How is donor behavior influenced by the contributions of the other donors? : Evidence from online fundraising campaigns in Japan

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Abstract

This paper investigates whether social information (the contributions of the others) influences one's own giving decision when similar giving behaviors are observed in the previous donors. We use the dataset of online fundraising campaigns from JustGiving.jp. Our estimated results show that the larger number of donors who donate modal amount during the first 2 days of each campaign, the more likely it is for the later donors to take the same amount. Interestingly, as for the campaigns for reconstruction from the Great East Japan Earthquake and Tsunami, the impacts cannot be observed. These results indicate that the impacts of social information could vary depending on situations.

Keywords: Charitable contributions, Social information, Conformity, Online fundraising, Natural experiment

JEL Classification Number: H41, D64, C99

I would like to express my heartfelt appreciation to Prof. Naoto Yamauchi, Prof. Miki Kohara, Daigo Sato, SunYoun Lee, Midori Matsuhima and participants at monthly seminar for their comments and suggestions. I'm also indebt to Masaya Kumagai for technical support in constructing the dataset.

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1. Introduction

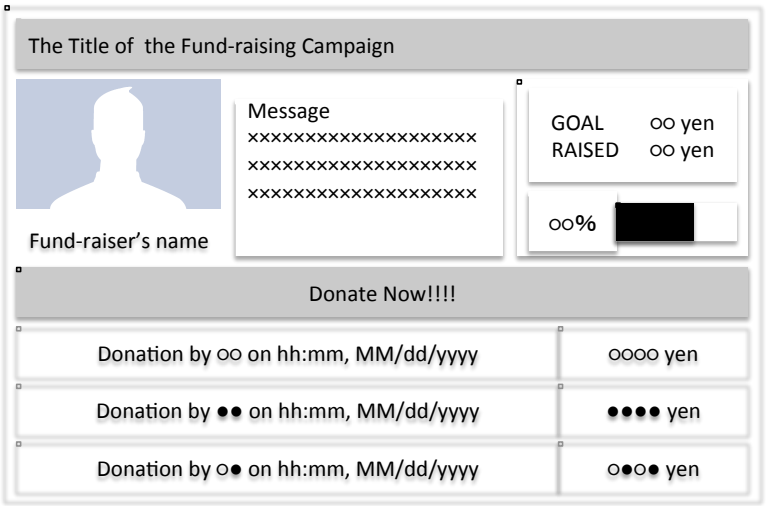
How information especially about the contributions of the other donors, which is termed as social information, could affect one's own giving decision has been one of the interests in economics. Theoretically, it is proven that the social information has a significant impact on one's consumption decision and its impact increases when the social information has some trend that is widely pursued by others because doing same things or buying same products with others provide comfort (*A theory of conformity* by Bernheim 1994).

In the reference to this theory, several empirical studies have demonstrated the presence of the effect of social information on the probability and the amount of the donation (Frey and Meier 2004, Alpizar et al. 2008, Croson and Shang 2008, Martin and Randal 2008, Shang and Croson 2009, Boeg et al. 2012, Smith et al. 2012). Shang et al. (2008) additionally shows that social similarities with other donors strengthen the information's effect. Croson and Shang (2013) further claim that when social information is too extreme, it ceases to influence the other contributions.

The major limitation of the earlier empirical studies however is not testing the effect of the trend of the giving. It is because they are either using data of field experiments or natural experiments that do not test how donors behave when they are given the information of the long term fundraising campaign record which include how many and how much people donate to the particular project. Therefore, the purpose of this paper is to empirically analyze whether social information influences on giving behavior when there is a trend in the information that is widely supported. In other words, we test that if more people donate the same amount in the earlier stage of each fundraising campaign, the later donors chose to give the same amount as the previous donors. In order to do so, we use the dataset of online fundraising campaigns that enables us to observe how much people donate when the information, including the name of the donor, the date and the amount of the donation, are provided.

The rest of the paper is organized as follows. Section 2 explains data and econometric framework and section 3 reports the estimated results. Implications and limitations of this study are discussed in section 4.

