

Social Influence in Charitable Giving

A thesis submitted in partial fulfilment of the requirements for the Degree of

Master of Commerce in Economics

University of Canterbury

Shanshan Wei

University of Canterbury

Department of Economics and Finance

2015

Abstract

Charities often publicize generous contributions as a fund-raising strategy to encourage individuals to donate more. This paper presents a laboratory experiment to analyze the effect of social influence in charitable giving. I conjecture that different types of social information about other donors' decisions will have different positive effects on donations, both to increase the proportion of positive donations and the total donations contribution. In a sample of one hundred and twenty one university students, social information regarding the mode contribution and information about randomly chosen contribution suggestively increases the proportion of positive donations and total donation amount. However, neither effect is statistically significant in this experimental design.

Key words: Social influence; charitable giving; dictator game; social information.

Acknowledgment

I would like to acknowledge the help I have received from my thesis supervisor Dr. Maroš Servátka and associate supervisor Dr. Jeremy Clark. Without their supervision, encouragement and help, this dissertation would not been possible. I would like to thank our librarian Janette Nicolle and learning advisor Jessica Ritchie for helping me with my literature search and thesis writing. I would also like to thank my friends, Katarina Dankova for assistance with laboratory experiments and Rose Bolderston for help in proof reading.

In addition, a special thanks to my parents for their unconditional love and support during my life.

Table of Contents

Abstract.....	i
Acknowledgment.....	ii
Table of Contents.....	iii
1. Introduction.....	1
2. Literature Review.....	3
3. Experiment Design and Procedures.....	7
4. Experimental Results.....	13
5. Conclusions.....	21
6. References.....	24
7. Appendices.....	27
Appendix A: Instruction for the Baseline Treatment.....	27
Appendix B: Instruction for the Mode Treatment.....	29
Appendix C: Instruction for the Random Treatment.....	31
Appendix D: Instruction for the Generate Information Treatment.....	33
Appendix E: Information Sheet for the Mode Treatment.....	35
Appendix F: Information Sheet for the Random Treatment.....	36

1. Introduction

In the summer of 2014, one of the most famous and successful campaigns in fund-raising was launched on social media. It was the Ice Bucket Challenge, in which participants dumped a bucket of ice water on their own heads and then nominated others to do the same within 24 hours. If the nominated participants did not wish to do this challenge, they could forfeit by making a charitable financial donation to the Amyotrophic Lateral Sclerosis (ALS) Association, which is an organization that promotes awareness and researches into ALS. ALS Association (2015) reported that the Ice Bucket Challenge raised \$115 million in 2014. Compared to \$23.5 million in funds raised in 2013, it was a huge increase in both the number of new donors and total donation amount. List (2011) illustrated that the aim of charitable organizations is to develop strategies to attract resources and allocate those resources. From this point of view, the Ice Bucket Challenge was a huge success. The reasons for the success of this donation activity may be that it harnesses competitiveness and social media pressure, creates low barriers to entry, but also that it internalizes social influence in charitable giving. Individuals' donation decisions are being influenced by information about their peers' behaviour.

Philanthropy New Zealand (2011) reported that New Zealanders give 1.35 percent of New Zealand's GDP to charitable and community organizations. This magnitude donation presents the importance for investigating what influences donation behavior. More researchers study on charitable giving and find which fund-raising strategy will

increase donations. Various studies focus on theories of pro-social behaviour and charitable giving (Rabin, 1993; Bernheim, 1994; Dufwenberg & Kirchsteiger, 2004). There are several studies for information effect on charitable giving in the laboratory (Berg *et al.* , 1995; Clark, 2002; Smith, Windmeijer & Wright, 2011) and more economists bring out these experiments to the field which has a more natural setting (Frey & Meier, 2004; Martin & Randal, 2008; Carson & Shang, 2009; Carson & Shang, 2010). These studies provide policy recommendations to charities.

By using social influence, charitable organizations implement fund-raising strategies that provide various types of information to encourage individuals to be more generous and donate more. For instance, online fundraising, such as *justgiving.co.uk* and *gofundme.com*, provide a full history of previous donations. In many galleries and museums, the total number of previous donation is visible in the transparent donation box. Martin & Randal (2008) run a field experiment at the Wellington City Art Gallery to investigate the potential differences between the actual and the perceived contents of the donation box. Several charities like The *Chronicle* annually tally and announce their top donations.

The whole history of donation, the total donation amount and the top donation are different types of social information. By showing the whole history of donation, charity introduces a social norm to donors. Announcing the top donation or the last donation provide a signal of what the social norm is. However, it is not known if these

types of social information have different effects on donation behaviour. If so, it is important to study which particular type of social information makes people more generous and more likely to donate. This paper investigates the following question: Which type of social information makes individuals more generous and why? To address this research question, I design a laboratory experiment, run it and then analyze the data. In my experiment, I use a dictator game in which participants are dictators and charity is recipient. I introduce different types of social information in each treatment and compare the results using statistic methods.

In my paper, I first review the literature on social influence, charitable giving and the dictator game, and then develop hypotheses about the effect of social information on charitable giving. I then describe my laboratory experiment that allows me to test my hypotheses. Finally, I describe my main results and provide some tentative policy implications.

2. Literature Review

A number of recent experimental studies have focused on the effect of social influence and charitable giving (Carman, 2004; Croson & Shang, 2008; Serváka, 2009; Duffy & Kornienko, 2010; Serváka, 2010; Meer & Rosen, 2012). They found that individuals' donation choices are affected by information about other people's previous donation decision.

