ESSAYS ON GIFTS OF BLOOD, MONEY AND TIME

A thesis presented

by

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Abstract

This thesis investigates the voluntary provision of public goods in three distinct contexts. Specifically, it studies gifts of blood, money and time. While the first essay undertakes to investigate the behaviour of blood donors from a theoretical perspective, the second and third chapter use the tools of empirical applied microeconomics to investigate strategic philanthropy (Chapter 2) and the impact of mandatory volunteering on income (Chapter 3).

In Chapter One I use the tools of non-cooperative game theory to study blood donor behaviour. I construct a model in which the decision to donate blood is driven by the need for consumers to obtain insurance against needing a blood transfusion, and in which access to the resources of the blood bank are allocated as under a first-come, first-served policy. I also study the effect of screening policies on the available blood supply, and identify policy instruments which may be effective in increasing the supply of blood. Strikingly, although blood banks typically direct greater effort to persuading universal donors (type O negative) to donate blood, I show that the efficient allocation is for individuals of each blood type to donate the same amount of blood. However, at the Nash equilibrium, the individuals who are the most likely to donate blood are universal recipients, and those who are the least likely are universal donors – a prediction that is consistent with observed donation frequency by blood type. The model also predicts that if there is an increase in the probability of needing blood, this will have no impact on donations of those individuals who are faced with a positive probability of not getting blood. I also show that in an economy with "good" blood and "bad" blood donors, if the total amount of bad blood is more than the total amount of good blood, bad blood crowds out good blood.

The second chapter is concerned with giving practices that practitioners refer to as strategic philanthropy. Anecdotal evidence that suggests that charitable givers – particularly those with the financial means and inclination to make substantial donations - are increasingly strategic in their philanthropic behaviour. However, there is no existing literature which has investigated whether or not so-called strategic givers are in fact determining donations differently from other donors, or whether in fact it is true that strategic behaviour is increasingly prevalent. A first challenge is to discern what specifically might constitute strategic giving, and I propose that strategic philanthropists are individuals who (i) plan their giving; (ii) give most of their philanthropic gifts to a small number of charities, and (iii) get involved in the organisations to which they make gifts. Different estimation methods are applied, and the results show that some charitable givers are strategic in their philanthropic givin**g,** and that the propensity to be strategic is highly and positively correlated with the level of education. My results also show that giving is strategic only when donations are made to secular organisations but not to religious organisations. My results also indicate that strategic behaviour has a substantial positive impact on donations to secular organisations.

The last chapter examines the link between volunteering and income, focussing particularly on the impact of mandatory volunteering in high school. I use data from the 2013 Giving, Volunteering and Participation component of the General Social Survy (GSS GVP) to update previous research on the labour market returns to volunteering and find evidence, consistent with previous findings that indivuals who choose to volunteer earn higher incomes. In contrast, when volunteering is mandated for high school students, the impact on income depends on the type of policy and on the time horizon. When the policy requires students to perform free community

service, it has no impact on income in the short run but generates a positive return in the long run. In contrast, when the policy requires students to acquire either paid or unpaid work experience, it leads to lower incomes in the short run but has a positive impact in the long run. There are three channels by which it has been suggested that volunteering leads to high labor market returns: human capital accumulation, strengthening of social networks, and signalling high productivity. The results suggest that when volunteering activities are mandated, this breaks the signal to potential employers. However, mandatory volunteering still leads to human capital accumulation and strengthens social networks, and consequently ultimately generates a positive return. Overall, requiring high school students to undertake free community service yields a better labour market outcome in the short run than the mandated work experience policy.

Dedication

I dedicate this thesis in loving memory of my dad, Mr. Ahmed Abaka Ainoo, to my husband Prince Owusu and my kids, Phoebe, David and William.

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Table of Contents

List of Tables

List of Figures

Introduction

The generosity of Canadian donors underlies a long history of philanthropic activities in Canada. For instance, in 2007 and 2010, individuals who were at least 15 years old gave about $10.6 billion to charitable and non-profit organisation (Turcotte, 2012). This generosity is in part reflective of the significant scale of activity in the not-for-profit sector. According to Imagine Canada (2012), over 170,000 charitable and non-profit organisations exist in Canada, of which 85,000 are registered charities, and 54% of all those charities were run by volunteers. Imagine Canada (2012) estimates that charitable and non-profit organisations contribute on average about 8% of Canada's gross domestic product (GDP). Moreover, Canadians give not only money, but also time: in 2013, 12.7 million Canadians aged 15 and over contributed 9.6 billion hours to volunteering (Turcotte, 2012). Canadians are not unique in their willingness to contribute to the not-for-profit and charitable sector, and in light of the significant scale of this activity in many countries, it is therefore not surprising that there is a substantial theoretical and empirical literature that examines the economics of philanthropy (e.g., Bergstrom, Blume & Varian, 1986; Andreoni, 1989; 1990, as well as the survey of articles on charitable giving (Bekkers & Wiepking, 2011) and the "Philanthropy" handbook (Andreoni, 2006)).

A central question addressed by this literature is why people give. Some of the key reasons are pure altruism (donors care about the level of public goods), impure altruism (donors get utility from their contributions), self-interest (the indirect benefits the donor can get), reciprocity (i.e., giving back), and reputation (the recognition gained from giving). This dissertation, which is made up of three independent chapters, seeks to contribute to this literature, and investigates

donor behaviour with respect to three different types of gifts: blood, money and time. The results reported in this thesis all have obvious implications for the design of public policy.

The first chapter focusses on the decision to donate blood and uses the tools of non-cooperative game theory to develop a theoretical model using a two-period framework. One of the key features of the model is the recognition that individuals who require blood transfusions actually require blood. Consequently, unlike the decision to donate time versus money, donations of cash cannot be substituted for donations of blood. The existence of different blood types also complicates the analysis of the donation decision. The blood of a universal donor (type O^-) can be used by any individual requiring a transfusion, whereas the blood of a universal recipient (type AB^+) can only be used by another universal recipient. If altruism is the only reason why people donate blood then one would expect that the more one's blood is useful to many people, the more likely this blood type would be supplied. However, empirical research on blood donations has shown that this is not the case (see for e.g., Wildman and Hollingsworth, 2009): universal donors are the individuals who are the least likely to give.

The theoretical model developed in this chapter builds on models of the voluntary provision of public goods, while taking account of the fact that blood is actually a private good - that is, it is both rivalrous and excludable - and yet the institutional framework in which access to banked blood is typically granted according to the principle of 'first-come, first-served', essentially treats it as a public good. The model highlights the 'insurance' motive for blood donations: individuals donate blood to reduce the probability of not getting blood should they require it. This approach is supported by the fact that blood donors responded that the reason why they gave blood was because they might also require blood (Bednall and Bove (2011), Otto

and Bolle (2011)). The model shows how donor decisions are influenced by their blood type and hence the existing stock of blood available to individuals given the blood type.

At the Nash equilibrium, universal donors are the least likely to have access to banked blood, and are consequently the least likely to donate. In contrast, it is a requirement for efficiency that individuals of every blood type give the same amount of blood. Importantly, when individuals of a particular blood type are faced with a positive probability of not getting blood, an increase in the probability of needing blood will have no impact on their donations of blood. I also extend the model to consider situations in which some individuals know that they have 'bad' blood (blood that does not meet donation criteria), but in which there are no (cost-effective) screening procedures to determine the quality of the blood individuals donate. I show that individuals will comply with voluntary screening procedures if there is enough "good" blood (blood that meets donation criteria) in the population. However, if there are too many "bad" blood donors, bad blood crowds out good blood.

The focus shifts from donations of blood to donations of money in the second chapter of this thesis. This chapter constitutes the first empirical investigation of a combination of giving behaviours that philanthropy practitioners are referring to as 'strategic philanthropy'. This chapter tries to understand how this so-called strategic philanthropy differs from the traditional ways of giving- which economists have always viewed as a strategic decision - and investigates the link between this donation behaviour and the amount that is donated.

Economists who have developed theoretic models of philanthropy have posited a number of different motivations for individual giving. In the public goods model, individuals give because they care about the general level of the public good**,** while in the private goods model, individuals

give because of what their personal contributions will achieve (Andreoni, 1998; 1990; Bergstrom, Blume & Varian, 1986). A third model of philanthropy was developed by Duncan (2004) called the impact philanthropy in which individuals give to "'personally make a difference'". In this case, individuals gain utility from the changes their contributions make**,** but because they want to make the difference by themselves, consequently contributions of others can reduce the utility of an individual.

In developing the analysis presented in this chapter, a first challenge was to discern the difference between strategic philanthropy and these other models of donor behaviour. To this end, I had to rely on anecdotal descriptions of strategic giving found on philanthropic blogs and in reports from a number of charitable foundations. The approach that is described is, on the one hand, similar to those of an impact philanthropist in that strategic philanthropists are viewed as deriving utility from the changes their contribution makes. On the other hand, contributions of others do not decrease the utility of a strategic giver as is the case for Duncan's model of impact philanthropy. I concluded that strategic givers are individuals whose giving behaviour is characterized by three practices: (i) gifts are planned, (ii) they are predominantly concentrated on a small number of charities, and (iii) strategic givers also will typically get involved with these charities by contributing their skills or expertise as well as their money.

Having defined the behaviours that characterize strategic givers, I then use the 2004, 2007 and 2010 cycles of the Canadian Survey of Giving, Volunteering and Participation (CSGVP) to examine whether some Canadians are giving strategically, and whether this matters, i.e., whether, for example, strategic givers donate more than non-strategic givers. Not surprisingly, a key econometric challenge is dealing with different potential sources of endogeneity. I consequently

use an instrumental variables estimation procedure, and use the highest level of education obtained (in particular having at least some university education or the proportion of individuals with at least university degree at the Census Metropolitan area and group participations that affects networks) as my instrument for strategic giving.

I find that although about 90% of givers have at least one characteristics of strategic behaviour, the population of strategic givers is relatively small, but is indeed growing. Importantly strategic giving behaviour does have a substantial positive impact of donations that go into secular causes; however, strategic giving behaviour does not change the level of giving to religious causes.

Finally, in the third chapter of this thesis, I turn to the labour market return to volunteering, focussing particularly on the impact of introducing mandatory volunteering requirements in high school. As observed by Day & Devlin (1998), there are three mechanisms by which volunteering may affect future income: human capital accumulation, signalling and social networks. The human capital hypothesis postulates that volunteers acquire additional human capital in the form of developing new skills or job experience (Menchik & Weisbord, 1986; Devlin & Day, 1998). The signalling hypothesis postulates that in a labor market characterized by asymmetric information, volunteering may be interpreted by employers as a signal that these volunteers are high productivity workers. Lastly, the network hypothesis postulates that individuals who volunteer will develop better social networks which will in turn lead to them finding better-paying jobs. Previous research has found support for all three of these mechanisms, although there is no consensus on the relative importance of each channel.

The analysis of the labor market return to mandatory volunteering provides potentially new insight into the role of each of these mechanisms. Strikingly, however, there are no existing

papers that have looked at the short and longer-term impact of the mandatory volunteering requirements that have been imposed on high school students in a number of jurisdictions. If the reason that previous researchers have found a positive correlation between volunteering and labor market earnings is because volunteering builds human capital or strengthens social networks then we should observe the same impact of volunteering on earnings, regardless of whether volunteering is mandated or is genuinely voluntary. In contrast, it is clear that if volunteering is viewed as a signal that the volunteer is a high-productivity employee, then mandating individuals to volunteer shuts down the signal, and there should be no wage premium associated with volunteering.

To carry out my analysis I use data from the 2004, 2007 and 2010 cycles of the CSGVP and the 2013 Giving, Volunteering and Participation component of the General Social Survey (GSS GVP). Before examining the impact of the introduction of mandatory volunteering, I first update previous findings, and check to see that there are positive labor market returns to volunteering for the population as a whole. There is a well-understood problem of endogeneity – volunteers are different from non-volunteers – and so I use an instrumental variable estimation procedure that utilises informal help and group participation as instruments for estimating the likelihood to volunteer. Consistent with the existing literature, I find that Canadians who volunteer earn more than non-volunteers.

I then turn to the impact of the introduction of mandatory work experience or community service requirements by the governments of British Columbia (BC) and Ontario (ON). In 1995, the government of BC enacted legislation which required its high school students to complete 30 hours of work experience as a requirement of graduation. Subsequently, in 1999 the government

of Ontario (ON) mandated its high school students to complete 40-hours of unpaid community service in order to satisfy the requirements of the high school graduation diploma. Since none of the data sets I use specifically ask respondents whether they were required to meet mandatory volunteering requirements in high school, I rely on information regarding respondents' age, province of residence, and the length of time they have been resident in their community to define synthetic cohorts who received treatment in these provinces and investigate the impact of these policies on earnings. My, results support both the human capital accumulation and the signalling hypothesis. Although I find that mandatory volunteering does not increase incomes in the short run – consistent with the signalling hypothesis – I do find evidence of a positive impact income in the longer term – consistent with the human capital and social networks hypothesis. Individuals who are required to volunteer in high school are no more likely to subsequently become engaged in their communities as volunteers than are individuals who were not subject to mandatory volunteering requirements.

Chapter 1
Voluntary Contributions to Private Goods: The Economics of Blood Donations

1.1 Introduction

Banked blood donations save millions of lives every year, and is critical to the success of many emergency and non-emergency surgeries, as well as other medical needs. Although most industrialized countries have well-developed systems for collecting blood, periodic shortages arise. Economists who have studied blood donor behaviour have focussed on three main questions: Who donates blood? Why do they donate blood? Would appropriately-designed incentives (and, in particular, monetary incentives) increase the number of donors and promote more regular donations?

When one asks blood donors why it is that they donate, most will answer "To help others" (Boe & Hemphill (1974), Glynn et al. (2003), Oswalt & Napoliello (1974)). Consequently, if it is generally assumed that the set of potential donors consists of altruistic individuals, and one of the key questions that empirical researchers have focussed on is 'what are the reasons that might prevent altruistic individuals from donating blood?' Orborne & Bradley (1975), Oswalt & Napoliello (1974), and Shahshahani *et al.* (2006) all highlight the importance of altruism as a motivation for giving, and draw attention to a number of factors (such as fear of needles, or medical ineligibility) that explain why many potential donors do not in fact regularly give blood.

However, there is good reason to believe that the decision to donate blood is not fully explained by feelings of altruism, or that - at the margin - factors other than altruism may be at play. One of

the important facts about blood is that it has different types: A negative (A^-) blood is useful to individuals with blood of type A and AB, but not to individuals of any other type. The frequency of different blood types also varies in the community: types B negative (B^-) and AB are rare, whereas A positive (A^+) and O positive (O^+) are abundant (Burnett (1981)). Consequently, if altruism is the key motivation (at the margin), then individuals whose blood is most likely to be useful to those in need should be more likely to donate. Strikingly, however, Nonis et al. (1996) found that individuals with the rare blood type AB^+ - who are able to use blood from all donors, but whose blood is only useful to other individuals with the blood type AB^+ - were *more* likely to donate blood than were individuals with the blood type O^+, which can be used by individuals with $O^+, A^+, B^+$and AB^+ blood. Similarly, Wildman & Hollingsworth (2009), using data from the Australian Red Cross, found that individuals with O^- blood - that is, universal donors whose blood can be used by any individual requiring a blood transfusion - are not more likely to donate than individuals with other blood types.

Whereas most of the existing research is empirical, there are a few theoretical models of donor decision-making. Stewart (1992) finds that financial incentives may increase the blood supply in the short run because it will increase the utility of those who want to sell blood and encourage them to increase their donation. However, in the long run, the number of individuals who actually follow the social norm of giving blood may decrease and the total blood supply may consequently fall. Janssen & Mendys (2001) also highlight the role of social norms. Introducing a financial reward is shown to increase the amount of blood donated by egoists but to reduce the utility of altruistic donors. As the proportion of egoistic donors increases, this 'crowds out' - and may in fact destroy - the social norm. In the long run, the introduction of a financial incentive may

lead to a fall in the supply of blood; withdrawing the financial incentive may not restore, or may restore only with long delay, the status-quo.

Whereas social norms would certainly seem to be an important factor in explaining donor behavior, there is reason to believe that this is not the only consideration. Another possible motive, empirically investigated by Wildman and Hollingsworth (2009), is the 'insurance' motive: individuals requiring blood transfusions need blood (of a particular type**),** and no other good can be accepted as a substitute. Consequently, the only way to insure against the need for a blood transfusion is for an adequate number of individuals to donate blood to the blood bank. Indirect evidence of the importance of the insurance motive is found in the fact that significant numbers of donors step forward when authorities announce that there is a blood shortage. Apparently, the concern about the possibility that one might have an accident, and not receive a blood transfusion, motivates a number of people to make a donation**.** Direct evidence found is when blood donors responded that they gave blood because they might also require blood (Bednall & Bove (2011), Otto & Bolle (2011)). Additional indirect evidence is found in the literature which examines the response of potential donors to the offer of a blood credit :- individuals are more willing to donate blood in return for blood credits. That is, the certainty that blood will be available to them were they, or a close family member, to require a transfusion (Oswalt (1977), Burnett(1981), Nonis *et al*.(1996), Marantidou *et al*., (2007), Sanchez *et al*. (2001), Glynn et al. (2003)).

This paper develops a theoretical model to contribute to our understanding of donor behaviour. The approach taken builds on models of the voluntary provision of public goods, while taking account of the fact that blood is actually a private good - that is, it is both rivalrous and excludable and yet the institutional framework treats it as a public good. The model highlights the 'insurance'

motive for blood donations. It also shows how donor decisions are influenced by the existing stock of blood available to individuals with a given blood type, as well as examing the way in which donor decisions are influenced by their blood type. Finally, it models the consequences of voluntary screening regimes that are designed to protect the quality of the blood supply, and examines whether they are likely to be successful in discouraging individuals with low-quality blood from making donations.

1.2 The Model

In this paper I study the blood donation decision in a highly-simplified two period model. To capture the fact that, in reality, there is no substitutability between blood and other goods, I assume that utility depends exclusively on the amount of blood available to the individual in each period. In effect, therefore, I assume additive separability between other consumption goods and blood[1]. I assume that individual i is characterized by an endowment of $B_{t,i}^G$ units of blood in period t, and blood type, G, where $G \in \{1, 2, 3\}$. The units of the endowment of blood $B_{t,i}^G$ is the same for all blood types. I denote the total number of individuals with blood type G by N_G. Blood types are 'structured' in the sense that blood given by a donor of type $G = 1$ can be used by recipients of blood types $G = 1, 2$ or 3 - that is, donors of type 1 are universal donors, whereas the blood of a donor of type $G = 2$ can be used only by recipients of type $G = 2$ or 3, and the blood of donors of type $G = 3$ can only be used by recipients of type $G = 3$, that is, these individuals are universal recipients.

The individual's lifetime utility depends on the amount of blood available to them in periods t and $t + 1$. In period t, the individual decides whether to donate blood in the amount $b_{t,i}$. The

[1] Even though donating blood may require individuals to take time out of the work day, arrangements are often made for workers to donate blood over their lunch hour, and many employers allow blood donors to use paid work hours for donating blood (see for example Marantidou *et al*., 2007).

amount of blood this individual has after donating $b_{t,i}^G$ amount of blood is therefore $B_{t,i}^G - b_{t,i}^G$. In period $t+1$, there is a probability γ that individual i will have a catastrophic accident, and will require a blood transfusion. The minimum amount of blood this individual requires to survive is $\underline{b}$ and the total amount of blood that will be available to this individual is $d_{t+1,i}^G$. Observe that there is no aggregate uncertainty regarding the amount of blood that needs to be banked in period t to ensure that there is blood available to all those who suffer a catastrophic accident in period $t+1$. It is assumed that blood must be banked in period t and that the total supply of blood will be divided equally or, if there will not be enough blood to satisfy the needs of all those who suffer a catastrophic accident, that the available blood will be distributed on a first-come, first-serve basis, giving $\underline{b}$ units to all who receive blood. I denote by Π_t^G the probability that an individual of blood type G does not receive a transfusion. If an individual suffers a catastrophic accident, but does not receive a transfusion, then this individual dies, obtaining payoff $\underline{U}$. It is assumed that $\underline{U} < 0$, and the utility function is strictly quasi-concave.

Given the structure of the model, the only decision that must be taken by individuals is how much blood to donate. The problem facing individual i can therefore be expressed as:

$$\begin{aligned}
\underset{b_{t,i}^G}{MaxEU_{t,i}^G} &= U\left(B_{t,i}^G - b_{t,i}^G\right) + (1-\gamma)\, U\left(B_{t+1,i}^G\right) \\
&\quad +\gamma\left[\Pi_t^G \underline{U} \;+\; \left(1-\Pi_t^G\right) U\left(d_{t+1,i}^G\right)\right] \\
\text{subject to} \quad d_{t+1,i}^G &= \max\left\{\sum_{g=1}^{G}\sum_{i=1}^{N_g} \frac{b_{t,i}^g}{\gamma \sum_{a=g}^{3} N_a}, \underline{b}\right\} \\
\Pi_t^G &= \max\left\{1 - \frac{1}{\underline{b}}\sum_{g=1}^{G}\sum_{i=1}^{N_g} \frac{b_{t,i}^g}{\gamma \sum_{a=g}^{3} N_a}, 0\right\}
\end{aligned}$$

Notice that $d_{t+1,i}^G$ which describes the amount of blood available to a transfusion recipient

of blood type G: will be the greater of the minimum amount required, $\underline{b}$, or an equal per capita share of the total supply of blood for recipients of type G. It should be observed that $d^3_{t+1,i} \geq d^2_{t+1,i} \geq d^1_{t+1,i}$.The probability of being refused a transfusion, Π^G_t, is determined endogenously as a function of the blood donation decisions taken in the previous period.

I assume that individuals are strategic in determining how much blood to donate. Each citizen takes their blood donation decision, taking as given the donation decisions of their citizens. In analysing the Nash equilibrium of the blood donation game, however, it is important to distinguish between three mutually-exclusive cases: (i) where there is enough blood to meet the transfusion needs of all blood groups; (ii) where there is insufficient blood to meet the transfusion needs of all blood groups; and (iii) where there is insufficient blood to meet the transfusion needs of universal donors, but there is sufficient blood to meet the transfusion needs of universal recipients (and, possibly, type 2 donors). We study each case in turn.

When there is 'enough blood' for all types $\left(\Pi^G_t > 0\right)$, it must be true that for all donors i of type G,

$$b^G_{t,i} : U'\left(B^G_{t,i} - b^G_{t,i}\right)(-1) + \gamma U'\left(d^G_{t+1,i}\right)\frac{1}{\gamma \sum_{g=G}^{3} N_g} = 0, \forall i, G$$

These first order conditions are usefully expressed as:

$$b^1_{t,i} \quad : \quad \frac{U'\left(B^1_{t,i} - b^1_{t,i}\right)}{U'\left(d^1_{t+1,i}\right)} = \frac{1}{(N_1 + N_2 + N_3)} \tag{1.1}$$

$$b^2_{t,i} \quad : \quad \frac{U'\left(B^2_{t,i} - b^2_{t,i}\right)}{U'\left(d^2_{t+1,i}\right)} = \frac{1}{(N_2 + N_3)} \tag{1.2}$$

$$b^3_{t,i} \quad : \quad \frac{U'\left(B^3_{t,i} - b^3_{t,i}\right)}{U'\left(d^3_{t+1,i}\right)} = \frac{1}{N_3} \tag{1.3}$$

Comparing (1.1)-(1.3), it is evident that the marginal rates of substitution differ across blood-types

but given that the higher the value of the denominator of the left hand side equation, the higher the value of the denominator on the right hand side equation and vice-versa, we cannot ascertain who donates more and who donates less. It is only evident that the universal donors are worse off than are universal recipients and thus may be less likely to donate. Notice also that the Nash equilibrium is clearly inefficient: ideally, consumption of blood should be smoothed between period t and period $t+1$ when there is an accident. At the Nash equilibrium, however, blood levels after an accident are always lower than in period t. Observe that these conditions also imply that $EU^1 < EU^2 < EU^3$, that is, it is better to be a universal recipient than a universal donor.

The second case arises when there is a positive probability, for individuals of every blood type, that a transfusion will not be available when needed. In this case, $\Pi_t^G > 0$ and $d_{t+1,i}^G = \underline{b}$. It is then straightforward to verify that the first-order conditions may be expressed as:

$$b_{t,i}^1 \quad : \quad \frac{U'\left(B_{t,i}^1 - b_{t,i}^1\right)}{\left[U\left(d_{t+1,i}^1\right) - \underline{U}\right]} = \frac{1}{\underline{b}\left(N_1 + N_2 + N_3\right)} \tag{1.4}$$

$$b_{t,i}^2 \quad : \quad \frac{U'\left(B_{t,i}^2 - b_{t,i}^2\right)}{\left[U\left(d_{t+1,i}^2\right) - \underline{U}\right]} = \frac{1}{\underline{b}\left(N_2 + N_3\right)} \tag{1.5}$$

$$b_{t,i}^3 \quad : \quad \frac{U'\left(B_{t,i}^3 - b_{t,i}^3\right)}{\left[U\left(d_{t+1,i}^3\right) - \underline{U}\right]} = \frac{1}{\underline{b}N_3} \tag{1.6}$$

Notice that an interior solution to (1.4)-(1.6) can exist only if $\underline{U} < -\infty$: otherwise, all participants would donate the maximum amount of blood that would allow them to remain alive in period t. In what follows, I therefore suppose that dying is not an infinitely bad outcome. Observe that, because $0 > \underline{U}$, the denominator on the left-hand side is always positive. Although the marginal rate of substitution, for individuals of all blood types may be different in this case than when there is enough blood for everyone in need, I cannot conclude that blood donations will be strictly

higher, given that the denominator in the expressions above may be larger or smaller than in the earlier case. In the appendix A, we include the first-order conditions for the intermediate cases, i.e., where a subset of blood groups faces a positive probability of not receiving a transfusion when one is needed.

Just as in the voluntary contributions literature, individuals are utility maximisers and so long as death is really really bad, in the event of needing blood, a contributor will prefer to get blood in order to survive. But since blood has to be donated in advance before it can be transfused, it is highly likely that the one who needs blood will have to receive someone else's blood. The total amount of blood available is not shared by the entire population but only those who need blood to survive. Thus, the benefits contributors derive from contributing is always positive leading to the solution concept that some individuals will definetely contribute towards the provision of blood.

Theorem 1 *The strategy profile* $\left(b_i^G\right)$ *is a Nash Equilibrium of the game.*

It is therefore necessary to check for the existence of Nash equilibrium (John Forbes Nash, 1950) to ensure that the theory is capable of predicting a definite outcome. Consider the strategy set for each individual i with blood group $G \in \{1,2,3\}$, $S_i^G = \left[0, B_i^G - b_i^G\right]\ \forall i \in N$ where $N = \sum_{j=1}^{3} N_j$ and individual $-i$ also has a blood group $g \in \{1,2,3\}$. The time variable t has been surpressed for simplicity so that $b_i^G \in S_i^G$. Clearly, the action set is non-empty, convex and compact of the Euclidean space $\mathbb{R}$. Similarly the payoff function $EU_i^G\left(b_i^G, b_{-i}^g\right)$ is concave in b_i^G (see appendix A) and also continuous in b_i^G and b_{-i}^g since there are no values of b_i^G and b_{-i}^g which make the payoff function undefined. By definition, the set of strategy profiles of the game $S = \prod_{i \in N} S_i^G$is compact, convex and non-empty. Consequently, the best response func-

tion $R\left(b_{-i}^{g}\right) = \underset{b_i^G \in S_i^G}{\arg\max} EU_i^G\left(b_i^G, b_{-i}^{g}\right)$ must be convex, non-empty and closed-valued function and by Weistrass theorem, $R\left(b_i^G\right)$ is non-empty. I therefore conclude that a pure strategy Nash equilibrium exists in this model.^{G}

Theorem 2 *The strategy profile* $\left(b_i^{G^*}, d^{G^*}\right)$ *is the unique Nash Equilibrium of the subgame.*

The existence of a Nash equilibrium imply that the best response function $R\left(b_i^G\right)$ has a fixed point. Given an aggregative game $\left(U_i\left(\cdot\right),\ S_i^G\right)_{i\in I}$ of individual i with blood group $G \in \{1,2,3\}$ and I number of active players , if $\left(b_i^{G^*}, d^{G^*}\right)_{i\in I}$where $d^{G^*} = \sum_{i=1}^{I}\sum_{g=1}^{G} b_i^g$ is a subgame Nash equilibrium, then $\forall i \in I,\ U_i\left(b_i^{G^*}, d^{G^*}\right) \geq U_i\left(b_i^{G^*}, d^{G^*} - b_i^{G^*} + \widehat{b_i^G}\right)$ $\forall \widehat{b_i^G} \in S$. By the first order condition, $\frac{\partial U_i^G\left(b_i^{G^*}, d^{G^*}\right)}{\partial b_i^G} + \frac{\partial U_i^G\left(b_i^{G^*}, d^{G^*}\right)}{\partial d_i^G} = 0$. Given an allocation $\left(\widehat{b_i^G},\ \widehat{d^G}\right)$, if the strict concavity assumption of the payoff fuction holds, the best response function $R\left(\widehat{b_i^G},\ \widehat{d^G}\right) = \frac{\partial U_i^G\left(\widehat{b_i^G}, \widehat{d^G}\right)}{\partial \widehat{b_i^G}} + \frac{\partial U_i^G\left(\widehat{b_i^G}, \widehat{d^G}\right)}{\partial \widehat{d^G}}$ will be strictly decreasing in $\widehat{b_i^G}$ and $\widehat{d^G}$. This consequently induces the strategic substitution condition so that $\frac{\partial^2 U_i^G\left(\widehat{b_i^G}, \widehat{d^G}\right)}{\partial\left(\widehat{d^G}\right)^2} < 0$.In this case the case, the best response function will be downward slopping in the sense that it will be decreasing in the strategies of the other players. Thus, under strict concavity assumption, there is a unique subgame Nash equilibrium so that there is no better strategy to play than thesubgame Nash equilibrium strategy $\left(b_i^{G^*}, d^{G^*}\right)$ (Corchón, 1994)

1.2.1 Efficient Blood Donation Decisions

Before proceeding to study the Nash equilibrium outcome in greater detail, it is useful to characterize the first-best outcome. In this setting, where all individuals - regardless of blood type - have the same blood supply in periods $t, t+1$, and face the same probability γ of suffering a catastrophic accident, the appropriate benchmark is the Utilitarian solution[2]. The

[2] There exist Pareto efficient outcomes which differ from the Utilitarian outcome. They involve redistribution of blood

total amount of blood available to an individual of blood type G is $d_{t+1}^G = \sum_{g=1}^{G} \frac{N_g b_t^g}{\gamma \sum_{a=g}^{3} N_a}$ but the Utilitarian will actually allocate $D_{t+1}^G \leq d_{t+1}^G$ amount of blood to any individual in the event that blood transfusion is required. Expected utility of an individual can now be expressed as

$$EU_{t,i}^G = U\left(B_{t,i}^G - b_{t,i}^G\right) + (1-\gamma)\left(UB_{t+1,i}^G\right) + \gamma U\left(D_{t+1,i}^G\right)$$

To find the Utilitarian solution we must solve:

$$\underset{b_t^1, b_t^2, b_t^3}{Max}\ N_1 EU_t^1 + N_2 EU_t^2 + N_3 EU_t^3$$

subject to

$$\begin{aligned} D_{t+1}^1 &\leq d_{t+1}^1 \\ D_{t+1}^2 &\leq d_{t+1}^2 \\ D_{t+1}^3 &\leq d_{t+1}^3 \\ \gamma N_1 D_{t+1}^1 + \gamma N_2 D_{t+1}^2 + \gamma N_3 D_{t+1}^3 &= N_1 b_t^1 + N_2 b_t^2 + N_3 b_t^3 \end{aligned}$$

By construction, the Utilitarian solution is efficient. At the Utilitarian optimum, b_t^G equates the marginal cost of contributing for individuals of blood type G to their respective marginal benefit from an increased blood supplly. As would be expected, this implies that $U'\left(B_t^1 - b_t^1\right) = U'\left(B_t^2 - b_t^2\right) = U'\left(B_t^3 - b_t^3\right)$ so that the Utilitarian equalizes donations across blood types: $\{b_t^3\}^* = \{b_t^2\}^* = \{b_t^1\}^* = \frac{\gamma B_t}{1+\gamma}$. Therefore, unlike the Nash equilibruim outcome, individuals of all blood types obtain the same level of expected utility. Observe that individuals of every blood type are worse off at the Nash equilibrium outcome than at the Utilitarian outcome. However, since expected utility is increasing in G at the Nash equilibrium outcome, the loss in utility is smallest for universal recipients, and largest for universal donors.

across blood types, and make individuals with blood type 2 and 3 better off at the expense of individuals of blood type 1 (the universal donor) and 2. These outcomes seems to be of little interest.

1.2.2 Sensitivity Analysis: Nash Equilibrium Outcome

To understand how blood donors decisions may be affected by demographic changes, or changes in the minimum blood requirements of those needing a transfusion, it is illuminating to conduct sensitivity analysis of the Nash equilibrium outcome to changes in key parameters.

Proposition 3 *When $\Pi_t^G = 0$ for all types, a change in the number of universal donors N_1 decreases the amount of blood donated by type 1. The total supply of type 1 blood may increase or decrease when there is an increase in the number of universal donors.*

When the number of universal donor N_1 increases, this increases the tendency towards free-riding amongst universal donors, leading to a fall in the amount of blood donated by each universal donor. The change in the total supply of blood of type 1 is $b_t^1 + N_1 db_t^1/dN_1 = \left(b_t^1 \cdot \partial^2 EU_t^1/db_t^{1^2} - N_1 \partial^2 EU_t^1/db_t^1 \partial N_1\right)/\partial^2 EU_t^1/db_t^{1^2} \gtrless 0$. A sufficient condition for this expression to be negative is that the absolute value of the elasticity of $U'(d_{t+1})$ with respect to d_{t+1} is greater than 1; this can be interpreted as requiring that the elasticity of the marginal utility of blood in the event that you require a transfusion is less than -1. The fact that a universal donor decreases his donation when N_1 increases, is quiet surprising because unlike the public goods model where you expect to see free-riding when the number of contributors increase one will not expect the same with blood donation and especially universal donors who cannot take blood from any other blood type.

For individuals of type 2 and type 3, an increase in the number of universal donors also increases the tendency towards free-riding because there are now more blood donors. However, in the case of these other blood types there is a second, indirect effect, which works in the reverse direction. Specifically, the fact that donors of type 1 are now donating less blood on average tends to increase the amount of blood donated by donors of type 2. If the actual supply of type 1 blood

decreases as a result of an increase in the number of universal donors, then the average amount of blood donated by a type 2 donor will not decrease. The impact of an increase in the number of universal donors on the donation behaviour of the universal recipient is qualitatively similar to the impact on a type 2 donor.

Not surprisingly, the impact of a change in the number of type 2 or type 3 donors is also indeterminate. What is interesting is to note that - despite the fact that universal donors cannot use the blood of type 2 or type 3 donors - the amount of blood donated by type 1 donors is in fact impacted by changes in the number of blood claimants of these other blood types. It can be verified that $db_t^1/dN_2 < 0 (\ db_t^1/dN_3 < 0)$ if and only if the elasticity of the marginal utility of blood in the event that you require a transfusion is less than -1.

Proposition 4 *When $\Pi_t^G = 0$ for all blood types, an increase in the probability of needing blood, γ, increases the donation of universal donors . The amount of blood donated by individuals of type 2 or 3 may increase or decrease.*

Straightforward computations allow us to show that $db_t^1/d\gamma = -\left(\partial^2 EU^1/db_t^1\partial\gamma\right) / \left(\partial^2 EU^1/db_t^{1^2}\right)$ > 0: when the probability of needing blood increases, a universal donor increases his donation, as expected. A universal donor cannot use blood from any other type of donor, and so must donate more when the probability of future need for blood goes up. In contrast, for donors of types 2 and 3, there are both direct and indirect effects. Thus, although there is an increased need for future blood, the fact that universal donors are increasing their donations will tend to decrease the amount donated by types 2 and 3.

What is interesting is to compare the above comparative statics results with what happens when there is insufficient blood available to ensure that all those requiring a transfusion obtain blood.

Proposition 5 *When $\Pi_t^G > 0$, $db_t^G/dN_j < 0$ for all $j \geq G$, that is, an increase in the number of individuals who can use type G's blood will have a negative impact on the amount of blood donated by type G.*

It is straightforward to show that when there is insufficient blood to ensure the availability of a transfusion to all those who might require one, i.e., $\Pi_t^G > 0$,then

$$\frac{db^G}{dN_j} = \frac{\left[\frac{1}{\underline{b}\left(\sum_{k=G}^{3} N_k\right)^2}\left[U\left(d_{t+1}^G\right) - \underline{U}\right]\right]}{U''(B_t^G - b_t^G)} < 0.$$

Thus, when an individual is faced with a positive probability of not receiving a transfusion, the

individual reduces the amount of blood donated whenever there is an increase in the number of people who can use his blood, leading to a decrease in the available blood supply (and therefore an increase in the probability of not receiving a transfusion).

In contrast, when $\Pi_t^G > 0$, an increase in the probability of needing blood in the future, γ, has no impact on the amount of blood donated by individual of blood type G: if an individual who has blood type G is already faced with a positive probability that there will not be enough blood available to him, an increase in the likelihood of needing blood in the future does not change his donation behaviour. However, should a subset of blood types (for example, say, just the universal donor) face a positive likelihood of being denied a transfusion when one is required, an increase in γ will increase the amount of blood donated by those individuals who are not 'rationed' so long as these individuals cannot use the blood of any other blood type faced with a probability of getting blood for sure when needed. That is, if the individuals who are not 'rationed' can use the blood for only those individuals who are faced with a positive probability of not getting blood when needed, then and increase in γ will increase their donation but if apart from type G, they can use blood of other types faced with a zero probability of not getting blood when needed, then their

donation may increase or decrease.

Proposition 6 *If $\Pi_t^G > 0$, an increase in $\underline{b}$, the minimum amount of blood required for the survival of a transfusion recipient, will increase or decrease the amount of blood donated by individuals of this type.*

For simplicity, we present the expression only for the universal donor; the calculations for donors of type 2 and 3 are presented in the Appendix A. Observe that

$$\begin{aligned}
\frac{db_t^1}{d\underline{b}} &= -\frac{\frac{\partial^2 EU^1}{db_t^1 d\underline{b}}}{\frac{\partial^2 EU^1}{\left(db_t^1\right)^2}} \\
&= -\frac{\left[U\left(d_{t+1}^1\right) - \underline{U}\right]}{\underline{b}^2\left(N_1+N_2+N_3\right)U^{"}\left(B_t^1 - b_t^1\right)}\left[\in_{\left[U\left(d_{t+1}^1\right)-\underline{U}\right],d_{t+1}^1} -1\right] \\
&\gtrless 0.
\end{aligned}$$

If an individual who has blood type G is faced with a positive probability that there will not be enough blood available to him, an increase in the minimum amount of blood needed to survive may lead to a reduction or an increase - in the amount of blood donated by this individual. A sufficient condition for this individual to choose to donate more when the minimum amount of blood required to survive increases is that the absolute value of the elasticity of the value of survival with respect to a 1% increase in the amount of blood available is greater that 1. If in the event of requiring a blood transfusion, this elasticity is greater than 1, donation will increase but when this elasticity is less than 1, then individuals reduce their donation effort. That is, a (marginal) increase in the minimum requirement means that, in the event that you receive a transfusion, you receive only the bare minimum to survive. However, it is now less likely that you receive blood, which means that the expected marginal benefit of the donation is reduced. Consequently, since the costs of donating blood (in terms of lower quality of life in period t) do not change, the equation of marginal costs with marginal expected benefits leads to a fall in the

amount of blood donated.

One would expect a change in $\underline{b}$ to have same impact as a change in γ. The difference could stem from the fact that when γ increases and one is faced with a positive probability of not getting blood, it aggravates situation because probability of needing blood has increased and you may not even get the blood and if you should get it, you still get the minimum $\underline{b}$. But as for an increase in $\underline{b}$, if you should get blood, the amount transfused is higher which increases one's utility.

Overall, the results in this section point to important differences in donor behaviour in situations where there is an adequate supply of blood for transfusion recipients as compared to situations where there are blood shortages.

1.3 Screening Model

It is a fact that, in most countries, subsections of the population are directed to refrain from donating blood. For example, in Canada, anyone who lived in the United Kindom or France for at least three months between 1980 and 1996 is asked to refrain from donating to avoid contaminating the blood supply with Variant Creutzfeldt-Jakob disease (vCJD). Similarly, individuals who have visited a malarial-prone zone for more than six months and did not contract malaria, are requested to refrain from donating for three years after returning to Canada but if they did contract malaria, they are banned indefinetely. In this case, voluntary screening forms an integral aspect of the blood collection process. This becomes crucial especially for the period in which contracted diseases cannot be detected by the existing rigorous tests. I assume universal screening is prohibitively costly and so voluntary screening is implemented. Will it work? Will individuals who want to donate but are not eligible to do so respect the ineligibility conditions?

Consider a screening model which is an extension of the main model where an individual i who

has blood type G decides to donate $b^G_{t\theta,i}$ of blood with quality θ. Individual i knows the quality of his blood by knowing the activities heéshe has indulged in. Quality θ can be a high quality h or low quality l. There are $N_{G\theta}$ number of individuals with quality θ. The total amount of bad blood available to this individual is $L^G_{t,i}$ and $H^G_{t,i}$ is the total amount of good blood available. The total amount of blood available to him, $S^G_{t,i}$, is the sum of the bad blood and good blood. We assume that bad blood is tantamount to no blood.

The problem facing an individual can be stated as follows:

$$\begin{aligned} \underset{b^G_{t\theta,i}}{MaxEU^G_{t\theta,i}} &= U\left(B^G_{t\theta,i} - b^G_{t\theta,i}\right) + (1-\gamma)\, U\left(B^G_{(t+1)\theta,i}\right) \\ &\quad +\gamma\left[\Pi^G_t \underline{U} + \left(1-\Pi^G_t\right) U\left(d^G_{(t+1)\theta,i}\right)\right] \end{aligned}$$

subject to

$$\begin{aligned} d^G_{(t+1)\theta,i} &= \max\left\{\sum_{g=1}^{G}\sum_{\theta=l,h}\sum_{i=1}^{N_{g\theta}} \frac{b^g_{t\theta,i}}{\gamma\sum_{a=g}^{3} N_a}, \underline{b}\right\} \\ \Pi^G_t &= \max\left\{1 - \frac{1}{\underline{b}}\sum_{g=1}^{G}\sum_{i=1}^{N_{gh}} \frac{b^g_{th,i}}{\gamma\sum_{a=g}^{3} N_a}, \frac{\sum_{g=1}^{G}\sum_{i=1}^{N_{gl}} \frac{b^g_{tl,i}}{\gamma\sum_{a=g}^{3} N_a}}{\sum_{g=1}^{G}\sum_{\theta=l,h}\sum_{i=1}^{N_{g\theta}} \frac{b^g_{t\theta,i}}{\gamma\sum_{a=g}^{3} N_a}}\right\} \end{aligned}$$

This will imply that $L^G_{t,i} = \sum_{g=1}^{G}\sum_{i=1}^{N_{gL}} \frac{b^g_{tl,i}}{\gamma\sum_{a=g}^{3} N_a}$, $H^G_{t,i} = \sum_{g=1}^{G}\sum_{i=1}^{N_{gh}} \frac{b^g_{th,i}}{\gamma\sum_{a=g}^{3} N_a}$ and $S^G_{t,i} = \sum_{g=1}^{G}\sum_{\theta=l,h}\sum_{i=1}^{N_{g\theta}} \frac{b^g_{t\theta,i}}{\gamma\sum_{a=g}^{3} N_a}$ where $S^G_{t,i} = L^G_{t,i} + H^G_{t,i}$

Notice that in the screening model, dying does not depend on only the amount of blood available to you but also depends on the proportion of bad blood in total supply of blood. Since bad blood is tantamount to no blood, even when there is enough blood available to you, survival will depend on the proportion of the total blood that is bad, in this case, $\Pi^G_t = \frac{L^G_{t,i}}{S^G_{t,i}}$. On the otherhand, when this individual is faced with a probability of not getting blood, his survival will then depend only on the total amount of good blood available to him. That is, the probability

of dying will not only depend on the insufficient blood available but also on whether the blood available is of good quality or bad quality- in which case $\Pi_t^G = 1 - \frac{1}{\underline{b}} S_{t,i}^G \left(\frac{H_{t,i}^G}{S_{t,i}^G} \right) = 1 - \frac{1}{\underline{b}} H_{t,i}^G$. For simplicity, there are two cases used to analyse the Nash equilibrium: (i) where there is enough blood available to all the blood groups and (ii) where the blood available is insufficient to meet the blood required by all the blood groups.

The first case is when the blood is enough for all types, the first order condition for a donor i who has a blood type G and blood quality $\theta \in \{l, h\}$ is

$$\begin{aligned} U'\left(B_{th,i}^G - b_{th,i}^G\right) &= \frac{1}{\sum_{g=G}^3 N_g} \frac{L_{t,i}^G}{\left(S_{t,i}^G\right)^2} \left[U\left(d_{(t+1)h,i}^G\right) - \underline{U}\right] \\ &\quad + \frac{1}{\sum_{g=G}^3 N_g} \left(1 - \frac{L_{t,i}^G}{S_{t,i}^G}\right) U'\left(d_{(t+1)h,i}^G\right) \\ U'\left(B_{tl,i}^G - b_{tl,i}^G\right) &= \frac{1}{\sum_{g=G}^3 N_g} \frac{1}{S_{t,i}^G} \left(\frac{L_{t,i}^G}{S_{t,i}^G} - 1\right) \left[U\left(d_{(t+1)l,i}^G\right) - \underline{U}\right] \\ &\quad + \frac{1}{\sum_{g=G}^3 N_g} \left(1 - \frac{L_{t,i}^G}{S_{t,i}^G}\right) U'\left(d_{(t+1)l,i}^G\right) \end{aligned}$$

From the first order conditions, it is hard to tell which blood type is better off because the proportion of bad blood in the total amount of blood $\frac{L_t^G}{S_t^G}$ may differ across blood types $\left(0 \leq \frac{L_t^G}{S_t^G} \leq 1\right)$. The only condition under which $\frac{L_t^G}{S_t^G}$ will be same across blood types is when the amount donated by each group is 0 or when individuals with blood types 2 and 3 do not donate.

Proposition 7 *Voluntary screening will work when the elasticity of survival with respect to the total amount of blood available is less than* 1.

It is clear from the first order condition that individuals with good blood will donate since $L_t^G \leq S_t^G$ and so their marginal utility of future consumption is positive. But what of those individuals with bad blood? Will they respect the decision of not being eligible to donate? They

will do so so long as the value of the elasticity of their survival with respect to the amount of blood available to them is less than 1; which means that if the elasticity of the difference between utilities for life and death with respect to the total blood supply available to them is less than 1 then voluntary screening will be respected. But if this elasticity, which can also be interpreted as the marginal utility of blood in the event that you require a transfusion is greater than $1,$ then these individuals with bad blood will ignore the ineligibilty criteria in order to donate.

Remark 1 *If* $\Pi_t^G > 0$*, then there will be a corner solution with only high quality types donating.*

This is somewhat a suprising result since one may expect bad blood donation to increase when there is not enough blood available but this could be due to the strong assumption made in this model that bad blood is like no blood. The results indicate that when there is a positive probability of not getting blood when it is required, the probability of dying rests solely on the amount of good blood available. There is no need for bad blood to be donated since that will amount to death eventhough the total amount of blood supply is also increased.

Remark 2 *If* $\Pi_t^G = 0$*, then an increase in bad blood will reduce the amount of good blood when the proportion of bad blood donated is more than half of the total amount of blood donated and vice-versa.*

When there is enough blood available and we assume an interior solution so that the second order condition with respect to good blood holds then bad blood will crowd out good blood if the amount of bad blood is at least half of the total amount of blood donated. This can be interpreted as: there is too much bad blood donated as compared to good blood, so that if in the event that blood is required, it is highly possible to get bad blood which is just like getting no blood. Consequently, good blood donors are not motivated to donate.

On the otherhand, if individuals with bad blood choose to donate, which will only occur under the condition that the elasticity of survival with respect to S_t^G is greater than 1 then good blood will crowd out bad blood so long as the total amount of bad blood is less than the total amount of good blood. That is, if the amount of bad blood is not proportionately large compared to the total amount of good blood supplied, good blood will crowd out the supply of bad blood.

Voluntary screening forms an integral part of the donation process and blood collection centres rely on how truthful potential donors are to voluntarily screen themselves before giving blood. I try to model how voluntary screening can affect donation behaviour - if individuals who want to donate will respect the eligibility criteria. My findings suggest that individuals with bad blood will not respect voluntary screening if the elasticity of survival, which is the difference between utilities for living and dying with respect to the total amount of blood available to them is greater than 1. Another important result is that crowding out of good blood can occur when the number of donors with bad blood is higher than the good blood donors.

1.4 Lessons for Public Policy

If there are no problems with the quality of the blood supply, then all individuals should be encouraged to donate blood - universal donors should not be singled out. Results from the model in this paper indicate that although all donors are worse off in the Nash Equilibrium outcome, the worst off donors are the universal donors. On the other hand, the Utilitarian solution is the efficient solution with all individuals donating the same amount. Thus, messages should not single out universal donors and classify all other blood types into one group. For instances instead of the message that "we are in need of blood of all types especially O^-, it should be "we are in need of all blood types".

To discourage the donation of bad quality blood, there could be minimum donation requirements that will screen out ’bad’ donors. If it is possible, the minimum amount of blood should be set above the amount that is donated by bad blood donors to induce them to screen themselves out voluntarily.

Public service messages emphasizing the insurance element: Instead of ‘Give blood, give life’, perhaps should also add ‘Insure ourselves: give blood regularly’. Messages to donors usually draw attention to the fact that they are saving the lives of others who are the recipients of their blood, but they could also become recipients in the future. Donating regularly is also a way of insuring oneself against future need for blood. Results of this paper suggest that it is important to emphasize that donors are not exempted from blood transfusion, they may also need blood so that if they donate regularly, they reduce the probability of blood not been available to them.

Some donors have argued that blood credit will motivate individuals to donate (see for example Sanchez *et al.*, 2001; Glynn *et al.*, 2003) but the problem with having a priority list for donors is that it can also motivate individuals with bad blood to give blood. There are individuals who want to donate but because they know that certain activities of theirs like visiting a malaria prone zone have increase their probability of having bad blood, they choose not to donate. According to the Canadian Blood Services, Health Canada has not yet come out with any mechanism for testing malaria so the blood centres rely heavily on how truthful their donors will be concerning such background questions. Blood credits could well entice individuals who may be carrying malaria parasites to donate just to secure themselves. This will eventually lead to an increase in bad blood and results from the model show that when the proportion of bad blood becomes substantially large, there will crowding out of good blood. To avoid the complications that can arise from the

bood credit scheme is to give alternative choices to those who cannot donate blood.

On the contrary, Kessler & Roth (2011) found that if individuals who are on the waiting lists for organ transplants and have previously registered to be organ donors are given priority for these organs, this will increase registeration for donations. This proirity setting will not work with blood because it is a renewable resources. Since blood regenerates, it is easier to give it than to give an organ and so placing individuals on the priority list for blood will induce bad blood donors which can eventually crowd out good blood.

The impact of monetary rewards on motivating individuals to donate is mixed. Monetary incentives are generally found to have a positive impact on new donors and younger ones (Sanchez *et al*., 2001; Shi L., 2011). Mellström & Johannesson (2008) tested Titmuss's (1971) 'crowding out' hypothesis that introducing monetary incentive will reduce the supply of blood and found that donations of women were indeed reduced by almost a half while those of men were not. Similarly, a survey conducted by Lecetera & Macis (2010) on blood donors in Italy, found that most donors, particularly women, would stop donating if offered cash. Oswalt & Napoliello (1974) showed that incentives such as money will have no impact on 80% of both donors and nondonors. It is not surprising that monetary incentive have a larger impact on younger donors because they typically are less well off than older people. The fact that money is not a substitute for blood is one potential reason why monetary incentives do not affect all donors.

In fact, the negative side effect of monetary incentives is discussed in Bénabou & Tirole (2006) who argued that extrinsic incentives to encourage prosocial behaviour can 'crowd out' contributions of agents because signalling the motives for their good deeds become difficult. Thus, instead of introducing monetary incentives, an efficient public policy would have been to

require everyone to donate but since some people have bad blood, not everyone can donate. To attract only eligible donors, a reasonable public policy would be to make people understand the 'insurance motive' for donating. Donations matter because individuals are concern about future need and that is the reason why most donors will be motivated by blood credit.

If the donor base starts to shrink toward its critical point, it will better for policy makers to incur the cost of screening certain diseases like the vCJD. Of course, electronic record systems may simplify screening by making past results available. Not all the individuals who do not meet the ineligibility criteria have bad blood so testing their blood will be better than not including them at all if the donor base is to be widened. This is true especially with the fact that certain blood types may have wider donor base than others.

1.5 Conclusions

This paper contributes to the literature on the economics of blood donations. I propose another reason for donating blood which is the 'insurance' motive. Individuals donate blood to reduce the probability of not getting blood should they need it and blood is distributed to those requiring a transfusion on a first-come, first-served basis. I examine donor behavior using a voluntary contributions model that takes into account the blood type and the stock of blood available to him. However, whereas the voluntary contributions model is typically applied to public goods, blood is a private good: it is rivalrous and excludable, and therefore the fact that no one is excluded in practice is a policy choice.

At the the Nash equilibrium, I find that universal recipients are better off than are universal donors. Additionally, I show that when the probability of needing blood in the future increases, this will have no impact on donation behaviour if individuals are uncertain of receiving blood

should they require a transfusion. In contrast, they may donate more if they know that they will receive blood whenever they require it. Surprisingly, if the minimum transfusion level increases, and a potential donor is faced with uncertaintly about receiving blood should it be needed, the impact on the donation level is uncertain. I also study whether or not donors will comply with voluntary screening regimes. I show that compliance is most likely when bad blood is in short supply. However, when there is a large amount of bad blood in the blood bank, bad blood may crowd out good blood.

The model in this paper focuses on the two-period setting but donations are usually made over time. An interesting direction for future research would be to study how contributions change across different blood types in a dynamic setting. This so important because past donation behaviour can affect the decision to donate in future periods. Social and cultural networks may also be important to analyse in understanding donation decisions.

Chapter 2
Strategic Giving and Private Philanthropy

2.1 Introduction

More recently, anecdotal evidence found on philanthropy blogs and in specialised reports ("grey literature") suggests that donors – particularly wealthy donors - are becoming more overtly strategic in their philanthropic activities. For example, the *2008 Bank of America Study of High-Net-Worth Philanthropy* reports that wealthy givers increasingly consult professionals before making gifts. In explaining this phenomenon, Rooney argues that "people were thinking more, 'I'm giving these gifts. Let's be strategic about it"' (as cited in McLaughlin, 2008, n.p). Similarly, Chapman (2012) notes that:

> We know many of the City's most wealthy are very generous and make sizeable donations to causes about which they are passionate. Many go on to become full-time philanthropists, using the skills and knowledge that helped them accumulate their wealth to be effective and strategic in their giving (Chapman, 2012, n.p.).

The puzzle to researchers is to discern what, if anything, differentiates this allegedly 'new' approach to giving from the way in which individuals have traditionally taken philanthropic decisions. Traditional philanthropy has been explained by economists using two types of models- the public goods model and the private goods model. In the public goods model, what motivates individuals to give is because they care about the general level of the public goods being produced (pure altruism), contributions are substitutes for one another and so individuals can benefit from the public good without having to pay for it (free-rider problem) (Bergstrom, Blume & Varian, 1986). Different from the public goods model, is the private goods model in which individuals are motivated to give because they care about their personal contributions (Andreoni,

1998; 1990). This ‘warm glow’ feeling postulated by (Andreoni, 1988; 1990) alleviates the free-rider problem because contributions are no longer perfect substitutes to one another. Duncan (2004) developed a third model of philanthropy called the impact philanthropy model in which individuals are motivated to give because they want to "‘personally make a difference’". In this case, individuals gain utility from the changes their contributions make. Contributions are also related but contributors want to personally make the change so that contributions of others can reduce the utility of an individual. The motive of strategic giving behaviour is similar to that of an impact philanthropist which is to make an impact and thus, derive utility from the changes their contribution make. Additionally, both an impact philanthropist and a strategic giver will target contributions to fewer projects or programs to make the biggest impact with their contributions. What is different from an impact philanthropist is that the utility of a strategic giver who aims at accelarating the impact of contributions will not fall if others contribute to the production of the good in question. As long as contributions of others will help maximise the impact of total contributions, a strategic giver’s utility would rather increase instead of falling.

Interestingly, the purported shift towards a more strategic approach by individual donors is echoed at the corporate level. Although no formal empirical analysis has been undertaken to see whether there is a difference between strategic and traditional philanthropic practices at the level of individual donors, there is a small body of empirical work on how strategic philanthropy is changing corporate giving. Marx (1997) conducted a survey of corporate firms in the United States to determine the effect of strategic philanthropy programs on total contributions to United Way. He found that when firms become more strategic in their approach to philanthropy defined as giving to benefit the recipient as well as fulfilling business objectives, they give less to the United

Way. In another survey of 200 large corporate businesses in the United Kingdom, Brammer, Millington and Pavelin, (2006) found that strategic motivations, defined as how proactive these firms are, did play a substantial role in how they handle their philanthropic activities but did not influence the total amount donated.

In contrast, this paper focuses on individual strategic giving. This study is the first econometric analysis of individual strategic giving, and contributes to the broader empirical literature on philanthropy by trying to identify (implicitly) who the strategic givers are. This paper also investigates whether there is a meaningful difference between the philanthropic practices of donors who appear to be giving strategically versus non-strategically. Additionally, the paper investigates whether individual donors are in fact becoming more strategic over time.

The first hurdle to overcome is to determine what giving practices are characteristic of individual strategic giving as distinct from traditional philanthropy. To this end, I draw on the descriptions of strategic versus non-strategic giving that are disseminated on philanthropy blogs and by philanthropic advisors. Strategic givers are typically described as impact driven philanthropists who actively seek out ways to maximize the impact of their contributions. To achieve their objectives, they often consult professionals or philanthropic advisors, typically choose to concentrate their donations in only a few areas and become involved in the organisations they support financially by also contributing relevant skills or expertise (Putnam, 2006; Remmer 2011). This definition brings out three main features of strategic giving, namely, proactive (or planned) giving, concentrated giving and volunteering of expertise. Givers who are strategic are expected to exhibit these characteristics in their philanthropic activities.

I match these three characteristics of strategic giving with the responses available in three cross

sections of data 2004, 2007 and 2010 Canadian Surveys of Giving, Volunteering and Participation (CSGVP).[3] Although these surveys have no direct information on whether individuals donated strategically or whether they had any strategy towards their philanthropic gifts, I am able to rely on the responses to a few questions in order to proxy these main elements. The proxies are made possible because each cycle of the CSGVP has questions on planned behaviour which I use in lieu of the proactive behaviour. It also reports information on the amount donated to each area of charity which I use to investigate whether givers concentrated their giving in particular sectors. There is also information on whether or not givers volunteer, and the sectors in which they volunteered, which I use as a measure of the skills and expertise givers provide to the organisations to which they gave. The 2010 CSGVP is used to analyse whether strategic behaviour differs across quantiles of amount donated and the religiosity of givers. To investigate how strategic behaviour has changed over time, I rely on all three cycles of the CSGVP.

I begin by creating proxies for each of the three features of strategic behaviour -the propensities to exhibit planned behaviour, to target donations to particular sectors of charities and to get involved in these sectors that affect giving. These characteristics are combined together to define a "strategic" variable. I investigate how each of the characteristics of strategic behaviour affects giving and then investigate the likelihood that a giver is "strategic" and how this affects the giver's financial contributions. The analyses are carried out separately for giving to religious and secular organisations because the literature is clear that the motivations for giving to these two broad areas differ from each other (Brown & Ferris, 2007; Graddy & Wang, 2008; Hrung, 2004). While

[3] The analysis presented in this paper was conducted at the COOL RDC which is part of the Canadian Research Data Centre Network (CRDCN). The services and activities provided by the COOL RDC are made possible by the financial or in-kind support of the SSHRC- Social Sciences and Humanities. Research Council of Canada, the CIHR- Canadian Institutes of Health Research, the CFI- Canada Foundation for Innovation, Statistics Canada, Carleton University, the University of Ottawa and the Université du Québec en Outaouais. The views expressed in this paper do not necessarily represent the CRDCN's or that of its partners.

it might be expected that the scale and level of giving to secular organisations may be shaped by strategic giving, giving to religious organisations is more likely to be guided by religious beliefs (Shubin, 2001).

One difficulty in conducting the analysis is the potential for endogeneity: my "strategic" indicator variable may be correlated with the errors in the equation to be estimated. For instance, in as much as strategic behaviour can affect how much one donates, the size of total donations can also affect how strategically one may wish to give. I employ an instrumental variables approach in order to deal with this problem; the instruments include a measure of completed education at the individual level or at the census metropolitan area (CMA) in which the donor resides and information on past youth experiences.

