

Joining the Crowd: The Impact of Social Information in Crowdfunding Campaigns

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1. Abstract

Philanthropic crowdfunding is an online funding method with a growing popularity. In this study we quantify the effects of information about the donation behavior of previous donors, also known as social information. We report results from a large natural field experiment among visitors (n = 23,676) of a crowdfunding platform advertising campaigns for artists and nonprofit organizations in the field of arts and culture. Visitors who were exposed to a reminder about the average donation amount of previous donors were not more likely to donate than visitors who were not exposed to this information. Neither did visitors who decided to donate give higher amounts.

2. Introduction

As charitable giving increasingly takes place online, using fundraising instruments like philanthropic crowdfunding, the online context is an increasingly important research setting. Philanthropic crowdfunding (i.e. donation and reward-based crowdfunding) is a relatively new online fundraising instrument where one can fund their project via an open call, and tap a large crowd of mainly unknown individuals for small sums of money without providing a financial return (van Teunenbroek & Borst, 2015). Even though, philanthropic crowdfunding is a popular funding method, it is less effective in assembling money than other forms of crowdfunding (van Teunenbroek & Borst, 2015) and could favor from a stimulus to increase the individual donations. However, philanthropic crowdfunding has received less attention from researchers than for example commercial crowdfunding and as a result we know less about possible stimulants for increasing the success rate (i.e. reaching the target amount). Thus, a study of the influence on the

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success of online fundraising campaigns, like crowdfunding, is timely.

As a result of the absence of a financial compensation, prosocial behavior is expected to be a dominant incentive and influence in philanthropic crowdfunding, since philanthropic behavior is highly influenced by social influences (Bekkers & Wiepking, 2011). In this paper we aim to test the effect of one specifically social stimulant: information about the donation behavior of previous donors, also known as social information (Shang & Croson, 2009). We specifically focus on the donation amount of previous donors. This study of social information as a charitable stimulant will help us further understand the social process behind online philanthropic behaviour, like crowdfunding. At the same time, the study will provide knowledge that can increase the success rate of philanthropic crowdfunding projects.

Previous research in offline contexts with mainly personal contact between the initiator (i.e. solicitor) and donor, such as telethons and face-to-face fundraising campaigns, provided evidence for the assumption that social information could 'nudge' individuals into donating higher amounts (e.g. Agerström, Carlsson, Nicklasson, & Guntell, 2016; Alpizar, Carlsson, & Johansson-Stenman, 2008a, 2008b; Klinowski, 2015; Martin & Randal, 2008; Shang, Croson, & Reed, 2012; Shang & Croson, 2009; Smith, Windmeijer, & Wright, 2014). Acknowledging the difference between the *offline* and *online* context we aim to test the effect of social information in relation to the success of philanthropic crowdfunding. By researching the following research question we present the kind of data needed to resolve it. How will social information in the form of earlier donation amounts influence donation behaviour in a crowdfunding context?

Some of the positive findings of the effect of social information on the amount donated as reported in empirical studies discussed above and in more detail later in this paper are quite strong (Bekkers, 2012). However, previous research also demonstrates that the effect works both ways in an asymmetrical order: negative social information is two times stronger than positive social information (Croson & Shang, 2008). Social information is considered as negative, if it is lower than an individual's intended donation amount. Both from a scientific perspective and practical point of view it is important to know whether social information has a generic effect, regardless of an individual's intended donation amount.

This study has essentially two goals. First to further understand the social process behind *online* philanthropic behaviour, like crowdfunding. Second, the study will provide knowledge that can increase the success rate of philanthropic crowdfunding projects. We conducted a field experiment with actual donors at a Dutch philanthropic crowdfunding platform, specialized in cultural art projects. This study is a follow-up study building upon the design of van Teunenbroek (2016): providing donors with the true average donation amount of previous donors to increase the amount donated.

Our methodological approach provides us with several advantages over this earlier study. First, our study uses a real crowdfunding context instead of an artificial one. Second, our subject pool consists out of actual donors instead of a students in a convenience sample. Third, we use actual house money instead of seed money. Also, we test the effect of social information over the complete life course of a large number of campaigns. Earlier research (van Teunenbroek, 2016) used a class-room experiment which did not allow for an investigation of changes in the effects of social information effects over the life course of campaigns. More broadly, our study contributes to

the literature on philanthropic participation in online platforms. We create a natural field experiment using a preregistered random control trial. Previous research has relied primarily on system data on donations via platforms that did not manipulate social incentives (Bøg, Harmgart, Huck, & Jeffers, 2012; Sasaki, 2015; Smith et al., 2014).

Our paper also contributes to the growing but still limited literature on crowdfunding. Finally, our study provides practical implications for initiators in improving their platform design.

3. Theory and hypotheses

There is overwhelming evidence for the importance of the influence of social norms on donation behaviour: donating is a form of social behaviour encouraged by social norms and social incentives (Bekkers & Wiepking, 2011). The research shows that donors adjust their charitable behaviour according to social information. Specifically, studies show that when individuals are presented with information on the donation amount of previous donors their donation amount increases (e.g. Alpizar et al., 2008a; Bekkers, 2012; Martin & Randal, 2008; Shang et al., 2012; van Teunenbroek, 2016). For example, in a field experiment with donations to an art gallery, Martin and Randal (2008) demonstrate that visitors prefer to donate amounts similar to the coins and bills in a transparent box at the entrance. Also, the researchers found that a few large denomination bills (\$50) resulted in higher donations per donor (\$2.39) than displaying large amounts of (\$.50) coins (\$1.69).

In a field experiment with donors to a public radio campaign, Croson and Shang (2013) and Shang and Croson (2009), found that the donations are higher after potential donors are informed about the donation amount of previous donors. Shang and Croson (2009) demonstrate that individuals adjust their donation according to the reference amount, on average with \$13 (12%). The researchers also found that renewing donors are unaffected by social information (Murphy, Batmunkh, Nilsson, & Ray, 2015; Shang & Croson, 2009). In their follow up study with a similar design, Croson et al. (2013) demonstrate that if the reference amount is too high (\$1000, based on the 99th percentile), it ceases to have an effect. While a large amount such as \$600 (based on the 95th percentile) increases the donations with about \$51 (14%).

