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Giving it away: charitable donations to overseas disasters*

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Abstract

Several major natural disasters over the past twenty years have attracted the attention of donors, but not as much from philanthropy researchers. This paper contributes to an expanding literature on donations for disaster relief by analyzing a large survey of Canadian donations that asks about disaster relief. We identify several individual characteristics associated with donations for international causes generally, and disaster relief specifically. We find that university education, religious activity, and living in cities are all highly associated with donating to international causes and disaster relief. Contrary to most domestic charitable activity, immigrants are more likely to support overseas causes than Canadians born in Canada. We conclude that the evidence is more consistent with theories of philanthropy that emphasize awareness and empathy, as opposed to those based on public goods provision or reciprocity.

Key words: charity, donations, natural disasters, disaster relief.

JEL Classification: H8

1. Introduction

When asked, about 85 percent of individuals living in Canada respond that they donated at least one dollar to charity in 2010. Of this group, 10 percent gave to organizations devoted to international causes, while almost three times that number of individuals (27 percent) responded positively to appeals for natural disaster assistance overseas (authors calculations from the CSGVP 2010 master file). What individual characteristics affect the observed pattern of donations? And can we gain some insight into philanthropic motivations by understanding these patterns?

A substantial literature exists on the determinants of giving in general (e.g., Brown, 1987; Brown and Lankford, 1992; Andreoni, 1989, 1990, 2006; Gittell and Tebaldi, 2006; Brown and Ferris, 2007; Apinunmahakul and Devlin, 2008; Andreoni et al. 2011), but many fewer papers focus specifically on international giving, and fewer still look at responses to natural disasters.^a There are both theoretical reasons and some limited empirical evidence to suggest that factors affecting overseas gifts may differ from those influencing domestic giving. There is also some limited evidence regarding donations for disaster relief. What remains unclear is how charitable contributions for natural disasters compares to donations more generally, and how these donations depend on the characteristics of individuals.

This paper is the first to focus on the natural disaster responses of Canadians. We do this using the confidential data files of the Canadian Survey of Giving, Volunteering and Participating (CSGVP) undertaken in 2010 (released in 2012), the only survey of its kind to ask individuals directly about their responses to natural disasters. We analyze these data to determine how giving for international and disaster relief causes compare to donations to other activities. To provide context and to guide our analysis, we first provide a brief review of philanthropy

theory, and then review the empirical literature regarding individuals' donations for international causes and disaster relief.

2. Literature Review

Economic models are based on rational actors maximizing their welfare, accommodating philanthropy in only a few ways. One approach is to define charitable activities in terms of a public good that provides benefits to all members of a society in a non-rival manner, an approach termed “pure altruism” (Andreoni, 2006: 1212).^b It is easy to see how a person might be motivated to support a local public good such as a nearby park or library, which provides the donor and others in the community with desirable services. Others have focused on global public goods (Kaul, Grunberg and Stern, 1999), though the activities of charities that focus on development or disaster relief have more remote material effects on most potential donors from wealthy countries.

The public good argument for giving hinges on the presence of benefits arising from the provision of the public good. Canadians with links to specific beneficiary country may receive public goods benefits vicariously (for instance, if they have family members there) or directly through travel. The provision of vaccinations to stop the spread of infectious diseases overseas may be especially beneficial for a domestic individual with international ties, while the promotion of health and sanitation in poor regions in general may render those countries amenable to travel. So a public goods approach provides some guidance about why and how people respond to natural disasters and international causes.

Andreoni (1989, 1990) and others extend the basic public goods model to include the idea of “warm glow”, the personal satisfaction derived from contributing to the public good. Since

“warm glow” does not provide much guidance about which charities will be supported, it is necessary to allow for heterogeneity in preferences to consider additional factors that may differentiate between domestic and international donors, and those who support disaster relief. One source of heterogeneity is differences in empathy with the poor and concern for those in need. Indeed, outside of economics, it would be normal to start with this characteristic as a key driver of philanthropic activity, and to define acts motivated by such concerns as altruism.^c There are many reasons why someone might feel altruistic: education, social norms, religious beliefs, and other sources of ethical beliefs or moral obligation. Since most extreme poverty is found overseas (from the perspective of potential donors in rich countries), and since few people have more immediate needs than those suffering through a devastating disaster, this type of altruism is a prime candidate for explaining donations for international causes and disaster relief. Natural disasters may galvanize responses from those who are particularly empathetic, consistent with work on “pro-social” behaviours (Einolf, 2008).

Theories underpinning philanthropy rarely provide definitive guidance regarding individual giving to specific charitable causes. For example, is education linked to international giving because such individuals are wealthier and more likely to travel? Or does education induce empathetic responses or make people more aware of living conditions overseas? While we may be able to infer some primary motivations by looking at how an individual’s characteristics affect their philanthropic behaviour, we have only limited evidence of these links.