Overall, I find evidence that some individuals behave strategically, and that a major determinant of strategic behaviour is the level of education. I also find that the proportion of individuals who have at least university education at the CMA level is a determinant of strategic behaviour. My findings suggest that on average strategic behaviour increases donations to secular organisations but does not affect donations to religious organisations. This may perhaps be due to the fact that religious giving is guided by different principles from secular giving. I also find that non-religious givers and individuals who give at least $500 have become increasingly strategic over the period 2004 to 2010 while the strategic behaviour of religious individuals and small givers has not changed across the years.

The rest of the paper is organised as follows: the next section introduces the concept of strategic philanthropy, section 2.3 presents the details of the data used, the determinants of strategic behaviour and the total amount donated. Section 2.4 presents the specification used for the model

of strategic behaviour and the total amount donated. I also discuss the problem of endogeneity and how it is solved. Estimation results are discussed in section 2.5. The conclusion follows in section 2.6.

2.2 Strategic Philanthropy

No theoretical model of individual strategic philanthropy clearly distinguishes between the 'new' sorts of giving practices described by philanthropic advisors as being reflective of strategic philanthropy, and the 'traditional' philanthropic behaviour that underlies standard models of individual giving. Nonetheless, a careful reading of the (grey) literature on strategic philanthropy allows a number of key traits to be identified. Strategic philanthropy implies that the donor clearly and explicitly articulates his/her philanthropic objectives before deciding how much, or to whom, to make a gift (Frumkin, 2006 p.n. 140; Putnam, 2006; Remmer, 2011). The donor's philanthropic objectives will include defining a 'theory of change' which will guide the donor in determining which sorts of programs to fund, what sorts of results are desired, and how contributions should be used to achieve those results.

Strategic behaviour involves research and planning about the charitable organisations that make an impact with their programs (Cole, 2008), consulting professionals (Frumkin, 2006 p.n. 141), meeting the staff or leaders of the organisations (Cole, 2008; Frumkin, 2006 p.n. 141), knowing what others have already done and meeting with the other funders of the program (Remmer, 2011). Strategic giving involves targeting contributions to a particular project, area or population instead of giving smaller amounts to a larger number of charities (Christensen, 2012; Putnam, 2006; Remmer, 2011). Lastly, strategic giving involves not only giving money but also leveraging the giver's networks (Putnam, 2006) and volunteering relevant skills or expertise that help achieve

intended results (Christensen, 2012; Putnam, 2006; Remmer, 2011).

A consequence of this approach is that donors are proactive in their philanthropic decisions, engaging in research and planning before they donate, concentrating their gifts on a smaller number of charitable organisations or areas of charitable activity and volunteering their time as well. Strategic givers seek to maximize the impact of their contributions: if donations are spread thinly over many organisations or areas of charity, a lower impact is achieved as compared to what is achieved when the donor targets contributions on fewer organisations or areas of charity. The sophisticated way donors are choosing to give to charitable organisations renders strategic philanthropy different from traditional philanthropy but similar to the emerging impact investing industry, which seeks to find ways to accelerate the financial return of investments (Jackson, 2013). Although there are no formal theoretical models of strategic philanthropy, Duncan (2004) has developed a theory of impact philanthropy which postulates that individuals give to make a difference. Note that whereas targeting contributions to make an impact is also a characteristic of a strategic philanthropist, contributions of others towards the good being produced will not reduce the utility of a strategic philanthropist, whereas it might in Duncan's model.

There are two papers which have sought to document the rise of strategic giving, but neither of them undertakes econometric analysis. The Lilly Family School of Philanthropy at the Indiana University and the United States Trust (2014) collaborated to undertake a survey of randomly-selected wealthy individuals. To be included in the survey, the respondents had to have a household income of above $200,000 or $1 million total net worth excluding the value of their house. Out of the total sample of 360 individuals that met the income requirements, 98% gave to charitable organisations. The survey revealed that most wealthy charitable donors had a strategy

and a budget for their giving. They typically focused their giving in a few areas of particular interest and volunteered their time as well. They were also more likely to consult professionals for philanthropic advice and evaluated the impacts of their gifts.

The Johnson Centre for Philanthropy at Grand Valley University, together with 21/64[4] (2013) conducted an online survey of 310 individuals and 30 personal interviews of next generation philanthropists aged 21 to 40 who come from families that give at least $250,000 per year to charities. The objective of the survey and interviews was to understand how they handle their philanthropic activities. It found that these next generation donors have a strategy for their philanthropic activities. Their philanthropic giving is partly influenced by family values but is also impact driven. Young philanthropists get involved in the organisations or causes to which they give in order to help achieve the impact they desire.

2.3 Data

I use data from the 2004, 2007 and 2010 cycles of the Canadian Survey of Giving, Volunteering and Participation (CSGVP). The 2010 CSGVP is used to analyse the key features of strategic behaviour, to investigate the factors that determine the propensity to be strategic and to look at how strategic behaviour affects the amounts that are donated. The sample weights provided by Statistics Canada are used for the regression analyses. I also used the weights to compute the various statistical means.

To investigate whether individuals are becoming increasingly strategic, the 2004, 2007 and 2010 cycles are pooled together. The CSGVP is a random-digit dialing survey of individuals who are 15 years or over and is representative of the Canadian population. The CSGVP is

[4] 21/64 is a non-profit consulting practice specializing in next generation and multigenerational engagement in philanthropy and family enterprise.

chosen because it has a wide range of questions about individuals' charitable behaviour. The survey includes questions about how individuals give, the answers to which can be used to discern whether a giver is proactive or reactive (or both) in their charitable giving. Additionally, respondents are asked to identify how many organisations they gave to, what those organisations do and how they arrived at their charitable giving decisions. The survey also includes questions regarding voluntary activity and about whether they regularly attend a place of worship which is used to capture individuals who are religious.

The CSGVP has information on 12 different types of charitable areas: culture and recreation, education and research, health, social services, environment, development and housing, law, advocacy and politics, philanthropic intermediaries and volunteerism, international, religion and business and professional associations and 'not elsewhere classified'. Donors are asked to indicate to what organisations they donated in the previous year. Based on what the organisations do, reported donations are grouped with respect to the twelve sectors of charitable activity. Also, information is provided regarding the total amount donated to each area. Information is not available regarding donations to individual charities, or the number of charities in each sector to which the individual donates.

The 2010 cycle contains the responses from 15,482 individuals of which 13,544 are givers. The 2007 cycle surveys 21,827 individuals of which 19,299 are givers while for 2004, out of 22,164 respondents, 19,495 individuals report that they are givers. The sample of non-givers was not included in the analysis because the questions related to strategic giving were asked only when the respondent made a financial donation. I also excluded residents of the Yukon and Northwest Territories leading to a loss of 964 givers for the 2010 wave, 959 for the 2007 wave and then

988 for the 2004 wave. Because of my focus on the importance of education, especially the completion of university degree, I eliminated givers younger than 25 years of age since they may not have completed university by age 24 – reducing the number of observations by 905 for the 2010 wave, 1,604 for the 2007 wave and 1,949 for the 2004 wave.

I also removed those individuals who gave only to unspecified charitable areas reducing observations by 21, 13 and 27 for the 2010, 2007 and 2004 waves respectively. Finally, I eliminated givers who reported zero household income: 30, 33 and 8 for the 2010, 2007 and 2004 waves respectively. After taking account of all missing information, the 2010 cycle used for the main analysis was comprised of 10,268 givers and the pooled dataset had a total of 39,990 givers. Table 2.1 presents a list of all variables names and their definitions used in these analyses. Table 2.2 presents the weighted descriptive statistics of the main variables of interest for each of the three waves of the CSGVP.

Table 3.3 also reports the weighted descriptive statistics of each variable from the 2010 CSGVP, by religiosity defined as whether a giver attends place of worship at least once a week or not, and by the quantile of the total amount donated to all organisations - “big” and “small” givers. Big givers are those in the top 25% of givers who made total donations of at least $525 in the 2010 CSGVP or a total of at least $440 in the pooled datasets. The small givers on the other hand are those in the lower 50% of givers who made total donations of at most $192 in the 2010 CSGVP and at most $159 in the pooled datasets.

All of the empirical analyses are estimated for different subpopulations using the 2010 CSGVP to tease out which subpopulations are more likely to be strategic in their donation behaviours. The 2010 is used because it is more recent. If individuals are becoming strategic, the more recent

datasets are more likely to capture this behaviour. For the subpopulations, I divided the sample into quantiles based on how religious the giver is and how much one gave in total contribution up to the median giver and those whose gifts are in the top 25% of total donations. Analyses of strategic giving behaviour were carried out for each subsample separately.

The CSGVP does not directly ask whether an individual approaches their giving strategically. A critical challenge is therefore to find a way to identify potential strategic donors from the overall donor pool. As the key characteristics of strategic giving are that it is planned, concentrated and also often characterized by the additional contribution of skills and expertise, I construct three indicator variables – PLANNED, FOCUSSED, INVOLVED. I then construct an indicator variable – STRATEGIC that defines strategic behaviour by combining all three characteristics. In this case a giver is strategic if giving is planned, concentrated and the giver was also involved in the charitable area to which he/she donated the biggest share of his/her total contributions.

The variable PLANNED captures differences in the extent to which individuals plan their giving, and is based on the responses to two questions: (1) in the past 12 months, did you make a charitable donation by approaching the charitable or non-profit organization on your own? (2) Do you decide in advance the total amount of money you will like to donate to charitable organization annually? The planned variable is an indicator variable that takes the value 1 if a giver responded 'yes' to at least one of these two questions, otherwise zero. Notice that it is possible, and in fact likely, that an individual who plans his or her giving also gives some money in an unplanned way. For example, an individual who gives large amounts to heart research may also make a small unplanned gift because they were asked to do so by a door-to-door canvasser.

To define the variable FOCUSSED, which captures the extent to which individuals concentrate

their gifts, I adapt the approach introduced by Andreoni, Brown & Rischall, (2003) and use the Herfindahl-Hirschman Index (HHI_{GIVE}) of the concentration of giving. The index of concentration is defined as:

$$HHI_{GIVE} = \sum_{1}^{10} C_A^2 \tag{2.1}$$

where C_A is the share of total contributions donated by an individual to charitable area A or the amount a donor donates to area A divided by the total contributions made by this individual. I exclude from the concentration index any gifts to unclassified areas of charities. Religious gifts are excluded from the index so that A varies in value from 1 to 10. This is done purposely to investigate how concentrated givers are when giving to secular organisations and also to help separate behaviour of givers when they give to secular areas of charities from behaviour when they give to religious areas of charities. The maximum value for the concentration index is 1 when a donor puts all donations into one charitable area whereas if a donor spreads his or her donations evenly across all the different areas, the index will take its minimum value for this donor. Rather than directly using the Herfindahl-Hirschmann Index, the variable FOCUSSED is constructed as an indicator variable, which takes the value 1 if the HHI_{GIVE} is greater than 0.4, and zero otherwise.[5]

A problem that can arise with the FOCUSSED index is that givers who gave smaller amounts may be more concentrated than those who gave bigger amount simply because when they give such a small amount it is essentially inevitable that they give to one or at most two charitable areas. A way to deal with this problem is to carry out the analyses by two groups of givers:

[5] To define the range for the index that will categorise a giver as concentrated, I adapt the interpretation of the Herfindahl-Hirschman Index (HHI_{GIVE}) of the concentration of firms in markets where an index $\in$ (0.4, 0.7} is considered as oligopoly markets and an index greater than 0.7 is considered as monopoly market. I define any giver with a concentration index greater than 0.4 as a concentrated giver. Using only the monoply cut-off point leads to a very small sample for strategic behaviour which makes some of the analyses impossible to carry out according to Statistics Canada requirements

small givers and the big givers groups. The concentration given pattern for each group is shown in figures 2.1 and 2.2. Another limitation of the dataset is that it does not actually identify the amount given to specific organisations but merely the total amount given to a particular sector so I am not able to compute the concentration index based on the number of organisations donated to. However, given that there is information on how much was donated to each charitable area, I am able to compute the index for each individual based on this information.

The third characteristic of strategic givers is their personal involvement in causes which they support. Although the CGSVP does not provide information on whether an individual volunteered in the charitable organisations they gave to, it does report volunteering by areas of charity. I define INVOLVED as an indicator variable that takes the value 1 if an individual volunteered in the charitable area to which he/she gave the biggest share of his/her total contribution. This definition is appropriate given that strategic givers are impact driven and would rather engage in organisations to which they gave the largest contributions in order to help increase the impact of their contribution. Given that the data does not enable me to separate gifts to charitable areas that were planned from those that were unplanned, it is not appropriate to construct the INVOLVED variable based on all the charitable areas to which the respondent donated. For instance, a strategic giver who gives to a door-to-door canvasser is unlikely to get involved in the charitable organisation to which he/she donated to in an unplanned manner. To also avoid capturing individuals who volunteered only for religious organisations, I excluded this charitable area in the definition of the INVOLVED variable.

2.3.1 The SRATEGIC Variable

The approach I use to study strategic giving relies on an indicator variable of such

giving. The variable that captures strategic behaviour combines the three key features of planned, concentrated and involvement. I define an indicator variable STRATEGIC as taking on the value 1 if a giver possess the three key features defined as PLANNED, FOCUSSED and INVOLVED, and zero otherwise.

Table2.2 presents descriptive statistics covering the three key components of strategic behaviour over the years 2004, 2007 and 2010. One can see that the proportion of individuals who plan their giving has increased steadily from 26% to 28% and then to 29% and the differences across the years are significant at 1%. In contrast, although a substantial number of concentrated givers are found in every cycle (more than 80%), the proportion of those who concentrate their giving increased in 2007 but decreased in 2010 and this decrease is significant at the 1% level, whereas the difference in the proportion of concentrated givers between 2010 and 2004 is not significant. This may be attributable to the fact that givers gave smaller amounts on average to secular causes in 2007 than in 2010. It is noteworthy that a higher proportion (13%) of givers volunteered in the organisations to which they gave the largest share of their total contributions in 2010 as compared to (12%) in 2007. The positive difference between 2010 and 2007 is significant at 1% while there is no significance difference in 2010 and 2004. One can also see that the average number of strategic givers is small but this has increased across the years. The average number of individuals who are strategic is highest in 2010 at 4% as compared to 2007 with 3% strategic givers and 2004 with 3% strategic givers. In contrast, there is no significant difference between the average number of strategic givers in 2007 and 2004. The positive differences between 2010 and 2007 and between 2010 and 2004 are all significant at 1%.

Looking at Table 2.3, which presents a more detailed analysis of strategic behaviour in 2010 by

subpopulations, one can see that, on average, small givers have a lower proportion of givers who plan their gifts (20%) as compared to big givers (49%). Religiosity also matters: 40% of religious individuals plan their gifts whereas only 26% of non-religious individuals do so. In contrast – and not surprisingly - the small givers sample has the highest proportion of concentrated givers - 87% as compared to 78% for big givers. This can be explained by the fact that their total giving is so small that it is not possible to be spread between more than one beneficiary organization rather than being the result of an active choice to concentrate. But as shown in Figures 2.1 and 2.2, concentration decreases with the size of gifts among small givers when religious gifts and secular gifts are combined together while it increases with the size of gifts for only secular gifts. On the otherhand, concentration increases with the size of gifts among big givers regardless of whether it is only secular gifts or both religious and secular gifts combined. Big givers and religious individuals have the largest proportion of givers who volunteered in areas to which they made their largest contribution.

Notice also that amongst the small givers, only 2% have giving behaviour that is consistent with strategic giving whereas strategic behaviour is observed in 7% of the big givers. The religious group also has highest average number of strategic givers within their group – 5% in contrast with only 3% amongst for non-religious givers.

2.4 Econometric Models and Estimation

The empirical investigation of strategic philanthropy presents a number of econometric challenges. The first problem is to 'find' the strategic givers. This is challenging for two reasons: (i) data limitations, and (ii) strategic behaviour is a choice in the sense that it is not an immutable characteristic of a particular donor, and is therefore endogenous. The second problem is to

determine whether donors who behave strategically in fact give differently than donors who are not strategic. The first problem is resolved as described above with proxies to capture the three main characteristics of strategic behaviour. The second problem is resolved using instrumental variables.

To investigate the relationship between strategic behaviour and the total amount donated, I define two dependent variables: the total amount donated to religious organisations and the total amount donated to secular organisation. Due to the censored nature of donations, I employ the Tobit approach to estimate the relationship between each of the key components of strategic behaviour, the strategic behaviour itself and amount donated.

I define a latent variable for the natural logarithm of amount donated as:

$$D_i^* = \omega_j' G_{ji} + \alpha_j' X_i + \delta_j' E_i + \mu_{ji} \tag{2.2}$$

where i denotes giver $i, G \in \{PLANNED, FOCUSSED, INVOLVED, STRATEGIC\}$, subscript $j \in \{p, f, v, s\}$with j which captures the changing coefficients in equation 2.2, takes the letter p, f, v, s when G is $PLANNED, FOCUSSED, INVOLVED$ and $STRATEGIC$ respectively. Variable, X is a vector of k explanatory variables presented in Table 2.1 which includes the price of giving computed as 1 minus the marginal tax rate for each Canadian province. Vector X excludes the education variables. E_i is the highest education level of giver i and the error term $\mu_i|X, G, E$ is normally distributed with mean of 0 and variance σ^2. In this case, equation 2.2 actually represents four different sets of equations for each variable that G_i represents. Notice also that D_i^* denotes religious or secular giving so that, in total, eight sets of equations are estimated. The natural logarithm of the observed amount donated can be defined as:

$$D_i = \max\{0,\ D_i^*\} \tag{2.3}$$

Notice that equation 2.2 treats the $STRATEGIC$ variable as well as the three key components of the strategic variable as exogenous to the determination of how much to give. It is likely, however, that the propensity to give strategically is also influenced by how much one wants to donate. If a donor is considering making a substantial gift – for example, one that might meaningfully affect the capacity of the recipient organization to discharge its mission - then there is a natural incentive to give in a more sophisticated way in order to ensure that the gift has the maximum impact possible as compared to smaller gifts which are unlikely to substantively influence the work of the charity receiving the donation. This means that not only is strategic behaviour endogenously determined, but its key characteristics may be endogenously determined as well. Consequently, rather than estimating equation 2.2 directly, an instrumental variables (IV) estimation method should be employed.

An IV Tobit (IVTOBIT) estimation requires that instruments that identify strategic behaviour be found. Good instruments must be correlated with the endogenous variable (here, strategic giving behaviour) but not with any unobserved factors that affect how much is donated (the error term). While the first condition can be directly tested using the overall significance of the instrument(s), the second condition is not directly testable. The second condition can be explained intuitively and also by relying on the Sargan–Hansen or the Hansen J test of overidentification. In summary, the overidentification test show that there are enough instruments that are not correlated with the error term in the structural equation. The drawback with this test is that one needs more instruments than the number of endogenous variables to perform.

Note that givers cannot give strategically without having the necessary information to do so - requiring information on potential recipient organisations to determine what they do and their investment-giving opportunities, information on how to get involved or volunteer – in order to maximise the impact of their donations. It is evident that undertaking these activities of research and planning is easier for individuals with more education. Indeed, it is well-documented that education plays an important role when it comes to private philanthropy. For this reason, all the empirical works on charitable donations have included the givers' education level as an explanatory variable, directly affecting how much they give. However, Brown & Ferris, (2007) explain that education enlarges one's information set, and may perhaps affect how much one gives through social capital. Similarly, Andreoni, Brown & Rischall, (2003) found that education helps determine who should be the primary decision maker when it comes to charitable giving. They also found that spouses who are more educated are better at assessing to which charities money should be given.

These facts suggest that,the whole awareness story about social needs, the types of philanthropic institutions etc affect how individuals choose to give. Consequently, as an individual's education level increases, this will influence the likelihood of giving strategically which will, in turn, affect the amount given. Whereas it is well known that education is correlated with income, the effect of income on the amount given is netted out if income is controlled for in the giving equation. Thus, when it comes to strategic giving, the level of education can be an appropriate instrument for estimating strategic behaviour because it affects how much you give through strategic behaviour, and not directly by itself.

To investigate the hypothesis that a giver's level of education affects donations by promoting

strategic behaviour, I estimate an instrumental variable Tobit equation using the level of education as a determinant of strategic behaviour and then subsequently control for that same education level in the second stage. These analyses were carried out for all the subsamples under study and also for the tercile distribution of income for both givers and non-givers. Summary results reported in Tables B.12 to B.14 in the appendix B show that the level of education does not affect how much is donated to either religious or secular charities. This supports the argument that education affects how much individuals give through how they choose to give.

However, while higher education levels is positively correlated with the likelihood to give strategically for both the middle income and high income group, having at least a grade 9 certificate is all that is required to give strategically for individuals in the low income group. A possible explanation is that only 15% of givers in the low income group have some university education as compared to 30% and 49% in the middle and high income groups respectively. Another possible explanation is that the low income group has the highest number of religious individuals (23%), and they gave more than half (about 52%) of their total contributions to religious causes. In contrast, only18% of middle income givers, and 14% of high income givers, are religious givers and less than half (about 44% and 34% respectively) of their total gifts were to religious causes.

Having at least some university education is an appropriate instrument for strategic behaviour for all of the subgroups under investigation. As an alternative instrument to the individual's level of education, I also include the proportion of individuals with the different educational levels in the giver's census metropolitan area (CMA) as instruments instead of the actual level of education of the giver. The proportion of individuals with at least a university degree at the CMA area is

an appropriate instrument for strategic behaviour for all the subgroups. A drawback with this approach, however, is that the proportion of individuals in the CMA with at least a university degree cannot be used as an instrument for strategic behaviour if actual levels of education are also included in the equation for the determination of strategic behaviour: one or both education levels become irrelevant to be used as instruments. In this case, the education variable denotes either having at least a university degree or the proportion of individuals with at least a university degree at the CMA area. For planned giving behaviour, having at least a university degree is the appropriate instrument for all the subgroups except for the small givers group for whom having at least a high school certificate is the appropriate instrument. For getting involved, having at least a high school certificate is the appropriate instrument for all the subgroups.

Education is not the only variable which affects the scope of a donor's network. In particular, early experiences such as involvement in youth groups or teams, whether one was active in high school government, whether one went door-to-door to raise money for a cause or for an organisation and whether one's parents also volunteered all influence the social networks of donors (Apinunmahakul & Devlin, 2008), and may consequently influence the likelihood that they choose to give strategically. For example, an individual who has a strong social network will be more likely to be aware of pressing community needs, and wish to concentrate philanthropic giving to alleviate specific problems rather than distributing gifts more broadly. For additional instruments, I use the youth experiences of respondents in grade school or high school (such as having being active in high school government, belonging to a youth group etc.), available in the CSGVP and detailed in Table 2.1.

I use the instruments (education and youth experiences) to estimate the reduced form equation

for each giver i as follows:

$$G_{ji} = I\left\{\beta_j' X_i + \gamma_j' E_i + \varphi_j' Z_i + \varepsilon_{ji} \geq 0\right\} \tag{2.4}$$

where $I(.)$ is an indicator function and G_i is a binary variable that takes the value 1 if i gives strategically, plan his/her gifts, concentrate the gifts or the giver was involved in the charitable areas he/she gave the most contribution. Z_i is i's youth experiences and the error term ε_i is normally distributed with mean of 0 and variance 1. I then re-estimate equation 2.2 in a structural form as:

$$D_i^* = \theta_j' \widehat{G}_{ji} + \tau_j' X_i + \eta_{ji} \tag{2.5}$$

The highest level of education of a giver can be considered as an exogenous variable because the decision as to how much education to pursue has already been taken. Youth experiences are also treated as exogenous because they measure actions completed in the past which cannot be changed as a result of present decision-making. All the instruments used for the analyses are significant at either 1% or 5% level and only 4 out of the 32 Cragg-Donald F-statistics reported were close to 10; the rest were all greater than 10. Tests of overidentification which show that at least one of the instruments is valid and that it is correctly excluded from the structural equation are all supported and reported in the first stage regression tables. It must also be noted that when either the youth experiences or both education levels and youth experiences are used as instruments, conclusions from the analyses remain the same. To investigate how strategic giving behaviour and its key elements have evolved overtime, I add year dummies to the control variables, scale the total amount donated by the various consumer price indices for each province

and scale the sample weights by 3 for each year before estimating the equation 2.4.

As equations 2.2, 2.4 and 2.5 are non-linear, I employ a maximum likelihood estimation procedure. In particular, I employ the user-written command for the conditional mixture model (cmp) proposed by Roodman, (2011) that handles multivariate equations with different specifications. This approach is particularly useful for the two-stage estimation given that both the first and second stage regressions are non-linear (Wooldridge, 2010). The first stage regression which determines the factors that affect the propensity to plan giving, concentrate giving, being involved, or to be strategic, requires a probit estimation method and the second stage which determines the impact of these four characteristics on how much is actually donated employs a Tobit estimation method.

2.5 Results

2.5.1 Are individuals becoming increasingly strategic?

The results in Table 2.6 provide insight into how strategic behaviour has evolved from 2004 to 2010 for all subgroups.

2.5.1.1 Religious vs Non-Religious Givers

Strategic giving increased in 2010 for the non-religious individuals (1% significance level) but remained the same for the religious givers. An interesting thing to note here is that although the strategic behaviour of the religious givers remained unchanged even in the year 2010, their planned giving behaviour did increase in 2010. For the non-religious individuals, both planned giving behaviour and involvement in areas of charity they made their substantial gifts increased in 2010. Common to both groups is the fact that concentrated giving behaviour has remained

unchanged over time. Further estimation shows that for gifts above $500, strategic behaviour has increased progressively in 2007 and 2010 for non-religious individuals whereas it remains unchanged for religious individuals. In particular, for the non-religious group, giving in 2010 as compared to 2004 is associated with a 5.3 percentage point increase in the likelihood of being strategic (1% significance level) while giving in 2007 instead of 2004 is associated with an 4.5 percentage point increase in the likelihood of being strategic (10% significance level). In contrast, for the religious group, and even for gifts above $\$500$, the likelihood of engaging in strategic behaviour remains unchanged. Chow tests of structural change confirm that indeed strategic behaviour has evolved over time for the non-religious individuals.

2.5.1.2 Small Givers vs Big Givers

Comparing those who gave up to the median amount of total donations (small givers) to those who are in the top 25% of givers (big givers), one can see that strategic giving behaviour increased in 2010 for big givers (5% significance level) but remained the same over the years for small givers. Although planned giving behaviour for big givers was the same for every wave, their involvement and strategic giving behaviours was higher in 2010. Concentrated giving behaviour did not change, for either big or small givers, over this 6 year period. Further estimation shows, however, that for gifts above $500 (for the big givers) and $100 (for the small givers), strategic behaviour has increased progressively in 2007 and 2010 for the big givers whereas it is still unchanged for small givers. In particular, for big givers making gifts exceeding $\$500$, giving in 2010 rather than in 2004 is associated with a 3.4 percentage increase in the likelihood of being strategic (1% significance level) while giving in 2007 rather than in 2004 is associated with a 2.5 percentage points increase in the likelihood of being strategic (10% significance level). The Chow

tests of structural change also confirm that indeed strategic behaviour has evolved over time for the big givers.

Consequently, planned giving behaviour is necessary but not sufficient for strategic giving. These results also emphasize on how important volunteering is in the strategic giving process. These results suggest that concentrated giving has been a giving strategy from 2004 to 2010. The results also imply that while strategic giving behaviour of the small givers and religious individuals is more of a habit, this strategic giving behaviour increases with the size of gifts for the non-religious or the big givers. Given that strategic giving behaviour increased in 2010 for the non-religious and big givers, it becomes necessary to delve into the year 2010 to investigate the factors that affect the likelihood to be strategic and also to analyse how strategic giving behaviour and its key characteristics affect how much is donated. Results of the estimations follow in the next discussion.

2.5.2 The likelihood to plan giving, concentrate, get involved and to be strategic

This section discusses the first stage regression coefficients of the likelihoods to plan giving, to concentrate giving, to participate in sectors of charity givers gave their largest share of their total contribution and to be strategic for the different types of instruments used. One thing to note here is that similar estimation results are obtained when the actual level of education of the giver or the education levels at the CMA are used as instruments. Results obtained when using the CMA level instruments are reported in the appendix B. Due to the numerous regression estimations, selected results are reported while the remaining results are reported in the appendix B. Table 2.7 reports the average marginal effects of the factors that affect the likelihood to plan giving. Table 2.8 reports the average marginal effects of the factors that affect the likelihood to concentrate

giving. Table 2.9 reports the average marginal effects of the factors that affect the likelihood to get involved and Table 2.10 reports the average marginal effects of the factors that affect the likelihood to give strategically. These tables also report the necessary tests for good instruments. Cragg-Donald F-statistics and tests of over identification are also reported in the same tables.

Comparing the results from Tables 2.7,2.8 and 2.9, one can see that whereas the level of education and youth experiences that affect a giver's networks are positively correlated with the likelihood to plan giving and to get involved, higher levels of education and youth experiences are negatively correlated with the likelihood to concentrate giving. Notice also that a positive correlation between the level of education and the likelihood of getting involved is found for individuals who have a high school certificate, as well as for those who have completed additional formal education. This is consistent with the finding of Ingen & Dekker (2011) who found no significant difference between higher and lower levels of education in the decision to volunteer.

2.5.2.1 The Likelihood to Plan Giving

Religious vs Non-Religious Givers The results in Table 2.7 show that having at least a university degree and youth experiences increase the likelihood to plan giving. Similarly, the price of giving is negatively correlated with the likelihood to plan giving at 1% significance level for both groups. Notice that among non-religious individuals, household income does not influence their decision to plan giving. However, among religious givers, those with household income of at least $150,000 are less likely to plan their giving than those who have household income of less than $50,000. Gender, marital status, employment and household size do not matter for the decision to plan giving for both groups. Being an immigrant is positively correlated with the likelihood to plan giving at 5% significance level. For the religious group, age does not matter,

whereas it is positively correlated with the decision to plan giving for the non-religious group. Also, for the religious group, living in all other regions does not matter except for the Prairies; in this case, it is positively correlated with the decision to plan giving at 5% significance level. However, for the non-religious group, living in the Prairies and BC instead of Ontario does not matter whereas living in Quebec or the Atlantic regions rather than in Ontario is negatively associated with the decision to plan giving at 1% significance level. While the length of time one lives in the community is positively correlated with the likelihood that non-religious givers decide to plan their giving, it does not matter for religious givers.

Small vs Big Givers Comparing these two groups, results show that youth experiences increase the likelihood that both groups choose to plan their giving. While having at least a university degree increases the likelihood that big givers plan their giving, having at least a high school certificate is all that is required to plan giving for small givers. The price of giving is negatively correlated with the decision to plan giving for both groups at 1% significance level. Income does not matter for big givers but it is positively correlated with the likelihood to plan giving for small givers. In both groups, immigrants are more likely to plan their giving than are those who are Canadian born. Age, gender, marital status, employment, the size of the household and the length of time one resides in a community do not matter in the decision to plan giving for both groups. Province of residence does not matter for the religious group but for the non-religious group. However, it only matters if one lives in the Atlantic region which is associated with a negative correlation to plan giving at 10% significance level.

2.5.2.2 The likelihood to Concentrate Giving

Youth experiences which lead to the formation of networks and higher education levels reduce

the likelihood of concentrated giving for both. Consequently, those with larger networks and higher education levels who are more likely to have higher networks (Apinunmahakul & Devlin, 2008) spread their donations more than those with smaller networks.

Religious vs Non-Religious Givers For religious givers, having finished grade 8 positively influences the likelihood that they concentrate their giving while having at most a diploma is what makes the non-religious group more likely to concentrate their giving, both at the 5% significance level. The higher the price of giving, the more concentrated are non-religious givers, but the price of giving has no impact on the extent to which religious givers concentrate their giving. Household income, gender, marital status, household size, employment status and the length of time one resides in the community do not affect the decision to concentrate giving for either group. Age does not matter for religious givers but it is negatively correlated with the likelihood to concentrate giving for the non-religious group except for individuals from age 35 to 44 years; in this latter case, there is no significant difference between their giving and the choices made by those of 65 years and above.

There are some interesting regional variations. Religious individuals living in Quebec are 12.6 percentage point less likely to concentrate their giving than those who live in Ontario at 5% significance level while non-religious individuals who live in Quebec are 3.1 percentage points more likely than those who live in Ontario, to concentrate their giving, at 10% significance level. Residing in British Columbia does not matter to either group but living in the Atlantic region reduces by 3.5 percentage point, the likelihood that non-religious individuals concentrate their giving, at 5% significance level. Living in the Prairies matter for only the religious group, reducing by 5.9 percentage point the likelihood of concentrating giving, at 10% significance level.

Small vs Big Givers

The results in Table 2.8 show that having finished grade 8 is what makes big givers more likely to concentrate their giving but has no effect on the likelihood that small givers choose to concentrate their giving. Further investigation reveals that, those small givers who give at most $45 behave differently from those who give more than this amount. It is in fact the case that having finished grade 8 is positively associated with the likelihood to concentrate giving for those who gave more than $45, whereas it is negatively associated with the likelihood to concentrate giving for those who gave at most $45. Consequently, when small givers as a whole are considered, the effect of education level is found to have no effect.

The price of giving does not affect the likelihood of concentrating giving for small givers but it is positively correlated with the likelihood to concentrate giving for big givers. Household income does not matter to the decision to concentrate giving among big givers but small givers, with household income greater than $150,000 are more likely to concentrate their giving.

Immigrants in both groups are less likely to concentrate their giving than their Canadian counterparts (at the 1% and 5% significance levels, respectively). Age does not matter for big givers but among small givers, those who are from age 25 to 34 are more likely to concentrate their giving than those who are at least 65 years old. Gender, marital status, household size and employment do not influence the decision to concentrate giving for both groups. Province of residence and length of time one resides in the community do not matter for big givers but for the small givers, the length of time is positively correlated with the likelihood to concentrate giving, while living in Atlantic region instead of Ontario is negatively associated with the likelihood to concentrate giving.

2.5.2.3 The Likelihood to Get Involved

The results reported in Table 2.9 show that having at least a high school certificate is all that is required to influence the decision to participate in areas one has made substantial gifts for all the subgroups.

Religious vs Non-Religious Individuals

The price of giving, negatively affect the likelihood that non-religious givers get involved in areas of charity that they made substantial donations whereas it has no impact on this decision for religious individuals'. In both groups, only those in the highest income group with household income of $150,000 and above are more likely to get involved than are those whose household income is at most $50,000. Immigrants who are religious are less likely to get involved than are Canadian born religious individuals but there is no significant difference between non-religious immigrants and their Canadian-born counterparts. Age does not matter for the religious group but non-religious individuals from age 35 to 44 years are more likely to participate than are non-religious givers who are at least 65 years of age. Gender matters for the non-religious group but not for religious givers. In particular, non-religious males are less likely to get involved than are non-religious females. Marital status, employment, household size, province of residence and the length of time one resides in the community do not affect the likelihood of getting involved in areas where one has made substantial gifts.

Small vs Big Givers

The price of giving negatively affects the participation decision in giving areas for small givers while it does not affect this decision for big givers. Among small givers, only those whose

household income is at least $150,000 are more likely to get involved. Income does not affect the decision of big givers to participate in areas they made substantial gifts. Among small givers, immigrants are less likely to get involved at 1% significance level. Among big givers, immigrants are no different from their Canadian-born counterparts. Gender does not influence the decision to get involved for big givers, but being a male is negatively associated with the likelihood of getting involved in the small givers group. Age, marital status and employment do not affect the likelihood of choosing to get involved. Province of residence and how long one lives in the community do not matter for small givers. However for big givers, living in the Prairies instead of Ontario is negatively correlated with the decision to get involved at 10% significance level. Also, there is no significant difference between the other provinces and Ontario for both the big and small givers. Among the big givers, the length of time one resides in the community positively influences the likelihood to get involved at 10% significance level.

The fact that age, on average, has no impact on the likelihood of choosing to participate, is contrary to the findings of Ingen & Dekker (2011) and Apinunmahakul & Devlin (2008). The former authors found that age is positively correlated with the likelihood to volunteer while the latter found age to be negatively correlated with the likelihood to volunteer. The results can be interpreted as suggesting that, whereas age is positively or negatively correlated with volunteering, age is not important to the decision to volunteer when one considers charities to which one has made a substantial financial donation. Previous studies (e.g., Lee & Brudney, 2012; Mesch, Rooney, Steinberg & Denton, 2006) found that males are less likely to volunteer in formal organisations than females, but this is true in this study only for non-religious individuals and small givers. In contrast, for big givers and religious individuals, there is no gender difference

in the likelihood of choosing to get involved, which is consistent with Ingen & Dekker (2011). Like Mesch et al, (2006), the results here show that married people and singles do not differ with respect to the likelihood that they choose to volunteer.

2.5.2.4 The Likelihood of Choosing to be Strategic

Table 2.10 shows the average marginal effect of the different factors which affect the likelihood of choosing to give strategically, after controlling for the actual level of education and youth experiences. A major determinant of the propensity to be strategic is the highest level of education, and in particular having at least some university education. This is not surprising given that education and networks are major determinants of a giver's information sets. It must be noted here that results reported are similar to results obtained when the proportion of individuals with at least a university degree at the CMA level and youth experiences are controlled for – reported in Table B.25 of the appendix B.

Religious vs Non-Religious Individuals For both religious and non-religious individuals, having at least some university education and youth experiences is positively correlated with the likelihood of choosing to give strategically. In particular, for religious individuals this education level is associated with a 3.6 percentage point increase in the likelihood of being strategic (1% significance level) and a 1.8 percentage point increase for non-religious individuals (1% significance level). Among religious givers, being a member of high school government or have parents who volunteered while in grade school or high school is associated with a 3.4 percentage point increase in the likelihood of choosing to be strategic (1% significance level). For non-religious individuals, being a member of a youth group or have parents who volunteered while in grade school or high school leads to a 2.2 percentage point increase in the likelihood to

be strategic, at 5% significance level.

For the religious subsample, the only factor that matters to the decision to give strategically, apart from education and youth experiences, is employment status. No other factors have a statistically-significant influence on the likelihood of choosing to be strategic. Being religious and employed is associated with a 3.4 percentage point decrease in the propensity of being strategic. This result can perhaps be explained by the fact that those who are not in the labour force are mostly retired and have more experience in charitable giving, which in turn increases the likelihood that they will choose to give strategically.

Among non-religious givers, gender, marital status, household size, employment, province of residence, length of time one has lived in the community do not influence the likelihood of strategic giving. However, for this group, the price of giving is negatively correlated with the likelihood of choosing to give strategically at 1% significance level. Also, those with household income above $150,000 are 2.7 percentage points more likely to be strategic than those with household income of at most $50,000 at 1% significance level. A surprising outcome is the fact that being a non-religious immigrant is associated with a 1.7 percentage point increase in the likelihood of being strategic as compared to non-religious Canadian-born donors, at a 5% significance level. This is surprising given that immigrants are generally expected to have more limited networks and less information than are Canadian-born individuals. Age matters for non-religious individuals: those who are in the 35 to 44 age category instead of age 65 and above are 2.9 percentage points more likely to give strategically, at 1% significance level. Gender and marital status are both insignificant.

Small vs Big Givers Having at least some university education is associated with a 1 percentage

point increase in the likelihood of being strategic for small givers (5% significance level) and a 3.2 percentage point increase in the likelihood of being strategic for big givers (5% significance level). Youth experiences are positively correlated with the likelihood of being strategic for both groups. Among small givers, being a member of a youth group or having parents who volunteered while in grade school or high school leads to a 1.8 percentage point increase in the likelihood of being strategic at 5% significance level. Among big givers, those who went door-to-door to raise money for a cause or for an organisation during their grade or high school are 3 percentage point more likely to be strategic.

While the price of giving does not influence the likelihood that big givers give strategically, it makes the small givers less likely to give strategically at 1% significance level. Income does not influence the decision to be strategic for both groups. Immigrants in the big givers' group are 3.9 percentage point more likely to be strategic than their Canadian born counterparts. However, being an immigrant does not affect the likelihood to give strategically in the small givers' group. Age, gender, marital status, household size and employment do affect the likelihood to give strategically among the big givers. Similarly for the small givers, gender and marital status do not impact the propensity to be strategic. However, being in the 35 to 44 age category instead of age 65 and above is associated with a 1.8 percentage point increase in the likelihood of being strategic in the small givers group at 5% significance. Province of residence does not matter to the small givers in their decision to give strategically but for the big givers, residing in the Atlantic region instead of Ontario is associated with a 4 percentage point more likelihood to give strategically while residing in Quebec instead of Ontario leads to a 6 percentage point more likely to give strategically. The length of time a giver has lived in the community has different effects on the

propensity to give strategically among the two groups. While it is negatively correlated with the likelihood to give strategically for small givers, it is positively correlated with the decision to be strategic for big givers. For instance in the small givers group, having lived in the community for less than 5 years is associated with a 1.3 percentage point increase in the likelihood to give strategically at 1% significance level but leads to a 5 percentage point decrease in the likelihood to give strategically among the big givers. In the small givers subsample, those who have been resident in their community from 5 to 10 years as compared to those who have lived in the community for more than 10 years are 1.1 percentage point more likely to be strategic while there is no significant difference between those who lived in the community for less than 5 years or from 5 to 10 years among the big givers.

2.5.3 Strategic, Planned, Concentrated Giving Behaviours, Involvement and Amount Donated

Results reported in Tables 2.11, **??** and **??** are for the average partial effects of strategic behaviour and selected key characteristics on the amount donated to religious causes and non-religious causes. Results are reported for when each of the giving behaviours is treated as exogenous (Tobit estimation) and also when it is treated as endogenous (IVTOBIT estimation). Additional estimation results are detailed in the appendix B. The interpretation of the average partial effect of strategic behaviour and its key characteristics in this section is based on the actual amount donated instead of the log of donations that is reported in the tables for chapter 2, which works out to be $(e^{\beta} - 1)100\%$ (Yang, 2012) where β is the coefficient of the explanatory variable. Tables 2.11 and **??** report the average partial effects for the IVTOBIT estimations when having at least some university education and youth experiences are used as instruments for the religious and non-religious individuals and for small and big givers respectively. Table **??** reports the

average partial effects after controlling for the CMA level instruments and youth experiences for all the subgroups. In a nutshell, the estimation results suggest that the decision to give strategically is exogenous with respect to religious giving but endogenous with respect to secular gifts. These results also show that while strategic behaviour has no impact on religious gifts on average, it has a positive impact on secular gifts.

2.5.3.1 Religious vs Non-Religious Individuals

One can see from Table 2.11 that, for both religious and non-religious individuals, strategic behaviour has nothing to do with giving to religious causes even after accounting for the endogeneity problem, strategic giving behaviour has no impact on giving to religious causes for all the subsamples. One can also see that strategic behaviour increase giving to secular causes and this relationship is strengthened after taking account of endogeneity. The results show that, for religious individuals, giving strategically increases donations to secular causes by about 168% on average, increasing to about 783% after controlling for endogeneity. Similarly, for non-religious individuals, being strategic increases donations to secular causes by about 109% on average, and to about 413% after controlling for endogeneity. These results are all significant at the 1% significance level.

Looking at planned giving behaviour for each subsample, the results show that this behaviour is endogenous for the non-religious individuals but for the religious individuals, it is endogenous only when they give to secular causes and exogenous when giving to religious causes. In the exogenous model of planned giving, giving behaviour has a positive and significant impact for religious individuals but has no impact on the decisions of non-religious individuals; these results are reversed after controlling for the endogeneity of planned giving behaviour. Planned giving

behaviour has a positive impact on gifts to secular causes and this behaviour is a choice for both religious and non-religious individuals. The results also show that when giving to secular causes is planned, religious individuals increases their donation by about 58% on average, and by about 601% after controlling for endogeneity. Planned giving behaviour increases donations of non-religious individuals to secular causes by about 81% on average, and by about 405% after controlling for endogeneity. All results are significant at the 1% level.

The results also show that concentrated giving behaviour is on average an exogenous decision that is taken by both religious and non-religious givers. It becomes a choice only for the non-religious when they give to secular causes but this giving behaviour has no impact on secular giving. While this behaviour reduces donations to religious causes, it increases donations to secular causes for both groups. Looking at gifts to secular causes, being a concentrated giver increases donations by about 544% on average by religious individuals. This decreases to about 481% after controlling for endogeneity but is still positive and significant. For non-religious individuals, being a concentrated giver increases gifts to secular causes by about 41% on average but different from the religious individuals, it has no impact on secular gifts after controlling for endogeneity. All results are significant at the 1% level.

Getting involved in the charitable area which has claimed the largest share of a donor's financial contributions has no effect on gifts to religious causes but has a positive effect on how much is given to secular causes for both groups. Results show that for religious individuals, getting involved increases gifts to secular causes by about 80% on average, and by about 510% after controlling for endogeneity. Getting involved leads to an increase in secular giving by non-religious individuals by about 59% on average, and increases to about 317% after controlling

for endogeneity. All results are significant at the 1% level. These results imply that the impact of strategic behaviour on both religious and secular gifts is similar for both the religious and non-religious.

2.5.3.2 Small vs Big Givers

Table **??** reports the average partial effect of strategic behaviour on the amount donated to religious and secular causes by the small giver and big giver subpopulations. One can see that for small givers, being strategic decreases donations to religious causes, but has no impact after controlling for endogeneity. Similarly, for big givers, strategic giving behaviour has no impact on gifts to religious causes. In contrast, for secular gifts, strategic behaviour increases donations for both small and big givers and this behaviour is endogenously determined. However, the impact is higher for the big givers than the small givers even after controlling for the endogeneity of strategic giving behaviour. In particular, strategic behaviour increases donations to secular sectors by about 56%, and by about 194% after controlling for endogeneity for the small givers subsample. For big givers, being strategic increases donations to secular sectors by about 102%, and by about 280% after controlling for endogeneity. These results are all significant at the 1% level. Further analyses of the small givers group reveal that those who gave more than $45 are those driving the results in this group. Those who gave at least $45 do not choose to give strategically even to secular causes.

Looking at planned giving behaviour, this behaviour does not affect how much is donated even after one has controlled for endogeneity. However, planned giving behaviour increases secular gifts by small givers by about 36% on average, and by about 91% after controlling for endogeneity. Similarly for big givers, planned giving behaviour increases secular gifts by about 29%, and by about 693% after controlling for endogeneity. These results, all significant at the 1%

significance level, show that the impact of planned giving behaviour on secular giving is higher for the big givers than the small givers. The impact of concentration giving behaviour is somehow different across these two groups of givers. While it reduces the size of religious gifts by the small givers, it increases donations to religious sectors by the big givers. However, concentration giving behaviour makes both the small and big givers' give more to secular causes. For small givers, being a concentrated giver increases donations to secular causes by about 163% on average, which increases to about 184% after controlling for endogeneity, all at 1% significance level. For big giver group, being a concentrated giver increases donations to secular causes by about 138% on average, but only by about 79% after controlling for endogeneity. It also increases gifts to religious causes after controlling for endogeneity.

Giving of skills or expertise has no impact on donations to religious causes by the small givers but has a negative impact on religious giving by the big givers. The impact among the big givers disappears after controlling for endogeneity. However, involvement has a positive impact on gifts to secular causes. Notice that for small givers, this behaviour increases secular gifts by about 44% on average, and by about 247% after controlling for endogeneity. Also, for big givers, involvement increases secular gifts by about 62% on average and by about 216% after controlling for the endogeneity. All results are significant at the 1% significance level.

As a robustness check, Table **??** shows the results of IVTOBIT estimation method using the proportion of residents in the CMA at each education level rather than the actual level of education of the giver. The results using this alternative instrument are similar to the results obtained when the individual level of education is used as instruments. This shows that the results reported above are robust regardless of whether one uses actual level of givers' education as

instruments or the educational status at the CMA level as instruments.

To summarize, the estimation results indicate that strategic behaviour increases the amount donated to secular organisations. This is not surprising given that this behaviour is costly, and that strategic donors are concerned about the impact of their gifts. Results also show that the impact of strategic giving behaviour is bigger for the big givers than the small givers. The results also imply that if endogeneity is not accounted for, the impact of strategic behaviour on how much is donated to secular organisations will be underestimated, the sign of rho being negative and significant. The results also support the view of other researchers that religious gifts should be modelled differently from non-religious gifts (Brown & Ferris, 2007; Graddy & Wang, 2008; Hrung, 2004). Interestingly, the results show that the impact of strategic behaviour on how much is donated is not dependent on how religious givers are or on how frequently givers attend their place of worship but, rather, depend on whether the gift is going to religious causes or secular causes and also on the size of the gift.

2.6 Conclusions

Philanthropy professionals claim that charitable givers are becoming more strategic in their philanthropic activities but no one has investigated this anecdotal evidence empirically. To study this issue first requires a clear understanding of what strategic philanthropy entails as distinct from traditional philanthropic practices. Definitions of strategic giving gathered from philanthropic experts and advisors describe strategic giving to be different from the traditional philanthropic giving. Strategic giving is impact driven, is about giving proactively (or planning your gifts) and concentrating contributions to a limited number of charitable causes rather than spreading donations amongst a larger number of worthy organisations (Putnam, 2006; Remmer,

2011). Strategic behaviour also includes getting involved in the organisations to which one donates, in the expectation that this will help to maximise the impacts of contributions (Putnam, 2006; Remmer, 2011). Strategic behaviour in effect has three main features: proactive or planned giving, concentrated giving and involvement.

This is the first econometric investigation of individual strategic giving. Using the Canadian Survey for Giving, Volunteering and Participation (CSGVP), this study uncovers the differences between the giving behaviours of strategic and non-strategic givers, and identifies the factors that influence the likelihood that a donor will choose to give strategically. Having at least some university education and the strength of an individual's social network are major determinants of the likelihood of strategic behaviour. Consequently, education affects how much is donated through how one chooses to give. While income is positively correlated with the propensity to be strategic for non-religious givers and individuals who give at most $192, income did not matter for religious donors who give at least $525. An interesting but surprising result of this research is that non-religious immigrants and immigrant who make substantial donations are more likely to give strategically than the Canadian-born. The results also show that religious strategic giving behaviour is different from secular strategic giving behaviour (Shubin, 2001). However, strategic behaviour has a substantial positive impact on how much is donated to secular causes, even by religious individuals. These results also support the view of other researchers that religious gifts should be modelled differently from non-religious gifts (Brown & Ferris, 2007; Graddy & Wang, 2008; Hrung, 2004). Results from the regression analysis using the pooled datasets from the CSGVP cycles 2004, 2007 and 2010 show that the subgroup that support the claim that charitable givers have become increasingly strategic are the non-religious individuals or those who make

substantial gifts – the big givers.

Being the first empirical paper to analyse strategic giving at the individual level, I faced a lot of challenges, particularly with regards to the available data set. The survey data set used in this study does not report direct questions on strategic giving behaviour, hence I had to rely on proxies to define strategic behaviour and its key characteristics. Another problem I faced in this study is that of the endogeneity of strategic behaviour and its key features which had to be dealt with using instrumental variable approach. The level of education of the giver or the proportion of individuals with different education levels at the CMA areas and youth experiences are used as instruments for strategic and its key components.

The results are of interest to charitable organisations. Soliciting donations from big givers when they do not have time to plan ahead may increase their propensity to give but will generate smaller contributions than when they are able to plan. Charitable organisations need to set out their goals clearly and provide information about their work to help donors take proactive decisions when making their donations. The fewer the number of programs of a charitable organisation, the more likely they are to attract the numerous concentrated givers or the strategic givers who will give more generously and concentrate their donations to few number of programs or charitable areas to accelerate the impacts of their contributions. Attracting strategic givers will not only increase financial contributions but also non-financial contributions in terms of relevant skills and expertise. These non-financial contributions will help in reducing the cost of running the charitable programs which will be beneficial to both the charitable organisations and society as a whole.

Table 2.1: Variable Definitions

Variables	Definitions
Dependent variables	
Religious Gifts	Total amount donated to religious organisations (*in logarithms*)
Secular Gifts	Total amount donated to non-religious organisations (*in logarithms*)
Strategic Variables	
PLANNED	=1 if giving is planned, 0 otherwise
FOCUSSED	=1 if giving is concentrated, 0 otherwise
INVOLVED	=1 if volunteered in the charitable sector that received the largest share of total amount donated
STRATEGIC	=1 if giving is planned, giving is concentrated and got involved
Control Variables	
Price	One minus the marginal tax rate for the first dollar given
Household Income categories	
HH Income <50	=1 if annual household income < $50,000, 0 otherwise : **reference group**
HH Income 50 to <100	=1 if annual household income is from $50,000 to <$100,000, 0 otherwise
HH Income 100 to <150	=1 if annual household income is from $100,000 to <$150,000, 0 otherwise
HH Income =150	=1 if annual household income is from $150,000 and above
Immigrant	=1 if born outside of Canada; 0 otherwise
Religious	=1 if attends religious services or meeting at least once a week, 0 otherwise
Age Categories	
Age 25 to 34yrs	=1 if age is from 25 to 34, 0 otherwise
Age 35 to 44yrs	=1 if age is from 35 to 44, 0 otherwise
Age 45 to 54yrs	=1 if age is from 45 to 54, 0 otherwise
Age 55 to 64yrs	=1 if age is from 55 to 64, 0 otherwise
Age 65 or more	=1 if age is 65 or above, 0 otherwise : **reference group**
Male	=1 if male, 0 otherwise
Single	=1 if single, widow, separated or divorced, 0 otherwise
HH Size	Number of individuals in household
Educational status	
High School	=1 if high school or elementary school education or less, 0 otherwise: **the reference group**
Postsecondary	=1 if some post-secondary education, 0 otherwise
Diploma	=1 if post-secondary diploma, 0 otherwise
University	=1 if university degree, 0 otherwise
Employed	=1 if employed, 0 otherwise

Table 2.1 (continued)

Province	
Ontario	=1 if lives in Ontario, 0 otherwise
Atlantic	=1 if lives in Newfoundland, Prince Edward Island, Nova Scotia or New Brunswick, 0 otherwise
Quebec	=1 if lives in Quebec, 0 otherwise
Prairies	=1 if lives in Alberta, Manitoba, Saskatchewan , 0 otherwise
British Columbia	=1 if lives in British Columbia, 0 otherwise
Current Abode <5yrs	= 1 if lived in current abode for less than 5 years, 0 otherwise
Current Abode 5 to <10yrs	= 1 if lived in current abode from 5 to less than 10 years, 0 otherwise
Current Abode =10yrs	= 1 if lived in current abode 10 years or more, 0 otherwise: **reference group**
Instrumental Variables	
University	=1 if has university degree or more, 0 otherwise
Some University	=1 if has some university education or more, 0 otherwise
At Least Diploma	=1 if has diploma certificate or more, 0 otherwise
At Least High School	=1 if has high school education or more, 0 otherwise
At Least Grade 9	=1 if has grade 9 education or more, 0 otherwise
At Most Diploma	=1 if has at most diploma certificate, 0 otherwise
Less High School	=1 if has less than high school education, 0 otherwise
Grade 8	=1 if has grade 8 education, 0 otherwise
Doctorate at CMA	Proportion of doctorate degree holders at the census metropolitan area
University at CMA	Proportion of at least university degree holders at the census metropolitan area
College at CMA	Proportion of college certificate holders at the census metropolitan area
Youth Government	=1 if was active in student government, 0 otherwise
Parent Volunteer	=1 if one or both parents did volunteer work in the community, 0 otherwise
Youth Group	=1 if belong to youth group such as guides, scouts, a 4-H club, or a choir
Youth Door-to-Door	=1 if went for door-to-door canvassing, 0 otherwise
Youth Experience 1	=1 if in Youth Government or Parent Volunteer, 0 otherwise
Youth Experience 2	=1 if in Youth Government or Youth Group, 0 otherwise
Youth Experience 3	=1 if in Youth Government or Youth Door-to-Door, 0 otherwise
Youth Experience 4	=1 if in Youth Group or Parent Volunteer, 0 otherwise-
Youth Experience 5	=1 if in Youth Group or Youth Door-to-Door, 0 otherwise
Youth Experience 6	=1 if in Youth Government or Parent Volunteer or Youth Group, 0 otherwise
Youth Experience 7	=1 if in Youth Government or Parent Volunteer or Youth Group or Youth Door-to-Door, 0 otherwise

Table 2.2: Descriptive Statistics for pooled cycles 2004, 2007 and 2010

Variable	2010	2007	2004
Amount Donated			
Religious Gifts	1.79	1.96	2.13
	(2.48)	(2.55)	(2.59)
Secular Gifts	4.32	4.16	4.29
	(1.69)	(1.68)	(1.62)
Dependent Variables			
PLANNED	.29	.28	.26
	(.45)	(.45)	(.44)
FOCUSSED	.84	.85	.83
	(.37)	(.36)	(.38)
INVOLVED	.13	.12	.13
	(.34)	(.33)	(.34)
STRATEGIC	.04	.03	.03
	(.19)	(.18)	(.18)
Observations	10268	14454	15268

Standard deviations in parentheses

Table 2.3: Descriptive Statistics for pooled cycles 2004, 2007 and 2010

Variable	Religious Givers	Non-Religious Givers	Small Givers	Big Givers
Dependent Variables				
Religious Gifts	4.96	1.16	0.93	4.25
	(2.38)	(2.02)	(1.57)	(3.22)
Secular Gifts	4.33	4.49	3.58	6.06
	(2.07)	(1.62)	(1.28)	(1.70)
Strategic Variables				
PLANNED	0.40	0.26	0.20	0.49
	(0.49)	(0.44)	(0.40)	(0.50)
FOCUSSED	0.76	0.85	0.87	0.78
	(0.43)	(0.35)	(0.34)	(0.41)
INVOLVED	0.13	0.13	0.11	0.18
	(0.34)	(0.34)	(0.31)	(0.39)
STRATEGIC	0.05	0.03	0.02	0.07
	(0.21)	(0.18)	(0.14)	(0.26)
Other Control Variables				
Price	0.84	0.89	0.91	0.81
	(0.12)	(0.13)	(0.13)	(0.10)
HH Income <50	0.41	0.30	0.39	0.21
	(0.49)	(0.46)	(0.49)	(0.41)
HH Income 50 to <100	0.34	0.36	0.37	0.32
	(0.47)	(0.48)	(0.48)	(0.47)
HH Income 100 to <150	0.15	0.20	0.16	0.22
	(0.36)	(0.40)	(0.36)	(0.42)
HH Income =150	0.10	0.14	0.08	0.25
	(0.30)	(0.35)	(0.27)	(0.43)
Age 25 to 34yrs	0.12	0.20	0.23	0.11
	(0.32)	(0.40)	(0.41)	(0.31)
Age 35 to 44yrs	0.17	0.22	0.22	0.19
	(0.38)	(0.41)	(0.42)	(0.39)
Age 45 to 54yrs	0.20	0.24	0.23	0.24
	(0.40)	(0.43)	(0.42)	(0.43)
Age 55 to 64yrs	0.19	0.18	0.16	0.22
	(0.39)	(0.38)	(0.37)	(0.41)
Age 65 or more	0.32	0.16	0.16	0.24
	(0.47)	(0.37)	(0.37)	(0.43)
Religious	1	0	0.10	0.41
	(0)	(0)	(0.30)	(0.49)
Immigrant	0.31	0.17	0.18	0.25
	(0.46)	(0.38)	(0.38)	(0.43)
Male	0.43	0.49	0.47	0.52
	(0.49)	(0.50)	(0.50)	(0.50)
Single	0.24	0.24	0.26	0.21
	(0.43)	(0.43)	(0.44)	(0.41)

Table 2.3 (continued)

Variable	Religious Givers	Non-Religious Givers	Small Givers	Big Givers
HH Size	2.94	2.83	2.87	2.83
	(1.49)	(1.30)	(1.32)	(1.37)
Employed	0.54	0.70	0.66	0.67
	(0.50)	(0.46)	(0.47)	(0.47)
High School	0.27	0.24	0.29	0.18
	(0.45)	(0.43)	(0.45	(0.38)
Postsecondary	0.07	0.07	0.07	0.07
	(0.26)	(0.24)	(0.25	(0.25)
Diploma	0.38	0.39	0.41	0.30
	(0.48)	(0.49)	(0.49)	(0.46)
University	0.28	0.30	0.23	0.45
	(0.45)	(0.46)	(0.42)	(0.50)
Atlantic	0.10	0.07	0.08	0.07
	(0.29)	(0.26)	(0.27)	(0.26)
Ontario	0.45	0.37	0.34	0.48
	(0.50)	(0.48)	(0.47)	(0.50)
Quebec	0.16	0.26	0.31	0.09
	(0.37)	(0.44)	(0.46)	(0.28)
Prairies	0.19	0.17	0.15	0.22
	(0.39)	(0.38)	(0.35)	(0.42)
British Columbia	0.11	0.13	0.12	0.14
	(0.31)	(0.33)	(0.32)	(0.35)
Current Abode <5yrs	0.19	0.19	0.20	0.16
	(0.39)	(0.39)	(0.40)	(0.37)
Current Abode 5 to <10yrs	0.11	0.13	0.13	0.12
	(0.32)	(0.34)	(0.34)	(0.32)
Current Abode =10yrs	0.70	0.68	0.67	0.72
	(0.46)	(0.47)	(0.47)	(0.45)
University	0.28	0.30	0.23	0.45
	(0.45)	(0.46)	(0.42)	(0.50)
Some University	0.30	0.34	0.26	0.49
	(0.46)	(0.47)	(0.44)	(0.50)
At Least Diploma	0.66	0.69	0.64	0.76
	(0.48)	(0.46)	(0.48)	(0.43)
At Least High School	0.85	0.89	0.85	0.93
	(0.35)	(0.31)	(0.35)	(0.26)
At Least Grade 9	.95	.97	.95	.99
	(.22)	(.17)	(.21)	(.11)
At Most Diploma	0.72	0.70	0.77	0.55
	(0.45)	(0.46)	(0.42)	(0.50)
Less High School	0.15	0.11	0.15	0.07
	(0.35)	(0.31)	(0.35)	(0.26)

Table 2.4: Average Marginal Effects for Structural Changes

	Dependent Variable - PLANNED			
Variable	(1)	(2)	(3)	(4)
Year 2010	0.050**	0.038***	0.012	0.029
	(2.13)	(3.52)	(1.00)	(1.30)
Year 2007	-0.104***	-0.001	-0.004	-0.083***
	(-4.07)	(-0.13)	(-0.32)	(-2.99)
F-test of no structural change - chi2	36.39	19.59	2.15	18.35
p-value	0.000	0.000	0.000	0.000
Observations	9498	30492	19995	9941

	Dependent Variable - INVOLVED			
Variable	(1)	(2)	(3)	(4)
Year 2010	0.011	0.026***	0.012	0.039**
	(0.73)	(3.39)	(1.43)	(2.41)
Year 2007	0.001	0.006	-0.005	0.017
	(0.05)	(0.73)	(-0.63)	(0.83)
F-test of no structural change - chi2	0.77	14.99	6.09	6.05
p-value	0.681	0.000	0.048	0.049
Observations	9498	30492	19995	9941

	Dependent Variable - FOCUSSED			
Variable	(1)	(2)	(3)	(4)
Year 2010	-0.024	0.004	0.010	0.013
	(-1.18)	(0.42)	(0.95)	(0.68)
Year 2007	-0.018	0.017*	0.018*	0.020
	(-0.72)	(1.77)	(1.67)	(0.76)
F-test of no structural change - chi2	1.43	3.18	2.80	0.71
p-value	0488	0.1486	0.247	0.703
Observations	9498	30492	19995	9941

Table 2.4 (continued)

	Dependent Variable - STRATEGIC			
Variable	(1)	(2)	(3)	(4)
Year 2010	0.010	0.010***	0.004	0.026**
	(1.21)	(2.67)	(1.02)	(2.53)
Year 2007	-0.014	0.002	0.001	0.017
	(-1.30)	(0.44)	(0.26)	(1.30)
F-test of no structural change - chi2	7.38	9.97	1.32	6.71
p-value	0.025	0.007	0.517	0.034
Observations	9498	30492	19995	9941

	Dependent Variable - STRATEGIC			
	Gifts = $500	Gifts = $500	Gifts = $100	Gifts = $500
Variable	(1)	(2)	(3)	(4)
Year 2010	0.010	0.053***	-0.002	0.034***
	(0.69)	(3.14)	(-0.40)	(3.12)
Year 2007	-0.012	0.045**	-0.000	0.025*
	(-0.59)	(2.39)	(-0.02)	(1.81)
F-test of no structural change - chi2	1.39	11.49	0.80	9.84
p-value	0.4984	0.003	0.6692	0.007
Observations	4469	4472	4687	8941

Robust *z* statistics in parentheses* p<.10, ** p<.05, *** p<0.01. (1), (2), (3) and (4) represent regression results for the religious sample, non-religious sample, small givers sample and big givers sample respectively.

