

## **Willingness to Donate to Victims of a Hypothetical Future Earthquake Disaster in Vancouver**

**Ali Asgary (Corresponding author)**

Disaster and Emergency Management  
School of Administrative Studies  
Faculty of Liberal & Professional Studies, York University  
Canada  
Email: asgary@yorku.ca, Phone: 416 736 2100

**Gregory Penfold**

Graduate Student  
Disaster and Emergency Management  
School of Administrative Studies  
Faculty of Liberal & Professional Studies, York University  
Canada  
Email: penfold.gregory@gmail.com, Phone: 416 736 2100

### **Abstract**

*Southern British Columbia, specially the city of Vancouver, is exposed to the highest seismic risk in Canada. Planning for disaster response and recovery as a consequence of a major earthquake is crucial for disaster and emergency management. Donations, especially financial donations, play a key role in disaster relief and recovery. Disaster response agencies rely heavily on peoples' donations for their disaster response and relief operations. This paper examines people's willingness to donate to disaster victims in Vancouver using a contingent valuation method. About 500 members of the public from the Greater Toronto Area were interviewed to ascertain their willingness to donate to a hypothetical earthquake disaster in Vancouver, British Columbia. It emerged that people are willing to donate an average of \$570.33 to disaster victims. Various factors such as past donation behaviour, helping attitude, willingness to help fellow Canadians, and age were found to have significant impacts on individuals' willingness to donate.*

**Keywords:** willingness to donate, willingness to pay, contingent valuation, disaster relief, donation management, Vancouver, earthquake.

### **1. INTRODUCTION**

Earthquake risk in British Columbia has been one of the major concerns of local, provincial and federal governments in Canada. The southwest part of British Columbia lies at the edge of the North America plate (Clague, 2002) and with more than 200 earthquakes each year, it is one of Canada's most seismically active regions in Canada (Monger and Journeay 1994). Historical records show that at least ten moderate to large earthquakes have occurred within 250 km of Vancouver and Victoria during the last 140 years (Rogers, 1998). The most recent large earthquake in this region was a magnitude 7.3 event that occurred in the northwest of Courtenay on Vancouver Island in 1946. Despite its magnitude, damage was limited because the areas close to the earthquake epicentre were sparsely populated. Since then, the population of this region has increased from about 700,000 to more than 2.5 million; in addition, much more of the region is urbanized and the value of the region's highly interconnected infrastructure has increased dramatically.

Metropolitan cities such as Vancouver and Victoria, and a number of other medium and small size communities, are very vulnerable to earthquake hazards (Adams and Atkinson, 2003). Therefore, the next large earthquake in south-western Vancouver and the Victoria region is likely to be more devastating than a similar earthquake decades ago when the region had a much smaller population. Such an event can generate tsunamis, landslides, and liquefaction and as such has the potential to kill a considerable number of people, injure many more and create a huge number of homeless households; the damage would likely be in the tens of billions of dollars (Clague, 2002) and would seriously impact the Canadian economy. This in part highlights that if such an earthquake occurs, a significant amount of resources are needed for response and relief operations. Historically, most of these resources came from the general public through donations in the form of goods, services, and money.

Although Canadians usually donate to charitable organizations and international disasters (Statistics Canada, 2008) it is not clearly known how much they would be willing to donate to a large disaster event at home. The objectives of this paper are (1) to estimate individuals' willingness to donate to future disasters in their country using a contingent valuation method, and (2) to understand what factors determine their current willingness to pay. Such a study could provide useful information for incorporation into disaster planning and management and overall resource allocation.

