The Completion Effect in Charitable Crowdfunding

DAVID KLINOWSKI*
Department of Economics
University of Pittsburgh

NICHOLE ARGO
Department of Engineering and Public Policy
Carnegie Mellon University

TAMAR KRISHNAMURTI
Department of Engineering and Public Policy
Carnegie Mellon University

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Abstract

We analyze data from the charitable crowdfunding platform Benevolent, and find that donors display a preference for completing requests: they make significantly larger donations, at significantly faster pace, when by doing so they there and then reach the recipient's fundraising goal. The effect is distinct from a gradual increase in contributions as funds accumulate. It is also a remarkably robust finding, prevalent even within-person for donors who make multiple donations on the platform. Most donors stop following suggested amounts and add a median 160% more to their gifts in order to complete a request. They also do not appear to worry that requests would have expired unfulfilled. Rather, we provide evidence that donors are motivated by feeling more impactful over recipients when they complete requests versus when they donate at any other stage of the fundraising campaign.

JEL codes: D64, G29, L86

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1 Introduction

Crowdfunding is the practice of funding a project or venture by raising many small amounts of money from a large number of people, typically via the Internet.[1] Projects differ widely, from art initiatives, to technological gadgets, to humanitarian causes. What funders may get in return also varies. Some crowdfunding markets are lending-based, where backers make loans and expect an interest return. Some are equity-based, where funders are treated as investors and receive equity stakes on the venture or shares of future profits. Others are reward-based, in which funders obtain benefits such as early access to the product or special acknowledgment. And finally there is charitable crowdfunding, where backers are donors and receive no material reward (Mollick, 2014; Belleflamme et al., 2015).

Crowdfunding has become an increasingly popular alternative to regular financing (Burtch et al., 2013), as Web 2.0 technology now allows millions of users to interact and collaborate with one another at virtually no cost. Crowdfunded projects raised $6.1 billion in 2013 and $16.2 billion in 2014 worldwide, and are expected to raise $34.4 billion in 2015 (Massolution, 2015). Yet crowdfunding is a relatively recent and developing phenomenon, and academic work is only beginning to examine the behavior of project creators, funders, and hosting platforms (Burtch et al., 2013; Mollick, 2014).[2]

We analyze data from Benevolent, a charitable crowdfunding platform where funders donate money to low-income individuals living in the U.S. to help them achieve specific goals. The goals typically involve purchases intended to improve the recipients' education, employment, healthcare, or housing conditions, such as tools to start working, books or a computer for school, or furniture for newly-acquired housing. As in other crowdfunding platforms, these funds must be raised within a specific period, or else the solicitee receives no money.

We find a robust and sizable behavior that we call a completion effect: donors in Benevolent contribute significantly more money when their gifts finalize the recipients' fundraising goals. Donations that complete requests are on average about 200% larger than all other donations. We show that this is specifically a last-donation effect, rather than a gradual increase in contribution size or donation propensity as funds accumulate.[3] We also show that the phenomenon is not driven by a particular kind of donor that deliberately seeks to finalize requests. Rather, even individuals who contribute multiple times on the platform donate larger amounts when they complete than when they do not.

A completion effect has also been observed in DonorsChoose.org, another charitable crowdfunding site (Wash, 2013). Hence the phenomenon is not peculiar to Benevolent. Our novelty and main contribution is in studying the mechanisms driving the completion effect. As we illustrate with a simple theoretical model in Section 4, high enough uncertainty that recipients will reach their fundraising goals on time can lead donors to pay more in order to complete themselves and thus ensure full funding for their preferred recipients. Alternatively, if donors are impact philanthropists who derive utility from personally making a difference on the recipient, and if completing a request intensifies this feeling of impact, then donors may be willing to pay more to complete even if they are certain that the recipient can in any case fundraise successfully.

Our data allow us to reject the former mechanism and favor the latter. Fundraising in Benevolent is exceptionally successful, as 94% of needs reach their goals on time. On average they do so with 37 days

[1] Oxford English Dictionary, s.v. "crowdfunding." Retrieved online on September 25, 2015.

[2] Studies of charitable crowdfunding platforms include Wash (2013) and Meer (2014) on DonorsChoose.org, and Smith et al. (2015) and Raihani and Smith (2015) on Justgiving.

[3] That donation behavior increases as funds accumulate is a common finding in crowdfunding sites (Zhang and Liu, 2012; Burtch et al., 2013; Agrawal et al., 2015). Psychologists have associated the phenomenon with a goal gradient (Cryder et al., 2013).

remaining to expiration. This and other findings presented below suggest that donors do not worry that recipients may fail to raise their goals on time. To explore the alternative of impact philanthropy, we exploit the fact that Benevolent provides donors with a list of suggested contribution amounts. Focusing on donations within the suggestion range, we find that when making non-completion donations, donors follow suggestions more than 87% of the time. Yet, when completing, they follow suggestions only 38% of the time, and increase their gifts by an additional 160%. That is, donors stop following suggestions and more than double their contributions when doing so finalizes someone's request. On average, they make completion donations 42% faster than other donations. Altogether this suggests that donors find it appealing to complete requests, even when there is little doubt that the requests will in any case reach their goals.