Table 2.5: First stage regressions of the propensity to planned giving using individuals' education and youth experiences as instruments from CSGVP 2010 - Average Marginal Effects

	Dependent Variable -PLANNED			
Control Variable	(1)	(2)	(3)	(4)
Price	-1.391***	-1.054***	-0.650***	-1.143***
	(-3.78)	(-8.44)	(-4.61)	(-3.10)
HH Income 50 to <100	-0.037	-0.008	-0.038*	-0.056
	(-0.90)	(-0.39)	(-1.75)	(-1.34)
HH Income 100 to <150	-0.006	0.016	-0.068**	0.012
	(-0.11)	(0.67)	(-2.32)	(0.22)
HH Income =150	-0.122**	0.041	-0.012	-0.063
	(-2.00)	(1.56)	(-0.33)	(-1.21)
Immigrant	0.093**	0.052**	0.070***	0.068*
	(2.24)	(2.47)	(2.80)	(1.89)
Religious			0.041	0.088***
			(1.29)	(2.86)
Age 25 to 34yrs	0.071	-0.078***	0.002	-0.031
	(1.01)	(-2.66)	(0.06)	(-0.48)
Age 35 to 44yrs	-0.028	-0.041	-0.001	-0.011
	(-0.43)	(-1.48)	(-0.04)	(-0.19)
Age 45 to 54yrs	0.076	-0.051*	0.010	-0.016
	(1.25)	(-1.93)	(0.33)	(-0.31)
Age 55 to 64yrs	-0.003	-0.052**	-0.004	-0.070
	(-0.08)	(-2.27)	(-0.15)	(-1.63)
Male	0.054	-0.006	0.001	0.007
	(1.61)	(-0.41)	(0.06)	(0.25)
Single	0.028	-0.013	-0.008	-0.003
	(0.61)	(-0.64)	(-0.34)	(-0.08)
HH Size	-0.006	-0.013	-0.008	0.002
	(-0.32)	(-1.63)	(-0.82)	(0.16)
Employed	-0.064	0.009	-0.027	0.005
	(-1.48)	(0.50)	(-1.25)	(0.11)
Atlantic	-0.063	-0.056***	-0.017	-0.066*
	(-1.60)	(-2.99)	(-0.76)	(-1.79)
Quebec	-0.114	-0.078***	-0.024	0.040
	(-1.46)	(-3.40)	(-0.87)	(0.62)
Prairies	0.083**	-0.018	0.012	0.004
	(2.01)	(-0.94)	(0.53)	(0.10)
British Columbia	0.064	0.015	-0.001	0.048
	(1.34)	(0.74)	(-0.05)	(1.27)
Current Abode <5yrs	0.069	-0.044**	-0.016	0.005
	(1.41)	(-2.35)	(-0.74)	(0.13)
Current Abode 5 to <10yrs	0.067	0.008	0.000	-0.003
	(1.38)	(0.33)	(0.00)	(-0.07)

Table 2.5 (continued)

	Dependent Variable - PLANNED			
Control Variable	(1)	(2)	(3)	(4)
University	0.126***	0.060***		0.088***
	(3.63)	(3.60)		(3.21)
At Least High School			0.078***	
			(2.68)	
Youth Experience 4	0.144***	0.060***	0.047**	
	(3.83)	(3.34)	(2.50)	
Youth Experience 5				0.090**
				(2.48)
Predicted Probabilities	0.36	0.27	0.22	0.44
Cragg-Donald Wald F Statistic	23.73	12.07	16.16	13.42
Hansen J Statistic	1.55	1.17	0.69	1.19
P-value	0.213	0.279	0.408	0.276
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses* p<.10, ** p<.05, *** p<0.01. (1), (2), (3) and (4) represent regression results for the religious sample, non-religious sample, small givers sample and big givers sample respectively.

Table 2.6: First stage regressions of the propensity to concentrate giving using individuals' education and youth experiences as instruments from CSGVP 2010 - Average Marginal Effects

	Dependent Variable - FOCUSSED			
Control Variable	(1)	(2)	(3)	(4)
Price	-0.175	0.297***	0.068	0.526*
	(-0.58)	(3.00)	(0.59)	(1.72)
HH Income 50 to <100	0.056	-0.012	0.000	0.008
	(1.57)	(-0.66)	(0.02)	(0.22)
HH Income 100 to <150	0.074	0.008	0.030	0.005
	(1.59)	(0.40)	(1.18)	(0.13)
HH Income =150	0.037	-0.010	0.091***	-0.011
	(0.64)	(-0.47)	(2.83)	(-0.27)
Immigrant	-0.106***	-0.037**	-0.064***	-0.062**
	(-3.16)	(-2.01)	(-2.99)	(-2.06)
Religious			-0.103***	-0.027
			(-4.44)	(-1.11)
Age 25 to 34yrs	-0.011	0.068**	0.054*	0.073
	(-0.19)	(2.52)	(1.67)	(1.40)
Age 35 to 44yrs	0.084	0.034	0.027	0.060
	(1.41)	(1.25)	(0.81)	(1.28)
Age 45 to 54yrs	-0.033	0.042*	0.034	-0.016
	(-0.69)	(1.78)	(1.17)	(-0.40)
Age 55 to 64yrs	-0.040	0.035*	0.018	-0.007
	(-1.04)	(1.74)	(0.71)	(-0.19)
Male	-0.011	0.010	0.008	0.012
	(-0.39)	(0.91)	(0.54)	(0.49)
Single	0.036	-0.001	-0.005	0.007
	(0.94)	(-0.04)	(-0.23)	(0.21)
HH Size	-0.020	0.005	-0.006	0.004
	(-1.42)	(0.70)	(-0.70)	(0.33)
Employed	-0.054	-0.017	-0.022	-0.034
	(-1.52)	(-1.18)	(-1.23)	(-1.11)
Atlantic	-0.049	-0.035**	-0.043**	-0.014
	(-1.46)	(-2.34)	(-2.34)	(-0.45)
Quebec	-0.126**	0.031*	-0.020	0.027
	(-2.22)	(1.73)	(-0.94)	(0.49)
Prairies	-0.059*	-0.000	-0.017	-0.040
	(-1.65)	(-0.01)	(-0.86)	(-1.30)
British Columbia	-0.028	0.027	0.036	-0.006
	(-0.62)	(1.60)	(1.64)	(-0.19)
Current Abode <5yrs	-0.045	-0.013	-0.033*	-0.013
	(-1.11)	(-0.81)	(-1.78)	(-0.38)
Current Abode 5 to <10yrs	0.013	-0.004	-0.015	0.026
	(0.32)	(-0.16)	(-0.57)	(0.76)

Table 2.6 (continued)

	Dependent Variable			
Control Variable	(1)	(2)	(3)	(4)
Grade 8	0.118**		0.011	0.209**
	(2.07)		(0.40)	(2.50)
At Most Diploma		0.038**		
		(2.52)		
Youth Experience 6	-0.131***		-0.066***	
	(-2.88)		(-3.36)	
Youth Experience 4		-0.040***		
		(-2.62)		
Youth Experience 5				-0.095***
				(-2.77)
Predicted Probabilities	0.76	0.85	0.86	0.82
Cragg-Donald Wald F Statistic	15.83	13.58	31.53	10.73
Hansen J Statistic	0.02	0.53		0.05
P-value	0.888	0.465		0.471
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses* p<.10, ** p<.05, *** p<0.01. (1), (2), (3) and (4) represent regression results for the religious sample, non-religious sample, small givers sample and big givers sample respectively.

Table 2.7: First stage regressions of the propensity to get involved using individuals' education and youth experiences as instruments from CSGVP 2010 - Average Marginal Effects

	Dependent Variable - INVOLVED			
Control Variable	(1)	(2)	(3)	(4)
Price	-0.199	-0.142*	-0.150*	-0.158
	(-0.99)	(-1.77)	(-1.72)	(-0.58)
HH Income 50 to <100	0.025	-0.005	-0.009	-0.034
	(0.98)	(-0.38)	(-0.62)	(-1.06)
HH Income 100 to <150	0.020	0.014	-0.007	0.018
	(0.64)	(0.88)	(-0.38)	(0.49)
HH Income =150	0.068*	0.064***	0.053**	0.035
	(1.65)	(3.63)	(2.35)	(0.91)
Immigrant	-0.061**	-0.015	-0.046***	-0.007
	(-2.29)	(-1.03)	(-2.64)	(-0.23)
Religious			-0.013	-0.020
			(-0.64)	(-0.85)
Age 25 to 34yrs	0.012	0.014	0.018	0.042
	(0.27)	(0.66)	(0.77)	(0.86)
Age 35 to 44yrs	-0.014	0.034*	0.015	0.056
	(-0.36)	(1.71)	(0.64)	(1.29)
Age 45 to 54yrs	-0.007	0.001	-0.001	0.018
	(-0.19)	(0.07)	(-0.03)	(0.49)
Age 55 to 64yrs	0.018	0.006	-0.020	0.047
	(0.70)	(0.39)	(-1.01)	(1.46)
Male	0.026	-0.018*	-0.023**	0.003
	(1.27)	(-1.93)	(-2.15)	(0.12)
Single	0.014	0.019	0.001	0.036
	(0.52)	(1.41)	(0.05)	(1.23)
HH Size	-0.012	0.008	0.005	0.004
	(-1.13)	(1.64)	(0.87)	(0.40)
Employed	-0.011	0.000	-0.005	-0.030
	(-0.48)	(0.02)	(-0.36)	(-1.06)
Atlantic	0.024	0.006	-0.006	0.021
	(1.01)	(0.45)	(-0.40)	(0.77)
Quebec	-0.026	-0.011	-0.009	0.012
	(-0.68)	(-0.73)	(-0.57)	(0.24)
Prairies	-0.041	0.009	-0.000	-0.057*
	(-1.51)	(0.63)	(-0.02)	(-1.92)
British Columbia	0.015	0.018	0.011	0.010
	(0.50)	(1.23)	(0.61)	(0.35)
Current Abode <5yrs	-0.018	-0.000	0.016	-0.061*
	(-0.62)	(-0.01)	(1.15)	(-1.86)
Current Abode 5 to <10yrs	-0.019	-0.002	0.015	-0.040
	(-0.57)	(-0.15)	(0.98)	(-1.13)

Table 2.7 (continued)

	Dependent Variable - INVOLVED			
Control Variable	(1)	(2)	(3)	(4)
At Least High School	0.100***	0.105***	0.094***	0.104**
	(3.29)	(4.43)	(4.30)	(2.22)
Youth Experience 4	0.071**			
	(2.42)			
Youth Experience 1		0.058***	0.049***	0.050**
		(5.60)	(4.34)	(2.11)
Predicted Probabilities	0.14	0.14	0.12	0.18
Cragg-Donald Wald F Statistic	12.15	28.43	21.31	11.49
Hansen J Statistic	0.04	1.02	1.19	2.45
P-value	0.845	0.316	0.279	0.118
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses* p<.10, ** p<.05, *** p<0.01. (1), (2), (3) and (4) represent regression results for the religious sample, non-religious sample, small givers sample and big givers sample respectively.

Table 2.8: First stage regressions of the propensity to be strategic using individuals' education levels and youth experiences as instruments from CSGVP 2010 - Average Marginal Effects

	Dependent Variable -STRATEGIC			
Control Variable	(1)	(2)	(3)	(4)
Price	-0.138	-0.194***	-0.121***	-0.029
	(-1.19)	(-4.32)	(-3.18)	(-0.18)
HH Income 50 to <100	0.014	0.006	0.007	-0.011
	(0.99)	(0.91)	(1.12)	(-0.55)
HH Income 100 to <150	0.008	0.007	-0.002	-0.005
	(0.52)	(0.85)	(-0.24)	(-0.21)
HH Income =150	-0.027	0.027***	0.017*	0.018
	(-1.17)	(3.13)	(1.90)	(0.73)
Immigrant	-0.014	0.016**	-0.005	0.039**
	(-0.91)	(2.31)	(-0.83)	(2.24)
Religious			0.007	0.002
			(0.83)	(0.11)
Age 25 to 34yrs	-0.006	0.013	0.011	-0.005
	(-0.24)	(1.30)	(1.33)	(-0.17)
Age 35 to 44yrs	0.002	0.029***	0.018**	0.026
	(0.07)	(2.84)	(2.04)	(0.92)
Age 45 to 54yrs	0.010	0.008	0.011	-0.018
	(0.44)	(0.94)	(1.35)	(-0.73)
Age 55 to 64yrs	-0.011	0.011	-0.001	0.004
	(-0.75)	(1.24)	(-0.18)	(0.18)
Male	0.017	-0.001	0.002	-0.002
	(1.42)	(-0.30)	(0.54)	(-0.14)
Single	0.005	0.004	-0.005	0.015
	(0.25)	(0.55)	(-0.86)	(0.74)
HH Size	-0.004	-0.002	-0.004**	0.004
	(-0.55)	(-0.97)	(-2.03)	(0.59)
Employed	-0.033**	-0.001	-0.015**	-0.009
	(-2.32)	(-0.22)	(-2.46)	(-0.51)
Atlantic	0.009	-0.001	-0.001	0.040**
	(0.63)	(-0.17)	(-0.13)	(2.38)
Quebec	-0.008	-0.013	-0.009	0.060**
	(-0.34)	(-1.51)	(-1.16)	(2.21)
Prairies	0.007	0.008	0.009	0.006
	(0.50)	(1.16)	(1.41)	(0.32)
British Columbia	0.011	0.002	0.002	0.002
	(0.63)	(0.22)	(0.31)	(0.09)
Current Abode <5yrs	0.013	-0.005	0.013**	-0.050**
	(0.77)	(-0.83)	(2.26)	(-2.30)
Current Abode 5 to <10yrs	0.019	-0.004	0.011*	0.001
	(1.28)	(-0.51)	(1.76)	(0.04)

Table 2.8 (continued)

	Dependent Variable - STRATEGIC			
Control Variable	(1)	(2)	(3)	(4)
Some University	0.036***	0.018***	0.010**	0.032**
	(3.01)	(3.25)	(2.06)	(2.24)
Youth Experience 1	0.034***			
	(2.60)			
Youth Experience 4		0.022***	0.018***	
		(3.43)	(2.90)	
Youth Door-to-Door				0.030**
				(2.19)
Predicted Probabilities	0.04	0.03	0.03	0.07
Cragg-Donald Wald F Statistic	10.16	11.42	13.44	9.63
Hansen J Statistic	0.51	1.10	0.02	1.20
P-value	0.474	0.295	0.900	0.274
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses* p<.10, ** p<.05, *** p<0.01. (1), (2), (3) and (4) represent regression results for the religious sample, non-religious sample, small givers sample and big givers sample respectively.

Table 2.9: Average Partial Effects of the propensity to be strategic on amount donated to religious and secular organisations using givers' education levels and youth experiences as instruments from CSGVP 2010.

Variable	Dependent Variable							
	Religious Gifts				Secular Gifts			
	(1)		(2)		(1)		(2)	
	Tobit	IVTOBIT	Tobit	IVTOBIT	Tobit	IVTOBIT	Tobit	IVTOBIT
PLANNED	0.544***	0.882	0.020	0.534***	0.460***	1.948***	0.593***	1.619***
	(3.74)	(1.26)	(0.31)	(3.04)	(3.36)	(4.62)	(11.59)	(10.76)
Rho		-0.100		-0.204***		-0.518***		-0.386***
		(-0.52)		(-3.48)		(-4.06)		(-6.92)
FOCUSSED	-0.331**	-0.921	-0.531***	-1.392***	1.863***	1.760***	0.341***	0.006
	(-2.35)	(-1.45)	(-7.77)	(-2.78)	(10.27)	(6.68)	(3.21)	(0.03)
Rho		0.196		0.213		-0.031		0.120**
		(1.62)		(0.78)		(-0.62)		(2.20)
INVOLVED	-0.206	0.206	-0.057	0.357	0.589***	1.808***	0.464***	1.428***
	(-0.96)	(0.57)	(-0.74)	(1.57)	(5.30)	(7.43)	(8.06)	(8.73)
Rho		-0.049		-0.218***		-0.398***		-0.361***
		(-0.82)		(-3.24)		(-5.64)		(-8.10)
STRATEGIC	0.067	0.220	-0.155	0.005	0.984***	2.178***	0.738***	1.635***
	(0.22)	(0.33)	(-1.12)	(0.02)	(6.00)	(6.66)	(6.99)	(8.93)
Rho		-0.032		-0.048		-0.308***		-0.278***
		(-0.30)		(-0.55)		(-4.20)		(-5.41)
Observations	2250	2250	8018	8018	2250	2250	8018	8018

Robust *z* statistics in parentheses* p<.10, ** p<.05, *** p<0.01. (1) and (2) represent regression results for the religious sample and non-religious sample respectively.

Table 2.10: Average Partial Effects of the propensity to be strategic on amount donated to religious and secular organisations using givers' education levels and youth experiences as instruments

	Dependent Variable							
	Religious Gifts				Secular Gifts			
Control Variable	(3)		(4)		(3)		(4)	
	Tobit	IVTOBIT	Tobit	IVTOBIT	Tobit	IVTOBIT	Tobit	IVTOBIT
PLANNED	-0.108	-0.364	-0.184	1.643	0.306***	0.649**	0.256***	2.071***
	(-1.64)	(-0.02)	(-1.36)	(1.48)	(4.24)	(2.51)	(2.76)	(7.96)
Rho		-0.183		-0.502		-0.043		-0.661***
		(-0.08)		(-1.63)		(1.09)		(-5.56)
FOCUSSED	-0.509***	-0.431***	-0.129	3.804***	0.967***	1.045***	0.886***	0.584***
	(-7.48)	(-5.85)	(-0.83)	(14.46)	(7.31)	(5.65)	(5.45)	(2.55)
Rho		0.510**		-0.914**		-0.043		0.113**
		(2.25)		(-12.15)		(-1.09)		(2.28)
INVOLVED	-0.125	0.056	-0.514***	-0.051	0.363***	1.244***	0.485***	1.152***
	(-1.58)	(0.10)	(-2.81)	(-0.11)	(6.71)	(8.73)	(5.77)	(6.30)
Rho		0.192		-0.121		-0.343***		-0.248***
		(0.71)		(-1.25)		(-6.04)		(-4.10)
STRATEGIC	-0.289**	-0.202	-0.445	-0.428	0.442***	1.077***	0.702***	1.334***
	(-2.13)	(-0.16)	(-1.59)	(-0.48)	(5.05)	(6.08)	(5.74)	(6.91)
Rho		-0.037		0.024		-0.217 ***		-0.220***
		(-0.07)		(-0.13)		(-4.12)		(-4.80)
Observations	5136	5136	2567	2567	5136	5136	2567	2567

Robust *z* statistics in parentheses* p<.10, ** p<.05, *** p<0.01. (3) and (4) represent regression results for the small givers sample and big givers sample respectively.

Table 2.11: Average Partial Effects of the propensity to be strategic on amount donated to religious and secular organisations using proportions of different education levels at the CMA level and/ or youth experiences as instruments from CSGVP 2010 - IVTOBIT

	Dependent Variable							
Control Variable	Religious Gifts				Secular Gifts			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
PLANNED	0.760	0.237	-0.108	0.698	1.197**	1.286***	0.547*	2.016***
	(0.82)	(1.13)	(-0.13)	(0.76)	(2.13)	(7.62)	(1.90)	(6.86)
Rho	-0.064	-0.077	-0.141	-0.471	-0.265	-0.297***	-0.143	-0.647***
	(-0.25)	(-0.92)	(-0.67)	(-1.73)	(1.47)	(4.55)	(-1.67)	(-4.94)
FOCUSSED	-0.955	-0.344***	-1.752***	3.833***	1.753***	0.200	1.021***	0.626***
	(-1.54)	(-4.55)	(-3.89)	(14.59)	(6.71)	(1.29)	(5.50)	(2.80)
Rho	0.196	0.213	0.501**	-0.918***	-0.002	0.054*	-0.043	0.095**
	(1.62)	(0.78)	(2.25)	(-12.09)	(-0.74)	(1.67)	(-1.35)	(2.08)
INVOLVED	0.074	0.168	0.403	-0.019	1.713***	1.261***	1.170***	0.981***
	(0.21)	(0.63)	(0.79)	(-0.04)	(6.90)	(8.16)	(8.46)	(4.64)
Rho	-0.066	-0.152**	-0.308	-0.129	-0.324***	-0.276***	-0.270***	-0.187***
	(-1.15)	(-2.01)	(-1.51)	(-1.38)	(-4.23)	(-5.48)	(-5.56)	(-2.60)
STRATEGIC	0.126	-0.311	0.534	-1.415	1.787***	1.445***	0.949***	1.269***
	(0.14)	(-0.49)	(0.46)	(-0.15)	(4.70)	(8.20)	(5.58)	(6.07)
Rho	-0.003	0.053	-0.176	-0.207	-0.200**	-0.216***	-0.172***	-0.200***
	(0.02)	(0.29)	(-1.65)	(-0.09)	(-2.31)	(-4.55)	(-3.35)	(-3.89)
Observations	2250	8018	5136	2567	2250	8018	5136	2567

Robust *z* statistics in parentheses* p<.10, ** p<.05, *** p<0.01. (1), (2), (3) and (4) represent regression results for the religious sample, non-religious sample, small givers sample and big givers sample respectively.

Figure 2.1: Relationship between the Concentration Index and Total Amount Donated by the Small Givers Subsample

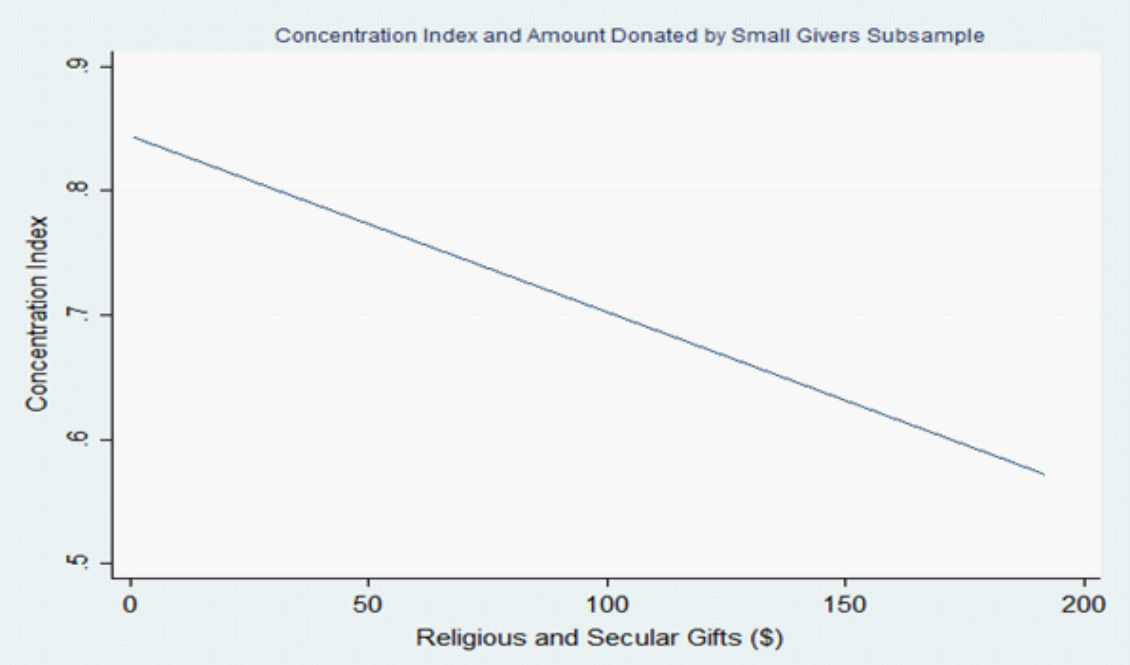
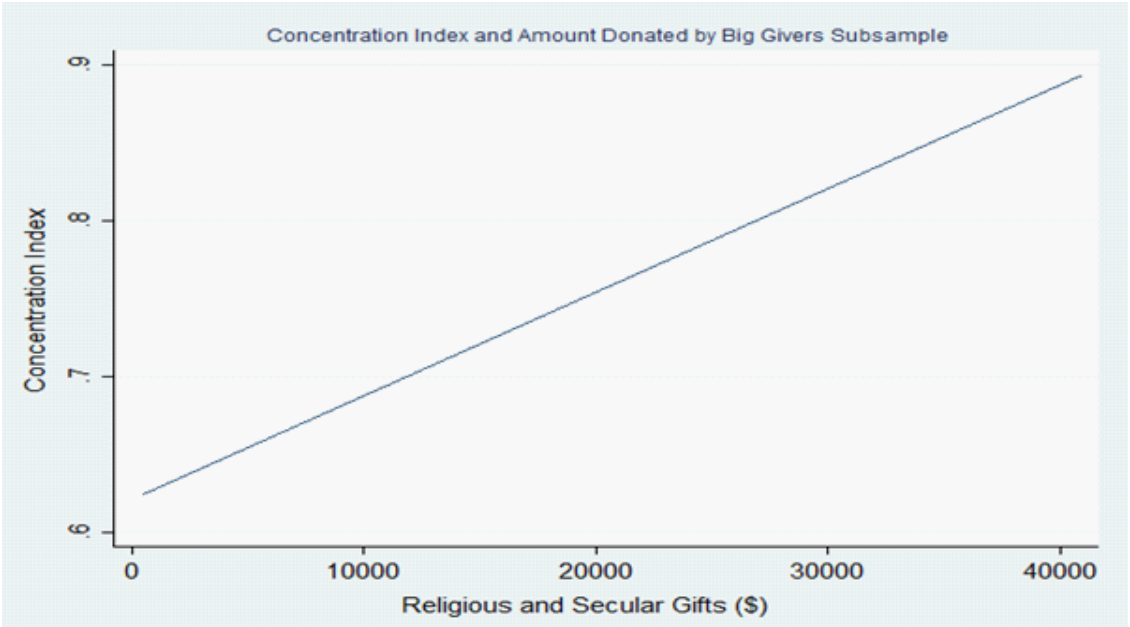


Figure 2.2: Relationship between the Concentration Index and Total Amount Donated by the Big Givers Subsample



Chapter 3
Understanding the Impact of Volunteering on Income: Canadian Evidence

3.1 Introduction

Over the past fifteen years, three Canadian provinces have introduced mandatory volunteering and/or work experience programs into the high school curriculum. In 1995, the government of British Columbia mandated at least 30 hours of paid work experience for high school students.[6] In 2004, the policy was revised to allow students to substitute 30 hours of unpaid community service for paid work experience (Government of British Columbia, 2004). In 1999, the government of Ontario became the first province in Canada to mandate volunteering activities by high school students, requiring each student upon graduation to have completed at least 40 hours of community services (Ontario Ministry of Education, 1999). Subsequently, in 2006, the government of Newfoundland and Labrador adopted a similar policy to that of Ontario, requiring at least 30 hours of community service (Government of Newfoundland and Labrador, 2006). While the stated purpose of the Ontario (ON) and Newfoundland and Labrador (Newfoundland) policies is to encourage young people to become involved in their communities, the British Columbia (BC) policy has been explicitly intended to encourage social or human capital development via the acquisition of work experience. In the other provinces, the choice of whether to require high school students to volunteer has been left to local school boards to decide, but very few have chosen to impose mandatory volunteering.

It is interesting to investigate what impacts the introduction of mandatory work experience or

[6] http://killarney.vsb.bc.ca/students/careerPrep/curriculum.html

volunteering programs may have had on the affected students in both the short and longer terms. At the time that Ontario introduced its volunteering requirements, there was considerable concern expressed that volunteers were, on average, getting older, and it was therefore important to get young people involved in the community as volunteers as early as possible. The expectation was that once young people had the experience of volunteering, that they would discover a taste for civic engagement, and continue to volunteer in the future. However, there was also a widespread view that volunteering led to other good outcomes, and in particular would help to prepare high school students for labor market success. Indeed, this latter view clearly informed the BC approach, which was predicated on the notion that getting either paid or unpaid work experience helps students to acquire human capital.

The notion that compelling high school students to volunteer might generate better labor market outcomes for these students in the future is grounded in the considerable body of research which has provided evidence of a positive relationship between volunteering and labor market earnings. Three distinct channels have been posited: human capital acquisition, social networks, and signaling (Devlin & Day, 1998). The human capital hypothesis posits that volunteers gain more insight into their own skill set, and are able to use these experiences to develop new competencies, including exercising leadership, developing teamwork skills, etc. The social networks hypothesis emphasizes the importance of volunteer activities for widening social contacts, for example increasing the likelihood that an individual will become aware of new jobs. In contrast, the signaling hypothesis speaks to the difficulties that firms have, particularly at the hiring stage, in distinguishing between high and low productivity workers, and argues that firms interpret the decision to volunteer as a signal that the volunteer is a go-getter who will bring that

same ambition and drive for success to the workplace.

Should it be expected that positive labor market returns to volunteering will persist if volunteering is rendered mandatory? If volunteering increases income by contributing to the acquisition of human capital, or by contributing to the development of a social network, then arguably there should be no difference in the outcomes of those who volunteer out of choice, and those who are obliged to volunteer, except to the extent that individuals who actively choose to volunteer may select into volunteer experiences which are more likely to promote these objectives. In contrast, if the decision to volunteer is interpreted as a signal that the volunteer is likely to be a high productivity worker, then in provinces where volunteering is rendered obligatory, this signal is broken, and the earnings premium associated with volunteering should disappear.

This paper combines three Canadian datasets –the 2004 and 2007 cycles of the Canadian Survey of Giving, Volunteering and Participation (CSGVP) and the 2013 General Social Survey – to investigate the short-term and longer-term impacts of high school mandatory volunteering and work experience policies on labor market earnings and on the propensity to volunteer. As the 2013 GSS links data collected from Canadians about their experience as a donor and volunteer in the previous twelve months to their actual tax file data, I also update the results obtained by previous researchers on the link between volunteering and income in the general population. Although there is one other paper which has looked at the short-term impact of BC's mandatory work experience program, this is the first paper to look at the effect of the mandatory volunteering programs introduced in Ontario and Newfoundland, and to look at both short-term and longer-term effects of these programs. Although I find no evidence that requiring students to volunteer without pay in high school will in fact increase the likelihood that they subsequently volunteer, the results

show that those who go through the work experience policy are more inclined to volunteer in the future. The results also provide qualified support for the view that mandatory volunteering programs will increase future earnings by contributing to the formation of human capital and-or social networks.

The rest of paper is organised as follows. Section 3.2 provides a brief discussion of the literature on volunteering and income, focussing on more recent contributions. Sections 3.3 and 3.4 detail the data used for the analyses and the econometric analysis respectively. Section 3.5 discusses the results and the conclusion follows in section 3.6.

3.2 Literature Review

There is a large body of literature that attempts to explain why individuals volunteer. Two broad motivations for volunteering have been identified by economists: the consumption motive, and the investment motive (Menchik & Weisbord, 1986). When individuals volunteer because they find the end product of such activity intrinsically rewarding, or because of the utility benefits they derive from engaging in altruistic behaviours, or from the enhancement to their reputation that arises as a result of such activity (Meier & Stutzer, 2008; Bruno & Fiorillo, 2013; Wilson, 2012), then the decision to volunteer is seen as being driven by the consumption motive. In contrast, when individuals volunteer due to extrinsic motivations or in the anticipation that such behaviour will be rewarded by an increase in labour market income, then their decision is viewed as being driven by the investment motivate (Menchik & Weisbord, 1986). Although some researchers have found evidence in support of the consumption model (Prouteau & Wolff (2006), Bruno & Fiorillo (2012), considerably more attention has been given to the link between volunteering and labour market earnings, e.g., the investment motive. Below**,** I focus on the empirical literature that has

examined the relationship between volunteering and labour market earnings. As this is a large and varied literature, this review is necessarily selective, and concentrates particularly on papers that have examined this issue using Canadian data, and on more recently published papers reporting findings in other countries.

A first step in understanding the link between volunteering and income is to understand the reasons for which volunteers might earn more than non-volunteers. As discussed by Day & Devlin (1998), there are three channels by which volunteering might be expected to give rise to a wage premium: - human capital accumulation, signaling and social networks. Volunteers might acquire additional human capital if their activities as a volunteer enable them to develop new skills or to broaden their job experience (Menchik & Weisbord, 1986; Day & Devlin, 1998). They may be able to parlay this volunteer job experience to acquire a better job, thus increasing their earnings. Alternatively, volunteering may be a labour market signal: in a labour market characterized by asymmetric information, employers may have difficulty in distinguishing high-productivity employees (or potential employees) from low productivity ones. Individuals who volunteer may be perceived as more ambitious, and consequently more likely to be high-productivity workers than those who do not choose to volunteer. Consequently volunteers are more likely to obtain access to (better) paid employment, and to experience more rapid career progression, leading to higher incomes. Evidence that volunteering is interpreted as a signal that the worker is of high-productivity has been found by Carlin (2001), Janey, Tuckwiller & Lonnquist (1991), Mueller (1975) and Stephan (1991). Volunteering may also lead to the creation of social contacts (Menchik & Weisbor, 1986) or networks, which in turn affect labour market outcomes by increasing the likelihood that the volunteer finds paid employment, and also may make it more

likely that volunteers are able to find better jobs (Apinunmahakul & Devlin, 2008; Devlin, 2000; Day & Devlin, 1998; Meier & Stutzer, 2008). Few researchers have tried to investigate whether volunteering affects income via human capital accumulation or via signaling or via networks (e.g., Bruno & Fiorillo, 2013; Day & Devlin, 1998; Devlin, 2000; Hackl, Halla & Pruckner, 2007).

The fact that there are different possible channels by which volunteering may influence earnings has led to a number of different measures of volunteer activity being used in the literature. The three outcome measures typically used are: whether one volunteered or not, the number of hours volunteered, and the number of different organisations for which the individual volunteers (Hackl, Halla & Pruckner, 2007). While all three measures are used to test for the human capital mechanism, the latter two are particularly well suited for capturing the importance of the network and signaling mechanisms: individuals who volunteer for more hours, or for more organisations, potentially demonstrate a greater commitment to being a 'high performer' – strengthening the signal – and also have more opportunity to develop their social network

Turning to actual estimates of the wage premium associated with volunteering, the seminal Canadian paper is Day & Devlin (1998). They use the 1987 Survey of Volunteer Activity to investigate the impact of volunteering on earnings in the paid labour market. They also investigated whether these returns could explain the male-female wage gap. They found an 11% wage premium for male volunteers as compared to their non-volunteer counterparts. In contrast, for females, there was no difference in the earnings of volunteers and non-volunteers. However, the authors did not control for the selection problem that can occur when individuals decide to volunteer. Day & Devlin (1998) also find a 7% wage premium for volunteers as compared to non-volunteers, but again do not correct for the bias in the earnings premium created by the

endogeneity of the decision to volunteer.

Devlin (2000) uses the 1997 Survey of Giving, Volunteering and Participation to again examine the returns to volunteering, and uses a Heckman sample selection approach to correct for the endogeneity bias occasioned by the likelihood to volunteer. On average, she finds a 4% earnings premium for volunteers as compared to non-volunteers: male volunteers earn 14% more than non-volunteer males, whereas female volunteers earn about 2% more than non-volunteer females, and volunteers who are university graduates also earn a premium of 4% more their non-volunteer counterparts. With regards to age, volunteers under 30 years of age earn about 20% less income than the non-volunteers counterparts, volunteers from age 30 to 59 earn about 6% higher and volunteers from 60 years and above earn about 12% premium than their non-volunteers counterparts. Devlin (2000) finds support the network hypothesis rather than the human capital or signaling hypothesis.

Prouteau & Wolff (2006) use a 1999 French survey to examine the returns to volunteering in the French labour market. Focusing on volunteers who perform managerial tasks in their association - such as a golf or tennis club - and using a switching regression model to correct for selection bias, they find no evidence that volunteering increases labour market earnings. One possible explanation for their findings is self-selection: those individuals who choose to assume managerial positions in voluntary organisations may have no aspiration to increase their income through volunteering.

Hackl, Halla & Pruckner, (2007) use 2001 Austrian Census data to investigate the link between volunteering and earnings in Austria. They consider three measures of volunteering: - the likelihood to volunteer, the number of hours volunteered and the number of organisations

for which an individual volunteers. Before controlling for the selection bias, they find a wage premium associated with volunteering of 23.6%. After controlling for the selection bias using whether one has a friend who volunteer, however, the authors estimate of the wage premium falls to 18.5% when the dependent variable used is the decision to volunteer, whereas the premium is 0.6% for one additional hour volunteered and for an additional organisation volunteered in. When the authors used a propensity score matching technique, they find that the wage premium ranges from 20.1% to 26.9%. Their results support all three mechanisms by which volunteering affects income. It should be noted that the support for the network hypothesis was via the number of hours volunteered rather than via the number of organisations in which the individual volunteers.

Bruno & Fiorillo (2013) examine the returns to volunteering for Italian employees using the 2006 European Union Statistics on Income and Living Conditions. The authors use a Heckman estimation procedure to correct for selection bias into the labour force and use instrumental variable estimation to correct for the selectivity bias of the participation in volunteer work. The authors use participation in group activities and informal help to correct for the selection bias. They find a wage premium of about 3.7%, which is higher than the wage premium without controlling for the selectivity bias.

Turning to Britain, Cozzi, Mantovan & Sauer (2013) use the British Household Panel data set between 1996 and 2008 to estimate the impact of volunteering on mean annual earnings and also to examine the earnings gap between male and female volunteers. The authors control for the selection bias arising from the likelihood to volunteer using instrumental variable estimation, and use data on rainfall to construct instruments. Their findings suggest that there is a wage gap between male and female volunteers of about 23.8%. Moreover, after controlling for the

endogeneity of the decision to volunteer, the returns to volunteering increases from about 12.5% to about 94.7% for males, whereas for females it increases from about 11.8% to about 87.5%. Their results provide support mainly for the screening hypothesis.

Although the papers discussed above have documented a positive link between volunteering and labour market earnings, none of these authors have investigated whether volunteering still has a positive impact on labour market outcomes when volunteering is mandated rather than being the expression of a personal choice. Indeed, to the best of my knowledge, the only research on how high school mandated work experience or volunteering programs affect labour market outcomes is Lee (2011). He investigates how the British Columbia policy reform in 1995, which required high school students to complete at least 30-hour work experience in order to graduate, impacted employment and wages of the affected students in the immediate aftermath of completing their high school studies, as well as the likelihood of pursuing post-secondary schooling. Using the Canadian Labour Force Survey, and conditioning on those in the labour force, the author found that the introduction of the policy resulted in a 2 percentage point increase in the likelihood of continuing with post-secondary school education. However, the policy reform led to a 3.2% reduction in the likelihood of employment, and a 3.3% decrease in wages for those who are only working, while for those who work and go to school, the policy had no impact on their wages as compared to those in Manitoba and Saskatchewan (who are in the control group). He interprets his findings as suggesting that those students affected by the policy may be engaged in search, i.e., they are seeking far better jobs upon graduation, after having taken lower-paying jobs.

Yang (2012) studies the impact of the Ontario policy reform on subsequent volunteering activities. He finds that this policy increased volunteering of students of age 17 and 18 years of

age by about 6% but decreased their subsequent volunteering rates after graduation by about 5%. Another finding was that students who were not directly affected by the policy also reduced their volunteer participation rates. This negative effect of the policy was persistent 8 years after the introduction of the policy.

In contrast to Lee (2011) and Yang (2012**),** the analysis conducted in this chapter considers both the BC and Ontario policy reforms and therefore evaluates the impact of both mandatory work experience and mandatory volunteering. More importantly, however, is that I consider both the short-term and medium-term impact of the introduction of these policies; whereas the short-term impact of the BC policy is consistent with Lee's findings, I show that the impact changes over time: nine years after completing high school, there are positive labour market returns to mandatory volunteering policies. The positive return on income for those who were subject to the BC policy may be attributable to the fact that although the policy initially leads to a reduction in income, it subsequently makes them more likely to voluntarily volunteer, and there is a wage premium associated with voluntary volunteering. I find that the Ontario policy generates positive income returns in the longer term yet made individuals less inclined to voluntarily volunteer. Comparing those who underwent these policies with their voluntary volunteer counterparts, my results suggest that although mandating volunteering breaks the signal associated with volunteering it does generate longer term benefits.

3.3 Data

The analysis conducted below draws on data from the 2004 and 2007 Canadian Survey of Giving, Volunteering and Participation (CSGVP)as well as the Giving, Volunteering and Participation component of the 2013 General Social Survey (GSS GVP).[7] I do not use the 2010

[7] The analysis presented in this paper was conducted at the COOL RDC which is part of the Canadian Research

CSGVP survey as it did not have information on personal income, but rather on household income.[8] The CSGVPs and the GSS GVP (GVPs) are random-digit dialing cross-section surveys of individuals who are 15 years of age and over and is representative of the Canadian population. These datasets are chosen because they have a wide range of questions about individuals' volunteering activities and the socio and demographic characteristics of both volunteers and non-volunteers. In particular, the surveys asked respondents if they supplied voluntary work in formal organisations, how many total hours they volunteered, and the number of organisations they volunteered in. The surveys also include questions regarding whether or not they regularly attend a place of worship; this is useful, as it is well-established in the literature that individuals who are more religious are also more likely to volunteer. In addition, they report information regarding membership or participation in group activities.

The 2013 GSS GVP is a particularly useful data set not only because it is the most recent data set to collect information about Canadians' volunteer activity but, more significantly, because the information on income (both wage and non-wage income) is extracted from individuals' income tax forms and hence is much more accurate than the self-reported income contained in the CSGVP surveys. In contrast, the CSGVP surveys do not specifically report wages and salaries, but instead provide information regarding overall personal income; a separate question asks individuals about their major source of income, and so the analysis below includes only those individuals who

Data Centre Network (CRDCN). The services and activities provided by the COOL RDC are made possible by the financial or in-kind support of the SSHRC- Social Sciences and Humanities. Research Council of Canada, the CIHR- Canadian Institutes of Health Research, the CFI- Canada Foundation for Innovation, Statistics Canada, Carleton University, the University of Ottawa and the Université du Québec en Outaouais. The views expressed in this paper do not necessarily represent the CRDCN's or that of its partners.

[8] I could have included the 2010 CSGVP survey if I had limited my analysis to single individuals. However, this would not only have reduced the sample size to fewer than 200 individuals for the analysis of mandatory volunteering, but also rendered the comparison with other results reported in the literature less evident, since most individuals live in households of two or more persons.

report that their major income source is wage and salary income.

Given the quality of the income data in the 2013 GSS, I take the opportunity in this chapter to update previous findings regarding the positive relationship between volunteering and labour market earnings. For this purpose, it is necessary to define the sample of voluntary volunteers. The GSS includes a question that asks respondents whether they have provided any unpaid work or service to formal organisations. I define a dichotomous variable - Volunteer – which equals one if the respondent volunteered in the past 12 months and zero otherwise. However, using this definitions will include in the samples of volunteers those individuals who are required by their school or employer or organisation to volunteer in the community. To correct for this, I exclude those individuals who said they were required to volunteer from the analysis. Respondents are also asked how many hours, in total, they volunteered for formal organisations, and for how many organisations they volunteered. I define the continuous variable Hours, and attribute to this variable the natural logarithm of the total number of hours volunteered by the respondent in formal organisations in the previous twelve months. Finally, I define the continuous variable Organisations, to record the natural logarithm of the number of formal organisations in which the respondent volunteers.

Amongst the sample of voluntary volunteers, there are individuals who were mandated to volunteer or who voluntarily volunteered when they were in high school. The 2007 CSGVP includes a question which asks respondents whether they volunteered in high school; I have no direct information regarding high school volunteer activity for respondents to any other cycles of the CSGVP survey, or for respondents to the GSS.

Moreover, in none of the datasets are respondents specifically asked about whether they were

required to volunteer when they were in high school. As such, to define the sample of individuals subject to mandatory volunteer or work experience requirements in high school, I rely on the information regarding the province of residence and the age of the respondent. However, one complication is inter-provincial migration**,** a respondent who completed high school in Ontario may subsequently move to Alberta, and if high school volunteering experience helps individuals to acquire human capital, then including inter-provincial migrants from provinces with mandatory volunteering programs to provinces without such programs will result in over-estimating the income of individuals not subject to high-school mandatory volunteering requirements. And, conversely, including inter-provincial migrants from provinces without mandatory volunteering programs to provinces with such programs will potentially result in underestimating the impact of these programs. To address this issue, I use information regarding the length of time the respondent has resided in the community to ensure that respondents completed high school in their current province of residence. Specifically, I require respondents who are 18 years old to have lived in the community for at least a year, 19 years old are expected to have lived in the community for at least 2 years and 27 years olds are expected to have lived in the community for at least 10 years and so on.[9] Of course, as individuals in this age group are often highly geographically mobile, there may be significant differences between the populations of 27 year olds who have been resident in their communities for the past 10 years, and those who have not been long-time residents; consequently, as a robustness check, I also report results when I do not apply the migration requirement.

[9] The 2007 CSGVP that asks respondents if they volunteered in high school. Using the age and how long one has lived in the community (migration criteria) to define the mandatory volunteers, I then checked with those who answered in the affirmative to having volunteered in high school. Only 1 individual in the sample of mandatory volunteers did not answer in the affirmative. This suggests that the selection criteria I apply to identify the mandatory volunteers are appropriate.

Table 3.1: Age group of mandatory volunteers across the years

	Province		
Year	Newfoundland	Ontario	British Columbia
2004	N/A	18 -19 years	18 - 23 years
2007	N/A	18-22 years	18 - 26 years
2013	18 - 21 years	18-28 years	18 - 32 years

Since BC passed its policy in 1995 and Ontario in 1999, respondents to the 2004 CSGVP who were subject to mandatory volunteering requirements would be from 18 to 23 years of age in BC and 18 to 19 years of age in Ontario, whereas in 2007, they would be from 18 to 26 years of age in BC and 18 to 22 years of age in Ontario. In 2013, this same group would be from 18 to 32 years of age in BC, 18 to 28 years of age in Ontario and 18 to 21 years of age in Newfoundland. The transition of the age groups is shown in Table 3.1.

To analyse how both policies affect future labour market income, I concentrate on individuals who are of age 25 years and above, because those below 25 years may be in school full time or may be searching for job. In particular, the synthetic cohorts from age 25 to 28 years (cohort A), from age 27 to 28 years (cohort B), from age 25 to 32 years (cohort C) and from age 27 to 32 years (cohort D) are the samples used to compare earnings' returns of voluntary volunteering with those of mandatory volunteering. While cohorts A and B capture those who were mandated to volunteer in Ontario, cohorts C and D capture those who were mandated to volunteer in BC. To evaluate the effectiveness of the policy reforms on income, I compare cohorts A and C in 2013 to individuals who are of age 29 to 32 years and 33 to 40 years respectively. Consequently, those of age 29 to 32 years and 33 to 40 years will be in the pre-treatment group and are not affected by the policy reforms of Ontario and BC respectively. Individuals in the same age group in the other provinces instead of BC and Ontario are also not treated in 2013, so that the reference category would be the other provinces. Similarly, for cohorts B and D, individuals of age 29 and 30 years and 33 to 38

years, will be in the post-treatment group. Notice also that if we include 2007 CSGVP then in 2007, individuals of age 25 and 26 years are affected by the BC policy, while those of age 27 and 28 years, will be in the control group.

A more robust analysis consists of including 2007 CSGVP in the analysis of the Ontario policy and 2004 CSGVP in the analysis of the BC policy because in those years, none of the age groups in the treated and control provinces were treated. This allows for the effect of the policy due to trends or time changes to be netted out. Note also that when I update the results on the wage premium, using the entire sample of volunteers in the 2013 GSS GVP, I focus on individuals who are at least 25 years of age.

In addition to the age and length of residence criteria discussed above, I include only those individuals who reported that they worked the week before the interview day because it is only for these individuals that information is reported regarding the type of job they do and the hours they work. However, I drop those individuals who worked for less than 30 hours in total, or who reported income less than what would be earned in 30 hours in a minimum wage position. Specifically, individuals who earned at most $300 for the year 2013 are excluded. In 2007, those who earned at most $240 are excluded and in 2004, those who earned at most $210 are excluded. Out of the full sample of 14714 individuals in the 2013 GSS GVP, 7948 were employed. However, focussing on individuals who report positive wages and salaries, the sample drops to 7339. Excluding respondents who are less than 25 years (1597), those who earned at least $300 (32 observations) , non-landed immigrants (96) and those who neither speak English or French (1 observation), the sample size drops to 5613. In the analyses of voluntary volunteers, after excluding those who were required to volunteer in the past 12 months (189 observations) and

those individuals with missing values from the variables used as instruments (3), means that the final sample size drops to 5,420 . To render comparisons with previous results more meaningful, and as a robustness check, I also use the 2013 GSS GVP to examine the earnings premium when the measure of income used is personal income. I restrict my sample to employed individuals whose major source of income is from wages and salaries, age 25 and above. After excluding non-landed immigrants, those who speak neither English nor French (2 observations), and those whose personal income is less than $300 (lost 1 observation), I obtained a sample of 5,150 individuals. After additionally excluding individuals who were required to volunteer (150) and missing values in the variables used as instruments (4 observations), my final sample size is 4,996.

In the 2004 CSGVP, out of 22164 respondents, 13033 were employed. However, I again restricted my sample to those individuals who reported that their major source of income is from wages and salaries (a deletion of 5408 observations), at least 25 years of age (a deletion of 1432 observations), non-landed immigrants (a reduction of 78 observations) and those who earned less than $210 (3 observations) I obtained a final sample of 6112; however, 239 of these individuals were required to volunteer in the past twelve months. Following the same steps, the final sample for the 2007 CSGVP includes 8166 individuals, 305 of whom were required to volunteer during the previous twelve months, out of an initial sample of 21,827 observation. Conseqnuently, the total sample for the pooled cross-sectional analysis is 19, 428 individuals, 694 of whom who were required to volunteer in the past 12 months.

For the analysis of the policy reforms of BC and Ontario, Ontario is dropped from the BC analysis and BC is also dropped from the Ontario analysis because both provinces had experienced a policy reform. This is a result of the different ages groups that have undergone the

BC and Ontario reforms. Some of the age groups who have not received treatment in Ontario have received treatment in BC, rendering the control groups across these two provinces very different. To analyse Ontario policy reform for the age groups, a total sample of 1,931 is used for the difference-in-difference-in-difference (DDD) analysis and a sample of 651 is used for the difference-in-difference (DD) analysis. Similarly for the analysis of the BC policy reform, a total sample of 3,385 is used for the DDD analysis and a sample of 1,452 is used for the DD analysis. To compare the outcomes of voluntary volunteer to those of the Ontario and BC reforms, the samples 1,375, 753 3,106 and 2,484 observations of cohorts A to D respectively are used. No observations was lost for the minimum wage requirement.

The univariate descriptive statistics of volunteers versus non-volunteers show that, on average, volunteers earned more income than non-volunteers. In 2013, volunteers earned wage and salary income of about $60, 977, while the non-volunteers earned about $52,333, a difference of about 18%. Even when we consider personal income, volunteers still earn more (about $68,656) than non-volunteers who earn about $58,066, a difference of about 18%. In 2007, volunteers earned $47,246.09 on average, while non-volunteers earned about $40,118.21 on average which is a difference of about 18%. Similar positive difference is found in 2004 and among the individuals aged 25 to 28 years and those aged 25 to 32 years.

3.4 Empirical Model

In order to determine if volunteering (both mandatory and voluntary) affects income, I estimate an income equation as a function of, among other factors, voluntary volunteering or mandatory volunteering. However, before investigating the impacts of the mandatory volunteering policies on income, I first investigate whether voluntary volunteering impacts income for the entire sample.

As discussed in the previous section, I use three different measures of voluntary volunteering: whether a respondent is a volunteer (Volunteer), the natural logarithm of the number of hours volunteered (#Hours) and the natural logarithm of the number of organisations for which the individual volunteered (#Organisations). Each specification of the model uses one of these measures of volunteer activity. I estimate a log-linear regression model of the natural logarithm of income, a variant of the well-known, Mincer equation (Mincer 1974), which has been used extensively in the literature.

$$Y_{ji} = \beta_j' X_{ki} + \gamma_j' V_{ji} + \varepsilon_i \tag{3.1}$$

where Y_i denotes either the natural logarithm of actual wages and salaries or personal wages and salaries or personal income with the main source of income being wages and salaries of individual i, and $\varepsilon_i|X, V$ is normally distributed with mean of 0 and variance σ^2. X_i is a vector of k explanatory variables, including age, marital status, gender, highest level of education, province of residence, the length of time one has lived in the community, place of birth, religiosity, and the number of children below 18 years of age in the household. All variables are as defined in Table 3.1. V_{ji} is the variable denoting one of the three types of voluntary volunteer variables; and subscript $j \in \{vol, hrs, org\}$ denotes the changing coefficients of equation 3.1 depending on the three measures of volunteering. Therefore, equation 3.1 is estimated three different times to capture the effect of each of the volunteering variables on income. Notice that the number of hours volunteered and the number of organisations for which the individual volunteered are censored at 0, which implies that the likelihood to volunteer is a dichotomous variable. When the analysis uses data pooled from different cycles, a year dummy is added to allow for the different

year variables to be added.

Notice that equation 3.1 treats each of the volunteer variables as exogenous. But endogeneity (due to reverse causality) may arise because individuals self-select into being volunteers, and may in fact be volunteering more hours or volunteering in many organisations in order to increase their income. To address this problem of endogeneity, I estimate the voluntary volunteer equations using an instrumental variables approach. Good instruments are highly correlated with the measure of volunteering, but do not otherwise affect income. This first condition is directly testable, but the validity requirement of the instruments (the exclusion restriction) is not. However, one can use the Hansen-Jason test of over-identification to determine whether at least as many of the chosen instruments as the number of endogenous variables are uncorrelated with the error term in the equation being estimated. This test is possible only when there are more instruments than the number of endogenous variables.

For the analyses of the sample of respondents aged 25 and above in the GVPs, I use two instruments similar to those used by Bruno & Fiorillo (2013). The first instrument is participation or membership in group activities such as sports or recreational organisations, cultural, educational or hobby organisations (not available in 2007 CSGVP), school groups, neighbourhood, civic or community associations, service clubs, seniors' groups, youth organisations and immigrant or ethnic associations, support or self-help programs (only in available in 2004 CSGVP), conservation or environmental group (only in available in 2004 CSGVP); door-to-door to raise money for a cause or an organisation (only in available in 2007 CSGVP), student government (only in available in 2007 CSGVP), one or both parents volunteered (only in available in 2007 CSGVP) or membership in religious affiliated groups. Participation or membership in these types

of groups encourage social interaction that leads to volunteering because group members are more likely to meet other volunteers or gain information about volunteering activities. In support of this argument, Smith (1994) argues that participation in social groups such as recreation and sports clubs or churches are all determinants of the likelihood to volunteer. For each cycle, I used participation in any of these group activities as an instrument for the analysis of the pooled cross-sections. The second instrument is whether or not the individual undertook informal volunteering, such as helping out neighbours or other activities undertaken outside of a formal organisation. Smith (1994) argues that helping someone informally is associated with volunteer behaviour. Participation or membership in professional associations or unions or political groups are excluded from the instruments because they are likely to affect income directly. As argued by Bruno & Fiorillo (2013), working status will affect membership in professional unions or association, and rent-seeking may also induce individuals to become members of political groups.

To investigate the impact of voluntary volunteering on income for all of the four cohorts and compare results to the effects of the policies, I rely on one instrument: - whether one was a member of a youth organisation or whether one or both parents volunteer (the latter is only available in the 2007 CSGVP). Those whose parents volunteer will have had volunteering behaviour modeled for them, and it is natural to speculate that this would make them more likely to volunteer. And, in fact, Caputo (2009) found that American youths whose parents volunteer are more likely to do so. McFarlan &Thomas (2006) also argue that youths who belong to their school-affiliated clubs such as drama clubs and service clubs, are more likely to volunteer. The involvement in youth groups or teams when one was young has been found to lead to enhanced social contacts, which foster volunteering (Apinunmahakul & Devlin, 2008).

Using participation in group activities and in informal help as instruments, I estimate three equations, one for each definition of volunteering. The reduced form of the volunteer equation for the dichotomous volunteer variable is:

$$V_{ji} = 1\left\{\lambda_k' X_{ki} + \varphi_k' Z_i + \mu_i \geq 0\right\} \tag{3.2}$$

where $1(.)$ is an indicator function and V_i is the variable capturing the likelihood to volunteer, Z_i is a vector of instrumental variables and the error term $\mu_i \mid X, Z$ is normally distributed with mean 0 and variance 1.

I also define the censored volunteer variables equations as:

$$V_{ji}^* = \tau_{jk}' X_{ki} + \theta_k' Z_i + \eta_i \tag{3.3}$$

where V_i^* denotes either the observed natural logarithm of hours volunteered or the natural logarithm of the number of organizations defined as V_i^*= max$\{0, V_i^*\}$ and $\eta_i \mid X, Z$ is normally distributed with mean 0 and variance σ^2. After estimating equations 3.2 and 3.3, I re-estimate equations 3.1 in a structural form as

$$Y = f\left(\widehat{V}\right) \tag{3.4}$$

I use Ordinary Least Squares to estimate equations 3.1 and 3.4. For the instrumental variables (IV) approach, I estimate the first stage equations 3.2 and 3.3 using probit and Tobit estimation methods respectively. I compute the predicted probabilities from these first stages and use the predicted probabilities as instruments for their respective endogenous variables in the second-stage regression of equation (4). This approach has several advantages: the standard errors and test statistics are asymptotically valid, the instrumental variable estimator is asymptotically efficient

and the first stage model does not need to be correctly specified (Wooldridge, 2002). Lastly, β and γ in equation 3.1 are still identified with just the exact number of instruments as the number of endogenous variables (Wooldridge, 2002).

In order to compare outcomes when volunteering is voluntary to outcomes when it is mandatory, I compare the analysis of the voluntary volunteering variables (Volunteer, #Hours, #Organisations) to that which happens when individuals have experienced mandatory volunteering requirements. To do this, I estimate the impact of voluntary volunteering on income for the same age cohorts who underwent the Ontario and BC policy (25 to 28 years and 25 to 32 years) and compare these outcomes with the outcomes from modelling the impact of mandatory volunteering resulting from the policies of Ontario and BC for these same age cohorts. I try to ensure that I am examining the same age groups for the treated (Ontario and BC) and untreated (other provinces) individuals. To investigate the impact of voluntary volunteering on income for all the four cohorts and compare results to the effects of the policies, I re-estimate equations 3.1 and 3.4.