In their field experiment with tourists at a national park, Alpizar et al. (2008a), solicitors verbally informed potential donors about the 'typical' donation amount (\$10) of previous donors, which increased donations with about 50 cents (18%).

Bekkers (2012) sent alumni a letter from the University Foundation asking for a donation, also informing them that an amount of €35 would be most helpful. Therefore framing the informing as a suggestion amount, finding that it increased the donations by €3.40 (12%). Even though, the framing does not specially refer to the donation behaviour of previous donors, it gives a clear idea of the social norm as with social information.

In a class-room experiment mimicking a crowdfunding environment using a real crowdfunding project, van Teunenbroek (2016) found that displaying the average (€15) donation amount of previous donors resulted in students indicating that they would donate amounts even higher than the displayed amount: the most popular contribution was €10 in the control and €20 in the treatment condition. Overall, the suggestion amount resulted in an increase of about €3 (12%).

Even though, the students only indicated the donation amount and never made an actual donation, the context was semi-hypothetical, since the students were informed that at least 10% of the indicated donations would actually be donated to the project.

Concluding, the positive effect is rather large ranging around 10% (Bekkers, 2012; Croson & Shang, 2008; Martin & Randal, 2008; Shang et al., 2012; Shang & Croson, 2004; van Teunenbroek, 2016), 15% (Cialdini & Schroeder, 1976; Croson & Shang, 2013; Smith, Windmeijer, & Wright, 2012) and 20% (Agerström et al., 2016; Alpizar et al., 2008a). Not only lab experiments confirm this positive relation, but also field experiments show similar results. Accordingly, we propose that:

H1: *Social information increases the amount donated.*

3.1 Social norm and reactance

Even though a vast amount of studies demonstrate that providing social information is an effective method to increase individual donations, previous research also found that the effect works both ways: if social information is negative, the amount donated decreases; if it is positive, the amount increases (Croson & Shang, 2008; Martin & Randal, 2008). Social information is labelled as negative if it is lower than an individual's intended donation amount, also described as downward social information (Croson & Shang, 2008). The effect seems to be asymmetric: negative social information has a stronger influence (26% decrease) than positive social information (10% increase) (Croson & Shang, 2008).

We examine how the social information effect varies with the concurrent average donation amount, using two hypotheses: social norm and reactance hypothesis. The social norm hypothesis predicts that if the amount displayed in the social information condition is larger than the intended donation amount, the amount donated increases, and when the amount displayed is lower the amount donated decreases. A lower amount signals that the norm is to make a small donation which is in accordance with an individual's self-interest in terms of money: the individual can donate a lower amount (i.e. save money) and still follow social norms. Accordingly, we propose that:

H2: *Social information increases the amount donated when the suggestion amount is larger than the intended donation amount.*

While the social norm hypothesis refers to the trend of the effect (i.e. positive or negative), the reactance hypothesis refers to the strength of the effect (i.e. weak or strong). Our reactance hypothesis predicts that the larger the difference between the amount displayed and the amount donors intended to give, the smaller the effect of the amount displayed. In other words, it refers to the gap between the intended donation amount and suggestion amount in relation to the strength of social information. We argue that the gap is important since an individual who perceives the high amount as obnoxious, will react by adopting or strengthening an opposing view or attitude, as a result of feeling as if their perceived behavioural freedom was removed.

Social scientists describe this phenomenon in their reactance theory, which has been broadly studied in social marketing. For example, potential buyers develop a negative view and even avoid websites using pop-up advertisements (Edwards, Li, & Lee, 2002) or even persuasive

advertisements (Koslow, 2000). More specific, the effect has also been found in connecting with social information. For example, Shang and Croson (2013) found that if the presented amount is too high (e.g. based on the 99th percentile), it ceases to increase the amount donated. In other words, presenting the donation behaviour of previous donors could lead to a boomerang effect if the suggestion amount lays too far from the intended donation amount. Accordingly, we propose that:

H3: *The social information effect is stronger if the difference between the suggestion amount and intended amount is small.*

3.2 Project funding period

A crowdfunding campaign runs for a before defined number of days, on average ranging from 30 to 60 days, during which the target amount has to be assembled to be considered successful. The crowdfunding literature describes that the distribution of the number of donors follows a so called 'bathtub shape' (Kuppuswamy & Bayus, 2015). In other words, there seems to be a 'funders gap', in the middle of the campaign where relatively few individuals make a donation. We divide a crowdfunding campaign in three project funding stages, as can be seen in the figure below, since we argue that the effectiveness of social information depends on the project funding stage.

The first stage (detonated by the letter 'A') represents the beginning of the campaign. In this stage we expect a limited effect of social information, since the beginning of the campaign mainly consists out of strong ties (i.e. family and friends) (Agrawal, Catalini, & Goldfarb, 2011; de Witt, 2012; Steinberg, 2012). The second stage (detonated by the letter 'B') represents the middle of the campaign, where we expect social information to be most effective since the donor type strong ties has been exhausted. As a result, the type of donors change in accordance, existing out of donors with weak or latent ties (Borst, Moser, & Ferguson, 2016; de Witt, 2012; Steinberg, 2012). The difference in ties strength is mainly determined by the level of contact between the initiator and donor. Strong ties are those with a tight relationship and regular contact with the initiator (Haythornthwaite, 2005). Weak ties are casual contacts or acquaintances of the initiator (Haythornthwaite, 2005), while latent ties are individuals who have the possibility but have not yet contacted the initiator (Ellison, Steinfield, & Lampe, 2007; Haythornthwaite, 2002).

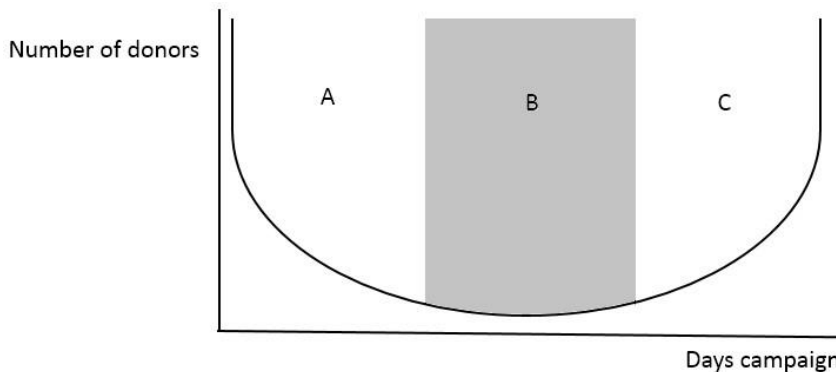
We argue that the difference in ties strength is important for the effectiveness of social information, since strong ties are likely less affected by social information, because they are well known with the group norm through previous interactions and could easily contact the initiator if needed (i.e. low threshold for personal contact). Therefore, strong ties are probably not looking for cues about the behaviour of others. On the other hand, the weak and latent ties have had no (recent) contact and therefore less information about the group norm. The lacking information about the group norm, i.e. 'what is an acceptable donation amount', stimulates individuals to search for cues about the behaviour of others as a reference and confirmation (Cialdini, 2007).