Our findings also contribute to the understanding of what motivates giving, in general settings as well as in charitable crowdfunding platforms. A completion effect due to a heightened feeling of impact is consistent with warm-glow giving (Andreoni, 1989, 1990), and with the theory of impact philanthropy (Duncan, 2004). Previous work notes that crowdfunders enjoy the feeling of collaboration and engagement with a community (Gerber et al., 2012), which may be thought of as an impurely altruistic motive. Benevolent emphasizes this sense of impact and belonging on their website and communications, thus it is intuitive to think that the opportunity to complete someone's fundraising goal intensifies this motive. In addition, by doing content analysis of the text and images that make up the requests, we observe that donors make faster donations to individuals who narrate a crisis or who make reference in their appeals to difficult circumstances, such as incarceration, physical or mental disability, and substance abuse. Interestingly, physically attractive recipients also get funded faster,[4] as do solicitees whose fundraising campaigns fall on days in which Benevolent offers one-to-one donation matches. However, none of these characteristics affects the amount donors give; they only attract donations quicker. The opportunity to complete requests, on the other hand, increases both the speed and size of the donations, making completion a particularly powerful incentive.

In the remaining of the paper, we first give an overview of Benevolent in Section 2 and of the data in Section 3. We present the findings in Section 4, including a theoretical examination of the possible mechanisms driving the completion effect. Section 5 closes by discussing implications and open questions.

2 Overview of Benevolent

Benevolent is a Chicago-based online platform where low-income individuals living in the U.S. request donations to pay for one-time, specific needs.[5] The needs range from buying uniforms or tools needed to start a new job, to paying for books and computers for schoolwork, to purchasing healthcare items such as eyeglasses, dentures, or a wheelchair.

For a request to be posted on Benevolent's website, a validating organization must first certify it. Validating organizations are social work organizations and other nonprofits that partner in advance with Benevolent, and act as intermediaries between Benevolent and the recipients. Recipients start the request process by contacting a validating organization, which approves the request and posts it on Benevolent's website. If the request raises its goal, Benevolent sends the funds to the organization, which in turn makes the purchase for the recipient and thus ensures that the money is used for the specified purpose.

[4]Relatedly, Landry et al. (2006) find that female solicitees attract larger donations in a door-to-door solicitation. We find that both attractive men and women receive donations faster.

[5]Benevolent's website is `http://www.benevolent.net`.

Recipients can only post one request at a time, and the request cannot exceed $700.[6] The post stays active on the website for 90 days or until it raises its goal, whichever happens first. If the goal is not raised in 90 days, the request expires, it is taken off the website, and the solicitee receives no money. Any funds raised by expiration are assigned to another recipient with a similar request, as determined by Benevolent.

Benevolent's success rate was exceptionally high during the period of analysis: 94% of requests obtained full funding. On average, requests received their opening donation just under 14 days after having been posted on the website, and completed their funding goal with 37 days remaining to expiration.

Benevolent's strategy rests on promoting a personal connection between donors and recipients. On its website, Benevolent stresses that donors "can step into the story of a person striving to reach important goals," and lists as one of its values a belief that "when we truly see one another, empathy trumps misperception." Accordingly, most requests on the website include a picture of the solicitee, text describing why the person asks for help, and a video in which the solicitee narrates the situation and goals. Donors, in turn, are allowed to accompany their contributions with written messages for the recipient. By making stories and donations more personal, Benevolent may have contributed to enhancing the donors' desires to have a direct impact on the recipient, as we discuss in Section 4.

On the payment site, Benevolent offers donors a list of suggested donation amounts. Donors may select an amount from this list, or enter any other value.[7] We exploit this feature of the payment system in the analysis in Section 4, where we look at the rate at which donors follow suggestions when their gifts do or do not complete requests.

3 Description of the Data

We analyze all donations made on Benevolent between November 30, 2011 and June 9, 2014. These were 3,488 donations made by 1,614 different donors to 442 recipients, and totaling $193,761.23. Benevolent provided us with individual donation data, with each donation time-stamped by the second and linked to their donor and recipient via non-personal identifiers. Each observation includes the amount requested by the recipient and the date the request was posted on the website. The average requested amount was $489, and the average donation size was $55.55.

Benevolent also provided us with demographic information and other characteristics that solicitees self-reported to the validating organizations when applying to post their requests on Benevolent. This includes gender, race, ZIP code of residence, personal and household income level, and whether the recipient is a veteran, senior, homeless, immigrant, disabled, and a criminal ex-offender. Table 1 presents mean values for the main characteristics of interest. As the Table reveals, the vast majority of recipients are urban poor.

Independently, we also analyzed the content of the website corresponding to each request. Figure 1 shows an example of a request on Benevolent. We analyzed the text describing the recipient's need and situation, and from this classified the purpose of the request (education, employment, healthcare, home repair, household, technology, and transportation). In addition we identified whether references

[6] Benevolent set this limit on June 2014. Before then, requests could go as high as $1600, though in practice more than 99% of requests were below $900.

[7] Prior to December 2013, the suggested amounts were 5, 10, 25, 50, and 100 dollars, and the default option was $25. In an effort to increase donation amounts, Benevolent changed the suggested amounts on December 2013 to 10, 20, 35, 50, 100, and 200 dollars, and set the default to $35.