## **2. Willingness to Donate to Disaster Victims and its Determinants**

Financial donations are critical to disaster response and relief; philanthropic actions of individuals, private corporations and national governments are the life blood of disaster management. There has been limited research dedicated to the factors that influence individual donations to disaster relief. It is apparent from a revision of the current research what is and what is not known at this time. It is also clear that there is broad scope for further relevant and useful exploration. Some literature on specific factors are found to be useful here, while for other factors - such as the impact of celebrities - we have looked to the related fields of marketing and public relations. While there is no research that has measured peoples' willingness to donate to disaster victims using contingent valuation method such as the one that has been applied in this study, studies have been conducted by various researchers to determine the factors which affect a population's behaviour toward donating to various disasters (Marquis et al., 2007; Corrado, 2004; Oosterhof et al., 2009; Bennet and Kottasz, 2010). Researchers have found that certain factors have a significant influence on peoples' donation behaviours, including demographic factors, socioeconomic conditions, the element of social trust and mistrust, as well as media and social influences through families, friends, and celebrities.

Demographic factors as predictors to disaster relief donations are relatively well researched. Brown et al. (2009) found that males donated 17% less to victims of the 2004 Indian Ocean Tsunami. Mickleright and Schnepf (2009) conversely find that, while more women than men make donations to overseas aid and disaster relief, the average amount given, per donor, is higher for men; similar results were found by Andreoni et al. (2003) for charity at large. Generally consistent results have been found between other demographic factors. Research has shown that larger and more frequent charitable donations generally come from older, more religious, more educated individuals with higher incomes. (Schokkaert, 2006; Auten et al., 2002; Brown and Ferris, 2007; Hood et al., 1977). Understandably one may be less likely to donate if s/he is concerned that the donations will not reach the impacted peoples. Using social cognitive theory, Cheung and Chan (2000) found that trust in international relief organizations had a significant effect on individuals' inclination to donate. Other related factors however, such as the perceived level of governmental corruption, have not yet been researched.

A Canadian public opinion poll (AngusReid, 2010) reported that only 28% of Canadians believed that most of the money donated toward flood relief in Pakistan would actually be used to help those in need, ten points lower than the Haiti earthquake relief. This could only partially account for the much larger aggregate donations to the Haiti appeal; other factors offered by the poll were a lack of information and a lack of broadcasted telethon. Studies investigating the influence of social norms on donation behaviour have shown that people are more likely to donate if others around them donate (Romano and Huseyin, 2001; Frey and Meier, 2004) and that individuals are likely to make larger donations if others do so (Croson et al., 2009). The former effect will be tested in this piece. Donors want to be assured that their financial contributions are going to be used for the stated purpose (Oosterhof et al., 2009). Donations tend to be made from one's disposable income (excess cash remaining from ones necessity purchases) and can therefore be understood as luxury goods. It follows therefore that, in the current economic climate, it may be found that the donor's ability or propensity to give is diminished. Perhaps due to the time lags associated with academic enquiry, little or no literature is currently published on this topic.

There has however been some initial investigation in the popular press. Newsweek Magazine (2008) reported that according to data provided by Giving USA, in the last 40 years charity giving fell in real terms (i.e. adjusted for inflation) in years when the economy was in recession and when there was significant stock market dislocation. The Telegraph Newspaper (2008) reported the Charity Commission's findings that a quarter of charities had faced a fall in donations over the preceding 12 months and that many had faced a sharp fall in corporate donations. MSNBC (2008) conversely reported that aid groups had seen little change, suggesting that charitable giving was recession-proof. The media is critical to the functioning of disaster management in that it provides the only national and international broadcast system. By providing awareness of disasters, the international media provides an opportunity to individuals all over the world to assist in funding response and recovery efforts (Oosterhof et al., 2009).

Accordingly those events that attract the greatest media attention tend to attract larger aggregate donations (Brown and Minty, 2008). In part due to excessive sensationalization of disaster coverage by the media (and in part due to the increasing number of disasters occurring around the world) the onslaught of international disasters can create donor fatigue. Brown et al. (2009) found that donating to victims of the 2004 Indian Ocean Tsunami had diverted future household expenditure away from donating to other charitable causes. However, other studies have shown that the greatest predictor of the intention to donate to disaster relief campaigns is in fact past donations to similar causes (Oosterhof et al., 2009; Smith and McSweeney, 2007). Celebrity endorsement is a commonly used strategy of increasing public awareness of all humanitarian causes. While little research has tested the degree to which celebrities influence the potential donor, based on their influence in traditional advertising one might expect similar effects among donors. Celebrities create *positive brand attitude* (Kamins et al., 1989) and *enhance message recall* (Friedman and Friedman 1979). Agrawal and Kamahura (1995) found that for these reasons, among others, celebrity endorsement advertising contracts are generally worthwhile investments for corporations. However one should bear in mind that Agrawal and Kamahura's study used a methodology that depended heavily upon the tenuous assumption of efficient markets in security pricing. With a sample of 1,953 adults from the UK, results showed that 11% of respondents felt very strongly influenced by celebrity appeals when it came to donating. It was also found that 11% of respondents were significantly influenced by television when making their decision to donate (Corrado, 2004).