To investigate the relationship between social information and charitable giving, Berg *et al.* (1995), Cason and Mui (1998), Frey and Meier (2004), Alpizar *et al.* (2008), Krupka and Webber (2009), and Croson and Shang (2009) test various types of social information and mainly find that there is an increase of giving social information on the proportion of positive donations and amount given. Donors tend to be more generous when they are informed about previous donation choices. However, in all of these studies, the authors test the relationship between single type of social information and charitable giving. None of these studies compares different types of social information on charitable giving, particularly favorable ones.

Introducing social information into the experiment, Berg *et al.* (1995) choose to provide the whole history of previous decisions. The authors run an investment game in the laboratory. In the second stage of their investment game, the authors introduce social information by providing the whole history of decisions in a previous baseline session. They find that participants in Room B (dictators) give more to participants in Room A (recipients) when they are given the whole history of allocation decisions from a previous session.

Instead of observing the whole history of previous donations, the participants in Krupka and Weber's (2009) information condition can observe four donation choices made by previous participants. In their study, participants have to make their decision in a dictator game, in which player A (the dictator) chooses option X (player A earns

\$5 and player B earns \$5) or option Y (player A earns \$7 and player B earns \$1). Krupka and Weber find that the percentage of participants who choose X in the information group is higher than that in the control group in which the dictators have no information about previous donations. These papers focused on the effect of showing the history of decisions made by previous participants. However, these studies by providing donation history, are unable to control the specific information participants provided. Participants observing the history of donation may be affected by a random donation, average or mode of donations. These authors do not have evidence to support which type of social information affect participants when they make their decisions. In my experiment, I provide a single type of social information, such as a randomly selected donation decision, and analyze this particular type of information by comparing the donation result with baseline treatment.

Instead of announcing the donation amount, Frey and Meier (2004) provide the proportion of past students who chose to donate. In their study, students from the University of Zurich were asked at the time of paying their tuition whether they would contribute to a loan fund for foreign students. Frey and Meier varied the reported proportion of past students who had donated from 46% to 64%. They found that students were more likely to donate if shown the higher previous participation rate, which is 64% in this study.

Closer to my domain of inquiry, Cason and Mui (1998), Alpizar *et al.* (2008) and Croson and Shang (2009) only provide one type of social information to their participants.

In 1998, Cason and Mui conducted a laboratory experiment in which they studied the social information effect in a sequential dictator game. They run a two-stage dictator game. In the first dictator game, participants make their dictator allocation with no social information. In the second stage, participants in baseline receive socially irrelevant information before they make their second dictator decision. Between the two dictator allocations, participants in the relevant information treatment receive the first dictator allocation chosen by one other participant. The authors find that participants on average become more self-regarding when not provided with any social information, and participants do not change their decisions when they receive the information about one other's dictator allocation.

Croson and Shang (2009) tested the effect of informing donors in the previous donation to a public radio station campaign. They provided the last donor's amount and asked how much the current donor would like to donate. They varied the announced amount as \$75, \$180, \$300 and found that donations significantly increased with higher announced amount.

Alpizar *et al.* (2008) explore the effect of providing participants with different previous modal donations on proportion of positive donations and the amount of giving. The authors run a natural field experiment at a national park in Costa Rica. They announced a previous modal donation before the participant make their voluntary contribution. The previous modal donations were \$2, \$5, \$10 US dollars. Compared to the baseline treatment, the proportion of positive donations increased but the average donation decreased with a low mode, which are \$2 and \$5. A high mode, as \$10, increased the average amount of donation.

My study contributes to the literature by testing relevant effects of different types of social information on donations. In Cason and Mui (1998) and Croson and Shang (2009), the social information is the donation made by one participant. Alpizar *et al.* (2008) provide information about mode donation in a previous session. In my study, I design two social information treatments, which provide donation decision of one participant and mode donation in the previous session, and compare the results of these two treatments.

3. Experiment Design and Procedures

The goal of my experiment is to test the effectiveness of different types of social influence on charitable giving. Does observing one person's donation generate social influence or is it necessary to have information on how much many other people donate for a social norm of donating to be internalized?

The experiment took place in the New Zealand Experimental Economics Laboratory (NZEEL) at the University of Canterbury. The experiment consists of four treatments to be described shortly, which are *Baseline (B)*, *Mode (M)*, *Random (R)* and *Generate Information (G)*. One hundred and twenty one students agreed to participate in the experiment. Students were recruited using the ORSEE recruitment system (Greiner, 2004). The experiment was advertised as a decision making task that would take half an hour.

Once the participants entered the laboratory, they were seated at cubicles. After reading through the instructions aloud, I handed out envelopes containing \$10 NZD (New Zealand dollars) to all participants.¹ While the content of the envelope was always \$10, the composition of this sum into bills and coins differed across treatments. Each participant was asked to open the envelope and check that it contained \$10. In this decision making task, participants had an opportunity to donate none, some, or all of their \$10 to the African project of *World Vision New Zealand*, which is a registered charity doing development work in poor countries overseas.² I informed the participants that I would forward all donations directly to *World Vision* and they were under no obligation to donate any money unless they wished to. Participants in this experiment were acting as dictators in a standard one-shot Dictator Game and were asked to allocate \$10 in the envelope between themselves and the recipient, i.e. *World*

¹ The adult minimum wage in New Zealand at the time of the experiment was NZ\$14.25 per hour. The instructions are provided in the appendix.

² More details about the African project for World Vision New Zealand are provided in the instructions attached in the appendix.

Vision New Zealand (similar to the baseline setting of Knowles & Servátka, 2015).