The third stage (detonated by the letter 'C') represents the end of the campaign, where all three type of donors are likely to make donations. However, the weak and latent ties are now mainly motivated by rewards (Ryu, Kim, & Kim, 2016), these donors participate for a certain perk. As a result, we expect social information to be less effective at the end of the campaign, since

crowdfunding provides donation categories. In accordance, we propose the following:

H4: *Social information mainly increases the amount donated in the middle of the campaign.*

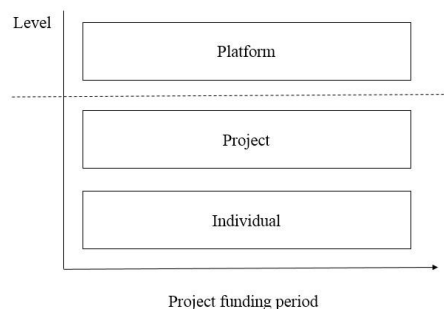
Figure 1. Schematic presentation of the funders gap. The letters denote the three project funding period stages. The letter 'A' represents the beginning of the campaign, we argue that this part of the campaign is mostly backed by strong ties. 'B' represents the middle of the campaign, where we expect social information to be most effective since the donor type strong ties has been exhausted. 'C' represents the end of the campaign, where all three type of donors are likely to make donations. However, the weak and latent ties are now mainly motivated by rewards.



3.3 Project and individual influences

The nature of our design ensures that there are several influences we cannot control for. One of these influences is the project funding period as explained above. Other influences are the different levels of a crowdfunding campaign: (1) platform, (2) project and (3) individual. As can be seen in figure 2, the highest level, i.e. platform level, is unaffected by the project funding period. In other word, platform characteristics are constant and the same for all individuals.

Figure 2. A schematic representation of the different levels in our design and the project funding period. The dotted line denotes the influence of the project funding period. The 'platform' level lies above the dotted line and is therefore unaffected by the project funding period. In other words, the platform level is constant and the same for all individuals during our experiment..



On the other hand, not all projects are the same. For example, they can differ in their target amount, theme and aim. In addition, the previous literature points towards a heterogeneous treatment effect: there seems to be a variability in how individuals respond to social information. This raises the question of possible moderators, since the social information effect appears to be more complex and subject to contextual and individual influences. Therefore, when individual donor data become available, previous donation behaviour and amounts will be examined in exploratory analyses as potential moderators of the social information effect. In addition, we explore if several project characteristics influence the effectiveness of social information.

3.4 Study context

The study context consists out of a Dutch philanthropic crowdfunding platform with a sole focus on cultural art projects, for example: dance, photography, music, theatre, movies and visual arts. In 2015 the platform hosted 712 projects with a success rate of 81% and a total donation amount of €3.558.549 (Voordekunst, 2016a). The donations were made by 40.107 donors (Voordekunst, 2016b) and about 13% of all the donors were renewing donors (Voordekunst, 2016a).

The platform uses a reward and donation based model. The rewards range from a mere thank you message to a tour through the museum at night. Both professional and amateur artist can start a crowdfunding campaign, and both companies and individuals can make donations. However, we exclude donations from companies during our analysis, since we research individual donation behaviour. The minimum donation amount is €10.

On the platform, an individual can read about the project or watch a short video where the initiators introduce themselves and the project. It also shows the reward scheme: i.e. the needed donation amount per reward. Also, the target amount, days to go before the campaign is closed, number of donors, percentage assembled thus far. Visitors can monitor the progress on the platform and both Voordekunst (i.e. platform owners) and initiators promote the project and provide updates using social media.

Donors can decide to publish their (nick)names, 30-40% donate anonymous (Borst et al., 2016), however the donation amount itself is not published. This is a key difference with Kickstarter, an often cited platform from the USA, since Kickstarter does publishes the previous donation amounts. Another key difference is that Voordekunst is mainly funded by Dutch donors, while Kickstarter has a more diverse crowd in terms of geography. While most of the studies with social information thus far have been conducted with American donors, the current experiment build upon a Dutch crowdfunding platform with mainly Dutch donors. In addition, Voordekunst focusses on a relatively limited category of projects, cultural art projects, while Kickstarter hosts projects from a large range of categories.

On average an initiator has 1 month to assemble the money. The platform uses a 80% rule in combination with an all-or-nothing funding model, meaning that the initiator only receives the money if they assembled at least 80% of their initial target amount. Otherwise, all donations are refunded. Therefore, a project is termed successful if at least 80% of the target amount is assembled in time.

The sample of our study spans a period of 30 days (September 15 till October 16, 2016), at the

start of our experiment the platform hosted 2661 projects.

4. Methods

4.1 Design

This study is a follow up study with a similar design (see van Teunenbroek, 2016) and was preregistered at [Aspredicted.org](https://aspredicted.org) on September 14, 2016 (see appendix C and <https://aspredicted.org/u5w9u.pdf>). The field experiment included two conditions. In the 'reference' condition, a reference amount was suggested to provide donors with a social norm. In this condition, participants can read that "Did you know that on average donors on Voordekunst donate 82 euros?". The reference amount is the actual average of all individual donations on the platform (i.e. excluding donations from companies) of the last six months of the previous year. In the 'base' condition, no reference was suggested.

The experiment was only conducted on a desktop, ignoring other instruments like mobile phones. We choose this design, since previous data demonstrates that most of the donors at the platform donate using a desktop (%). In addition, donors were randomly distributed over the two conditions using internet cookies. Meaning that as long as the participant used the same computer they would end up in the same condition. This is also the reason for excluding all non-desktop users, since a donor could end up in a different condition if they would for example view the project on their phone and donate using their computer.