Interestingly, Jackson and Darrow (2005) found that, among young people, celebrities could influence political opinions suggesting that celebrities could be used to sell ideas as well as products. Samman et al. (2009) attempted to test the impact of celebrity involvement in international aid, and while the study did suffer from a small sample size it was found that celebrities help raise the public profile of particular charities. Using regression analysis of survey data we will show the degree to which Canadians agree that the actions of celebrities influence peoples' decisions to give to disaster relief specifically. Studies have shown that, "the past behaviour of donors is of crucial importance for their future behaviour" (Oosterhof et al., 2009: 156). This particular study on donation campaigns and their relationship to social cognitive factors found that past donation behaviour proved to be the *greatest* indicator for predicting future donation patterns. Marquis et al. (2007) conducted a study consisting of 7,930 U.S citizens in an attempt to understand the factors that encourage donations from a wide range of participants pertaining to many different ethnic groups. After being asked to rate the importance of 17 different factors that affected their last donation decision, some interesting results were found. The study showed that more than 90% of respondents cited a perceived responsibility or duty to help others as an important motivator toward giving donations. A significant amount of respondents, near 70%, felt that being asked personally by friends while at work to donate was an important aspect in their decision to donate (Marquis et al., 2007). The results demonstrated that for donation programs to be effective, they should build on the population's sense of social responsibility and use more direct requests for donations (Marquis et al., 2007).

### **3. DATA, METHODS & FINDINGS**

#### **3.1 Methods**

In a typical contingent valuation method (CVM) respondents are asked to consider a hypothetical scenario, where a potential market exists for the benefits of a public program being evaluated. In this study the hypothetical situation is "earthquake disaster in Vancouver" and the service is "donation to disaster victim". There are various formats for CVM surveys, including open-ended, payment cards, bidding games, and dichotomous choice. For the purposes of this study a dichotomous choice CVM was applied. The dichotomous choice asks respondents a simple yes/no question regarding whether they would pay a specified amount, that is, "If the donation amount were \$X, would you be willing to donate that amount?" Distribution of WTP in the sample may be gained from yes/no answers with the mean WTP value being estimated using non-parametric or parametric methods such as logit or probit regressions (Loureiro et al., 2004). The advantages of the dichotomous choice method are that it better reflects market situations because prices are set exogenously and it produces less conservative results compared with open-ended surveys, mainly because it does not ask for the maximum WTP. The limitations of the dichotomous choice elicitation method are that it is subject to the tendency of the individual to respond positively to a hypothetical scenario regardless of the content or scenario presented, and requires a much larger sample size than the other elicitation formats (Heinzen and Bridges, 2008). As in many other CVM studies, this study included three kinds of questions: demographic questions, attitudes and perceptual questions, and the CVM question (Mitchell and Carson, 1989).

The exact wording of the CVM question was: “Consider that a large earthquake occurs in British Columbia (Vancouver area) that is an earthquake prone zone in Canada, would you be willing to donate \$\_\_\_\_\_ to disaster victims? 1.) Yes  2) No ?” One WTP bid (\$10, \$50, \$100, \$200, \$500, \$1000, \$2000, \$5000, \$10000, and \$15000) was randomly assigned to each respondent. This WTP bid range was used based on a rough estimation of the minimum and maximum per capita donations and the results of previous research (Hall et al., 2009; Imagine Canada 2010).

