the visibility of the pledge has no detectable effect on uptake in either of the two subsamples. In our simple theoretical framework, all three factors can explain this null result: (i) it could be that the probability that others can update their assessment of the subject's generosity based on the pledge is very small, i.e. that the signal is not effective, (ii) it could be that subjects do not care to be perceived in a positive light by the group of people in the waiting area, or (iii) it could be that subjects believe that pledging to donate by either of the collectors is not seen as socially desirable by the group of people in the waiting area. We now discuss each of these factors in turn.

Our survey data provides suggestive evidence that (iii) alone is unlikely to explain why social image effects are not operational. When we ask subjects pre-treatment whether they agree or disagree that blood donors are perceived as altruists, we find that 41 percent of subjects strongly agree and another 40 percent agree (overall mean of 4.01 on a 5-point likert scale). In addition, subjects who agree and subjects who strongly agree that blood donors are perceived as altruist are significantly more likely to take up a donation themselves.

Turning to (ii), we can explore how the composition of the reference group affects individual propensity to pledge a blood donation by studying heterogeneous treatment effects of the visibility treatment for interviewed subjects who come to the municipal service center alone and those that come in a group. Therefore we extend equation (4.1) as follows:

$$P_{e,i} = \alpha_e + \beta_e (\text{Public}_{e,i} \times \text{Group}_{e,i}) + \mathbf{X}'_{e,i} \delta_e + \varepsilon_{e,i} \quad (4.2)$$

where $\text{Group}_{e,i}$ is an indicator for whether individual i came to the city hall alone ($\text{Group}_{e,i} = 0$) or in a group ($\text{Group}_{e,i} = 1$).

Table 7 presents OLS estimates. We find that the composition of the reference group indeed shapes social image effects in the uptake of donation pledges. When people are asked to pledge a donation with the German Red Cross, making the request public increases willingness to pledge among people who came in a group ($p < 0.05$) without affecting people coming alone. We can quantify this difference using a t-test on the difference between visibility effect for people coming alone and in group. We reject the null (p-value 0.067 and 0.046 for model (1) and (2) of Table 7, respectively). Interestingly, social image effects for the *COMMERCIAL* treatment are generally much weaker and are not detectable at any conventional level of confidence, both for people coming alone, as well as for people coming in groups. We interpret the stronger effect for the *CHARITABLE* treatment as consistent with the theoretical framework, in that the strength of the social image effect should be an increasing function of the perceived social desirability of the action.

Finally, turning to (i), we cannot rule out that our manipulation of visibility failed to increase the probability that others could update their assessment of the subject's generosity based on the pledge. First, it could be that subjects were already signaling altruism vis-à-vis our enumerators. Even though the *PRIVATE* treatment had subjects accept or decline to pledge a donation on the screen of the tablet, subjects could reasonably assume that our enumerator would find out how they decided. Second, pledges are inherently different from actual prosocial behavior because they depend on later fulfillment. It could be that public image concerns are not operational because a reference group of strangers in the municipal service center cannot hold subjects accountable to fulfill the pledge later. This would be consistent with our finding that social image concerns are indeed only operational for subjects who are accompanied by other people.

4.3 Fulfillment of Pledges at Blood Drives

Our experiment is designed to investigate the effect of making the choice to commit to a blood donation visible on stated willingness to donate. Because of our partnership with blood collecting institutions we can go one step further and study how social image concerns affect fulfillment rates of pledges, hence actual donations.

We start by discussing the conversion of pledges into actual donations, which are strikingly low. From the initial sample of 614 interviewed subjects we discard 18 observations for which we did not obtain full names to match to our partners' records. Of the 596 remaining observations 141 (23.66 percent) chose, at the end of their survey session, to pledge to make a donation in April or May 2017. Strikingly, only 1 of the 141 who pledged to donate ended up donating during the suggested period, and 4 of those who initially did not want to donate during the same period ended up donating anyway (see Table 3 for a summary of actual donations across treatments). These conversion rates are striking low in comparison to the only similar study that similarly to ours collects and verify pledges to donate blood among university students