As can be seen in figure 3, the platform provides several forms of information. Most of the project information is presented at a central place on the website: like, the target amount, days to go, number of donors (i.e. social information) and percentage funded thus far (number 1). Number two represents the added information in the form of a reference amount which is only shown in the 'reference' condition. The platform also publishes the reward scheme (i.e. which donation amount is needed to receive a certain reward) and the number of donors choosing this reward (number 3). Thus, another form of social information. The platform also published a 'tip reward': each initiator can choose a reward they prefer to publish above all other rewards (number 4).

4.2 Procedure

The moment a participant enters the website, he or she is divided into one of the two conditions based on internet cookies. Meaning that they are in the same condition even if they visit multiple projects or revisit the platform another day. If a participant decides to make a donation, they can travel from the 'information page' to the 'donation page'. Similarly as on the information page the reference amount is mentioned at the same place on the donation page, with similar framing (see appendix A). On the 'the donation' page the donor specifies the amount they want to donate and if they want to receive a reward (if they donate an amount high enough to receive a reward). The participant is then guided towards the 'payment page', from this point on no reference amount was mentioned, where they again specify the donation amount. Here they also indicate if they want to publish their donation using social media and/or leave a (pseudo)name. In the next step they leave the platform site and enter into the payment system.

Figure 3. An example of the 'information page' as presented in the 'reference' condition. The numbers symbolize the different kinds of information as specified in the text above. The reference amount is presented in a yellow block, which is the main color of the platform, with the following sentence: "Did you know that on average donors on Voordekunst donate 82 euros?"

Biografie Mathilde
Amsterdam, Nederland

Lizette de Zoete
Illustratief vormgever

f t in Deel dit project

1

€ 5.778
van € 6.000

19 dagen
te gaan

85 donateurs

96%

Doneer nu

Het verhaal Updates 1 Donaties 85

Mathilde

Mathilde, Nederlands bekendste muze, Zeeus's meisje, Het Fenomeen, levend kunstwerk, mode-koningin van de jaren zeventig, muze en levensvrouw van Carel Willink, ambassadrice van Fong-Leng, mythe en mysterie.

Mathilde is op 7/7/1928 in Terneuzen geboren als Mathilde Maria Theodora de Doelder. Na het gymnasium vertrekt zij naar Amsterdam om kunstgeschiedenis en klassieke talen te studeren. Aldaar ontmoet zij de veertig jaar oudere schilder Carel Willink. Zij wordt zijn muze en vrouw. Dankzij de extravagante Mathilde komt Willink's werk weer meer in de belangstelling. Wanneer zij begin jaren zeventig de creaties van kunstenaars Fong-Leng ontdekt, wordt zij steeds bekender. Mathildes hart breekt als Willink haar na veertien jaar samen, verlaat voor een jongere vrouw. Zij gaat op zoek naar kunstenaars van wie zij opnieuw de muze kan zijn, waaronder Salvador Dalí en Anton Heyboer. Niet alleen door haar uiterlijk maar ook door haar uitspraken neemt Mathildes bekendheid steeds grotere vormen aan. Op 25/10/1977 wordt Mathilde dood gevonden in haar hemelbed, met een schotwond in haar linkerslaap. Haar dood is een mysterie, de zaak is nooit opgelost en inmiddels verjaard. Zowel haar excentrieke leven als haar mysterieuze dood hebben eraan bijgedragen dat Mathilde Willink nog altijd een begrip is.

2

Wist je dat de gemiddelde donatie op voordekunst €82 is?

3

€ 10 of meer
5 donaties
Ontzettend bedankt voor je steun!

4

Tip
€ 50 of meer
67 donaties
Je ontvangt nu publicatie het boek, (gesignd door de schrijfstel)
Verwachte levertijd – november 2018

4.3 Participants

The experiment was conducted among 23,676 unique visitors of the Voordekunst platform. 1702 visitors donated, 890 donors in the control group (7.4%) and 812 in the suggestion condition (6.9%). All donors are included in the analyses, so both renewing ($N = 221$) and new donors ($N = 1481$). Renewing donors are those who made multiple donations during our experiment, while new donors made one donation. All participants made a donation to one of the projects advertised on Voordekunst during the experiment period.

5. Results

We expected that the amount donated was higher in the social information treatment (N = 812) than in the control group (N = 890), but as can be seen in table 1 and figure 4 the data did not support this prediction[†].

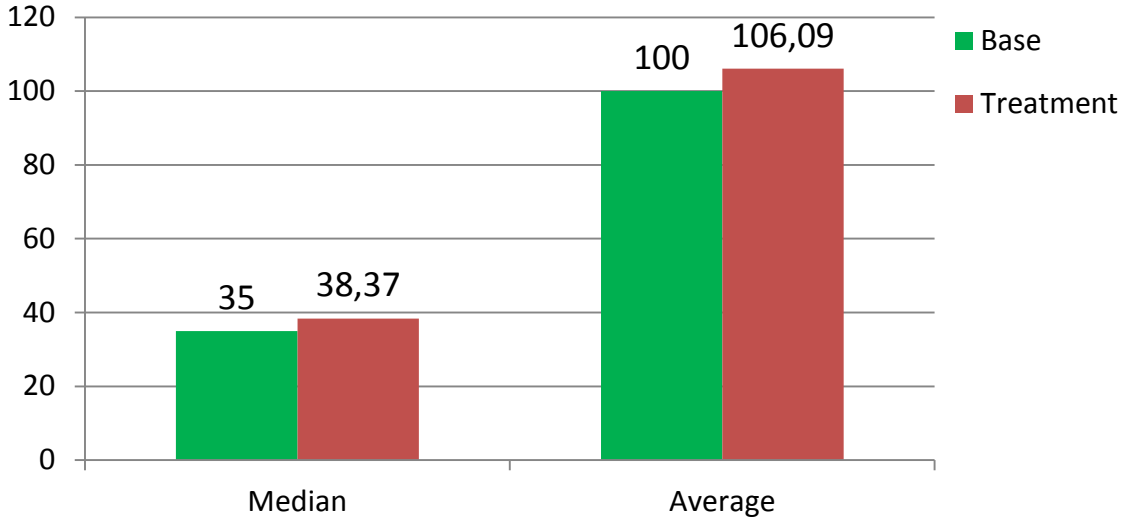
Table 1. Amount donated and conversion per condition among all donors