### 3.2 Data

The target population was adults living in the GTA in Ontario, Canada. This region is very important provincially and nationally, with almost 46% of the Ontario’s population living in the GTA in 2006, and therefore, over 15% of Canada’s population (Statistics Canada, 2008). The choice of sample size in a CVM study determines the precision of the sample statistics used as estimates of population parameters such as mean WTP. Generally the larger the sample the smaller the variation in the mean WTP as measured by the standard error and described in confidence intervals. In CVM studies, a sample size of two hundred to two thousand observations is generally required to achieve reasonable reliability from a sampling (confidence interval) perspective. Using Mitchell and Carson’s recommended sample sizes for CVM studies under various precession levels (Mitchell and Carson, 1989) and considering the available budget, a target sample of 505 was selected. This would mean that the estimated WTP would be allowed to deviate by only 10 percent from the true WTP approximately 95 percent of the time. The sampling method chosen for this study was a convenience cluster sampling. As such we do not claim that ours is a fully representative sample of the general population in the GTA. Since the study involved human participation, ethics approval was obtained. Data was collected by a group of undergraduate students at York University in November 2010.

## 4 FINDINGS

### 4.1 Descriptive Results

A detailed descriptive of our survey statistics is offered in Table 1. The slight majority of our respondents were female (53%) and 70% of respondents were 40 years old and under. In terms of education, 69.9% of respondents had either a college diploma/degree or a university undergraduate degree; of the remainder, 21.8% had achieved a high school diploma and 5.5% had a master’s degree. Over half of those surveyed (55.7%) were presently employed and 21.3% were students. Half of the group (50.3%) reported earnings of less than \$30,000 annually; a further 24% earned between \$30,000 and \$50,000; 14% of participants earned \$51,000 to \$80,000, leaving 11.3% reportedly earning between \$81,000 and \$150,000.

For the multiple choice preference questions (those questions where the respondent is asked whether they ‘strongly agree’, ‘agree’, ‘neither agree nor disagree’, ‘disagree’ or ‘strongly disagree’ with a given statement), mean scores around 3 (between 2.75 and 3.25) indicate that there was no strong preference across the group as a whole in agreement or disagreement of those statements / questions. This was the case in half of the multiple choice preference questions. Of the questions that elicited a clearer outcome, 76% of the respondents either agreed or strongly agreed that the *Government of Canada should provide disaster assistance to other countries*. In addition, 75.1% of respondents agreed or strongly agreed that *all large disasters should have equal attention in the mass media*. Television proved to be the favoured media source for news, watched by around half of the group (49.7%). The internet was also popular, used by 39.3%; radio and newspapers were less popular being used by only 15.9% and 18.9% of responders, respectively. A substantial 71.9% either agreed or strongly agreed that *the actions of celebrities influence people decision to give to disaster relief*.

A great deal more of the survey respondents donated to the Haiti earthquake than the Pakistan floods: 27.8% donated to Haiti as compared to just 6.5% for Pakistan. Of those that donated to both, 47.5% made larger donations to Haiti, 28.3% made roughly equal donations to each and the remaining 24.3% made greater donations to Pakistan. 79.3% of donations were made in cash, 4.2% in clothes and 5.1% in food donations. Just 10.7% of respondents expressed dissatisfaction with the *overall contributions of Canadians* to the Haiti Earthquake, 23.7% in the case of Pakistan. Nearly three quarters of participants (72.9%) expressed that they would donate more if their family or friends were impacted by disasters, and 17.9% reported that ‘*My family, my friend or I have been victims of disasters in the past*’. While there was no clear response as to whether the respondents trusted the agencies that collect donations for disaster assistances, 60.4% of the group indicated concern that the money or goods donated do not reach the disaster victims.