following an experimental survey (Stutzer et al., 2011). Among the 596 individuals who provided a complete name 65 had previously donated either at the German Red Cross or at Haema. Our entire campaign converted in donations over the study period 4.6 percent of approaches with previous donors and 0.38 percent of approaches with interviewed subjects who had not previously donated blood to any of our collection partners. We benchmark these numbers to a series of experiments from Goette, Stutzer, Yavuzcan, and Frey (2009), in which a summer blood donation elicitation campaign lead to a conversion rate of approaches over donation of about 0.6 percent for Zurich citizens who had not previously donated and 45.3 percent of registered donors of the Swiss Red Cross in Zurich. Comparatively, our campaign was particularly ineffective at attracting donations especially among registered donors.

Suggestively, and in line with the Facebook experiment of Lacetera et al. (2016), we conclude that pledges to donate are an ineffective method of eliciting prosocial behavior. A pledge to donate anticipates some of the personal benefit from acting good in terms of reputational gains, but the private cost of not following through appears from this study to bear little weight in the final decision to donate.

5 Conclusions

An increasing amount of evidence highlights the role of social image considerations in prosocial behavior. In many settings, however, prosocial actions cannot be made public. One way for individuals to still benefit from public recognition of their prosocial activities is to demonstrate proof of contribution ex-post. Ex-ante, social pressure can be leveraged by encouraging public pledges to act charitably in the future. This project has focused on pledges to behave prosocially. Our application is the choice to donate blood.

We set out our investigation to provided clean causal evidence of the role of social image concerns on the uptake of pledges to donate blood, and we match pledges to registered donations to determine the conversion rate. To study the role of social image on the pledging decision, we follow a simple theoretical framework (Benabou & Tirole, 2006; Bursztyn & Jensen, 2017) that allows us to detect social image effects through at least three margins: (i) the publicity of the signal that derives from pledging a blood donation, (ii) the extent to which an agent cares to be perceived in a positive light by others in a reference group j , and (iii) the social desirability of the prosocial action. To provide such evidence, we conduct a field experiment with customers of the service center of the Bonn municipal government.

For this experiment, customers in the waiting area of the service center were approached by our enumerators to privately fill out on a tablet a survey on awareness and attitudes towards blood donations. At the end of the survey, customers were offered the opportunity to pledge a donation while being surrounded by a natural audience. The experiment introduces exogenous variation in the nature of the donation

(*CHARITABLE* vs. *COMMERCIAL*), and the visibility of the pledge by making the request to pledge private (on the tablet) or public (verbally). We also exploit natural variation in the composition of the audience that is determined by whether customers visit the service center alone or with friends and family.

Our results highlight that social image concerns play an important role in the decision to pledge. In particular, pledges to charitable blood donations increase in public, but the increase is significant only among customers who visit the service center with friends or family. Discouragingly, and in line with [Lacetera et al. \(2016\)](#), we find that very few pledges convert into actual donations.

Although pledges to donate are widely used by charities and NGOs to elicit future contributions, there is little evidence of their effectiveness in affecting actual contributions, and even less is known regarding the factors that affect willingness to pledge. We contribute to the growing evidence on the role of social image considerations on the willingness to behave prosocially. Our research extends – to pledges for prosocial behavior – the domain of decisions that can be affected by social image considerations, but cautions that pledges can generally be rather ineffective campaign tools. [Andreoni and Serra-Garcia \(2017\)](#) make one step in the direction of understanding the determinants of the conversion rate of pledges by proposing to use ‘thank you’ cards in proximity of the decision to actually make a charitable donations to leverage *social control*. Future research should more systematically try to establish under what conditions charitable pledges are effective instruments to increase donations.