One of the earlier contributions to the empirical literature on international giving is Ribar and Wilhelm (1995) who examine giving to international relief and development in the United States. They find that per capita donations tend to be significantly higher in US states with higher average income levels, more college educated people, more liberal congressional representatives,

higher tax benefits for charitable contributions, lower church membership rates, and more people over the age of 65. Rajan, Pink and Dow (2009) corroborate most of these results (with the notable exception of the effect of religion) using Canadian survey data from 2000, and in addition find that Canadian-born people are more likely to give domestically, but less likely to support international causes. Using a 2001 US survey, Casale and Baumann (2015) find that people who give to international causes tend to be older, better educated, foreign born, religious, and volunteers. Mickelwright and Schnepf (2009) examine UK data from 2005-2007 and conclude that relative to domestic charities, donors to international causes and disaster relief are more likely to be female, married, well educated, with high incomes and professional employment. Gifts to international development charities from the UK, however, tend to be more sensitive to changes in income than domestic causes (Atkinson et al., 2012).

The literature looking at how individuals respond to unexpected natural disasters is relatively sparse, but has been growing over the past decade or so following some notable catastrophic events such as the 2004 Indian Ocean tsunami, Hurricane Katrina in 2005, the 2010 earthquake in Haiti and the 2011 and the 2011 earthquake, tsunami and nuclear accident in Japan. Some of these studies focused on the effects of media coverage on donations, giving precise response elasticities (Feeny and Clark, 2007; Brown and Minty, 2008; Lobb et al., 2010; Martin, 2013). Crowding out was examined by Brown, et al. (2012) using the Panel Study of Income Dynamics (PSID) for the year 2005. No evidence was found that donations to other causes were crowded out when individuals donated in response to the 2004 tsunami; they also concluded that these donations were not affected significantly by donor wealth or the tax-price of

giving. By contrast, Denis et al. (2018) do find evidence of disasters crowding out other causes for Belgian donors.

There is some limited direct evidence regarding motivations for supporting disaster relief. Examining donors behaviour associated with Hurricane Katrina, Eckel et al. (2007) found that empathy was an important determinant of giving as was the perception of need, which Fong (2007) also finds in experimental data. Empathetic responses, however, also has a possible dark side: Fong and Luttmer (2009) report experimental results showing that individuals were more likely to give to those of a similar race when confronted with images of low-income people affected by Katrina.

Finally, a few recent papers have investigated how the characteristics of disasters affect donor behaviour. Feeny and Clark (2007) examine donations to World Vision Australia from 1998 to 2004, a period with 43 emergency appeals, and donations were higher for disasters that had higher numbers of affected people, occurred in a country with better human rights records, and were sudden catastrophic events. Andorfer and Otte (2013) use experimental data and find that victim need and severity of the disaster were important determinants of subject responses. Devlin & Rowlands (2019) use data on donations to the Humanitarian Coalition for 17 disasters from 2005-2015. Donations are higher when a disaster has more fatalities, is a sudden-onset event like an earthquake, and occurs in a poorer country. These studies suggest that empathetic responses to those in need is an important characteristic of those supporting disaster relief. However, Devlin and Rowlands (2019) also find evidence of donor fatigue, with lower donations occurring if there has already been a recent prior disaster, and responses to government policies such as donation matching, which suggests that even empathetic responses are conditional on the broader financial context.

Using the existing theoretical and empirical literature as our foundation, we extend the evidence base regarding the characteristics associated with giving to international charities and natural disaster relief. Specifically, we analyze Canadian survey data to see how donors for international causes and for natural disaster relief compare to one another, and to donors for other causes. From the empirical evidence we also hope to shed some light on the motivations that underpin donations to these different causes.

3. Data and Empirical Methodology

The primary source of data for this study is the Canadian Survey of Giving, Volunteering and Participating (CSGVP, 2010), which contains information on 15,482 individuals representing the Canadian population aged 15 and over. The CSGVP surveys contain a large array of information on donors and non-donors, but for us the 2010 survey is particularly valuable as it is the only survey of its kind that asks individuals directly if they gave in response to a natural disaster, and how much was donated.

The interviews for the 2010 survey were conducted from September 14 to December 10, 2010, and individuals were asked about their donations in the preceding 12 months. According to the EM-DAT data base,^d by far the largest natural disaster which took place during this period when judged by the number of deaths was the Haitian earthquake of January, 2010, resulting in some 222,570 directly related deaths plus over 4,000 from the ensuing cholera outbreak.^e While the question asked by the survey was about giving to natural disasters in general, it seems likely that the data are primarily picking up responses to the Haitian crisis.