Figure1 Sample of an online fundraising campaign page



2. Data and Methodology

2.1 Data

This study is based on the dataset drawn from JustGiving.jp, which is an online platform that provides non-profit organizations with an easy tool to create their own fundraising campaign page. The dataset enables us to track each giving behavior by time-related variables and thus to capture the accommodation process of the contributions in detail. Moreover, each page has a list of all the past donations as seen in Figure1. The list includes the name of the donor (which is often "anonymous"), the date of the donation and the amount. As the information is shown in chronological order within a page, it can be assumed that potential donors read it and it affects their own decision. The dataset covers the campaigns launched from March 2010 to December 2012.

2.2 Econometric Framework

We investigate whether the information about the others' contributions influence one's own giving decision when similar giving behaviors are observed in the previous donors. This means that if the trend is more widely followed, the impact is more strengthened. As a result, it is more likely for the later donors to take the same trend. In this paper, the trend is expressed as the mode, which is the most frequently donated amount. We use logistic regression to test that if there are more early donors who take the mode, it is more likely for the later donors to take the same amount.

The variables are constructed in data units of fundraising campaigns, considering the limitation of not capturing personal attributes of each donor. The trend is expressed by dividing into the modal donation at the first 2 days of the campaign and at the rest of the days. If the early mode is followed by lots of donors, the later mode is assumed to be the same amount as the early mode.

Table1 Summary Statistics

Variable		Obs	Mean	Std. Dev.	Min	Max
dsame	dsame=1, if emod=lmod, dependent variable	1353	0.323725	0.46807	0	1
emod	most frequently donated amount during the first 2days of the campaign	1353	3791.331	3405.341	500	15000
num_emod	number of donors who take "emod"	1353	1.944568	1.280499	1	6
lmod	most frequently donated amount during the rest of the campaign	1353	3625.003	3074.781	500	11000
num_lmod	number of donors who take "lmod"	1353	2.470067	1.789813	1	8
num_emod_0-10	number of donors who take "emod," 0 < "emod" < 1,000	1353	0.201035	0.647776	0	6
num_emod_10-20	number of donors who take "emod," 1,000 <= "emod" < 2,000	1353	0.456763	0.976696	0	6
num_emod_20-30	number of donors who take "emod," 2,000 <= "emod" < 3,000	1353	0.285292	0.877006	0	6
num_emod_30-50	number of donors who take "emod," 3,000 <= "emod" < 5,000	1353	0.243902	0.746546	0	6
num_emod_50-100	number of donors who take "emod," 5,000 <= "emod" < 10,000	1353	0.357724	0.972576	0	6
num_emod_100-	number of donors who take "emod," 10,000 <= "emod"	1353	0.399852	1.048625	0	6
goal	target price of the campaign	1353	209617.2	306865.2	2010	1100000
ttl_donor	number of donors during the whole period of the campaign	1353	8.833703	7.454972	2	46
giv_duration	duration from the first donation to the last donation	1353	46.32742	52.73099	2	237
ddur	ddur=1, if the campaign has a deadline	1353	0.257945	0.437666	0	1
ddisaster	ddisaster=1. if the campaing is projected for reconstruction from 3.11	1353	0.524021	0.499607	0	1

Note: Every campaign has **one of following values in greater than zero**, "num_emod_0-10," "num_emod_10-20," "num_emod_20-30," "num_emod_30-50," "num_emod_50-100" and "num_emod_100-."
For example, if one campaign has a value of "num_emod_10-20" **in two**, each value of "num_emod_0-10," "num_emod_20-30," "num_emod_30-50," "num_emod_50-100" and "num_emod_100-" is equal **to zero.**

As explained in Table1, the variable "dsame" is a dummy variable, which has a value of 1, if the later mode "lmod" is equal to the early mode "emod." We regress "dsame" on factors indicating the information about the contributions of the other donors, which are expressed as "num_emod_0-10," "num_emod_10-20," "num_emod_20-30," "num_emod_30-50," "num_emod_50-100" and "num_emod_100-," in addition to variables related to attributes of each campaign as controls.

3. Results

Table2 Whether the later mode is equal to the early mode or not?