Participants had a few minutes to make their donation decision, which was made by placing cash in the provided envelope. The participants were asked to seal the envelope once they decided on the amount of the donation. When all participants were done, they were called one by one to leave the laboratory and place their envelope in the donation box that was at the back of laboratory.

To make participants' decisions completely anonymous, I incorporated the double-blind procedures introduced by Hoffman *et al.* (1994), in which neither the experimenter nor the other participants could identify participants' identities from their decisions. Using double-blind procedures can avoid biasing participants' decision out of concern for their reputation or the threat of punishment from the recipients. As is explained in the experiment instructions, no one would know of any participant's donation decision. Neither participants' names nor their student ID number appeared on any form that recorded their decision. The participants who chose not to donate also put their empty envelope in the donation box. This procedure made it impossible to detect whether a given participant made a donation or not.

The experiment consists of four treatments and was run using an across-subjects design. The first treatment, *Generate Information*, was used to create the contribution information, which was later used in social influence treatments. In *Generate Information*, participants receive an envelope that contained two \$5 notes. One of the

\$5 presented the show up fee. The participant could decide whether or not to donate the other \$5 to *World Vision New Zealand*. The amount \$5 was chosen in order to provide a strong signal regarding previous donations. The social information in subsequent treatments would be higher than what participants would like give in the absence of a ‘high’ social norm. Average donations in double-blind dictator experiments without social information tend to be below 50% (eg. Hoffman *et al.* 1994).

The *Baseline* treatment, participants receive an envelope containing one \$5 note, two \$2 coins and one \$1 coin. This distribution enabled a participant to choose to donate any whole dollar amount between \$0 and \$10. In *Baseline* treatment, there is no further information about other participants’ donation choices provided. This treatment serves as a control for comparisons with social information treatments.

In the final two treatments, I introduced social influence by providing participants with information about the donations in the *Generate Information* treatment before making an actual donation. In the *Mode* treatment, participants receive the same distribution of money as in *Baseline* i.e. containing one \$5 note, two \$2 coins and one \$1 coin. The only difference between *Baseline* and *Mode* was an additional information sheet in the envelope for the participants in the *Mode* treatment. The information sheet contained the following text:

In a previous session, most participants who chose to donate have given ...\$5.... (i.e. the most common donation) to World Vision New Zealand for doing development work in poor countries overseas.³

The participants were asked to place their donation and the information sheet back inside the envelope before sealing it.

In the *Random* treatment, the participants had the same distribution of money and envelope as in *Mode*. However, the information sheet in *Random* contained a different text than in *Mode*:

In a previous session, a randomly selected participant who chose to donate has given ...\$5.... (i.e. the donation of one person) to World Vision New Zealand for doing development work in poor countries overseas.

The information represents only one participant's past choice, so the potential for social influence is weaker than that in *Mode*.

The different experimental treatments are summarized in Table 1. By design, in *Baseline* and *Generate Information*, there is no social information. *Mode* and *Random* presents the same information that \$5 was donated. In *Random*, \$5 is information

³ "\$5" was handwritten in both information sheets.

about one person's donation, whereas in *Mode*, it is information about the modal donation. Rege and Telle (2001) presented that the social approval is felt more strongly when more the number of people adhering to this norm. In my experiment design, the information in *Random* represents a signal of social behavior, while that in *Mode* represents a social norm, which seems to have stronger effect and is more likely to be internalized.

Table 1: Summary of Experimental Treatments

Treatment	Information Sheet	Content of the Envelope
Generate Information	No information	\$5*2
Baseline (B)	No information	\$5+\$2*2+\$1
Mode (M)	Most common previous donation (\$5)	
Random (R)	Randomly selected previous donation (\$5)	

My testable hypotheses are summarized as follows.

Hypothesis 1: $P(B) < P(R) < P(M)$

P stands for the proportion of positive donations in different treatments. Hypothesis 1 tests whether people will be more likely to donate when social information is provided. Introducing social information will increase the proportion of participants who choose to donate. The stronger the norm of the social information, the higher the proportion of positive donation, if the norm is higher than what the person would likely to give.

Hypothesis 2: $\mu (B) < \mu (R) < \mu (M)$

μ stands for the average of donation amount in different treatments. Hypothesis 2 tests whether participants will donate more when receiving information about other donors' decisions. The stronger the norm of the social information, the higher donations will be, if the norm is higher than what the person would likely to give. Social norm will be stronger when it represents the decisions of more people.

Hypothesis 3: $\sigma (B) > \sigma (R) > \sigma (M)$

The standard deviation of donations, which is presented as σ , will be smaller with social information. The donation amount will be closer to that provided in the social information and the standard deviation will be smaller. The stronger the norm of the social information, the smaller the standard deviation will be.