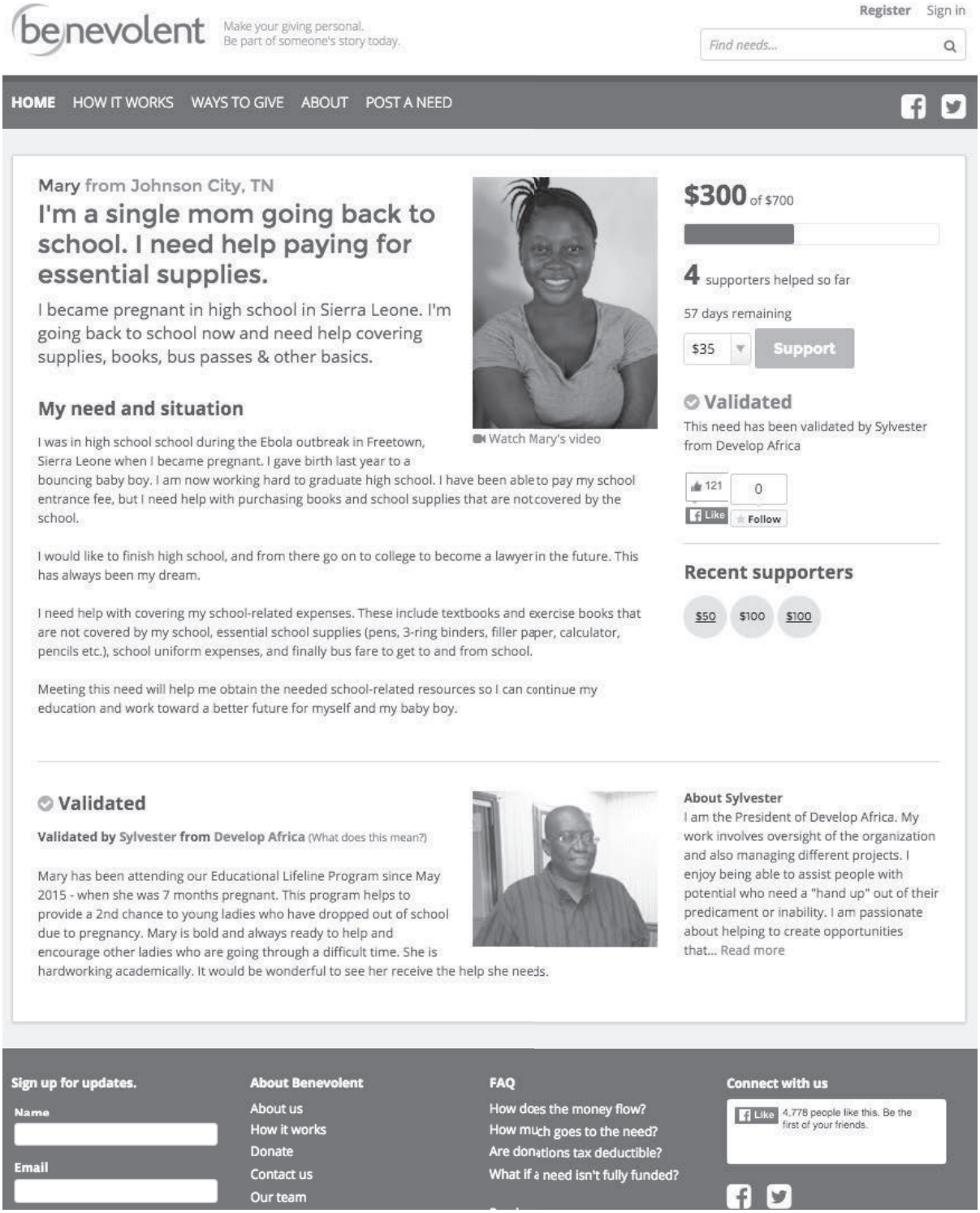

Figure 1: *Example of a request on Benevolent*

Table 1: *Recipient characteristics*

Variable	Mean	N	Variable	Mean	N
Personal income	$6,785	440	Race		418
Household income	$10,623	439	White	0.144	
Female	0.622	439	Black	0.615	
Homeless	0.292	442	Latino	0.170	
Veteran	0.043	442	Other	0.072	
Senior	0.007	442	Employment		440
Immigrant	0.133	442	Full	0.148	
LBGT	0.036	442	Part	0.186	
Disabled	0.231	442	Unemployed	0.666	
Ex offender	0.181	442	Education		436
HIV+	0	442	<High School	0.227	
Abuse survivor	0.251	442	High School	0.330	
			Some college	0.305	
			More	0.138	
			Location		437
			Chicago	0.535	
			Detroit	0.174	
			Oakland, SF, SJ	0.173	
			Charlotte	0.053	
			LA, SD	0.046	

were made to previous incarceration, history of substance abuse, homelessness, physical or mental disability, employment condition, government assistance, a crisis, ability to resolve the crisis, kids, religion, and gratitude. Finally, based on the recipient's picture, we rated the recipient's attractiveness and effort put on physical appearance.[8]

Our dataset contains much less information about the donors. In fact, we have no donor information directly collected by Benevolent. Benevolent contracted an external, marketing organization that provided variables such as age, gender, household income, level of education, and occupation of the donors based on their email addresses. Since we could not confirm the veracity of the data, and since the data are only available for a limited number of donors whose email addresses generated a result (rather than for a random sample of the donors), we use these data only for secondary analysis and robustness checks.