References

- Andreoni, J., Rao, J. M., & Trachtman, H. (2017, April). Avoiding the Ask: A Field Experiment on Altruism, Empathy, and Charitable Giving. *Journal of Political Economy*, 125(3), 625–653. doi: [10.1086/691703](https://doi.org/10.1086/691703)
- Andreoni, J., & Serra-Garcia, M. (2017, September). *Time-Inconsistent Charitable Giving* (Working Paper No. 22824). Cambridge, MA: National Bureau of Economic Research. Retrieved 2017-11-14, from <http://www.nber.org/papers/w22824> (DOI: 10.3386/w22824)
- Ariely, D., Bracha, A., & Meier, S. (2009, February). Doing Good or Doing Well? Image Motivation and Monetary Incentives in Behaving Prosocially. *American Economic Review*, 99(1), 544–555. doi: [10.1257/aer.99.1.544](https://doi.org/10.1257/aer.99.1.544)
- Benabou, R., & Tirole, J. (2006, December). Incentives and Prosocial Behavior. *American Economic Review*, 96(5), 1652–1678. doi: [10.1257/aer.96.5.1652](https://doi.org/10.1257/aer.96.5.1652)
- Bursztyn, L., & Jensen, R. (2017, August). Social Image and Economic Behavior in the Field: Identifying, Understanding, and Shaping Social Pressure. *Annual Review of Economics*, 9, 131–153. doi: [10.1146/annurev-economics-063016-103625](https://doi.org/10.1146/annurev-economics-063016-103625)
- Charness, G., & Dufwenberg, M. (2006, November). Promises and Partnership. *Econometrica*, 74(6), 1579–1601. doi: [10.1111/j.1468-0262.2006.00719.x](https://doi.org/10.1111/j.1468-0262.2006.00719.x)
- Cialdini, R., & Trost, M. (1998). Social influence: Social norms, conformity and compliance. *The handbook of social psychology*, D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), 151–192.
- Cioffi, D., & Garner, R. (1996, February). On Doing the Decision: Effects of Active versus Passive Choice on Commitment and Self-Perception. *Personality and Social Psychology Bulletin*, 22(2), 133–147. Retrieved 2017-09-15, from <https://doi.org/10.1177/0146167296222003> doi: [10.1177/0146167296222003](https://doi.org/10.1177/0146167296222003)
- DellaVigna, S., List, J. A., & Malmendier, U. (2012, February). Testing for Altruism and Social Pressure in Charitable Giving. *The Quarterly Journal of Economics*, 127(1), 1–56. doi: [10.1093/qje/qjr050](https://doi.org/10.1093/qje/qjr050)
- DellaVigna, S., List, J. A., Malmendier, U., & Rao, G. (2017, January). Voting to Tell Others. *The Review of Economic Studies*, 84(1), 143–181. doi: [10.1093/restud/rdw056](https://doi.org/10.1093/restud/rdw056)
- Dreber, A., Fudenberg, D., Levine, D., & Rand, D. (2016, February). *Self-Control, Social Preferences and the Effect of Delayed Payments* (SSRN Scholarly Paper No. ID 2477454). Rochester, NY: Social Science Research Network. Retrieved 2017-11-14, from <https://papers.ssrn.com/abstract=2477454>
- Funk, P. (2010, September). Social Incentives and Voter Turnout: Evidence from the Swiss Mail Ballot System. *Journal of the European Economic Association*, 8(5), 1077–1103. doi: [10.1111/j.1542-4774.2010.tb00548.x](https://doi.org/10.1111/j.1542-4774.2010.tb00548.x)
- Goette, L., Stutzer, A., Yavuzcan, G., & Frey, B. M. (2009, March). Free cholesterol testing as a motivation device in blood donations: evidence from field experiments. *Transfusion*, 49(3), 524–531. doi: [10.1111/j.1537-2995.2008.02007.x](https://doi.org/10.1111/j.1537-2995.2008.02007.x)
- Lacetera, N., Macis, M., & Mele, A. (2016, April). Viral Altruism? Charitable Giving and Social Contagion in Online Networks. *Sociological Science*, 3, 202–238. doi: [10.15195/v3.a11](https://doi.org/10.15195/v3.a11)