**Insert Table 1 Here**



## **4.2 Willingness to Donate**

Overall, 503 respondents answered the CVM question and 240 of them accepted the bids offered to them for donation to a hypothetical earthquake disaster in Vancouver (Table 2). The mean WTP for those who answered “yes” to the CVM question is \$570.33. One can multiply this mean WTP per total number of adults in the study area to calculate the total donation that can be collected. To assess the validity and reliability of this figure one can compare it with the actual donations that people of Ontario, where GTA is located in, have paid to charitable organizations. According to Statistics Canada about 9.1 million tax filers (an individual who filed a personal income tax return for the referenced year) in Ontario have paid a total of 3.5 billion dollars to charitable organizations in 2009 (Imagine Canada, 2010). This provides an average of \$380.90 donations per tax filer. Considering that the average income is larger in the GTA compared to the rest of Ontario, it seems that average willingness to donate found in our study is not far from reality.

**Insert Table 2 here**

## **4.3 Determinants of Willingness to Donate**

A logistic regression was used to estimate the responses given to the CVM question (Yes=1, No=0) as the dependent variable and a number of donation behavioural, attitudinal, and demographic factors as explanatory variables. Table 3 presents the results. The bids for donation showed negative signs as expected with strong significance level. This means that more people are likely to accept the lower bids as opposed to higher bids.

Among the demographic variables age, gender, occupation, organization, and annual family income were significant. Education, family size and number of persons under 18 and over 60 years old were not found to have any significant impact on respondents’ decisions to buy the influenza vaccine. Among the health and pandemic risk-related variables, the results show that receiving an annual flu shot, having additional insurance, knowing someone with a serious illness, and knowledge about pandemics contribute significantly to respondents’ decisions to accept the bids for vaccine. Having additional insurance and a knowledge about pandemics have negative impacts on respondents’ decisions to accept the bids. Respondents’ perceptions of deaths in pandemic and the likelihood of pandemic in the next twelve months were not found to be influential factors in their decisions.

Pandemic planning related factors (trusting official information on pandemics, supporting government expenditure, and rating government pandemic planning) were significant at different levels. Trusting official information and rating government pandemic planning have a negative impact, while supporting government expenditure has a positive impact on the dependent variable. Volunteer behaviour, donation behaviour, and donating to Canadians are positively correlated with the willingness to donate. In other words, people who are willing to provide help if provided with this opportunity, those who regularly donate, and people who are willing to donate to disaster victims in Canada are more likely to accept the donation bids and contribute than other people. Variables such as impacts of the economic crisis on donation, trust, and past disaster experience were not found to influence respondents’ decisions to donate. Among the demographic variables only age showed a strong correlation with decision to donate the offered bids. According to this finding, older people are more likely to donate. This is consistent with the results of previous studies.

**Insert Table 3 here**

## **5. CONCLUSION**

The results of this study show that the CV method can provide some useful information for policy and decision making regarding disaster donation planning and management. Although this study provides some reasonable results, certain points should be considered when using these findings. It is recognized that the results are based on a medium size sample. For a referendum CVM study, the larger the sample size, the more reliable the results. There is also potential for sample selection bias in the sample selection due to the fact that we used a convenient sampling and therefore respondents who were reached might not represent the overall population of the Greater Toronto Area. The results of this survey indicate that the sampled residents in a large Canadian metropolitan area are willing to pay and donate to a hypothetical disaster in their country. The results are somewhat consistent with the overall donation statistics published by Statistics Canada. Finally, it should be noted that because this study examines people’s willingness to donate for a future event, it was not possible to include the influence of social and psychological factors that amplify donation behaviour in time of actual disasters such as media and celebrities’ roles and friends and families’ donation behaviour. This means that the actual donation could be somewhat higher than what has been estimated in this study.