4 Findings: The Completion Effect

In this section we focus attention on a particular finding: donors gifted larger amounts when their donations caused the recipient to immediately reach the fundraising goal. Table 2 estimates the size of the completion effect under five model specifications (one for each column) when all donations in the data are considered. The OLS column is a pooled ordinary least squares regression with no controls. RE (1) is a panel regression with no controls, treating donors as random-effects. RE (2) adds

[8]The text and photograph analysis was done by four independent research assistants. Each evaluated the requests of a randomly-determined one fourth of the set of recipients in the data. For some recipients, their attractiveness and effort put on appearance could not be determined, as their pictures were intentionally blurred by Benevolent to protect their identities. In very few cases, the values coded for some variables fell outside the expected range (for instance, a binary variable with a value outside $\{0, 1\}$). We drop these observations in the analysis.

Table 2: *Donation size ($) for all donors in the data*

	OLS	RE (1)	RE (2)	RE (3)	RE (4)
completion	121.21***	99.72***	118.14***	119.08***	88.34***
	(23.39)	(12.60)	(13.53)	(14.10)	(16.07)
funds requested			0.08***	0.08***	0.07***
			(0.01)	(0.01)	(0.01)
funds raised			-0.09***	-0.09***	-0.06***
			(0.01)	(0.01)	(0.01)
matched			-5.11	-5.46	-4.53
			(3.50)	(3.45)	(5.81)
last day				19.23***	
				(6.66)	
completion*last day				-14.67	
				(24.94)	
donor income					2.44**
					(1.04)
donor age					4.84***
					(1.79)
constant	42.76***	46.01***	60.76***	60.83***	59.31***
	(1.71)	(1.56)	(2.93)	(2.93)	(3.86)
N	3488	3488	3488	3488	1559

Notes: This table shows estimated marginal effects on the amount donated, from observations from all donors. *completion* indicates whether the donation completed a request, *funds requested* is the deviation from the mean requested amount, *funds raised* is the amount of money raised when the donation was made, *matched* indicates whether the donation was matched 1-to-1 by Benevolent, *last day* indicates whether the donation occurred within 24 hrs to expiration, *donor income* is the deviation from the mean donor's household income (in bins 0-15k, 15k-25k, 25k-35k, 35k-50k, 50k-75k, 75k-100k, 100k-125k, 125k-150k, 150k-175k, 175k-200k, 200k+, where the mean is 50k-75k), and *donor age* is the deviation from the mean donor's age (in bins 21-24, 25-34, 35-44, 45-54, 55-64, 65+, where the mean is 45-54). The latter two variables correspond to values as of August 2015, from data purchased by Benevolent from an external, marketing agency that provides personal information based on email addresses. OLS refers to estimates of a pooled ordinary least squares regression, an RE refers to estimates of regressions treating donors as random effects. Standard errors clustered at the donor level in parentheses. $*p < 0.1$; $**p < 0.05$; $***p < 0.01$.

to this model controls for the amount requested and the funds already raised. The last column (RE (4)) includes as additional controls the donor's household income and age. (A discussion of column RE (3) is left for Section 4.1.1.) These estimates show that completion donations are on average three to four times larger than non-completion donations. The effect is robust to excluding from the data the most prolific completers who may be considered outliers (results not reported here).

The effect is not driven by a kind of donor who dedicates himself to completing requests. Table 3 estimates the size of the completion effect exclusively for donors who contributed multiple times, at least once to complete a request and at least once for a non-completion donation. These donors gave on average 63% to 117% more to complete requests, as the corresponding columns of Table 3 show. The appeal of completing someone's goal is thus robust and not exclusive to dedicated completer donors.

Figure 2 provides a visual impression of the completion effect. Each graph in the matrix is constructed by combining all requests in the data that took the same number of donations to reach their goals. For instance, the top-left graph contains observations only from requests that were completed with two donations; the graph following to the right includes only observations from requests that were completed with three donations; and so on all the way to the graph on the bottom right corner, which

Table 3: *Donation size ($) for donors making both completion and non-completion donations*

	OLS	RE (1)	RE (2)	RE (3)	RE (4)
completion	72.87**	58.36***	99.35***	100.21***	54.03***
	(28.88)	(16.76)	(21.48)	(22.24)	(20.39)
funds requested			0.17***	0.17***	0.08**
			(0.04)	(0.04)	(0.03)
funds raised			-0.18***	-0.18***	-0.08**
			(0.04)	(0.04)	(0.04)
matched			0.05	-0.54	1.24
			(7.05)	(7.37)	(5.98)
last day				24.00**	
				(12.07)	
completion*last day				-13.66	
				(22.51)	
donor income					2.49
					(3.47)
donor age					-8.39
					(6.99)
constant	62.52***	83.57***	114.76***	114.50***	85.84***
	(7.08)	(8.84)	(12.60)	(12.61)	(12.52)
N	851	851	851	851	462

Notes: This table shows estimated marginal effects on the amount donated, from observations only from donors who made at least one completion donation and one non-completion donation. *completion* indicates whether the donation completed a request, *funds requested* is the deviation from the mean requested amount, *funds raised* is the amount of money raised when the donation was made, *matched* indicates whether the donation was matched 1-to-1 by Benevolent, *last day* indicates whether the donation occurred within 24 hrs to expiration, *donor income* is the deviation from the mean donor's household income (in bins 0-15k, 15k-25k, 25k-35k, 35k-50k, 50k-75k, 75k-100k, 100k-125k, 125k-150k, 150k-175k, 175k-200k, 200k+, where the mean is 50k-75k), and *donor age* is the deviation from the mean donor's age (in bins 21-24, 25-34, 35-44, 45-54, 55-64, 65+, where the mean is 45-54). The latter two variables correspond to values as of August 2015, from data purchased by Benevolent from an external, marketing agency that provides personal information based on email addresses. OLS refers to estimates of a pooled ordinary least squares regression, an RE refers to estimates of regressions treating donors as random effects. Standard errors clustered at the donor level in parentheses. $*p < 0.1$; $**p < 0.05$; $***p < 0.01$.