4. Experimental Results

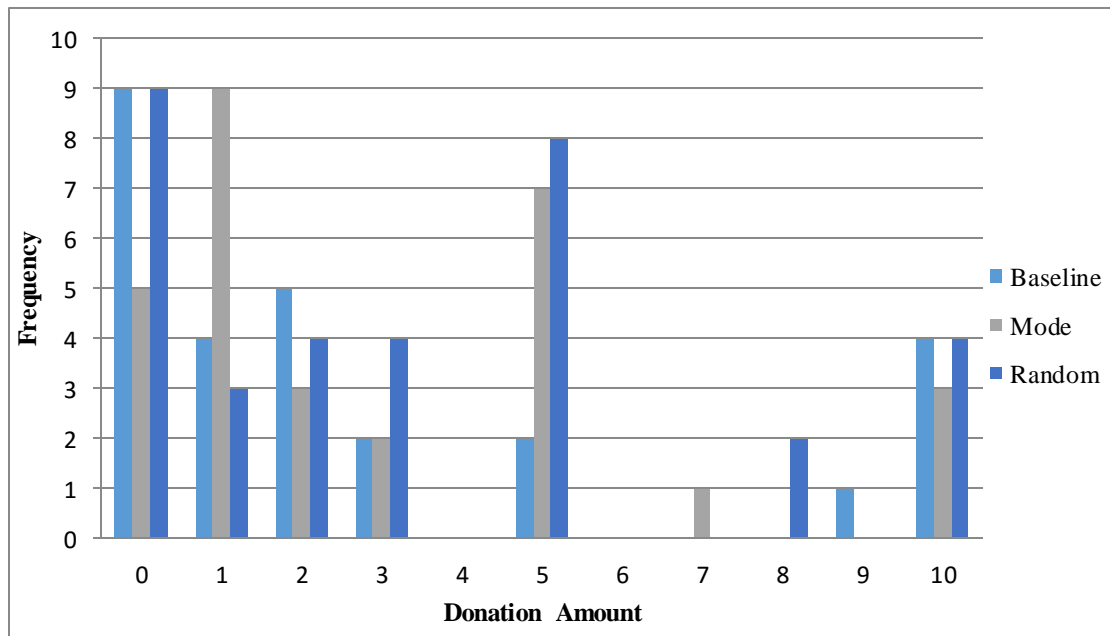
To test my three hypotheses, I analyzed experiment results in two ways: the extensive margin (all data) and intensive margin (conditional giving). In the all data panel, all donations I collected from the experiment were analyzed. In the conditional giving case, I only used positive donations from the experiment. Summary statistics for each treatment are reported in Table 2 for both cases and Figure 1 presents the distribution of all donations in the three main different treatments.

Table 2: Summary Statistics

Treatment	Baseline (B)	Mode (M)	Random (R)	Generate (G)
Panel A: Extensive Margin (All Data)				
Number of observations	27	30	34	30
Average donation	2.93	3.1	3.5	2.33
Median donation	2	2	3	0
Standard deviation	3.63	3.08	3.33	2.54
Panel B: Intensive Margin(Conditional Giving)				
Number of positive donations	18 (66.7%)	25 (83.3%)	25 (73.5%)	14 (46.7%)
Average donation conditional on giving	4.39	3.72	4.76	5
Median donation conditional on giving	2.5	3	5	5
Standard deviation conditional on giving	3.65	3.01	3	0

Note: The proportion of positive donations is given in parentheses, which is calculated as the number of positive donations divided by the number of participants.

Figure 1: Proportion of Different Levels of Donations



The mean donation in *Baseline* is \$2.93 and 66.7% of participants give a positive amount to the charity. In Panel A (All Data), donations in *Random* are higher than any

of the treatments. In Panel B (Conditional Giving), *Mode* has the highest proportion of positive donations, at 83.3%, but surprisingly also has the lowest average donation.

To test whether any of these differences are statistically significant, I move on to formal tests. Table 3 presents statistical tests of whether there are statistically significant differences across treatments. I run the standard t-test and Wilcoxon Rank-sum Test (non-parametric) for the difference between means. Because the data is not normal distributed, the more relevant test result is the non-parametric Wilcoxon Rank-sum Test which tests whether the two distributions are identical. To test whether the proportion of positive donations is statistically significantly different across treatments, I use the Fisher's Exact Test. As Table 3 indicates, no pairwise comparison of treatments is statistically significant.

Table 3: Significant Tests for Difference across Treatments

Treatment	Means t-test	Wilcoxon Rank-sum Test	Fisher's Exact Test for proportion of Positive Donations
Panel A: Extensive Margin (All Data)			
B vs. M	-0.19(0.845)	-0.73(0.464)	(0.218)
B vs. R	-0.64(0.522)	-0.95(0.339)	(0.585)
M vs. R	-0.49(0.621)	-0.31(0.753)	(0.381)
Panel B: Intensive Margin (Conditional Giving)			
B vs. M	0.65(0.514)	0.56(0.570)	
B vs. R	-0.36(0.716)	-0.82(0.408)	
M vs. R	-1.22(0.227)	1.45(0.146)	

Note: P-values in parentheses.

To test for differences in dispersion of giving across treatments, I also run a test for equal variances and show the results in Table 4. According to the pairwise comparison for equal variances shown in the table below, there is no statistically significant difference between treatments.

Table 4: Standard Deviation Test for Difference across Treatments

Treatment	Panel A: Extensive Margin (All Data)	Panel B: Intensive Margin (Conditional Giving)
B vs. M	1.38(0.390)	1.47(0.376)
B vs. R	1.18(0.640)	1.47(0.374)
M vs. R	1.17(0.667)	0.99(0.995)

Note: P-values in parentheses.

Additionally, I also test for differences in donation decisions between treatments using regression analysis. In particular, I run Ordinary Least Squares (OLS), Tobit and Logit regressions to test for an effect of social information on donation decisions. In general form, the model I use is as follows:

$$Y_i = \beta_0 + \beta_1 X_{\text{mode dummy}} + \beta_2 X_{\text{random dummy}} + \varepsilon_i \quad (1)$$

where ε_i is a classical error term.