In order to compare outcomes when volunteering is voluntary to outcomes when it is mandatory, I estimate the impact of voluntary volunteering on income only for individuals who belong to the same age cohorts as those individuals who were subject to the Ontario and BC policies (25 to 28 years and 25 to 32 years), and compare these outcomes for the treated (ON and BC) and untreated (other provinces) individuals. To investigate the impact of voluntary volunteering on income for all the four cohorts and to compare the effects of the policies, I re-estimate equations 3.1 to 3.4.

To analyse the impact of the policies of BC and Ontario, I have to be careful to estimate the model for the specific age groups that were subject to the mandatory volunteering requirements

in high school and compare them to those who had not. As shown in Table 3.1, for the province of BC, the age group from 25 to 32 years is the treated group in 2013 and individuals from 33 to 40 years in 2013 in BC are non-treated. In all other provinces except Ontario, individuals in both age groups are untreated. In contrast, in 2007, those who are treated in BC are those individuals age 25 and 26 years so that those who are untreated in BC are those of age 27 and 28 ; individuals in these age groups in the other provinces did not receive treatment. Subsequently, the age group 25 to 28 years in 2013 can be compared to the age group 29 to 32 for the analysis of the Ontario policy. For the longer term analysis of the policy, I focus on individuals from 27 years of age instead of the 25 years of age, the treated and untreated groups in BC is 27 to 32 years and 33 to 38 years respectively. More details regarding the description of treated groups are provided in Table 3.1.

Similarly, as the mandatory unpaid community service policy of Ontario was instituted in 1999 (Table 3.1), in this province the treated group consists of individuals age 25 to 28 years in 2013 while those from age 29 to 32 in Ontario are untreated in this year. In the other provinces (except BC), no one in this age group received treatment. If I focus on individuals of age 27 years and above, then the treated and control groups in Ontario would be from age 27 to 28 and 29 to 30 respectively while in the other provinces (except BC), these age groups did not receive treatment. The mandatory unpaid community service policy of Newfoundland was instituted in 2006, and so those who are subject to the policy and have completed high school are from 18 to 21 years of age in the 2013 GSS GVP. In this province the age group that was treated is younger than age 25 in 2013, and consequently the short and longer term impacts of the Newfoundland policy cannot be investigated in this study.

To analyse the impact of the mandatory volunteering policies, a difference-in-difference (DD) estimation method is appropriate. By comparing the treated group to the control group in the second period, the DD technique deals with the within-province differences and across-province differences by removing biases in the income of the treated group that has nothing to do with the policy change. These biases include those resulting from permanent income differences across those in the treated age group and those in the control age group and the income differences that exist between the treated provinces (Ontario or BC) and the control provinces (the other provinces). In this case, the DD estimated coefficients ρ_1 capture the average gain in the income of the treated group minus the average gain in income of the control group.

The DD method redefines the linear regression model of equation 3.1 as:

$$Y_i = \alpha'_{1k} X_{ki} + \omega'_1 AGE\_GRP_i + \xi_1 PROV_i + \rho_1 AGE\_GRP_i * PROV_i + \sigma_{1i} \tag{3.5}$$

The dummy variable, AGE_GRP captures the age groups that are subject to the policy in the provinces that implement th**e** policy**,** and the dummy variable $PROV$ captures the province that implements the policy (treated province). The coefficient of interest, ρ_1, gives the true effect of the policy reform.

For the analysis of the BC policy, the province dummy variable $PROV$ will take the value 1 if an individual is in the province of BC and 0 otherwise (excluding Ontario, as some of its residents in the age groups under study were subject to similar policies). Also, the age group dummy, AGE_GRP takes the value 1 when an individual's age is between 25 to 32 years in 2013 or between 25 to 26 in 2007 and 0 if the individual's age lies in age group 33 to 40 in 2013 or between 27 to 28 in 2007 respectively. Similarly, when analyzing the Ontario policy, the province

dummy variable $PROV$ will take the value 1 if an individual lives in Ontario and 0 otherwise (excluding BC, as some of its residents in the age groups under study were also subject to similar policies). Also the age group dummy, AGE_GRP takes the value 1 when an individual's age is between 25 to 28 years in 2013, and 0 if the individual's age lies in the age group 29 to 32 in 2013. Similar procedures are applied when the sample selection is restricted to ensure that members of the treated group are at least 27 years of age.

From equation 3.5, the average gain in income of the treated group is

$[Y\,(AGE\_GRP = 1,\ PROV = 1) - Y\,(AGE\_GRP = 0,\ PROV = 1)]$

$-\,[Y\,(AGE\_GRP = 1,\ PROV = 0) - Y\,(AGE\_GRP = 0,\ PROV = 0)]$

The within province effect is $[Y\,(AGE\_GRP = 1,\ PROV = 1) - Y\,(AGE\_GRP = 0,\ PROV = 1)]$ which is $(\omega_1 + \zeta_1 + \rho_1) - (\zeta_1) = \omega_1 + \rho_1$. Similarly, the within province effect in the control province is given by $[Y\,(AGE\_GRP = 1,\ PROV = 0) - Y\,(AGE\_GRP = 0,\ PROV = 0)]$ which is ω_1. Consequently, the across province effects is given by $(\omega_1 + \rho_1) - \omega_1 = \rho_1$ which is the coefficient of interest.

A more robust approach over the DD approach is the difference-in-difference-in-difference (DDD) estimation method, which takes account of the year effects between the treated group and untreated group. The approach is to include a year prior to the year individuals received the treatment in order to net out changes in income that are due to trends (or a shock to the economy). In this case, the DDD technique removes biases in incomes which are due to trends but have nothing to do with the policy reform. For the DDD analysis, I redefine the linear regression model of equation 3.5 as:

$$
\begin{aligned}
Y_i &= \alpha'_{2k} X_{ki} + \omega'_2 AGE\_GRP_i + \xi_2 PROV_i + +\delta_2 POST_i + \pi_2 AGE\_GRP_i * PROV_i \\
&\quad + \upsilon_2 AGE\_GRP_i * POST_i + \phi_2 PROV_i * POST_i + \rho_2 AGE\_GRP_i * PROV_i * POST_i \\
&\quad + \sigma_{2i} \qquad (3.6)
\end{aligned}
$$

where $POST$ is a dummy variable capturing the second period in which individuals are exposed to the treatment. In this case, the treated group consists of individuals who are exposed to treatment in the second period but not in the first period. Individuals in the control group are not exposed to treatment in neither the first nor second period. The coefficient of interest, ρ_2, gives the true effect of the policy reform. For the analysis of the BC policy reform, since some individuals received treatment in both 2013 and 2007, the dummy variable will take the value 1 when the year is either 2007 or 2013 and 0 if the year is 2004. Similarly, for the analysis of the Ontario policy reform, the dummy variable takes the value 1 if the year is 2013 and 0 if the year is 2007: no individuals belonging to the treated group in 2013 were treated in 2007.

From equation 3.6, it is possible to determine within and across-province effects to determine the DDD estimator by computing the net average gain in the income within the control provinces and subtracting this from the net average gain in the income of those within in the treated province. The within-effect in the treated province is $(AGE\_GRP = 1,\ PROV = 1,\ POST = 1) -$

$Y\ (AGE\_GRP = 1,\ PROV = 1,\ POST = 0)$ minus

$Y\ (AGE\_GRP = 0,\ PROV = 1,\ POST = 1)$

$-Y\ (AGE\_GRP = 0,\ PROV = 1,\ POST = 0)$ which deduces to $(\delta_2 + \upsilon_2 + \phi_2 + \rho_2) - (\delta_2 + \phi_2) = \upsilon_2 + \rho_2$. Similarly, the within effect in the control province is

$Y\ (AGE\_GRP = 1,\ PROV = 0,\ POST = 1)$

$-\ Y\ (AGE\_GRP = 1,\ PROV = 0,\ POST = 0)$ minus

$Y\ (AGE\_GRP = 0,\ PROV = 0,\ POST = 1)$

$-Y\ (AGE\_GRP = 0,\ PROV = 0,\ POST = 0)$, which gives $(\delta_2 + \upsilon_2) - \delta_2 = \upsilon_2$.

Consequently, the across province effects is given by $(\upsilon_2 + \rho_2) - \upsilon_2 = \rho_2$ which is the coefficient of interest.

Results from both the DD and the DDD approaches are reported in this study. However, a key identification requirement for the DD approach is that the changes in incomes of the control groups and the treated groups would have continued the same way in the absence of the policy reform. Looking at Figures 3.1 to 3.4 that compare the income of the treated and control groups in BC and Ontario to their same-age counterparts in the other provinces, one can see that the trends in incomes remained the same in the pre-treatment year for the treated but changed for the treated province in the post-treatment year. However, the income trend for the control groups in BC and ON compared to their counterparts in the other provinces was smooth over time. Hence the identification condition is satisfied. Due to the small sample sizes for the voluntary volunteer cohorts, I had to group the data some of the other independent variables used in the analyses: immigrants are grouped together; individuals who are single, separated and divorced are all collapsed into one variable called single/SWD. Iinstead of capturing knowledge of both official languages, whether English is the language spoken by the respondent at home is included; no rural/urban classification is available in the 2004 CSGVP, so these variables were also dropped altogether from the analyses of the pooled cross-sections.

Equations 3.5 and 3.6 are also estimated using an Ordinary Least Squares procedure. The DD and DDD techniques are initially applied under the assumption that all respondents finished

high school in their current province of residence. Subsequently, the equations are re-estimated applying an additional requirement that the respondent report that they have been resident in the community for the period of time that has passed since they completed high school. To deal with concerns that the DD results might be driven by returns to volunteering accruing to individuals who volunteered in the past 12 months, the analysis is carried out for three different sample inclusion specifications: for both volunteers and non-volunteers in the past 12 months, only for individuals who have not volunteered in the past 12 months and lastly, only for individuals who have volunteered in the past 12 months.

3.5 Results

Since equations 3.1 and 3.4 are semi-logarithmic models, the interpretation of the wage premium is based on the transformation of the estimated beta associated with the volunteer variable: $\left(e^{\beta}-1\right)100\%$, indicates the percentage change in income associated with the given β (Wooldridge, 2002). Tests of the strengths of all instruments used in the IV analyses are reported in Tables 3.4 and 3.5. The Cragg-Donald F-statistics are all greater than 10 and in the case when two instruments are used, the Hansen-Jason tests of overidentification confirm the validity of one of the instruments, so that at least one of the instruments is not correlated with the error term. A falsification test for the instruments is also performed based on the 2013 GSS GVP, which has information about investment income. It seems reasonable to take the view that individuals are not choosing to volunteer in order to increase investment income. If this is true, and the instruments are valid, then the decision to volunteer should not be a choice. Results are reported in the Table C.1 of the Appendix. The results from analysing the impact of volunteering on investment income show that all the volunteer variables have no effect on investment income after controlling for

selection bias and all three of my volunteer variables (decision to volunteer; hours volunteered; number of organizations) are exogenous. All the regression results are reported in the appendix C.

3.5.1 Voluntary Volunteering and Income (Full Sample Analysis)

The results reported in Table 3.6 using the 2013 GSS GVP (actual income, wages and salaries) show a positive return to volunteering. The wage premium for volunteering without controlling for selection bias is about 7%, similar to the findings of Day & Devlin (1998). A 1% increase in the number of organisations in which the individual volunteers is associated with a wage premium of about 9%. However, the results in Table 3.6 show that after controlling for the selectivity bias, the wage premium for being a volunteer increases to about 30%. A 1% increase in volunteer hours is increases earnings by about 5% while a 1% increase in the number of organizations for which an individual volunteers generates a wage premium of about 20%.

Among all the indicators of volunteering, volunteer hours had the lowest returns to volunteering. One possibility for the smaller wage premium from the volunteer hours is that when volunteer hours exceed a threshold, it may signal lack of available time for paid work (Hackl, Halla & Pruckner, 2007). When I include all individuals of age 15 years and above, I find no impact on wages; when the sample excludes those who are younger than 20, the wage premium increases to about 19%. Excluding individuals who are less than 23 years of age increases the premium to about 23%. The wage premium for the different age groups is shown in Table C.1 of the Appendix. Similar results are found for the number of hours and number of organisations volunteered in, but the results reported in the Appendix C are only for those estimates where the dependent variable is the likelihood to volunteer. These results imply that the more active the individual is in the labour force, the higher the wage premium associated with additional hours of

volunteer work.

Results reported in Table 3.6 also show that when the outcome variable is personal income, which includes income from all sources, the returns to volunteering decrease from 30% to 24%. What should be underscored is that these results imply that whether the outcome variable is personal income (with major source of income coming from wages and salaries) or actual wages and salaries, the story is still consistent:- volunteering has a positive returns on earnings.

The results reported in Table 3.7 show the regression estimates of all the volunteer variables on the actual wages and salaries (as opposed to self-reported wages and salaries); recall that actual wages and salaries are only available in the 2013 GSS GVP. Results are reported for both the OLS and the IV estimation methods. The results are mostly consistent with past findings: males earn more than females, higher education levels leads to higher earnings, experience - as captured by only age - increases with income but at a decreasing rate, the number of working hours is associated with higher earnings, those with white collar jobs have higher earnings and those who reside in rural areas earn less than those who reside in the urban cities. Immigrants who have been in Canada for fewer than 20 years make less income on average than the Canadian born, but there is no significant difference between Canadian-born and immigrants resident in Canada for more than 20 years. There is no income difference between individuals who attend place of worship at least once a month as compared to those who do not. Those who have children less than 18 years of age make less income than those who do not, but there is no significant difference betweens those who have children 18 years or older as compared to those who do not. How long one has lived in the community does not affect earnings, but the province of residence does. Those who reside in Alberta earn more than do those who reside in Ontario. Those who live in Manitoba

and Saskatchewan have no income differences, but those who live in all other provinces, with the exception of Alberta, earn less income than those in Ontario. Not surprisingly, those who have knowledge of both of the official languages of Canada earn more on average than those who have knowledge of only one of the official languages.

3.5.2 Voluntary Volunteering, Mandatory Volunteering and Income

This section compares outcomes of volunteering on income when volunteering activities are mandatory as compared to when they are voluntary as was reported previously. Tables 3.8, 3.9, 3.10 and 3.11 report the impact of the Ontario and BC policies for both the DD and the DDD technique, and with and without the migration requirement which requires individuals to have lived long enough in their province to have completed high school in that province. Tables 3.8 and 3.9 report the direct effect of the policies of Ontario and BC using both the DD and the DDD; Tables 3.10 and 3.11 report the effect of the policies for the sample of individuals who volunteered in the past 12 months. Result in all four tables show that the outcome of the BC and Ontario policies are robust: similar results are obtained regardless of whether the DD or the DDD technique is used.

Focussing on the estimation results of the DD analysis with the strict constraint on inter-provincial migration, reported in Table 3.8, I find that there is no average gain in income for those who were subjected to the Ontario policy as compared to those who were not. However the work-experience policy in the province of BC led to an average reduction in earnings for individuals aged 25 to 32 years by about 18% as compared to those who were not forced to work in high school. However, the results change dramatically if we look at the sample of individuals aged 27 years and above. In particular, those of age 27 or more who underwent the Ontario policy

have about 40% average gain in income while for those who underwent the BC policy, there is an average gain in income of about 13%. These results support that human capital acquisition theory in which volunteering is an investment good.

The results presented in Tables 3.10 and 3.11 focus on individuals who volunteered in the previous 12 months. They show that voluntary volunteers who were subject to the Ontario policy when in high school received a positive average gain in income as compared to those who were not subject to this policy. However, those who underwent the BC policy reform of mandatory work experience received a lower average income as compared to those who did not undergo such treatment in high school but volunteered voluntarily in the previous 12 months. The difference in income between those who were subject to the BC policy and those who were not disappears only at age 27 years or more. The persistent lower average income for those who are 26 years and below and who were subject to the BC work experience requirement is similar to the finding of Lee (2011). The author found that high school graduates who underwent the BC policy had a short-term reduction in wages. A possible explanation for these results is that mandating high school students to work for money may encourage them to stay in these jobs for a longer time before searching for better paid jobs. In a study of high school students who work and its effect on graduation and labour market outcome in Canada by Parent (2006), the author found that high school students who work part-time usually work in sales or the manufacting industries and those who work more hours are less likely to graduate than those who do not work in high school. Parent (2006) also found that those who are induced to work while in high school earn less after graduation.

I further investigate the effects of these mandatory volunteering/working policies on the

likelihood to volunteer in the future. Results from this analysis are reported in Tables 3.12 and 3.13. I find that those who were required to satisfy the BC policy are more likely to volunteer in the future**,** whereas those who were subject to the Ontario policy are not. Indeed, those who were subject to mandatory volunteering requirements in Ontario do not volunteer more or less in the shorter term than their contemporaries in other provinces who were not required to meet such requirements, but in the longer term (from age 27) they are rather less likely to volunteer. This result is consistent with the findings reported in Yang (2012), who found that those mandated to volunteer in high school in Ontario were less likely to volunteer after completing high school. Notice in Table 3.13 that those who underwent the BC policy are more inclined to volunteer. A possible explanation of the high volunteer rates among the BC treated group is that because the policy leads to a lower average gain in income**,** they may subsequently be volunteering more in order to get better paying jobs. The payoff to their high volunteer rate is realised from age 27 years of age. The fall in the likelihood of volunteering associated with the Ontario policy may be attributable to the fact that although there was no impact on income in the short term, the policy made them better off in the long term, and so they were consequently less inclined to volunteer in the longer term. These results provide support, therefore, for the screening hypothesis. Ironically, both policies appear to have failed in terms of their stated objectives: whereas one objective of the Ontario policy was to promote civic engagement, the opposite is true in the long term. And the BC policy that was intended, at least in part, to help prepare students better for the work force leads to a lower average gain in income, although to higher levels of civic engagement than does the Ontario policy.

Table 3.14 reports results of analysing the effect of voluntary volunteering on income if I

restrict the sample of voluntary volunteers to individuals who are in the same age group as those who were mandated to volunteer. Looking first at voluntary volunteers who are in the same age group as the treated group in Ontario (25 to 28 years), there is no wage premium attached to voluntary volunteering whether this is measured in terms of the number of hours volunteered, or the number of organisations for which the individual volunteered. This result is similar to the short term effect of the Ontario policy on individuals subject to that policy who do not volunteer in the previous twelve months. Strikingly, however, there is still no wage premium associated with voluntary volunteering for individuals age 27 to 28, even though the DDD results discussed above indicate that the Ontario policy made the treated group better off in the labour market.To better understand this finding, I did further analysis of voluntary volunteers for the 25 to 28 year old age group (reported in Table B.41 of the Appendix), but excluded from the sample voluntary volunteers from BC and Ontario. When BC and Ontario respondents are dropped, the results change: after controlling for selection bias, there is a positive wage premium associated with voluntary volunteering, whether this is measured in terms of participation, hours volunteered or the number of organisations. Note also that the decision to volunteer, or to intensify volunteering either in terms of hours volunteered or in terms of the number of organisations volunteered in were all endogenous. Considered together, these results suggest that although mandating individuals to perform free community service in high school shuts down the signalling channel by which volunteering increases income in the short run, it does in fact lead to greater human capital accumulation, and generates a positive labour market outcome in the longer term.

I then undertake a similar exercise, and investigate the labor market return to voluntary volunteers of the same age as the treated cohort in BC, that is, voluntary volunteers age 25 to 32

or 27 to 32. After controlling for selection bias in the decision to volunteer using instrumental variable approach, voluntary volunteering positively impacts income for individuals in these age gropus, and voluntary volunteers who volunteer more hours or for more organisations see the highest returns (these are significant at the 10% and 5% levels for these cohorts). However, as discussed above, the 25 to 32 treated group in BC had a lower average gain in income than did non-treated individuals of the same age. In the longer term, however, the difference between the labour market earnings of treated BC individuals and non-treated age contemporaries disappears. These results suggest that the BC work experience policy is having two effects: in the short run it is both breaking the signal associated with volunteering, and also encouraging young people to remain in paid employment where they do not acquire human capital as rapidly as they would were they required to undertake unpaid community service, as in Ontario. However, when they start to voluntarily volunteer after completing high school, BC residents start to 'catch up' with respect to their age contemporaries elsewhere in Canada.

Overall, these results suggest that when high school students are mandated to volunteer, there are distinct short term and long term effects. In the short term, the signal to potential employers is broken because the pool of volunteers is now made up of individuals who would have voluntarily volunteered and those who would not have volunteered. This reduces the labour market return to volunteering. However, volunteering does still promote the accumulation of human capital, and the development of social networks, and this positively impacts future income whether the volunteering activity is mandated or voluntary.

3.6 Conclusion

Focussing on the investment motive to volunteer, I first examine whether there is a wage

premium from volunteering, and examine the channel through which this works, i.e., human capital accumulation, signalling or the expansion of the volunteer's social network. I also compare the returns to volunteering when volunteering is voluntary versus when it is mandated. If volunteering leads to the acquisition of human capital, then mandating individuals to volunteer should lead to a positive return for those who go through this policy. In contrast, if signalling is the channel through which volunteering increases earnings, then mandating individuals to volunteer will break the signal, because the pool of mandatory volunteers includes individuals who would have voluntarily volunteered as well as those who would not have volunteered voluntarily. In this case, the wage premium associated with volunteering should disappear.

I find that the two policies result in different average gains in income in the short term but similar average gains in income in the long term. While both policies have an immediate effect of breaking the signalling mechanism, the Ontario policy results in no average difference in income in the short term for those subject to the policy as compared to those who were not required to meet the requirements of this polic**y,** but yields a positive average gain in the longer term. Strikingly, when considering individuals who voluntarily volunteer, the Ontario policy yields an average gain in income that is similar in the shorter term and higher in the longer term as compared to their counterparts who lived in other provinces. Individuals who were subject to the BC policy experience a short term negative average return on income but a positive long term return on income. Moreover, those who underwent the BC policy are more likely to volunteer in the future, and it is probable that it is the effect of the high volunteer rates that increase the future returns of the BC policy, rather than the policy itself. The policy of Ontario reduces civic engagement over the longer term, and this may be due to the fact that the policy makes them better

off and so they volunteer less.

Results suggests that requiring high school students to perform free community service may lead to better labour market outcomes than does a policy requiring them to acquire work experience. However, requiring students to acquire work-experience may be better for promoting future civic engagement than is a policy of mandated free community service. The results from the analyses provide support for all three mechanisms by which volunteering is hypothesized to affect income; however,the support is particularly strong for the screening hypothesis and human capital acquisition. These findings should also influence the way in which volunteer organisations and community-based programs that rely on volunteers develop strategies to strengthen volunteer recruitment and retention. Volunteering can also be a policy that governments could use to help displaced workers or new immigrants to acquire useful job market experience.

Table 3.2: Variable Definitions

Variables	Definitions
Dependent variables	
Wages	Wages and salaries (*in logarithms*)
Income	Self-reported personal income (*in logarithms*)
Investment Income	Investment income (*in logarithms*)
Control Variables	
Volunteer Variables	
Volunteer	=1 if volunteered in a formal organisation, 0 otherwise
#Hours	Number of hours volunteered
#Organisations	Number of organisations volunteered in
Male	= 1 if male, 0 otherwise
Age	= age
Age2	= age squared
Single	=1 if single and never married, 0 otherwise
SWD	=1 if separated, widowed or divorced, 0 otherwise
Married	=1 married, 0 otherwise: **the reference group**
Kids <18yrs	= 1if has own children in household of less than 18 years old
Kids >=18yrs	= 1if number of own children in household of 18 years or more
Immigrant <10yrs	= if migrated to Canada less than 10 years ago
Immigrant 10 to < 20yrs	= if migrated to Canada less than 10 to years ago
Immigrant >=20yrs	= if migrated to Canada more than 20 years ago
Religious	= 1 if attends religious services or meetings at least once a month, 0 otherwise
English &French	=1 if respondent can communicate in both English and French
French	=1 if respondent can communicate in only French
English	=1 if respondent can communicate in only English: **the reference group**
High School	=1 if has high school or elementary school education or less, 0 otherwise: **the reference group**
Diploma	=1 if has a diploma, 0 otherwise
University	=1 if has university degree, 0 otherwise
Self-Employed	= 1 if self-employed, 0 otherwise
Hours Worked	Total hours worked per week
Management	= 1 if in management occupations, 0 otherwise
Business	= 1 if in business, finance and administration occupations, 0 otherwise
Science	= 1 if in natural, applied sciences and related occupations, 0 otherwise
Health	= 1 if in health occupations, 0 otherwise
Education	= 1 if in education, law and social, community and government occupations, 0 otherwise
Arts	= 1 if in arts, culture, recreation and sports occupations, 0 otherwise
Trade	= 1 if in trades, transport and equipment operators and related occupations, 0 otherwise
Resource	= 1 if in natural resources, agriculture and related production occupations, 0 otherwise

Table 3.2 (Continued)

Manufacturing	= 1 if in manufacturing and utilities occupations, 0 otherwise
Sales	= 1 if in sales and service occupations, 0 otherwise: **the reference group**
White Collar	=1 if worked in a white collar job, 0 otherwise
Rural	= 1 if lives in rural area classification, 0 otherwise
Town	= 1 if lives in town area classification, 0 otherwise
Urban	= 1 if lives in urban area classification, 0 otherwise
Ontario	= 1 if lives in Ontario, 0 otherwise: **the reference group**
Newfoundland	= 1 if lives in Newfoundland or 0 otherwise
Prince Edward Island	= 1 if lives in Prince Edward Island, 0 otherwise
Nova Scotia	= 1 if lives in Nova Scotia, 0 otherwise
New Brunswick	= 1 if lives in New Brunswick, 0 otherwise
Quebec	= 1 if lives in Quebec, 0 otherwise
Manitoba	= 1 if lives in Manitoba, 0 otherwise
Saskatchewan	= 1 if lives in Saskatchewan , 0 otherwise
Alberta	= 1 if lives in Alberta, 0 otherwise
British Columbia	= 1 if lives in British Columbia, 0 otherwise
Abode <5yrs	= 1 if lived in current abode for less than 5 years, 0 otherwise
Abode 5 to <10yrs	= 1 if lived in current abode from 5 to less than 10 years, 0 otherwise
Abode >=10yrs	= 1 if lived in current abode for 10 years or more, 0 otherwise: **reference group**
Year 2013	= 1 if year is 2013, 0 otherwise
Year 2007	= 1 if year is 2007, 0 otherwise
Year 2004	= 1 if year is 2004, 0 otherwise
Instrumental Variables	
Participation	= 1 if has university degree or more, 0 otherwise
Informal Help	= 1 if has some university education or more, 0 otherwise
Youth	= 1 if was a member or participant of a youth organisation or if one or both parents volunteered
Control Variables redefined for analysis for mandatory volunteering	
Immigrant	=1 if born outside of Canada; 0 otherwise
English	= 1 if speaks English at home, 0 otherwise
Single/SWD	=1 if single, widowed, separated or divorced, 0 otherwise
Other Province	=1 if resides in any other provinces except for the mandatory volunteer province
POST	=1 if treatment year, 0 otherwise

Table 3.3: Descriptive Statistics

Variables	2013 GSS GVP	Pooled Cross Section Analysis				
		2013 GSS GVP	2004 CSGVP	2007 CSGVP	25 to 28 years	25 to 32 years
Dependent Variables						
Wages	10.55					
	(0.99)					
Income		10.62	10.35	10.32	10.32	10.43
		(.87)	(.93)	(.90)	(.65)	(.68)
Control Variables						
Volunteer	.44	.46	.50	.55	.39	.43
	(.50)	(.50)	(.5)	(.50)	(.49)	(.50)
#Hours	55.13	56.53	73.91	81.19	52.26	53.25
	(173.77)	(174.99)	(225.9)	(240.37)	(184.26)	(194.12)
#Organisations	.83	.86	.9472	1.12	.69	.73
	(1.30)	(1.30)	(1.331)	(1.50)	(1.11)	(1.10)
Age	44.28	41.13	38.70	38.62	(1.09)	(2.30)
	(11.43)	(12.97)	(12.56)	(11.92)	705.27	824.62
Age2	2091.24	1859.80	1655.73	1633.13	(57.94)	(131.77)
		(1084.86)				
Immigrant <10yrs	.047	.05	.04	.036		
	(.21)	(.21)	(.21)	(.19)		
Immigrant 10 to < 20yrs	.053	.06	.059	.048		
	(.22)	(.23)	(.24)	(.21)		
Immigrant =20yrs	.08	.07	.058	.077		
	(.27)	(.26)	(.23)	(.26)		
Immigrant	.18	.18	.18	.16	.13	.14
	(0.39)	(.39)	(.38)	(.37)	(.33)	(.35)
Religious	.22	.22	.25	.29	.17	.19
	(.42)	(.42)	(.43)	(.45)	(.38)	(.30)
English and French	.20					
	(.40)					
English	.12					
	(.33)					
French	.68					
	(.47)					
English (language spoken at home)	.70	.71	.69	.75	.70	.70
	(.46)	(.45)	(.46)	(.43)	(.46)	(.46)
Male	.54	.54	.54	.50		
	(.50)	(.50)	(.50)	(.5)		
Married	.76	.68	.64	.68	.49	.61
	(.43)	(.47)	(.48)	(.46)	(.50)	(.49)
Single	.15	.25	.29	.24		
	(.36)	(.43)	(.45)	(.42)		

Table 3.3 (continued)

Control Variable	2013 GSS GVP	Pooled Cross Section Analysis				
		2013 GSS GVP	2004 CSGVP	2007 CSGVP	25 to 28 years	25 to 32 years
SWD	0.08	0.07	.076	.08		
	(0.28)	(.26)	(.2651)	(.27)		
Single/SWD					.51	.39
					(.50)	(.49)
Kids <18yrs	.40	.35	.36	.45	.51	.39
	(.49)	(.48)	(.48)	(.50)	(.50)	(.49)
Kids=18yrs	.15	.13	.12	.13		
	(.35)	(.34)	(.33)	(.33)		
High School	.29	.32	.28	.25	.23	.20
	(.45)	(.42)	(.45)	(.43)	(.42)	(.40)
Diploma	.38	.38	.46	.47	.44	.43
	(.49)	(.48)	(.50)	(.50)	(.50)	(.50)
University	.35	.30	.26	.27	.32	.36
	(.47)	(.46)	(.44)	(.45)	(.47)	(.48)
Self-Employed	.09	.06	.19	.08	.11	.11
	(.28)	(.25)	(.39)	(.28)	(.31)	(.31)
Hours Worked	37.48	36.59	39.04	39.10	38.84	39.65
	(12.52)	(12.81)	(14.92)	(14.33)	(14.83)	(13.46)
Management	.13	.11	.08	.09		
	(.33)	(.32)	(.27)	(.29)		
Business	.17	.17	.19	.17		
	(.38)	(.37)	(.39)	(.38)		
Science	.09	.09	.071	.09		
	(.29)	(.28)	(.26)	(.28)		
Health	.07	.07	.07	.06		
	(.26)	(.25)	(.25)	(.25)		
Education	.14	.13	.10	.11		
	(.35)	(.34)	(.30)	(.31)		
Arts	.03	.02	.03	.03		
	(.16)	(.13)	(.17)	(.17)		
Trade	.03	.02	.03	.03		
	(.16)	(.15)	(.17)	(.17)		
Resource	.13	.01	.14	.12		
	(.34)	(.11)	(.34)	(.33)		
Manufacturing	.01	.04	.02	.03		
	(.11)	(.19)	(.15)	(.16)		
Sales	.17	.24	.24	.23		
	(.19)	(.41)	(.22)	(.23)		
White Collar Job	N/A		N/A	N/A	.47	.50
					(.50)	(.50)
Urban	.718		N/A	N/A		
	(.45)					

Table 3.3 (continue)

		Pooled Cross Section Analysis				
Control Variable	2013 GSS GVP	2013 GSS GVP	2004 CSGVP	2007 CSGVP	25 to 28 years	25 to 32 years
Rural	.1758		N/A	N/A		
	(.38)		N/A	N/A		
Town	.11					
	(.31)					
Newfoundland	.014	.01	.01	.01	.01	.01
	(.12)	(.12)	(.11)	(.12)	(.10)	(.11)
Prince Edward Island	.01	.01	.01	.01	.01	.01
	(.07)	(.06)	(.06)	(.07)	(.06)	(.06)
Nova Scotia	.02	.03	.03	.03	.03	.03
	(.15)	(.16)	(.17)	(.17)	(.17)	(.16)
New Brunswick	.02	.02	.02	.02	.02	.02
	(.15)	(.15)	(.15)	(.15)	(.15)	(.15)
Quebec	.25	.24	.24	.19	.25	.23
	(.43)	(.43)	(.43)	(.40)	(.43)	(.42)
Manitoba	.04	.04	.04	.04	.04	.03
	(.18)	(.19)	(.19)	(.19)	(.18)	(.18)
Saskatchewan	.03	.03	.03	.03	.03	.03
	(.17)	(.18)	(.17)	(.18)	(.18)	(.17)
Alberta	.12	.13	.11	.09	.11	.12
	(.32)	(.33)	(.32)	(.29)	(.32)	(.33)
British Columbia	.12	.12	.13	.12	.12	.12
	(.32)	(.32)	(.33)	(.33)	(.32)	(.32)
Ontario	.39	.38	.38	.45	.38	.39
	(.49)	(.49)	(.49)	(.50)	(.49)	(.49)
Other Provinces	N/A	N/A	N/A	N/A	.51	.52
					(.50)	(.50)
Abode <5yrs	.16	.16	.22	.27	.36	.37
	(.36)	(.37)	(.42)	(.44)	(.48)	(.48)
Abode 5 to <10yrs	.16	.16	.14	.13	.12	.15
	(.37)	(.37)	(.35)	(.34)	(.33)	(.36)
Abode=10yrs	.68	.68	.63	.60	.51	.48
	(.47)	(.47)	(.48)	(.49)	(.5)	(.50)
Informal Help	.85	.85	.88	.91		
	(.36)	(.36)	(.33)	(.29)		
Participation	.42	.42	10.23	10.28		
	(.49)	(.49)	(.93)	(.90)		
Year 2013					.33	.35
					(.47)	(.48)
Year 2007					.43	.40
					(.50)	(.49)
Year 2004					.24	.25
					(.42)	(.43)

Table 3.3 (continue)

Control Variable	2013 GSS GVP	Pooled Cross Section Analysis				
		2013 GSS GVP	2004 CSGVP	2007 CSGVP	25 to 28 years	25 to 32 years
POST					.35	.36
					(.48)	(.48)
Youth					.24	.22
					(.43)	(.42)
Observations	5420	5379	9487	5707	1422	3213

Standard deviation in parenthesis

Table 3.4: Tests of strengths of instruments for full sample analyses of voluntary volunteers

	Cragg-Donald Wald F Statistic			Hansen Jason Test P-value			Endogeneity Tests P-value		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Volunteer	289.32	134.99	547.74	0.762	0.740	0.846	0.031	0.022	0.001
#Hours	398.74	379.58	704.34	0.851	0.849	0.923	0.010	0.009	0.001
#Organisations	359.99	344.729	630.24	0.774	0.747	0.835	0.069	0.051	0.003
Observations	5420	4996	18715	5420	4996	18715	5420	4996	18715

(1), (2) and (3) represent different regressions of each of the volunteer variables on income where income is either wages , income for the 2013 GSS GVP only and income for the pooled cross-sections of 2004 CSGVP, 2007 CSGVP and 2013 GSS GVP.

Table 3.5: Tests of Strengths of Instruments used for the subsample analyses of voluntary volunteers for cohorts A, B, C and D

	Cragg-Donald Wald F Statistic				Endogeneity Tests P-value			
Control Variable	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Volunteer	20.19	16.82	57.38	55.25	0.728	0.200	0.122	0.041
#Hours	32.06	32.42	76.59	74.27	0.551	0.144	0.085	0.031
#Organisations	34.03	25.20	80.67	72.10	0.592	0.157	0.098	0.044
Observations	1375	753	3106	2484	1375	753	3106	2484

(1), (2), (3) and (4) represent four regressions of each of the volunteer variables on income for each of the four cohorts A to D ranging from age 25 to 28 years, age 27 to 28 years, 25 to 32 years and from 27 to 32 years respectively using all three datasets.

Table 3.6: OLS and IV estimates of the impact of Voluntary Volunteering on Income - full sample analysis using the 2013 GSS GVP only and also the pooled cross sections of 2004, 2007 CSGVPs and the 2013 GSS GVP

	Dependent Variable					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Volunteer	0.070*	0.044*	0.062***	0.259***	0.212***	0.244***
	(1.90)	(1.77)	(4.26)	(2.61)	(2.73)	(4.21)
#Hours	0.007	0.005	0.009***	0.053***	0.044***	0.049***
	(0.86)	(0.75)	(2.76)	(2.63)	(2.73)	(4.06)
#Organisations	0.082**	0.058**	0.058***	0.218***	0.179***	0.209***
	(2.48)	(2.55)	(4.44)	(2.61)	(2.70)	(4.07)
Observations	5420	4996	18715	5420	4996	18715

Robust standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) and (3) represent different regressions of each of the volunteer variables on income where income is wages and salaries and personal income for the 2013 GSS GVP only and personal income for the pooled cross-sections of 2004 CSGVP, 2007 CSGVP and 2013 GSS GVP.

Table 3.7: OLS and IV estimates of the Impact of Voluntary Volunteering on Wages - full sample analysis using the 2013 GSS GVP

	Dependent Variable:- Wages					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Volunteer	0.070*			0.259***		
	(1.90)			(2.61)		
#Hours		0.007			0.053***	
		(0.86)			(2.63)	
#Organisations			0.082**			0.218***
			(2.48)			(2.61)
Immigrant <10yrs	-0.567***	-0.576***	-0.560***	-0.517***	-0.518***	-0.517***
	(-5.71)	(-5.77)	(-5.67)	(-5.19)	(-5.21)	(-5.19)
Immigrant 10 to < 20yrs	-0.384***	-0.388***	-0.378***	-0.363***	-0.359***	-0.353***
	(-2.97)	(-3.00)	(-2.93)	(-2.77)	(-2.74)	(-2.71)
Immigrant >=20yrs	-0.055	-0.059	-0.054	-0.039	-0.042	-0.040
	(-0.85)	(-0.90)	(-0.83)	(-0.59)	(-0.63)	(-0.62)
Religious	-0.018	-0.014	-0.022	-0.049	-0.055	-0.048
	(-0.45)	(-0.34)	(-0.55)	(-1.12)	(-1.24)	(-1.11)
English & French	0.109**	0.111**	0.108**	0.099**	0.102**	0.101**
	(2.24)	(2.27)	(2.23)	(2.05)	(2.08)	(2.07)
French	0.005	0.004	0.005	0.011	0.008	0.007
	(0.09)	(0.07)	(0.08)	(0.17)	(0.12)	(0.11)
Male	0.342***	0.342***	0.342***	0.340***	0.332***	0.339***
	(9.54)	(9.56)	(9.53)	(9.42)	(9.14)	(9.44)
Single	-0.203***	-0.204***	-0.203***	-0.201***	-0.202***	-0.202***
	(-4.68)	(-4.69)	(-4.69)	(-4.60)	(-4.62)	(-4.65)
SWD	-0.079	-0.080	-0.079	-0.076	-0.082*	-0.079
	(-1.61)	(-1.64)	(-1.63)	(-1.54)	(-1.67)	(-1.61)
Kids <18yrs	-0.072*	-0.068*	-0.075**	-0.088**	-0.083**	-0.089**
	(-1.96)	(-1.87)	(-2.03)	(-2.28)	(-2.20)	(-2.32)

Table 3.7 (continued)

	Dependent Variable:- Wages					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Kids >=18yrs	0.003	0.003	0.002	-0.001	-0.004	-0.001
	(0.05)	(0.06)	(0.04)	(-0.02)	(-0.07)	(-0.01)
Diploma	0.246***	0.248***	0.243***	0.234***	0.234***	0.232***
	(6.15)	(6.20)	(6.07)	(5.91)	(5.94)	(5.87)
University	0.503***	0.508***	0.495***	0.473***	0.470***	0.465***
	(10.40)	(10.50)	(10.17)	(9.54)	(9.47)	(9.29)
Age	0.093***	0.093***	0.092***	0.092***	0.092***	0.091***
	(8.65)	(8.67)	(8.57)	(8.39)	(8.44)	(8.25)
Age2	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-7.99)	(-8.01)	(-7.91)	(-7.75)	(-7.83)	(-7.63)
Self-Employed	-0.905***	-0.903***	-0.908***	-0.917***	-0.921***	-0.920***
	(-10.08)	(-10.03)	(-10.12)	(-10.31)	(-10.28)	(-10.31)
Hours Worked	0.021***	0.021***	0.021***	0.022***	0.022***	0.022***
	(9.56)	(9.50)	(9.57)	(9.78)	(9.74)	(9.73)
Management	0.388***	0.396***	0.385***	0.358***	0.375***	0.360***
	(6.68)	(6.80)	(6.62)	(5.97)	(6.38)	(6.01)
Business	0.319***	0.323***	0.319***	0.298***	0.308***	0.307***
	(6.64)	(6.76)	(6.68)	(6.14)	(6.41)	(6.39)
Science	0.445***	0.447***	0.444***	0.437***	0.443***	0.438***
	(6.36)	(6.39)	(6.35)	(6.22)	(6.28)	(6.23)
Health	0.389***	0.390***	0.391***	0.388***	0.393***	0.394***
	(5.91)	(5.91)	(5.94)	(5.89)	(5.92)	(5.98)
Education	0.114*	0.121*	0.111*	0.080	0.086	0.086
	(1.84)	(1.95)	(1.80)	(1.23)	(1.33)	(1.33)
Arts	-0.264	-0.255	-0.268*	-0.308*	-0.298*	-0.302*
	(-1.63)	(-1.58)	(-1.65)	(-1.88)	(-1.82)	(-1.84)

Table 3.7 (continued)

	Dependent Variable:- Wages					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Trade	0.178***	0.176***	0.180***	0.189***	0.190***	0.189***
	(2.82)	(2.80)	(2.84)	(2.92)	(2.97)	(2.95)
Resource	0.072	0.068	0.074	0.094	0.092	0.092
	(0.31)	(0.30)	(0.33)	(0.41)	(0.40)	(0.40)
Manufacturing	0.319***	0.319***	0.320***	0.324***	0.328***	0.324***
	(5.21)	(5.19)	(5.23)	(5.26)	(5.32)	(5.32)
Rural	-0.118***	-0.117***	-0.122***	-0.127***	-0.131***	-0.133***
	(-2.71)	(-2.70)	(-2.81)	(-2.90)	(-3.02)	(-3.05)
Town	-0.019	-0.017	-0.022	-0.024	-0.024	-0.030
	(-0.39)	(-0.37)	(-0.45)	(-0.49)	(-0.49)	(-0.62)
Newfoundland	-0.124*	-0.123*	-0.126*	-0.129*	-0.129*	-0.132**
	(-1.90)	(-1.89)	(-1.93)	(-1.96)	(-1.96)	(-2.01)
Prince Edward Island	-0.234***	-0.232***	-0.234***	-0.240***	-0.234***	-0.238***
	(-3.83)	(-3.79)	(-3.82)	(-3.91)	(-3.84)	(-3.88)
Nova Scotia	-0.166***	-0.164***	-0.165***	-0.178***	-0.179***	-0.172***
	(-3.37)	(-3.33)	(-3.36)	(-3.55)	(-3.57)	(-3.48)
New Brunswick	-0.250***	-0.253***	-0.249***	-0.237***	-0.242***	-0.238***
	(-4.88)	(-4.92)	(-4.87)	(-4.58)	(-4.71)	(-4.63)
Quebec	-0.146***	-0.150***	-0.142**	-0.124**	-0.127**	-0.123**
	(-2.63)	(-2.69)	(-2.58)	(-2.19)	(-2.24)	(-2.18)
Manitoba	-0.069	-0.065	-0.072	-0.088*	-0.082	-0.089*
	(-1.32)	(-1.24)	(-1.39)	(-1.66)	(-1.55)	(-1.69)
Saskatchewan	0.000	0.006	-0.006	-0.028	-0.021	-0.034
	(0.01)	(0.10)	(-0.09)	(-0.43)	(-0.32)	(-0.52)
Alberta	0.286***	0.288***	0.284***	0.274***	0.274***	0.272***
	(5.72)	(5.74)	(5.65)	(5.45)	(5.43)	(5.38)

Table 3.7 (continued)

	Dependent Variable:- Wages					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Trade	0.178***	0.176***	0.180***	0.189***	0.190***	0.189***
British Columbia	-0.119**	-0.115**	-0.121**	-0.137**	-0.136**	-0.135**
	(-2.15)	(-2.09)	(-2.19)	(-2.44)	(-2.43)	(-2.42)
Abode <5yrs	-0.000	-0.002	0.001	0.007	0.005	0.008
	(-0.01)	(-0.03)	(0.02)	(0.13)	(0.09)	(0.15)
Abode 5 to <10yrs	0.029	0.030	0.030	0.031	0.035	0.031
	(0.70)	(0.71)	(0.71)	(0.72)	(0.83)	(0.74)
Constant	7.117***	7.127***	7.131***	7.083***	7.110***	7.134***
	(29.43)	(29.49)	(29.48)	(29.05)	(29.16)	(29.18)
Observations	5420	5420	5420	5420	5420	5420

Robust *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) and (3) represent three regressions of each of the volunteer variables (Volunteer, #Hours, #Organisations) on wages.

Table 3.8: DD and DDD estimates of the impact of Ontario Policy on Income using the pooled cross-sections 2004, 2007s and 2013 GSS GVP for individuals aged 25 to 32, and 27 to 30 respectively

DD and DDD estimates of the impact of Ontario Policy on Income using the pooled cross-sections 2004, 2007s and 2013 GSS GVP for individuals aged 25 to 32, and 27 to 30 respectively.

	Dependent Variable : Income							
	Without migration condition				With migration condition			
Control Variable	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
25_28*ON	-0.031				0.070			
	(-0.69)				(0.90)			
27_28*ON		0.093				0.340**		
		(1.14)				(2.90)		
25_28*POST*ON			-0.078				-0.041	
			(-1.62)				(-0.39)	
27_28*POST*ON				0.027				0.431**
				(0.27)				(2.62)
Observations	651	330	1931	973	327	170	931	723

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) represent two separate regressions for the samples 25 to 32years and 27 to 30 years respectively using the DD approach and (3) and (4) represent two separate regressions for each sample of 25 to 32 years or 27to 30 years respectively using for the DDD approach

Table 3.9: DD and DDD estimates of the impact of British Columbia's Policy on Income using the pooled cross-sections 2004, 2007s and 2013 GSS GVP for individuals aged 25 to 40, and 27 to 38 respectively

	Dependent Variable : Income							
	Without migration condition				With migration condition			
Control Variable	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
25_32*British Columbia	-0.245***				-0.168***			
	(-5.27)				(-4.40)			
27_32*British Columbia		-0.028				0.125**		
		(-0.90)				(2.96)		
25_32*POST*British Columbia			-0.239**				-0.202**	
			(-3.41)				(-2.92)	
27_32*POST*British Columbia				0.323***				0.592***
				(5.53)				(12.54)
Observations	1452	1101	3386	3213	809	610	1766	1616

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) represent two separate regressions for the samples 25 to 40years and 27 to 38 years respectively using the DD approach and (3) and (4) represent two separate regressions for each sample of 25 to 40years and 27 to 38 years respectively using for the DDD approach.

Table 3.10: DD and DDD estimates of the impact of Ontario Policy on Income using the pooled cross-sections 2004, 2007s and 2013 GSS GVP sampling only volunteers aged 25 to 32, and 27 to 30 in the past 12 months

	Dependent Variable : Income							
	Without migration condition				With migration condition			
Control Variable	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
25_28*ON	-0.101				0.135			
	(-1.49)				(0.88)			
27_28*ON		-0.011				0.447*		
		(-0.10)				(1.94)		
25_28*POST*ON			-0.120				0.150	
			(-1.19)				(0.90)	
27_28*POST*ON				0.010				0.460
				(0.07)				(1.59)
Observations	324	174	1152	597	176	103	556	285

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) represent two separate regressions for the samples 25 to 32years and 27 to 30 years respectively using the DD approach and (3) and (4) represent two separate regressions for each sample of 25 to 32 years or 27to 30 years respectively using for the DDD approach.

Table 3.11: DD and DDD estimates of the impact of British Columbia's Policy on Income using the pooled cross-sections 2004, 2007s and 2013 GSS GVP sampling volunteers aged 25 to 40, and 27 to 38 respectively the past 12 months

	Dependent Variable : Income							
	Without migration condition				With migration condition			
Control Variable	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
25_32*British Columbia	-0.222**				-0.277**			
	(-4.53)				(-2.42)			
27_32*British Columbia		0.046				0.133		
		(0.89)				(1.39)		
25_32*POST*British Columbia			-0.056				-0.133	
			(-1.66)				(-0.97)	
27_32*POST*British Columbia				0.330*				0.407
				(1.78)				(1.50)
Observations	793	606	2153	2046	469	357	1155	1064

Clustered standard z statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) represent two separate regressions for the samples 25 to 40years and 27 to 38 years respectively using the DD approach and (3) and (4) represent two separate regressions for each sample of 25 to 40years and 27 to 38 years respectively using for the DDD approach.

Table 3.12: OLS estimates of the impact of Mandatory Volunteering on the likelihood to voluntarily volunteer in the future -using the pooled cross-sections 2004, 2007s and 2013 GSS GVP

	Dependent Variable : Volunteer							
	Without migration condition				With migration condition			
Control Variable	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
25_28*ON	0.011				-0.236			
	(0.08)				(-0.81)			
27_28*ON		-0.212				-0.855*		
		(-0.95)				(-1.80)		
25_28*POST*ON			0.205				0.053	
			(1.14)				(0.18)	
27_28*POST*ONT				-0.248				-0.788***
				(-1.13)				(-1.94)
Observations	651	330	1931	973	325	170	931	723

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) represent two separate regressions for the samples 25 to 32years and 27 to 30 years respectively using the DD approach and (3) and (4) represent two separate regressions for each sample of 25 to 32 years or 27to 30 years respectively using for the DDD approach

Table 3.13: DD and DDD estimates of the impact of British Columbia's Policy on the likelihood to voluntarily volunteer in the future using the pooled cross-sections 2004, 2007s and 2013 GSS GVP for individuals aged 25 to 40, and 27 to 38 respectively

	Dependent Variable : Volunteer							
	Without migration condition				With migration condition			
Control Variable	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
25_32*British Columbia	0.329***				0.379*			
	(2.59)				(1.73)			
27_32*British Columbia		0.254***				0.290**		
		(5.04)				(2.20)		
25_32*POST*British Columbia			0.190***				-0.029	
			(4.22)				(-0.15)	
27_32*POST*British Columbia				0.444***				0.604***
				(6.26)				(3.69)
Observations	1452	1101	3386	3213	809	610	1766	1616

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) represent two separate regressions for the samples 25 to 40years and 27 to 38 years respectively using the DD approach and (3) and (4) represent two separate regressions for each sample of 25 to 40years and 27 to 38 years respectively using for the DDD approach

Table 3.14: OLS and IV estimates of the impact of Voluntary Volunteering on Income -using the pooled cross-section 2004, 2007s and 2013 GSS GVP and sampling individuals of the same age as those who were mandated to volunteer (aged 25 to 28, 27 to 28, 25 to 32 and 27 to 32 years)

	Dependent Variable : Income							
	OLS				IV			
Control Variable	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Volunteer	0.067	0.051	0.073**	0.082**	0.201	0.627	0.470*	0.626**
	(1.40)	(1.25)	(2.36)	(3.11)	(0.50)	(1.31)	(1.73)	(2.22)
#Hours	0.003	0.001	0.009	0.012*	0.047	0.113	0.102*	0.134**
	(0.27)	(0.08)	(1.38)	(2.06)	(0.60)	(1.32)	(1.77)	(2.22)
#Organisations	0.038	0.053	0.058**	0.078**	0.202	0.584	0.402*	0.548**
	(0.84)	(1.22)	(2.70)	(3.42)	(0.61)	(1.41)	(2.70)	(2.19)
Observations	1375	753	3106	2484	1375	753	3106	2484

Robust standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.01. (1), (2), (3) and (4) represent four regressions of each of the volunteer variables on income for each of the four cohorts A to D ranging from 25 to 28 years, 27 to 28 years, 25 to 32 years and from 27 to 32 years respectively using all three datasets.

Figure 3.1: Income of British Columbia treatment group and their counterparts in the other provinces across the years

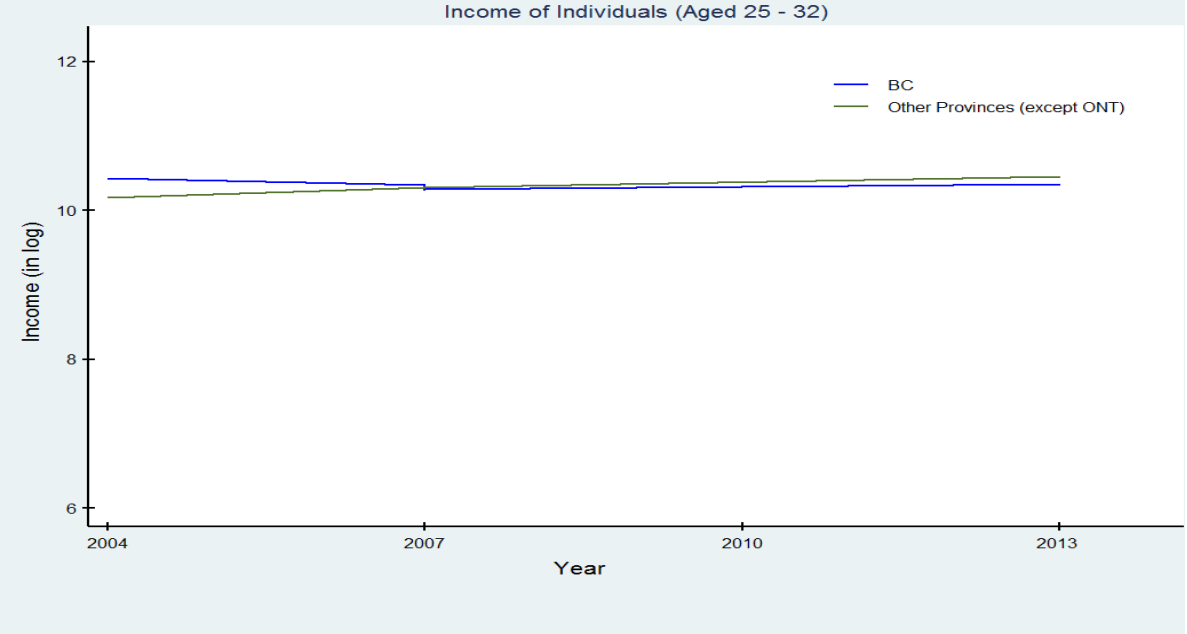


Figure 3.2: Income of British Columbia control group across and their counterparts in the other provinces the years

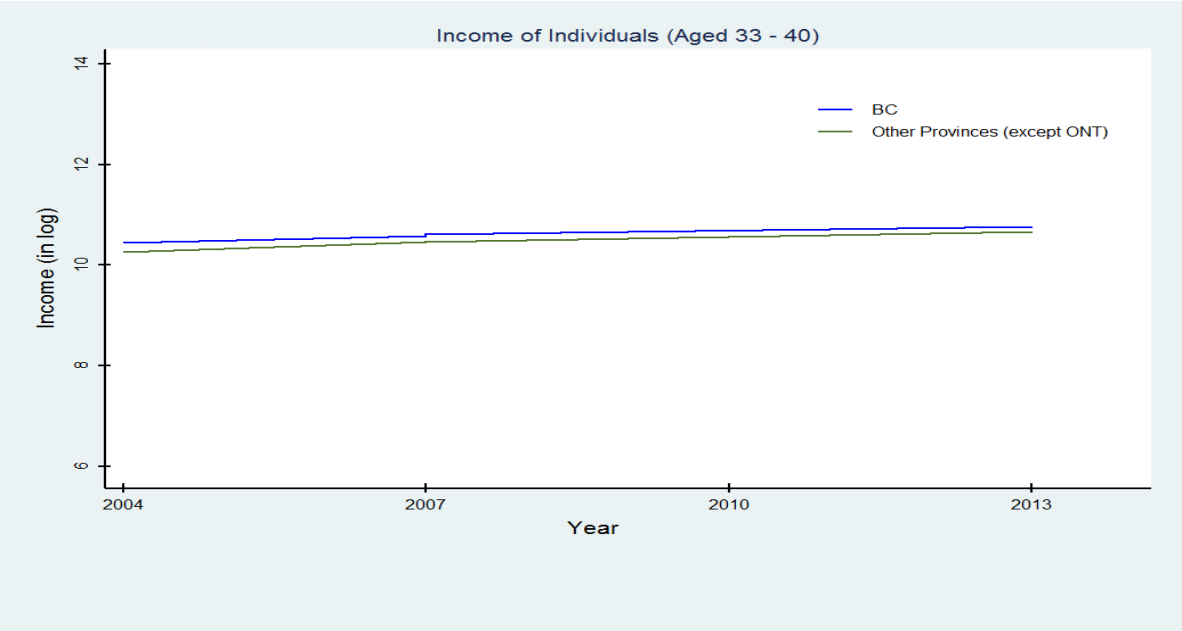


Figure 3.3: Income of Ontario treatment group and their counterparts in the other provinces across the years

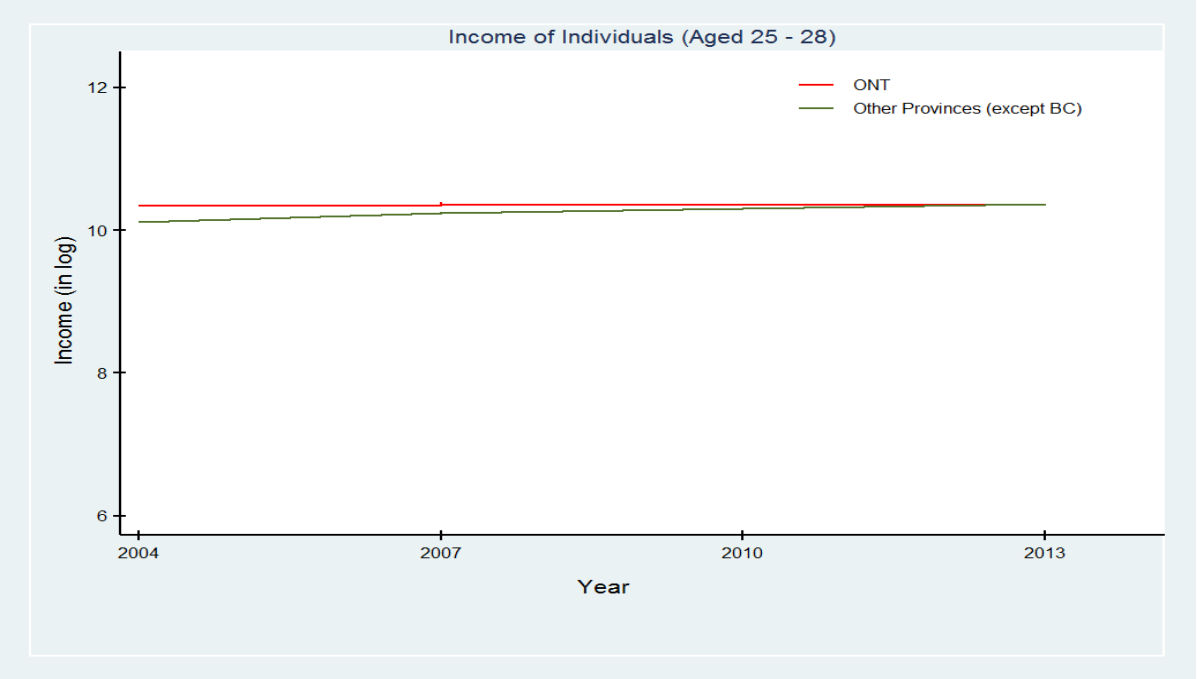
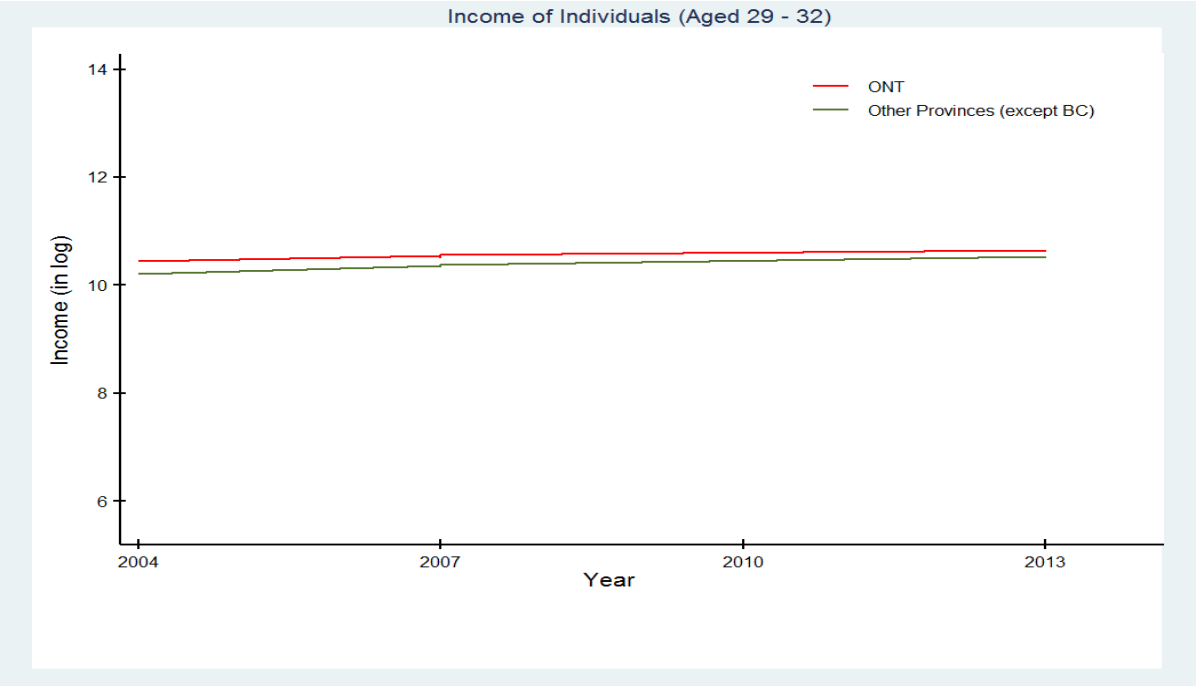


Figure 3.4: Income of Ontario control group and their counterparts in the other provinces across the years



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Appendix A
Blood

Case 2.1

Π_t^G may differ accross blood types. That is $\Pi_t^1 > 0, \Pi_t^2 = 0$ and $\Pi_t^3 = 0$ or $\Pi_t^1 > 0, \Pi_t^2 > 0$ and $\Pi_t^3 = 0$ then

F.O.C:

$$b_{t,i}^G \quad : \quad U'\left(B_{t,i}^G - b_{t,i}^G\right) = \frac{1}{\underline{b}\sum_{g=G}^3 N_g}\left[U\left(d_{t+1,i}^G\right) - \underline{U}\right] \text{ if } \Pi_t^G > 0 \tag{A.1}$$

$$b_{t,i}^G \quad : \quad U'\left(B_{t,i}^G - b_{t,i}^G\right) = \frac{1}{\sum_{g=G}^3 N_g}U'\left(d_{t+1,i}^G\right) \text{ if } \Pi_t^G = 0 \tag{A.2}$$

A.0.1 Utilitarian Solution

$\Pi_t^G = 0$ for all types

Lagragian,

$$\begin{aligned}\mathcal{L} = & N_1\left[U\left(B_t^1 - b_t^1\right)) + (1-\gamma)\,U\left(B_{t+1}^1\right) + \gamma U(D_{t+1}^1)\right] \\ & + N_2\left[U'\left(B_t^2 - b_t^2\right) + (1-\gamma)\,U\left(B_{t+1}^2\right) + \gamma U\left(D_{t+1}^2\right)\right] \\ & + N_3\left[U\left(B_t^3 - b_t^3\right) + (1-\gamma)\,U\left(B_{t+1}^3\right) + \gamma U\left(D_{t+1}^3\right)\right] \\ & + \lambda\left[d_{t+1}^1 - D_{t+1}^1\right] + \mu\left[d_{t+1}^2 - D_{t+1}^2\right] + \varphi\left[d_{t+1}^3 - D_{t+1}^3\right] \\ & + \eta\left[N_1 b_t^1 + N_2 b_t^2 + N_3 b_t^3 - \gamma N_1 D_{t+1}^1 - \gamma N_2 D_{t+1}^2 - \gamma N_3 D_{t+1}^3\right]\end{aligned}$$

F.O.C:

$$b_t^1 \quad : \quad N_1 U'\left(B_t^1 - b_t^1\right)(-1) + \frac{\lambda N_1}{\gamma\left(N_1+N_2+N_3\right)} \tag{A.3}$$

$$+\frac{\mu N_1}{\gamma\left(N_1+N_2+N_3\right)} + \frac{\varphi N_1}{\gamma\left(N_1+N_2+N_3\right)} + \eta N_1 \tag{A.4}$$

$$= \quad 0 \tag{A.5}$$

$$b_t^2 \quad : \quad N_2 U'\left(B_t^2 - b_t^2\right)(-1) + \frac{\mu N_2}{\gamma(N_2+N_3)} \tag{A.6}$$

$$+\frac{\varphi N_2}{\gamma(N_2+N_3)} + \eta N_2 \tag{A.7}$$

$$= \quad 0 \tag{A.8}$$

$$b_t^3 \quad : \quad N_3 U'\left(B_t^3 - b_t^3\right)(-1) + \frac{\varphi N_3}{\gamma N_3} + \eta N_3 = 0 \tag{A.9}$$

$$D_{t+1}^1 \quad : \quad N_1 \gamma U'\left(D_{t+1}^1\right) - \lambda - \eta\gamma N_1 = 0 \tag{A.10}$$

$$D_{t+1}^2 \quad : \quad N_2 \gamma U'\left(D_{t+1}^2\right) - \mu - \eta\gamma N_2 = 0 \tag{A.11}$$

$$D_{t+1}^3 \quad : \quad N_3 \gamma U'\left(D_{t+1}^3\right) - \varphi - \eta\gamma N_3 = 0 \tag{A.12}$$

$$\eta \quad : \quad \gamma N_1 D_{t+1}^1 + \gamma N_2 D_{t+1}^2 + \gamma N_3 D_{t+1}^3 \tag{A.13}$$

$$= \quad N_1 b_t^1 + N_2 b_t^2 + N_3 b_t^3 \tag{A.14}$$

$$\lambda\left[d_{t+1}^1 - D_{t+1}^1\right] \quad = \quad 0,\ \mu\left[d_{t+1}^2 - D_{t+1}^2\right] = 0,\ \varphi\left[d_{t+1}^3 - D_{t+1}^3\right] = 0 \tag{A.15}$$

$$\lambda \quad \geq \quad 0,\ \mu \geq 0,\ \varphi \geq 0 \tag{A.16}$$

From $(A.9)$

$U'\left(B_t^3 - b_t^3\right) = \frac{\varphi}{\gamma N_3} + \eta$

Substitute $(A.12)$

$$\frac{U'\left(B_t^3 - b_t^3\right)}{U'\left(D_{t+1}^3\right)} = 1 \tag{A.17}$$

From $(A.6)$

$(N_2 + N_3)U'\left(B_t^2 - b_t^2\right) = \frac{\mu}{\gamma} + \frac{\varphi}{\gamma} + \eta(N_2 + N_3)$

divide through by N_2 and substitute $(A.11)$ and $(A.12)$

$U'\left(B_t^2 - b_t^2\right) + \frac{N_3}{N_2}U'\left(B_t^2 - b_t^2\right) - U'\left(D_{t+1}^2\right) - \frac{N_3}{N_2}U'\left(D_{t+1}^3\right) = 0$

$$\Longrightarrow \left[\frac{U'\left(B_t^2 - b_t^2\right)}{U'(D_{t+1}^2)} - 1\right] + \frac{N_3}{N_2}\left[\frac{U'\left(B_t^2 - b_t^2\right)}{U'(D_{t+1}^3)} - 1\right] = 0 \tag{A.18}$$

From $(A.6)$

$\left(N_1 + N_2 + N_3\right)U'\left(B_t^1 - b_t^1\right) = \frac{\lambda}{\gamma} + \frac{\mu}{\gamma} + \frac{\varphi}{\gamma} + \eta\left(N_1 + N_2 + N_3\right)$

divide through by N_1 and substitute $(A.10)$, $(A.11)$ and $(A.12)$

$U'\left(B_t^1 - b_t^1\right) + \frac{N_2}{N_1}U'\left(B_t^1 - b_t^1\right) + \frac{N_3}{N_1}U'\left(B_t^1 - b_t^1\right) - U'\left(D_{t+1}^1\right) - \frac{N_2}{N_1}U'\left(D_{t+1}^2\right) - \frac{N_3}{N_1}U'\left(D_{t+1}^3\right) = 0$

$$\Longrightarrow \left[\frac{U'\left(B_t^1 - b_t^1\right)}{U'(D_{t+1}^1)} - 1\right] + \left[\frac{U'\left(B_t^1 - b_t^1\right)}{U'(D_{t+1}^2)} - 1\right] + \left[\frac{U'\left(B_t^1 - b_t^1\right)}{U'(D_{t+1}^3)} - 1\right] = 0 \tag{A.19}$$

$D_{t+1}^3 = \frac{N_3 b_t^3}{\gamma N_3} = \frac{b_t^3}{\gamma}$

$\Longrightarrow B_t^3 - b_t^3 = \frac{b_t^3}{\gamma}$

$\Longrightarrow B_t^3 = \left(\frac{1+\gamma}{\gamma}\right) b_t^3$

$b_t^3 == \frac{\gamma B_t^3}{1+\gamma}$

If we set $b_t^3 = b_t^2 = b_t^1 = \frac{\gamma B_t}{1+\gamma}$ and $D_{t+1}^1 = D_{t+1}^2 = D_{t+1}^3 = \frac{b_t}{\gamma}$, observe that this implies that the blood available is entirely distributed, that is, $U'\left(B_t^1 - b_t^1\right) = U'\left(B_t^2 - b_t^2\right) = U'\left(B_t^3 - b_t^3\right)$ and that equations $(A.17)$, $(A.18)$ and $(A.19)$ are simultaneously satisfied. This is consequently the

solution to the Utilitarian optimum.