	Base	Suggest	Test statistics	Significance
Median amount donated	€35.00	€38.37	$\chi^2=377.04$	$p=.120$
Mean amount donated	€100.00 (SD=376.28)	€106.09 (SD=281.69)		
Natural log of amount donated	1.62	1.66		
Minimum donation	€10.00	€10.00		
Maximum donation	€7,500.00	€5,000.00		
Modal donation	€25.00	€25.00		
Conversion	7.4%	6.9%		
Total donation amount	€89,005.05	€86,148.70	$\chi^2= 1701.00$	$p<.001$

Even though the amount donated was 6% (€6.09) higher in the social information treatment, a Kruskal-Wallis test demonstrated that this difference was not significant from the control group. The conversion (i.e., the likelihood of making a donation once the visitor has arrived at the payment page) was slightly higher in the control treatment, however the difference was minimal. Contrary to our expectations, the total amount collected was higher in the control group than the social information treatment.

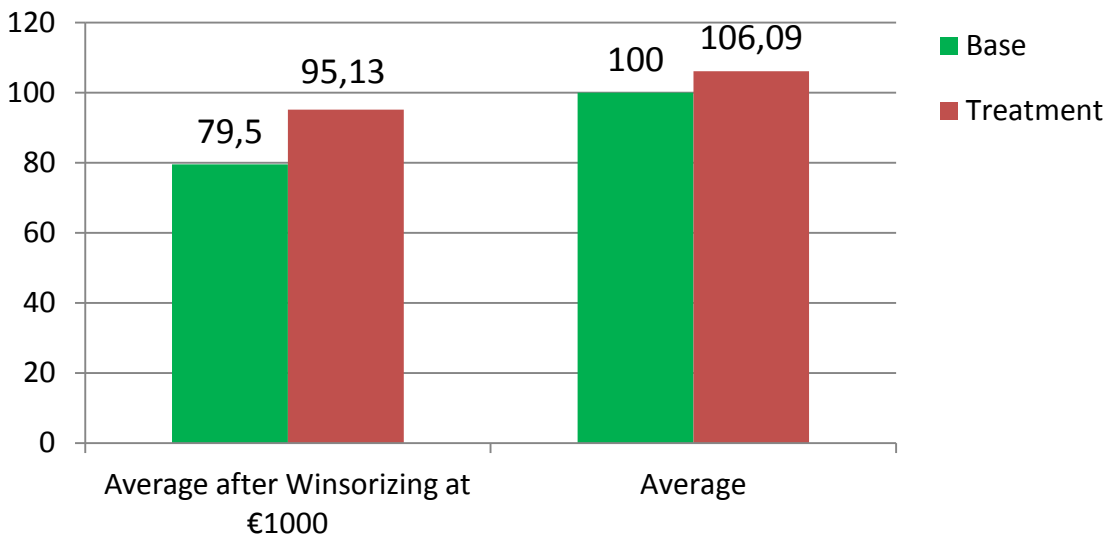
[†] Note, this paper is work in progress. We are aware that our data is nested within projects and includes repeated measures. However, at the moment of writing this version, we have collected all the data, but not yet received the complete data file. As a result, we could not include this in our current analyses.

Figure 4. Graphical representation of the average and median amount donated per condition.



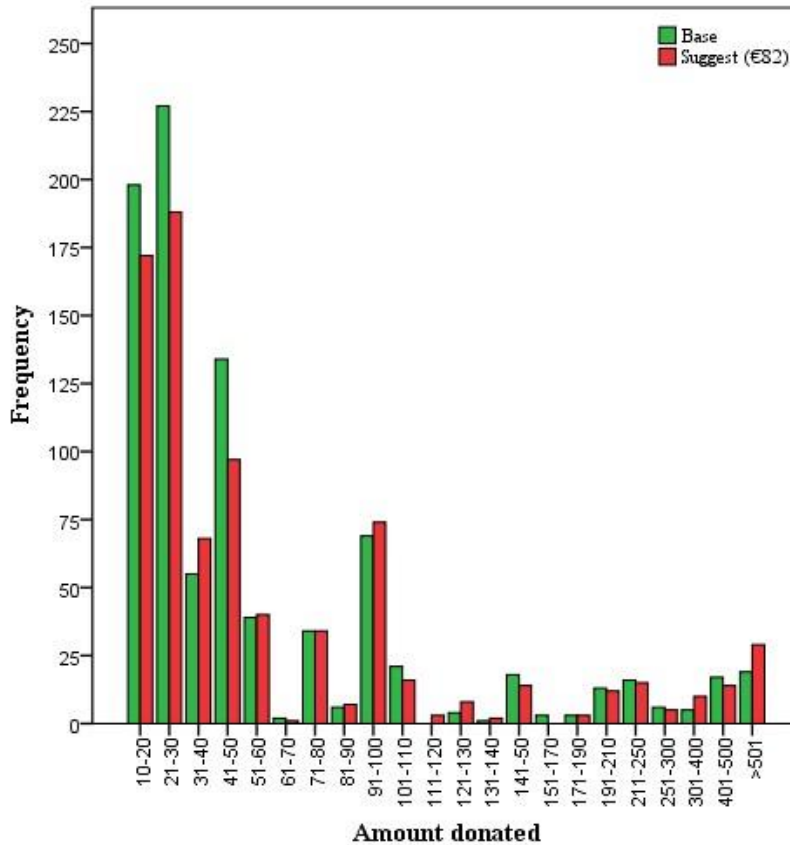
In additional analyses we examined outliers in several ways. First, we excluded 12 donations above €1,000 ($\chi^2(1 = 1,690) = 371.73, p = .121$), which was around three standard deviations above the mean. We also applied a Winsorizing technique, treating 12 donations above €1,000 as €1,000. As can be seen in figure 5, this analysis revealed that the average individual donation amount in the social information treatment (N=812, M= 95.13, SD = 176.95) was 20% higher than the control group (N=890, M= 79.50, SD = 143.60). This difference was not significant ($\chi^2(1 = 1702) = 377.07, p = .119$).

Figure 5. Graphical representation of the average after and before Winsorizing at €1000.



