

Please Share! Online WOM and Charitable Crowdfunding

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Abstract

During the last few years, charitable crowdfunding has become an increasingly popular method of online fundraising for personal and charitable causes. Many such crowdfunding platforms encourage and facilitate the use of online word of mouth (WOM) through social networks and social media, to spread the word about the crowdfunding campaigns. While online WOM is commonly used to share information about crowdfunding campaigns, there is hitherto limited understanding as to whether or how this information sharing affect individuals' contribution behavior or the outcome of crowdfunding campaigns. In this study, using a unique dataset from 590 crowdfunding campaigns observed over 12 days, we examine to what extent, and how quickly online WOM affect the rate of contributions. In addition, we explore the effect of different phases of fundraising (over time or as they approach their target goals) and of the coverage of the campaigns in major online news websites.

Keywords

Charitable Crowdfunding, Social Media, Online WOM, Word of Mouth.

Introduction

Crowdfunding platforms often facilitate and encourage “sharing the campaign” with others through social networks. For example, GoFundMe recommends Facebook as “the absolute best way to reach out to those closest to you,” and claims that sharing the campaign on Facebook increases donations by 350%.¹ Nonetheless, up to an estimated 40 percent of organizers (based on our sample) do not share their campaigns on Facebook. Few studies have explored the relationship between online “sharing” (i.e., online/electronic word of mouth) and the outcome of crowdfunding campaigns especially in the context of personal and charitable crowdfunding. Furthermore, the existing studies do not agree on the effect of various means of WOM.

Awareness and Social Influence

WOM on social media and social network platforms (hereafter called social platforms) play a role in charitable giving through two different mechanisms: a) by creating awareness and b) through social influence. Awareness has been well recognized as the first step in the charitable giving decision process (Guy and Patten, 1989; Snipes and Oswald, 2010). The popularity of social platforms have enhanced the efficiency and effectiveness of communication, by providing a means to reach a large audience at a low cost. These platforms have enabled individuals to contribute to charitable causes using their social capital. Even those who do not donate directly to the charitable cause can contribute towards it by spreading the word and informing potential donors about it through social platforms. In addition to awareness, social platforms can create social influence or facilitate donors' social objectives. Social objectives, such as reputation and desire for respect or social acclaim, have been theoretically and experimentally shown to positively affect people's motivation to donate. Harbaugh (1998) and Bénabou and Tirole (2005) theoretically modeled how desire for prestige and social reputation influences donors' behaviors. Saxton and Wang's (2014) study suggested that “social network effect takes precedence over traditional economic

¹ <http://support.gofundme.com/hc/en-us/articles/203604494-6-Steps-to-a-Successful-Campaign>

explanations” in charitable giving within a social network. Similarly, Castillo et al.’s (2014) experiments demonstrated how public announcement of donations on an online social network affect friends’ donations. These public announcements are seen as a soft ask (diffuse ask) to many friends on the social platform, which might motivate donation by creating an indirect social pressure. We investigate three main channels through which campaigns raise awareness or create social influence: 1) online WOM channels (e.g., Facebook and Twitter), 2) offline WOM channels (e.g., face-to-face conversations), and 3) mass media (e.g., news and broadcasts). We hypothesize that these channels affect the intention to donate positively by increasing the awareness about the campaigns or by creating social influence or by enhancing donors’ social objectives.

Donation-based Crowdfunding

Crowdfunding platforms, both for-profit (reward-based) and donation-based, help raise monetary contribution from many individuals in two forms: 1) by facilitating making an open call to the public to raise monetary contributions, and 2) by managing the transfer and collection of the funds.

Lu et al.’s (2014) study was the first to report that the number of posts on Twitter (i.e., tweets) about a project on Kickstarter was correlated positively with the outcomes of the project’s fundraising efforts. However, they claimed that the correlations were “primarily due to the fact that if a project is more persuasive to intrigue authors in social networks to discuss it (either by social promotions or external stimulations), it is more attractive to investors.” Thies et al. (2014) observed that an increase in the total number of daily Facebook posts (shares) about a crowdfunding campaign had a positive effect on the number of backers (funders) on the following day, while they observed either no effect, or a negative effect, for daily tweets. The data used for their study were collected from Indiegogo. The authors proposed that because those who fund successful projects typically receive some form of reward (or return on their investments), financial incentives (e.g., minimizing the uncertainty of backing a project) might influence a funder’s sharing and investing behavior. To the best of our knowledge, the only study that has focused on the effect of online WOM in donation-based crowdfunding is that of Hong et al. (2015). These authors found empirical evidence to support the hypotheses that an increase in the number of Facebook shares only had positive effects on “public good” (e.g., charitable) campaigns, while tweets only affected “private good” (e.g., creative product) campaigns positively. The proposed hypotheses were based on the assumption that Facebook users are more responsive to desirable behaviors in a social group, such as donations to charity, while Twitter users are more responsive to consumer goods and services.