The CSGVP classifies donations into 15 broad areas, including social services, environment, international causes, and religious organizations.^f Eighty-seven percent of respondents reported

that they gave at least one dollar to charity. From the sample 12% gave to international causes and 29.8% gave some money to disaster relief. In total, 5,342 people (34.5%) gave to either international causes or disaster relief.

To get a sense of how the presence of a natural disaster affected the amounts and distribution of charitable donations across these different categories, we also examined the CSGVP results for the 2007 survey. While the 2007 survey did not ask about giving for natural disasters, it was also a year with no major disasters or relief appeals. In 2007, 88.4% of those surveyed made charitable donations, and 10% gave to international causes. In the 2010 data, we observe a significant shift in the propensity to give to international causes or disaster relief, likely associated with the Haitian earthquake. For example, the shares of donations going to international causes was higher in 2010 than in 2007. By contrast, the share of donations going to the health sector and religious causes were significantly lower. Relative shares are shown in Figure 1 below.

FIGURE 1 HERE

Unfortunately, we cannot identify from the 2007 and 2010 CSGVP data whether the presence of large natural disasters affected total donations. Given the significant shifts in the shares of donations going to different causes, we would expect that total donations would also increase to accommodate the presence of disaster relief causes. Total charitable contributions by Canadians, however, declined from \$8.65 billion in 2007 to \$7.75 billion in 2009. By 2010 contributions had recovered somewhat (to \$8.25 billion) but remained below 2007 levels until 2014. This reduced level of generosity is likely related to the economic hardship and uncertainty

associated with the 2008 Global Financial Crisis. Consequently, whether the presence of large disasters also increases total donations remains unclear from these surveys. The surveys did indicate that in both 2007 and 2010 just over 60 percent of respondents reported that they could not afford to donate more, a number that is significantly higher than for donors to international causes (around 37 percent) but lower than for donors to disaster relief in 2010, when 68 percent of respondents indicated feeling financially constrained.

The main part of the analysis is an econometric examination of whether individuals contribute to international causes and disaster relief, how much they give, and what share of their charitable contributions go to international and disaster relief causes. The analysis is conducted on the 13,512 observations of individuals who reported donating at least some money, and who responded to all questions relevant to our analysis. Of these givers, 1,653 gave to international causes and 4,099 gave in response to a natural disaster.

We identify several hypotheses to guide the empirical analysis and aid with interpretation. Starting from the related empirical literature (Ribar and Wilhelm, 1995; Rajan, Pink and Dow, 2009; Mickelwright and Schnepf, 2009; and Casale and Baumann, 2015) we have reasonably strong evidence to suggest that donations to international causes will be relatively higher for people with higher incomes, more education, who are older, more religious, female, married, tend to volunteer (or admire volunteers) and are foreign born. Other household characteristics that we test are household size and number of pre-teen children. To this list we also add some additional measures that we suspect might be a signal of empathy, such as the number of hours volunteered, and the share of a person's other donations that go to social services rather than charities such as sports, the arts, or professional associations (but excluding disasters and international causes). We also examine whether being unemployed (taking income into account)

makes a person more sensitive to the hardships of others, and thus more likely to support disaster relief. Finally, we add variables to identify whether people live in urban areas, what their representative tax price of donations is (reflecting provincial tax differences), and which region of the country they live in.

The definitions of all of the variables used in the analyses are presented in Table 1, while Table 2 reports variable means for the main groups under consideration, specifically: all persons including non-givers (15,436), givers only (13,512); those who supported disaster relief (4,604) and donors to international causes (3,447). The reported means suggest that relative to others, donors to international and disaster relief causes are more likely to have higher incomes, have more education, to be female, to volunteer or have admired volunteers, to give a higher share of donations to social service causes than other domestic charities, to be religious, be non-Canadian born or a recent immigrant, and to live in an urban area. It also appears that donors for disaster relief are more likely to come from Eastern Canada, while donors from Western Canada and the Territories are more likely to donate to international causes. These latter observations must be taken with some caution as these means do not adjust for the fact that some respondents reported disaster relief donations as international donations, an issue that is considered in the formal estimations reported below. In addition, the formal estimations adjust the sample by weighting observations in order to better reflect the population as a whole.