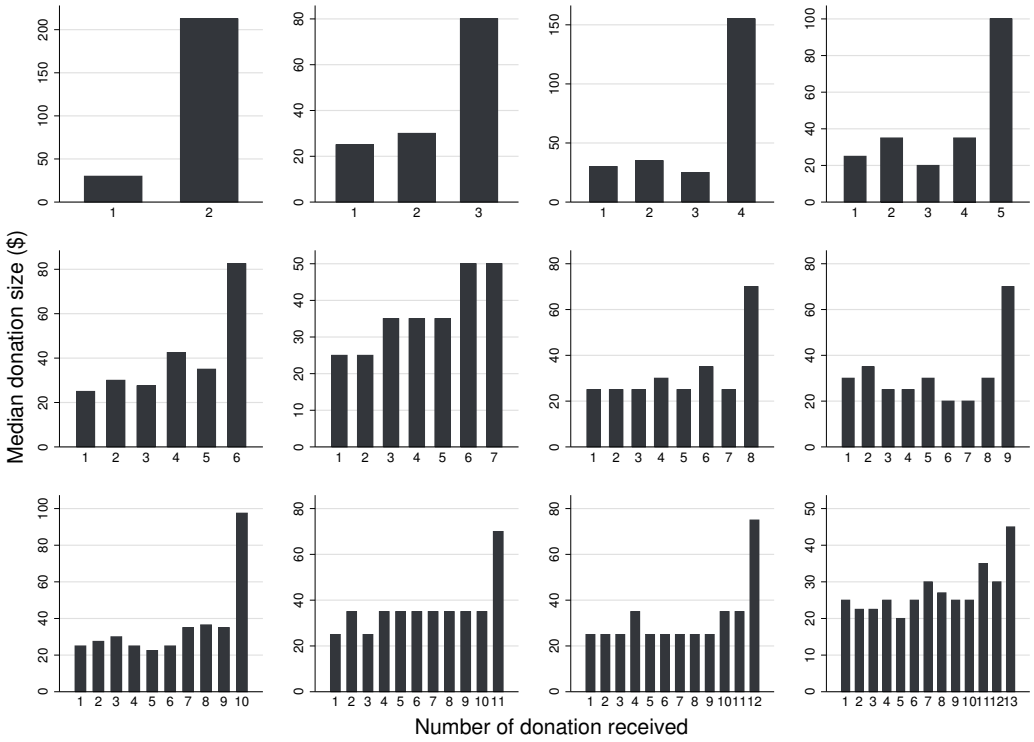

Figure 2: *Donation size, from opening to completion of requests*

Notes: Each graph in this figure shows the median amount donated successively since requests open until they reach their goal. Each graph contains observations only from requests that reached their goal with the same number of donations. For instance, the top-left graph contains observations only from requests that reached their goals with two donations, and thus donation 1 is the opening donation and donation 2 is the completion donation; the next graph to the right contains observations only from requests that reached their goals with three donations, and thus donation 1 is the opening donation and donation 3 is the completion donation; and so on all the way to the bottom-right graph, which contains observations only from requests that got completed with thirteen donations. The number of requests in each group is, respectively, 28, 38, 28, 25, 24, 25, 43, 26, 24, 27, 27, and 22.

includes only requests that were completed with thirteen donations. Each graph plots the median size of each successive donation from opening to finalizing the fundraising goal. Hence the right-most bar in each graph represents the median size of the completion donation. Notice that the vertical axis varies in scale across graphs.

Figure 2 shows that completion donations are systematically larger than all other donations sent to the recipient. The effect is not a gradual increase in the donation size as funds accumulate. It is specifically a last-donation effect. It is robust to outliers, as the figure shows median rather than mean donations. And it is stable across requests that reached their goals with various numbers of donations.

4.1 What Drives the Completion Effect? Theory and Evidence

Donors may give larger amounts to complete requests for at least two reasons. First, they may fear that their preferred recipients will not reach their goals by the deadline. To avoid this, they may give more to complete requests, and thus resolve the completion uncertainty themselves. Alternatively, donors may experience a heightened feeling of making an impact on the recipient by completing their requests. Motivated by this positive utility, they may give more. We evaluate each explanation in turn, first with a theoretical illustration, and then empirically. We find evidence that the latter explanation is responsible for the results in our setting.

4.1.1 Completion Uncertainty

If donors worry that their preferred recipients will fail to raise their goals, they may be willing to donate larger amounts and complete the fundraising campaign themselves. In the theory section below we illustrate how this holds when there is high-enough uncertainty about the project's successful completion. But as the data presented in the subsequent evidence section suggest, fear of non-completion does not appear to drive the results in our setting.