- Meyer, C., & Tripodi, E. (2017, October). *Sorting Into Incentives for Prosocial Behavior* (SSRN Working Paper No. 3058195). Rochester, NY: Social Science Research Network. Retrieved 2017-11-14, from <https://papers.ssrn.com/abstract=3058195>
- Oberverwaltungsgericht Rheinland-Pfalz. (2013, December). *Urteil DRK-Blutspendedienst West gGmbH v. Land Rheinland-Pfalz*. Koblenz: Oberverwaltungsgericht Rheinland-Pfalz. Retrieved from <http://www3.mjv.rlp.de/rechtspr/DisplayUrteil.asp?rowguid=%7B5F1EE8CA-8A24-476B-A999-864539234DEB%7D>
- Saito, K. (2015, July). Impure altruism and impure selfishness. *Journal of Economic Theory*, 158(Part A), 336–370. doi: [10.1016/j.jet.2015.05.003](https://doi.org/10.1016/j.jet.2015.05.003)
- Stutzer, A., Goette, L., & Zehnder, M. (2011, November). Active Decisions and Prosocial Behaviour: a Field Experiment on Blood Donation. *The Economic Journal*, 121(556), F476–F493. doi: [10.1111/j.1468-0297.2011.02477.x](https://doi.org/10.1111/j.1468-0297.2011.02477.x)
- World Health Organization. (2017). *Global Status Report on Blood Safety and Availability 2016* (Tech. Rep.). Geneva: World Health Organization.

Figures

Figure 3: Illustration of Tablet Screens with Donation Offer, by Treatment

The figure shows two tablet screens side-by-side, each with a black border. Screen (a) on the left is for the CHARITABLE treatment. It contains the following text: 'We would like to invite you to donate blood.' followed by 'This is just an invitation. Your participation is voluntary.' Then, 'We invite you to donate blood with [name of local Red Cross chapter]' followed by a grey box containing 'German Red Cross logo'. The text continues: 'the local chapter of the German Red Cross. At the German Red Cross, you will **not receive any monetary compensation for your donation.**' Then, 'If you are interested in donating, we would like to **sign you up for a donation in [the next two months].** For this sign-up, we work with the German Red Cross.' At the bottom, it asks 'Are you interested?' with two grey buttons labeled 'Yes' and 'No'. Screen (b) on the right is for the COMMERCIAL treatment. It contains the same initial text as screen (a). Then, 'We invite you to donate blood with [commercial blood bank]' followed by a grey box containing 'Commercial blood bank logo'. The text continues: 'the largest commercial blood bank here in Bonn. At [commercial blood bank], you will receive **monetary compensation of 20 euros for your donation.**' Then, 'If you are interested in donating, we would like to **sign you up for a donation in [the next two months].** For this sign-up, we work with [commercial blood bank].' At the bottom, it asks 'Are you interested?' with two grey buttons labeled 'Yes' and 'No'.

We would like to invite you to donate blood.

This is just an invitation. Your participation is voluntary.

We invite you to donate blood with [name of local Red Cross chapter]

the local chapter of the German Red Cross. At the German Red Cross, you will **not receive any monetary compensation for your donation.**

If you are interested in donating, we would like to **sign you up for a donation in [the next two months].** For this sign-up, we work with the German Red Cross.

Are you interested?

Yes No

We would like to invite you to donate blood.

This is just an invitation. Your participation is voluntary.

We invite you to donate blood with [commercial blood bank]

the largest commercial blood bank here in Bonn. At [commercial blood bank], you will receive **monetary compensation of 20 euros for your donation.**

If you are interested in donating, we would like to **sign you up for a donation in [the next two months].** For this sign-up, we work with [commercial blood bank].

Are you interested?

Yes No

(a) CHARITABLE treatment

(b) COMMERCIAL treatment

Notes: This figure is an illustration that approximates the layout of the tablet screens, with instructions translated from German. Original screenshots are available upon request.

Figure 5: “Thank You” Card for Red Cross Sign-Up



(a) Front

(b) Back

Notes: Front reads: “Thank you for your participation. We signed you up for a donation with the [local blood donation service of the German Red Cross]. You can find out where and when to donate on the back of this card. We are looking forward to your donation”. Back reads “We expect you at one of our donation drives in Bonn over the next few weeks”.