The estimating equations are designed to address three main questions: what are the factors that influence the decision to give overseas (internationally or in response to a natural disaster); what factors influence the amount given; what factors affect the share of charitable donations to these overseas causes. For the first question, a probit model is used, while for the second and

third questions a Tobit model takes account of the censoring of the data at zero (for donations and shares) or more than 1 (for shares).^g

4. Results

Table 3 presents the probit results for different types of donors using 2010 data only. We first corroborate previous findings regarding the differences between donors and non-donors. Column 2 of Table 3 indicates that people who donate money to philanthropic causes are, relative to non-donors, more likely to: have higher incomes,^h higher levels of education, be older, be female, be married, have younger children, volunteer and had admired volunteers, be religious, not be a recent immigrant, not unemployed, face a low tax price, and not live in Quebec or British Columbia. For the most part these results conform with our understanding of philanthropic behaviour.ⁱ

Column 3 report results that differentiate between donors as a whole, and the subset that donated to international causes. By comparison with donors generally, international donors also tend to have higher incomes and university degrees, are female, admired volunteers when young, are religious, have migrated to Canada more than 10 years ago, live in urban areas, and are more likely to live in BC and less likely to live in the Atlantic region.^j The income effect on the probability of giving is extremely small (an additional \$1000 in income increases the propensity to be an international donor by less than 0.0004 percentage points). By contrast a university degree increases the probability by 7%, roughly a 50% increase over the average propensity of 0.13. The effects of being female, having admired volunteers, an urban dweller, and a resident of B.C. have smaller effects than a university degree (ranging from 2.5% to 3.5%), while being religious has the largest effect (an increase of almost 10%). Being Canadian born reduces the

probability of a donor giving to international causes by almost 3.5% relative to established immigrants.^k

Almost identical results emerge when examining the differences between donors who support disaster relief and those who do not (column 4 of Table 3). Since only about a quarter of donors for disaster relief are also donors for international causes, and 60% of international donors also give to disaster relief, this similarity is not simply the result of identical donors. The magnitude of the marginal effects tend to be larger for disaster relief donors than their international counterparts, especially the effect of being female (more than twice as large). The only clear differences are in the regional effects: donors in the prairie and territory region are 5% less likely to support disaster relief than other Canadians. The similarities between donors for disaster relief and for other international causes is confirmed in an estimation that tries to distinguish between them directly. The estimation uses the sample of donors who give to either of these causes but not both, and is adjusted to remove observations where it is not clear if the international donations included ND donations as well. These results (last column in Table 3) indicate few statistically significant effects, though natural disaster (only) donors tend to be slightly poorer, have fewer pre-teen children, less likely to have admired volunteers or attend religious services regularly, live in cities or in Western Canada. They are, however, more likely to be recent immigrants.

The probit estimations inform us about who donate to international and disaster relief causes, but not how much they give in terms of dollar amounts or shares of donations. We use tobit estimations on the amounts and shares of donations using the 2010 sample of donors, but we drop observations where the respondent identified the amount of their natural disaster

donation in another category. These results appear in Table 4. The results are quite consistent across these estimations, with a few interesting differences.

First, the amounts and shares of donations for both international causes and disaster relief rise with income, education, for females, for those who admired volunteers, for religious people, and for urban dwellers. The elasticity with respect to income for donations and donation shares is again very low: an additional \$1000 of income increases international donations by just over 1 cent (0.09% of all donations), and disaster relief donations by just under half a cent (0.03% of all donations). These are extremely small responses. By contrast, having a university degree increases international donations by \$142 (21% of total donations) and disaster relief donations by \$68.1 (7% of all donations). Females, volunteer admirers, religious people, urban dwellers, and residents of B.C. all respond generously to international and disaster relief causes, and at comparable orders of magnitude as university degree holders. By contrast, donors born in Canada tend to lower levels of donations and shares to these causes, though the statistical significance of the response tends to be weaker. Where differences arise is for recent immigrants, who give less to international causes but not to disaster relief, and for unemployed persons, who provide on average an additional \$156 (25% of donations) for disaster relief but not for other international causes.

Our analysis highlights many of the key individual characteristics associated with donations for international and disaster relief causes. Higher income has a statistically significant but very small effect on these charitable activities, especially when compared with the large effects of university education, being female, and living in cities. It is possible that education and urban settings make people more aware of a multicultural environment as well as of international events and conditions, and thus more willing to support the needs of people overseas. The fact

that people born in Canada are less generous in giving to these overseas causes than established immigrants and even more recent immigrants (in the case of disaster relief) suggests an important role for international awareness, a result echoed in the studies of media coverage of disasters.

The positive effects of religion and having admired volunteers on donation propensity and amount suggests that factors associated with compassion and empathy contribute to this type of philanthropic behaviour. Females also respond more generously to overseas causes.

Unexpectedly, the amount of domestic donations devoted to social service charities, another potential signal of empathy, does not help to explain responses to natural disasters. Empathetic concern, at least for disadvantaged persons domestically, seems to be unrelated to giving to overseas causes. The positive response of unemployed persons to disaster relief may also be indicative of the importance of empathy in determining generosity towards those facing extreme hardship, regardless of where they may live.