The modal donation (€25.00) was similar in both conditions: in the social information treatment 15.1% of all donors donated the modal amount versus 17.2% of all donors in the control group. However, donation amounts around 80 were slightly more popular in the social information treatment than the control group. For example, in the control group amounts between €75 and €85 were donated by 3.7%, while this was slightly higher in the social information treatment: 4.8%. One individual in the social information treatment actually donated the exact suggestion amount (€82).

Figure 6. Distribution of the amount donated of all donors in categories per condition



The reference amount was not per se more popular in the social information treatment at the expense of lower amounts. However, the modal condition (€25) and amounts below the modal condition (€10, €15, €20, €25) were more popular in the control group. While amounts above (€30, €35, €40 and €45) the modal donation were more popular in the social information treatment. Even though €100 was a more popular donation amount in the suggest (8.7%) than the control group (7.5%), amounts above €100 were similar in both conditions.

An analysis of the donations made by donors (N=1481) who made only one donation is

reported in table 2. The amount donated was 4.0% (€3.18) higher in the social information treatment (N = 713), but a Kruskal-Wallis test demonstrated that it was not significantly different from the control group (N = 768). The conversion was slightly higher in the social information treatment, however the difference was minimal. Also, contrary to the expectations the total amount collected was lower in the suggestion condition than the control group. We also expected that the reference amount (€82) would be less popular in the control group than the social information treatment. However, as can be seen in the figure below, this was not the case.

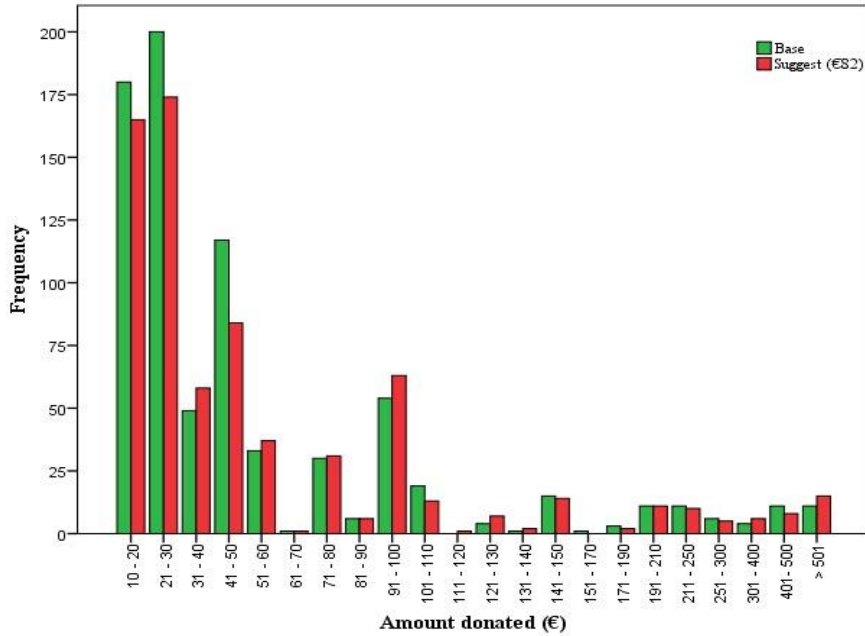
The modal donation (€25.00) was similar in both conditions: in the social information treatment 15.7% of all donors donated the modal amount versus 18.1% of all donors in the control group. However, donation amounts around 80 were slightly more popular in the social information treatment than the control group. For example, in the control group amounts between €75 and €85 were donated by 3.24%, while this was slightly higher in the social information treatment: 5.2%.

Table 2. Amount donated and conversion per condition among donors who made only one donation

	Base	Suggest	Test statistics	Significance
Median amount donated	€31.50	€35.00	$\chi^2=281.24$	$p=.363$
Mean amount donated	€78.09 (SD=219.83)	€81.27 (SD=184.77)		
Natural log of amount donated	1.60	1.61		
Minimum donation	€10.00	€10.00		
Maximum donation	€3,750.00	€3,000.00		
Modal donation	€25.00	€25.00		
Total donation amount	€59,970.45	€57,945.00	$\chi^2= 1,480.00$	$p<.001$

The reference amount was not per se more popular in the social information treatment to the determinant of lower amounts (see the distribution of the exact amounts donated in Appendix B). However, the modal condition (€25) and amounts below the modal condition (€15, €20) were more popular in the control group. While amounts above (€ 30, €35, €40 and €45) the modal donation were more popular in the social information treatment. Even though €100 was a more popular donation amount in the suggest (8.7%) than the control group (6.8%), amounts above €100 were similar in both conditions.

Figure 7. Distribution of the amount donated of the 'new donors' in categories per condition



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References

- Agerström, J., Carlsson, R., Nicklasson, L., & Guntell, L. (2016). Using descriptive social norms to increase charitable giving : The power of local norms. *Journal of Economic Psychology*, *52*, 147–153.
- Agrawal, A., Catalini, C., & Goldfarb, A. (2011). *Friends, Family, and the Flat World: The Geography of Crowdfunding* (No. 16820). NBER Working Paper.
- Alpizar, F., Carlsson, F., & Johansson-Stenman, O. (2008a). Anonymity, reciprocity, and conformity: Evidence from voluntary contributions to a national park in Costa Rica. *Journal of Public Economics*, *92*(5-6), 1047–1060.
- Alpizar, F., Carlsson, F., & Johansson-Stenman, O. (2008b). Does context matter more for hypothetical than for actual contributions? Evidence from a natural field experiment. *Experimental Economics*, *11*, 299–314.
- Bekkers, R. (2012). *Limits of Social Influence on Giving: Who is Affected When and Why?* Presented at the Royal Over-seas League, London, Chicago, February 24, 2012, 1–49.
- Bekkers, R., & Wiepking, P. (2011). A Literature Review of Empirical Studies of Philanthropy: Eight Mechanisms that Drive Charitable Giving. *Voluntary Sector Quarterly*, *40*(5), 924–973.
- Bøg, M., Harmgart, H., Huck, S., & Jeffers, A. M. (2012). Fundraising on the Internet. *Kyklos*, *65*(1), 18–30.
- Borst, W. A. M., Moser, C., & Ferguson, J. (2016). *From friendfunding to crowdfunding: effects of social ties and media usage on project performance*.
- Cialdini, R. B. (2007). *Influence. The psychology of persuasion*. New York: William Morrow and Company.
- Cialdini, R. B., & Schroeder, D. a. (1976). Increasing compliance by legitimizing paltry contributions: When even a penny helps. *Journal of Personality and Social Psychology*, *34*(4), 599–604.
- Croson, R., & Shang, J. (2008). The impact of downward social information on contribution decisions. *Experimental Economics*, *11*(3), 221–233.
- Croson, R., & Shang, J. (2013). Limits of the effect of social information on the voluntary provision of public goods: Evidence from field experiments. *Economic Inquiry*, *51*(1), 473–477.
- De Witt, N. (2012). A Kickstarter’s Guide to Kickstarter: How to Successfully Fund Your Creative Project. Retrieved September 9, 2016, from