Tables

Table 1: Market Awareness in Bonn, by Incentive scheme, Visibility Condition, and Round (Shares and Standard Errors in Parentheses)

| | Incentive scheme | | Paid | | Obs |
|--------------|---------------------|------------------|------------------|------------------|-----|
| | Not paid (DRK) | Paid (Haema/Uni) | Haema | Uni | |
| Whole sample | 0.854 (0.014) | 0.723 (0.018) | 0.133 (0.014) | 0.703 (0.019) | 610 |
| | <i>by gender</i> | | | | |
| Female | 0.887 (0.018) | 0.775 (0.024) | 0.164 (0.021) | 0.749 (0.025) | 311 |
| Male | 0.819 (0.022) | 0.669 (0.027) | 0.100 (0.017) | 0.656 (0.028) | 299 |
| | <i>by age group</i> | | | | |
| 18 to 24 | 0.854 (0.028) | 0.778 (0.033) | 0.139 (0.028) | 0.747 (0.035) | 158 |
| 25 to 34 | 0.847 (0.026) | 0.725 (0.033) | 0.169 (0.027) | 0.704 (0.033) | 189 |
| 35 to 44 | 0.808 (0.036) | 0.658 (0.043) | 0.083 (0.025) | 0.650 (0.044) | 120 |
| 45 to 54 | 0.902 (0.028) | 0.723 (0.042) | 0.116 (0.030) | 0.714 (0.043) | 112 |
| 55 to 64 | 0.903 (0.054) | 0.677 (0.085) | 0.129 (0.061) | 0.645 (0.087) | 31 |

Table 2: Summary Statistics for All Approached Subjects, by Participation Status (Means and Standard Errors in Parentheses)

| | Participated | Aborted | Did not participate | P-value |
|--------------------------|------------------|------------------|---------------------|---------|
| Respondent age group | 3.480 (0.050) | 5.804 (0.093) | 3.811 (0.076) | 0.000 |
| Male | 0.489 (0.020) | 0.521 (0.036) | 0.587 (0.030) | 0.028 |
| Respondent came in group | 0.300 (0.026) | 0.412 (0.043) | 0.337 (0.039) | 0.003 |
| Respondent migrant | 0.130 (0.014) | 0.253 (0.031) | 0.542 (0.031) | 0.000 |
| Observations | 614 | 194 | 264 | |

Notes: Respondent age groups: 1 “under 18” 2 “18 to 24” 3 “25 to 34” 4 “35 to 44” 5 “45 to 54” 6 “55 to 64” 7 “64 or older”. Intensity of social image concern asked enumerators to record their perceived intensity of social image, on a 5-point likert scale where 1 is “very weak” and 5 is “very strong”, based on how crowded and how quiet the waiting area was. P-value is for a one-way ANOVA on ranks (Kruskal-Wallis) test comparing the three groups.

Table 3: Donation Behavior Over
Study Period, by Treatment
Assignment

| | Charitable | Commercial |
|--------------------------|------------|------------|
| <i>Whole sample</i> | | |
| Did not donate | 340 | 251 |
| Donated | 4 | 1 |
| <i>PUBLIC treatment</i> | | |
| Did not donate | 151 | 120 |
| Donated | 0 | 1 |
| <i>PRIVATE treatment</i> | | |
| Did not donate | 189 | 131 |
| Donated | 4 | 0 |

Table 4: Participation in Donation, by
Treatment Assignment (Means and
Standard Errors in Parentheses)

| | Charitable | Commercial |
|-----------------------------------|------------------|------------------|
| Whole sample | 0.262 (0.023) | 0.205 (0.025) |
| <i>by observability treatment</i> | | |
| Private | 0.232 (0.030) | 0.200 (0.035) |
| Public | 0.299 (0.037) | 0.210 (0.037) |
| <i>by enumerator</i> | | |
| Enumerator 1 | 0.245 (0.034) | 0.187 (0.032) |
| Enumerator 2 | 0.276 (0.032) | 0.229 (0.040) |