Dependent variable: dsame (dsame=1, if the later mode is equal to the early mode)		Estimated mariginal effect		
Regression model: Logit		Full sample	Sample restricted to disaster related campaigns	Sample restricted to non-disaster related campaigns
Information about the contributions of the other donors				
	num_emod_0-10	0.0466**	0.0464	0.0575**
		(0.022)	(0.0416)	(0.0271)
	num_emod_10-20	0.0537***	0.0237	0.0816***
		(0.0165)	(0.0262)	(0.023)
	num_emod_20-30	0.0149	0.00383	0.043
		(0.0179)	(0.0216)	(0.038)
	num_emod_30-50	0.0791***	0.0485*	0.118***
		(0.02)	(0.0268)	(0.0315)
	num_emod_50-100	0.0430**	0.0308	0.0776**
		(0.0174)	(0.0213)	(0.038)
	num_emod_100-	0.0691***	0.0661***	0.029
		(0.0168)	(0.0206)	(0.0458)
Attributes of each campaign				
	goal	0.0000000258	0.0000000409	-0.00000000298
		(0.0000000441)	(0.0000000522)	(0.0000000947)
	ttl_donor	-0.000163	0.0013	-0.00234
		(0.00236)	(0.00316)	(0.00373)
	giv_duration	-0.000338	0.000366	-0.000973***
		(0.000261)	(0.000376)	(0.000375)
	ddur	-0.045	-0.0254	-0.0627*
		(0.0298)	(0.0516)	(0.0379)
	Observations	1353	709	644
Standard errors in parentheses	*** p<0.01, ** p<0.05, * p<0.1			

According to Table2, social information about the early donors seems to have significant impacts on behaviors of the later donors. However, can all the significant marginal effects of them be understood as the impacts of the information? For example, the result of the impact being larger in "num_emod_100-" than in "num_emod_50-100" might be inconsistent with common sense. We analyze these results in detail, considering the peculiar experience Japan had.

There is clearly a difference in significance of marginal effects of social information between non-disaster related campaigns and disaster related campaigns. As for non-disaster related campaigns, we can observe

significant impacts of the information especially in the lower ranges of the early modes. In the categories of "num_emod_0-10," "num_emod_10-20," "num_emod_30-50" and "num_emod_50-100," the larger number of donors who donate modal amount during the first 2 days of each campaign, the more likely it is for the later donors to take the same amount. However, we cannot obtain the significance in the category of "num_emod_100-." This result might be consistent with the suggestion from Croson and Shang (2013) that there are limits in the impact of social information on the voluntary provision of public goods. On the other hand, as for disaster related campaigns, all of which were projected for reconstruction from the Great East Japan Earthquake and Tsunami, we can observe no or quite weakened impact of the information in the lower ranges of the early modes. This means that the later donors could be less influenced by the trend in social information in the emergency situations, even if the early mode is followed by lots of donors. Although we can obtain the significance in the category of "num_emod_100-," it seems difficult to suggest this result as the significant impact of the information, because our dataset does not include the information about personal attributes of each donor, especially the information related to income.

4. Discussion

Our estimated results show that, as for normal situations, the larger number of donors who donate modal amount at the early stage of each fundraising campaign, the more likely it is for the later donors to stick to the same amount. Interestingly, the impacts of the trend in social information could be weakened in emergency situations, such as the reconstruction process from Great East Japan Earthquake and Tsunami. This means that the effects of social information could vary depending on situations. However, these results need to be interpreted with more caution, because this study has less experimental control against the dataset, which naturally occurred on the particular online fundraising platform. In addition, as mentioned in most previous studies using natural experiment or field experiment, there is discussion about whether the obtained results are applicable also outside the setting of this study.

Despite of some limitations, we explores the study about the effects of the trend in the contributions of the others, by using the dataset drawn from the website, which allows us to capture the accommodation process of charitable contributions. As a result, we can suggest from a closer and clearer perspective that the larger number of donors who follow the trend at the early stage of the fundraising campaign, it is more likely for the later donors to stick to the same trend. In addition, there is thought to be also practical contribution, like our results' suggesting the possibility that fundraisers can control the trend of later donors by strategically making the early donations to be the same amount. As there is no doubt that we are today observing the rise of online fundraising activities, the practical contribution might be perceived as more important in the near future.

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