

The Determinants of Charitable Donation
understanding its relation with psychological preferences

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Abstract

This paper investigates charitable giving behaviour using a British sample, focusing on individuals' social and economic preferences and beliefs, such as risk and time preferences, laboratory measures of people's prosocial behaviour and willingness to donate to charities. To elicit such preferences and beliefs, we conducted a lab experiment that consists of multiple layers of lab-based elicitation methods. In addition, to examine the existence of consistency seeking behaviour, we randomly assigned the subjects in the experiment into two treatments: those who are asked to state their principles about helping others before making decision on charitable giving and those asked after the charity decision. The estimation results show that risk seeking individuals trend to give more money in both the dictator game and our charitable giving task. Notably, asking subjects' principle has a partially positive impact on donation, indicating that people seek to maintain their cognitive consistency.

Keywords: charitable giving, donation, risk preference, consistency seeking

JEL classification: D81, D91

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1. Introduction

1.1. Background

Charitable giving can be considered as one of the typical forms of altruism. From the economics perspective, the amount of donation is considered as people's willingness to pay for an activity in which a charitable organization engages. Many people are participating in the charitable activities, willing to sacrifice their income or time to help others who are in need. Then, the question arises – what drives such charitable giving behaviour?

In this study, we assume that people's risk and time preferences affect their prosocial decision makings in a lab experiment. Specifically, this paper demonstrates how altruism is related to risk and time preference in the context of charitable donation. Further, one novel idea is included in the study; that is, stating principles or morals influences person's intentions to donate to charity. We examine whether they are motivated to be consistent with their stated principles, and hence we looked at if asking principle changes their proceeding actions or not.

For this aim, we designed a study that asked subjects to make hypothetical charitable donations with laboratory measures of social preference as well as risk and time preferences. Also, we manipulated the timing when a subject was asked to state their morals to investigate the impact on charitable giving behavior.

The main research questions of this study are:

Question 1: Do risk and time preferences explain laboratory measures of social preference?

Question 2: Can laboratory measures of social preference predict charitable donation?

Question 3: Does stating principles before making donation alter charitable giving intentions?

1.2. Determinants of donation

A large body of previous work on charitable donation has focused on the demographic determinants, trying to find potential donors. Among all the demographics, such as age, one's annual income and educational attainment, the most commonly mentioned demographic factor of charitable donation is gender (e.g., Mesch et al., 2011; Muller & Rau, 2016; Willer et al., 2015). It is well studied that female tend to make more donations to charity than male. In fact, they also different in terms of favor.

Although demographic factors have been attracted much attentions, the current study also emphasis the important psychological determinants.

One set of studies initiated by Fetherstonhaugh et al. (1997) applied psychological numbering principle, which explains our diminishing sensitivity to the marginal increase of a stimulus, to people's evaluation of human lives. Other studies in the field of life-saving have documented similar cognitive processing: psychophysical numbing and proportional reasoning (Friedrich et al., 1999; Jenni & Loewenstein, 1997). Indeed, these findings support the notion where people's

perception of stimuli is closely connected with prosocial behaviour.

In the same line, another group of literatures has also related people's preference for risky choices as well as intertemporal choices to altruism. The central assumption is that a person takes an altruistic action expecting the future return from the recipient (Axelrod, 1984). Angerer et al. (2015) suggested that more risk seeking person is more likely to engage in giving actions, and a person with a high discounting rate of future rewards generally expected to give less money than a more patient person.

Regarding people's taste of consistency, the classic theories of cognitive consistency and dissonance hold an assumption where humans have an inherent motive to be consistent (Festinger & James, 1959; Harmon-Jones & Mills, 1999). In fact, experimental studies have also constantly investigated people's preference of consistency. In the experiment, when subjects engaged in an action which contradicts with their initially stated attitudes, individuals tended to change their behaviour (e.g., Falk & Zimmermann, 2011). The theories of consistency explain this attitude in the way where people tried to manage their actions to be consistent rather than accepting their contradicting previous statement. Several economics literatures also explained this finding by modeling the notion of consistency preference (e.g., Mazar et al., 2008; Falk & Zimmermann, 2011). These ideas are closely related with cognitive dissonance, which assumes people seek to avoid discomfort caused by inconsistency between their beliefs and actions (Festinger 1957).