Table 5: Summary Statistics for Participating Subjects, by Treatment Assignment
(Means and Standard Errors in Parentheses)

| | Full sample | Charitable | | Commercial | | P-value |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|---------|
| | | Private | Public | Private | Public | |
| <i>a) Self-reported before treatment</i> | | | | | | |
| Frequency of altruistic activity | 3.059 (0.037) | 3.086 (0.064) | 3.067 (0.076) | 3.019 (0.078) | 3.056 (0.082) | 0.922 |
| Importance of donating blood | 4.007 (0.043) | 4.030 (0.076) | 3.881 (0.095) | 3.955 (0.083) | 4.169 (0.093) | 0.089 |
| Perception of blood donors as altruists | 4.153 (0.036) | 4.157 (0.064) | 4.074 (0.082) | 4.242 (0.065) | 4.121 (0.081) | 0.551 |
| Awareness of institutions: | 0.855 (0.014) | 0.833 (0.027) | 0.815 (0.034) | 0.892 (0.025) | 0.887 (0.029) | 0.155 |
| Where would you go to donate: DRK | 0.412 (0.020) | 0.409 (0.035) | 0.422 (0.043) | 0.427 (0.040) | 0.387 (0.044) | 0.914 |
| Awareness of institutions: Haema | 0.132 (0.014) | 0.157 (0.026) | 0.185 (0.034) | 0.089 (0.023) | 0.089 (0.026) | 0.031 |
| Where would you go to donate: Haema | 0.029 (0.007) | 0.030 (0.012) | 0.044 (0.018) | 0.000 (0.000) | 0.048 (0.019) | 0.060 |
| Awareness of institutions: UKB | 0.705 (0.018) | 0.667 (0.034) | 0.741 (0.038) | 0.752 (0.035) | 0.669 (0.042) | 0.202 |
| Where would you go to donate: UKB | 0.559 (0.020) | 0.561 (0.035) | 0.533 (0.043) | 0.573 (0.040) | 0.565 (0.045) | 0.918 |
| Respondent age | 34.415 (0.480) | 33.556 (0.827) | 35.807 (1.034) | 34.312 (0.966) | 34.403 (1.075) | 0.359 |
| <i>b) Measured by enumerator in post-survey questionnaire</i> | | | | | | |
| Male | 0.489 (0.020) | 0.424 (0.035) | 0.519 (0.043) | 0.459 (0.040) | 0.597 (0.044) | 0.018 |
| Respondent came in group | 0.300 (0.026) | 0.364 (0.049) | 0.304 (0.056) | 0.255 (0.051) | 0.250 (0.047) | 0.205 |
| Respondent migrant | 0.130 (0.014) | 0.131 (0.024) | 0.126 (0.029) | 0.127 (0.027) | 0.137 (0.031) | 0.993 |
| Respondent years lived in Bonn | 5.666 (0.150) | 5.657 (0.268) | 5.689 (0.327) | 5.675 (0.291) | 5.645 (0.327) | 0.992 |
| Intensity of social image concern | 3.438 (0.045) | 3.212 (0.081) | 3.489 (0.097) | 3.618 (0.085) | 3.516 (0.101) | 0.004 |
| Ability to complete survey | 4.203 (0.029) | 4.141 (0.052) | 4.348 (0.061) | 4.128 (0.049) | 4.242 (0.071) | 0.008 |
| Observations | 614 | 198 | 135 | 157 | 124 | |

Notes: Frequency of altruistic activity asked interviewed subjects how often they engage in altruistic activities, on a 5-point likert scale where 1 is “never” and 5 is “very often”. Importance of donating blood asked interviewed subjects how important they consider donating blood, on a 5-point likert scale where 1 is “not important” and 5 is “important”. Perception of blood donors as altruists asked interviewed subjects to what extent they think is true that a friend or family member is altruistic for donating blood, on a 5-point likert scale where 1 is “not true” and 5 is “true”. Intensity of social image concern asked enumerators to record their perceived intensity of social image, on a 5-point likert scale where 1 is “very weak” and 5 is “very strong”, based on how crowded and how quiet the waiting area was. P-value is for a one-way ANOVA on ranks (Kruskal-Wallis) test comparing the three groups.