Perception of urgency

The literature on charitable giving has established a positive effect of the perception of urgency on giving behavior (Sargeant, 1999). In addition to campaigns’ inherent characteristics, the passage of time and funding progress might affect the perception of urgency. We hypothesize that as campaigns become “older” on the platform, or as they approach their target goals, they are perceived to be less urgent. Therefore, both time and funding progress are expected to affect perceived urgency negatively and consequently, reduce the intention to donate (Figure 1). Note that the dashed arrows in the figure emanate from the effects that we control for but do not draw any formal hypotheses.

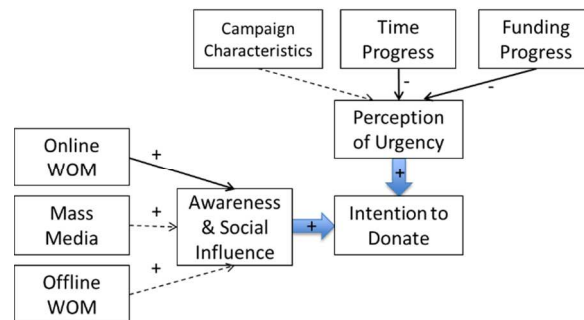


Figure 1. Factors affecting intention to donate to crowdfunding campaigns. The dashed arrows in the figure emanate from the effects that we control for but do not draw any formal hypotheses.

Data

We collected a comprehensive set of information on 590 crowdfunding campaigns from GoFundMe, a donation-based (as compared to reward-based) crowdfunding platform that allows people to raise money for personal causes (e.g., medical expenses, education costs, funerals, and memorials) or charities. Users create their own campaign webpages to describe why they raise money, how much money they need to raise, and to post updates about the cause. The data were collected from multiple sources. First, each campaign's information, including its description, organizer, target goal, and information about all contributions, was collected every 6 hours using a web-crawler application that we developed. Second, a Twitter streaming API was established to collect complete information on each post (and its writer) for each campaign. Third, the number of Facebook shares about each campaign during each period was collected using a Facebook API embedded in the crowdfunding platform. Fourth, a separate web-crawler application was developed to collect information about any news coverage of each campaign by any of the online news websites indexed by Google News, during each period.

The majority of crowdfunding campaigns on GoFundMe raise money for personal causes, such as covering medical costs. The target goals of most campaigns (the total amount of money requested from the crowd) are somewhere between several hundreds and several thousands of dollars. While more than 90 percent of campaigns in our dataset raised less than \$500, a few attracted tens of thousands of dollars.

Campaign Characteristics

The goals of the campaigns varied significantly in urgency, ranging from non-urgent (e.g. an educational trip) to life threatening conditions (e.g. a critical surgery). Moreover, the campaigns might have been setup by people with varying levels of experience or different numbers of friends or followers on social networks. Such characteristics of a campaign affect its popularity and attractiveness both to funders and other people who visit the campaign's' webpage. To control for the urgency of the causes, fundraisers' experience, and all other time-invariant factors, we collected multiple observations for each campaign and employed a fixed effect (within effect) panel data model.

Time and Funding Progress

All of the campaigns in our dataset were started on the same day, January 18, 2016: this decreased the effect of seasonal or time-dependent factors, and facilitated examining and controlling for them. In addition, it allowed us to observe these campaigns from their inception. The largest number of contributions is typically made in the first day of a campaign, and thereafter, the number of contributions decrease exponentially over time. Overall, approximately 95 percent of contributions are made during the first week of a campaign. While we observed varying patterns of progress, the most frequently observed pattern was a "bursty" starting phase followed by a long period of nearly flat cumulative contributions. We did not observe a "bursty" final phase such as the one reported by Lu et al. (2014) for Kickstarter campaigns.

Online Word of mouth

We measured online WOM using the two sources: shares on Facebook and tweets. The distribution of both the number of Facebook shares and tweets about campaigns were extremely skewed. Similar to the number of contributions, online WOM factors decreased sharply after the first few days. The total number of contributions, Facebook shares and tweets were correlated strongly and positively. These correlations might be caused by campaigns' characteristics (e.g. urgency) or time trends, to a large extent.

Mass Media

Crowdfunding campaigns have been increasingly covered by online mass media and news websites. Broadcasting to a large audience could increase public awareness about the campaign and therefore increase the number of potential funders. During our data collection period, we periodically collected information about any news coverage of each campaign by major online news websites. We developed a web-crawler application to collect every news article related to GofundMe campaigns within Google News.

While at least ten articles referring to different Gofundme campaigns were published every day, few of them referred to campaigns that were included in our data (note that all the 590 campaigns in this study were created on a specific day and several hundreds of such campaigns are created every day). These campaigns were excluded from our collection. We also removed one campaign that was mentioned in a live news channel.