To the extent that income and immigration status are linked to the likelihood of travelling overseas, there is some support for the public goods or reciprocity motives for philanthropy. Nevertheless, the results appear more consistent with the importance of awareness and empathy as critical determinants of whether to support these overseas causes, and how much to give. For the most part the donations to international charities and disaster relief are very similar, though the latter seem to provoke empathy from disadvantaged persons such as the unemployed.

5. Conclusions

This paper analyzes giving to international causes and responding to overseas natural disasters – two under-researched questions in the literature. We find limited evidence that

theories of philanthropy emphasizing public goods and reciprocity fit overseas giving patterns, but our results suggest that the most important factors linked to supporting international and disaster relief causes are more consistent with a story of increased awareness and empathy. While income exerts a positive impact on such giving, having a university education is a much more important factor explaining overseas giving.

Our findings may be of some value to fund-raisers for overseas causes. Focusing on university-educated urban dwellers, especially women, may be more effective means of attracting donations. Soliciting through religious organizations may also be a useful way of reaching likely donors.

Overall, this paper helps to address a number of questions regarding giving to overseas causes, but it begs several others. More and better data would allow us to investigate more fully the behaviour of immigrants when it comes to overseas donations. The link between the region of origin of the immigrants and responses to natural disasters would be another worthwhile direction for further research. As pleas for international assistance increase, and as natural disasters become more commonplace, there is a need to understand better what motivates individuals to “give it away”.

TABLES AND FIGURES

Table 1: Dependent Variable Names and Descriptions	
Dependent Variables	Description
Donor	Binary: 1 if the person donated any money to any cause
Donation	Amount of donations.
International donor	Binary: 1 if gave money to International charity
International donation	Donation amount to international category
International share	Share of donations going to international category
ND donor	Binary: 1 if gave money in response to natural disaster
ND donation	Donation amount for natural disasters
ND share	Donations to natural disasters divided by total donations
Independent Variables	Description
Income	Total Household income before taxes & deductions (\$1000)
No high school	Binary: 1 if person did not have a high school degree
University	Binary: 1 if the person has a university degree
Age	Respondent's age.
Female	Binary: 1 if respondent is a female.
Married	Binary: 1 if the person is married or living common law
Household size	Number of people in the household
Number of preteens	The number of person's own pre-teens in the household
Hours volunteered	The number of hours a person volunteered
Volunteer admirer	Binary: 1 if person admired a volunteer when younger
Social service share	Share of total donations (excluding donations to international or natural disasters) given to domestic social services
Religious	Binary: 1 if they attend religious service at least once a month
Canada born	Binary: 1 if the person is born in Canada
Recent immigrant	Binary: 1 if the person migrated to Canada within 10 years
Unemployed	Binary: 1 if the respondent is classified as unemployed.
Urban	Binary: 1 if the person lives in an urban area
Tax price	One minus a representative tax rate by province and territory
Atlantic	Binary: 1 if person lives in Newfoundland and Labrador, Nova Scotia, Prince Edward Island, or New Brunswick
Quebec	Binary: 1 if the person lives in Quebec
ON	Binary: 1 if the person lives in Ontario (Reference Group)
Prairies and Territories	Binary: 1 if the person lives in Manitoba, Saskatchewan, Alberta, or any territory (Yukon, NWT, Nunavut)
BC	Binary: 1 if the person lives in British Columbia

Table 2: Variable Means (2010) (unweighted sample)

Variable	Full sample	Donors	ND donors	International donors
Sample size	15,482	13,544	4,614	1853
Donor	0.875	1	1	1
International donor	0.120	0.137	0.244	1
ND donor	0.298	0.341	1	0.607
Income (in thousands)	71.1	74.1	81.4	80.4
No high school	0.238	0.214	0.174	0.216
University	0.228	0.246	0.326	0.348
Age	49.6	50.5	51.3	50.4
Female	0.558	0.568	0.615	0.600
Married	0.583	0.610	0.637	0.619
Household size	2.48	2.46	2.48	2.57
Number of preteens	0.351	0.356	0.359	0.405
Hours volunteered	94.8	103	127	119
Volunteer admirer	0.548	0.572	0.612	0.601
Social service share	0.191	0.220	0.240	0.245
Religious	0.182	0.197	0.275	0.320
Canada born	0.805	0.805	0.770	0.746
Recent immigrant	0.0385	0.0365	0.497	0.0594
Unemployed	0.0206	0.0169	0.165	0.219
Urban	0.517	0.523	0.576	0.587
Tax price	91.2	91.1	90.8	91.6
Atlantic	0.262	0.275	0.282	0.211
Quebec	0.143	0.145	0.166	0.129
ON	0.160	0.164	0.175	0.177
Prairies and Territories	0.304	0.286	0.238	0.316
BC	0.131	0.130	0.139	0.167