Table 6: Linear Probability Model Social Image Effect on Pledge to Donate Blood
(Coefficient Estimates and Standard Errors in Parentheses)

| | Charitable | | Commercial | |
|--------------------------|-------------------|-------------------|--------------------|-------------------|
| | (1) | (2) | (3) | (4) |
| <i>Treatments</i> | | | | |
| Public | 0.067 (0.047) | 0.071 (0.048) | 0.017 (0.053) | 0.019 (0.053) |
| <i>Control variables</i> | | | | |
| Male | -0.035 (0.050) | -0.041 (0.050) | 0.025 (0.056) | 0.016 (0.057) |
| DRK donor | 0.077 (0.088) | 0.084 (0.089) | -0.010 (0.092) | -0.003 (0.093) |
| Haema donor | -0.046 (0.201) | 0.019 (0.206) | 0.315** (0.148) | 0.226 (0.165) |
| Other personal | Y | Y | Y | Y |
| Awareness blood market | N | Y | N | Y |
| Observations | 355 | 355 | 259 | 259 |
| R^2 | 0.101 | 0.113 | 0.124 | 0.144 |

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

Notes: Binary variable indicating pledge to donate blood is the dependent variable in all regression models from (1) to (4). Models (1) and (2) estimate regression for pledge to charitable blood donation, (3) and (4) for pledge to commercial blood donation. "Other personal" include age group, migration background, charitable behavior (stated intensity on a 1 to 5 likert scale), perceived relevance of donating blood (stated intensity on a 1 to 5 likert scale), and perceived altruism of people donating blood (stated intensity on a 1 to 5 likert scale). "Awareness blood market" include binary variables indicating awareness of DRK, awareness of commercial blood bank Haema, and awareness of the Bonn university hospital blood collection center.

Table 7: Linear Probability Model for Heterogeneous Social Image Effects on Pledge to Donate Blood
(Coefficient Estimates and Standard Errors in Parentheses)

| | Charitable | | Commercial | |
|---|--------------------|--------------------|--------------------|-------------------|
| | (1) | (2) | (3) | (4) |
| <i>Treatments (baseline: Private \times Group)</i> | | | | |
| Private \times Alone | 0.035 (0.072) | 0.048 (0.073) | 0.067 (0.088) | 0.072 (0.088) |
| Public \times Alone | 0.055 (0.072) | 0.067 (0.073) | 0.059 (0.089) | 0.060 (0.089) |
| Public \times Group | 0.233** (0.102) | 0.252** (0.102) | 0.111 (0.116) | 0.133 (0.116) |
| <i>Control variables</i> | | | | |
| Male | -0.038 (0.050) | -0.044 (0.050) | 0.017 (0.057) | 0.006 (0.058) |
| DRK donor | 0.062 (0.089) | 0.068 (0.089) | -0.008 (0.092) | -0.002 (0.093) |
| Haema donor | -0.054 (0.200) | 0.017 (0.205) | 0.301** (0.149) | 0.208 (0.166) |
| Other personal | Y | Y | Y | Y |
| Awareness blood market | N | Y | N | Y |
| Social image effect: Group vs Alone Difference (p-value) | 0.067* | 0.046** | 0.365 | 0.268 |
| Observations | 355 | 355 | 259 | 259 |
| R^2 | 0.110 | 0.124 | 0.127 | 0.148 |

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

Notes: Binary variable indicating pledge to donate blood is the dependent variable in all regression models from (1) to (4). Models (1) and (2) estimate regression for pledge to charitable blood donation, (3) and (4) for pledge to commercial blood donation. "Other personal" include age group, migration background, charitable behavior (stated intensity on a 1 to 5 likert scale), perceived relevance of donating blood (stated intensity on a 1 to 5 likert scale), and perceived altruism of people donating blood (stated intensity on a 1 to 5 likert scale). "Awareness blood market" include binary variables indicating awareness of DRK, awareness of commercial blood bank Haema, and awareness of the Bonn university hospital blood collection center.