## References

- Adams, J., and Atkinson G. (2003). Development of seismic hazard maps for the proposed 2005 edition of the National Building Code of Canada. *Can. J. Civ. Eng.*, 30, 255–271.
- Agrawal, J. and Kamakura, W. A. (1995). The Economic Worth of Celebrity Endorsers: An Event Study Analysis. *Journal of Marketing*, 59(3), 56-62.
- Andreoni, J., Brown, E. and Rischall, I. (2003). Charitable giving by married couples: who decides and why does it matter?. *Journal of Human Resources*, 38 (2), 111–33.
- AngusReid Public Opinion, (2010), Few Canadians Have Made a Donation to Help Pakistan. [Online] Available [http://www.visioncritical.com/wp-content/uploads/2010/09/2010.08.31\\_Giving\\_CAN.pdf](http://www.visioncritical.com/wp-content/uploads/2010/09/2010.08.31_Giving_CAN.pdf) (Augst 31, 2010)
- Auten, G. E., Clotfelter, C.T., and Sieg, H. 2002. Charitable giving, income, and taxes: an analysis of panel data. *American Economic Review*, 92, 371–82.
- Baguelin M, Van Hoek A. J., Jit, M., Flasche, S., White P.J., Edmunds W.J. (2010). Vaccination against pandemic influenza A/H1N1v in England: A real-time economic evaluation. *Vaccine*, 28, 2370–2384.
- Bennet, R., and Kottasz, R. (2010). Emergency fund-raising for disaster relief. *Disaster Prevention and Management*, 9, 352-359.
- Brown, E., and Ferris, J. M. (2007). Social Capital and Philanthropy: An Analysis of the Impact of Social Capital on Individual Giving and Volunteering. *Nonprofit and Voluntary Sector Quarterly*, 36(1), 85-99.
- Brown, P.H. and Minty, J. H. (2008). Media coverage and charitable giving after the 2004 tsunami. *Southern Economic Journal*, 75, 9-25.
- Brown, S., Harris, M. N., and Taylor, K. 2009. Modelling Charitable Donations to an Unexpected Natural Disaster: Evidence from the U.S. Panel Study of Income Dynamics. IZA Discussion Papers4424, Institute for the Study of Labor (IZA).
- Cheung, C. K., and Chan, C.M.2000. Social-cognitive factors of donating money to charity, with special attention to an international relief organization. *Evaluation and Program Planning*, 23, 241-253.
- Clague J. J. (2002) The Earthquake Threat in Southwestern British Columbia: A Geologic Perspective. *Natural Hazards*, 26, 7–34.
- Corrado, M, (2004), Behaviour and attitudes of existing and potential donors. [Online] Available: <http://www.ipsos-mori.com/researchpublications/researcharchive.aspx> ()
- Croson, R., Handy, F. and Shang, J. (2009). Keeping up with the Joneses: The relationship of perceived descriptive social norms, social information, and charitable giving. *Nonprofit Management and Leadership*, 19(4), 467-48.
- Frey, B. S. and Meier, S. (2004). Pro-social behaviour in a natural setting. *Journal of Economic Behavior & Organization*, 54(1), 65-88.
- Friedman, H. H. and Friedman, L. (1979). Endorser Effectiveness by Product Type. *Journal of Advertising Research*, 19(5), 63-74.
- Heinzen, R.R., Bridges, J.F. (2008). Comparison of four contingent valuation methods to estimate the economic value of a pneumococcal vaccine in Bangladesh. *International Journal of Technology Assessment in Health Care*, 24,481-487.
- Hall, M., Lasby D., Ayer, S., and Gibbons, W. D. (2009). Caring Canadians, Involved Canadians: Highlights from the 2007 Canada Survey of Giving, Volunteering and Participating. [Online] Available: <http://www.statcan.gc.ca/pub/71-542-x/71-542-x2009001-eng.pdf> (November, 2010)
- Hood, R.D., Martin, S.A., Osberg, L.S. (1977). Economic determinants of individual charitable donations in Canada. *The Canadian Journal of Economics*, 10(4), 653-669.
- Imagin Canada. (2010). Statistics Canada Releases Most Recent Charitable Donor Stats. [Online] Available: <http://blog.imaginecanada.ca/2010/12/06/charitable-donations-2009/> (November, 2010)
- Jackson, D.J. and Darrow, T.I.A. (2005). The Influence of Celebrity Endorsements on Young Adults' Political Opinions. *The International Journal of Press/Politics*, 10 (3), 80-98.
- Kamins, M.A., Brand, M.J., Hoeke, S.A., and Moe, J.C. (1989). Two-sided versus One-sided Celebrity Endorsements: The Impact on Advertising Effectiveness and Credibility. *Journal of Advertising*, 18(2), 4-10.
- Loureiro, M.L., Loomis, J.B., and Nahuelhual, L. (2004). A comparison of a parametric and a non-parametric method to value a non-rejectable public good. *Journal of Forest Economics*, 10(2), 61-74.
- Marquis, C., Glynn, M. A., and Davis, G. (2007). Community Isomorphism and Corporate Social Action. *Academy of Management Review*, 32 (3), 925–945.
- Mickelwright, J. and Schenepf, S. (2009). Who Gives Charitable Donations for Overseas Development? *Journal of Social Policy*, 38(2), 317-341.
- Mitchell, R. C., Carson, R. T. (1989). Using survey to value public goods: the contingent valuation method. Washington: Resources for the Future.
- MSNBC-USA (2008), Americans still giving, despite economic crisis. [Online] Available: <http://www.msnbc.msn.com/id/27840397/> (November 08)