Table 3: Probit Estimations on Donor Categories (marginal effects)

Variable	Model 1: Donors versus non-donors	Model 2: International donors versus donors	Model 3: Disaster relief donors versus donors	Model 4: Disaster relief donors versus international donors
Income (\$1000000) ^a	0.820*** (5.75)	0.350*** (3.79)	0.496*** (3.28)	-0.491† (-1.78)
Income (squared)	-0.509*** (-4.38)	-0.171 (-1.56)	-0.216 (-1.42)	0.741 (1.61)
No high school	-0.0321** (-2.42)	0.00137 (0.11)	0.0122 (0.63)	0.0238 (0.76)
University	0.0460*** (3.36)	0.0710*** (6.64)	0.0889*** (5.39)	-0.0257 (-1.09)
Age	0.00179*** (5.45)	-0.000180 (-0.59)	0.000547 (1.10)	0.00104 (1.41)
Female	0.0348*** (3.38)	0.0254*** (2.89)	0.0648*** (4.71)	0.00912 (0.43)
Married	0.0518*** (4.35)	0.00803 (0.79)	0.0165 (1.02)	-0.00369 (-0.14)
Household size	-0.00886 (-1.64)	-0.00122 (-0.28)	0.00449 (0.60)	0.0128 (1.22)
Number of preteens	0.0257*** (3.13)	-0.00324 (-0.52)	-0.0104 (-1.03)	-0.0259† (-1.86)
Hours volunteered (1000 hours)	0.160*** (4.08)	0.0166 (1.31)	0.0396† (1.74)	-0.000672 (-0.19)
Volunteer admirer	0.0724*** (6.57)	0.0353*** (3.92)	0.0556*** (3.84)	-0.0472* (-2.08)
Social service share	- 0.0824***	-0.0224 (-1.43)	0.00535 (0.21)	0.0120 (0.27)
Religious	(5.65) -0.0110	0.0988*** (7.89)	0.166*** (8.64)	-0.0648** (-2.31)
Canada born	(-0.72) -0.0969***	-0.0349*** (-2.84)	-0.0778*** (-4.06)	0.00906 (0.34)
Recent immigrant	(-3.10) -0.0648†	-0.0325 (-1.64)	0.0150 (0.42)	0.0921* (2.01)
Unemployed	(-1.81) 0.00503	-0.0229 (-0.64)	0.160** (2.49)	0.0905 (1.46)
Urban	(0.46) -0.00762**	0.0398*** (4.49)	0.0437*** (3.17)	-0.0477* (-2.23)
Tax price	(-2.38) 0.0225	0.00121 (0.41)	-0.00347 (-0.78)	-0.0103 (-1.40)
Atlantic	(1.30) -0.109†	-0.0261† (-1.81)	0.00918 (0.38)	0.0409 (1.11)
Quebec	(-1.91) -0.026	-0.00999 (-0.22)	0.00632 (0.09)	-0.0572 (-0.48)

Prairies and Territories	(-1.58)	0.00385	-0.0529***	-0.0795**
	-0.0407**	(0.29)	(-2.58)	(-2.32)
BC	(-2.55)	0.0282*	0.0121	-0.0787**
		(2.20)	(0.61)	(-2.54)
Sample size	15436	13512	13512	3416
Pseudo-R ²	0.102	0.057	0.041	0.052
Actual share of ones	0.841	0.133	0.337	0.790
Predicted share	0.870	0.120	0.331	0.803

t-statistics from robust standard errors in parentheses

***, **, * and † identify statistically significant for one-tailed tests at p values of .01, .025, .05 and .1, respectively.

a. Income has been divided by 1000000 for ease of reporting the marginal effects.