A.0.2 Comparative Statics

Assume $db^G_{t,i} = db^G_t \forall i$ then

Case 1

When $\Pi^G_t = 0$ for all types

From F.O.C for b^1_t

$$\frac{\partial^2 EU^1_t}{\left(\partial b^1_t\right)^2} = U''\left(B^1_t - b^1_t\right) + \frac{N_1}{\gamma(N_1+N_2+N_3)^2} U''\left(d^1_{t+1}\right) < 0$$

$$\frac{\partial^2 EU^1_t}{\partial b^1_t \partial b^2_t} = 0$$

$$\frac{\partial^2 EU^1_t}{\partial b^1_t \partial b^3_t} = 0$$

$$\frac{\partial^2 EU^1_t}{\partial b^1_t \partial N_1} = -\frac{U'\left(d^1_{t+1}\right)}{\left(N_1+N_2+N_3\right)^2} + \frac{(N_2+N_3)b^1_t}{\gamma(N_1+N_2+N_3)^3} U''\left(d^1_{t+1}\right) < 0$$

$$\frac{\partial^2 EU^1_t}{\partial b^1_t \partial N_2} = -\frac{U'\left(d^1_{t+1}\right)}{\left(N_1+N_2+N_3\right)^2} - \frac{N_1 b^1_t}{\gamma(N_1+N_2+N_3)^3} U''\left(d^1_{t+1}\right)$$

$$\frac{\partial^2 EU^1_t}{\partial b^1_t \partial N_2} = \frac{\partial^2 EU^1_t}{\partial b^1_t \partial N_3} = -\frac{U'\left(d^1_{t+1}\right)}{(N_1+N_2+N_3)^2}\left[1 + \in_{U'\left(d^1_{t+1}\right), d^1_{t+1}}\right] \gtreqless 0$$

$$\frac{\partial^2 EU^1_t}{\partial b^1_t \partial \gamma} = -\frac{d^1_{t+1}}{\gamma(N_1+N_2+N_3)} U''\left(d^1_{t+1}\right) > 0$$

From F.O.C for b^2_t

$$\frac{\partial^2 EU^2_t}{\partial b^2_t \partial b^1_t} = \frac{N_1}{\gamma(N_2+N_3)(N_1+N_2+N_3)} U''\left(d^2_{t+1}\right) < 0$$

$$\frac{\partial^2 EU^2_t}{\left(\partial b^2_t\right)^2} = U''\left(B^2_t - b^2_t\right) + \frac{N_2}{(N_2+N_3)^2} U''\left(d^2_{t+1}\right) < 0$$

$$\frac{\partial^2 EU^2_t}{\partial b^2_t \partial b^3_t} = 0$$

$$\frac{\partial^2 EU^2_t}{\partial b^2_t \partial N_1} = \frac{b^1_t}{\gamma(N_1+N_2+N_3)^2} U''\left(d^2_{t+1}\right) < 0$$

$$\frac{\partial^2 EU^2_t}{\partial b^2_t \partial N_2} = -\frac{U'\left(d^2_{t+1}\right)}{\left(N_2+N_3\right)^2}\left[1 + \in_{U'\left(d^2_{t+1}\right), d^2_{t+1}}\right] + \frac{b^2_t U''\left(d^2_{t+1}\right)}{\gamma(N_2+N_3)^2} + \frac{(N_1)^2 b^1_t U''\left(d^2_{t+1}\right)}{\gamma(N_2+N_3)(N_1+N_2+N_3)}$$

$$\frac{\partial^2 EU^2_t}{\partial b^2_t \partial N_3} = -\frac{U'\left(d^2_{t+1}\right)}{\left(N_2+N_3\right)^2}\left[1 + \in_{U'\left(d^2_{t+1}\right), d^2_{t+1}}\right] + \frac{(N_1)^2 b^1_t U''\left(d^2_{t+1}\right)}{\gamma(N_2+N_3)(N_1+N_2+N_3)}$$

$$\frac{\partial^2 EU^1_t}{\partial b^2_t \partial \gamma} = -\frac{d^2_{t+1}}{\gamma(N_2+N_3)} U''\left(d^2_{t+1}\right) > 0$$

From F.O.C for b_t^3

$$\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial b_t^1} = \frac{N_1}{\gamma N_3 (N_1+N_2+N_3)} U''\left(d_{t+1}^3\right) < 0$$

$$\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial b_t^2} = \frac{N_2}{\gamma N_3 (N_2+N_3)} U''\left(d_{t+1}^3\right) < 0$$

$$\frac{\partial^2 EU_t^3}{\left(\partial b_t^3\right)^2} = U''\left(B_t^3 - b_t^3\right) + \frac{1}{\gamma N_3} U''\left(d_{t+1}^3\right) < 0$$

$$\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial N_1} = \frac{(N_2+N_3) b_t^1}{\gamma N_3 (N_1+N_2+N_3)^2} U''\left(d_{t+1}^3\right) < 0$$

$$\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial N_2} = U''\left(d_{t+1}^3\right)\left[\frac{b_t^2}{\gamma (N_2+N_3)^2} - \frac{N_1 b_t^1}{\gamma N_3 (N_1+N_2+N_3)^2}\right] \gtreqless 0$$

$$\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial N_3} = -\frac{U'\left(d_{t+1}^3\right)}{(N_3)^2}\left[1 + \in_{U'\left(d_{t+1}^3\right), d_{t+1}^3}\right] + \frac{U''\left(d_{t+1}^3\right)}{\gamma (N_3)^2}\left[\frac{(N_1+N_2) N_1 b_t^1}{(N_1+N_2+N_3)^2} + \frac{(N_2)^2 b_t^2}{(N_2+N_3)^2} + b_t^3\right]$$

$$\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial \gamma} = -\frac{d_{t+1}^3}{\gamma N_3} U''\left(d_{t+1}^3\right) > 0$$

How b_t^1 responds to changes in exogenous variables

$$\frac{db_t^1}{dN_1} = -\frac{\frac{\partial^2 EU_t^1}{\partial b_t^1 \partial N_1}}{\frac{\partial^2 EU_t^1}{\left(\partial b_t^1\right)^2}} < 0$$

$$\frac{db_t^1}{dN_2} = \frac{db_t^1}{dN_3} = -\frac{U'\left(d_{t+1}^1\right)}{(N_1+N_2+N_3)^2 \frac{\partial^2 EU_t^1}{\left(\partial b_t^1\right)^2}}\left[1 + \in_{U'\left(d_{t+1}^1\right), d_{t+1}^1}\right] \gtreqless 0$$

$$\frac{db_t^1}{d\gamma} = \frac{-\frac{\partial^2 EU_t^1}{\partial b_t^1 \partial \gamma}}{\frac{\partial^2 EU_t^1}{\left(\partial b_t^1\right)^2}} > 0$$

How db_t^2 responds to changes in exogenous variables

$$\frac{db_t^2}{dN_j} = -\frac{\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial N_j}}{\frac{\partial^2 EU_t^2}{\left(\partial b_t^2\right)^2}} + \left[-\frac{db_t^1}{dN_j}\right] \frac{\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial b_t^1}}{\frac{\partial^2 EU_t^2}{\left(\partial b_t^2\right)^2}} \gtreqless 0 \forall N_j \in \{N_1, N_2, N_3, \gamma\}$$

How db_t^3 responds to changes in exogenous variables

$$\frac{db_t^3}{dN_j} = -\frac{\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial N_j}}{\frac{\partial^2 EU_t^3}{\left(\partial b_t^3\right)^2}} - \left[\frac{db_t^1}{dN_j} \frac{\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial b_t^1}}{\frac{\partial^2 EU_t^3}{\left(\partial b_t^3\right)^2}} + \frac{db_t^2}{dN_j} \frac{\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial b_t^2}}{\frac{\partial^2 EU_t^3}{\left(\partial b_t^3\right)^2}}\right] \gtreqless 0 \forall N_j \in \{N_1, N_2, N_3, \gamma\}$$

Case 2

When $\Pi_t^1 > 0, \Pi_t^2 = 0$ and $\Pi_t^3 = 0$ then

Finding the elements of the matrices

$\underline{b_t^1}$

$$\frac{\partial^2 EU_t^1}{\left(\partial b_t^1\right)^2} = U''\left(B_t^1 - b_t^1\right) < 0$$

$$\frac{\partial^2 EU_t^1}{\partial b_t^1 \partial b_t^2} = \frac{\partial^2 EU_t^1}{\partial b_t^1 \partial b_t^3} = 0$$

$$\frac{\partial^2 EU_t^1}{\partial b_t^1 \partial N_1} = \frac{\partial^2 EU_t^1}{\partial b_t^1 \partial N_2} = \frac{\partial^2 EU_t^1}{\partial b_t^1 \partial N_3} = -\frac{1}{\underline{b}(N_1+N_2+N_3)^2}\left[U\left(d_{t+1}^1\right) - \underline{U}\right] < 0$$

$$\frac{\partial^2 EU_t^1}{\partial b_t^1 \partial \gamma} = 0$$

$$\frac{\partial^2 EU_t^1}{\partial b_t^1 \partial \underline{b}} = \frac{\left[U\left(d_{t+1}^1\right) - \underline{U}\right]}{\underline{b}^2(N_1+N_2+N_3)}\left[\in_{\left[U\left(d_{t+1}^1\right) - \underline{U}\right], d_{t+1}^1} - 1\right] \gtreqless 0$$

$\underline{b_t^2}$

$$\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial b_t^1} = \frac{N_1}{\gamma(N_2+N_3)(N_1+N_2+N_3)} U''\left(d_{t+1}^2\right) < 0$$

$$\frac{\partial^2 EU_t^2}{\left(\partial b_t^2\right)^2} = U''\left(B_t^2 - b_t^2\right) + \frac{N_2}{(N_2+N_3)^2} U''\left(d_{t+1}^2\right) < 0$$

$$\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial b_t^3} = 0$$

$$\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial N_1} = \frac{b_t^1}{\gamma(N_1+N_2+N_3)^2} U''\left(d_{t+1}^2\right) < 0$$

$$\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial N_2} = -\frac{U'\left(d_{t+1}^2\right)}{\left(N_2+N_3\right)^2}\left[1 + \in_{U'\left(d_{t+1}^2\right), d_{t+1}^2}\right] + \frac{U''\left(d_{t+1}^2\right)}{(N_2+N_3)}\left[\frac{b_t^2}{\gamma(N_2+N_3)} + N_1 d_{t+1}^1\right] \gtreqless 0$$

$$\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial N_3} = -\frac{U'\left(d_{t+1}^2\right)}{\left(N_2+N_3\right)^2}\left[1 + \in_{U'\left(d_{t+1}^2\right), d_{t+1}^2}\right] + \frac{N_1 d_{t+1}^1 U''\left(d_{t+1}^2\right)}{(N_2+N_3)}$$

$$\frac{\partial^2 EU_t^1}{\partial b_t^2 \partial \gamma} = -\frac{d_{t+1}^2}{\gamma(N_2+N_3)} U''\left(d_{t+1}^2\right) > 0$$

$$\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial \underline{b}} = 0$$

$\underline{b_t^3}$

$$\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial b_t^1} = \frac{N_1}{\gamma N_3(N_1+N_2+N_3)} U''\left(d_{t+1}^3\right) < 0$$

$$\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial b_t^2} = \frac{N_2}{\gamma N_3(N_2+N_3)} U''\left(d_{t+1}^3\right) < 0$$

$$\frac{\partial^2 EU_t^3}{\left(\partial b_t^3\right)^2} = U''\left(B_t^3 - b_t^3\right) + \frac{1}{\gamma N_3} U''\left(d_{t+1}^3\right) < 0$$

$$\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial N_1} = \frac{(N_2+N_3) b_t^1}{\gamma N_3(N_1+N_2+N_3)^2} U''\left(d_{t+1}^3\right) < 0$$

$$\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial N_2} = -\frac{N_1 b_t^1 U''\left(d_{t+1}^3\right)}{\gamma N_3(N_1+N_2+N_3)^2} + \frac{N_3 b_t^2 U''\left(d_{t+1}^3\right)}{\gamma N_3(N_2+N_3)^2} \gtreqless 0$$

$$\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial N_3} = -\frac{U'\left(d_{t+1}^3\right)}{(N_3)^2}\left[1 + \in_{U'\left(d_{t+1}^3\right), d_{t+1}^3}\right] + \frac{U''\left(d_{t+1}^3\right)}{\gamma(N_3)^2}\left[\frac{(N_1+N_2) N_1 b_t^1}{(N_1+N_2+N_3)^2} + \frac{(N_2)^2 b_t^2}{(N_2+N_3)^2} + b_t^3\right]$$

$$\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial \gamma} = -\frac{d_{t+1}^3}{\gamma N_3} U''\left(d_{t+1}^3\right) > 0$$

$$\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial \underline{b}} = 0$$

How b_t^1 responds to changes in exogenous variables

$$\frac{db_t^1}{dN_j} = -\frac{\frac{\partial^2 EU_t^1}{\partial b_t^1 \partial N_j}}{\frac{\partial^2 EU_t^1}{\left(\partial b_t^1\right)^2}} < 0 \forall j \in \{1,2,3\}$$

$$\frac{db_t^1}{d\gamma} = 0$$

$$\frac{db_t^1}{d\underline{b}} = \frac{-\frac{\partial^2 EU_t^1}{\partial b_t^1 \partial \underline{b}}}{\frac{\partial^2 EU_t^1}{\left(\partial b_t^1\right)^2}} = -\frac{\left[U\left(d_{t+1}^1\right) - \underline{U}\right]}{\underline{b}^2 (N_1+N_2+N_3) U''\left(B_t^1 - b_t^1\right)} \left[\in_{\left[U\left(d_{t+1}^1\right)-\underline{U}\right], d_{t+1}^1} -1\right] \gtreqless 0$$

How db_t^2 responds to changes in exogenous variables

$$\frac{db_t^2}{dN_j} = -\frac{\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial N_j}}{\frac{\partial^2 EU_t^2}{\left(\partial b_t^2\right)^2}} + \left[-\frac{db_t^1}{dN_j}\right] \frac{\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial b_t^1}}{\frac{\partial^2 EU_t^2}{\left(\partial b_t^2\right)^2}} \gtreqless 0 \forall j \in \{1,2,3\}$$

$$\frac{db_t^2}{d\gamma} = -\frac{\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial \gamma}}{\frac{\partial^2 EU_t^2}{\left(\partial b_t^2\right)^2}} > 0$$

$$\frac{db_t^2}{d\underline{b}} = \left[-\frac{db_t^1}{d\underline{b}}\right] \frac{\frac{\partial^2 EU_t^2}{\partial b_t^2 \partial b_t^1}}{\frac{\partial^2 EU_t^2}{\left(\partial b_t^2\right)^2}} \gtreqless 0$$

How db_t^3 responds to changes in exogenous variables

$$\frac{db_t^3}{dN_j} = -\frac{\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial N_j}}{\frac{\partial^2 EU_t^3}{\left(\partial b_t^3\right)^2}} + \left[-\frac{db_t^1}{dN_j}\frac{\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial b_t^1}}{\frac{\partial^2 EU_t^3}{\left(\partial b_t^3\right)^2}} - \frac{db_t^2}{dN_j}\frac{\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial b_t^2}}{\frac{\partial^2 EU_t^3}{\left(\partial b_t^3\right)^2}}\right] \gtreqless 0 \forall j \in \{1,2,3\}$$

$$\frac{db_t^3}{d\gamma} = -\frac{\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial \gamma}}{\frac{\partial^2 EU_t^3}{\left(\partial b_t^3\right)^2}} + \left[-\frac{db_t^2}{d\gamma}\frac{\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial b_t^2}}{\frac{\partial^2 EU_t^3}{\left(\partial b_t^3\right)^2}}\right] \gtreqless 0$$

$$\frac{db_t^3}{d\underline{b}} = -\frac{db_t^1}{d\underline{b}}\frac{\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial b_t^1}}{\frac{\partial^2 EU_t^3}{\left(\partial b_t^3\right)^2}} - \frac{db_t^2}{d\underline{b}}\frac{\frac{\partial^2 EU_t^3}{\partial b_t^3 \partial b_t^2}}{\frac{\partial^2 EU_t^3}{\left(\partial b_t^3\right)^2}} \gtreqless 0$$

Case 3

Similar deductions can be made for the case when $\Pi_t^1 > 0, \Pi_t^2 > 0$ and $\Pi_t^3 = 0$

A.0.3 Screening Model

Denote $L_{t,i}^G = \sum_{g=1}^{G} \sum_{i=1}^{N_{gL}} \frac{b_{tl,i}^g}{\gamma \sum_{a=g}^{3} N_a}$, $H_{t,i}^G = \sum_{g=1}^{G} \sum_{i=1}^{N_{gh}} \frac{b_{th,i}^g}{\gamma \sum_{a=g}^{3} N_a}$ and

$S_{t,i}^G = \sum_{g=1}^{G} \sum_{\theta=l,h} \sum_{i=1}^{N_{g\theta}} \frac{b_{t\theta,i}^g}{\gamma \sum_{a=g}^{3} N_a}$ where $S_{t,i}^G = L_{t,i}^G + H_{t,i}^G$

Consider two cases:

- When there is enough blood available but then there is a probability that the blood available may be of low quality.

That is when $d^G_{(t+1)\theta,i} = \sum_{g=1}^{G}\sum_{\theta=l,h}\sum_{i=1}^{N_{g\theta}} \frac{b^g_{t\theta,i}}{\gamma\sum_{a=g}^{3} N_a} = S^G_{t,i}$

then $\Pi^G_t = \frac{\sum_{g=1}^{G}\sum_{i=1}^{N_{gl}} \frac{b^g_{tl,i}}{\gamma\sum_{a=g}^{3} N_a}}{\sum_{g=1}^{G}\sum_{\theta=l,h}\sum_{i=1}^{N_{g\theta}} \frac{b^g_{t\theta,i}}{\gamma\sum_{a=g}^{3} N_a}} = \frac{L^G_{t,i}}{S^G_{t,i}}$ where $0 \leq \frac{L^G_t}{S^G_t} \leq 1 \forall G \in \{1,2,3\}$

F.O.C:

$$U'\left(B^G_{th,i} - b^G_{th,i}\right) = \frac{1}{\sum_{g=G}^{3} N_g}\left[\begin{array}{c} \frac{L^G_{t,i}}{\left(S^G_{t,i}\right)^2}\left[U\left(d^G_{(t+1)h,i}\right) - \underline{U}\right] \\ +\left(1 - \frac{L^G_{t,i}}{S^G_{t,i}}\right)U'\left(d^G_{(t+1)h,i}\right)\end{array}\right] \tag{A.20}$$

$$U'\left(B^G_{tl,i} - b^G_{tl,i}\right) = \frac{1}{\sum_{g=G}^{3} N_g}\left[\begin{array}{c} \frac{1}{S^G_{t,i}}\left(\frac{L^G_{t,i}}{S^G_{t,i}} - 1\right)\left[U\left(d^G_{(t+1)l,i}\right) - \underline{U}\right] \\ +\left(1 - \frac{L^G_{t,i}}{S^G_{t,i}}\right)U'\left(d^G_{(t+1)l,i}\right)\end{array}\right] \tag{A.21}$$

$$U'\left(B^G_{tl,i} - b^G_{tl,i}\right) = \frac{1}{\sum_{g=G}^{3} N_g}\frac{1}{S^G_{t,i}}\left(1 - \frac{L^G_{t,i}}{S^G_{t,i}}\right)\left[\in_{U\left(d^G_{(t+1)l,i}\right)-\underline{U},S^G_{t,i}} - 1\right] \tag{A.22}$$

S.O.Cs:

$$\frac{\partial^2 EU^G_{th,i}}{\left(\partial b^G_{th,i}\right)^2} = U^{"}\left(B^G_{th,i} - b^G_{th,i}\right) \tag{A.23}$$

$$+\frac{1}{\gamma\left(\sum_{g=G}^{3} N_g\right)^2}\left[\begin{array}{c} \left(-\frac{2L^G_{t,i}}{\left(S^G_{t,i}\right)^3}\right)\left[U\left(d^G_{(t+1)h,i}\right) - \underline{U}\right] \\ +\frac{2L^G_{t,i}}{\left(S^G_{t,i}\right)^2}U'\left(d^G_{(t+1)h,i}\right) \\ +\left(1 - \frac{L^G_{t,i}}{S^G_{t,i}}\right)U^{"}\left(d^G_{(t+1)h,i}\right)\end{array}\right] \tag{A.24}$$

(A.25)

$$\frac{\partial^2 EU^G_{tl,i}}{\left(\partial b^G_{tl,i}\right)^2} = U^{"}\left(B^G_{tl} - b^G_{tl}\right) - \frac{2}{\gamma S^G_{t,i}\sum_{g=G}^{3} N_g}U'\left(B^G_{tl,i} - b^G_{tl,i}\right) \tag{A.26}$$

$$+\frac{1}{\gamma\left(\sum_{g=G}^{3} N_g\right)^2}\left(1 - \frac{L^G_{t,i}}{S^G_{t,i}}\right)U^{"}\left(d^G_{(t+1)l}\right) \tag{A.27}$$

$\frac{\partial^2 EU^G_{th,i}}{\left(\partial b^G_{th,i}\right)^2} < 0$ if $L = 0$ or if $U'\left(B^G_{th,i} - b^G_{th,i}\right) - \frac{1}{\sum_{g=G}^{3} N_g}U'\left(d^G_{(t+1)h,i}\right) \geqslant 0$ but $\frac{\partial^2 EU^G_{tl,i}}{\left(\partial b^G_{tl,i}\right)^2} < 0$

When there is not enough blood in which case $\Pi_t^G > 0$ and the probability of dying will not only depend on the total supply available but whether the available blood is of good quality.

- That is: when $d^G_{(t+1)\theta,i} = \underline{b}$ then $\Pi_t^G = 1 - \frac{1}{\underline{b}} \sum_{g=1}^{G} \sum_{i=1}^{N_{gh}} \frac{b^g_{th,i}}{\gamma \sum_{a=g}^{3} N_a} = 1 - \frac{1}{\underline{b}} S^G_{t,i} \left(\frac{H^G_i}{S^G_{t,i}} \right) = 1 - \frac{1}{\underline{b}} H^G_{t,i}$

F.O.C:

$$U' \left(B^G_{th,i} - b^G_{th,i} \right) = \frac{1}{\underline{b} \sum_{g=G}^{3} N_g} \left[U \left(d^G_{(t+1)h,i} \right) - \underline{U} \right] \quad \text{(A.28)}$$

$$-U' \left(B^G_{tl,i} - b^G_{tl,i} \right) \quad \text{(A.29)}$$

S.O.Cs:

$\frac{\partial^2 EU^G_{th,i}}{\left(\partial b^G_{th,i} \right)^2} = U" \left(B^G_{th,i} - b^G_{th,i} \right) < 0$

$\frac{\partial^2 EU^G_{tl,i}}{\left(\partial b^G_{tl,i} \right)^2} = U" \left(B^G_{tl,i} - b^G_{tl,i} \right) < 0$

Comparative Statics

Symmetric Nash Equilibrium $\Longrightarrow b^G_{t\theta,i} = b^G_{t\theta}$ forall $\theta \in \{l.h\}$

Case 1

When $\Pi_t^G = \frac{L^G_t}{S^G_t}$ where $L^G_t = \sum_{g=1}^{G} \frac{N_{gl} b^g_{tl}}{\gamma \sum_{a=g}^{3} N_a}$, $H^G_t = \sum_{g=1}^{G} \frac{N_{gh} b^g_{th}}{\gamma \sum_{a=g}^{3} N_a}$ and $S^G_t = L^G_t + H^G_t$

$\Longrightarrow d^G_{(t+1)\theta} = \sum_{g=1}^{G} \sum_{\theta=l,h} \frac{N_{g\theta} b^g_{t\theta}}{\gamma \sum_{a=g}^{3} N_a}$

Effect of b^G_{tl} on b^G_{th}

$$\frac{db^G_{th}}{db^G_{tl}} = \frac{-\frac{\partial^2 EU^G_{th}}{\partial b^G_{th} \partial b^G_{tl}}}{\frac{\partial^2 EU^G_{th}}{\left(\partial b^G_{th} \right)^2}}$$

$$\frac{db^G_{th}}{db^G_{tl}} = -\frac{\frac{N_{Gl}}{\gamma \left(\sum_{g=G}^{3} N_g \right)^2} \left[\begin{array}{c} \left(\frac{S^G_t - 2L^G_t}{L^G_t S^G_t} \right) \left[U' \left(B^G_{th} - b^G_{th} \right) - \frac{1}{\sum_{g=G}^{3} N_g} U' \left(d^G_{(t+1)h} \right) \right] \\ + \frac{1}{\sum_{g=G}^{3} N_g} \left(1 - \frac{L^G_t}{S^G_t} \right) U" \left(d^G_{(t+1)h} \right) \end{array} \right]}{\begin{array}{c} U" \left(B^G_{th} - b^G_{th} \right) - \frac{2N_{Gh}}{\gamma S^G_{t,i} \sum_{g=G}^{3} N_g} \left[U' \left(B^G_{th} - b^G_{th} \right) - \frac{1}{\sum_{g=G}^{3} N_g} U' \left(d^G_{(t+1)h} \right) \right] \\ + \frac{N_{Gh}}{\gamma \left(\sum_{g=G}^{3} N_g \right)^2} \left(1 - \frac{L^G_t}{S^G_t} \right) U" \left(d^G_{(t+1)h} \right) \end{array}} 0 \quad \text{(A.30)}$$

The denominator is negative so the impact of b^G_{tl} on b^G_{th} will depend on the magnitude of the

terms in the numerator .

If $U'\left(B_{th}^{G}-b_{th}^{G}\right)-\frac{1}{\sum_{g=G}^{3}N_g}U'\left(d_{(t+1)h}^{G}\right)>0$ and $S_t^G>2L_t^G$ then the sign of the numerator is

not obvious and so is the sign of $\frac{db_{th}^{G}}{db_{tl}^{G}}$

If $U'\left(B_{th}^{G}-b_{th}^{G}\right)-\frac{1}{\sum_{g=G}^{3}N_g}U'\left(d_{(t+1)h}^{G}\right)\geqslant 0$ and $S_t^G\leqslant 2L_t^G$ then $\frac{db_{th}^{G}}{db_{tl}^{G}}<0$

Effects of b_{th}^{G} on b_{tl}^{G}

$$\frac{db_{tl}^{G}}{db_{th}^{G}}=\frac{-\frac{\partial^2 EU_{tl}^{G}}{\partial b_{tl}^{G}\partial b_{th}^{G}}}{\frac{\partial^2 EU_{tl}^{G}}{\left(\partial b_{tl}^{G}\right)^2}}$$

$$\frac{db_{tl}^{G}}{db_{th}^{G}}=-\frac{\frac{N_{Gh}}{\gamma\left(\sum_{g=G}^{3}N_g\right)^2}\left[\begin{array}{c}\frac{1}{\left(S_t^G\right)^2}\left(\frac{2L_t^G}{S_t^G}-1\right)\left[\frac{U'\left(d_{(t+1)l}^{G}\right)S_t^G}{U\left(d_{(t+1)l,i}^{G}\right)-\underline{U}}-1\right]\\+\left(1-\frac{L_t^G}{S_t^G}\right)U"\left(d_{(t+1)l}^{G}\right)\end{array}\right]}{\begin{array}{c}U"\left(B_{tl}^{G}-b_{tl}^{G}\right)-\frac{N_{Gl}}{\gamma\sum_{g=G}^{3}N_g}\frac{2}{S_t^G}U'\left(B_{tl}^{G}-b_{tl}^{G}\right)+\\\frac{N_{Gl}}{\gamma\left(\sum_{g=G}^{3}N_g\right)^2}\left(1-\frac{L_i^G}{S_t^G}\right)U"\left(d_{(t+1)l}^{G}\right)\end{array}} \tag{A.31}$$

$\frac{\partial^2 EU_{tl}^{G}}{\left(\partial b_{tl}^{G}\right)^2}<0$ and so long as the condition $\frac{U'\left(d_{(t+1)l}^{G}\right)S_t^G}{U\left(d_{(t+1)l,i}^{G}\right)-\underline{U}}>1\Longrightarrow\in_{U\left(d_{(t+1)l,i}^{G}\right)-\underline{U},S_t^G}>1$ and $2L_t^G<S_t^G$ holds, db_{th}^{G} will have a negative impact on db_{tl}^{G}. An increase in good blood will crowd out the supply of bad blood.

Appendix B
Money

Table B.1: Average Partial Effect of Education on religious and secular donations by religious and non-religious individuals

	Dependent Variables			
	Religious Gifts		Secular Gifts	
Control Variable	(1)	(2)	(1)	(2)
Price	-9.286***	-0.890	-4.317***	-2.470**
	(-6.67)	(-0.69)	(-2.67)	(-2.34)
HH Income 50 to <100	0.352*	0.012	0.247	0.399***
	(1.77)	(0.12)	(1.28)	(4.54)
HH Income 100 to <150	0.798***	-0.200	0.861***	0.653***
	(3.40)	(-1.52)	(3.69)	(6.19)
HH Income =150	0.548*	-0.458*	1.167***	0.630***
	(1.79)	(-1.88)	(4.63)	(2.99)
Immigrant	-0.078	0.211	-0.437**	-0.255**
	(-0.39)	(1.38)	(-2.21)	(-2.11)
Age 25 to 34yrs	-0.678**	-0.954***	-0.902***	-0.626***
	(-2.07)	(-5.65)	(-3.33)	(-4.10)
Age 35 to 44yrs	-0.515*	-0.817***	-0.851***	-0.727***
	(-1.77)	(-4.04)	(-3.32)	(-3.91)
Age 45 to 54yrs	-0.594**	-0.644***	-0.971***	-0.301**
	(-2.27)	(-4.52)	(-4.00)	(-2.38)
Age 55 to 64yrs	-0.232	-0.472***	-0.180	-0.252**
	(-1.10)	(-3.56)	(-1.11)	(-2.22)
Male	-0.065	0.070	-0.272*	-0.074
	(-0.38)	(0.85)	(-1.81)	(-1.15)
Single	0.171	-0.037	-0.024	-0.008
	(0.96)	(-0.35)	(-0.12)	(-0.08)
HH Size	0.104	0.145***	0.013	-0.054
	(1.62)	(3.85)	(0.20)	(-1.45)
Employed	0.028	0.180*	0.295	0.235***
	(0.11)	(1.67)	(1.37)	(2.87)
Atlantic	-0.338*	0.472***	-0.531***	-0.273***
	(-1.66)	(4.47)	(-3.14)	(-3.48)
Quebec	-1.378***	0.441***	-1.319***	-0.538***
	(-5.35)	(3.89)	(-4.66)	(-5.65)
Prairies	0.280	-0.092	-0.396**	-0.282**
	(1.41)	(-0.64)	(-2.21)	(-2.53)
British Columbia	0.332	-0.478***	-0.182	-0.022
	(1.52)	(-3.77)	(-0.80)	(-0.22)
Current Abode <5yrs	0.330	-0.005	-0.485**	-0.083
	(1.52)	(-0.05)	(-2.21)	(-0.91)
Current Abode 5 to <10yrs	-0.075	0.029	-0.105	-0.037
	(-0.30)	(0.21)	(-0.49)	(-0.31)

Table B.1 (continued)

	Dependent Variables			
	Religious Gifts		Secular Gifts	
Control Variables	(1)	(2)	(3)	(4)
Some University	0.058	0.036	0.202	0.137
	(0.26)	(0.27)	(0.88)	(1.29)
STRATEGIC	0.574	9.971*	8.321*	11.203***
	(0.12)	(1.85)	(1.94)	(2.65)
Observations	2250	8018	2250	8018

Robust *z* statistics in parentheses* p<.10, ** p<.05, *** p<0.01. (1) and (3) are the regressions results for the regressions for the religious sample while (2) and (4) are the regression results for the non-religious sample.

Table B.2: Average Partial Effect of Education on religious and secular donations by small and big givers

	Religious Gifts		Secular Gifts	
Variable	(3)	(4)	(3)	(4)
Price	-1.977**	-1.451	-1.121	-3.060
	(-2.45)	(-0.80)	(-1.64)	(-1.52)
HH Income 50 to <100	0.314***	0.522***	0.042	-0.290
	(3.26)	(2.61)	(0.56)	(-1.54)
HH Income 100 to <150	0.560***	0.978***	-0.136	-0.708***
	(5.79)	(4.17)	(-1.37)	(-2.86)
HH Income=150	0.433***	1.019***	-0.236	-0.754**
	(2.61)	(3.45)	(-1.52)	(-2.43)
Immigrant	-0.305**	-0.524**	0.314***	0.176
	(-2.51)	(-2.14)	(3.63)	(0.62)
Religious	-0.571***	-0.954***	1.179***	2.883***
	(-3.82)	(-7.05)	(11.81)	(19.24)
Age 25 to 34yrs	-0.415**	-0.723***	-0.258**	-0.288
	(-2.30)	(-2.62)	(-2.09)	(-0.94)
Age 35 to 44yrs	-0.389*	-0.884***	-0.050	-0.229
	(-1.86)	(-2.67)	(-0.34)	(-0.60)
Age 45 to 54yrs	-0.297*	-0.393*	-0.149	-0.519*
	(-1.78)	(-1.68)	(-1.32)	(-1.86)
Age 55 to 64yrs	-0.094	-0.404**	-0.239***	0.218
	(-0.81)	(-1.99)	(-2.61)	(0.96)
Male	-0.181***	-0.179	0.006	0.181
	(-2.80)	(-1.33)	(0.11)	(1.22)
Single	-0.108	0.113	0.042	-0.315
	(-0.94)	(0.51)	(0.55)	(-1.37)
HH Size	-0.045	-0.069	0.070**	0.217***
	(-0.94)	(-0.95)	(2.19)	(2.96)
Employed	0.280***	0.219	0.048	0.025
	(2.61)	(1.16)	(0.53)	(0.13)
Atlantic	-0.167**	-0.627**	0.299***	0.479
	(-2.24)	(-2.56)	(4.02)	(1.56)
Quebec	-0.391***	-0.924**	0.538***	-0.247
	(-3.96)	(-2.05)	(6.68)	(-0.45)
Prairies	-0.169	-0.300*	-0.050	0.074
	(-1.48)	(-1.83)	(-0.50)	(0.40)
British Columbia	-0.100	0.205	-0.250***	-0.448**
	(-0.99)	(1.25)	(-2.68)	(-2.20)

Table B.2 (continued)

Variable	Religious Gifts		Secular Gifts	
	Small Givers Sample	Big Givers Sample	Small Givers Sample	Big Givers Sample
Current Abode <5yrs	-0.229**	-0.049	0.086	-0.256
	(-2.08)	(-0.20)	(0.82)	(-0.86)
Current Abode 5 to <10yrs	-0.140	0.009	0.119	-0.039
	(-1.15)	(0.04)	(1.13)	(-0.17)
Some University	0.173*	0.067	-0.005	0.256
	(1.78)	(0.37)	(-0.06)	(1.28)
STRATEGIC	7.832	7.369*	-1.087	-4.734
	(1.59)	(1.65)	(-0.24)	(-0.83)
Observations	5136	2545	5136	2545

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.3: Average Partial Effect of Education on religious and secular donations by income groups

Variable	Religious Gifts			Secular Gifts		
	Low Income Sample	Middle Income Sample	High Income Sample	Low Income Sample	Middle Income Sample	High Income Sample
Price	-2.246	-1.750	0.837	-1.502	-2.840**	-4.197***
	(-1.20)	(-1.24)	(0.26)	(-0.75)	(-2.19)	(-2.85)
Immigrant	0.385*	0.395***	-0.297	-0.375	-0.228	-0.219
	(1.67)	(2.71)	(-0.93)	(-1.43)	(-1.39)	(-1.28)
Religious	1.784***	1.815***	2.557***	-0.447	-0.497**	-0.082
	(4.53)	(6.27)	(10.00)	(-1.60)	(-2.41)	(-0.60)
Age 25 to 34yrs	-0.776***	-0.482*	-1.013***	-0.652***	-0.402	-0.940***
	(-3.55)	(-1.90)	(-2.73)	(-2.84)	(-1.55)	(-4.49)
Age 35 to 44yrs	-0.501	-0.410	-0.995**	-0.904**	-0.538*	-0.880***
	(-1.37)	(-1.63)	(-2.43)	(-2.56)	(-1.86)	(-4.05)
Age 45 to 54yrs	-0.681***	-0.309	-0.708**	-0.543***	-0.339	-0.418**
	(-3.69)	(-1.41)	(-2.30)	(-2.73)	(-1.41)	(-2.35)
Age 55 to 64yrs	-0.604***	-0.106	-0.428	-0.244*	-0.122	-0.322*
	(-4.78)	(-0.56)	(-1.24)	(-1.71)	(-0.66)	(-1.74)
Male	-0.116	0.014	0.182	-0.171	-0.138	-0.033
	(-1.18)	(0.12)	(1.05)	(-1.59)	(-1.27)	(-0.36)
Single	-0.021	-0.040	-0.306	0.097	-0.111	-0.088
	(-0.16)	(-0.25)	(-1.08)	(0.70)	(-0.68)	(-0.57)
HH Size	0.033	0.100*	0.225***	0.054	-0.108*	-0.059
	(0.36)	(1.93)	(3.11)	(0.64)	(-1.79)	(-1.29)
Employed	0.431***	0.049	0.086	0.264*	0.357**	0.133
	(3.24)	(0.31)	(0.32)	(1.66)	(2.44)	(1.12)
Atlantic	0.542***	0.224	0.151	-0.069	-0.289**	-0.542***
	(3.70)	(1.58)	(0.48)	(-0.37)	(-2.45)	(-4.10)
Quebec	0.588**	0.066	0.130	-0.139	-0.853***	-0.806***
	(2.22)	(0.39)	(0.51)	(-0.43)	(-5.89)	(-5.77)
Prairies	0.264*	0.104	-0.505	-0.140	-0.386**	-0.295**
	(1.71)	(0.60)	(-1.49)	(-0.78)	(-2.57)	(-2.03)
British Columbia	-0.173	-0.388**	-0.408*	0.021	-0.182	0.064
	(-1.15)	(-2.28)	(-1.70)	(0.12)	(-1.10)	(0.49)
Current Abode <5yrs	0.021	-0.123	0.189	-0.288	-0.189	-0.063
	(0.15)	(-0.76)	(0.76)	(-1.64)	(-1.27)	(-0.49)
Current Abode 5 to <10yrs	0.110	0.147	-0.235	0.297	-0.287	-0.030
	(0.53)	(0.90)	(-0.86)	(1.41)	(-1.62)	(-0.22)
At Least Grade9	0.078			0.084		
	(0.32)			(0.32)		

Table B.3 (continued)

Variable	Religious Gifts			
	Low Income Sample	Middle Income Sample	High Income Sample	Low Income Sample
University		-0.047		
		(-0.27)		
Some University			-0.282	
			(-0.67)	
STRATEGIC	6.448	8.627	16.452	15.546
	(0.60)	(1.38)	(1.37)	(1.39)
Observations	3563	3533	3172	3563

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.4: Average Marginal Effects for Structural Changes in Planned Giving Behaviour (PLANNED)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-1.045***	-0.641***	-0.488***	-0.642***
	(-9.59)	(-15.11)	(-10.27)	(-4.97)
HH Income at CPI	0.011	0.017***	-0.016**	-0.006
	(0.80)	(2.60)	(-2.31)	(-0.44)
Immigrant	0.008	0.033***	0.035***	0.012
	(0.40)	(2.94)	(2.69)	(0.62)
Religious			0.026	0.047***
			(1.63)	(2.91)
Age 25 to 34yrs	0.018	-0.082***	-0.010	0.011
	(0.52)	(-5.09)	(-0.59)	(0.32)
Age 35 to 44yrs	-0.017	-0.035**	0.016	-0.002
	(-0.53)	(-2.30)	(0.97)	(-0.07)
Age 45 to 54yrs	0.044	-0.031**	0.025	0.001
	(1.53)	(-2.17)	(1.53)	(0.05)
Age 55 to 64yrs	0.008	-0.033**	0.015	-0.025
	(0.37)	(-2.52)	(1.01)	(-1.03)
Male	0.036**	0.001	-0.002	0.011
	(2.09)	(0.10)	(-0.26)	(0.71)
Single	-0.002	-0.006	-0.009	-0.039*
	(-0.10)	(-0.63)	(-0.74)	(-1.82)
HH Size	-0.007	-0.012***	-0.004	-0.012
	(-0.90)	(-2.92)	(-0.90)	(-1.52)
Postsecondary	-0.010	0.010	0.016	-0.064*
	(-0.27)	(0.63)	(0.90)	(-1.72)
Diploma	0.039*	0.006	0.005	0.012
	(1.84)	(0.64)	(0.46)	(0.53)
University	0.079***	0.048***	-0.002	0.084***
	(3.49)	(4.38)	(-0.18)	(3.72)
Employed	-0.049**	-0.013	-0.022*	-0.007
	(-2.29)	(-1.31)	(-1.90)	(-0.33)
Atlantic	-0.075***	-0.045***	-0.028**	-0.078***
	(-3.81)	(-4.40)	(-2.33)	(-3.98)
Quebec	-0.092***	-0.049***	-0.014	0.007
	(-2.64)	(-4.73)	(-1.12)	(0.25)
Prairies	0.044**	0.008	0.012	0.016
	(2.16)	(0.75)	(1.03)	(0.83)
British Columbia	0.075***	0.034***	0.027**	0.059***
	(3.31)	(3.15)	(2.08)	(2.96)
Current Abode <5yrs	0.013	-0.010	0.010	-0.023
	(0.54)	(-1.00)	(0.93)	(-1.06)
Current Abode 5 to <10yrs	0.036	-0.001	0.003	-0.020
	(1.47)	(-0.11)	(0.19)	(-0.87)

Table B.4 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Year 2010	0.050**	0.038***	0.012	0.029
	(2.13)	(3.52)	(1.00)	(1.30)
Year 2007	-0.104***	-0.001	-0.004	-0.083***
	(-4.07)	(-0.13)	(-0.32)	(-2.99)
F-test of no structural change - chi2	36.39	19.59	2.15	18.35
p-value	0.000	0.000	0.341	0.000
Predicted Probabilities	0.34	0.26	0.20	0.42
Log likelihood	-2074457.7	-7522457.4	-4536151.3	-2427651.7
Observations	9498	30492	19995	9994

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.5: Average Marginal Effects for Structural Changes in Concentrated Giving Behaviour (FOCUSSED)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-0.267***	0.138***	0.028	0.020
	(-2.73)	(3.96)	(0.68)	(0.17)
HH Income at CPI	0.002	-0.018***	0.007	-0.024**
	(0.13)	(-2.97)	(1.03)	(-2.02)
Immigrant	-0.052***	-0.034***	-0.046***	-0.028*
	(-2.89)	(-3.59)	(-4.11)	(-1.70)
Religious			-0.087***	0.001
			(-6.91)	(0.11)
Age 25 to 34yrs	-0.033	0.061***	0.028	0.044
	(-1.09)	(4.30)	(1.64)	(1.48)
Age 35 to 44yrs	-0.004	0.038***	0.013	0.054**
	(-0.13)	(2.67)	(0.73)	(2.02)
Age 45 to 54yrs	-0.021	0.021*	0.002	0.034
	(-0.83)	(1.65)	(0.15)	(1.37)
Age 55 to 64yrs	-0.026	0.021*	0.010	-0.003
	(-1.24)	(1.77)	(0.70)	(-0.16)
Male	0.011	0.001	-0.005	0.020
	(0.73)	(0.14)	(-0.62)	(1.53)
Single	-0.012	-0.005	0.002	-0.030
	(-0.59)	(-0.52)	(0.21)	(-1.60)
HH Size	-0.009	-0.001	-0.005	-0.008
	(-1.37)	(-0.16)	(-1.20)	(-1.25)
Postsecondary	0.039	-0.020	0.002	-0.022
	(1.24)	(-1.59)	(0.16)	(-0.75)
Diploma	0.001	-0.024***	-0.008	-0.030
	(0.03)	(-2.88)	(-0.91)	(-1.53)
University	-0.001	-0.044***	-0.001	-0.046**
	(-0.04)	(-4.70)	(-0.05)	(-2.40)
Employed	-0.031*	-0.001	-0.006	-0.025
	(-1.70)	(-0.14)	(-0.61)	(-1.42)
Atlantic	-0.031*	-0.044***	-0.051***	-0.012
	(-1.82)	(-5.40)	(-5.13)	(-0.74)
Quebec	-0.077***	-0.003	-0.039***	0.004
	(-2.92)	(-0.35)	(-3.66)	(0.18)
Prairies	-0.051***	-0.024***	-0.030***	-0.024
	(-2.85)	(-2.70)	(-2.73)	(-1.54)
British Columbia	-0.019	0.009	0.002	-0.004
	(-0.88)	(1.05)	(0.14)	(-0.23)
Current Abode <5yrs	-0.003	-0.003	-0.016*	0.014
	(-0.15)	(-0.36)	(-1.71)	(0.81)

Table B.5 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Current Abode 5 to <10yrs	0.001	0.005	-0.006	0.019
	(0.06)	(0.45)	(-0.44)	(0.99)
Year 2010	-0.024	0.004	0.010	0.013
	(-1.18)	(0.42)	(0.95)	(0.68)
Year 2007	-0.018	0.017*	0.018*	0.020
	(-0.72)	(1.77)	(1.67)	(0.76)
F-test of no structural change - chi2	1.43	3.18	2.80	0.71
p-value	0488	0.1486	0.247	0.703
Predicted Probabilities	0.77	0.85	0.86	0.79
Log likelihood	-1720683.1	-5731773.8	-3601201.2	-1886941.7
Observations	9498	30492	19995	9994

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.6: Average Marginal Effects for Structural Changes in Involvement (INVOLVED)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-0.146**	-0.186***	-0.131***	-0.112
	(-2.30)	(-6.60)	(-4.38)	(-1.24)
HH Income at CPI	0.025***	0.026***	0.011**	0.047***
	(2.80)	(5.40)	(2.04)	(4.56)
Immigrant	-0.073***	-0.027***	-0.033***	-0.040***
	(-5.71)	(-3.57)	(-4.03)	(-2.77)
Religious			0.003	-0.008
			(0.33)	(-0.73)
Age 25 to 34yrs	-0.024	0.014	0.023**	-0.004
	(-1.19)	(1.24)	(1.96)	(-0.17)
Age 35 to 44yrs	-0.008	0.024**	0.021*	0.010
	(-0.43)	(2.35)	(1.88)	(0.45)
Age 45 to 54yrs	-0.023	0.018*	0.019*	-0.003
	(-1.32)	(1.79)	(1.73)	(-0.17)
Age 55 to 64yrs	-0.003	0.007	-0.012	0.006
	(-0.18)	(0.73)	(-1.20)	(0.35)
Male	-0.003	-0.026***	-0.028***	-0.013
	(-0.30)	(-5.31)	(-5.05)	(-1.20)
Single	-0.001	0.011*	-0.001	0.014
	(-0.06)	(1.75)	(-0.12)	(0.94)
HH Size	-0.005	0.004*	0.002	-0.000
	(-1.30)	(1.66)	(0.73)	(-0.05)
Postsecondary	0.078***	0.043***	0.043***	0.037
	(3.50)	(4.04)	(3.87)	(1.38)
Diploma	0.050***	0.034***	0.035***	0.032*
	(4.03)	(5.05)	(5.07)	(1.90)
University	0.079***	0.067***	0.063***	0.056***
	(5.80)	(9.07)	(7.94)	(3.28)
Employed	0.008	0.003	-0.000	-0.006
	(0.66)	(0.42)	(-0.04)	(-0.40)
Atlantic	0.018	0.005	0.005	0.028**
	(1.50)	(0.80)	(0.63)	(2.07)
Quebec	-0.030*	-0.035***	-0.022***	-0.008
	(-1.81)	(-4.94)	(-2.95)	(-0.38)
Prairies	-0.001	0.010	0.011	-0.015
	(-0.06)	(1.43)	(1.42)	(-1.05)
British Columbia	0.006	0.007	0.010	0.003
	(0.42)	(0.93)	(1.13)	(0.21)
Current Abode <5yrs	-0.008	-0.012*	-0.010	-0.037**
	(-0.60)	(-1.87)	(-1.37)	(-2.44)
Current Abode 5 to <10yrs	-0.009	-0.012	-0.014	-0.013
	(-0.64)	(-1.59)	(-1.60)	(-0.75)

Table B.6 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Year 2010	0.011	0.026***	0.012	0.039**
	(0.73)	(3.39)	(1.43)	(2.41)
Year 2007	0.001	0.006	-0.005	0.017
	(0.05)	(0.73)	(-0.63)	(0.83)
F-test of no structural change - chi2	0.77	14.99	6.09	6.05
p-value	0.681	0.000	0.048	0.049
Predicted Probabilities	0.14	0.13	0.11	0.10
Log likelihood	-1255692.7	-5068793.7	-2994232.5	-1645705.6
Observations	9498	30492	19995	9994

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.7: Average Marginal Effects for Structural Changes in Strategic Giving Behaviour (STRATEGIC)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-0.193***	-0.107***	-0.061***	-0.052
	(-4.24)	(-6.86)	(-4.45)	(-0.88)
HH Income at CPI	0.005	0.008***	0.001	0.020***
	(0.92)	(3.44)	(0.36)	(3.11)
Immigrant	-0.021***	0.001	-0.005	-0.001
	(-2.76)	(0.24)	(-1.39)	(-0.13)
Religious			0.005	0.002
			(1.20)	(0.34)
Age 25 to 34yrs	-0.011	0.005	0.004	0.005
	(-0.97)	(0.78)	(0.82)	(0.32)
Age 35 to 44yrs	0.003	0.016***	0.011**	0.017
	(0.26)	(2.98)	(2.25)	(1.17)
Age 45 to 54yrs	0.002	0.013***	0.010**	0.008
	(0.23)	(2.60)	(2.20)	(0.64)
Age 55 to 64yrs	-0.011	0.005	-0.002	0.002
	(-1.32)	(1.17)	(-0.59)	(0.14)
Male	0.007	-0.007***	-0.006**	-0.002
	(1.15)	(-2.80)	(-2.29)	(-0.31)
Single	-0.007	-0.000	-0.005	0.003
	(-0.84)	(-0.15)	(-1.57)	(0.33)
HH Size	-0.005*	-0.002*	-0.002**	-0.003
	(-1.91)	(-1.68)	(-2.15)	(-0.81)
Postsecondary	-0.009	0.017***	0.012**	-0.013
	(-0.78)	(3.06)	(2.53)	(-0.80)
Diploma	0.010	0.007**	0.007**	0.019*
	(1.37)	(2.00)	(2.18)	(1.75)
University	0.033***	0.018***	0.010***	0.032***
	(4.30)	(4.67)	(2.79)	(2.81)
Employed	-0.017**	-0.001	-0.007*	-0.015
	(-2.30)	(-0.38)	(-1.92)	(-1.41)
Atlantic	-0.008	-0.003	-0.005	0.014
	(-1.12)	(-0.93)	(-1.37)	(1.62)
Quebec	-0.031**	-0.012***	-0.007**	0.011
	(-2.50)	(-3.25)	(-2.14)	(0.78)
Prairies	0.005	0.004	0.003	0.010
	(0.75)	(1.17)	(0.78)	(1.19)
British Columbia	0.010	0.003	0.003	0.004
	(1.24)	(0.90)	(1.01)	(0.46)

Table B.7 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Current Abode <5yrs	0.003	-0.005*	0.001	-0.016*
	(0.34)	(-1.65)	(0.17)	(-1.76)
Current Abode 5 to <10yrs	0.006	-0.005	-0.001	-0.007
	(0.73)	(-1.19)	(-0.27)	(-0.63)
Year 2010	0.010	0.010***	0.004	0.026**
	(1.21)	(2.67)	(1.02)	(2.53)
Year 2007	-0.014	0.002	0.001	0.017
	(-1.30)	(0.44)	(0.26)	(1.30)
F-test of no structural change - chi2	7.38	9.97	1.32	6.71
p-value	0.025	0.007	0.517	0.034
Predicted Probabilities	0.04	0.03	0.02	0.06
Log likelihood	-567983	-1880163.9	-882759.4	-548798.3
Observations	9498	30492	19995	9994

Robust *z* statistics in parentheses,
* p<.10, ** p<.05, *** p<0.01

Table B.8: Average Marginal Effects for Structural Changes in Strategic Giving Behaviour (STRATEGIC) for restricted amounts