Newsweek Magazine (2008), The Coming Charity Crisis, How the struggling economy is hurting donations. [Online] Available: <http://www.newsweek.com/2008/06/11/the-coming-charity-crisis.html> (June 2008)

Oosterhof, L., Heuvelman, A., and Peters, O. (2009). Donation to disaster relief campaigns: Underlying social cognitive factors exposed. *Evaluation and Program Planning*, 32, 148-157.

Rogers, G. C. (1998) Earthquakes and earthquake hazard in the Vancouver area. In Clague J.J., Luternauer J.L., Mosher D.C. (edit). *Geology and natural hazards of the Fraser River delta, British Columbia*. GSC Bulletin 525, 17-25.

Romano, R. and Huseyin, Y. (2001). Why charities announce donations: a positive perspective. *Journal of Public Economics*, 81, 423–447.

Samman, E., McAuliffe, E., and MacLachlan, M. (2009). The role of celebrity in endorsing poverty reduction through international aid. *International Journal of Nonprofit and Voluntary Sector Marketing*, 14(2), 137–148.

Schokkaert, E. (2006). The empirical analysis of transfer motives. In S.-C. Kolm, and Ythier, J.M. *Handbook of the economics of giving, altruism and reciprocity* (New York: Elsevier Science.)

Smith, J. R., and McSweeney, A. (2007). Charitable Giving: the effectiveness of a revised theory of planned behavior model in predicting donating intentions and behavior. *The Journal of Community and Applied Social Psychology*, 17, 363-386.

Statistics Canada (2010). Charitable donors. [Online] Available: <http://www40.statcan.ca/101/cst01/famil90-eng.htm> (January 2011)

Statistics Canada, Population and demography, 2008. Available at: [http://www40.statcan.ca/101/ind01/13\\_3867.htm?hili\\_none](http://www40.statcan.ca/101/ind01/13_3867.htm?hili_none) (Accessed March 29 2008).

The Telegraph Newspaper. (2008). Charity donations hit by financial crisis. [Online] Available: <http://www.telegraph.co.uk/finance/financialcrisis/3405594/Charity-donations-hit-by-financial-crisis.html> (January, 2008)