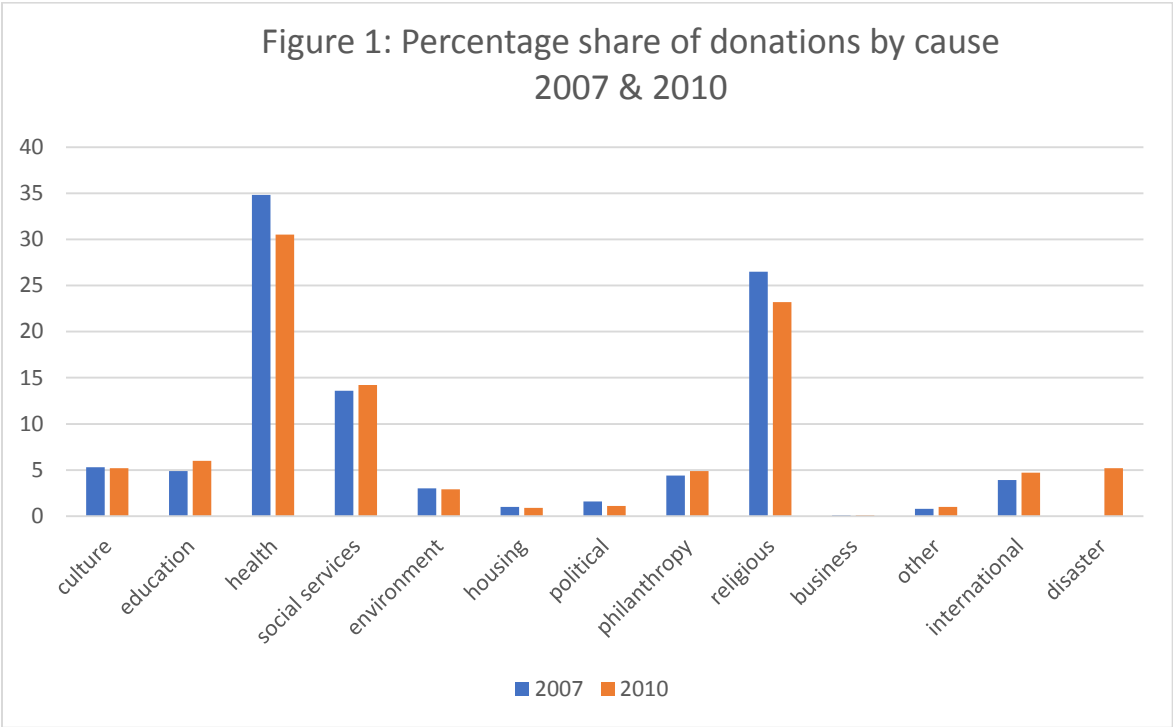
**Table 4: Tobit Estimations: Donation Amounts and Shares
(marginal effects)**

Variable	Model 1: International donation amounts	Model 2: Disaster relief donation amounts	Model 3: International donation % of donations	Model 4: Disaster relief donation % of donations
Income (\$1000)	0.00116*** (4.54)	0.487*** (3.28)	0.0920*** (3.04)	0.0324† (1.93)
Income (squared)	-0.000583 (1.60)	-0.000190† (-1.89)	-0.0000487 (-1.51)	-0.000009.84 (-0.08)
No high school	6.12 (0.17)	19.3 (0.83)	1.01 (0.22)	2.39 (1.00)
University	142*** (5.25)	68.1*** (3.86)	21.4*** (6.05)	7.01*** (3.65)
Age	0.0304 (0.03)	0.888† (1.92)	-0.163 (-1.46)	0.0619 (0.95)
Female	61.0** (2.48)	52.3*** (2.89)	8.33*** (2.61)	5.40*** (3.26)
Married	28.2 (0.98)	21.3 (1.51)	1.10 (0.30)	2.54 (1.28)
Household size	-13.9 (-1.17)	6.47 (0.96)	0.0462 (0.03)	1.47 (1.53)
Number of preteens	11.36641 (0.66)	-1.90 (-0.18)	-2.28 (-1.05)	-1.29 (-1.03)
Hours volunteered	0.0524 (1.52)	0.0573† (1.90)	0.00216 (0.52)	0.0741 (0.31)
Volunteer admirer	115*** (4.42)	47.0*** (2.75)	11.7*** (3.65)	5.35*** (2.99)
Social service share	-56.0 (-1.29)	-32.3 (-1.28)	-9.73 (-1.63)	3.18 (0.92)
Religious	243*** (7.47)	96.8*** (5.18)	21.3*** (6.14)	8.62*** (4.11)
Canada born	-62.7† (-1.91)	-31.6† (-1.77)	-13.1*** (-3.11)	-4.90* (-2.18)
Recent immigrant	-154** (-2.54)	31.6 (0.70)	-11.2 (-1.46)	7.69† (1.75)
Unemployed	-20.5 (-0.21)	156* (2.02)	-11.1 (-0.93)	25.0*** (2.67)
Urban	86.3*** (3.36)	40.6*** (2.63)	14.9*** (4.53)	4.41*** (2.66)
Tax price	13.6 (1.57)	0.00488 (0.00)	0.972 (0.92)	-0.0791 (-0.15)
Atlantic	-21.2 (-0.47)	-6.28 (-0.30)	-7.03 (-1.27)	2.59 (0.89)
Quebec	62.3 (0.46)	-2.30 (-0.04)	6.23 (0.38)	4.09 (0.48)