The dependent variable Y_i in my model is the donation amount chosen by individual i . $X_{\text{mode dummy}}$ and $X_{\text{random dummy}}$ are the dummy variables for *Mode* and *Random* treatments. For instance, $X_{\text{mode dummy}}$ equals to 1 if individual A participated in *Mode* treatment, otherwise $X_{\text{mode dummy}}$ equals to 0. β_0 is the intercept term in the linear model and it represents the average donation in the *Baseline* treatment. β_1 is the coefficient for the average additional amount contributed for *Mode* over the *Baseline* and β_2 is the coefficient for the average additional amount contributed for *Random*

over the *Baseline*. In the logit regression, I test whether there is an increase for the proportion of participants who choose to donate. The summarized regression results are reported in Table 5.

Table 5 Estimates of Donation Amount

	Panel A: Extensive Margin (All Data)			Panel B: Intensive Margin (Conditional Giving)	
	OLS	Tobit	Logit	OLS	Tobit
β_0 (Baseline)	2.92***(0.643)	2.16**(1.007)	0.69*(0.408)	4.389***(0.751)	4.28***(1.194)
β_1 (Mode)	0.17(0.887)	0.64(1.364)	0.92(0.638)	-0.66(0.985)	-1.47(1.582)
β_2 (Random)	0.57(0.862)	0.80(1.334)	0.33(0.564)	0.37(0.985)	0.54(1.554)
N	91	91	91	68	68
R ²	0.006	0.001	0.021	0.021	0.007

Note: standard error in parentheses. *, **, *** denotes statistical significance at the 10%, 5% and 1% levels, respectively.

As illustrated in Figure 1, there were many participants who chose not to donate with bunching of contributions at zero, and to a lesser extent at 10. So it is necessary to run a Tobit model that imposes an upper limit at 10 and a lower limit at 0. The Tobit results are qualitatively similar to the OLS results which shows in Table 5.

The aforementioned tests and regression analysis lead to three findings summarized as follows:

Finding 1 (*based on Hypothesis 1*): Social information does not significantly increase the proportion of positive donations.

Support for Finding 1: Comparing the proportion of positive donations in the first row of Panel B (Conditional Giving) in Table 2, the proportion of positive donations

increases from 66.7% in *Baseline* to 73.5% in *Random* then to 83.3% in *Mode*. This observation appears to support Hypothesis 1, which is that the proportion of positive donations increased by introducing social influence in charitable giving. However, neither of these differences is statistically significant according to the Fisher's Exact Test results reported in the third column of Table 3. Similarly, according to the Logit regression results in Table 5, the participants in *Mode* and *Random* are not significantly more likely to donate than participants in *Baseline*. While β_1 and β_2 are positive, they are not significantly different from zero.

Finding 2a (*based on Hypothesis 2*): Providing social information does not significantly increase average donations.

Support for Finding 2a: The average donations are \$2.93 in *Baseline*, \$3.50 in *Random* and \$3.10 in *Mode*. These results seem to suggest that introducing social information increases the average donation, which supports the results in Croson & Shang (2009). However, the observed increase of average donation is not statistically significant according to the three test results in Panel A (All Data), Table 3. Moreover, the fact that the average donation is higher in *Random* than in *Mode* goes against the hypothesized effect that *Mode* provides a stronger social influence information than *Random*. Similarly the first two columns of Table 5, OLS and Tobit regression present the same results that *Random* appears to have a higher average donation than *Mode*, yet the difference is not statistically significant.

Finding 2b (*based on Hypothesis 2*): Social information does not increase the average of the donation amount conditional on donating.

Support for Finding 2b: From the results in Panel B (Conditional Giving), Table 2, I find that introducing the previous modal donation as social information reduces rather than increases the average donation from \$4.39 in *Baseline* to \$3.72 in *Mode*, and that introducing random social information increases the average donation from \$4.39 in *Baseline* to \$4.76 in *Random*. The decrease of average in *Mode* presents the similar result in Alpizar *et al.* (2008). However, neither of these pairwise adjustments, provided in Panel B (Conditional Giving), Table 3 are statistically significant. The regression results from the last two columns in Table 5 thus support the conclusions above.

Finding 3 (*based on Hypothesis 3*): Providing social information does not significantly decrease the standard deviation for all data and conditional on giving.

Support for Finding 3: Table 4 presents the test results for variance tests across treatments. Across Panel A (All Data) and Panel B (Conditional Giving), the standard deviation in *Random* appears bigger than that in *Mode*, and smaller than that in *Baseline*. Although direction of effect supports Hypothesis 3, the differences are not statistically significant.

After all these findings, there is an auxiliary result finding. In Figure 1, there are huge increases for number of participants who choose donate exact \$5 in *Mode* and *Random* treatments comparing with that in *Baseline*. To test for these increases in number of participants who choose to donate \$5, I run OLS, Tobit and Logit regressions in both panels, which are all data and conditional giving. In general form, the model I use is as follows:

$$Y_i = \beta_0 + \beta_1 X_{\text{mode dummy}} + \beta_2 X_{\text{random dummy}} + \varepsilon_i \quad (2)$$

where ε_i is a classical error term.

The dependent variable Y_i in my model is the absolute value of deviation of contribution from \$5 for individual i . $X_{\text{mode dummy}}$ and $X_{\text{random dummy}}$ are the dummy variables for *Mode* and *Random* treatments. For instance, $X_{\text{mode dummy}}$ equals to 1 if individual A participated in *Mode* treatment, otherwise $X_{\text{mode dummy}}$ equals to 0. β_0 is the intercept term in the linear model and it represents the average absolute value of deviation of contribution from \$5 in the *Baseline* treatment. β_1 is the coefficient for the average additional absolute value of deviation of contribution from \$5 for *Mode* over the *Baseline* and β_2 is the coefficient for the average additional absolute value of deviation of contribution from \$5 for *Random* over the *Baseline*. In the logit regression, I test whether there is an increase for the proportion of participants who choose to donate exactly \$5. The summarized regression results are reported in Table 6.