Theory The model is a modification of Admati and Perry (1991). There are n donors, indexed by $i \in \{1, ..., n\}$, who decide sequentially and one at a time how much to contribute toward a charitable project. In period $t \in \{1, ..., n\}$, donor $i = t$ chooses her level of contribution g_i. Donations are fully observable. Denote the aggregate contribution at period t by $G(t) = \sum_{i=1}^{t} g_i$, and define $G_{-i}(t) = G(t) - g_i$.[9]

The project is carried out only if it raises the target amount $\bar{G}$, which is exogenous and known. Donors derive utility from the project only if it gets carried out. Thus, donor i's utility is

$$U_i = \begin{cases} -g_i & \text{if } G(n) < \bar{G} \\ V_i - g_i & \text{if } G(n) \geq \bar{G} \end{cases} \tag{1}$$

where V_i is the benefit donor i gets if the project is carried out.[10]

We explore the role of uncertainty about the project's completion in a simple, parametric case as follows. Let there be a known probability $p \in (0, 1)$ that $n = 2$, and a known probability $1 - p$ that $n = 3$. Donors $1, 2$ are thus certain to participate in the fundraising campaign, and donor 2 is the last contributor to the project with probability p.

Assume finally that $0 < V_i < \bar{G} < V_i + V_j$ for any i, j. This implies that no donor wants to single-handedly finance the project, but it is efficient that the project gets completed even when only two donors get to move.

In solving this game, it is helpful to consider first the degenerate cases $p = 1$ and $p = 0$. In the former, donor i's best-response function is

$$g_i^*(g_j) = \begin{cases} 0 & \text{if } \bar{G} - g_j > V_i \\ \bar{G} - g_j & \text{if } \bar{G} - g_j \leq V_i \end{cases} \tag{2}$$

That is, given the other agent's contribution, a donor is willing to reach the fundraising target if she can do so with a donation smaller than the benefit she obtains from the project's completion. The Subgame-Perfect Nash Equilibrium (SPNE) achieves completion at $t = 2$, with donations $(g_1 = \bar{G} - V_2, g_2 = V_2)$. In this case, donor 1 uses her first-mover advantage to partially free ride on donor 2, who donates the maximum she is willing to give.

In the degenerate case of $p = 0$, the SPNE also achieves completion, at $t = 3$. Donor 1 fully free rides on donors $2, 3$, and the game is identical to the 2-donor case starting from period $t = 2$. The SPNE outcome is $(g_1 = 0, g_2 = \bar{G} - V_3, g_3 = V_3)$.

[9] Vesterlund (2003) and Romano and Yildirim (2005) note that this move structure incorrectly assumes that a donor cannot contribute at multiple points of the solicitation. However, this assumption is warranted in our case, as fewer than 7% of donations in our data are repeated donations by a given contributor to a given recipient.

[10] This is the binary benefit function presented by Marx and Matthews (2000) in their comparison of dynamic versus static contributions to public goods.

When $p \in (0,1)$, we get the interesting question of whether donor 2 completes in the SPNE. If called to play, donor 3 follows a best-response function as in eq. (2), replacing g_j with $G_{-3}(3)$. Given this reaction, donor 2 may choose to donate $g_2 = 0$ or $g_2 = \bar{G} - g_1 - V_3$ and thus leave the project's completion in the (potential) hands of donor 3, or she may choose to complete the project herself by donating $g_2 = \bar{G} - g_1$. Clearly the latter is possible only if $\bar{G} - g_1 > V_2$. Moreover, it must be that $V_2 > V_3$ for donor 2 not to prefer to partially free ride on donor 3's potential contribution.[11] If these two conditions hold, donor 2 prefers to complete the project herself at $t = 2$ rather than to make a smaller donation and wait for possible completion at $t = 3$ only if the expected utility from the former action is larger than that of the latter action. That is, only if

$$V_2 - \bar{G} + g_1 > p \cdot (-\bar{G} + V_3 + g_1) + (1-p) \cdot (V_2 - \bar{G} + V_3 + g_1) \tag{3}$$

which reduces to $p > \frac{V_3}{V_2}$.

High-enough uncertainty about the arrival of a donation after $t = 2$ leads to a completion effect: a larger contribution and completion of the project at $t = 2$. The SPNE outcome when $p > \frac{V_3}{V_2}$ is $(g_1 = \bar{G} - V_2, g_2 = V_2, g_3 = 0)$, whereas when $p < \frac{V_3}{V_2}$ the SPNE outcome is $(g_1 = 0, g_2 = \bar{G} - V_3, g_3 = V_3)$.

Evidence Donors did not appear to fear non-completion in our setting. Benevolent's success rate was exceptionally high, as 94% of requests reached their goals. This fact was advertised visibly on the website, so presumably donors were aware of it. Requests also tended to get fulfilled long before the 90-day mark. On average recipients reached their goals with 37 days remaining to expiration, and only 9% of requests remained unfulfilled a day prior to expiration. Since requests displayed the time remaining until expiration very saliently, it is hard to imagine that donors completed requests driven by fear of non-completion.

In addition, columns RE(3) in Table 2 and Table 3 show that the completion effect is robust to including in the model an indicator of donations occurring the day prior to expiration, and that there is no interaction between completion and last day. The completion effect was thus not driven by last-day donations, for which worry of non-completion may be at its peak. Nor did the completion effect get any larger or smaller if completion occurred on the 90th day of the fundraising campaign. Altogether this suggests that donors contributed more to complete requests for reasons other than fear of requests going unfulfilled.