Variable	Donations =500 Religious Sample	Donations =500 Non-Religious Sample	Donations =100 Small Givers Sample	Donations =500 Big Givers Sample
Price	-0.184*	0.027	-0.063***	-0.033
	(-1.81)	(0.33)	(-2.97)	(-0.52)
HH Income at CPI	0.008	0.029***	-0.000	0.020***
	(0.86)	(3.06)	(-0.00)	(2.99)
Immigrant	0.001	0.004	-0.006	0.001
	(0.07)	(0.27)	(-1.04)	(0.14)
Religious			0.005	-0.000
			(0.71)	(-0.00)
Age 25 to 34yrs	-0.015	0.024	0.003	0.001
	(-0.77)	(0.89)	(0.43)	(0.08)
Age 35 to 44yrs	-0.002	0.039	0.007	0.016
	(-0.10)	(1.54)	(0.98)	(0.97)
Age 45 to 54yrs	-0.014	0.037*	0.011	0.010
	(-0.80)	(1.70)	(1.55)	(0.73)
Age 55 to 64yrs	-0.015	0.027	-0.005	0.000
	(-1.04)	(1.33)	(-0.79)	(0.03)
Male	0.011	-0.016	-0.004	-0.002
	(1.11)	(-1.48)	(-1.05)	(-0.22)
Single	-0.005	0.018	-0.008	0.007
	(-0.34)	(1.24)	(-1.38)	(0.66)
HH Size	-0.004	0.003	-0.001	-0.001
	(-0.85)	(0.67)	(-0.48)	(-0.29)
Postsecondary	-0.001	-0.013	0.019***	-0.009
	(-0.05)	(-0.48)	(2.60)	(-0.54)
Diploma	0.029*	0.012	0.009*	0.021*
	(1.93)	(0.62)	(1.81)	(1.71)
University	0.055***	0.009	0.014***	0.031**
	(3.69)	(0.47)	(2.73)	(2.45)
Employed	-0.019*	-0.005	-0.007	-0.014
	(-1.70)	(-0.28)	(-1.31)	(-1.20)
Atlantic	0.015	0.021	-0.004	0.019**
	(1.15)	(1.49)	(-0.66)	(1.97)
Quebec	0.001	0.030	-0.006	0.024
	(0.05)	(1.57)	(-1.01)	(1.59)
Prairies	0.014	0.005	0.004	0.011
	(1.15)	(0.36)	(0.82)	(1.21)
British Columbia	0.018	-0.004	0.003	0.005
	(1.31)	(-0.32)	(0.65)	(0.51)
Current Abode<5yrs	-0.019	-0.016	0.002	-0.018*
	(-1.50)	(-1.10)	(0.43)	(-1.80)

Table B.8 (continued)

Variable	Gifts =500 Religious Sample	Gifts =500 Non-Religious Sample	Gifts =100 Small Givers Sample	Gifts =500 Big Givers Sample
Current Abode 5 to <10yrs	-0.012	-0.005	-0.002	-0.007
	(-0.92)	(-0.28)	(-0.35)	(-0.62)
Year 2010	0.010	0.053***	0.002	0.034***
	(0.69)	(3.14)	(0.40)	(3.02)
Year 2007	-0.012	0.045**	0.000	0.025*
	(-0.59)	(2.39)	(0.02)	(1.80)
F-test of no structural change - chi2	1.39	11.49	0.80	9.84
p-value	0.4984	0.003	0.6692	0.007
Predicted Probabilities	0.05	0.07	0.01	0.06
Log likelihood	-323985.49	-447055.66	-548798.3	-780864.33
Observations	4469	4472	4687	8941

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.9: First stage regressions of the propensity to plan giving (PLANNED) - Average Marginal Effects using education levels at the CMAs and/or youth experiences as instruments

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-1.391***	-1.076***	-0.650***	-1.143***
	(-3.78)	(-8.67)	(-4.61)	(-3.10)
HH Income 50 to <100	-0.037	-0.008	-0.038*	-0.056
	(-0.90)	(-0.39)	(-1.75)	(-1.34)
HH Income 100 to <150	-0.006	0.017	-0.068**	0.012
	(-0.11)	(0.70)	(-2.32)	(0.22)
HH Income =150	-0.122**	0.045*	-0.012	-0.063
	(-2.00)	(1.73)	(-0.33)	(-1.21)
Immigrant	0.093**	0.052**	0.070***	0.068*
	(2.24)	(2.49)	(2.80)	(1.89)
Religious			0.041	0.088***
			(1.29)	(2.86)
Age 25 to 34yrs	0.071	-0.076**	0.002	-0.031
	(1.01)	(-2.56)	(0.06)	(-0.48)
Age 35 to 44yrs	-0.028	-0.040	-0.001	-0.011
	(-0.43)	(-1.45)	(-0.04)	(-0.19)
Age 45 to 54yrs	0.076	-0.050*	0.010	-0.016
	(1.25)	(-1.91)	(0.33)	(-0.31)
Age 55 to 64yrs	-0.003	-0.050**	-0.004	-0.070
	(-0.08)	(-2.15)	(-0.15)	(-1.63)
Male	0.054	-0.006	0.001	0.007
	(1.61)	(-0.39)	(0.06)	(0.25)
Single	0.028	-0.015	-0.008	-0.003
	(0.61)	(-0.71)	(-0.34)	(-0.08)
HH Size	-0.006	-0.013*	-0.008	0.002
	(-0.32)	(-1.68)	(-0.82)	(0.16)
Employed	-0.064	0.009	-0.027	0.005
	(-1.48)	(0.51)	(-1.25)	(0.11)
Atlantic	-0.063	-0.050***	-0.017	-0.066*
	(-1.60)	(-2.59)	(-0.76)	(-1.79)
Quebec	-0.114	-0.073***	-0.024	0.040
	(-1.46)	(-3.16)	(-0.87)	(0.62)
Prairies	0.083**	-0.011	0.012	0.004
	(2.01)	(-0.58)	(0.53)	(0.10)
British Columbia	0.064	0.018	-0.001	0.048
	(1.34)	(0.91)	(-0.05)	(1.27)
Current Abode <5yrs	0.069	-0.042**	-0.016	0.005
	(1.41)	(-2.25)	(-0.74)	(0.13)
Current Abode 5 to <10yrs	0.067	0.008	0.000	-0.003
	(1.38)	(0.36)	(0.00)	(-0.07)
University	0.126***	0.026		0.088***
	(3.63)	(1.64)		(3.21)

Table B.9 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
At Least High School			0.078***	
			(2.68)	
Doctorate at CMA		0.242**		
		(2.02)		
Youth Experience 4	0.144***	0.057***	0.047**	
	(3.83)	(3.05)	(2.50)	
Youth Experience 5				0.090**
				(2.48)
Predicted Probabilities	0.36	0.27	0.22	0.44
Cragg-Donald Wald F Statistic	28.81	9.21	14.78	12.75
Hansen J Statistic		0.75		
P-value		0.386		
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.10: First stage regressions of the propensity to concentrate giving (FOCUSSED) - Average Marginal Effects using education levels at the CMAs and/or youth experiences as instruments

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-0.190	0.297***	0.068	0.526*
	(-0.64)	(3.00)	(0.59)	(1.72)
HH Income 50 to <100	0.055	-0.012	0.000	0.008
	(1.55)	(-0.66)	(0.02)	(0.22)
HH Income 100 to <150	0.075	0.008	0.030	0.005
	(1.61)	(0.40)	(1.18)	(0.13)
HH Income =150	0.035	-0.010	0.091***	-0.011
	(0.61)	(-0.47)	(2.83)	(-0.27)
Immigrant	-0.094***	-0.037**	-0.064***	-0.062**
	(-2.83)	(-2.01)	(-2.99)	(-2.06)
Religious			-0.103***	-0.027
			(-4.44)	(-1.11)
Age 25 to 34yrs	-0.011	0.068**	0.054*	0.073
	(-0.19)	(2.52)	(1.67)	(1.40)
Age 35 to 44yrs	0.084	0.034	0.027	0.060
	(1.42)	(1.25)	(0.81)	(1.28)
Age 45 to 54yrs	-0.033	0.042*	0.034	-0.016
	(-0.69)	(1.78)	(1.17)	(-0.40)
Age 55 to 64yrs	-0.042	0.035*	0.018	-0.007
	(-1.11)	(1.74)	(0.71)	(-0.19)
Male	-0.010	0.010	0.008	0.012
	(-0.35)	(0.91)	(0.54)	(0.49)
Single	0.033	-0.001	-0.005	0.007
	(0.86)	(-0.04)	(-0.23)	(0.21)
HH Size	-0.019	0.005	-0.006	0.004
	(-1.36)	(0.70)	(-0.70)	(0.33)
Employed	-0.053	-0.017	-0.022	-0.034
	(-1.49)	(-1.18)	(-1.23)	(-1.11)
Atlantic	-0.046	-0.035**	-0.043**	-0.014
	(-1.34)	(-2.34)	(-2.34)	(-0.45)
Quebec	-0.095	0.031*	-0.020	0.027
	(-1.63)	(1.73)	(-0.94)	(0.49)
Prairies	-0.044	-0.000	-0.017	-0.040
	(-1.20)	(-0.01)	(-0.86)	(-1.30)
British Columbia	-0.020	0.027	0.036	-0.006
	(-0.44)	(1.60)	(1.64)	(-0.19)
Current Abode 5 to <10yrs	0.011	-0.004	-0.015	0.026
	(0.26)	(-0.16)	(-0.57)	(0.76)
GRADE8	0.119**		0.011	0.209**
	(2.12)		(0.40)	(2.50)

Table B.10 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
At Most Diploma		0.038**		
		(2.52)		
College at CMA	1.736**			
	(2.01)			
Youth Experience 6	-0.130***		-0.066***	
	(-2.85)		(-3.36)	
Youth Experience 4		-0.040***		
		(-2.62)		
Youth Experience 5				-0.095***
				(-2.77)
Predicted Probabilities	0.76	0.85	0.86	0.82
Cragg-Donald Wald F Statistic	16.35	12.19	31.53	14.92
Hansen J Statistic	1.95			
P-value	0.163			
Observations	2250	8018	5136	2567

R Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.11: First stage regressions of the propensity to participate (INVOLVED) - Average Marginal Effects using education levels at the CMAs and/or youth experiences as instruments

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-0.199	-0.142*	-0.150*	-0.158
	(-0.99)	(-1.77)	(-1.72)	(-0.58)
HH Income 50 to <100	0.025	-0.005	-0.009	-0.034
	(0.98)	(-0.38)	(-0.62)	(-1.06)
HH Income 100 to <150	0.020	0.014	-0.007	0.018
	(0.64)	(0.88)	(-0.38)	(0.49)
HH Income =150	0.068*	0.064***	0.053**	0.035
	(1.65)	(3.63)	(2.35)	(0.91)
Immigrant	-0.061**	-0.015	-0.046***	-0.007
	(-2.29)	(-1.03)	(-2.64)	(-0.23)
Religious			-0.013	-0.020
			(-0.64)	(-0.85)
Age 25 to 34yrs	0.012	0.014	0.018	0.042
	(0.27)	(0.66)	(0.77)	(0.86)
Age 35 to 44yrs	-0.014	0.034*	0.015	0.056
	(-0.36)	(1.71)	(0.64)	(1.29)
Age 45 to 54yrs	-0.007	0.001	-0.001	0.018
	(-0.19)	(0.07)	(-0.03)	(0.49)
Age 55 to 64yrs	0.018	0.006	-0.020	0.047
	(0.70)	(0.39)	(-1.01)	(1.46)
Male	0.026	-0.018*	-0.023**	0.003
	(1.27)	(-1.93)	(-2.15)	(0.12)
Single	0.014	0.019	0.001	0.036
	(0.52)	(1.41)	(0.05)	(1.23)
HH Size	-0.012	0.008	0.005	0.004
	(-1.13)	(1.64)	(0.87)	(0.40)
Employed	-0.011	0.000	-0.005	-0.030
	(-0.48)	(0.02)	(-0.36)	(-1.06)
Atlantic	0.024	0.006	-0.006	0.021
	(1.01)	(0.45)	(-0.40)	(0.77)
Quebec	-0.026	-0.011	-0.009	0.012
	(-0.68)	(-0.73)	(-0.57)	(0.24)
Prairies	-0.041	0.009	-0.000	-0.057*
	(-1.51)	(0.63)	(-0.02)	(-1.92)
British Columbia	0.015	0.018	0.011	0.010
	(0.50)	(1.23)	(0.61)	(0.35)
Current Abode <5yrs	-0.018	-0.000	0.016	-0.061*
	(-0.62)	(-0.01)	(1.15)	(-1.86)
Current Abode 5 to <10yrs	-0.019	-0.002	0.015	-0.040
	(-0.57)	(-0.15)	(0.98)	(-1.13)
At Least High School	0.100***	0.105***	0.094***	0.104**
	(3.29)	(4.43)	(4.30)	(2.22)

Table B.11 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Youth Experience 4	0.071**			
	(2.42)			
Youth Experience 1		0.058***	0.049***	0.050**
		(5.60)	(4.34)	(2.11)
Predicted Probabilities	0.14	0.14	0.12	0.18
Cragg-Donald Wald F Statistic	12.46	31.55	20.92	9.58
Hansen J Statistic P-value				
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.12: First stage regressions of the propensity to give strategically (STRATEGIC) - Average Marginal Effects using education levels at the CMAs and youth experiences as instruments

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-0.151	-0.207***	-0.130***	-0.061
	(-1.31)	(-4.61)	(-3.37)	(-0.39)
HH Income 50 to <100	0.019	0.008	0.007	-0.006
	(1.44)	(1.25)	(1.28)	(-0.27)
HH Income 100 to <150	0.017	0.010	-0.001	0.002
	(1.04)	(1.24)	(-0.14)	(0.11)
HH Income =150	-0.020	0.032***	0.018**	0.027
	(-0.82)	(3.66)	(2.14)	(1.11)
Immigrant	-0.017	0.017**	-0.004	0.034**
	(-1.11)	(2.47)	(-0.70)	(2.04)
Religious				0.002
				(0.11)
Age 25 to 34yrs	0.002	0.014	0.011	0.002
	(0.08)	(1.32)	(1.34)	(0.06)
Age 35 to 44yrs	0.009	0.028***	0.018**	0.027
	(0.41)	(2.72)	(2.04)	(0.97)
Age 45 to 54yrs	0.014	0.007	0.011	-0.015
	(0.65)	(0.81)	(1.30)	(-0.62)
Age 55 to 64yrs	-0.007	0.010	-0.002	0.009
	(-0.47)	(1.13)	(-0.22)	(0.42)
Male	0.015	-0.001	0.002	-0.003
	(1.31)	(-0.28)	(0.56)	(-0.22)
Single	0.004	0.003	-0.005	0.013
	(0.25)	(0.43)	(-0.92)	(0.62)
HH Size	-0.005	-0.002	-0.004**	0.004
	(-0.78)	(-1.12)	(-2.14)	(0.56)
Employed	-0.032**	-0.001	-0.015**	-0.008
	(-2.32)	(-0.10)	(-2.40)	(-0.47)
Atlantic	0.021	0.006	0.004	0.058***
	(1.34)	(0.82)	(0.65)	(3.10)
Quebec	-0.001	-0.007	-0.005	0.074***
	(-0.05)	(-0.83)	(-0.58)	(2.63)
Prairies	0.022	0.015**	0.014**	0.028
	(1.39)	(2.06)	(1.99)	(1.36)
British Columbia	0.023	0.007	0.006	0.012
	(1.29)	(0.91)	(0.88)	(0.63)
Current Abode <5yrs	0.011	-0.003	0.014**	-0.046**
	(0.65)	(-0.49)	(2.31)	(-2.10)
Current Abode 5 to <10yrs	0.017	-0.003	0.011*	0.001
	(1.17)	(-0.38)	(1.75)	(0.03)

Table B.12 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
University at CMA	2.095*	0.983**	0.705**	3.127**
	(1.89)	(2.31)	(1.98)	(2.10)
Youth Experience 1	0.037***			
	(2.75)			
Youth Experience 4		0.024***	0.019***	0.030**
		(3.56)	(3.05)	(2.21)
Youth Door-to-Door				0.030**
				(2.21)
Predicted Probabilities	0.04	0.03	0.03	0.07
Cragg-Donald Wald F Statistic	17.76	11.44	13.08	10.70
Hansen J Statistic	1.00	1.41	0.85	0.07
P-value	0.318	0.235	0.357	0.788
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.13: Average Partial Effects of Planned Giving Behaviour (PLANNED) on religious donations - TOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-8.614***	-2.384***	-1.037***	-3.028
	(-6.67)	(-5.39)	(-2.59)	(-1.64)
HH Income 50 to <100	0.350**	0.032	0.012	-0.218
	(1.96)	(0.41)	(0.17)	(-1.32)
HH Income 100 to <150	0.768***	-0.160	-0.160	-0.682***
	(3.50)	(-1.61)	(-1.63)	(-3.17)
HH Income =150	0.511*	-0.120	-0.277**	-0.875***
	(1.77)	(-1.05)	(-2.17)	(-3.57)
Immigrant	-0.144	0.321***	0.318***	0.014
	(-0.79)	(3.73)	(3.95)	(0.08)
Religious			1.169***	3.008***
			(17.72)	(26.44)
Age 25 to 34yrs	-0.791**	-0.776***	-0.297***	-0.394
	(-2.39)	(-6.33)	(-2.70)	(-1.34)
Age 35 to 44yrs	-0.550*	-0.524***	-0.101	-0.430
	(-1.90)	(-4.44)	(-0.92)	(-1.55)
Age 45 to 54yrs	-0.661***	-0.546***	-0.177*	-0.441*
	(-2.61)	(-5.08)	(-1.82)	(-1.74)
Age 55 to 64yrs	-0.267	-0.373***	-0.250***	0.182
	(-1.31)	(-3.89)	(-2.76)	(0.87)
Male	-0.093	0.056	-0.001	0.213
	(-0.64)	(0.97)	(-0.02)	(1.56)
Single	0.179	-0.024	0.045	-0.335*
	(1.01)	(-0.30)	(0.61)	(-1.86)
HH Size	0.118*	0.113***	0.076***	0.214***
	(1.90)	(3.90)	(2.80)	(3.32)
Postsecondary	0.617**	0.061	0.001	-0.025
	(2.10)	(0.49)	(0.01)	(-0.10)
Diploma	0.128	0.164**	0.135**	-0.231
	(0.73)	(2.14)	(2.05)	(-1.29)
University	0.219	0.278***	0.083	0.036
	(1.06)	(3.16)	(1.01)	(0.19)
Employed	0.046	0.143*	0.052	0.093
	(0.24)	(1.88)	(0.79)	(0.50)
Atlantic	-0.277	0.430***	0.295***	0.321**
	(-1.40)	(5.72)	(3.99)	(1.96)
Quebec	-1.301***	0.325***	0.530***	-0.630*
	(-4.77)	(3.89)	(6.88)	(-1.84)
Prairies	0.255	0.037	-0.059	0.103
	(1.35)	(0.44)	(-0.69)	(0.58)

Table B.13 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
British Columbia	0.306	-0.401***	-0.255***	-0.433**
	(1.52)	(-4.17)	(-2.79)	(-2.28)
Current Abode <5yrs	0.290	-0.039	0.068	-0.036
	(1.50)	(-0.48)	(0.93)	(-0.20)
Current Abode 5 to <10yrs	-0.119	-0.005	0.100	-0.042
	(-0.50)	(-0.06)	(1.12)	(-0.19)
PLANNED	0.544***	0.020	-0.108	-0.184
	(3.74)	(0.31)	(-1.64)	(-1.36)
Log likelihood	-6954585.9	-17587122	-10829981	-7334426.4
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.14: Average Partial Effects of Planned Giving Behaviour (PLANNED) on secular donations - TOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-5.994***	-5.296***	-2.993***	-1.971
	(-3.98)	(-13.90)	(-6.26)	(-1.60)
HH Income 50 to <100	0.519***	0.578***	0.415***	0.471***
	(3.23)	(6.62)	(4.37)	(2.86)
HH Income 100 to <150	1.221***	0.906***	0.619***	0.999***
	(6.31)	(10.01)	(6.68)	(5.44)
HH Income =150	1.311***	1.303***	0.646***	1.274***
	(5.42)	(12.07)	(5.50)	(6.41)
Immigrant	-0.731***	-0.149*	-0.420***	-0.295**
	(-4.26)	(-1.76)	(-3.86)	(-2.41)
Religious			-0.569***	-1.092***
			(-3.89)	(-10.34)
Age 25 to 34yrs	-1.205***	-0.638***	-0.374**	-0.623***
	(-4.89)	(-4.50)	(-2.37)	(-3.08)
Age 35 to 44yrs	-1.007***	-0.572***	-0.281*	-0.630***
	(-4.12)	(-4.06)	(-1.72)	(-3.33)
Age 45 to 54yrs	-1.132***	-0.305**	-0.241*	-0.492***
	(-5.57)	(-2.47)	(-1.68)	(-3.07)
Age 55 to 64yrs	-0.297**	-0.217**	-0.113	-0.353***
	(-2.08)	(-2.16)	(-1.00)	(-2.65)
Male	-0.167	-0.108**	-0.178***	-0.199**
	(-1.32)	(-2.14)	(-2.95)	(-2.01)
Single	0.045	0.007	-0.158	0.262*
	(0.26)	(0.08)	(-1.45)	(1.75)
HH Size	-0.013	-0.097***	-0.081**	-0.038
	(-0.20)	(-2.72)	(-1.97)	(-0.74)
Postsecondary	0.398*	0.182*	0.105	0.387*
	(1.65)	(1.69)	(0.96)	(1.77)
Diploma	0.059	0.182**	0.070	0.343**
	(0.35)	(2.42)	(0.89)	(2.57)
University	0.609***	0.500***	0.343***	0.473***
	(3.24)	(5.94)	(3.84)	(3.21)
Employed	0.089	0.282***	0.187**	0.117
	(0.57)	(4.19)	(2.55)	(0.78)
Atlantic	-0.469***	-0.326***	-0.181***	-0.341***
	(-3.64)	(-5.15)	(-2.70)	(-3.12)
Quebec	-1.598***	-0.783***	-0.480***	-0.384**
	(-5.84)	(-11.22)	(-5.77)	(-2.00)

Table B.14 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Prairies	-0.385**	-0.177***	-0.076	-0.318***
	(-2.45)	(-2.79)	(-1.05)	(-2.64)
British Columbia	-0.089	0.009	-0.063	0.216*
	(-0.44)	(0.13)	(-0.73)	(1.78)
Current Abode <5yrs	-0.479**	-0.144**	-0.113	-0.376***
	(-2.46)	(-2.07)	(-1.37)	(-2.58)
Current Abode 5 to <10yrs	0.013	-0.103	-0.062	-0.014
	(0.07)	(-1.03)	(-0.56)	(-0.10)
PLANNED	0.460***	0.593***	0.306***	0.256***
	(3.36)	(11.59)	(4.24)	(2.76)
Log likelihood	-6259386.8	-25205306	-16016815	-6508796.2
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.15: Average Partial Effects of Planned Giving Behaviour (PLANNED) on religious donations using individual level of education and youth experiences - IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-8.139***	-2.039***	-1.255	-0.849
	(-4.87)	(-4.47)	(-0.09)	(-0.35)
HH Income 50 to <100	0.385**	0.075	0.022	-0.171
	(2.14)	(0.97)	(0.04)	(-0.99)
HH Income 100 to <150	0.791***	-0.110	-0.158	-0.749***
	(3.69)	(-1.11)	(-0.14)	(-3.14)
HH Income =150	0.619**	-0.064	-0.261*	-0.831***
	(2.11)	(-0.57)	(-1.87)	(-3.27)
Immigrant	-0.169	0.323***	0.349	-0.084
	(-0.90)	(3.70)	(0.21)	(-0.43)
Religious			1.188	2.757***
			(0.91)	(18.00)
Age 25 to 34yrs	-0.759**	-0.716***	-0.259	-0.253
	(-2.28)	(-5.80)	(-0.46)	(-0.81)
Age 35 to 44yrs	-0.498*	-0.472***	-0.063	-0.446
	(-1.73)	(-3.93)	(-0.13)	(-1.48)
Age 45 to 54yrs	-0.650**	-0.511***	-0.150	-0.431
	(-2.55)	(-4.67)	(-0.24)	(-1.55)
Age 55 to 64yrs	-0.234	-0.341***	-0.235	0.291
	(-1.15)	(-3.51)	(-1.16)	(1.22)
Male	-0.103	0.059	0.006	0.198
	(-0.69)	(0.99)	(0.04)	(1.34)
Single	0.147	-0.020	0.045	-0.336*
	(0.83)	(-0.25)	(0.42)	(-1.67)
HH Size	0.109*	0.115***	0.071	0.212***
	(1.74)	(3.89)	(0.43)	(3.04)
Employed	0.058	0.154**	0.055	0.045
	(0.29)	(1.98)	(0.12)	(0.22)
Atlantic	-0.280	0.455***	0.295	0.408**
	(-1.35)	(5.94)	(1.26)	(2.13)
Quebec	-1.277***	0.371***	0.536	-0.624
	(-4.16)	(4.36)	(1.41)	(-1.64)
Prairies	0.201	0.026	-0.056	0.106
	(1.03)	(0.31)	(-0.16)	(0.56)
British Columbia	0.287	-0.408***	-0.251*	-0.488**
	(1.38)	(-4.21)	(-1.77)	(-2.47)
Current Abode <5yrs	0.269	-0.006	0.061	-0.068
	(1.34)	(-0.07)	(0.21)	(-0.34)
Current Abode 5 to<10yrs	-0.116	0.004	0.106	-0.034
	(-0.46)	(0.04)	(0.98)	(-0.14)

Table B.15 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
PLANNED	0.882	0.534***	-0.364	1.643
	(1.26)	(3.04)	(-0.02)	(1.48)
Rho	-0.100	-0.204***	-0.183	-0.502
	(-0.52)	(-3.48)	(-0.08)	(-1.63)
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.16: Average Partial Effects of Planned Giving Behaviour (PLANNED) on secular donations using individual level of education and youth experiences - IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-3.818**	-4.443***	-2.903***	0.097
	(-2.14)	(-10.30)	(-5.89)	(0.07)
HH Income 50 to <100	0.594***	0.639***	0.463***	0.605***
	(3.54)	(7.77)	(5.08)	(3.31)
HH Income 100 to <150	1.235***	0.975***	0.709***	0.991***
	(6.34)	(11.30)	(7.96)	(4.84)
HH Income =150	1.510***	1.384***	0.735***	1.408***
	(6.49)	(13.51)	(6.40)	(6.64)
Immigrant	-0.788***	-0.146*	-0.389***	-0.397***
	(-4.20)	(-1.75)	(-3.66)	(-2.74)
Religious			-0.588***	-1.211***
			(-3.93)	(-9.93)
Age 25 to 34yrs	-1.177***	-0.513***	-0.338**	-0.574**
	(-4.45)	(-3.51)	(-2.05)	(-2.37)
Age 35 to 44yrs	-0.847***	-0.476***	-0.242	-0.622***
	(-3.32)	(-3.29)	(-1.41)	(-2.81)
Age 45 to 54yrs	-1.131***	-0.238*	-0.230	-0.463**
	(-4.88)	(-1.89)	(-1.56)	(-2.44)
Age 55 to 64yrs	-0.237	-0.154	-0.103	-0.222
	(-1.57)	(-1.49)	(-0.88)	(-1.40)
Male	-0.241*	-0.101*	-0.176***	-0.183
	(-1.74)	(-1.96)	(-2.85)	(-1.63)
Single	-0.021	0.024	-0.153	0.275
	(-0.11)	(0.27)	(-1.39)	(1.60)
HH Size	-0.019	-0.090**	-0.084**	-0.037
	(-0.25)	(-2.52)	(-1.97)	(-0.60)
Employed	0.179	0.292***	0.201***	0.136
	(1.11)	(4.22)	(2.68)	(0.89)
Atlantic	-0.391***	-0.275***	-0.179***	-0.250*
	(-2.67)	(-4.16)	(-2.60)	(-1.91)
Quebec	-1.385***	-0.689***	-0.464***	-0.431*
	(-4.25)	(-9.50)	(-5.17)	(-1.92)
Prairies	-0.545***	-0.188***	-0.093	-0.325**
	(-3.45)	(-2.88)	(-1.30)	(-2.31)
British Columbia	-0.176	0.001	-0.049	0.166
	(-0.83)	(0.01)	(-0.57)	(1.15)
Current Abode <5yrs	-0.568***	-0.073	-0.098	-0.366**
	(-2.83)	(-1.04)	(-1.17)	(-2.34)
Current Abode 5 to <10yrs	-0.074	-0.084	-0.033	0.004
	(-0.36)	(-0.86)	(-0.30)	(0.02)

Table B.16 (continued)

	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
PLANNED	1.948***	1.619***	0.649**	2.071***
	(4.62)	(10.76)	(2.51)	(7.96)
Rho	-0.518***	-0.386***	-0.043	-0.661***
	(-4.06)	(-6.92)	(-1.09)	(-5.56)
Log-likelihood	-8258759.6	-33199258	-20861274	-8904516.1
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.17: Average Partial Effects of Planned Giving Behaviour (PLANNED) on religious donations using the level of education at the CMA area and/or youth experiences - IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-8.303***	-2.151***	-1.037	-2.025
	(-4.44)	(-4.50)	(-1.43)	(-0.90)
HH Income 50 to <100	0.356**	0.033	0.012	-0.194
	(1.96)	(0.42)	(0.16)	(-1.12)
HH Income 100 to <150	0.764***	-0.165*	-0.160	-0.717***
	(3.52)	(-1.65)	(-1.46)	(-3.22)
HH Income =150	0.530*	-0.132	-0.277**	-0.900***
	(1.71)	(-1.15)	(-2.17)	(-3.54)
Immigrant	-0.163	0.310***	0.318***	-0.040
	(-0.85)	(3.56)	(3.06)	(-0.22)
Religious			1.169***	2.895***
			(15.69)	(20.77)
Age 25 to 34yrs	-0.809**	-0.761***	-0.297***	-0.328
	(-2.40)	(-6.16)	(-2.69)	(-1.09)
Age 35 to 44yrs	-0.546*	-0.514***	-0.101	-0.447
	(-1.88)	(-4.33)	(-0.91)	(-1.55)
Age 45 to 54yrs	-0.676***	-0.534***	-0.177*	-0.465*
	(-2.65)	(-4.95)	(-1.77)	(-1.75)
Age 55 to 64yrs	-0.267	-0.361***	-0.250***	0.230
	(-1.31)	(-3.75)	(-2.76)	(1.02)
Male	-0.105	0.057	-0.001	0.194
	(-0.70)	(0.98)	(-0.02)	(1.38)
Single	0.171	-0.021	0.045	-0.354*
	(0.98)	(-0.26)	(0.61)	(-1.87)
HH Size	0.120*	0.116***	0.076***	0.215***
	(1.90)	(3.94)	(2.68)	(3.24)
Postsecondary	0.616**	0.060	0.001	0.005
	(2.10)	(0.48)	(0.01)	(0.02)
Diploma	0.125	0.163**	0.135*	-0.298*
	(0.72)	(2.13)	(1.88)	(-1.67)
University	0.197	0.270***	0.083	-0.042
	(0.90)	(3.05)	(0.95)	(-0.20)
Employed	0.059	0.141*	0.052	0.076
	(0.29)	(1.85)	(0.73)	(0.39)
Atlantic	-0.265	0.442***	0.295***	0.351**
	(-1.25)	(5.82)	(3.91)	(1.97)
Quebec	-1.274***	0.342***	0.530***	-0.615*
	(-3.97)	(4.04)	(6.46)	(-1.69)
Prairies	0.233	0.039	-0.059	0.105
	(1.16)	(0.46)	(-0.69)	(0.58)
British Columbia	0.292	-0.407***	-0.255***	-0.464**
	(1.41)	(-4.21)	(-2.79)	(-2.40)

Table B.17 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Current Abode <5yrs	0.272	-0.031	0.068	-0.068
	(1.29)	(-0.38)	(0.90)	(-0.36)
Current Abode 5 to <10yrs	-0.131	-0.007	0.100	-0.036
	(-0.5)	(-0.08)	(1.12)	(-0.16)
PLANNED	0.760	0.237	-0.108	0.698
	(0.82)	(1.13)	(-0.13)	(0.76)
Rho	-0.064	-0.077	-0.141	-0.471
	(-0.25)	(-0.92)	(-0.67)	(-1.73)
Log-likelihood	-8937527.1	-25492810	-15372947	-9733841.4
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.18: Average Partial Effects of Planned Giving Behaviour (PLANNED) on secular donations using the level of education at the CMA area and/or youth experiences - IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-4.901***	-4.487***	-2.817***	0.184
	(-3.04)	(-10.48)	(-5.78)	(0.13)
HH Income 50 to <100	0.532***	0.577***	0.422***	0.559***
	(3.31)	(6.70)	(4.48)	(3.04)
HH Income 100 to <150	1.194***	0.885***	0.633***	0.953***
	(6.24)	(9.92)	(6.92)	(4.66)
HH Income =150	1.360***	1.257***	0.648***	1.365***
	(5.68)	(11.78)	(5.52)	(6.16)
Immigrant	-0.787***	-0.186**	-0.438***	-0.398***
	(-4.48)	(-2.24)	(-4.06)	(-2.81)
Religious			-0.581***	-1.211***
			(-4.02)	(-9.81)
Age 25 to 34yrs	-1.255***	-0.579***	-0.377**	-0.575**
	(-4.99)	(-4.20)	(-2.42)	(-2.42)
Age 35 to 44yrs	-0.983***	-0.534***	-0.283*	-0.635***
	(-4.01)	(-3.93)	(-1.75)	(-2.91)
Age 45 to 54yrs	-1.171***	-0.264**	-0.246*	-0.461**
	(-5.59)	(-2.19)	(-1.74)	(-2.46)
Age 55 to 64yrs	-0.292**	-0.178*	-0.114	-0.235
	(-2.02)	(-1.81)	(-1.01)	(-1.49)
Male	-0.206	-0.104**	-0.179***	-0.179
	(-1.64)	(-2.05)	(-2.95)	(-1.63)
Single	0.020	0.017	-0.156	0.279
	(0.11)	(0.19)	(-1.43)	(1.64)
HH Size	-0.007	-0.087**	-0.079*	-0.034
	(-0.10)	(-2.49)	(-1.90)	(-0.57)
Postsecondary	0.390	0.176*	0.096	0.375*
	(1.64)	(1.65)	(0.88)	(1.77)
Diploma	0.047	0.177**	0.061	0.329**
	(0.28)	(2.36)	(0.79)	(2.47)
University	0.522**	0.469***	0.334***	0.281*
	(2.52)	(5.51)	(3.77)	(1.75)
Employed	0.131	0.274***	0.193***	0.108
	(0.81)	(4.01)	(2.59)	(0.70)
Atlantic	-0.421***	-0.288***	-0.177***	-0.238*
	(-3.08)	(-4.44)	(-2.59)	(-1.85)
Quebec	-1.491***	-0.724***	-0.472***	-0.430*
	(-4.89)	(-10.09)	(-5.36)	(-1.91)
Prairies	-0.454***	-0.168***	-0.080	-0.309**
	(-2.76)	(-2.62)	(-1.11)	(-2.27)

Table B.18 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
British Columbia	-0.135	-0.006	-0.065	0.163
	(-0.64)	(-0.08)	(-0.75)	(1.13)
Current Abode <5yrs	-0.529***	-0.117*	-0.110	-0.368**
	(-2.71)	(-1.68)	(-1.31)	(-2.37)
Current Abode 5 to <10yrs	-0.030	-0.109	-0.062	-0.010
	(-0.15)	(-1.13)	(-0.56)	(-0.06)
PLANNED	1.197**	1.286***	0.547*	2.016***
	(2.13)	(7.62)	(1.90)	(6.86)
Rho	-0.265	-0.297***	-0.143	-0.647***
	(1.47)	(4.55)	(-1.67)	(-4.94)
Log-likelihood	-8240223.9	-33103083	-20813059	-8893657.5
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.19: Average Partial Effect of Concentration Giving Behaviour (FOCUSSED) on religious donations - TOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-9.431***	-2.265***	-0.921**	-2.782
	(-7.67)	(-5.15)	(-2.30)	(-1.47)
HH Income 50 to <100	0.347*	0.031	0.016	-0.225
	(1.95)	(0.41)	(0.24)	(-1.35)
HH Income 100 to <150	0.791***	-0.145	-0.134	-0.699***
	(3.53)	(-1.49)	(-1.40)	(-3.21)
HH Income =150	0.465	-0.117	-0.228*	-0.938***
	(1.62)	(-1.05)	(-1.79)	(-3.82)
Immigrant	-0.130	0.296***	0.253***	-0.007
	(-0.71)	(3.45)	(3.09)	(-0.04)
Religious			1.095***	2.969***
			(15.17)	(25.79)
Age 25 to 34yrs	-0.754**	-0.735***	-0.276***	-0.355
	(-2.30)	(-6.11)	(-2.68)	(-1.20)
Age 35 to 44yrs	-0.536*	-0.504***	-0.095	-0.436
	(-1.86)	(-4.38)	(-0.93)	(-1.54)
Age 45 to 54yrs	-0.641**	-0.520***	-0.165*	-0.483*
	(-2.52)	(-4.93)	(-1.81)	(-1.86)
Age 55 to 64yrs	-0.286	-0.353***	-0.242***	0.183
	(-1.39)	(-3.72)	(-2.81)	(0.85)
Male	-0.068	0.056	-0.007	0.190
	(-0.47)	(0.97)	(-0.12)	(1.38)
Single	0.203	-0.033	0.027	-0.362**
	(1.14)	(-0.44)	(0.38)	(-1.98)
HH Size	0.106*	0.115***	0.073***	0.214***
	(1.71)	(4.10)	(2.70)	(3.30)
Postsecondary	0.599**	0.045	-0.016	0.018
	(2.05)	(0.36)	(-0.14)	(0.08)
Diploma	0.151	0.151**	0.122*	-0.301*
	(0.87)	(2.00)	(1.87)	(-1.67)
University	0.290	0.253***	0.097	0.015
	(1.43)	(2.87)	(1.20)	(0.08)
Employed	-0.006	0.138*	0.041	0.081
	(-0.03)	(1.81)	(0.63)	(0.43)
Atlantic	-0.322	0.407***	0.263***	0.309*
	(-1.64)	(5.48)	(3.62)	(1.86)
Quebec	-1.397***	0.340***	0.515***	-0.602*
	(-5.41)	(4.12)	(6.54)	(-1.70)
Prairies	0.289	0.034	-0.078	0.100
	(1.52)	(0.41)	(-0.94)	(0.56)
British Columbia	0.333	-0.384***	-0.250***	-0.448**
	(1.63)	(-4.01)	(-2.77)	(-2.33)

Table B.19 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Current Abode <5yrs	0.314	-0.050	0.045	-0.069
	(1.59)	(-0.62)	(0.61)	(-0.37)
Current Abode 5 to <10yrs	-0.083	-0.010	0.086	-0.037
	(-0.35)	(-0.12)	(1.02)	(-0.17)
FOCUSSED	-0.331**	-0.531***	-0.509***	-0.129
	(-2.35)	(-7.77)	(-7.48)	(-0.83)
Log likelihood	-6970477.2	-17495183	-10725530	-7336796.4
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.20: Average Partial Effect of Concentration Giving Behaviour (FOCUSSED) on secular donations - TOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-6.467***	-6.042***	-3.309***	-2.634**
	(-5.45)	(-15.38)	(-7.45)	(-2.15)
HH Income 50 to <100	0.434***	0.578***	0.413***	0.465***
	(3.17)	(6.68)	(4.91)	(2.92)
HH Income 100 to <150	1.134***	0.915***	0.585***	1.015***
	(6.37)	(9.98)	(6.56)	(5.80)
HH Income =150	1.262***	1.336***	0.582***	1.288***
	(5.15)	(12.26)	(5.00)	(6.72)
Immigrant	-0.515***	-0.105	-0.333***	-0.250**
	(-3.57)	(-1.25)	(-3.57)	(-2.17)
Religious			-0.436***	-1.043***
			(-3.59)	(-10.19)
Age 25 to 34yrs	-1.128***	-0.712***	-0.409***	-0.715***
	(-4.92)	(-5.20)	(-2.95)	(-3.58)
Age 35 to 44yrs	-1.156***	-0.618***	-0.297**	-0.682***
	(-5.21)	(-4.49)	(-2.10)	(-3.67)
Age 45 to 54yrs	-1.024***	-0.356***	-0.258**	-0.480***
	(-5.70)	(-2.97)	(-2.06)	(-3.07)
Age 55 to 64yrs	-0.203	-0.265***	-0.122	-0.361***
	(-1.43)	(-2.68)	(-1.19)	(-2.69)
Male	-0.118	-0.114**	-0.183***	-0.217**
	(-1.02)	(-2.24)	(-3.26)	(-2.24)
Single	0.005	-0.001	-0.151	0.256*
	(0.03)	(-0.01)	(-1.64)	(1.80)
HH Size	0.021	-0.106***	-0.079**	-0.043
	(0.37)	(-2.93)	(-2.24)	(-0.87)
Postsecondary	0.398*	0.217**	0.130	0.391*
	(1.84)	(2.00)	(1.21)	(1.88)
Diploma	0.130	0.213***	0.093	0.395***
	(0.93)	(2.78)	(1.25)	(2.97)
University	0.681***	0.555***	0.337***	0.533***
	(4.29)	(6.35)	(4.04)	(3.79)
Employed	0.165	0.291***	0.203***	0.160
	(1.23)	(4.28)	(2.88)	(1.11)
Atlantic	-0.427***	-0.344***	-0.142**	-0.350***
	(-3.48)	(-5.33)	(-2.14)	(-3.08)
Quebec	-1.519***	-0.841***	-0.479***	-0.418**
	(-7.81)	(-11.81)	(-6.23)	(-2.14)
Prairies	-0.232	-0.183***	-0.054	-0.260**
	(-1.60)	(-2.83)	(-0.76)	(-2.18)

Table B.20 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
British Columbia	-0.025	0.013	-0.090	0.244**
	(-0.15)	(0.18)	(-1.11)	(2.09)
Current Abode <5yrs	-0.367**	-0.162**	-0.081	-0.362***
	(-2.29)	(-2.31)	(-1.06)	(-2.65)
Current Abode 5 to <10yrs	-0.020	-0.097	-0.046	-0.056
	(-0.11)	(-0.96)	(-0.48)	(-0.39)
FOCUSSED	1.863***	0.341***	0.967***	0.886***
	(10.27)	(3.21)	(7.31)	(5.45)
Log likelihood	-5953707.6	-25392894	-15701853	-6414939.2
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.21: Average Partial Effect of Concentration Giving Behaviour (FOCUSSED) on religious donations using individual level of education and/or youth experiences -IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-9.558***	-2.255***	-0.941**	-5.275**
	(-7.70)	(-4.91)	(-2.36)	(-2.41)
HH Income 50 to <100	0.418**	0.055	0.015	-0.169
	(2.24)	(0.71)	(0.22)	(-0.79)
HH Income 100 to <150	0.882***	-0.091	-0.135	-0.604**
	(3.77)	(-0.92)	(-1.40)	(-2.13)
HH Income =150	0.576**	-0.060	-0.232*	-0.696**
	(2.00)	(-0.53)	(-1.82)	(-2.30)
Immigrant	-0.175	0.296***	0.259***	0.239
	(-0.94)	(3.29)	(3.17)	(1.17)
Religious			1.104***	2.858***
			(15.47)	(18.10)
Age 25 to 34yrs	-0.696**	-0.670***	-0.277***	-0.573
	(-2.17)	(-5.38)	(-2.67)	(-1.58)
Age 35 to 44yrs	-0.429	-0.454***	-0.093	-0.660**
	(-1.46)	(-3.82)	(-0.89)	(-1.99)
Age 45 to 54yrs	-0.621**	-0.483***	-0.164*	-0.348
	(-2.46)	(-4.37)	(-1.79)	(-1.17)
Age 55 to 64yrs	-0.278	-0.324***	-0.242***	0.200
	(-1.35)	(-3.25)	(-2.80)	(0.81)
Male	-0.071	0.065	-0.006	0.073
	(-0.48)	(1.08)	(-0.11)	(0.44)
Single	0.199	-0.038	0.025	-0.364
	(1.10)	(-0.49)	(0.35)	(-1.59)
HH Size	0.078	0.117***	0.073***	0.175**
	(1.23)	(4.04)	(2.69)	(2.25)
Employed	-0.044	0.142*	0.044	0.264
	(-0.23)	(1.79)	(0.66)	(1.17)
Postsecondary			-0.025	
			(-0.22)	
Diploma			0.121*	
			(1.85)	
University			0.092	
			(1.14)	
Atlantic	-0.372*	0.384***	0.266***	0.347*
	(-1.92)	(4.91)	(3.66)	(1.74)
Quebec	-1.479***	0.381***	0.513***	-0.713*
	(-5.90)	(4.39)	(6.55)	(-1.80)
Prairies	0.226	0.019	-0.077	0.256
	(1.21)	(0.21)	(-0.93)	(1.19)

Table B.21 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
British Columbia	0.323	-0.367***	-0.253***	-0.379*
	(1.57)	(-3.72)	(-2.81)	(-1.68)
Current Abode <5yrs	0.286	-0.049	0.049	-0.002
	(1.43)	(-0.59)	(0.66)	(-0.01)
Current Abode 5 to <10yrs	-0.044	-0.003	0.090	-0.191
	(-0.18)	(-0.03)	(1.06)	(-0.69)
FOCUSSED	-0.921	-1.392***	-0.431***	3.804***
	(-1.45)	(-2.78)	(-5.85)	(14.46)
Rho	0.196	0.213	0.501**	-0.914***
	(1.62)	(0.78)	(2.25)	(-12.15)
Log likelihood	-8625568	-23388687	-19420508	-9118802.3
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.22: Average Partial Effect of Concentration Giving Behaviour (FOCUSSED) on secular donations using individual level of education and/or youth experiences -IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-6.752***	-6.379***	-3.312***	-2.895**
	(-5.53)	(-15.33)	(-7.50)	(-2.36)
HH Income 50 to <100	0.542***	0.650***	0.413***	0.559***
	(3.81)	(7.72)	(4.95)	(3.43)
HH Income 100 to <150	1.301***	1.040***	0.582***	1.123***
	(7.16)	(11.78)	(6.53)	(6.37)
HH Income =150	1.455***	1.515***	0.576***	1.419***
	(5.89)	(14.83)	(4.92)	(7.63)
Immigrant	-0.456***	-0.049	-0.327***	-0.227*
	(-3.18)	(-0.59)	(-3.63)	(-1.89)
Religious			-0.425***	-1.068***
			(-3.61)	(-10.38)
Age 25 to 34yrs	-0.982***	-0.645***	-0.412***	-0.683***
	(-4.24)	(-4.41)	(-3.02)	(-3.24)
Age 35 to 44yrs	-1.016***	-0.560***	-0.298**	-0.641***
	(-4.47)	(-3.70)	(-2.14)	(-3.36)
Age 45 to 54yrs	-0.941***	-0.333***	-0.260**	-0.490***
	(-5.18)	(-2.62)	(-2.11)	(-3.09)
Age 55 to 64yrs	-0.152	-0.247**	-0.123	-0.352***
	(-1.07)	(-2.38)	(-1.21)	(-2.61)
Male	-0.117	-0.111**	-0.183***	-0.227**
	(-1.00)	(-2.14)	(-3.28)	(-2.29)
Single	-0.003	0.002	-0.150*	0.257*
	(-0.02)	(0.02)	(-1.66)	(1.74)
HH Size	-0.009	-0.114***	-0.078**	-0.046
	(-0.17)	(-2.91)	(-2.27)	(-0.90)
Employed	0.183	0.313***	0.204***	0.201
	(1.35)	(4.53)	(2.91)	(1.36)
Postsecondary			0.131	
			(1.22)	
Diploma			0.093	
			(1.26)	
University			0.337***	
			(4.07)	
Atlantic	-0.468***	-0.365***	-0.139**	-0.386***
	(-3.74)	(-5.63)	(-2.07)	(-3.38)
Quebec	-1.586***	-0.824***	-0.478***	-0.415**
	(-7.92)	(-11.51)	(-6.24)	(-2.11)

Table B.22 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Prairies	-0.281*	-0.214***	-0.052	-0.322***
	(-1.86)	(-3.33)	(-0.73)	(-2.59)
British Columbia	-0.021	0.040	-0.092	0.246**
	(-0.12)	(0.52)	(-1.14)	(2.10)
Current Abode <5yrs	-0.371**	-0.130*	-0.078	-0.342**
	(-2.26)	(-1.84)	(-1.03)	(-2.44)
Current Abode 5 to <10yrs	-0.006	-0.065	-0.045	-0.035
	(-0.03)	(-0.63)	(-0.47)	(-0.25)
FOCUSSED	1.760***	0.006	1.045***	0.584**
	(6.68)	(0.03)	(5.65)	(2.55)
Rho	-0.031	0.120**	-0.043	0.113**
	(-0.62)	(2.20)	(-1.35)	(2.28)
Log likelihood	-7639183.8	-31270231	-19420255	-8261904
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.23: Average Partial Effect of Concentration Giving Behaviour (FOCUSSED) on religious donations using level of education at the CMA area and/or youth experiences as instruments -IV-TOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-9.505***	-2.315***	-0.876*	-5.113**
	(-7.64)	(-5.27)	(-1.86)	(-2.33)
HH Income 50 to <100	0.377**	0.034	0.019	-0.180
	(2.02)	(0.44)	(0.26)	(-0.84)
HH Income 100 to <150	0.829***	-0.146	-0.116	-0.631**
	(3.56)	(-1.49)	(-1.11)	(-2.21)
HH Income =150	0.477*	-0.114	-0.172	-0.760**
	(1.65)	(-1.02)	(-1.24)	(-2.48)
Immigrant	-0.195	0.303***	0.179*	0.211
	(-1.07)	(3.54)	(1.95)	(1.04)
Religious			0.992***	2.864***
			(10.50)	(18.13)
Age 25 to 34yrs	-0.773**	-0.748***	-0.250**	-0.616*
	(-2.37)	(-6.21)	(-2.29)	(-1.70)
Age 35 to 44yrs	-0.488*	-0.511***	-0.075	-0.672**
	(-1.67)	(-4.43)	(-0.69)	(-2.02)
Age 45 to 54yrs	-0.666***	-0.529***	-0.145	-0.357
	(-2.64)	(-5.00)	(-1.50)	(-1.20)
Age 55 to 64yrs	-0.317	-0.360***	-0.245***	0.189
	(-1.55)	(-3.79)	(-2.67)	(0.76)
Male	-0.078	0.054	-0.004	0.084
	(-0.54)	(0.94)	(-0.07)	(0.50)
Single	0.217	-0.032	0.014	-0.361
	(1.20)	(-0.43)	(0.17)	(-1.56)
HH Size	0.091	0.114***	0.068**	0.178**
	(1.43)	(4.05)	(2.17)	(2.28)
Postsecondary	0.580**	0.045	-0.015	0.147
	(2.00)	(0.36)	(-0.12)	(0.75)
Diploma	0.134	0.152**	0.113	-0.210
	(0.78)	(2.01)	(1.62)	(-1.40)
University	0.278	0.260***	0.103	0.079
	(1.39)	(2.96)	(1.21)	(0.50)
Employed	-0.043	0.141*	0.012	0.264
	(-0.23)	(1.85)	(0.17)	(1.16)
Atlantic	-0.348*	0.414***	0.227***	0.355*
	(-1.81)	(5.57)	(2.87)	(1.77)
Quebec	-1.456***	0.333***	0.524***	-0.709*
	(-5.73)	(4.03)	(5.61)	(-1.78)
Prairies	0.248	0.035	-0.103	0.272
	(1.31)	(0.42)	(-1.14)	(1.26)

Table B.23 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
British Columbia	0.319	-0.389***	-0.223**	-0.378*
	(1.56)	(-4.06)	(-2.31)	(-1.68)
Current Abode <5yrs	0.279	-0.047	-0.000	-0.018
	(1.37)	(-0.58)	(-0.00)	(-0.08)
Current Abode 5 to <10yrs	-0.064	-0.010	0.072	-0.186
	(-0.27)	(-0.11)	(0.82)	(-0.67)
FOCUSSED	-0.955	-0.344***	-1.752***	3.833***
	(-1.54)	(-4.55)	(-3.89)	(14.59)
Rho	0.196	0.213	0.501**	-0.918***
	(1.62)	(0.78)	(2.25)	(-12.09)
Log likelihood	-8611945.5	-23373610	-17387447	-9111369.5
Observations	2250	8018	5136	5132

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.24: Average Partial Effect of Concentration Giving Behaviour (FOCUSSED) on secular donations using level of education at the CMA area and/or youth experiences as instruments -IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-6.499***	-6.002***	-3.312***	-2.495**
	(-5.40)	(-15.13)	(-7.48)	(-2.01)
HH Income 50 to <100	0.440***	0.576***	0.413***	0.464***
	(3.18)	(6.60)	(4.94)	(2.87)
HH Income 100 to <150	1.144***	0.915***	0.583***	1.015***
	(6.39)	(9.92)	(6.54)	(5.70)
HH Income =150	1.267***	1.334***	0.577***	1.283***
	(5.17)	(12.22)	(4.94)	(6.59)
Immigrant	-0.528***	-0.110	-0.329***	-0.263**
	(-3.70)	(-1.31)	(-3.63)	(-2.26)
Religious			-0.428***	-1.050***
			(-3.62)	(-10.17)
Age 25 to 34yrs	-1.134***	-0.702***	-0.411***	-0.701***
	(-4.93)	(-5.15)	(-3.00)	(-3.49)
Age 35 to 44yrs	-1.151***	-0.613***	-0.298**	-0.667***
	(-5.17)	(-4.42)	(-2.13)	(-3.56)
Age 45 to 54yrs	-1.031***	-0.349***	-0.259**	-0.485***
	(-5.73)	(-2.91)	(-2.10)	(-3.08)
Age 55 to 64yrs	-0.209	-0.259***	-0.123	-0.364***
	(-1.47)	(-2.63)	(-1.20)	(-2.71)
Male	-0.120	-0.113**	-0.183***	-0.212**
	(-1.04)	(-2.21)	(-3.28)	(-2.18)
Single	0.008	-0.002	-0.151*	0.257*
	(0.05)	(-0.02)	(-1.65)	(1.78)
HH Size	0.018	-0.105***	-0.078**	-0.042
	(0.33)	(-2.86)	(-2.27)	(-0.84)
Postsecondary	0.396*	0.216**	0.131	0.388*
	(1.83)	(2.00)	(1.22)	(1.86)
Diploma	0.127	0.212***	0.093	0.392***
	(0.91)	(2.76)	(1.26)	(2.94)
University	0.680***	0.550***	0.337***	0.531***
	(4.28)	(6.23)	(4.06)	(3.77)
Employed	0.159	0.288***	0.204***	0.150
	(1.18)	(4.23)	(2.90)	(1.02)
Atlantic	-0.433***	-0.350***	-0.140**	-0.354***
	(-3.51)	(-5.39)	(-2.08)	(-3.13)
Quebec	-1.533***	-0.836***	-0.478***	-0.410**
	(-7.75)	(-11.73)	(-6.24)	(-2.10)

Table B.24 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Prairies	-0.240	-0.184***	-0.053	-0.272**
	(-1.62)	(-2.84)	(-0.74)	(-2.27)
British Columbia	-0.027	0.017	-0.091	0.242**
	(-0.16)	(0.22)	(-1.13)	(2.06)
Current Abode <5yrs	-0.373**	-0.164**	-0.079	-0.366***
	(-2.30)	(-2.33)	(-1.04)	(-2.63)
Current Abode 5 to <10yrs	-0.017	-0.098	-0.046	-0.048
	(-0.10)	(-0.96)	(-0.47)	(-0.34)
FOCUSSED	1.753***	0.200	1.021***	0.626***
	(6.71)	(1.29)	(5.50)	(2.80)
Rho	-0.002	0.054*	-0.043	0.095**
	(-0.74)	(1.67)	(-1.35)	(2.08)
Log likelihood	-7595392.3	-31270231	-19411896	-8236889.2
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.25: Average Partial Effect of Involvement (INVOLVED) on religious donations- TOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-9.383***	-2.415***	-0.988**	-2.965
	(-7.60)	(-5.48)	(-2.50)	(-1.58)
HH Income 50 to <100	0.337*	0.033	0.015	-0.238
	(1.90)	(0.42)	(0.21)	(-1.44)
HH Income 100 to <150	0.775***	-0.158	-0.156	-0.688***
	(3.45)	(-1.59)	(-1.58)	(-3.14)
HH Income =150	0.475*	-0.113	-0.271**	-0.911***
	(1.66)	(-1.00)	(-2.11)	(-3.74)
Immigrant	-0.107	0.321***	0.303***	-0.005
	(-0.59)	(3.73)	(3.71)	(-0.03)
Religious			1.162***	2.966***
			(17.03)	(25.74)
Age 25 to 34yrs	-0.738**	-0.777***	-0.297***	-0.339
	(-2.25)	(-6.35)	(-2.69)	(-1.17)
Age 35 to 44yrs	-0.563*	-0.522***	-0.099	-0.413
	(-1.95)	(-4.43)	(-0.90)	(-1.47)
Age 45 to 54yrs	-0.628**	-0.546***	-0.180*	-0.472*
	(-2.46)	(-5.10)	(-1.84)	(-1.84)
Age 55 to 64yrs	-0.263	-0.373***	-0.251***	0.215
	(-1.27)	(-3.90)	(-2.77)	(1.01)
Male	-0.057	0.055	-0.005	0.189
	(-0.39)	(0.95)	(-0.10)	(1.38)
Single	0.199	-0.023	0.044	-0.345*
	(1.11)	(-0.30)	(0.60)	(-1.89)
HH Size	0.111*	0.113***	0.077***	0.216***
	(1.78)	(3.91)	(2.83)	(3.37)
Employed	0.627**	0.063	-0.001	0.036
	(2.11)	(0.51)	(-0.01)	(0.15)
Postsecondary	0.173	0.166**	0.134**	-0.287
	(1.00)	(2.17)	(2.02)	(-1.59)
Diploma	0.307	0.282***	0.088	0.029
	(1.50)	(3.19)	(1.07)	(0.15)
University	0.014	0.143*	0.054	0.074
	(0.07)	(1.88)	(0.82)	(0.40)
Atlantic	-0.301	0.429***	0.295***	0.322*
	(-1.52)	(5.72)	(3.97)	(1.95)
Quebec	-1.367***	0.322***	0.530***	-0.607*
	(-5.27)	(3.86)	(6.83)	(-1.74)
Prairies	0.303	0.037	-0.062	0.077
	(1.58)	(0.44)	(-0.72)	(0.43)
British Columbia	0.343*	-0.399***	-0.254***	-0.443**
	(1.67)	(-4.14)	(-2.77)	(-2.31)

Table B.25 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Current Abode <5yrs	0.329*	-0.039	0.073	-0.095
	(1.67)	(-0.49)	(0.99)	(-0.50)
Current Abode 5 to <10yrs	-0.098	-0.006	0.101	-0.065
	(-0.41)	(-0.06)	(1.12)	(-0.29)
INVOLVED	-0.206	-0.057	-0.125	-0.514***
	(-0.96)	(-0.74)	(-1.58)	(-2.81)
Log likelihood	-6975462.5	-17586478	-10831153	-7324849.2
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.26: Average Partial Effect of Involvement (INVOLVED) on secular donations- TOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-6.561***	-5.870***	-3.152***	-2.118*
	(-4.43)	(-15.22)	(-6.66)	(-1.69)
HH Income 50 to <100	0.488***	0.573***	0.408***	0.479***
	(3.02)	(6.45)	(4.27)	(2.87)
HH Income 100 to <150	1.210***	0.908***	0.603***	1.008***
	(6.12)	(9.85)	(6.44)	(5.45)
HH Income =150	1.221***	1.295***	0.622***	1.255***
	(4.95)	(11.82)	(5.32)	(6.24)
Immigrant	-0.655***	-0.109	-0.382***	-0.282**
	(-3.85)	(-1.27)	(-3.53)	(-2.32)
Religious			-0.556***	-1.058***
			(-3.84)	(-9.92)
Age 25 to 34yrs	-1.174***	-0.699***	-0.381**	-0.685***
	(-4.73)	(-4.90)	(-2.40)	(-3.41)
Age 35 to 44yrs	-0.994***	-0.623***	-0.288*	-0.660***
	(-4.03)	(-4.37)	(-1.76)	(-3.48)
Age 45 to 54yrs	-1.085***	-0.342***	-0.237	-0.503***
	(-5.41)	(-2.73)	(-1.64)	(-3.10)
Age 55 to 64yrs	-0.311**	-0.256**	-0.108	-0.396***
	(-2.17)	(-2.52)	(-0.95)	(-2.90)
Male	-0.159	-0.102**	-0.169***	-0.203**
	(-1.23)	(-1.99)	(-2.81)	(-2.04)
Single	0.038	-0.011	-0.161	0.241
	(0.22)	(-0.12)	(-1.50)	(1.62)
HH Size	-0.014	-0.109***	-0.086**	-0.043
	(-0.21)	(-2.95)	(-2.09)	(-0.83)
Employed	0.303	0.197*	0.111	0.346
	(1.27)	(1.80)	(0.99)	(1.55)
Postsecondary	0.044	0.199***	0.072	0.371***
	(0.25)	(2.59)	(0.91)	(2.78)
Diploma	0.616***	0.514***	0.326***	0.481***
	(3.21)	(6.00)	(3.62)	(3.30)
University	0.058	0.284***	0.181**	0.143
	(0.37)	(4.21)	(2.47)	(0.93)
Atlantic	-0.513***	-0.361***	-0.185***	-0.376***
	(-4.02)	(-5.68)	(-2.78)	(-3.38)
Quebec	-1.642***	-0.822***	-0.485***	-0.398**
	(-6.39)	(-11.63)	(-5.98)	(-2.05)