According to these findings and theories, Benabou and Tirole (2006) constructed a utility function which includes the notion of participating in altruistic activities. The activities include engaging charitable giving. They indicated that one's altruistic behaviour is motivated by unobserved and endogenous three key factors: intrinsic, extrinsic, and reputational. It is assumed that one's past actions are much easier to recall than their underlying motives, and this fact makes it rational to determine oneself through these past decisions, such that "I am the kind of person who behaves in this way." (Benabou & Tirole 2006 p.1657). This further implies that, later on, the exact motivations underlying past actions become unavailable with the probability that other individuals would think "what kind of a person s/he is" by observing the person's action.

Together with the main questions, we have the following hypotheses:

Hypothesis 1: Risk seeking person gives more money to the other person in dictator game

Hypothesis 2: More patient person gives more money to the other person in dictator game

Hypothesis 3: Laboratory measure of social preference predicts people's charitable giving behaviour

Hypothesis 4: Risk seeking person donates more money to charities

Hypothesis 5: More patient person gives more money to charities

Hypothesis 6: Stating one's principle has a positive impact on their willingness to donate

2. Methodology

To test the hypotheses, we designed a within-subjects experiment with four stages including six different tasks: namely, risk and time preference elicitation tasks as the first stage, two lab-based tasks for social preference for the second stage, and, in the final stage, a charitable giving task with principle task. The experiment was conducted through the internet based survey tool, Qualtrics, on 3 July 2017, recruiting 207 subjects (71 males and 133 females, and 3 others) through Prolific.ac. It lasted approximately 15 to 20 minutes to complete, and after completing the whole survey, each subject was paid £2 in reward for participation. We restricted our subject pools to be the UK nationals as we directly manipulated the dimension of “UK vs. Overseas” in the third stage of the experiment.¹ Figure 1 gives information about an overview of the general study design. Our subjects’ average age is 37, and annual income class is 30,000 to 34,999. On average, subjects have two siblings, one of which is older than them.

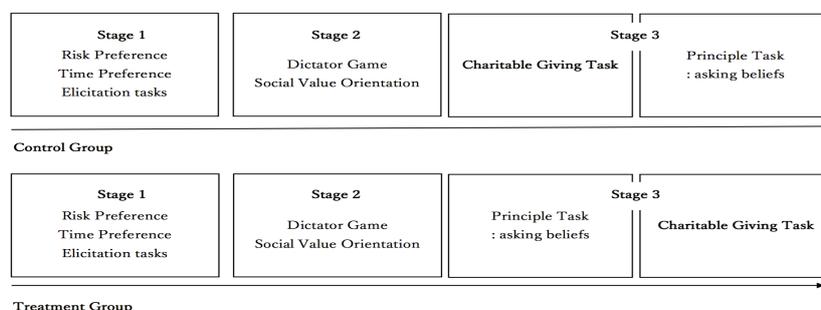


Figure 1. The Flow of the Experiment.

Imagine there are two persons who need help, but there are not enough resources to help them both.
One is a person in the **UK**, and the other is a person **overseas**.

Indicate which statement would you most agree with and how strongly you agree:

A: It is more important to help a person overseas than a person in the UK.
B: It is more important to help a person in the UK than a person overseas.

Strongly agree with A

Moderately agree with A

Slightly agree with A

Slightly agree with B

Moderately agree with B

Strongly agree with B

In this task, you will consider 8 different charities. You will be asked whether you would donate different amounts of money to each of the charities.

Imagine that at the end of the task, one of your answers will be selected. If you agreed to donate that amount of money, you would have to donate it for real. Because only one answer would be picked, you should answer each question as if it were the only one. All the choices are hypothetical, but we want you to make your decisions as though you were really considering whether to donate.

This charity helps a **child in the UK** who is living in **poverty**.
Your donation could help to improve this person's life.