4.1.2 Heightened Feeling of Impact

The behavior of donors suggests a preference for completing requests. As proposed by the theory of impact philanthropy (Duncan, 2004), donors may care about personally making a difference with their contributions. It is possible that completing a fundraising goal provided a heightened feeling of making an impact, compelling donors to donate larger amounts at a faster pace when by doing so they personally completed the project. The theory section below illustrates the intuitive point that a completion effect may result form a utility of personally reaching the goal. The evidence section

[11] Donor 2's best-response function is

$$g_2^*(g_1) = \begin{cases} 0 & \text{if } \bar{G} - g_1 > V_2 \text{ and } p > \frac{V_3}{V_2} \\ \bar{G} - g_1 & \text{if } \bar{G} - g_1 \leq V_2 \text{ and } p > \frac{V_3}{V_2} \\ \bar{G} - V_3 - g_1 & \text{if } p < \frac{V_3}{V_2} \end{cases}$$

that follows provides evidence that donors indeed shifted their behavior by making larger and faster donations in order to complete.

Theory Assume the setup above and let donors derive an additional benefit from personally reaching the fundraising target. In particular, let donor i's utility now be

$$U_i = \begin{cases} -g_i & \text{if } G(n) < \bar{G} \\ V_i - g_i & \text{if } G(n) \geq \bar{G} \text{and } i \neq T \\ V_i + b_i - g_i & \text{if } G(n) \geq \bar{G} \text{and } i = T \end{cases} \tag{4}$$

where b_i is the benefit from personally completing, and T is the final period.

It is straightforward to verify that with this utility, the condition for observing a completion effect becomes $p > \frac{V_3 - b_2}{V_2}$. That is, a large enough benefit from personally completing can result in a completion effect regardless of how small p gets.

Evidence Donors tended to make completion donations quicker than normal, and increased their donation size in order to achieve the fundraising goals. Table 4 and Figure 3 provide evidence of this.

Table 4 shows the hours passed between two successive donations made to any given recipient. Columns OLS and RE(1) indicate that the time elapsed between the completion and the penultimate donations was on average 79 to 100 hours shorter than the time elapsed between any two other successive donations. A large part of this was actually a gradual speeding up of donations as funds accumulated, rather than a pure completion effect. However, even after controlling for the funds raised and the amount requested, completion donations continue to be significantly faster (column RE(2)). This remains true for donations smaller than or equal to \$200 (what we call regular donations) after controlling for characteristics of the recipient and 1-to-1 matching campaigns by Benevolent, as columns RE(3) shows.[12] The possibility to complete a request thus appears to have compelled donors to give faster.

Figure 3 gives additional evidence for regular donors' preference for completion. It shows histograms of the size of regular donations. The top graph focuses exclusively on opening donations (i.e., very first donations recipients received), the middle graph exclusively on all donations except opening and completion donations, and the bottom graph exclusively on completion donations. When making opening contributions, donors followed a suggested amount 88% of the time, and the median donation size was \$25. The spikes at the suggested values in the top graph illustrate this. The pattern was almost identical for donations that neither opened nor completed requests.

On the other hand, donors behaved quite differently when completing requests. They followed suggestions only 38% of the time. This drop in frequency is expected, because as recipients accumulate funds for their campaigns, the amount remaining to reach the goal is likely to be a value other than a suggestion, and thus completion donations are naturally unlikely to equal suggestions. But less obviously, the distribution of completion donations shifted to the right substantially relative to other donations (Mann-Whitney U test $p < 0.001$). The median size of regular, completion donations was \$65. This indicates that regular donors stopped following suggestions and added a median 160% more to their gifts when by doing so they could complete the recipients' requests. Again, this suggests that donors exhibit a preference for completing requests.

[12] We focus separately on donations smaller than or equal to \$200 because, as detailed before, the largest amount suggested by Benevolent on its payment site was \$200. 96% of all donations in the data fall into this category.

Table 4: *Time (hrs) elapsed between donations*

	OLS	RE (1)	RE (2)	RE (3)
completion	-79.46***	-100.65***	-22.99*	-39.74***
	(9.96)	(9.05)	(11.85)	(12.32)
funds requested			0.13***	0.04
			(0.04)	(0.03)
fraction raised			-731.62***	-660.01***
			(67.51)	(70.11)
fraction raised sq.			528.22***	479.48***
			(67.62)	(72.17)
$200+				-31.23
				(57.29)
completion*$200+				90.84
				(64.19)
incarceration				-110.85***
				(25.86)
substance abuse				-22.63
				(24.64)
disability				-31.55**
				(15.95)
crisis				-12.08
				(11.67)
resolve crisis				-4.46
				(16.44)
homeless				23.75*
				(13.24)
female				31.01***
				(11.21)
matched				-74.91***
				(18.02)
attractiveness				-17.87**
				(8.66)
constant	142.09***	177.58***	301.46***	313.42***
	(5.60)	(8.18)	(15.02)	(30.78)
N	3487	3487	3487	2798

Notes: This table shows estimated marginal effects on the hours elapsed between the receipt of a given donation and the previous donation (or between the posting date and the opening donation). *completion* indicates whether the donation completed a request, *$200+* indicates whether the donation was larger than $200, *funds requested* is the deviation from the mean requested amount, and *matched* indicates whether the donation was matched 1-to-1 by Benevolent. Other variables indicate elements or characteristics of the recipient narrated in the text accompanying the request. *crisis* indicates whether a crisis was narrated, and *resolve crisis* whether the crisis can be resolved with the request. *attractiveness* is the recipient's physical attractiveness on a 1-to-3 scale as rated by independent coders evaluating the recipients' request pictures. OLS refers to estimates of a pooled ordinary least squares regression, an RE refers to estimates of regressions treating recipients as random effects. Standard errors clustered at the recipient level in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