Table B.26 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Prairies	-0.317**	-0.193***	-0.074	-0.276**
	(-1.98)	(-3.00)	(-1.02)	(-2.27)
British Columbia	-0.070	0.010	-0.068	0.233*
	(-0.34)	(0.14)	(-0.79)	(1.93)
Current Abode <5yrs	-0.437**	-0.166**	-0.125	-0.340**
	(-2.21)	(-2.36)	(-1.52)	(-2.34)
Current Abode 5 to <10yrs	0.052	-0.096	-0.065	-0.008
	(0.28)	(-0.93)	(-0.58)	(-0.05)
INVOLVED	0.589***	0.464***	0.363***	0.485***
	(5.30)	(8.06)	(6.71)	(5.77)
Log likelihood	-6263758	-25357495	-16024113	-6493069.9
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.27: Average Partial Effect of Involvement (INVOLVED) on religious donations using individual level of education and youth experiences- IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-9.415***	-2.548***	-0.979**	-3.049
	(-7.63)	(-5.81)	(-2.42)	(-1.61)
HH Income 50 to <100	0.376**	0.074	0.032	-0.224
	(2.12)	(0.96)	(0.46)	(-1.35)
HH Income 100 to <150	0.818***	-0.103	-0.138	-0.677***
	(3.65)	(-1.04)	(-1.41)	(-3.10)
HH Income =150	0.538*	-0.060	-0.265**	-0.874***
	(1.91)	(-0.53)	(-2.01)	(-3.55)
Immigrant	-0.070	0.356***	0.319***	0.032
	(-0.38)	(4.18)	(3.87)	(0.18)
Religious			1.163***	2.962***
			(17.27)	(25.44)
Age 25 to 34yrs	-0.670**	-0.761***	-0.274**	-0.320
	(-2.06)	(-6.23)	(-2.47)	(-1.08)
Age 35 to 44yrs	-0.496*	-0.509***	-0.075	-0.436
	(-1.72)	(-4.32)	(-0.67)	(-1.54)
Age 45 to 54yrs	-0.562**	-0.539***	-0.163*	-0.468*
	(-2.19)	(-5.00)	(-1.66)	(-1.81)
Age 55 to 64yrs	-0.243	-0.370***	-0.238***	0.198
	(-1.18)	(-3.84)	(-2.62)	(0.91)
Male	-0.050	0.063	0.004	0.177
	(-0.34)	(1.07)	(0.06)	(1.28)
Single	0.164	-0.034	0.045	-0.362**
	(0.92)	(-0.44)	(0.61)	(-1.98)
HH Size	0.099	0.104***	0.074***	0.212***
	(1.58)	(3.64)	(2.73)	(3.27)
Employed	0.017	0.157**	0.063	0.083
	(0.09)	(2.04)	(0.96)	(0.44)
Atlantic	-0.338*	0.423***	0.299***	0.308*
	(-1.71)	(5.60)	(4.02)	(1.85)
Quebec	-1.348***	0.334***	0.543***	-0.616*
	(-5.23)	(3.99)	(6.97)	(-1.75)
Prairies	0.292	0.014	-0.064	0.089
	(1.52)	(0.17)	(-0.75)	(0.50)
British Columbia	0.345*	-0.402***	-0.255***	-0.448**
	(1.67)	(-4.18)	(-2.75)	(-2.32)
Current Abode <5yrs	0.336*	-0.024	0.066	-0.050
	(1.71)	(-0.30)	(0.88)	(-0.27)
Current Abode 5 to <10yrs	-0.070	0.010	0.104	-0.054
	(-0.29)	(0.11)	(1.15)	(-0.24)

Table B.27 (continued)

Table B.27 (continued)

	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
INVOLVED	0.206	0.357	0.056	-0.051
	(0.57)	(1.57)	(0.10)	(-0.11)
Rho	-0.049	-0.218***	0.192	-0.121
	(-0.82)	(-3.24)	(0.71)	(-1.25)
Log likelihood	-8143500.7	-22960306	-14092255	-898293.9
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.28: Average Partial Effect of Involvement (INVOLVED) on secular donations using individual level of education and youth experiences- IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-6.497***	-6.054***	-3.112***	-2.385*
	(-4.52)	(-15.42)	(-6.54)	(-1.93)
HH Income 50 to <100	0.512***	0.633***	0.439***	0.578***
	(3.05)	(7.52)	(4.78)	(3.48)
HH Income 100 to <150	1.280***	0.989***	0.657***	1.086***
	(6.28)	(11.23)	(7.17)	(5.98)
HH Income =150	1.235***	1.365***	0.633***	1.337***
	(4.81)	(12.92)	(5.48)	(7.08)
Immigrant	-0.497***	-0.034	-0.297***	-0.243*
	(-2.98)	(-0.40)	(-2.91)	(-1.91)
Religious			-0.555***	-1.060***
			(-3.81)	(-10.02)
Age 25 to 34yrs	-1.042***	-0.681***	-0.374**	-0.710***
	(-4.23)	(-4.63)	(-2.26)	(-3.38)
Age 35 to 44yrs	-0.847***	-0.621***	-0.277	-0.681***
	(-3.43)	(-4.21)	(-1.62)	(-3.51)
Age 45 to 54yrs	-0.979***	-0.337***	-0.228	-0.517***
	(-4.82)	(-2.63)	(-1.53)	(-3.16)
Age 55 to 64yrs	-0.292**	-0.258**	-0.089	-0.422***
	(-2.01)	(-2.48)	(-0.76)	(-3.07)
Male	-0.197	-0.082	-0.144**	-0.217**
	(-1.51)	(-1.58)	(-2.37)	(-2.14)
Single	0.003	-0.028	-0.161	0.217
	(0.02)	(-0.29)	(-1.50)	(1.45)
HH Size	-0.023	-0.125***	-0.095**	-0.050
	(-0.36)	(-3.24)	(-2.23)	(-0.93)
Employed	0.077	0.304***	0.188**	0.208
	(0.49)	(4.49)	(2.55)	(1.37)
Atlantic	-0.558***	-0.373***	-0.184***	-0.419***
	(-4.23)	(-5.88)	(-2.73)	(-3.64)
Quebec	-1.619***	-0.798***	-0.466***	-0.412**
	(-6.39)	(-11.21)	(-5.68)	(-2.13)
Prairies	-0.296*	-0.235***	-0.090	-0.283**
	(-1.82)	(-3.65)	(-1.22)	(-2.24)
British Columbia	-0.065	0.002	-0.072	0.228*
	(-0.32)	(0.02)	(-0.81)	(1.89)
Current Abode <5yrs	-0.419**	-0.134*	-0.134	-0.278*
	(-2.11)	(-1.89)	(-1.61)	(-1.94)
Current Abode 5 to <10yrs	0.066	-0.061	-0.052	0.034
	(0.35)	(-0.59)	(-0.46)	(0.23)

Table B.28 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
INVOLVED	1.808***	1.428***	1.244***	1.152***
	(7.43)	(8.73)	(8.37)	(6.30)
Rho	-0.398***	-0.361***	-0.343***	-0.248***
	(-5.64)	(-8.10)	(-6.04)	(-4.10)
Log likelihood	-7448592.8	-30792918	-19295491	
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.29: Average Partial Effect of Involvement (INVOLVED) on religious donations using youth experiences- IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-9.390***	-2.377***	-0.908**	-2.897
	(-7.62)	(-5.38)	(-2.25)	(-1.35)
HH Income 50 to <100	0.336*	0.032	0.015	-0.225
	(1.90)	(0.41)	(0.21)	(-1.35)
HH Income 100 to <150	0.766***	-0.164	-0.158	-0.696***
	(3.43)	(-1.63)	(-1.59)	(-3.17)
HH Income =150	0.448	-0.133	-0.305**	-0.933***
	(1.57)	(-1.14)	(-2.32)	(-3.78)
Immigrant	-0.094	0.324***	0.322***	0.000
	(-0.52)	(3.76)	(3.77)	(0.00)
Religious			1.168***	2.971***
			(16.91)	(25.53)
Age 25 to 34yrs	-0.743**	-0.782***	-0.316***	-0.364
	(-2.26)	(-6.38)	(-2.84)	(-1.23)
Age 35 to 44yrs	-0.559*	-0.532***	-0.115	-0.444
	(-1.94)	(-4.51)	(-1.03)	(-1.57)
Age 45 to 54yrs	-0.608**	-0.547***	-0.185*	-0.479*
	(-2.38)	(-5.10)	(-1.88)	(-1.85)
Age 55 to 64yrs	-0.277	-0.375***	-0.248***	0.188
	(-1.34)	(-3.91)	(-2.72)	(0.89)
Male	-0.054	0.060	0.006	0.188
	(-0.37)	(1.02)	(0.10)	(1.37)
Single	0.183	-0.027	0.043	-0.362**
	(1.03)	(-0.35)	(0.58)	(-1.97)
HH Size	0.112*	0.111***	0.076***	0.213***
	(1.79)	(3.83)	(2.75)	(3.30)
Postsecondary	0.610**	0.057	-0.017	0.021
	(2.06)	(0.46)	(-0.15)	(0.09)
Diploma	0.165	0.160**	0.121*	-0.303
	(0.96)	(2.08)	(1.81)	(-1.67)
University	0.289	0.276***	0.073	0.010
	(1.42)	(3.10)	(0.87)	(0.05)
Employed	0.018	0.142*	0.056	0.089
	(0.10)	(1.87)	(0.86)	(0.46)
Atlantic	-0.310	0.428***	0.298***	0.309*
	(-1.57)	(5.70)	(3.99)	(1.85)
Quebec	-1.325***	0.326***	0.538***	-0.613*
	(-5.12)	(3.91)	(6.87)	(-1.73)
Prairies	0.313	0.034	-0.066	0.101
	(1.61)	(0.40)	(-0.76)	(0.57)
British Columbia	0.345*	-0.405***	-0.265***	-0.447**
	(1.68)	(-4.20)	(-2.85)	(-2.33)

Table B.29 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Current Abode <5yrs	0.329*	-0.040	0.064	-0.065
	(1.66)	(-0.49)	(0.85)	(-0.35)
Current Abode 5 to <10yrs	-0.098	-0.005	0.095	-0.043
	(-0.41)	(-0.05)	(1.03)	(-0.19)
INVOLVED	0.074	0.168	0.403	-0.019
	(0.21)	(0.63)	(0.79)	(-0.04)
Rho	-0.066	-0.152**	-0.308	-0.129
	(-1.15)	(-2.01)	(-1.51)	(-1.38)
Log likelihood	-8135519.8	-22941369	-14089275	-8976197.4
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.30: Average Partial Effect of Involvement (INVOLVED) on secular donations using youth experiences- IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-6.284***	-5.705***	-2.985***	-2.052*
	(-4.43)	(-14.77)	(-6.31)	(-1.65)
HH Income 50 to <100	0.438***	0.567***	0.406***	0.492***
	(2.71)	(6.45)	(4.29)	(2.98)
HH Income 100 to <150	1.153***	0.885***	0.596***	0.997***
	(5.80)	(9.61)	(6.34)	(5.41)
HH Income =150	1.093***	1.218***	0.562***	1.230***
	(4.36)	(10.89)	(4.76)	(6.15)
Immigrant	-0.567***	-0.099	-0.349***	-0.276**
	(-3.42)	(-1.16)	(-3.30)	(-2.27)
Religious			-0.553***	-1.049***
			(-3.86)	(-9.87)
Age 25 to 34yrs	-1.176***	-0.714***	-0.406***	-0.712***
	(-4.75)	(-5.09)	(-2.60)	(-3.54)
Age 35 to 44yrs	-0.964***	-0.653***	-0.310*	-0.691***
	(-3.94)	(-4.67)	(-1.92)	(-3.62)
Age 45 to 54yrs	-1.051***	-0.342***	-0.242*	-0.510***
	(-5.32)	(-2.76)	(-1.69)	(-3.14)
Age 55 to 64yrs	-0.337**	-0.260***	-0.100	-0.423***
	(-2.33)	(-2.58)	(-0.88)	(-3.09)
Male	-0.192	-0.086*	-0.149**	-0.203**
	(-1.51)	(-1.66)	(-2.48)	(-2.05)
Single	0.016	-0.027	-0.162	0.223
	(0.09)	(-0.28)	(-1.53)	(1.51)
HH Size	-0.001	-0.115***	-0.089**	-0.046
	(-0.02)	(-3.10)	(-2.16)	(-0.87)
Postsecondary	0.252	0.167	0.076	0.328
	(1.08)	(1.56)	(0.70)	(1.47)
Diploma	-0.006	0.173**	0.044	0.354***
	(-0.03)	(2.32)	(0.57)	(2.66)
University	0.558***	0.483***	0.292***	0.461***
	(2.97)	(5.84)	(3.36)	(3.15)
Employed	0.063	0.281***	0.183**	0.158
	(0.40)	(4.17)	(2.50)	(1.03)
Atlantic	-0.526***	-0.365***	-0.181***	-0.388***
	(-4.05)	(-5.75)	(-2.70)	(-3.45)
Quebec	-1.582***	-0.805***	-0.471***	-0.405**
	(-6.38)	(-11.35)	(-5.85)	(-2.10)
Prairies	-0.271*	-0.205***	-0.079	-0.251**
	(-1.68)	(-3.17)	(-1.07)	(-2.05)
British Columbia	-0.069	-0.010	-0.084	0.227*
	(-0.34)	(-0.13)	(-0.96)	(1.87)

Table B.30 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Current Abode <5yrs	-0.422**	-0.168**	-0.141*	-0.309**
	(-2.15)	(-2.37)	(-1.71)	(-2.18)
Current Abode 5 to <10yrs	0.073	-0.092	-0.076	0.015
	(0.39)	(-0.89)	(-0.68)	(0.11)
INVOLVED	1.713***	1.261***	1.170***	0.981***
	(6.90)	(8.16)	(8.46)	(4.64)
Rho	-0.324***	-0.276***	-0.270***	-0.187***
	(-4.23)	(-5.48)	(-5.56)	(-2.60)
Log likelihood	-7419427.6	-30694520	-19257062	
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.31: Average Partial Effect of Strategic Giving Behaviour (STRATEGIC) on religious donations - TOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-9.347***	-2.433***	-0.993**	-1.509
	(-7.61)	(-5.52)	(-2.51)	(-0.84)
HH Income 50 to <100	0.330*	0.033	0.018	-0.117
	(1.85)	(0.42)	(0.25)	(-0.68)
HH Income 100 to <150	0.769***	-0.159	-0.155	-0.471**
	(3.44)	(-1.60)	(-1.58)	(-2.25)
HH Income =150	0.460	-0.113	-0.273**	-0.604**
	(1.60)	(-0.99)	(-2.13)	(-2.47)
Immigrant	-0.093	0.325***	0.304***	0.046
	(-0.52)	(3.77)	(3.73)	(0.26)
Religious			1.168***	3.830***
			(17.15)	(28.27)
Age 25 to 34yrs	-0.739**	-0.777***	-0.296***	-0.557*
	(-2.25)	(-6.35)	(-2.69)	(-1.89)
Age 35 to 44yrs	-0.559*	-0.521***	-0.097	-0.528*
	(-1.94)	(-4.42)	(-0.88)	(-1.89)
Age 45 to 54yrs	-0.625**	-0.546***	-0.176*	-0.527*
	(-2.45)	(-5.10)	(-1.80)	(-1.93)
Age 55 to 64yrs	-0.268	-0.373***	-0.247***	0.083
	(-1.30)	(-3.90)	(-2.74)	(0.38)
Male	-0.064	0.056	0.000	0.187
	(-0.44)	(0.97)	(0.00)	(1.33)
Single	0.194	-0.024	0.046	-0.172
	(1.09)	(-0.31)	(0.61)	(-1.05)
HH Size	0.113*	0.112***	0.076***	0.211***
	(1.81)	(3.88)	(2.77)	(3.56)
Postsecondary	0.601**	0.063	-0.006	0.075
	(2.04)	(0.50)	(-0.05)	(0.37)
Diploma	0.159	0.164**	0.130**	-0.212
	(0.92)	(2.15)	(1.96)	(-1.27)
University	0.287	0.282***	0.084	0.029
	(1.40)	(3.19)	(1.02)	(0.16)
Employed	0.017	0.144*	0.050	0.065
	(0.09)	(1.89)	(0.76)	(0.36)
Atlantic	-0.308	0.429***	0.295***	0.227
	(-1.56)	(5.71)	(3.98)	(1.32)
Quebec	-1.360***	0.322***	0.530***	-0.115
	(-5.28)	(3.86)	(6.85)	(-0.32)

Table B.31 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Prairies	0.309	0.038	-0.058	0.004
	(1.62)	(0.45)	(-0.68)	(0.02)
British Columbia	0.339*	-0.400***	-0.256***	-0.420**
	(1.65)	(-4.15)	(-2.79)	(-2.12)
Current Abode <5yrs	0.331*	-0.041	0.076	-0.058
	(1.68)	(-0.50)	(1.02)	(-0.31)
Current Abode 5 to <10yrs	-0.094	-0.006	0.103	0.042
	(-0.39)	(-0.07)	(1.15)	(0.20)
STRATEGIC	0.067	-0.155	-0.289**	-0.445
	(0.22)	(-1.12)	(-2.13)	(-1.59)
Log likelihood	-6976968.4	-17585610	-10831031	-6937748.6
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.32: Average Partial Effect of Strategic Giving Behaviour (STRATEGIC) on secular donations - TOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-6.515***	-5.806***	-3.158***	-2.114*
	(-4.39)	(-15.01)	(-6.64)	(-1.69)
HH Income 50 to <100	0.486***	0.570***	0.403***	0.471***
	(3.01)	(6.39)	(4.20)	(2.81)
HH Income 100 to <150	1.209***	0.913***	0.603***	1.015***
	(6.11)	(9.85)	(6.42)	(5.46)
HH Income =150	1.283***	1.306***	0.635***	1.259***
	(5.17)	(11.93)	(5.37)	(6.23)
Immigrant	-0.677***	-0.128	-0.387***	-0.310**
	(-3.98)	(-1.48)	(-3.57)	(-2.52)
Religious			-0.565***	-1.065***
			(-3.91)	(-9.94)
Age 25 to 34yrs	-1.166***	-0.696***	-0.377**	-0.671***
	(-4.72)	(-4.85)	(-2.37)	(-3.31)
Age 35 to 44yrs	-1.013***	-0.624***	-0.289*	-0.655***
	(-4.11)	(-4.35)	(-1.76)	(-3.45)
Age 45 to 54yrs	-1.107***	-0.343***	-0.243*	-0.488***
	(-5.50)	(-2.74)	(-1.68)	(-3.00)
Age 55 to 64yrs	-0.293**	-0.256**	-0.114	-0.375***
	(-2.05)	(-2.51)	(-1.00)	(-2.75)
Male	-0.162	-0.110**	-0.181***	-0.201**
	(-1.27)	(-2.15)	(-3.02)	(-2.03)
Single	0.048	-0.002	-0.160	0.244
	(0.28)	(-0.02)	(-1.48)	(1.64)
HH Size	-0.015	-0.103***	-0.083**	-0.043
	(-0.23)	(-2.79)	(-2.01)	(-0.84)
Postsecondary	0.394*	0.205*	0.124	0.382*
	(1.67)	(1.89)	(1.12)	(1.73)
Diploma	0.072	0.207***	0.081	0.368***
	(0.42)	(2.69)	(1.02)	(2.74)
University	0.626***	0.528***	0.342***	0.474***
	(3.27)	(6.12)	(3.80)	(3.22)
Employed	0.089	0.286***	0.185**	0.136
	(0.57)	(4.22)	(2.52)	(0.89)
Atlantic	-0.511***	-0.358***	-0.187***	-0.391***
	(-3.99)	(-5.60)	(-2.80)	(-3.52)
Quebec	-1.656***	-0.824***	-0.489***	-0.444**
	(-6.42)	(-11.61)	(-5.99)	(-2.28)
Prairies	-0.353**	-0.194***	-0.079	-0.303**
	(-2.21)	(-3.00)	(-1.08)	(-2.49)
British Columbia	-0.076	0.019	-0.067	0.233*
	(-0.37)	(0.25)	(-0.77)	(1.93)

Table B.32 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Current Abode <5yrs	-0.461**	-0.163**	-0.126	-0.341**
	(-2.33)	(-2.31)	(-1.54)	(-2.34)
Current Abode 5 to <10yrs	0.021	-0.096	-0.068	-0.026
	(0.11)	(-0.93)	(-0.61)	(-0.18)
STRATEGIC	0.984***	0.738***	0.442***	0.702***
	(6.00)	(6.99)	(5.05)	(5.74)
Log likelihood	-6261832.6	-25381815	-16053598	-6495212.2
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.33: Average Partial Effect of Strategic Giving Behaviour (STRATEGIC) on religious donations using individual level of education and youth experiences - IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-9.373***	-2.607***	-1.007**	-3.080
	(-7.60)	(-5.93)	(-2.39)	(-1.64)
HH Income 50 to <100	0.371**	0.076	0.034	-0.224
	(2.05)	(0.99)	(0.49)	(-1.35)
HH Income 100 to <150	0.822***	-0.093	-0.137	-0.674***
	(3.66)	(-0.95)	(-1.41)	(-3.10)
HH Income =150	0.563**	-0.028	-0.257**	-0.864***
	(1.98)	(-0.25)	(-2.01)	(-3.51)
Immigrant	-0.075	0.352***	0.316***	0.048
	(-0.42)	(4.13)	(3.97)	(0.27)
Religious			1.165***	2.960***
			(17.06)	(25.63)
Age 25 to 34yrs	-0.663**	-0.750***	-0.270**	-0.314
	(-2.05)	(-6.18)	(-2.41)	(-1.06)
Age 35 to 44yrs	-0.499*	-0.492***	-0.070	-0.420
	(-1.73)	(-4.19)	(-0.61)	(-1.47)
Age 45 to 54yrs	-0.581**	-0.537***	-0.160	-0.475*
	(-2.27)	(-5.00)	(-1.60)	(-1.84)
Age 55 to 64yrs	-0.230	-0.367***	-0.239***	0.196
	(-1.11)	(-3.82)	(-2.63)	(0.91)
Male	-0.059	0.057	0.003	0.177
	(-0.40)	(0.97)	(0.06)	(1.28)
Single	0.175	-0.027	0.045	-0.356*
	(0.98)	(-0.35)	(0.62)	(-1.96)
HH Size	0.100	0.107***	0.073***	0.213***
	(1.58)	(3.75)	(2.67)	(3.31)
Employed	0.020	0.159**	0.061	0.080
	(0.10)	(2.08)	(0.89)	(0.43)
Atlantic	-0.335*	0.424***	0.298***	0.322*
	(-1.69)	(5.63)	(4.02)	(1.89)
Quebec	-1.386***	0.328***	0.541***	-0.584
	(-5.40)	(3.92)	(6.94)	(-1.64)
Prairies	0.282	0.019	-0.061	0.092
	(1.48)	(0.23)	(-0.71)	(0.52)
British Columbia	0.340	-0.392***	-0.254***	-0.445**
	(1.64)	(-4.09)	(-2.78)	(-2.30)
Current Abode <5yrs	0.334*	-0.024	0.072	-0.066
	(1.71)	(-0.29)	(0.93)	(-0.35)
Current Abode 5 to <10yrs	-0.072	0.009	0.107	-0.056
	(-0.29)	(0.09)	(1.18)	(-0.25)
STRATEGIC	0.220	0.005	-0.202	-0.428
	(0.33)	(0.02)	(-0.16)	(-0.48)

Table B.33 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Rho	-0.032	-0.048	-0.037	-0.024
	(-0.30)	(-0.55)	(-0.07)	(0.13)
Log- likelihood	-7536921.4	-19567549	-11769337	-8200461.7
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.34: Average Partial Effect of Strategic Giving Behaviour (STRATEGIC) on secular donations using individual level of education and youth experiences - IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-6.555***	-6.044***	-3.248***	-2.531**
	(-4.40)	(-15.25)	(-6.77)	(-2.09)
HH Income 50 to <100	0.545***	0.638***	0.438***	0.551***
	(3.24)	(7.53)	(4.71)	(3.34)
HH Income 100 to <150	1.317***	1.024***	0.675***	1.095***
	(6.44)	(11.68)	(7.40)	(6.11)
HH Income =150	1.457***	1.446***	0.712***	1.350***
	(5.79)	(14.28)	(6.19)	(7.21)
Immigrant	-0.594***	-0.076	-0.335***	-0.291**
	(-3.50)	(-0.90)	(-3.19)	(-2.29)
Religious			-0.568***	-1.080***
			(-3.85)	(-10.35)
Age 25 to 34yrs	-1.017***	-0.664***	-0.337**	-0.630***
	(-4.17)	(-4.38)	(-1.98)	(-3.00)
Age 35 to 44yrs	-0.894***	-0.603***	-0.252	-0.655***
	(-3.59)	(-3.94)	(-1.43)	(-3.40)
Age 45 to 54yrs	-1.036***	-0.340***	-0.225	-0.485***
	(-4.99)	(-2.61)	(-1.48)	(-2.99)
Age 55 to 64yrs	-0.232	-0.257**	-0.097	-0.366***
	(-1.62)	(-2.43)	(-0.81)	(-2.71)
Male	-0.183	-0.109**	-0.176***	-0.211**
	(-1.39)	(-2.11)	(-2.89)	(-2.11)
Single	0.027	0.001	-0.153	0.234
	(0.16)	(0.01)	(-1.40)	(1.57)
HH Size	-0.035	-0.109***	-0.086**	-0.049
	(-0.54)	(-2.86)	(-2.04)	(-0.92)
Employed	0.139	0.313***	0.202***	0.179
	(0.89)	(4.61)	(2.73)	(1.19)
Atlantic	-0.558***	-0.365***	-0.190***	-0.439***
	(-4.25)	(-5.73)	(-2.83)	(-3.96)
Quebec	-1.687***	-0.811***	-0.477***	-0.495***
	(-6.49)	(-11.44)	(-5.74)	(-2.61)
Prairies	-0.402**	-0.233***	-0.097	-0.360***
	(-2.51)	(-3.63)	(-1.32)	(-2.89)
British Columbia	-0.088	0.033	-0.051	0.219*
	(-0.44)	(0.43)	(-0.58)	(1.83)
Current Abode <5yrs	-0.476**	-0.125*	-0.125	-0.304**
	(-2.37)	(-1.77)	(-1.51)	(-2.11)

Table B.34 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Current Abode 5 to <10yrs	0.002	-0.062	-0.045	-0.005
	(0.01)	(-0.60)	(-0.40)	(-0.03)
STRATEGIC	2.178***	1.635***	1.077***	1.334***
	(6.66)	(8.93)	(6.08)	(6.91)
Rho	-0.308***	-0.278***	-0.217 ***	-0.220***
	(-4.20)	(-5.41)	(-4.12)	(-4.80)
Log- likelihood	-6840984.9	-27450761	-17023278	-7525355.6
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.35: Average Partial Effect of Strategic Giving Behaviour (STRATEGIC) on religious donations using level of education at the CMA area and youth experiences - IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-7.644***	-2.669***	-0.943**	-3.207
	(-7.26)	(-5.83)	(-2.33)	(-1.41)
HH Income 50 to <100	0.215	0.078	0.029	-0.224
	(1.37)	(1.02)	(0.42)	(-1.33)
HH Income 100 to <150	0.533***	-0.090	-0.139	-0.660**
	(2.81)	(-0.92)	(-1.42)	(-2.55)
HH Income =150	0.584***	-0.015	-0.269**	-0.823*
	(2.60)	(-0.13)	(-2.15)	(-1.73)
Immigrant	-0.019	0.358***	0.319***	0.085
	(-0.12)	(4.16)	(3.99)	(0.21)
Religious			1.161***	2.951***
			(17.20)	(25.36)
Age 25 to 34yrs	-1.086***	-0.746***	-0.279**	-0.296
	(-3.75)	(-6.14)	(-2.49)	(-0.88)
Age 35 to 44yrs	-0.739***	-0.484***	-0.082	-0.380
	(-2.89)	(-4.08)	(-0.72)	(-0.76)
Age 45 to 54yrs	-0.760***	-0.535***	-0.168*	-0.487*
	(-3.33)	(-4.99)	(-1.69)	(-1.72)
Age 55 to 64yrs	-0.314*	-0.365***	-0.241***	0.203
	(-1.80)	(-3.80)	(-2.64)	(0.88)
Male	0.035	0.056	0.002	0.174
	(0.27)	(0.96)	(0.03)	(1.23)
Single	0.079	-0.027	0.048	-0.333
	(0.43)	(-0.35)	(0.65)	(-1.13)
HH Size	0.072	0.106***	0.076***	0.217***
	(1.07)	(3.71)	(2.79)	(2.81)
Employed	0.170	0.159**	0.070	0.074
	(1.00)	(2.08)	(1.04)	(0.37)
Atlantic	-0.287*	0.424***	0.299***	0.360
	(-1.85)	(5.63)	(4.01)	(0.86)
Quebec	-1.030***	0.326***	0.546***	-0.508
	(-5.28)	(3.88)	(7.00)	(-0.60)
Prairies	0.155	0.023	-0.067	0.091
	(0.95)	(0.27)	(-0.79)	(0.52)
British Columbia	0.093	-0.391***	-0.258***	-0.437**
	(0.48)	(-4.07)	(-2.79)	(-2.15)
Current Abode <5yrs	0.149	-0.025	0.064	-0.104
	(0.87)	(-0.30)	(0.84)	(-0.24)
Current Abode 5 to <10yrs	-0.173	0.008	0.101	-0.062
	(-0.74)	(0.09)	(1.11)	(-0.27)

Table B.35 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
STRATEGIC	0.126	-0.311	0.534	-1.415
	(0.14)	(-0.49)	(0.46)	(-0.15)
Rho	-0.003	0.053	-0.176	0.207
	(0.02)	(0.29)	(-1.65)	(-0.09)
Log likelihood	-7505322.4	-19571642	-11756183	-8199349.6
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.36: Average Partial Effect of Strategic Giving Behaviour (STRATEGIC) secular donations using level of education at the CMA area and youth experiences - IVTOBIT

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
Price	-6.629***	-6.085***	-3.264***	-2.538**
	(-4.44)	(-15.27)	(-6.82)	(-2.10)
HH Income 50 to <100	0.556***	0.639***	0.439***	0.550***
	(3.29)	(7.56)	(4.73)	(3.34)
HH Income 100 to <150	1.331***	1.026***	0.675***	1.096***
	(6.48)	(11.72)	(7.40)	(6.11)
HH Income =150	1.459***	1.455***	0.715***	1.352***
	(5.79)	(14.46)	(6.23)	(7.23)
Immigrant	-0.600***	-0.073	-0.336***	-0.289**
	(-3.52)	(-0.86)	(-3.20)	(-2.26)
Religious			-0.567***	-1.081***
			(-3.84)	(-10.36)
Age 25 to 34yrs	-1.019***	-0.662***	-0.335**	-0.629***
	(-4.17)	(-4.36)	(-1.97)	(-2.99)
Age 35 to 44yrs	-0.893***	-0.598***	-0.249	-0.653***
	(-3.58)	(-3.89)	(-1.41)	(-3.37)
Age 45 to 54yrs	-1.033***	-0.340***	-0.224	-0.486***
	(-4.99)	(-2.60)	(-1.47)	(-3.00)
Age 55 to 64yrs	-0.234	-0.256**	-0.097	-0.365***
	(-1.64)	(-2.41)	(-0.81)	(-2.70)
Male	-0.176	-0.109**	-0.176***	-0.211**
	(-1.34)	(-2.11)	(-2.88)	(-2.11)
Single	0.029	0.001	-0.153	0.235
	(0.17)	(0.01)	(-1.40)	(1.58)
HH Size	-0.037	-0.110***	-0.087**	-0.049
	(-0.58)	(-2.87)	(-2.04)	(-0.92)
Employed	0.129	0.313***	0.200***	0.178
	(0.82)	(4.61)	(2.71)	(1.18)
Atlantic	-0.554***	-0.365***	-0.190***	-0.436***
	(-4.25)	(-5.74)	(-2.83)	(-3.95)
Quebec	-1.694***	-0.812***	-0.478***	-0.490***
	(-6.50)	(-11.46)	(-5.75)	(-2.59)
Prairies	-0.399**	-0.231***	-0.095	-0.360***
	(-2.48)	(-3.60)	(-1.30)	(-2.89)
British Columbia	-0.082	0.034	-0.050	0.219*
	(-0.41)	(0.44)	(-0.57)	(1.83)
Current Abode <5yrs	-0.471**	-0.126*	-0.123	-0.307**
	(-2.35)	(-1.78)	(-1.49)	(-2.13)
Current Abode 5 to <10yrs	0.009	-0.062	-0.043	-0.005
	(0.05)	(-0.60)	(-0.39)	(-0.03)

Table B.36 (continued)

Variable	Religious Sample	Non-Religious Sample	Small Givers Sample	Big Givers Sample
STRATEGIC	1.787***	1.445***	0.949***	1.269***
	(4.70)	(8.20)	(5.58)	(6.07)
Rho	-0.200**	-0.216***	-0.172***	-0.200***
	(-2.31)	(-4.55)	(-3.35)	(-3.89)
Log likelihood	-6847148.1	-27460155	-17024957	-7525939.6
Observations	2250	8018	5136	2567

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.37: Average Partial Effect of Concentration Giving Behaviour (FOCUSSED) on religious and secular gifts for Small Givers - TOBIT

	Religious Gifts		Secular Gifts	
Variable	Gifts=45	Gifts>45	Gifts=45	Gifts>45
Price	-0.068	-0.340	-2.223***	-0.794*
	(-0.13)	(-0.64)	(-3.54)	(-1.72)
HH Income 50 to <100	0.028	-0.106	0.156	0.345***
	(0.36)	(-1.19)	(1.53)	(4.71)
HH Income 100 to <150	0.070	-0.405***	0.218**	0.407***
	(0.62)	(-3.26)	(2.02)	(4.95)
HH Income =150	-0.251	-0.430***	-0.191	0.427***
	(-1.30)	(-2.72)	(-1.28)	(4.92)
Immigrant	0.066	0.308***	-0.332***	-0.288***
	(0.65)	(2.96)	(-3.10)	(-3.12)
Religious	0.406***	1.254***	-0.244	-0.870***
	(3.05)	(16.06)	(-1.59)	(-7.20)
Age 25 to 34yrs	-0.132	-0.184	-0.138	-0.112
	(-1.11)	(-1.27)	(-0.93)	(-1.03)
Age 35 to 44yrs	-0.028	-0.052	-0.164	-0.147
	(-0.23)	(-0.38)	(-1.07)	(-1.32)
Age 45 to 54yrs	-0.099	-0.126	-0.102	-0.104
	(-0.90)	(-1.03)	(-0.73)	(-1.05)
Age 55 to 64yrs	-0.234**	-0.166	-0.089	0.024
	(-2.33)	(-1.43)	(-0.70)	(0.26)
Male	-0.061	0.063	-0.168***	-0.090*
	(-1.01)	(0.87)	(-2.60)	(-1.68)
Single	0.035	0.001	-0.300***	0.014
	(0.45)	(0.01)	(-3.00)	(0.21)
HH Size	0.088***	0.067**	-0.106***	-0.024
	(3.09)	(2.00)	(-3.06)	(-1.04)
Postsecondary	-0.105	-0.057	0.109	-0.029
	(-0.85)	(-0.36)	(0.78)	(-0.31)
Diploma	0.103	0.082	0.019	-0.037
	(1.47)	(0.91)	(0.25)	(-0.51)
University	0.129	0.006	0.191**	0.103
	(1.35)	(0.05)	(2.08)	(1.32)
Employed	-0.022	0.037	0.205**	0.029
	(-0.29)	(0.41)	(2.57)	(0.47)
Atlantic	0.199**	0.386***	-0.092	-0.065
	(2.20)	(3.95)	(-1.10)	(-0.95)
Quebec	0.512***	0.547***	-0.448***	-0.286***
	(5.45)	(5.24)	(-5.03)	(-3.88)
Prairies	0.072	-0.137	-0.087	-0.121
	(0.76)	(-1.23)	(-0.99)	(-1.64)

Table B.37 (continued)

	Religious Gifts		Secular Gifts	
Variable	Gifts=45	Gifts>45	Gifts=45	Gifts>45
British Columbia	0.049	-0.388***	-0.229***	0.001
	(0.46)	(-3.16)	(-2.58)	(0.01)
Current Abode <5yrs	-0.051	0.101	-0.092	-0.114
	(-0.60)	(1.02)	(-1.11)	(-1.46)
Current Abode 5 to <10yrs	0.011	0.132	-0.011	-0.030
	(0.12)	(1.18)	(-0.09)	(-0.40)
FOCUSSED	-0.725***	-0.290***	1.360***	0.922***
	(-8.80)	(-3.48)	(6.91)	(7.13)
Log likelihood	-2832809	-7541587	-4982585.5	-8277352.9
Observations	1912	3224	1912	3224

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.38: Average Partial Effect of Concentration Giving Behaviour (FOCUSSED) on religious and secular gifts for Small Givers - IVTOBIT

	Religious Gifts		Secular Gifts	
Variable	Gifts=45	Gifts>45	Gifts=45	Gifts>45
Price	-0.235	-0.367	-2.265***	-0.858*
	(-0.38)	(-0.64)	(-3.57)	(-1.87)
HH Income 50 to <100	0.029	-0.097	0.172*	0.355***
	(0.34)	(-1.06)	(1.75)	(4.88)
HH Income 100 to <150	0.147	-0.350***	0.243**	0.431***
	(1.20)	(-2.69)	(2.27)	(5.19)
HH Income =150	-0.246	-0.384**	-0.171	0.452***
	(-1.16)	(-2.39)	(-1.11)	(5.31)
Immigrant	0.008	0.246**	-0.291***	-0.260***
	(0.06)	(2.26)	(-2.99)	(-2.98)
Religious	0.290	1.147***	-0.221	-0.860***
	(1.48)	(12.09)	(-1.42)	(-7.32)
Age 25 to 34yrs	-0.038	-0.176	-0.128	-0.096
	(-0.28)	(-1.18)	(-0.87)	(-0.89)
Age 35 to 44yrs	0.066	-0.073	-0.141	-0.136
	(0.51)	(-0.51)	(-0.90)	(-1.26)
Age 45 to 54yrs	-0.051	-0.103	-0.087	-0.103
	(-0.44)	(-0.81)	(-0.63)	(-1.04)
Age 55 to 64yrs	-0.253**	-0.149	-0.078	0.025
	(-2.21)	(-1.26)	(-0.62)	(0.28)
Male	-0.069	0.073	-0.170***	-0.088*
	(-0.93)	(0.95)	(-2.64)	(-1.65)
Single	-0.020	0.054	-0.294***	0.014
	(-0.22)	(0.57)	(-3.14)	(0.22)
HH Size	0.068*	0.083**	-0.104***	-0.027
	(1.92)	(2.35)	(-3.17)	(-1.20)
Employed	-0.010	0.013	0.210***	0.027
	(-0.12)	(0.14)	(2.61)	(0.43)
Atlantic	0.206*	0.316***	-0.098	-0.058
	(1.93)	(3.11)	(-1.14)	(-0.85)
Quebec	0.530***	0.542***	-0.442***	-0.285***
	(4.54)	(4.96)	(-4.83)	(-3.91)
Prairies	0.080	-0.175	-0.101	-0.122*
	(0.69)	(-1.51)	(-1.15)	(-1.65)
British Columbia	0.101	-0.385***	-0.220**	0.006
	(0.74)	(-3.08)	(-2.53)	(0.09)

Table B.38 (continued)

	Religious Gifts		Secular Gifts	
Variable	Gifts=45	Gifts>45	Gifts=45	Gifts>45
Current Abode <5yrs	-0.079	0.082	-0.079	-0.109
	(-0.83)	(0.78)	(-0.97)	(-1.39)
Current Abode 5 to <10yrs	-0.021	0.138	0.014	-0.022
	(-0.22)	(1.18)	(0.13)	(-0.30)
FOCUSSED	-1.677**	-1.327***	1.518***	0.987***
	(-1.96)	(-3.94)	(5.12)	(6.35)
Log likelihood	-3985597.4	-10153412	-6161478.1	-10747201
Observations	1912	3224	1912	3224

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.39: First stage regressions of the propensity to concentrate giving using individuals' education and youth experiences as instruments for Small Givers - Average Marginal Effects

Variable	Gifts=45	Gifts>45
Price	-0.150	0.099
	(-0.74)	(0.67)
HH Income 50 to <100	-0.013	0.020
	(-0.41)	(0.90)
HH Income 100 to <150	0.069	0.038
	(1.49)	(1.36)
HH Income =150	0.135**	0.112***
	(2.04)	(3.05)
Immigrant	-0.074**	-0.052**
	(-2.57)	(-2.16)
Religious	-0.111***	-0.099***
	(-2.85)	(-3.73)
Age 25 to 34yrs	0.007	0.053
	(0.17)	(1.38)
Age 35 to 44yrs	-0.043	0.045
	(-0.99)	(1.24)
Age 45 to 54yrs	-0.032	0.055*
	(-0.83)	(1.65)
Age 55 to 64yrs	-0.039	0.050
	(-1.05)	(1.64)
Male	-0.012	0.014
	(-0.57)	(0.78)
Single	-0.030	0.020
	(-1.00)	(0.92)
HH Size	-0.009	-0.000
	(-0.79)	(-0.03)
Employed	0.002	-0.045*
	(0.08)	(-1.90)
Atlantic	-0.012	-0.069***
	(-0.39)	(-3.09)
Quebec	-0.028	-0.013
	(-0.92)	(-0.50)
Prairies	0.022	-0.033
	(0.66)	(-1.31)
British Columbia	0.037	0.026
	(1.08)	(0.96)
Current Abode <5yrs	-0.017	-0.039
	(-0.65)	(-1.62)
Current Abode 5 to <10yrs	-0.024	-0.000
	(-0.65)	(-0.01)
Grade 8	-0.096**	0.097**
	(2.18)	(-2.21)

Table B.39 (continued)

Variable	Gifts=45	Gifts>45
Youth Experience 6	-0.031	-0.090***
	(-1.19)	(-3.51)
Observations	1912	3224

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.40: Average Partial Effect of Strategic Giving Behaviour (STRATEGIC) on religious and secular gifts for Small Givers - TOBIT

	Religious Gifts		Secular Gifts	
Variable	Gifts=45	Gifts>45	Gifts=45	Gifts>45
Price	-0.015	-0.471	-2.113***	-0.728
	(-0.02)	(-0.93)	(-3.29)	(-1.46)
HH Income 50 to <100	0.042	-0.073	0.116	0.347***
	(0.40)	(-0.86)	(0.81)	(4.69)
HH Income 100 to <150	-0.008	-0.338***	0.285**	0.445***
	(-0.06)	(-2.83)	(2.14)	(5.55)
HH Income =150	-0.316	-0.402***	-0.120	0.534***
	(-1.45)	(-2.64)	(-0.82)	(6.20)
Immigrant	0.284***	0.311***	-0.401***	-0.293***
	(2.68)	(3.16)	(-2.64)	(-3.02)
Religious	0.568***	1.283***	-0.448**	-0.913***
	(5.39)	(17.24)	(-2.04)	(-6.29)
Age 25 to 34yrs	-0.141	-0.199	-0.019	-0.070
	(-0.91)	(-1.45)	(-0.09)	(-0.63)
Age 35 to 44yrs	0.045	-0.074	-0.089	-0.099
	(0.28)	(-0.56)	(-0.42)	(-0.84)
Age 45 to 54yrs	-0.114	-0.147	-0.136	-0.085
	(-0.76)	(-1.27)	(-0.68)	(-0.84)
Age 55 to 64yrs	-0.189	-0.196*	-0.083	0.063
	(-1.58)	(-1.74)	(-0.54)	(0.68)
Male	-0.052	0.067	-0.144*	-0.075
	(-0.75)	(0.97)	(-1.89)	(-1.36)
Single	0.073	0.030	-0.388***	0.013
	(0.75)	(0.35)	(-2.74)	(0.20)
HH Size	0.093***	0.072**	-0.129***	-0.027
	(2.85)	(2.25)	(-2.59)	(-1.13)
Postsecondary	-0.075	-0.015	0.068	-0.011
	(-0.50)	(-0.10)	(0.51)	(-0.12)
Diploma	0.066	0.122	-0.023	-0.054
	(0.83)	(1.42)	(-0.26)	(-0.73)
University	-0.072	0.045	0.170	0.063
	(-0.63)	(0.43)	(1.35)	(0.82)
Employed	-0.011	0.031	0.184**	-0.014
	(-0.13)	(0.37)	(2.02)	(-0.22)
Atlantic	0.232**	0.395***	-0.085	-0.123*
	(2.16)	(4.22)	(-1.00)	(-1.95)
Quebec	0.577***	0.573***	-0.454***	-0.268***
	(5.69)	(5.82)	(-4.72)	(-3.72)
Prairies	0.057	-0.091	-0.018	-0.129*
	(0.49)	(-0.85)	(-0.18)	(-1.77)

Table B.40 (continued)

Variable	Gifts=45	Gifts>45	Gifts=45	Gifts>45
British Columbia	0.038	-0.346***	-0.127	0.030
	(0.31)	(-2.95)	(-1.25)	(0.40)
Current Abode <5yrs	-0.045	0.123	-0.190*	-0.164**
	(-0.47)	(1.32)	(-1.80)	(-2.04)
Current Abode 5 to <10yrs	0.140	0.099	-0.092	-0.031
	(1.03)	(0.92)	(-0.57)	(-0.43)
STRATEGIC	-0.084	-0.416***	0.354**	0.225***
	(-0.36)	(-2.61)	(2.26)	(2.95)
Log likelihood	-2632182.3	-7974241.9	-4606487.9	-9176007.2
Observations	1912	3224	1912	3224

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.41: Average Partial Effect of Strategic Giving Behaviour (STRATEGIC) on religious and secular gifts for Small Givers - IVTOBIT

	Religious Gifts		Secular Gifts	
Variable	Gifts=45	Gifts>45	Gifts=45	Gifts>45
Price	0.031	-0.403	-2.436***	-0.693
	(0.05)	(-0.75)	(-3.92)	(-1.33)
HH Income 50 to <100	0.072	-0.092	0.146	0.359***
	(0.71)	(-1.05)	(1.07)	(4.39)
HH Income 100 to <150	-0.017	-0.410***	0.333***	0.456***
	(-0.13)	(-3.34)	(2.69)	(5.16)
HH Income =150	-0.296	-0.450***	-0.130	0.530***
	(-1.40)	(-2.95)	(-0.87)	(5.65)
Immigrant	0.265**	0.323***	-0.393***	-0.309***
	(2.56)	(3.23)	(-2.82)	(-3.16)
Religious	0.569***	1.288***	-0.521**	-0.968***
	(5.56)	(16.72)	(-2.30)	(-6.47)
Age 25 to 34yrs	-0.133	-0.183	-0.079	-0.080
	(-0.87)	(-1.26)	(-0.35)	(-0.68)
Age 35 to 44yrs	0.041	-0.040	-0.158	-0.127
	(0.25)	(-0.29)	(-0.70)	(-1.05)
Age 45 to 54yrs	-0.097	-0.121	-0.077	-0.080
	(-0.67)	(-0.98)	(-0.38)	(-0.72)
Age 55 to 64yrs	-0.209*	-0.173	-0.088	0.052
	(-1.79)	(-1.47)	(-0.57)	(0.52)
Male	-0.033	0.069	-0.164**	-0.082
	(-0.49)	(0.95)	(-2.16)	(-1.41)
Single	0.091	-0.007	-0.359**	0.030
	(0.99)	(-0.07)	(-2.50)	(0.44)
HH Size	0.095***	0.063*	-0.124**	-0.025
	(2.96)	(1.88)	(-2.36)	(-0.98)
Employed	-0.023	0.047	0.207**	-0.006
	(-0.29)	(0.51)	(2.26)	(-0.09)
Atlantic	0.271***	0.417***	-0.087	-0.133**
	(2.58)	(4.25)	(-1.03)	(-1.97)
Quebec	0.635***	0.559***	-0.451***	-0.286***
	(6.58)	(5.35)	(-4.68)	(-3.65)
Prairies	0.077	-0.115	-0.069	-0.163**
	(0.68)	(-1.02)	(-0.73)	(-2.12)
British Columbia	0.062	-0.384***	-0.138	0.019
	(0.49)	(-3.12)	(-1.35)	(0.24)
Current Abode <5yrs	-0.064	0.123	-0.132	-0.162*
	(-0.71)	(1.23)	(-1.29)	(-1.87)
Current Abode 5 to <10yrs	0.107	0.139	-0.024	-0.029
	(0.81)	(1.24)	(-0.15)	(-0.37)

Table B.41 (continued)

STRATEGIC	0.504	-0.473	0.998**	0.492***
	(1.13)	(-0.74)	(2.16)	(3.78)
Log likelihood	-3038754.3	-8210229	-5318312.8	-9310097.6
Observations	1912	3224	1912	3224

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.42: Average Partial Effect of Strategic Giving Behaviour (STRATEGIC) on religious and secular gifts for Small Givers - IVTOBIT

	Religious Gifts		Secular Gifts	
Variable	Gifts=45	Gifts>45	Gifts=45	Gifts>45
Price	0.005	-0.429	0.005	-0.698
	(0.01)	(-0.18)	(0.01)	(-1.34)
HH Income 50 to <100	0.049	-0.089	0.049	0.360***
	(0.49)	(-0.28)	(0.49)	(4.40)
HH Income 100 to <150	0.027	-0.409**	0.027	0.456***
	(0.20)	(-2.57)	(0.20)	(5.16)
HH Income =150	-0.353*	-0.446	-0.353*	0.530***
	(-1.69)	(-1.11)	(-1.69)	(5.66)
Immigrant	0.216**	0.323***	0.216**	-0.309***
	(2.00)	(2.98)	(2.00)	(-3.15)
Religious	0.559***	1.291***	0.559***	-0.968***
	(5.36)	(7.02)	(5.36)	(-6.48)
Age 25 to 34yrs	-0.141	-0.180	-0.141	-0.079
	(-0.94)	(-0.46)	(-0.94)	(-0.67)
Age 35 to 44yrs	0.003	-0.036	0.003	-0.126
	(0.02)	(-0.09)	(0.02)	(-1.04)
Age 45 to 54yrs	-0.098	-0.119	-0.098	-0.079
	(-0.69)	(-0.40)	(-0.69)	(-0.71)
Age 55 to 64yrs	-0.218*	-0.174	-0.218*	0.052
	(-1.88)	(-1.43)	(-1.88)	(0.52)
Male	-0.031	0.071	-0.031	-0.082
	(-0.46)	(0.39)	(-0.46)	(-1.41)
Single	0.126	-0.007	0.126	0.030
	(1.34)	(-0.07)	(1.34)	(0.43)
HH Size	0.109***	0.062	0.109***	-0.025
	(3.36)	(0.87)	(3.36)	(-0.99)
Employed	-0.004	0.043	-0.004	-0.007
	(-0.05)	(0.11)	(-0.05)	(-0.10)
Atlantic	0.236**	0.420**	0.236**	-0.133**
	(2.26)	(2.15)	(2.26)	(-1.97)
Quebec	0.590***	0.559***	0.590***	-0.286***
	(6.03)	(5.26)	(6.03)	(-3.65)
Prairies	0.061	-0.111	0.061	-0.162**
	(0.54)	(-0.30)	(0.54)	(-2.10)
British Columbia	0.026	-0.381	0.026	0.020
	(0.21)	(-1.47)	(0.21)	(0.25)

Table B.42 (continued)

	Gifts=45	Gifts>45	Gifts=45	Gifts>45
Current Abode <5yrs	-0.025	0.128	-0.025	-0.161*
	(-0.27)	(0.31)	(-0.27)	(-1.86)
Current Abode 5 to <10yrs	0.088	0.144	0.088	-0.029
	(0.67)	(0.31)	(0.67)	(-0.36)
STRATEGIC	0.651	-0.674	0.651	0.454***
	(1.61)	(-0.04)	(1.61)	(3.51)
Log likelihood	-3216902.6	-8236680.1	-5575344.1	-9309278.5
Observations	1912	3224	1912	3224

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Table B.43: First stage regressions of the propensity to give strategically using education and youth experiences as instruments for Small Givers - Average Marginal Effects

	Using individual level of education and youth experiences as instruments		Using the level of education at the CMA and youth experiences as instruments	
Variable	Gifts=45	Gifts>45	Gifts=45	Gifts>45
Price	-0.092**	-0.123**	-0.082*	-0.133**
	(-2.20)	(-2.31)	(-1.94)	(-2.42)
HH Income 50 to <100	-0.004	0.014	-0.006	0.015*
	(-0.63)	(1.49)	(-1.05)	(1.67)
HH Income 100 to <150	-0.032***	0.003	-0.036***	0.005
	(-2.59)	(0.27)	(-2.86)	(0.50)
HH Income =150	0.019*	0.016	0.016	0.019
	(1.90)	(1.27)	(1.64)	(1.53)
Immigrant	-0.008	-0.004	-0.008	-0.004
	(-1.12)	(-0.47)	(-1.06)	(-0.47)
Religious	0.017**	0.003	0.017**	0.002
	(2.24)	(0.31)	(2.19)	(0.18)
Age 25 to 34yrs	0.006	0.015	0.010	0.017
	(0.59)	(1.10)	(0.98)	(1.22)
Age 35 to 44yrs	0.020*	0.015	0.025**	0.015
	(1.80)	(1.17)	(2.20)	(1.18)
Age 45 to 54yrs	0.004	0.012	0.011	0.012
	(0.51)	(0.95)	(1.25)	(0.94)
Age 55 to 64yrs	0.006	-0.006	0.008	-0.006
	(0.76)	(-0.58)	(0.98)	(-0.51)
Male	-0.006	0.007	-0.004	0.008
	(-1.19)	(1.11)	(-0.95)	(1.14)
Single	-0.008	-0.002	-0.007	-0.003
	(-1.42)	(-0.28)	(-1.29)	(-0.38)
HH Size	-0.004	-0.003	-0.005*	-0.003
	(-1.51)	(-1.10)	(-1.74)	(-1.28)
Employed	-0.009	-0.019**	-0.009	-0.019**
	(-1.29)	(-2.08)	(-1.38)	(-2.13)
Atlantic	-0.013	0.007	-0.013	0.017*
	(-1.54)	(0.79)	(-1.49)	(1.82)
Quebec	-0.014	-0.003	-0.015	0.005
	(-1.59)	(-0.30)	(-1.62)	(0.45)
Prairies	-0.005	0.015	-0.004	0.025**
	(-0.77)	(1.60)	(-0.56)	(2.45)
British Columbia	-0.009	0.010	-0.011	0.017*
	(-1.19)	(1.05)	(-1.42)	(1.67)
Current Abode <5yrs	0.010*	0.017**	0.007	0.018**
	(1.79)	(1.99)	(1.18)	(2.09)
Current Abode 5 to <10yrs	-0.010	0.021**	-0.013	0.022**
	(-1.16)	(2.29)	(-1.44)	(2.36)

Table B.43 (continued)

	Using individual level of education and youth experiences as instruments		Using the level of education at the CMA area and youth experiences as instruments	
Variable	Gifts =45	Gifts >45	Gifts =45	Gifts >45
Some University	-0.007	0.013**		
	(-0.95)	(2.04)		
Youth Experience 1	0.018**	0.017**	0.019**	0.019**
	(2.47)	(1.99)	(2.54)	(2.19)
University at CMA			-0.330	1.298**
			(-0.74)	(2.54)
Observations	1912	3224	1912	3224

Robust *z* statistics in parentheses
* p<.10, ** p<.05, *** p<0.01

Appendix C
Time

Table C.1: Falsification Tests for Instruments- full sample analysis using the 2013 GSS GVP only

	Dependent Variable - Investment Income					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Volunteer	0.212**			0.432		
	(2.11)			(1.30)		
#Hours		0.027			0.008	0.008
		(1.18)			(0.16)	(0.16)
#Organisations			0.193**			-0.403
			(2.17)			(-1.36)
Immigrant <10yrs	-0.354	-0.378	-0.348	-0.294	-0.403	-0.403
	(-1.16)	(-1.24)	(-1.14)	(-0.97)	(-1.36)	(-1.36)
Immigrant 10 to < 20yrs	0.059	0.051	0.070	0.086	0.039	0.039
	(0.22)	(0.19)	(0.25)	(0.33)	(0.15)	(0.15)
Immigrant =20yrs	0.225	0.215	0.225	0.246	0.208	0.208
	(1.22)	(1.17)	(1.22)	(1.34)	(1.15)	(1.15)
Religious	-0.041	-0.030	-0.043	-0.077	-0.013	-0.013
	(-0.34)	(-0.25)	(-0.36)	(-0.59)	(-0.10)	(-0.10)
English & French	-0.265*	-0.261*	-0.267*	-0.274*	-0.257	-0.257
	(-1.73)	(-1.71)	(-1.75)	(-1.72)	(-1.63)	(-1.63)
French	-0.497**	-0.504**	-0.502**	-0.488**	-0.506**	-0.506**
	(-2.13)	(-2.16)	(-2.16)	(-2.04)	(-2.12)	(-2.12)
Male	0.026	0.025	0.026	0.023	0.028	0.028
	(0.24)	(0.23)	(0.24)	(0.21)	(0.25)	(0.25)
Single	-0.399**	-0.400**	-0.398**	-0.397**	-0.401**	-0.401**
	(-2.48)	(-2.48)	(-2.47)	(-2.56)	(-2.57)	(-2.57)
Sep_Wid_Div	-0.526***	-0.531***	-0.530***	-0.524***	-0.530***	-0.530***
	(-3.12)	(-3.14)	(-3.14)	(-3.20)	(-3.24)	(-3.24)
Kids <18yrs	-0.340***	-0.332***	-0.343***	-0.358***	-0.326***	-0.326***
	(-2.77)	(-2.72)	(-2.80)	(-2.89)	(-2.69)	(-2.69)

Table C.1 (continued)

	Dependent Variable - Investment Income					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Kids =18yrs	-0.351**	-0.349**	-0.351**	-0.357**	-0.346**	-0.346**
	(-2.27)	(-2.26)	(-2.28)	(-2.16)	(-2.10)	(-2.10)
Diploma	0.311**	0.316**	0.308**	0.298**	0.322**	0.322**
	(2.26)	(2.30)	(2.24)	(2.27)	(2.46)	(2.46)
University	0.904***	0.915***	0.894***	0.871***	0.931***	0.931***
	(5.87)	(5.99)	(5.83)	(5.77)	(6.25)	(6.25)
Age	0.146***	0.147***	0.145***	0.145***	0.147***	0.147***
	(4.44)	(4.46)	(4.42)	(4.31)	(4.40)	(4.40)
Age2	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-3.30)	(-3.33)	(-3.28)	(-3.16)	(-3.26)	(-3.26)
Self-Employed	1.845***	1.846***	1.841***	1.833***	1.854***	1.854***
	(11.47)	(11.50)	(11.47)	(11.05)	(11.37)	(11.37)
Hours Worked	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004
	(-0.97)	(-1.02)	(-1.01)	(-0.85)	(-1.03)	(-1.03)
Management	0.366*	0.387**	0.365*	0.331*	0.396**	0.396**
	(1.93)	(2.04)	(1.92)	(1.66)	(2.05)	(2.05)
Business	0.429**	0.443**	0.435**	0.407**	0.450***	0.450***
	(2.41)	(2.49)	(2.44)	(2.35)	(2.62)	(2.62)
Science	0.904***	0.908***	0.903***	0.897***	0.909***	0.909***
	(4.16)	(4.17)	(4.15)	(4.17)	(4.25)	(4.25)
Health	0.389*	0.389*	0.391*	0.387*	0.388*	0.388*
	(1.73)	(1.73)	(1.74)	(1.79)	(1.80)	(1.80)
Education	0.027	0.042	0.029	-0.012	0.057	0.057
	(0.14)	(0.22)	(0.15)	(-0.06)	(0.28)	(0.28)
Arts	0.326	0.348	0.326	0.277	0.366	0.366
	(1.05)	(1.13)	(1.05)	(0.87)	(1.18)	(1.18)
Trade	0.079	0.072	0.080	0.092	0.066	0.066
	(0.39)	(0.36)	(0.39)	(0.44)	(0.32)	(0.32)

Table C.1 (continued)

	Dependent Variable - Investment Income					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Resource	0.558	0.543	0.560	0.584	0.534	0.534
	(1.48)	(1.44)	(1.49)	(1.61)	(1.46)	(1.46)
Manufacturing	0.180	0.178	0.181	0.188	0.174	0.174
	(0.58)	(0.57)	(0.58)	(0.60)	(0.56)	(0.56)
Rural	-0.071	-0.069	-0.079	-0.082	-0.063	-0.063
	(-0.51)	(-0.50)	(-0.57)	(-0.61)	(-0.47)	(-0.47)
Town	-0.112	-0.110	-0.119	-0.118	-0.108	-0.108
	(-0.71)	(-0.70)	(-0.75)	(-0.72)	(-0.67)	(-0.67)
Newfoundland	-0.825***	-0.823***	-0.829***	-0.831***	-0.821***	-0.821***
	(-3.65)	(-3.64)	(-3.67)	(-3.48)	(-3.45)	(-3.45)
Prince Edward Island	-0.431**	-0.425**	-0.430**	-0.436*	-0.425*	-0.425*
	(-2.07)	(-2.04)	(-2.06)	(-1.92)	(-1.88)	(-1.88)
Nova Scotia	-0.635***	-0.630***	-0.628***	-0.647***	-0.624***	-0.624***
	(-3.10)	(-3.07)	(-3.06)	(-3.26)	(-3.13)	(-3.13)
New Brunswick	-0.519**	-0.526**	-0.517**	-0.504**	-0.531**	-0.531**
	(-2.49)	(-2.53)	(-2.49)	(-2.44)	(-2.57)	(-2.57)
Quebec	0.243	0.234	0.249	0.267	0.225	0.225
	(1.33)	(1.28)	(1.35)	(1.38)	(1.17)	(1.17)
Manitoba	0.111	0.124	0.108	0.089	0.131	0.131
	(0.63)	(0.71)	(0.62)	(0.50)	(0.74)	(0.74)
Saskatchewan	0.431**	0.448**	0.423**	0.398**	0.460**	0.460**
	(2.42)	(2.52)	(2.37)	(2.15)	(2.54)	(2.54)
Alberta	0.394**	0.400**	0.391**	0.380**	0.406**	0.406**
	(2.41)	(2.45)	(2.39)	(2.23)	(2.38)	(2.38)
British Columbia	0.319**	0.328**	0.318**	0.298*	0.336**	0.336**
	(2.11)	(2.17)	(2.10)	(1.84)	(2.11)	(2.11)
Abode <5yrs	0.098	0.094	0.101	0.105	0.091	0.091
	(0.62)	(0.59)	(0.64)	(0.66)	(0.57)	(0.57)

Table C.1 (continued)

	Dependent Variable - Investment Income					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Abode 5 to <10yrs	-0.204	-0.202	-0.203	-0.202	-0.205	-0.205
	(-1.43)	(-1.42)	(-1.42)	(-1.45)	(-1.46)	(-1.46)
Constant	6.173***	6.150***	6.135***	5.841***	5.974***	5.968***
	(6.83)	(6.78)	(6.76)	(5.84)	(6.04)	(6.11)
Observations	5452	5452	5452	5452	5452	5452

Robust standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) and (3) represent different regressions of each of the likelihood to volunteer on investment income using only the 2013 GSS GVP.