Would you donate £50 to this charity?

Figure 2. The screenshots of principle task (child vs. elderly²), and charitable giving task (Child, the UK and Poverty).

The survey had two treatments: one where subjects complete the principle task before the main charitable giving task, and one when these tasks are in the opposite order. Figure 1 shows different steps that each group of people took, indicating main treatment group in the lower panel. The only

¹ To minimize potential order effects (i.e., heterogeneous preference towards the first or middle options), questions in each section were presented in randomized orders. Figure 1 gives information about an overview of the general study design.

² By observing existing dimensions of charities in the UK, three dimensions were adapted as to create three trade-offs: the UK vs. overseas, a child vs. an elderly person, and a person in poverty vs. ill health.

difference between two groups was that subjects in the treatment group were asked to express their beliefs, while subjects in control group do not have to state any of their beliefs prior to decide the amount of donation (the control group had 103, and 104 for the treatment group).

Figure 2 depicts the screens of principle task and charitable giving task. For charitable giving task, we used a modified version of standard dictator game in a frame of bisection. We made two changes from the standard dictator game. First, we added context of charitable donation with specified recipient group. Second, we designed it with iteration to indifference to avoid problems of rounding in the open-ended willingness to pay. If a subject agreed (disagreed) to donate an amount of money in the previous question (e.g., £50 in the first question), the amount in the subsequent question was elevated (decreased) until the open-ended question (£0: donate nothing).

3. Results

3.1. Descriptive analysis

The average amount of invested money in the investment task is about £30 (SD = 24.874), with 24% (50 individuals) of subject chose £50 and 17% of subjects (36 individuals) invested nothing. The mean number of sooner options chosen by subjects is 4.440 (SD = 1.927), and the mean number of safer options is 6.369 (SD = 2.238). In the charitable giving task, on average, a subject gave about £23 in dictator game, and their average amount of donation is about £284 in the charitable giving task.³ The result of SVO is similar to the that of Murphy et al. (2011), having two large clusters in individualistic and prosocial regions. In principle task, we created a new variable to indicate how strongly did subjects agree with each statement. Each value falls in the range between -3 and 3. The average person is more sympathetic to a child than an elderly person, having 0.976 and -0.976. Likewise, our subjects are more supportive of a person in the UK (1.353) than overseas (-1.507), and cooperative with a person living in ill health (0.527) than a person a person living in poverty (-0.527).

3.2. Regression analysis

We have 3 regression models for the dictator game, which included a Tobit model where the dependent is a dummy variable which becomes zero when a subject give nothing to the other person in dictator game, and 4 regression models for the charitable giving task with donation as a dependent. The first Risk Seeking is a continuous variable of invested money in investment task in the first stage, while the second Risk Seeking variable is a variable that captures the number of risky options that subjects chose in the task. The variable, Time Preference, indicates the number of small immediate rewards chosen by subjects. As control variables, several demographics are

³ All subjects were consistent in the task choosing relevant (either 45 or 50) choice at the end of the charitable giving task.

included, such as age, income, a categorical variable of employment, marital status, the number of siblings, own educational attainment, and a dummy variable for religious.

Table 1. Regressions on the dictator game.

	OLS Model		
	Model 1-0	Model 1-1	Model 1-2
Risk Seeking	0.007***	0.174**	0.216***
(Investment task)	(0.003)	(0.075)	(0.079)
Risk Seeking	-0.051	-1.126*	-2.276***
(Holt & Laury)	(0.031)	(0.672)	(0.777)
Time Discounting	0.008	0.316	-0.101
Rate	(0.037)	(0.799)	(1.098)
Gender	0.159		4.778
(Female=1)	(0.148)		(4.323)
Religious	0.004		-3.042
(Yes=1)	(0.132)		(3.705)
Income	-1.36e-06		-0.0001
	(3.85e-06)		(0.0001)
Own Educational Attainment	-0.163**		-2.850
	(0.069)		(1.799)
Sibling Number	0.036		0.801
	(0.046)		(1.356)
Employment	-0.018		-0.388
	(0.042)		(1.213)
Marital Status	-0.061		-0.766
	(0.066)		(2.179)
Age	-0.009		-0.237
	(0.006)		(0.153)
Gender*Risk Seeking			
Past Donation	-0.560***		-14.45***
	(0.190)		(4.128)
Duration	0.003		0.269*
	(0.007)		(0.153)
Constant Term	0.999**	20.69***	42.55***
	(0.433)	(4.971)	(15.22)
Individual Characteristics	Yes	No	Yes
Adjusted R-sqr	0.093(Pseudo-R2)	0.023	0.127
N	143	187	143