Prairies and Territories	75.8* (2.03)	-47.7* (-2.02)	4.27 (0.90)	-4.71† (-1.89)
BC	138*** (3.78)	19.6 (0.97)	11.6*** (2.60)	3.01 (1.26)
Constant	-2236*** (-2.69)	-473 (-1.25)	-19.3† (-1.91)	-41.3 (-0.80)
Sample size	12186	12186	12186	12186
Pseudo-R ²	0.0238	.009	0.0451	.0335
Number left censored	10868	8908	10868	8908

t-statistics from robust standard errors in parentheses

***, **, * and † identify statistically significant for one-tailed tests at p values of .01, .025, .05 and .1, respectively.



Source: CSGVP 2007, 2010.

Endnotes

^a In this paper we generally consider natural disasters to be international ones, typically (but not exclusively) occurring in poorer countries. Important recent exceptions are Hurricane Katrina in 2005 (U.S.), the Fukushima disaster in 2011 (Japan), and Hurricane Maria, which devastated the U.S. overseas territory of Puerto Rico in 2017. For Canadian donors, all of these would be both international and natural disaster causes. While major domestic disasters in wealthy countries do attract substantial donations, as in the case of Hurricane Katrina, to a large extent many potential donors would see emergency response to be a responsibility of the government, with clear implications for donations.

^b A second self-interest based theory of philanthropy is reciprocity, which focuses on the provision of subsequent benefits for the donor (Nowak & Sigmund, 2005; Fehr & Fischbacher, 2003, Milinski et al., 2002). Unfortunately, neither direct reciprocity (where there is some reasonable expectation of being assisted by those the donor herself assists) nor indirect reciprocity (where anticipated benefits may be less specific) apply well to international charity given the absence of proximity between donors and beneficiaries, and the limited financial capacity of the latter.

^c Bekkers & Wiepking (2011) review the research on charitable giving in a variety of disciplines, and identify the following eight key factors that drive giving generally: (a) awareness of need; (b) solicitation; (c) costs and benefits; (d) altruism; (e) reputation; (f) psychological benefits; (g) values; (h) efficacy.

^d The EM-DAT data base is the International Disaster Database from the Centre for Research on the Epidemiology of Disasters (CRED), School of Public Health of the Université Catholique de Louvain, and is found at:

<http://www.emdat.be/databas>

^e In addition, over the period in question, there were other natural disasters that caused over 1,000 deaths: an Indonesian earthquake (1,115 deaths); a heatwave in Russia (55,736 fatalities, but not the subject of a large international appeal), and three events in China: an earthquake, flood and landslide (with fatalities numbering, respectively, 2,968, 1,691 and 1,765). There were also severe floods in Pakistan causing over 2000 fatalities, and affecting millions; this event was the subject of a significant appeal for donations in Canada.

^f These 15 areas correspond to the 12 determined by the International Classification of Nonprofit Organizations (<http://www.ccss.jhu.edu>) with three of them having been split into two (the CSGVP splits the category Culture and Recreation into arts and culture, plus sports and recreation; hospitals are separated from the health category, and the education and research category separates out gifts to universities and colleges).

^g We test the set of independent variables for multicollinearity. While there is significant correlation between the tax price and the Quebec dummy variable, there is no other evidence of multicollinearity. We also run the estimations with and without robust standard errors, and the absence of significant differences suggest that heteroscedasticity is not a serious problem.

^h The use of a quadratic income term allows for a possible non-linear relationship between income and the probability of being donor. In this case we conclude that since donations reach a maximum at around \$700 thousand, the relationship is likely one where donation propensity rises with income, but at a diminishing rate.

^h These results are also essentially the same as those observed for the 2007 data. A pooled estimation using both 2007 and 2010 data does not suggest any particularly noteworthy differences over the years, including having a statistically insignificant coefficient estimate for a 2010 dummy inserted into the pooled estimation.

ⁱ These results are also essentially the same as those observed for the 2007 data. A pooled estimation using both 2007 and 2010 data does not suggest any particularly noteworthy differences over the years, including having a statistically insignificant coefficient estimate for a 2010 dummy inserted into the pooled estimation.

^j When pooled with the 2007 sample, the results are very similar but also indicate a big 2010 effect favouring being an international donor. The results also remain essentially unchanged when we remove from the sample those respondents who had recorded disaster relief donations in other categories, potentially skewing the results.

^k While a literature exists that examines Canadian immigrants' remittances overseas (e.g., Rowlands and Unheim, 2012), it would be useful to explore the extent to which these remittances substitute for international giving, and especially in the context of natural disasters (Debnath, 2017).

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