Table 6 Estimates of Donating Exactly \$5

	Panel A: Extensive Margin (All Data)			Panel B: Intensive Margin (Conditional Giving)		
	OLS	Tobit	Logit	OLS	Tobit	Logit
β_0 (Baseline)	3.85***(0.353)	3.79***(0.420)	-2.52***(0.735)	3.28***(0.420)	3.16***(0.535)	-2.08***(0.75)
β_1 (Mode)	-0.82*(0.486)	-0.99*(0.583)	1.34(0.852)	-0.64(0.551)	-0.85(0.708)	1.13(0.872)
β_2 (Random)	-0.82*(0.472)	-1.00*(0.567)	1.35(0.839)	-0.96*(0.551)	-1.24*(0.711)	1.32(0.864)
N	91	91	91	68	68	68
R ²	0.042	0.01	0.042	0.045	0.011	0.038

Note: standard error in parentheses. *, **, *** denotes statistical significance at the 10%, 5% and 1% levels, respectively.

There is suggestive evidence that both *Mode* and *Random* treatments increase the likelihood of participants giving exactly \$5 (or equivalently reducing the distance of contributions away from \$5), though it tends to be significant at no better than the 10% level.

5. Conclusions

This paper studies the effect of social influence in charitable giving. In particular, I ask what type of social information makes people more likely to donate, or donate more. To answer this question, I run a laboratory experiment with a dictator game where the recipient is a charity. Social information in my experiment was introduced by providing information about other participants' donations. I find no statistically significant results in my data analysis, using either all data or that which is conditional on positive donations. Social information treatments appear to increase the proportion of positive donations, compared to the baseline treatment that has no social

information; however, this increase is not statistically significant. In terms of policy implications, I have found no support for my hypothesis of social influence having a positive effect on proportion of positive giving or more donations. The other result I could find is that use of specific past donation numbers drive a significant increase in the proportion of people who give that exact amount, without affecting the incidence or amount of giving overall.

One reason for the lack of significant results may be the calibration of this experiment. In particular, the social information I provided to the participants in *Mode* and *Random*, \$5, was perhaps too high to be credible, compared with the average donation in *Baseline*. Social influence may have had a stronger effect when I calibrated the experiment differently. For example, generating and providing information that the previous random or mode donation was equal to \$3 or \$4, which is closer to the actual average donation in *Baseline*, may have had an effect. This could possibly sway non-donors to donate a small amount rather than nothing. Unfortunately, there is no theory that provides guidance in setting the appropriate calibration. Further experimentation would be needed to test different calibrations.

The relatively small sample size might be another reason for the results not being statistically significant. With a treatment sample size of 30 in between subject tests, it might be harder to detect treatment differences in the current setting as the effect of social influence might be quite subtle. Alternatively, the effects of social influence

might be easier to detect in a different environment, for example where participants are informed in more detail about how the social influence information was generated.

According to the data from Figure 1, there were more participants in *Mode* and *Random* who chose to donate \$5 than that in *Baseline*. There may be many reasons for this result. One of them is that participants were affected by social influence to mildly adjust donations upwards. Another reason may be that the participants directly took a cue from the \$5 information and directly matched it to \$5 as a simple shortcut. It could also be an ‘anchoring’ effect unrelated to social comparison. Ariely, Loewenstein & Prelec (2003) found that anchoring effect can increase individual’s willingness to pay. In my experiment, \$5 may have become the anchor when participants saw it on the information sheet. Further research can use experiments to separate anchoring effect from social influence.

6. References

- Alpizar, F., Carlsson, F., & Johansson-Stenman, O. (2008). Anonymity, Reciprocity, and Conformity: Evidence from Voluntary Contributions to a National Park in Costa Rica. *Journal of Public Economics* 92 June, 1047-1060.
- Amyotrophic Lateral Sclerosis (ALS) Association. (2015). *Putting your dollars to work*. Retrieved from <http://www.alsa.org/fight-als/ibc-progress.html>.
- Ariely, D., Loewenstein, G, & Prelec, D. (2003). “Coherent Arbitrariness”: Stable Demand Curves without Stable Preferences. *The Quarterly Journal of Economics* Feb 2003.
- Berg, J., Dickhaut, J. & McCabe, K., (1995). Trust, Reciprocity, and Social History. *Games and Economic Behavior*. 10, 122-142.
- Bernheim, B.D. (1994). A Theory of Conformity. *Journal of Political Economy*. 102, 841-877.
- Carman, K.G. (2004). *Social Influence and the Designation of Charitable Contributions: Evidence from the Workplace*. Retrieved from [www.rwj.harvard.edu/.../carman/Social Influences Designation.pdf](http://www.rwj.harvard.edu/.../carman/Social%20Influences%20Designation.pdf) ·2004-11-8.
- Cason, T.N., & Mui, V-L. (1998). Social Influence in the Sequential Dictator Game. *Journal of Mathematical Psychology* 42, 248-265.
- Clark, J. (2002). Recognizing Large Donations to Public Goods: An Experimental Test. *Managerial and Decision Economics*, 23, 1, 33-44.
- Croson, R., & Shang, J. (2009). A Field Experiment in Charitable Contribution: The Impact of Social Information on the Voluntary Provision of Public Goods. *The*