<https://www.kickstarter.com/projects/identifyingnelson/a-kickstarters-guide-to-kickstarter>

- Edwards, S. M., Li, H., & Lee, J. H. (2002). Forced exposure and psychological reactance: Antecedents and consequences of the perceived intrusiveness of pop-up ads. *Journal of Advertising*, 31(3), 83–95.
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The Benefits of Facebook “Friends:” Social Capital and College Students’ Use of Online Social Network Sites. *Journal of Computer-Mediated Communication*, 12(4), 1143–1168.
- Haythornthwaite, C. (2002). Strong , Weak , and Latent Ties and the Impact. *The Information Society*, 18(5), 385–401.
- Haythornthwaite, C. (2005). Social Networks and Internet Connectivity Effects. *Information, Communication & Society*, 8(2), 125–147.
- Klinowski, D. (2015). Reluctant donors and their reactions to social information. Retrieved from http://spihub.org/site/resource_files/publications/spi_wp_120_jasper.pdf
- Koslow, S. (2000). Can the truth hurt? How honest and persuasive advertising can unintentionally lead to increased consumer skepticism. *Journal of Consumer Affairs*, 34(2), 245–267.
- Kuppuswamy, V., & Bayus, B. L. (2015). Crowdfunding creative ideas: The dynamics of project backers in Kickstarter.
- Martin, R., & Randal, J. (2008). How is Donation Behaviour Affected by the Donations of Others? *Journal of Economic Behavior & Organization*, 67(1), 228–238.
- Murphy, J. J., Batmunkh, N., Nilsson, B., & Ray, S. (2015). The impact of social information on the voluntary provision of public goods: A replication study. *Research in Experimental Economics*, 18, 41–50.
- Ryu, S., Kim, K., & Kim, Y. (2016). *Reward versus philanthropy motivation in crowdfunding behavior*. Retrieved from <http://www.pacis2016.org/Abstract/ALL/164.pdf>
- Sasaki, S. (2015). *Conformity in Charitable Giving : Evidence from Empirical Analysis of Japanese Online Donations*, *Science of Philanthropy Initiative* (No. 139). Retrieved from http://spihub.org/site/resource_files/publications/spi_wp_139_sasaki.pdf
- Shang, J., & Croson, R. (2004). *Field experiments in nonprofit marketing: the impact of social information* (No. University of Pennsylvania). *Working Paper, University of Pennsylvania*.

- Shang, J., & Croson, R. (2009). A Field Experiment in Charitable Contribution: The Impact of Social Information on the Voluntary Provision of Public Goods. *The Economic Journal*, 119(540), 1422–1439.
- Shang, J., Croson, R. T. A., & Reed, A. (2012). “I” give, but “we” give more: The impact of identity and the mere social information effect on donation behavior. *Journal of Marketing Research*, (forthcoming).
- Smith, S., Windmeijer, F., & Wright, E. (2012). The effect of social information on charitable donations : Evidence from the (running) field. *Social Research*, (January), 1–39.
- Smith, S., Windmeijer, F., & Wright, E. (2014). Peer effects in charitable giving: Evidence from the (running) field. *Economic Journal*, 1–19. doi:10.1111/eoj.12114
- Steinberg, D. (2012). *The Kickstarter handbook*. Philadelphia: PA: Quirk Books.
- Van Teunenbroek, P. S. C. (2016). Social Aspects and Successfully Funding a CrowdFunding Project: The Impact of Social Information. *Science, Engineering and Technology, International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 10(6), 1765–1776.
- Van Teunenbroek, P. S. C., & Borst, W. A. M. (2015). Social information as a stimulant in philanthropic crowdfunding: A systematic literature review of the effects of social information on donation behavior. *Presented at the 44th Arnova Conference, Chicago, November 19-21, 2015*, 1–29. Retrieved from <https://crowdfundingpscvt.files.wordpress.com/2016/09/van-teunenbroek-borst-2015draft-social-information-as-a-stimulant-in-philanthropic-crowdfunding.pdf>
- Voordekunst. (2016a). *2016 Jaarplan Voordekunst*. Amsterdam. Retrieved from <https://voordekunst.files.wordpress.com/2016/06/2016-jaarplan-voordekunst-def.pdf>
- Voordekunst. (2016b). *Voordekunst jaarverslag 2015*. Amsterdam. Retrieved from https://issuu.com/voordekunst/docs/20160701_vdk_jaarverslag2015_online

Appendix A.

A.1. An example of the 'donation' page as the 'reference' condition

Biografie Mathilde

Geen tegenprestatie

Ik wil dit project graag steunen en hoef hiervoor geen tegenprestatie te ontvangen.
minimaal € 10 euro.

Doneer € 10 of meer

Onzettend bedankt voor je steun!

Doneer € 20 of meer

Je ontvangt van de schrijfter een handgeschreven kaart per post, met daarop natuurlijk een afbeelding van Mathilde.
Geschatte levertijd 01 november.

Doneer € 50 of meer

€ 50 doneer

Ik steun voordekunst met 5% extra

Je ontvangt na publicatie het boek (gesigneerd door de schrijfter)
Geschatte levertijd 01 november.

Doneer € 100 of meer

Je ontvangt na publicatie het boek (gesigneerd) en een handgeschreven kaart per post, met daarop natuurlijk een afbeelding van Mathilde.
Geschatte levertijd 01 november.

Doneer € 150 of meer

Je ontvangt na publicatie het boek (gesigneerd) en naamvermelding in het dankwoord van het boek.
Geschatte levertijd 01 november.