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 2. Regressions on the donation amount.

	Model 3			
	Model 3-1	Model 3-2	Model 3-3	Model 3-4
Risk Seeking	2.025**	1.687*	1.907*	-0.497
(Investment task)	(0.881)	(0.905)	(1.039)	(1.134)
Risk Seeking	-8.215	-5.606	-6.549	-7.640
(Holt & Laury)	(8.200)	(8.467)	(10.79)	(10.78)
Time Discounting	7.158	6.754	5.749	4.196
Rate	(9.246)	(9.109)	(11.42)	(11.01)
Altruism	1.736*	2.911**	2.565*	
(Dictator Game)		(1.022)	(1.442)	(1.416)
SVO		62.88	7.901	17.02
		(44.92)	(60.94)	(60.54)
Gender			89.42*	-48.56
(Female=1)			(52.06)	(73.44)
Religious			40.06	38.08
(Yes=1)			(46.67)	(46.16)
Income			0.0003	0.001
			(0.001)	(0.001)
Own Educational Attainment			-6.027	-8.664
			(18.37)	(17.55)
Sibling Number			23.68	19.47
			(17.16)	(16.35)
Employment			-9.433	-7.931
			(13.13)	(11.96)
Marital Status			-11.65	-2.902
			(21.08)	(21.46)
Age			0.477	0.650
			(1.800)	(1.746)
Duration			-3.228**	-2.122
			(1.366)	(1.556)
Past Donation			-71.53	-77.50
			(48.26)	(47.64)
Gender*Risk Seeking				4.137**
				(1.863)
Condition	54.50	64.61*	49.10	37.59
(Before=1)	(38.44)	(38.12)	(47.22)	(45.63)
Constant Term	192.9***	232.5***	14.83	204.4
	(65.32)	(82.91)	(153.9)	(164.7)
Individual Characteristics	No	No	Yes	Yes
Adjusted R-sqr	0.024	0.063	0.081	0.108
N	187	187	143	143

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

For Table 1, although none of the demographics are significantly correlated to the dependent variable, the results replicate the effects of risk preferences. The past donating experience (No=1) is negatively associated with the dependent variable, indicating a subject who have donated in the past give more money to the other person. Cuzick's Wilconxon-type test for trend also confirms that a trend is found between risk preference and the amount of money that a person gave in the dictator game (p = 0.010). Also, altruism in dictator game shows positive significant values, indicating there is a positive correlation between prosocial behaviour in dictator game and charitable giving behaviour. This justifies the connection between these two prosocial actions. In Model 3-3, having all demographic variables, correlation coincidences for risk seeking, gender dummy, and altruism in dictator game are positively significant. Model 3-4 shows the positive effect of risk remains the same even when we include the interaction term between gender and risk seeking variable. On the other hand, the positive impact of gender dummy becomes insignificant. These results support the notion that female shows a significant and positive correlation between risk preference and donations, and the gender difference in altruistic behaviour can be explained by more risk seeking female who give more in the tasks. Figure 2 also confirms this idea, having a crossing point.

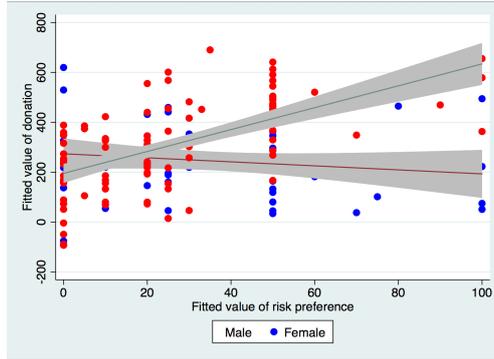


Figure 2. Two-way linear prediction plots.