- Economic Journal*, 1422-1439.
- Croson, R., & Shang, J. (2008). The Impact of Downward Social Information on Contribution Decisions. *Experiment Economics* 11, 211-233.
- Duffy, J., & Kornienko, T. (2010). Does Competition Affect Giving? *Journal of Economic Behavior & Organization* 74, 82-103.
- Dufwenberg, M. & Kirchsteiger, G. (2004). A Theory of Sequential Reciprocity. *Games and Economic Behavior*. 47, 268-298.
- Frey, B.S., & Meier S. (2004). Pro-social Behavior in a Natural Setting. *Journal of Economic Behavior & Organization*, 54. 65-88.
- Greiner, Ben (2004): *An Online Recruitment System for Economic Experiments*.
Published in: Forschung und wissenschaftliches Rechnen 2003. GWDG Bericht , 63, 79-93.
- Hoffman, E., McCabe, K., Shachat, K., & Smith, V. (1994). Preferences, Property Rights, and Anonymity in Bargaining Games. *Games and Economic Behavior*. 7, 346-380.
- List, J.A. (2011). The Market for Charitable Giving. *Journal of Economic Perspectives*, 25, 157-180.
- Knowles, S & Servátka, M. (2015). Transaction Costs, the Opportunity Cost of Time and Inertia in Charitable Giving. *Journal of public economics*, 125, 54-63.
- Krupka, Erin & Weber, Roberto A. (2009). The Focusing and Informational Effects of Norms on Pro-social Behavior. *Journal of Economic Psychology*, 30, 307-320.
- Martin, R & Randal, J. (2008). How is Donation Behaviour Affected by the Donations

- of Others? *Journal of Economic Behavior & Organization*. 67 (2008) 228-238.
- Meer, Jonathan & Rosen, Harvey S., (2012). Does Generosity Beget Generosity? Alumni Giving and Undergraduate Financial Aid. *Economics of Education Review, Elsevier*, 31(6), 890-907.
- Philanthropy New Zealand. (2011). Giving New Zealand Philanthropic Funding 2011. Retrieved from http://www.philanthropy.org.nz/sites/all/files/2011%20PhilanthropyReport_final%20HRes.pdf. 2015-10-28.
- Rabin, M. (1993). Incorporating Fairness into Game Theory and Economics. *American Economic Review*. 83, 1281-1302.
- Rege, M & Telle, K. (2001). *An Experimental Investigation of Social Norms*. Discussion Papers No.310, Statistics Norway, Research Department. Retrieved from <http://core.ac.uk/download/pdf/6318198.pdf>.
- Servátka, M., (2010). Does Generosity Generate Generosity? An Experimental Study of Reputation Effects in a Dictator Game. *The Journal of Socio-Economics* 39, 11-17.
- Servátka, M., (2009). Separating Reputation, Social Influence, and Identification Effects in a Dictator Game. *European Economic Review*, 53, 197-209.
- Smith, S., Windmeijer, F., & Wright, E. (2011). *The Effect of Social Information on Charitable Donations: Evidence from the (running) Field*. Retrieved from www.bristol.ac.uk/cmpo/events/2012/charitablegiving/smith.pdf · 2014-11-17.

7. Appendices

Appendix A: Instruction for the Baseline Treatment

Instructions

Thank you for participating in this research project.

From now until the end of the session, unauthorized communication of any nature with other participants is prohibited. If you violate this rule, we will have to exclude you from the experiment and from all payments. If you have a question after we finish reading the instructions, please raise your hand and the experimenter will approach you and answer your question in private.

Donation

We will shortly hand out to you an envelope containing \$10. You can either keep this \$10 for yourself, or donate some, or all of it to *World Vision New Zealand*, who are a registered charity doing development work in poor countries overseas. We will forward all money directly to *World Vision*. *World Vision* will use this money to provide vaccinations to protect children in poor countries (e.g. in African countries like Rwanda, Tanzania and Uganda) against measles, whooping cough, diphtheria, hepatitis, polio and tetanus. These disease cause many children to die every year, but are easily preventable. The envelope contains a \$5 note, two \$2 coins and a \$1 coin, so it is possible to donate any whole dollar amount, between \$0 and \$10 to *World Vision*. You are under no obligation to donate any money to *World Vision* unless you

wish to do so.

After you made the donation decision, please put the money you wish to donate back in the envelope and seal it. We suggest you put any money you have decided to keep in your pocket or bag. We will give you a minute to do this.

Anonymity

Your decision is completely anonymous. This task is designed in such a way that no-one will ever know how much any individual has given. Your privacy is guaranteed because neither your name nor your student ID number will appear on any form that records your decisions.

Receipt

At the end of the session we will ask you one at a time to come up to the room at the back of the lab and sign a receipt acknowledging that you were given \$10. When you have done this, please place the envelope, whether you have chosen to donate any money or not, in the donation box sitting at the back of the lab and leave the lab afterwards. Please do not wait around outside the lab once you have done this.

Thank you once more for taking part in this research project.

Appendix B: Instruction for the Mode Treatment

Instructions

Thank you for participating in this research project.

From now until the end of the session, unauthorized communication of any nature with other participants is prohibited. If you violate this rule, we will have to exclude you from the experiment and from all payments. If you have a question after we finish reading the instructions, please raise your hand and the experimenter will approach you and answer your question in private.