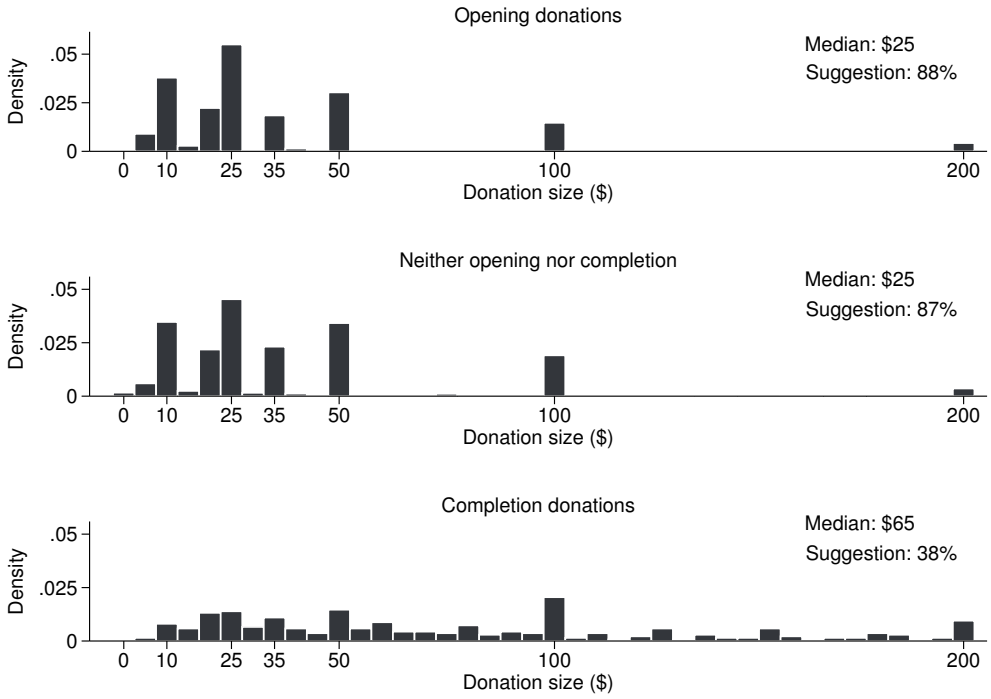

Figure 3: *Histogram of donations of $200 or less*

Notes: This figure shows the density of individual donations, including only donations equal to or less than $200. The top graph includes only opening donations; that is, the first donations requests receive after being posted on Benevolent. The middle graph includes all donations except opening and completion donations. The bottom graph includes only completion donations. Prior to December 2013, Benevolent suggested donors the following contribution amounts: 5, 10, 25, 50, and 100 dollars. After that date, suggestions were changed to 10, 20, 35, 50, 100, and 200 dollars.

5 Discussion and Conclusion

Worldwide donations made on charitable crowdfunding platforms went from $406 million in 2010 to $4 billion in 2014 (Massolution, 2015). As more charities turn to the web to raise funds, it is increasingly important to understand what features of the crowdfunding environment affect donors' motivations for giving. It has been shown, for instance, that as the number of projects soliciting contributions grows, coordination among participants becomes more difficult, leading to a decrease in both total donations and the number of successfully funded projects (Corazzini et al., 2015). Thus knowing how to encourage individuals to donate is particularly pressing in the crowdfunding sector.

This paper provides evidence that donors in a charitable crowdfunding platform display a preference for completing requests. They make significantly larger donations, at significantly faster pace, when by doing so they there and then reach the recipient's fundraising target. The effect is distinct from a gradual increase in contributions as funds accumulate. It is also a remarkably robust finding, prevalent even within-person for donors who make multiple donations on the platform. Donors do not appear to worry that requests will expire unfulfilled. Rather, the evidence suggests that they feel more impactful over recipients when they complete requests versus when they donate at any other stage of the fundraising campaign. We find that other aspects of the recipients profiles also attract faster donations, particularly making reference to difficult circumstances such as a personal crisis, incarceration, and disability. Yet, unlike these, the opportunity to complete a request increases not only the pace, but also the size of the contributions.

Most non-equity crowdfunding platforms implement some kind of provision-point mechanism to stimulate support from funders who might otherwise abstain for fear that the project will not raise enough funds to get off the ground (Agrawal et al., 2014). Setting a provision point solves this coordination problem, but also creates a target that appeals to donors, who seem to intrinsically prefer to be the ones who reach it. Hence setting fundraising goals is doubly beneficial. One naturally wonders whether the target must actually hold—that is, whether funds must be disbursed *only* if the recipient reaches the goal—for it to produce a completion effect. The question also arises as to whether there are other means to leverage the completion appeal and motivate donations throughout the entire fundraising progression. Finally, there are many new aspects that crowdfunding platforms introduce into the practice of fundraising whose effects are not understood—for instance, the process of vetting requests by validating organizations, and their role in reducing uncertainty about the recipient's merits and use of the money. These are only some of the open questions that deserve the attention of future investigation.

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