**Table 1 Descriptive Statistics of the Sample for Selected Variables**

Variables	Mean	Median	Mode	SD
If I were offered an opportunity to travel and help with the aftermath of a disaster, I would take that opportunity. (1=8.7%, 2=16.2%; 3=23.1%; 4=33.6%; 5=18.4%)	3.37	4.00	4	1.204
I often donate to disaster events around the world (1=9.9%;2=28.0%;3=26.0%;4=28.4%;5=7.7%).	2.96	3.00	4	1.126
I trust the agencies that collect donations for disaster assistances (1=7.7%; 2=21.8%;3=31.5%; 4=32.1%; 5=6.9%)	3.09	3.00	4	1.058
I would make donations only if the disaster impacted country is a poor or developing country (1=7.7%;2=32.4%;3=27.3%;4=22.7%;5=9.9%)	2.95	3.00	2	1.120
The recent economic crisis has impacted my donation capacity (1=5.1%;2=22.7%; 3=29.0%;4=30.4%;5=12.8%).	3.23	3.00	4	1.094
I would donate more if my family or friends were impacted by disasters (1=5.3%; 2=7.1%;3=14.6; 4=39.9%; 5=33.0%).	3.59	4.00	4	1.109
I would donate more if similar events occur in Canada or a country that I have links with (1=8.9%; 2=23.2%; 3=26.9%; 4=32.5%; 5=8.5%).	3.09	3.00	4	1.117
My family, my friend or I have been victims of disasters in the past (1=33.4%; 2=33.4%; 3=15.2%; 4=13.0%; 5=4.9%).	2.23	2.00	1*	1.185
Gender (1(Male)= 46.7%; 2(Female)=53.3%).	1.53	2.00	2	.499
Age (1 (Less than 20)=18.1%; 2(21 to 30)=42.1%; 3(31 to 40)=20.3%; 4(41 to 50)=9.8%; 5(51 to 60)=9.3%; 6(More than 61)=0.4%	2.51	2.00	2	1.189
Education (1(Less than high school)= 2.8%; 2(High School)=21.8%;3(College Diploma / Degree)= 30.9%;4(Undergraduate Degree)= 39.0%;5(Postgraduate Degree)= 5.5%	3.23	3.00	4	.944
Annual income? (1(Less than \$30,000)= 50.3%;2(\$31,000 to \$50,000)= 24.3%;3(\$51,000 to \$80,000)= 14.0%;4(81,000 to \$100,000k)= 8.9%; 5(More than \$101,000)	1.89	1.00	1	1.100
Born in Canada (1(yes)=62.1%; 0(No)=37.9%)	.62	1.00	1	.486
Practice a religion (1(yes)=43.8%; 0(No)=56.2%)	.56	1.00	1	.497

**Table 2 Yes and No responses to various donation bids**

Donation Bids	Number of Respondents who Rejected the Bids	Number of Respondents who Accepted the Bids	Total
10	7	62	69
50	15	43	58
100	25	42	67
200	19	33	52
500	21	19	40
1000	23	15	38
2000	38	7	45
5000	35	8	43
10000	32	5	37
15000	48	6	54
Total	263	240	503

**Table 3 Logistic regression results**

Independent Variables	B	S.E.	Sig.
<i>Bids for donation</i> (in \$1000)	-.271	.039	<b>.000</b>
<i>Volunteer behaviour</i> (If I were offered an opportunity to travel and help with the aftermath of a disaster, I would take that opportunity.)	.328	.098	<b>.001</b>
<i>Donation behaviour</i> (I often donate to disaster events around the world.)	.212	.106	<b>.046</b>
<i>Donating to poor countries</i> (I would make donations only if the disaster impacted country is a poor or developing country )	-.115	.098	.242
<i>Impacts of the economic crisis on donation</i> (The recent economic crisis has impacted my donation capacity.)	.054	.103	.602
<i>Donating to families &amp; Friends</i> (I would donate more if my family or friends were impacted by disasters.)	-.105	.100	.294
<i>Donating to Canadians</i> (I would donate more if disaster events occur in Canada or a country that I have links with.)	.157	.100	<b>.118</b>
<i>Trust</i> (I trust the agencies that collect donations for disaster assistances)	.048	.108	.659
<i>Donors are exhausted</i> (donors are exhausted from the onslaught of international disasters)	.073	.107	.498
<i>Past disaster experience</i> (My family, my friend or I have been victims of disasters in the past.)	-.011	.095	.908
<i>Gender</i>	.279	.221	.205
<i>Age</i>	.301	.117	<b>.010</b>
<i>Education</i>	.017	.118	.887
<i>Annual income</i>	-.030	.127	.813
<i>Born in Canada</i>	.068	.234	.772
<i>Practicing a religion</i>	-.308	.223	.168
<i>Constant</i>	-2.529	.987	.010