Donation

We will shortly hand out to you an envelope containing \$10. You can either keep this \$10 for yourself, or donate some, or all of it to *World Vision New Zealand*, who are a registered charity doing development work in poor countries overseas. We will forward all money directly to *World Vision*. *World Vision* will use this money to provide vaccinations to protect children in poor countries (e.g. in African countries like Rwanda, Tanzania and Uganda) against measles, whooping cough, diphtheria, hepatitis, polio and tetanus. These disease cause many children to die every year, but are easily preventable. The envelope contains a \$5 note, two \$2 coins and a \$1 coin, so it is possible to donate any whole dollar amount, between \$0 and \$10 to *World Vision*. You are under no obligation to donate any money to *World Vision* unless you wish to do so.

After you made the donation decision, please put the money you wish to donate back in the envelope and seal it. We suggest you put any money you have decided to keep in your pocket or bag. We will give you a minute to do this.

Information about Previous Donations

With the money inside the envelope, there is an information sheet. It shows how much most participants who chose to donate in a previous session have given to *World Vision* (i.e. what the most common donation was).

Anonymity

Your decision is completely anonymous. This task is designed in such a way that no-one will ever know how much any individual has given. Your privacy is guaranteed because neither your name nor your student ID number will appear on any form that records your decisions.

Receipt

At the end of the session we will ask you one at a time to come up to the room at the back of the lab and sign a receipt acknowledging that you were given \$10. When you have done this, please place the envelope, whether you have chosen to donate any money or not, in the donation box sitting at the back of the lab and leave the lab afterwards. Please do not wait around outside the lab once you have done this.

Thank you once more for taking part in this research project.

Appendix C: Instruction for the Random Treatment

Instructions

Thank you for participating in this research project.

From now until the end of the session, unauthorized communication of any nature with other participants is prohibited. If you violate this rule, we will have to exclude you from the experiment and from all payments. If you have a question after we finish reading the instructions, please raise your hand and the experimenter will approach you and answer your question in private.

Donation

We will shortly hand out to you an envelope containing \$10. You can either keep this \$10 for yourself, or donate some, or all of it to *World Vision New Zealand*, who are a registered charity doing development work in poor countries overseas. We will forward all money directly to *World Vision*. *World Vision* will use this money to provide vaccinations to protect children in poor countries (e.g. in African countries like Rwanda, Tanzania and Uganda) against measles, whooping cough, diphtheria, hepatitis, polio and tetanus. These disease cause many children to die every year, but are easily preventable. The envelope contains a \$5 note, two \$2 coins and a \$1 coin, so it is possible to donate any whole dollar amount, between \$0 and \$10 to *World Vision*. You are under no obligation to donate any money to *World Vision* unless you wish to do so.

After you made the donation decision, please put the money you wish to donate back in the envelope and seal it. We suggest you put any money you have decided to keep in your pocket or bag. We will give you a minute to do this.

Information about Previous Donations

With the money inside the envelope, there is an information sheet. It shows how much a randomly selected participant who chose to donate in a previous session have given to *World Vision* (i.e. what the donation of one person was).

Anonymity

Your decision is completely anonymous. This task is designed in such a way that no-one will ever know how much any individual has given. Your privacy is guaranteed because neither your name nor your student ID number will appear on any form that records your decisions.

Receipt

At the end of the session we will ask you one at a time to come up to the room at the back of the lab and sign a receipt acknowledging that you were given \$10. When you have done this, please place the envelope, whether you have chosen to donate any money or not, in the donation box sitting at the back of the lab and leave the lab afterwards. Please do not wait around outside the lab once you have done this.

Thank you once more for taking part in this research project.

Appendix D: Instruction for the Generate Information Treatment

Instructions

Thank you for participating in this research project.

From now until the end of the session, unauthorized communication of any nature with other participants is prohibited. If you violate this rule, we will have to exclude you from the experiment and from all payments. If you have a question after we finish reading the instructions, please raise your hand and the experimenter will approach you and answer your question in private.

Donation

We will shortly hand out to you an envelope containing two \$5 notes. When you receive the envelope, please open it up and check that there are two \$5 notes in it. One of the \$5 notes is your show-up fee and you can either keep the other \$5 for yourself, or donate to *World Vision New Zealand*, who are a registered charity doing development work in poor countries overseas. We will forward all money directly to *World Vision*. *World Vision* will use this money to provide vaccinations to protect children in poor countries (e.g. in African countries like Rwanda, Tanzania and Uganda) against measles, whooping cough, diphtheria, hepatitis, polio and tetanus. These disease cause many children to die every year, but are easily preventable. You are under no obligation to donate any money to *World Vision* unless you wish to do so.

After you made the donation decision, please put the money you wish to donate back in the envelope and seal it. We suggest you put any money you have decided to keep in your pocket or bag. We will give you a minute to do this.

Anonymity

Your decision is completely anonymous. This task is designed in such a way that no-one will ever know how much any individual has given. Your privacy is guaranteed because neither your name nor your student ID number will appear on any form that records your decisions.

Receipt

At the end of the session we will ask you one at a time to come up to the room at the back of the lab and sign a receipt acknowledging that you were given \$10. When you have done this, please place the envelope, whether you have chosen to donate any money or not, in the donation box sitting at the back of the lab and leave the lab afterwards. Please do not wait around outside the lab once you have done this.

Thank you once more for taking part in this research project.

Appendix E: Information Sheet for the Mode Treatment

Information Sheet

In a previous session, most participants who chose to donate have given ...\$5.... (i.e. the most common donation) to *World Vision New Zealand* for doing development work in poor countries overseas.

Appendix F: Information Sheet for the Random Treatment

Information Sheet

In a previous session, a randomly selected participant who chose to donate has given ...\$5.... (i.e. the donation of one person) to *World Vision New Zealand* for doing development work in poor countries overseas.