Offline Word of Mouth

Besides online word of mouth (social media) and news articles (mass media) about a campaign, offline word of mouth could increase awareness about the campaign, and therefore affect both contributions and online word of mouth. To control for this effect in our model, we assumed that some potential funders or advocates would have heard about a campaign through offline word of mouth and, then visit the campaign web page to donate and/or share a post about the campaign on social media. Translating this into our fixed effect model, offline conversations during a time period $t-1$ affect both contribution and sharing in the next period, t . This assumption is realistic if the length of each time period is small. Therefore, both the number of posts on social media about a campaign and contributions in time period t might be affected with (unobserved) offline word of mouth about the campaign at time $t-1$. To control for this effect, and consistent with the literature (Thies et al., 2014 and Hong et al., 2015), we modeled the effect of online word of mouth in previous periods on the contributions in the current period.

Empirical Model

In order to control for unobservable, time-invariant campaign characteristics (including inherent urgency of campaign's goal and fundraiser's experience), we collected multiple observations for each campaign (at different periods). This allows us to model the changes in campaigns' observable time-variant characteristics while controlling for unobservable time-invariant factors.

We, then, employed a fixed effect (within effect) panel data model to estimate the model coefficients. The estimators in fixed effect modeling, which is equivalent to introducing a dummy variable for each campaign, are not affected by the heterogeneity of the time-invariant characteristics of the campaigns.

As noted above, both contributions (the dependent variable) and different WOM measures (the main independent variables) are skewed heavily to the right. Using the date in the original scale is likely to violate the assumption of normality of regression residuals and produce unreliable test statistics. A possible solution is to use log transformed variables (Hong et al. 2015). However, the treatment for the log transformations of zero values (such as using $\log(x+c)$ for a constant c) are quite arbitrary. In cases where variables obtain the value of zero in a large number of observations, as in our data, the treatment of zero values in the transformation might affect the results, significantly.

In order to mitigate this problem, we modeled the presence (or non-presence) of events instead of the counts of them. More specifically, we can avoid the issue of dealing with skewed data containing many zeros by converting them to "presence data," binary variables indicating the presence or lack specific events (Fletcher, 2005). We then employ a fixed-effect logit model to estimate the parameters of the model. Therefore, we model the presence of any contributions to campaign i at time t as a function of the presence of WOM and mass media about the campaign in the previous period, as well as the progress of the campaign in terms of days passed (Day_t), and the percentage of the goal funded ($Percent_t$). In addition, we controlled for any possible reinforcement or substitution effects by including contributions in the previous period ($Contribution_{it-1}$).

Preliminary Results

We use three different fixed effect models to test and estimate the effect of various factors on contribution. First, we estimated the model using the original (non-normalized) data, following Thies et al. (2014). Second, we transformed both contribution and WOM factors, following Hong et al. (2015). Third, we used "presence data" transformation, as explained above. Consistent with Thies et al. (2014) and Hong et al. (2015), all three models suggest a positive effect of Facebook shares on contribution. In contrast to these studies, both our original data and presence data models suggest a significant effect of tweets on contribution. We believe the disagreement between our results and the previous studies is mainly due to

the differences in data collection or transformation. As discussed previously, failing to observe the effect of tweets in previous studies might be due to the issue of many zeros in the log transformed model. Interestingly, our log transformed model shows no effect of tweets on contribution as the log transformed model in Hong et al. (2015). Due to the real-time nature and short-lived effect of tweets, we believe that the data collection intervals should be small to capture these effects. Since all the main factors in our model were constructed based on periods of 6-hours, we were able to observe the immediate effect of tweets on contributions. Previous studies collected and analyzed data on a daily basis.

Based on our preliminary logit model, on average, the presence of any Facebook shares in current period increases the odds of receiving at least one contribution in the next three periods by 21, 31, and 31 percent, respectively. Tweets, on the other hand, increases the odds of at least one contribution only in the next period, by almost 44 percent. In addition, the results suggest a significant negative effect of both time and percentage funded on contributions.

Conclusion

We empirically demonstrated the ways in which WOM affects contributions to personal crowdfunding campaigns, after controlling for other factors, including the campaigns' progress and previous contributions. Sharing posts on either Facebook or Twitter resulted in a significant increase in the odds of receiving funds during a short period thereafter. Both time and percentage funded negatively affected contribution. The effect of previous contributions, different forms of WOM (e.g. tweets vs retweets) and the characteristics of the person sharing the post (e.g. the number of his followers) are not reported in this manuscript due to space limitations. In addition, we have not reported our robustness checks, namely the assessment of multicollinearity, robustness to outliers, and alternative estimators including dynamic panel data models.

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