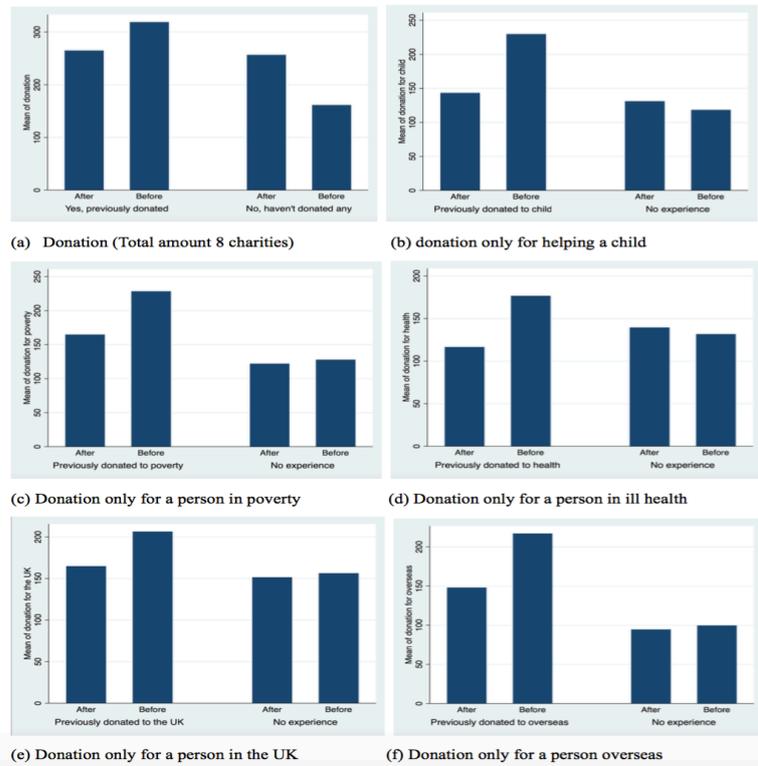


Figure 3. the average donations by categories.

Regarding the impact of the treatment, subjects donated £305 in the before group and £263 in the after group. Welch's t-test between the two condition fails to reject the null hypothesis. However, when we take subjects donation experience and characteristic of charities into consideration, significant differences are found between the two. Suggestive evidence for the differences comes from the histograms shown in Figure 3, where mean donations shown in the relations to subjects' donation experiences and characteristics of charities. Two-tailed Welch's t-tests also support that people who have donated to a charity for a child in the past and asked their principles before making donations gave more money to charitable giving task. The mean of donation for the charity helping a child is significantly different between two conditions if a

Condition	General Exp Dummy = Yes		Child Dummy = Yes		UK Dummy = Yes		Overseas Dummy = Yes		Poverty Dummy = Yes		Health Dummy = Yes	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Before	95	83	47	46	27	29	53	29	26	48	53	48
After	83	45	46	21	26	48	48	26	48	48	48	48

Notes: each dummy takes 1 if a subject have donated to a charity which has a certain characteristic indicated by the name of dummy variables

Table 3. the distribution of subjects categorized by their past donation.

subject has been supporting a charity for a child ($p=0.007$) and a person in ill health ($p=0.020$). One-tailed Welch's t-test also indicates people donated more money to a charity when the charity is consistent with their principles.

4. Conclusion

Overall, this study found the following facts: there is a positive correlation between risk tolerance and people's prosocial behaviour in laboratory based experiment (H1). On the contrary, time preference does not have any relation to people's prosocial behavior (H2). The lab-based prosocial behaviour is positively correlated with persons' charitable giving actions (H3). Risk preference is also significantly correlated with donation (H4), while time preference was not (H5). There is no significant impact of asking person's principle on donations unless one considers subjects' past donating actions and characteristics of charities (H6).

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