Doneer € 200 of meer

Dankzij jou kan ik een hele foto aankopen! Je ontvangt het boek (gesigneerd), naamvermelding in het boek en een uitnodiging voor de boekpresentatie.
Geschatte levertijd 01 november.

Doneer € 500 of meer

Dankzij jou kan ik een serie aankopen! Je ontvangt het boek, naamvermelding, uitnodiging boekpresentatie en een luxe afdruk van een foto van Mathilde naar keuze. (20x30 cm)
Geschatte levertijd 01 november.

Doneer € 1.000 of meer

Je ontvangt het beeldje als bij 500,- inclusief een noder cyreeren te konnen kunstwerk naar keuze, zoals ik dat bijv. ook voor LOOISS en VT Wronen doe. (check mijn site voor meer info)
Geschatte levertijd 01 november.

Ik doneer:

€ 50

Je ontvangt na publicatie het boek (gesigneerd door de schrijfter)
Geschatte levertijd 01 november.

Ik steun voordekunst met 5% extra

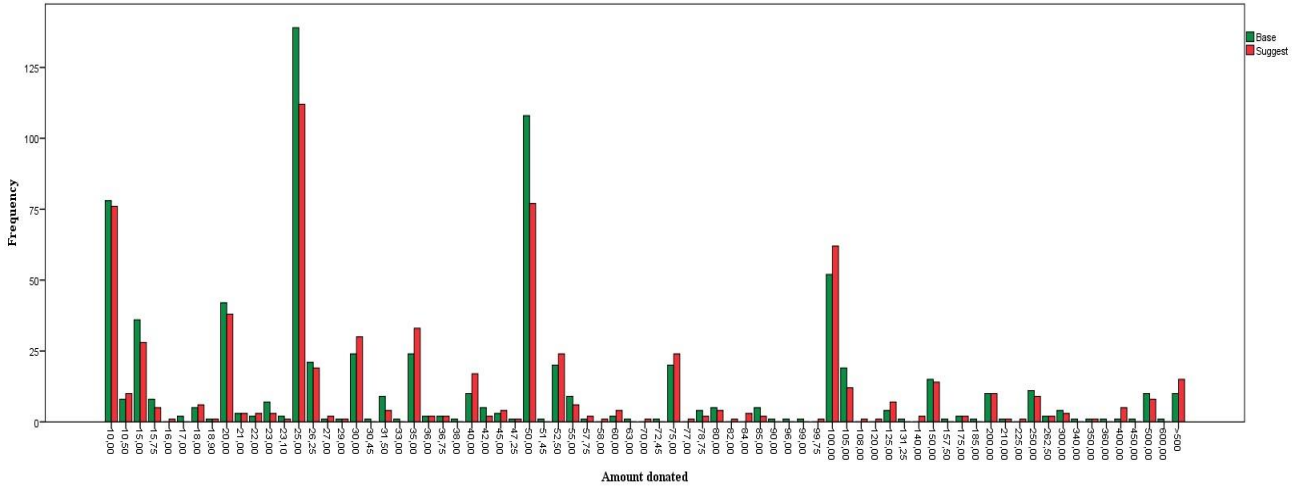
Verder met doneren

Door te doneren, ga je automatisch akkoord met de gebruiksvoorwaarden.

Wist je dat de gemiddelde donatie op voordekunst €82 is?

Appendix B.

B.1. Distribution of the amount donated of the ‘new donors’ per condition



Appendix C.

C.1. Preregistration of the experiment

JOINING THE CROWD (#1186)

Author(s)

René Bekkers (VU University) - r.bekkers@vu.nl

Peggy Sue Claire van Teunenbroek (VU University) - p.s.c.van.teunenbroek@vu.nl 1) **What's the main question being**

asked or hypothesis being tested in this study?

Created: 09/14/2016 12:00 PM (PT)

Public: 09/15/2016 03:03 PM (PT)

Research question: What is the influence of social information on donation behavior on an online crowdfunding platform? Our key hypothesis is that social information increases the amount donated.

2) Describe the key dependent variable(s) specifying how they will be measured.

We measure two dependent variables:

- 1) whether or not a visitor of the platform makes a donation;
- 2) individual donation amount: the total amount donated to a project per donor; 3) the natural logarithm of the individual donation amount.

3) How many and which conditions will participants be assigned to?

This is a straightforward A/B test with two conditions in a natural field experiment:

- (1) control condition: without adding social information
- (2) treatment condition: adding social information using the following sentence: "Wist je dat de gemiddelde gift op Voordekunst €82 is?" ["Did you know that the average donation amount at voordekunst is €82?"]. We will present this information on the project information page as well as on the donation page.

4) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

Straightforward comparisons of means without covariants will be conducted in the analysis of amounts donated as well as non-parametric tests when donation amounts are not distributed normally. Amounts donated will also be analyzed in OLS, tobit and quantile regression models, including fixed effects at the project, time and individual level. Empty models will be run to estimate variance components at these levels.

Conversion will be modeled in logistic regression models. Zero-inflated (negative binomial) models will be estimated in robustness checks.

5) Any secondary analyses?

In addition, we test how the social information effect varies during the period a project is advertised. We expect that social information is less effective in the beginning as well as towards the end of the campaign, and most effective in the middle period.

Finally, we examine how the social information effect varies with the concurrent average donation amount, testing two hypotheses. The social norm hypothesis predicts that when the amount displayed in the social information condition is larger than the intended donation amount, the amount donated increases, and when the amount displayed is lower the amount donated decreases. The reactance hypothesis predicts that the larger the difference between the amount displayed in the social information condition and the amount donors intended to give, the smaller the effect of the amount displayed.

When individual donor data become available previous donation behavior and amounts will be examined in exploratory analyses as potential moderators of the social information effect.

6) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

Based on an effect size of .15 (based on previous research), we aim to achieve a sample of 900 donors. With a conversion rate of 5.27% we will need around 45,000 donors to achieve this sample size, which we estimate will take about 4 weeks.

7) Anything else you would like to pre-register? (e.g., data exclusions, variables collected for exploratory purposes, unusual analyses planned?) The design is developed into a concept and uploaded by an external company: Digital Natives

8) Have any data been collected for this study already?

No, no data have been collected for this study yet

Available at <http://aspredicted.org/u5w9u.pdf>