Table C.2: OLS and IV estimates of the Impact of Voluntary Volunteering on Wages - full sample analysis for different age groups using the 2013 GSS GVP only

	Dependent Variable- Wages							
	OLS				IV			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Volunteer	0.039	0.039	0.052	0.070*	0.125	0.177*	0.209**	0.259***
	(1.09)	(1.11)	(1.42)	(1.90)	(1.29)	(1.83)	(2.13)	(2.61)
Immigrant <10yrs	-0.518***	-0.560***	-0.562***	-0.567***	-0.497***	-0.523***	-0.520***	-0.517***
	(-5.44)	(-5.76)	(-5.70)	(-5.71)	(-5.13)	(-5.33)	(-5.22)	(-5.19)
Immigrant 10 to < 20yrs	-0.297***	-0.324***	-0.371***	-0.384***	-0.287***	-0.308***	-0.350***	-0.363***
	(-2.73)	(-2.86)	(-3.02)	(-2.97)	(-2.59)	(-2.68)	(-2.82)	(-2.77)
Immigrant >=20yrs	-0.032	-0.040	-0.055	-0.055	-0.024	-0.027	-0.041	-0.039
	(-0.49)	(-0.61)	(-0.84)	(-0.85)	(-0.37)	(-0.42)	(-0.63)	(-0.59)
Religious	-0.022	-0.019	-0.001	-0.018	-0.037	-0.044	-0.027	-0.049
	(-0.50)	(-0.45)	(-0.02)	(-0.45)	(-0.80)	(-0.96)	(-0.59)	(-1.12)
English & French	0.118**	0.106**	0.114**	0.109**	0.113**	0.098**	0.104**	0.099**
	(2.47)	(2.20)	(2.29)	(2.24)	(2.33)	(2.01)	(2.08)	(2.05)
French	-0.012	-0.001	-0.009	0.005	-0.009	0.005	-0.005	0.011
	(-0.20)	(-0.01)	(-0.14)	(0.09)	(-0.14)	(0.08)	(-0.07)	(0.17)
Male	0.317***	0.321***	0.333***	0.342***	0.314***	0.318***	0.331***	0.340***
	(8.67)	(8.68)	(9.05)	(9.54)	(8.55)	(8.54)	(8.93)	(9.42)
Single	-0.259***	-0.252***	-0.251***	-0.203***	-0.260***	-0.253***	-0.249***	-0.201***
	(-6.40)	(-6.17)	(-5.97)	(-4.68)	(-6.40)	(-6.14)	(-5.85)	(-4.60)
SWD	-0.086*	-0.082*	-0.084*	-0.079	-0.085*	-0.080*	-0.081*	-0.076
	(-1.76)	(-1.70)	(-1.73)	(-1.61)	(-1.74)	(-1.66)	(-1.67)	(-1.54)
Kids <18yrs	-0.076**	-0.065*	-0.070*	-0.072*	-0.083**	-0.076**	-0.083**	-0.088**
	(-2.12)	(-1.81)	(-1.92)	(-1.96)	(-2.25)	(-2.05)	(-2.19)	(-2.28)
Kids >=18yrs	-0.014	-0.003	-0.010	0.003	-0.016	-0.007	-0.013	-0.001
	(-0.26)	(-0.05)	(-0.18)	(0.05)	(-0.31)	(-0.13)	(-0.25)	(-0.02)

Table C.2 (continued)

	Dependent Variable- Wages							
	OLS				IV			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Diploma	0.250***	0.230***	0.255***	0.246***	0.245***	0.221***	0.244***	0.234***
	(6.39)	(5.81)	(6.31)	(6.15)	(6.19)	(5.51)	(6.05)	(5.91)
University	0.477***	0.465***	0.495***	0.503***	0.465***	0.444***	0.470***	0.473***
	(9.86)	(9.60)	(10.05)	(10.40)	(9.22)	(8.87)	(9.20)	(9.54)
Age	0.110***	0.097***	0.104***	0.093***	0.110***	0.097***	0.103***	0.092***
	(11.51)	(10.29)	(10.13)	(8.65)	(11.55)	(10.19)	(9.82)	(8.39)
Age2	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-10.28)	(-9.18)	(-9.22)	(-7.99)	(-10.31)	(-9.10)	(-8.95)	(-7.75)
Self-Employed	-0.880***	-0.894***	-0.905***	-0.905***	-0.887***	-0.904***	-0.916***	-0.917***
	(-9.98)	(-10.16)	(-10.13)	(-10.08)	(-10.11)	(-10.37)	(-10.32)	(-10.31)
Hours Worked	0.021***	0.021***	0.022***	0.021***	0.021***	0.022***	0.022***	0.022***
	(10.56)	(10.15)	(9.81)	(9.56)	(10.63)	(10.30)	(10.00)	(9.78)
Management	0.394***	0.377***	0.376***	0.388***	0.381***	0.355***	0.352***	0.358***
	(6.76)	(6.45)	(6.41)	(6.68)	(6.32)	(5.84)	(5.82)	(5.97)
Business	0.269***	0.252***	0.274***	0.319***	0.261***	0.239***	0.258***	0.298***
	(5.26)	(4.93)	(5.35)	(6.64)	(5.07)	(4.62)	(4.98)	(6.14)
Science	0.457***	0.438***	0.440***	0.445***	0.454***	0.432***	0.434***	0.437***
	(6.70)	(6.37)	(6.30)	(6.36)	(6.65)	(6.26)	(6.19)	(6.22)
Health	0.368***	0.349***	0.371***	0.389***	0.369***	0.350***	0.373***	0.388***
	(5.53)	(5.12)	(5.54)	(5.91)	(5.50)	(5.07)	(5.52)	(5.89)
Education	0.141**	0.116*	0.110*	0.114*	0.126**	0.092	0.083	0.080
	(2.36)	(1.92)	(1.79)	(1.84)	(2.02)	(1.45)	(1.29)	(1.23)
Arts	-0.243	-0.272*	-0.314**	-0.264	-0.262*	-0.304**	-0.350**	-0.308*
	(-1.63)	(-1.80)	(-2.05)	(-1.63)	(-1.74)	(-1.99)	(-2.25)	(-1.88)
Trade	0.192***	0.172***	0.183***	0.178***	0.200***	0.182***	0.195***	0.189***
	(3.04)	(2.70)	(2.85)	(2.82)	(3.12)	(2.82)	(2.98)	(2.92)
Resource	0.043	0.001	0.026	0.072	0.051	0.012	0.050	0.094
	(0.23)	(0.00)	(0.13)	(0.31)	(0.27)	(0.06)	(0.24)	(0.41)

Table C.2 (continued)

	Dependent Variable- Wages							
	OLS				IV			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Manufacturing	0.303***	0.278***	0.291***	0.319***	0.306***	0.282***	0.296***	0.324***
	(4.34)	(3.94)	(4.10)	(5.21)	(4.39)	(4.00)	(4.17)	(5.26)
Rural	-0.089**	-0.101**	-0.112***	-0.118***	-0.092**	-0.106**	-0.119***	-0.127***
	(-2.11)	(-2.38)	(-2.59)	(-2.71)	(-2.19)	(-2.49)	(-2.75)	(-2.90)
Town	-0.016	-0.012	-0.034	-0.019	-0.016	-0.015	-0.038	-0.024
	(-0.34)	(-0.27)	(-0.73)	(-0.39)	(-0.35)	(-0.32)	(-0.78)	(-0.49)
Newfoundland	-0.120**	-0.112*	-0.131**	-0.124*	-0.126**	-0.119*	-0.138**	-0.129*
	(-1.97)	(-1.79)	(-2.02)	(-1.90)	(-2.04)	(-1.88)	(-2.12)	(-1.96)
Prince Edward Island	-0.211***	-0.193***	-0.221***	-0.234***	-0.215***	-0.199***	-0.226***	-0.240***
	(-3.58)	(-3.38)	(-3.74)	(-3.83)	(-3.62)	(-3.49)	(-3.80)	(-3.91)
Nova Scotia	-0.059	-0.074	-0.115**	-0.166***	-0.067	-0.085*	-0.125**	-0.178***
	(-1.21)	(-1.48)	(-2.29)	(-3.37)	(-1.36)	(-1.69)	(-2.48)	(-3.55)
New Brunswick	-0.231***	-0.224***	-0.239***	-0.250***	-0.225***	-0.215***	-0.228***	-0.237***
	(-4.54)	(-4.46)	(-4.66)	(-4.88)	(-4.41)	(-4.28)	(-4.44)	(-4.58)
Quebec	-0.105*	-0.114**	-0.125**	-0.146***	-0.096*	-0.099*	-0.107*	-0.124**
	(-1.89)	(-2.01)	(-2.21)	(-2.63)	(-1.70)	(-1.72)	(-1.83)	(-2.19)
Manitoba	-0.031	-0.014	-0.047	-0.069	-0.041	-0.029	-0.063	-0.088*
	(-0.59)	(-0.27)	(-0.91)	(-1.32)	(-0.76)	(-0.55)	(-1.21)	(-1.66)
Saskatchewan	0.047	0.022	0.020	0.000	0.036	0.004	-0.002	-0.028
	(0.72)	(0.34)	(0.32)	(0.01)	(0.54)	(0.06)	(-0.03)	(-0.43)
Alberta	0.267***	0.289***	0.284***	0.286***	0.261***	0.281***	0.274***	0.274***
	(4.86)	(5.45)	(5.38)	(5.72)	(4.71)	(5.23)	(5.13)	(5.45)
British Columbia	-0.107*	-0.080	-0.101*	-0.119**	-0.113*	-0.090	-0.115**	-0.137**
	(-1.84)	(-1.41)	(-1.78)	(-2.15)	(-1.92)	(-1.58)	(-2.01)	(-2.44)
Abode <5yrs	0.026	0.019	0.009	-0.000	0.031	0.027	0.015	0.007
	(0.49)	(0.37)	(0.18)	(-0.01)	(0.60)	(0.51)	(0.30)	(0.13)
Abode 5 to <10yrs	0.023	0.013	0.023	0.029	0.023	0.013	0.021	0.031
	(0.55)	(0.31)	(0.54)	(0.70)	(0.55)	(0.31)	(0.49)	(0.72)

Table C.2 (continued)

	Dependent Variable- Wages							
	OLS				IV			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Constant	6.752***	7.065***	6.863***	7.117***	6.709***	7.009***	6.829***	7.083***
	(34.61)	(35.99)	(29.75)	(29.43)	(33.56)	(34.58)	(29.37)	(29.05)
Observations	5720	5640	5527	5420	5720	5640	5527	5420

Robust standard z statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) and (3) represent different regressions of the likelihood to volunteer on wages for each of the age group 15 years and above, 19 years and above, 22 years and above and 25years and above respectively using only the 2013 GSS GVP.

Table C.3: First Stage Regression of instruments on Volunteer Variables (Volunteer, Number of Hours, Number of Organisations) - full sample analysis using the 2013 GSS GVP only

	Dependent Variable -Volunteer			
	(1)	(2)	(3)	(4)
Immigrant <10yrs	-0.191***	-0.203***	-0.200***	-0.199***
	(-3.85)	(-4.07)	(-4.02)	(-3.96)
Immigrant 10 to < 20yrs	-0.069	-0.066	-0.071	-0.058
	(-1.37)	(-1.28)	(-1.35)	(-1.09)
Immigrant >=20yrs	-0.062**	-0.062**	-0.056*	-0.058**
	(-2.12)	(-2.15)	(-1.96)	(-1.98)
Religious	0.103***	0.103***	0.087***	0.090***
	(4.70)	(4.75)	(4.10)	(4.27)
English & French	0.034	0.039	0.045	0.036
	(1.12)	(1.32)	(1.52)	(1.22)
French	-0.052	-0.047	-0.030	-0.035
	(-1.27)	(-1.19)	(-0.74)	(-0.87)
Male	0.011	0.006	0.006	0.004
	(0.58)	(0.30)	(0.34)	(0.21)
Single	0.011	0.013	-0.001	-0.005
	(0.45)	(0.52)	(-0.05)	(-0.20)
SWD	-0.010	-0.011	-0.012	-0.014
	(-0.39)	(-0.41)	(-0.46)	(-0.51)
Kids <18yrs	0.062***	0.060***	0.064***	0.065***
	(3.18)	(3.13)	(3.36)	(3.32)
Kids >=18yrs	0.035	0.033	0.027	0.025
	(1.26)	(1.18)	(0.96)	(0.91)
Diploma	0.040*	0.043**	0.040*	0.036*
	(1.94)	(2.06)	(1.92)	(1.75)
University	0.074***	0.076***	0.080***	0.078***
	(3.09)	(3.16)	(3.30)	(3.28)
Age	-0.001	0.002	0.008	0.009
	(-0.13)	(0.31)	(1.45)	(1.42)
Age2	0.000	-0.000	-0.000	-0.000
	(0.03)	(-0.38)	(-1.43)	(-1.42)
Self-Employed	0.062*	0.059*	0.056*	0.050
	(1.95)	(1.87)	(1.75)	(1.53)
Hours Worked	-0.002***	-0.002***	-0.002**	-0.002**
	(-3.00)	(-2.83)	(-2.28)	(-2.31)
Management	0.132***	0.133***	0.134***	0.139***
	(3.76)	(3.80)	(3.79)	(3.97)
Business	0.076***	0.078***	0.083***	0.091***
	(2.71)	(2.80)	(2.95)	(3.25)
Science	0.029	0.032	0.029	0.033
	(0.79)	(0.87)	(0.79)	(0.88)
Health	-0.012	-0.009	-0.018	-0.009
	(-0.32)	(-0.25)	(-0.49)	(-0.23)

Table C.3 (continued)

	Dependent Variable -Volunteer			
	(1)	(2)	(3)	(4)
Education	0.118***	0.116***	0.116***	0.125***
	(3.77)	(3.61)	(3.70)	(3.94)
Arts	0.206***	0.206***	0.199***	0.221***
	(4.00)	(4.00)	(3.84)	(4.14)
Trade	-0.089***	-0.082**	-0.085**	-0.068*
	(-2.66)	(-2.43)	(-2.43)	(-1.94)
Resource	-0.064	-0.064	-0.129*	-0.098
	(-0.81)	(-0.79)	(-1.68)	(-1.18)
Manufacturing	-0.053	-0.047	-0.048	-0.039
	(-1.10)	(-0.98)	(-1.00)	(-0.82)
Rural	0.018	0.016	0.020	0.025
	(0.80)	(0.71)	(0.90)	(1.07)
Town	-0.006	0.002	0.004	0.009
	(-0.22)	(0.10)	(0.17)	(0.34)
Newfoundland	0.056	0.043	0.040	0.029
	(1.60)	(1.18)	(1.14)	(0.83)
Prince Edward Island	0.046	0.040	0.025	0.028
	(1.25)	(1.06)	(0.70)	(0.78)
Nova Scotia	0.088***	0.074**	0.062*	0.058*
	(2.69)	(2.26)	(1.88)	(1.80)
New Brunswick	-0.034	-0.033	-0.037	-0.040
	(-1.02)	(-1.00)	(-1.12)	(-1.21)
Quebec	-0.070*	-0.078**	-0.088**	-0.083**
	(-1.91)	(-2.19)	(-2.46)	(-2.32)
Manitoba	0.085***	0.076**	0.074**	0.071**
	(2.80)	(2.48)	(2.43)	(2.27)
Saskatchewan	0.102***	0.101***	0.111***	0.119***
	(3.15)	(3.07)	(3.43)	(3.65)
Alberta	0.036	0.027	0.035	0.034
	(1.16)	(0.88)	(1.16)	(1.11)
British Columbia	0.055*	0.057**	0.067**	0.071**
	(1.96)	(2.07)	(2.42)	(2.54)
Abode <5yrs	-0.041	-0.033	-0.018	-0.014
	(-1.56)	(-1.28)	(-0.70)	(-0.52)
Abode 5 to <10yrs	0.005	0.005	0.016	0.002
	(0.22)	(0.22)	(0.66)	(0.08)
Participation	0.271***	0.273***	0.271***	0.267***
	(17.04)	(17.36)	(17.24)	(16.50)
Informal Help	0.080***	0.079***	0.075***	0.086***
	(3.52)	(3.44)	(3.25)	(3.82)
Observations	5720	5640	5527	5420

z statistics in parentheses, * p<.10, ** p<.05, *** p<0.01. (1), (2) and (3) represent different regressions on the likelihood to volunteer for each of the age group 15 years and above, 19 years and above, 22 years and above and 25years and above respectively using only the 2013 GSS GVP .

Table C.7 (continued).

	Dependent Variable – Volunteer, #Hours, #Organisations		
Control Variable	(1)	(2)	(3)
Arts	0.146***	0.502***	0.136***
	(4.31)	(5.04)	(5.28)
Trade	-0.062***	-0.261***	-0.063***
	(-3.41)	(-3.79)	(-3.66)
Resource	-0.019	-0.057	-0.007
	(-0.51)	(-0.42)	(-0.21)
Manufacturing	-0.050**	-0.249**	-0.057**
	(-2.00)	(-2.53)	(-2.35)
Newfoundland	-0.000	0.044	0.008
	(-0.02)	(0.65)	(0.47)
Prince Edward Island	0.013	0.039	0.016
	(0.61)	(0.55)	(0.91)
Nova Scotia	0.062***	0.236***	0.055***
	(3.47)	(4.10)	(3.77)
New Brunswick	-0.011	0.012	-0.004
	(-0.60)	(0.19)	(-0.25)
Quebec	-0.019	-0.054	-0.029
	(-0.94)	(-0.73)	(-1.60)
Manitoba	0.081***	0.269***	0.079***
	(4.61)	(4.82)	(5.53)
Saskatchewan	0.097***	0.302***	0.098***
	(5.04)	(5.19)	(6.41)
Alberta	0.044**	0.169***	0.049***
	(2.58)	(3.01)	(3.44)
British Columbia	0.037**	0.174***	0.038***
	(2.41)	(3.40)	(2.94)
Abode <5yrs	-0.045***	-0.178***	-0.049***
	(-3.35)	(-3.83)	(-4.19)
Abode 5 to <10yrs	-0.007	-0.048	-0.012
	(-0.48)	(-1.01)	(-0.99)
Year 2013	-0.021	-0.092**	-0.020*
	(-1.62)	(-2.10)	(-1.81)
Year 2007	-0.105***	-0.354***	-0.100***
	(-4.62)	(-4.38)	(-4.93)
Participation	0.240***	1.011***	0.244***
	(20.79)	(22.76)	(21.72)
Informal Help	0.109***	0.463***	0.121***
	(7.40)	(8.23)	(8.58)
Observations	18715	18715	18715

Robust *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) and (3) represent first stage regressions of instruments on each of the volunteer variables (Volunteer, #Hours, #Organisations) using the pooled cross-section datasets.

Table C.4: OLS and IV estimates of the Impact of Voluntary Volunteering on Income - full sample analysis using the 2013 GSS GVP

	Dependent Variable - Income					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Volunteer	0.043*			0.212***		
	(1.72)			(2.70)		
#Hours		0.004			0.044***	
		(0.71)			(2.69)	
#Organisations			0.058**			0.179***
			(2.51)			(2.66)
Immigrant <10yrs	-0.514***	-0.519***	-0.509***	-0.479***	-0.479***	-0.479***
	(-7.34)	(-7.34)	(-7.31)	(-6.83)	(-6.79)	(-6.87)
Immigrant 10 to < 20yrs	-0.229***	-0.231***	-0.225***	-0.212***	-0.210***	-0.205***
	(-3.58)	(-3.62)	(-3.50)	(-3.09)	(-3.06)	(-3.04)
Immigrant =20yrs	-0.110**	-0.112**	-0.108**	-0.094*	-0.095**	-0.097**
	(-2.28)	(-2.32)	(-2.25)	(-1.93)	(-1.96)	(-2.00)
Religious	-0.039	-0.037	-0.043	-0.064**	-0.070**	-0.064**
	(-1.36)	(-1.25)	(-1.48)	(-2.09)	(-2.23)	(-2.11)
English & French	0.091**	0.092**	0.090**	0.084**	0.087**	0.085**
	(2.44)	(2.46)	(2.43)	(2.24)	(2.31)	(2.30)
French	-0.007	-0.008	-0.006	0.004	0.002	-0.000
	(-0.13)	(-0.16)	(-0.13)	(0.08)	(0.03)	(-0.01)
Male	0.260***	0.260***	0.260***	0.258***	0.251***	0.258***
	(9.09)	(9.12)	(9.08)	(8.94)	(8.63)	(8.97)
Single	-0.173***	-0.173***	-0.172***	-0.173***	-0.170***	-0.171***
	(-5.51)	(-5.49)	(-5.51)	(-5.48)	(-5.39)	(-5.47)
Sep_Wid_Div	-0.015	-0.016	-0.016	-0.015	-0.018	-0.016
	(-0.45)	(-0.46)	(-0.46)	(-0.43)	(-0.54)	(-0.48)
Kids <18yrs	0.081***	0.083***	0.079***	0.065**	0.071**	0.066**
	(2.98)	(3.07)	(2.90)	(2.23)	(2.47)	(2.27)
Kids =18yrs	0.004	0.005	0.004	-0.001	-0.002	-0.000
	(0.13)	(0.15)	(0.11)	(-0.02)	(-0.05)	(-0.01)

Table C.4 (continued)

	Dependent Variable - Income					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Diploma	0.195***	0.196***	0.193***	0.184***	0.184***	0.182***
	(6.87)	(6.91)	(6.79)	(6.43)	(6.46)	(6.38)
University	0.432***	0.435***	0.426***	0.404***	0.403***	0.399***
	(12.26)	(12.34)	(12.01)	(10.76)	(10.66)	(10.45)
Age	0.030***	0.030***	0.029***	0.029***	0.029***	0.028***
	(3.43)	(3.44)	(3.37)	(3.29)	(3.31)	(3.18)
Age2	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**
	(-2.18)	(-2.20)	(-2.13)	(-2.07)	(-2.11)	(-1.97)
Self-Employed	-0.259***	-0.259***	-0.262***	-0.268***	-0.274***	-0.273***
	(-4.91)	(-4.87)	(-4.97)	(-5.08)	(-5.13)	(-5.16)
Hours Worked	0.014***	0.014***	0.014***	0.015***	0.015***	0.015***
	(7.97)	(7.92)	(7.99)	(8.32)	(8.29)	(8.24)
Management	0.346***	0.352***	0.342***	0.316***	0.330***	0.318***
	(7.45)	(7.60)	(7.39)	(6.51)	(6.98)	(6.54)
Business	0.269***	0.272***	0.269***	0.251***	0.260***	0.259***
	(7.81)	(7.92)	(7.84)	(7.20)	(7.54)	(7.52)
Science	0.420***	0.422***	0.419***	0.410***	0.416***	0.413***
	(9.20)	(9.25)	(9.21)	(8.95)	(9.08)	(9.06)
Health	0.321***	0.321***	0.322***	0.320***	0.324***	0.326***
	(5.74)	(5.74)	(5.78)	(5.72)	(5.73)	(5.84)
Education	0.145***	0.149***	0.141***	0.112**	0.116**	0.116**
	(2.86)	(2.97)	(2.82)	(2.11)	(2.20)	(2.21)
Arts	-0.153	-0.147	-0.158	-0.193	-0.187	-0.188
	(-1.26)	(-1.23)	(-1.30)	(-1.51)	(-1.45)	(-1.49)
Trade	0.179***	0.178***	0.181***	0.191***	0.191***	0.191***
	(3.71)	(3.68)	(3.74)	(3.88)	(3.89)	(3.89)
Resource	0.219	0.218	0.219	0.224	0.226	0.223
	(1.49)	(1.49)	(1.49)	(1.49)	(1.52)	(1.50)

Table C.4 (continued)

	Dependent Variable - Income					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Manufacturing	0.244***	0.244***	0.245***	0.247***	0.252***	0.248***
	(4.68)	(4.66)	(4.71)	(4.81)	(4.88)	(4.85)
Rural	-0.104***	-0.104***	-0.107***	-0.112***	-0.115***	-0.117***
	(-3.14)	(-3.13)	(-3.23)	(-3.33)	(-3.44)	(-3.50)
Town	-0.010	-0.010	-0.012	-0.012	-0.012	-0.018
	(-0.28)	(-0.27)	(-0.35)	(-0.34)	(-0.35)	(-0.51)
Newfoundland	-0.116***	-0.116***	-0.116***	-0.116***	-0.118***	-0.118***
	(-2.63)	(-2.62)	(-2.64)	(-2.62)	(-2.62)	(-2.66)
Prince Edward Island	-0.136***	-0.135***	-0.136***	-0.138***	-0.133***	-0.137***
	(-3.45)	(-3.43)	(-3.46)	(-3.47)	(-3.36)	(-3.47)
Nova Scotia	-0.179***	-0.178***	-0.179***	-0.189***	-0.191***	-0.184***
	(-4.19)	(-4.16)	(-4.20)	(-4.38)	(-4.41)	(-4.32)
New Brunswick	-0.224***	-0.226***	-0.222***	-0.211***	-0.215***	-0.212***
	(-5.25)	(-5.28)	(-5.24)	(-4.95)	(-5.07)	(-5.02)
Quebec	-0.150***	-0.153***	-0.147***	-0.129***	-0.133***	-0.129***
	(-3.29)	(-3.35)	(-3.24)	(-2.76)	(-2.86)	(-2.78)
Manitoba	-0.075*	-0.073*	-0.078**	-0.090**	-0.085**	-0.091**
	(-1.94)	(-1.88)	(-2.01)	(-2.25)	(-2.13)	(-2.27)
Saskatchewan	0.043	0.046	0.039	0.022	0.028	0.019
	(1.05)	(1.13)	(0.95)	(0.53)	(0.70)	(0.44)
Alberta	0.177***	0.178***	0.174***	0.166***	0.165***	0.164***
	(4.58)	(4.60)	(4.51)	(4.25)	(4.20)	(4.16)
British Columbia	-0.119***	-0.118***	-0.121***	-0.132***	-0.131***	-0.130***
	(-2.94)	(-2.89)	(-2.98)	(-3.20)	(-3.17)	(-3.19)
Abode <5yrs	0.001	-0.000	0.002	0.008	0.006	0.009
	(0.02)	(-0.01)	(0.07)	(0.24)	(0.17)	(0.28)
Abode 5 to <10yrs	0.024	0.024	0.024	0.026	0.030	0.027
	(0.73)	(0.74)	(0.75)	(0.78)	(0.92)	(0.81)

Table C.4. OLS and IV estimates of the Impact of Voluntary Volunteering on Income – full sample analysis using the 2013 GSS GVP

	Dependent Variable - Income					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Newfoundland	-0.116***	-0.116***	-0.116***	-0.116***	-0.118***	-0.118***
_cons	8.904***	8.911***	8.910***	8.862***	8.877***	8.902***
	(45.38)	(45.41)	(45.33)	(44.58)	(44.41)	(44.77)
Observations	4999	4999	4999	4999	4999	4999

Robust *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) and (3) represent three regressions of each of the volunteer variables (Volunteer, #Hours, #Organisations) on Income.

Table C.5: First Stage Regressions of the likelihood to volunteer, Number of Hours and Number of Organisations using Wages or Income in the second stage regressions from the 2013 GSS GVP only

	Dependent Variable – Volunteer Variables (Volunteer, #Hours, #Organisations)					
Control Variable	(1)	(2)	(3)	(4)	(5)	(6)
Immigrant <10yrs	-0.199***	-0.779***	-0.195***	-0.175***	-0.682***	-0.171***
	(-3.96)	(-4.36)	(-4.12)	(-3.74)	(-3.99)	(-3.87)
Immigrant 10 to < 20yrs	-0.058	-0.216	-0.066	-0.052	-0.190	-0.059
	(-1.09)	(-1.15)	(-1.43)	(-0.98)	(-1.02)	(-1.28)
Immigrant =20yrs	-0.058**	-0.179*	-0.048*	-0.066**	-0.229**	-0.054**
	(-1.98)	(-1.83)	(-1.88)	(-2.36)	(-2.41)	(-2.20)
Religious	0.090***	0.347***	0.072***	0.071***	0.292***	0.057***
	(4.27)	(5.31)	(4.28)	(3.37)	(4.45)	(3.39)
English & French	0.036	0.106	0.028	0.024	0.053	0.017
	(1.22)	(1.17)	(1.19)	(0.80)	(0.56)	(0.67)
French	-0.035	-0.156	-0.039	-0.071*	-0.309**	-0.074**
	(-0.87)	(-1.15)	(-1.12)	(-1.73)	(-2.20)	(-2.04)
Male	0.004	0.088	0.006	-0.003	0.071	-0.000
	(0.21)	(1.41)	(0.36)	(-0.14)	(1.05)	(-0.02)
Single	-0.005	-0.015	-0.004	0.002	-0.018	-0.000
	(-0.20)	(-0.16)	(-0.18)	(0.08)	(-0.19)	(-0.02)
Sep_Wid_Div	-0.014	0.004	-0.007	-0.004	0.023	-0.001
	(-0.51)	(0.04)	(-0.28)	(-0.15)	(0.23)	(-0.03)
Kids <18yrs	0.065***	0.203***	0.064***	0.068***	0.201***	0.064***
	(3.32)	(3.22)	(3.90)	(3.41)	(3.05)	(3.72)
Kids =18yrs	0.025	0.099	0.019	0.034	0.109	0.024
	(0.91)	(1.11)	(0.84)	(1.27)	(1.27)	(1.07)
Diploma	0.036*	0.156**	0.045**	0.040*	0.176**	0.051***
	(1.75)	(2.14)	(2.41)	(1.94)	(2.39)	(2.68)
University	0.078***	0.316***	0.092***	0.087***	0.345***	0.099***
	(3.28)	(4.07)	(4.59)	(3.61)	(4.35)	(4.83)
Age	0.009	0.027	0.009*	0.008	0.026	0.010*
	(1.42)	(1.32)	(1.80)	(1.30)	(1.13)	(1.73)

Table C.5 (continued)

	Dependent Variable – Volunteer Variables (Volunteer, #Hours, #Organisations)					
Control Variable	(1)	(2)	(3)	(4)	(5)	(6)
Age2	-0.000	-0.000	-0.000*	-0.000	-0.000	-0.000*
	(-1.42)	(-1.22)	(-1.78)	(-1.29)	(-1.05)	(-1.73)
Self-Employed	0.050	0.221**	0.053**	0.037	0.189**	0.046**
	(1.53)	(2.23)	(2.08)	(1.31)	(2.14)	(2.00)
Hours Worked	-0.002**	-0.006**	-0.001*	-0.002**	-0.007***	-0.001**
	(-2.31)	(-2.26)	(-1.91)	(-2.46)	(-2.66)	(-2.12)
Management	0.139***	0.405***	0.134***	0.159***	0.483***	0.155***
	(3.97)	(3.62)	(4.48)	(4.47)	(4.20)	(5.06)
Business	0.091***	0.294***	0.077***	0.090***	0.289***	0.075***
	(3.25)	(2.93)	(3.00)	(3.08)	(2.77)	(2.81)
Science	0.033	0.089	0.034	0.053	0.155	0.049
	(0.88)	(0.70)	(1.01)	(1.43)	(1.21)	(1.47)
Health	-0.009	-0.063	-0.016	-0.003	-0.048	-0.015
	(-0.23)	(-0.48)	(-0.49)	(-0.08)	(-0.35)	(-0.44)
Education	0.125***	0.398***	0.102***	0.140***	0.448***	0.114***
	(3.94)	(3.77)	(3.79)	(4.34)	(4.22)	(4.24)
Arts	0.221***	0.700***	0.183***	0.219***	0.730***	0.188***
	(4.14)	(4.57)	(4.60)	(3.56)	(3.81)	(4.20)
Trade	-0.068*	-0.303**	-0.073**	-0.077**	-0.333**	-0.082**
	(-1.94)	(-2.34)	(-2.20)	(-2.18)	(-2.52)	(-2.45)
Resource	-0.098	-0.363	-0.094	-0.018	-0.058	-0.005
	(-1.18)	(-1.13)	(-1.14)	(-0.20)	(-0.16)	(-0.05)
Manufacturing	-0.039	-0.243	-0.050	-0.028	-0.209	-0.041
	(-0.82)	(-1.37)	(-1.14)	(-0.60)	(-1.18)	(-0.91)
Rural	0.025	0.127*	0.035*	0.021	0.109	0.031
	(1.07)	(1.73)	(1.84)	(0.92)	(1.48)	(1.62)
Town	0.009	0.047	0.026	-0.009	-0.022	0.011
	(0.34)	(0.54)	(1.12)	(-0.34)	(-0.23)	(0.45)
Newfoundland	0.029	0.116	0.035	0.011	0.058	0.014
	(0.83)	(1.02)	(1.17)	(0.29)	(0.49)	(0.47)

Table C.5 (continued)

	Dependent Variable – Volunteer Variables (Volunteer, #Hours, #Organisations)					
Control Variable	(1)	(2)	(3)	(4)	(5)	(6)
Prince Edward Island	0.028	0.057	0.022	0.007	-0.012	0.008
	(0.78)	(0.49)	(0.74)	(0.18)	(-0.10)	(0.26)
Nova Scotia	0.058*	0.221**	0.039	0.051	0.208*	0.034
	(1.80)	(2.12)	(1.52)	(1.54)	(1.93)	(1.29)
New Brunswick	-0.040	-0.086	-0.030	-0.043	-0.099	-0.032
	(-1.21)	(-0.76)	(-1.05)	(-1.27)	(-0.83)	(-1.05)
Quebec	-0.083**	-0.286**	-0.081***	-0.096**	-0.327***	-0.094***
	(-2.32)	(-2.43)	(-2.64)	(-2.58)	(-2.63)	(-2.94)
Manitoba	0.071**	0.198**	0.064**	0.062**	0.171*	0.057**
	(2.27)	(1.98)	(2.53)	(2.03)	(1.71)	(2.27)
Saskatchewan	0.119***	0.344***	0.113***	0.098***	0.262**	0.090***
	(3.65)	(3.39)	(4.10)	(2.90)	(2.47)	(3.12)
Alberta	0.034	0.125	0.036	0.031	0.130	0.035
	(1.11)	(1.27)	(1.36)	(1.01)	(1.30)	(1.31)
British Columbia	0.071**	0.249***	0.060***	0.053*	0.185**	0.046*
	(2.54)	(2.83)	(2.69)	(1.87)	(2.03)	(1.96)
Abode <5yrs	-0.014	-0.050	-0.020	-0.021	-0.070	-0.027
	(-0.52)	(-0.56)	(-0.87)	(-0.81)	(-0.77)	(-1.18)
Abode 5 to <10yrs	0.002	-0.035	0.001	0.002	-0.043	0.000
	(0.08)	(-0.46)	(0.04)	(0.07)	(-0.53)	(0.01)
MISS_VAR2	-0.019	-0.133	-0.019	-0.016	-0.170	-0.030
	(-0.41)	(-0.85)	(-0.46)	(-0.33)	(-1.05)	(-0.69)
Participation	0.267***	1.084***	0.268***	0.269***	1.093***	0.271***
	(16.50)	(17.22)	(16.62)	(16.74)	(17.48)	(16.88)
Informal Help	0.086***	0.321***	0.094***	0.089***	0.328***	0.099***
	(3.82)	(3.90)	(4.56)	(3.85)	(3.80)	(4.62)
Observartions	5420	5420	5420	4999	4999	4999

Robust *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) and (3) represent first stage regressions of instruments on each of the volunteer variables (Volunteer, #Hours, #Organisations) when the second stage dependant variable is Wages and (3), (4) and (5) for the same volunteer variables when the second stage dependent variable is Income.

Table C.6: OLS and IV estimates of the Impact of Voluntary Volunteering on Income - using the pooled cross section datasets of 2004, 2007 CSGVP and the 2013 GSS GVP

	Dependent Variable – Income					
	OLS			IV		
Control Variable	(1)	(2)	(3)	(4)	(5)	(6)
Volunteer	0.062***			0.244***		
	(4.26)			(4.21)		
#Hours		0.009***			0.049***	
		(2.76)			(4.06)	
#Organisations			0.058***			0.209***
			(4.44)			(4.07)
Immigrant <10yrs	-0.366***	-0.369***	-0.364***	-0.332***	-0.335***	-0.331***
	(-8.35)	(-8.41)	(-8.33)	(-7.43)	(-7.50)	(-7.39)
Immigrant 10 to < 20yrs	-0.168***	-0.170***	-0.165***	-0.152***	-0.150***	-0.142***
	(-4.51)	(-4.54)	(-4.42)	(-3.90)	(-3.85)	(-3.60)
Immigrant >=20yrs	-0.017	-0.018	-0.016	-0.008	-0.007	-0.005
	(-0.60)	(-0.63)	(-0.57)	(-0.27)	(-0.25)	(-0.18)
Religious	-0.075***	-0.074***	-0.077***	-0.105***	-0.110***	-0.108***
	(-4.54)	(-4.39)	(-4.62)	(-5.51)	(-5.55)	(-5.53)
English	0.063**	0.065**	0.063**	0.044	0.045	0.046
	(2.27)	(2.34)	(2.26)	(1.55)	(1.61)	(1.62)
Male	0.336***	0.336***	0.337***	0.334***	0.330***	0.337***
	(21.08)	(20.98)	(21.11)	(20.94)	(20.55)	(21.11)
Single	-0.114***	-0.116***	-0.115***	-0.108***	-0.111***	-0.110***
	(-5.37)	(-5.42)	(-5.39)	(-5.05)	(-5.24)	(-5.19)
SWD	0.023	0.022	0.023	0.027	0.024	0.026
	(1.29)	(1.24)	(1.27)	(1.49)	(1.31)	(1.41)
Kids <18yrs	0.021	0.024	0.020	0.002	0.007	0.001
	(1.33)	(1.51)	(1.28)	(0.09)	(0.44)	(0.07)
Kids >=18yrs	-0.014	-0.014	-0.014	-0.015	-0.016	-0.015
	(-0.67)	(-0.68)	(-0.67)	(-0.71)	(-0.76)	(-0.70)
Diploma	0.164***	0.166***	0.164***	0.149***	0.152***	0.148***
	(9.45)	(9.55)	(9.40)	(8.40)	(8.66)	(8.33)

Table C.6 (continued)

	Dependent Variable – Income					
		OLS			IV	
Control Variable	(1)	(2)	(3)	(4)	(5)	(6)
University	0.445***	0.448***	0.442***	0.416***	0.420***	0.409***
	(21.20)	(21.32)	(21.04)	(18.69)	(19.01)	(17.84)
Age	0.037***	0.038***	0.037***	0.034***	0.035***	0.033***
	(7.23)	(7.30)	(7.15)	(6.40)	(6.56)	(6.20)
Age2	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(-5.65)	(-5.73)	(-5.59)	(-4.89)	(-5.09)	(-4.74)
Self-Employed	-0.217***	-0.214***	-0.218***	-0.244***	-0.243***	-0.245***
	(-7.81)	(-7.70)	(-7.84)	(-8.52)	(-8.46)	(-8.51)
Hours Worked	0.016***	0.016***	0.016***	0.016***	0.016***	0.016***
	(17.12)	(17.04)	(17.11)	(17.73)	(17.61)	(17.59)
Management	0.387***	0.391***	0.386***	0.360***	0.369***	0.359***
	(14.25)	(14.39)	(14.21)	(12.71)	(13.33)	(12.62)
Business	0.272***	0.274***	0.272***	0.258***	0.264***	0.261***
	(12.54)	(12.63)	(12.56)	(11.76)	(12.11)	(11.94)
Science	0.377***	0.378***	0.378***	0.371***	0.374***	0.373***
	(12.96)	(12.99)	(12.97)	(12.76)	(12.87)	(12.79)
Health	0.336***	0.337***	0.337***	0.334***	0.336***	0.339***
	(9.40)	(9.39)	(9.43)	(9.39)	(9.39)	(9.53)
Education	0.191***	0.195***	0.190***	0.157***	0.160***	0.156***
	(6.93)	(7.06)	(6.86)	(5.20)	(5.29)	(5.13)
Arts	0.077*	0.081*	0.076*	0.046	0.053	0.047
	(1.74)	(1.84)	(1.72)	(1.00)	(1.17)	(1.01)
Trade	0.168***	0.166***	0.167***	0.180***	0.178***	0.177***
	(6.95)	(6.89)	(6.94)	(7.27)	(7.24)	(7.22)
Resource	-0.009	-0.010	-0.010	-0.004	-0.004	-0.007
	(-0.15)	(-0.16)	(-0.16)	(-0.06)	(-0.06)	(-0.11)
Manufacturing	0.199***	0.198***	0.199***	0.208***	0.208***	0.206***
	(6.28)	(6.25)	(6.28)	(6.50)	(6.51)	(6.49)

Table C.6 (continued)

	Dependent Variable – Income					
	OLS				IV	
Control Variable	(1)	(2)	(3)	(4)	(5)	(6)
Newfoundland	-0.221***	-0.222***	-0.222***	-0.220***	-0.224***	-0.223***
	(-9.08)	(-9.13)	(-9.14)	(-8.94)	(-9.15)	(-9.12)
Prince Edward Island	-0.233***	-0.232***	-0.233***	-0.236***	-0.233***	-0.236***
	(-9.89)	(-9.84)	(-9.91)	(-9.90)	(-9.84)	(-9.97)
Nova Scotia	-0.235***	-0.234***	-0.236***	-0.247***	-0.248***	-0.247***
	(-10.53)	(-10.47)	(-10.54)	(-10.82)	(-10.83)	(-10.84)
Nova Scotia	-0.235***	-0.234***	-0.236***	-0.247***	-0.248***	-0.247***
	(-10.53)	(-10.47)	(-10.54)	(-10.82)	(-10.83)	(-10.84)
New Brunswick	-0.246***	-0.247***	-0.247***	-0.244***	-0.248***	-0.246***
	(-9.73)	(-9.79)	(-9.75)	(-9.54)	(-9.75)	(-9.63)
Quebec	-0.067**	-0.068**	-0.066**	-0.064**	-0.067**	-0.061**
	(-2.23)	(-2.25)	(-2.19)	(-2.12)	(-2.21)	(-2.00)
Manitoba	-0.098***	-0.096***	-0.100***	-0.115***	-0.112***	-0.118***
	(-4.17)	(-4.07)	(-4.22)	(-4.67)	(-4.55)	(-4.74)
Saskatchewan	-0.101***	-0.099***	-0.104***	-0.122***	-0.119***	-0.130***
	(-4.04)	(-3.93)	(-4.15)	(-4.64)	(-4.54)	(-4.83)
Alberta	0.009	0.010	0.007	-0.002	-0.003	-0.007
	(0.37)	(0.41)	(0.31)	(-0.09)	(-0.12)	(-0.27)
British Columbia	-0.056**	-0.055**	-0.056**	-0.064***	-0.067***	-0.065***
	(-2.34)	(-2.33)	(-2.36)	(-2.63)	(-2.74)	(-2.68)
Abode <5yrs	0.000	-0.001	0.001	0.010	0.009	0.012
	(0.02)	(-0.03)	(0.07)	(0.53)	(0.51)	(0.65)
Abode 5 to <10yrs	0.039**	0.039**	0.040**	0.041**	0.042**	0.043**
	(2.09)	(2.10)	(2.12)	(2.14)	(2.24)	(2.24)
Year 2013	0.176***	0.175***	0.176***	0.188***	0.189***	0.189***
	(10.32)	(10.25)	(10.35)	(10.81)	(10.82)	(10.82)
Year 2007	-0.064**	-0.065**	-0.063**	-0.061*	-0.063**	-0.058*
	(-2.01)	(-2.03)	(-1.98)	(-1.92)	(-2.00)	(-1.83)

Table C.6 (continued)

	Dependent Variable – Income					
		OLS			IV	
Control Variable	(1)	(2)	(3)	(4)	(5)	(6)
Constant	8.268***	8.269***	8.279***	8.284***	8.298***	8.324***
	(70.28)	(70.18)	(70.31)	(69.86)	(69.56)	(69.22)
Observations	18715	18715	18715	18715	18715	18715

Robust *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) and (3) represent three regressions of each of the volunteer variables (Volunteer, #Hours, #Organisations) on wages.

Table C.7: First Stage Regression of instruments on Volunteer Variables (Volunteer, Number of Hours, Number of Organisations) using 2004, 2007 CSGVPs and 2013 GSS GVP

	Dependent Variable – (Volunteer, #Hours, #Organisations)		
Control Variable	(1)	(2)	(3)
Immigrant <10yrs	-0.141***	-0.541***	-0.139***
	(-4.90)	(-4.94)	(-4.96)
Immigrant 10 to < 20yrs	-0.053*	-0.204*	-0.068***
	(-1.77)	(-1.95)	(-2.66)
Immigrant >=20yrs	-0.042**	-0.156**	-0.042**
	(-2.09)	(-2.25)	(-2.39)
Religious	0.120***	0.482***	0.109***
	(10.15)	(12.69)	(11.49)
English	0.079***	0.315***	0.076***
	(4.25)	(4.67)	(4.54)
Male	0.002	0.060	-0.003
	(0.20)	(1.53)	(-0.31)
Single	-0.033**	-0.112**	-0.031**
	(-2.22)	(-2.06)	(-2.27)
SWD	-0.022	-0.056	-0.019
	(-1.42)	(-1.04)	(-1.39)
Kids <18yrs	0.100***	0.330***	0.094***
	(8.86)	(8.50)	(9.64)
Kids >=18yrs	0.004	0.013	-0.000
	(0.24)	(0.24)	(-0.02)
Diploma	0.060***	0.239***	0.069***
	(4.87)	(5.23)	(6.05)
University	0.109***	0.405***	0.123***
	(7.36)	(7.80)	(9.46)
Age	0.018***	0.062***	0.019***
	(4.96)	(4.70)	(5.56)
Age2	-0.000***	-0.001***	-0.000***
	(-4.81)	(-4.39)	(-5.33)
Self-Employed	0.136***	0.469***	0.116***
	(8.18)	(9.47)	(9.22)
Hours Worked	-0.001***	-0.004***	-0.001**
	(-3.03)	(-3.00)	(-2.25)
Management	0.131***	0.435***	0.130***
	(6.73)	(6.87)	(7.90)
Business	0.064***	0.216***	0.061***
	(4.08)	(3.81)	(4.30)
Science	0.026	0.083	0.022
	(1.25)	(1.12)	(1.21)
Health	0.003	0.011	-0.003
	(0.16)	(0.15)	(-0.16)
Education	0.156***	0.547***	0.140***
	(8.29)	(9.02)	(9.19)

Table C.8: DD analysis of Ontario Policy on Income for the cohorts 25 - 28 years and 27-28 years

	Dependent Variable - Income			
	without migration Condition		with migration condition	
Control Variable	(1)	(2)	(3)	(4)
Immigrant	-0.211	-0.436**	-0.080	-0.284
	(-1.56)	(-3.07)	(-0.79)	(-1.13)
Religious	0.085	0.236**	0.091	0.170***
	(1.54)	(2.50)	(1.54)	(4.05)
English	0.029	0.014	-0.039	-0.129
	(0.32)	(0.11)	(-0.33)	(-0.89)
Male	0.145**	0.025	0.200	0.072
	(3.21)	(0.40)	(1.45)	(0.53)
Single/SWD	-0.160***	-0.126	-0.270***	-0.302***
	(-3.60)	(-1.65)	(-6.98)	(-3.54)
Kids <18yrs	0.040	0.016	0.091*	-0.066
	(1.20)	(0.29)	(2.06)	(-0.84)
Diploma	0.084	0.154*	0.125	0.032
	(1.56)	(2.24)	(1.12)	(0.23)
University	0.129*	0.257***	0.184	0.249*
	(2.00)	(5.65)	(1.17)	(2.09)
Age	0.154	-0.279	-0.145	-1.515
	(0.25)	(-0.17)	(-0.24)	(-0.63)
Age2	-0.002	0.005	0.003	0.026
	(-0.20)	(0.17)	(0.32)	(0.61)
Self-Employed	-0.413***	-0.868***	-0.256***	-0.845**
	(-3.39)	(-3.47)	(-4.70)	(-2.63)
Hours Worked	0.017***	0.020***	0.015***	0.017***
	(16.04)	(4.88)	(3.94)	(4.43)
White Collar	0.179***	0.191	0.134***	0.163
	(6.10)	(1.82)	(4.16)	(1.61)
Abode <5yrs	-0.061	0.037		
	(-0.68)	(0.28)		
	(2.33)	(2.98)	(1.44)	(1.30)
Age Group	-0.067	-0.218	0.022	-0.216
	(-0.59)	(-1.74)	(0.11)	(-0.98)
ON	0.001	0.001	0.009	0.017
	(0.02)	(0.01)	(0.07)	(0.10)
Age Group *ON	-0.031	0.093	0.070	0.340**
	(-0.69)	(1.14)	(0.90)	(2.90)
Constant	7.124	13.724	11.268	31.792
	(0.78)	(0.59)	(1.24)	(0.95)
Observations	651	330	327	170

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (3) represent two separate regressions for 25 to 28years sample and (1) and (4) represent regressions for the 27 to 28 years cohorts.

Table C.9: DDD analysis of Ontario Policy on Income for the cohorts 25 - 28 years and 27-28 years

	Dependent Variable - Income			
	without migration Condition		with migration condition	
Control Variable	(1)	(2)	(3)	(4)
Immigrant	-0.026	0.076	-0.093	-0.118
	(-0.28)	(0.84)	(-0.50)	(-0.59)
Religious	-0.081**	-0.109	-0.074*	-0.124**
	(-3.28)	(-1.32)	(-2.24)	(-2.46)
English	0.082*	0.107*	0.045	0.076
	(2.07)	(2.16)	(0.88)	(1.39)
Male	0.313***	0.263**	0.361***	0.322***
	(14.57)	(2.81)	(6.86)	(5.34)
Single/SWD	-0.184***	-0.160***	-0.218***	-0.170***
	(-6.87)	(-4.89)	(-11.59)	(-5.24)
Kids <18yrs	-0.042	0.018	0.009	0.049
	(-1.72)	(0.69)	(0.14)	(0.76)
Diploma	0.157**	0.081	0.129*	0.125
	(2.87)	(0.65)	(2.27)	(1.09)
University	0.305***	0.325***	0.270***	0.310***
	(7.92)	(6.60)	(8.96)	(4.18)
Age	0.326	1.739**	0.110	0.485
	(1.50)	(2.66)	(0.30)	(0.62)
Age2	-0.005	-0.030**	-0.001	-0.007
	(-1.38)	(-2.69)	(-0.22)	(-0.58)
Self-Employed	-0.164**	-0.165	-0.052	-0.034
	(-3.20)	(-1.64)	(-0.98)	(-0.69)
Hours Worked	0.014***	0.019***	0.013***	0.019***
	(12.03)	(4.76)	(7.03)	(7.87)
White Collar	0.181***	0.192**	0.197***	0.141***
	(7.01)	(2.98)	(9.35)	(5.82)
Abode <5yrs	0.010	0.038		
	(0.39)	(1.14)		
Abode 5 to <10yrs	0.080*	0.111**	-0.010	0.199
	(1.98)	(2.34)	(-0.14)	(1.68)
Age Group	0.065	-0.011	0.012	0.234
	(1.51)	(-0.15)	(0.18)	(1.19)
ON	0.043	-0.050	0.028	0.014
	(1.17)	(-1.05)	(0.69)	(0.31)
POST	0.435***	0.354***	0.440***	0.245
	(7.98)	(3.61)	(3.57)	(1.41)
Age Group *ON	0.015	0.020	-0.003	-0.275***
	(0.63)	(0.26)	(-0.12)	(-5.11)
Age Group*POST	-0.045	-0.097	0.007	-0.209
	(-1.27)	(-1.47)	(0.07)	(-1.43)

Table C.9 (continued)

	Dependent Variable - Income			
Control Variable	(1)	(2)	(3)	(4)
POST*ON	-0.057	0.033	0.008	0.014
	(-1.31)	(0.34)	(0.09)	(0.15)
Age Group *POST* ON	-0.078	0.027	-0.041	0.431**
	(-1.62)	(0.27)	(-0.39)	(2.62)
Constant	3.750	-15.811	7.079	1.070
	(1.13)	(-1.68)	(1.32)	(0.09)
Observations	1931	973	931	723

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (3) represent two separate regressions for 25 to 28years sample and (1) and (4) represent regressions for the 27 to 28 years cohorts.

Table C.10: DD analysis of Ontario Policy on Income for the sample of voluntary volunteers

	Dependent Variable - Income			
	without migration Condition		with migration condition	
Control Variable	(1)	(2)	(3)	(4)
Immigrant	-0.216***	-0.380***	-0.209	-0.389
	(-5.08)	(-3.83)	(-1.54)	(-1.39)
Religious	0.054	0.292***	0.205	0.246**
	(0.91)	(4.43)	(1.48)	(3.09)
English	-0.051	-0.056	-0.057	-0.109
	(-0.52)	(-0.70)	(-0.39)	(-0.73)
Male	0.255***	0.166	0.289**	0.132
	(5.05)	(1.77)	(2.53)	(0.95)
Single/SWD	0.008	-0.031	-0.081	-0.086
	(0.15)	(-0.38)	(-0.94)	(-0.83)
Kids <18yrs	0.067	-0.167	0.027	-0.145
	(0.83)	(-1.34)	(0.32)	(-1.48)
Diploma	0.057	0.007	-0.062	-0.032
	(0.55)	(0.06)	(-0.38)	(-0.24)
University	0.161*	0.181	0.053	0.093
	(2.00)	(1.56)	(0.43)	(0.44)
Age	0.225	-5.381*	0.268	-4.754
	(0.39)	(-2.10)	(0.31)	(-0.90)
Age2	-0.003	0.094*	-0.004	0.084
	(-0.33)	(2.10)	(-0.30)	(0.91)
Self-Employed	-0.463*	-0.860*	-0.157	-1.166
	(-1.96)	(-2.06)	(-0.72)	(-1.48)
Hours Worked	0.022***	0.017***	0.013	0.017*
	(4.65)	(4.70)	(1.33)	(1.90)
White Collar	0.161**	0.243**	0.052	0.200**
	(2.39)	(3.03)	(1.05)	(3.26)
Abode <5yrs	0.019	-0.019		
	(0.20)	(-0.11)		
Abode 5 to <10yrs	-0.104	-0.028	-0.028	0.160
	(-0.83)	(-0.37)	(-0.24)	(0.85)
Age Group	-0.020	-0.277	-0.149	-0.230
	(-0.14)	(-1.33)	(-0.59)	(-0.74)
ON	0.010	-0.002	-0.063	0.014
	(0.08)	(-0.01)	(-0.27)	(0.05)
Age Group *ON	-0.101	-0.011	0.135	0.447*
	(-1.49)	(-0.10)	(0.88)	(1.94)
Constant	5.816	7.005**	6.052	6.782
	(0.69)	(2.37)	(0.48)	(1.03)
Observation	651	330	327	170

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (3) represent two separate regressions for 25 to 28years sample and (1) and (4) represent regressions for the 27 to 28 years cohorts.

Table C.11: DDD analysis of Ontario Policy on Income for the sample of voluntary volunteers

	Dependent Variable - Income			
	without migration Condition		with migration condition	
Control Variable	(1)	(2)	(3)	(4)
Immigrant	-0.153	-0.122	-0.027	0.001
	(-1.86)	(-0.81)	(-0.23)	(0.00)
Religious	-0.072**	0.020	0.002	0.076
	(-2.37)	(0.56)	(0.02)	(0.72)
English	0.021	0.094	0.084	0.055
	(0.39)	(1.22)	(0.89)	(0.55)
Male	0.269***	0.288**	0.293***	0.268
	(6.54)	(2.55)	(4.25)	(1.70)
Single/SWD	-0.046	-0.052	-0.038	-0.045
	(-0.97)	(-0.92)	(-0.61)	(-0.74)
Kids <18yrs	-0.007	-0.102	-0.052	-0.096
	(-0.10)	(-1.14)	(-0.69)	(-1.45)
Diploma	0.143*	0.147*	0.032	0.036
	(2.03)	(1.93)	(0.33)	(0.53)
University	0.230***	0.309***	0.097	0.243
	(5.08)	(3.69)	(1.47)	(1.74)
Age	0.448	-1.939	0.596	0.632
	(1.08)	(-1.39)	(1.45)	(0.30)
Age2	-0.007	0.034	-0.010	-0.010
	(-1.00)	(1.44)	(-1.43)	(-0.28)
Self-Employed	-0.069	-0.220	0.007	-0.177
	(-1.37)	(-1.63)	(0.09)	(-0.76)
Hours Worked	0.020***	0.018***	0.015**	0.013
	(5.95)	(5.68)	(3.13)	(1.82)
White Collar	0.163***	0.217***	0.104	0.140*
	(3.89)	(5.73)	(1.80)	(2.10)
Abode <5yrs	0.004	-0.096		
	(0.11)	(-0.80)		
Abode 5 to <10yrs	-0.086	-0.101	-0.183***	0.016
	(-1.81)	(-1.18)	(-4.48)	(0.09)
AGE_GRP	0.048	-0.024	-0.015	0.017
	(0.88)	(-0.23)	(-0.11)	(0.17)
ON	0.105*	0.098	0.045	0.120
	(2.16)	(1.09)	(0.89)	(1.75)
POST	0.413***	0.295	0.436	0.378
	(6.53)	(1.25)	(1.84)	(1.10)
Age Group*ON	-0.004	0.105*	-0.027	0.149
	(-0.13)	(1.95)	(-0.51)	(1.42)
Age Group*POST	-0.042	-0.152	-0.103	-0.302
	(-0.46)	(-1.06)	(-0.72)	(-1.26)
POST*ON	-0.089	-0.191*	-0.146	-0.253
	(-1.56)	(-2.23)	(-0.85)	(-1.33)

Table C.11 (continued)

	Dependent Variable - Income			
Control Variable	(1)	(2)	(3)	(4)
Age Group*POST* ON	-0.120	0.010	0.150	0.460
	(-1.19)	(0.07)	(0.90)	(1.59)
Constant	1.982	36.475	0.305	-0.417
	(0.33)	(1.77)	(0.05)	(-0.01)
Observations	1152	597	556	285

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (3) represent two separate regressions for 25 to 28years sample and (1) and (4) represent regressions for the 27 to 28 years cohorts.

Table C.12: DD analyses on the impact of Ontario policy on the likelihood to voluntarily volunteer

	Dependent Variable- Volunteer			
	Without migration Condition		With migration condition	
Control Variable	(1)	(2)	(3)	(4)
Immigrant	-0.010	-0.145*	0.637***	1.320*
	(-0.04)	(-1.87)	(2.63)	(1.65)
Religious	0.322	0.597*	0.182	0.224
	(1.21)	(1.80)	(1.03)	(0.78)
English	0.435***	0.491***	0.331***	0.406***
	(5.19)	(2.90)	(3.81)	(4.65)
Male	-0.130	0.029	-0.589***	-0.447
	(-1.59)	(0.33)	(-3.07)	(-1.50)
Single/SWD	-0.019	0.004	-0.452***	-0.406
	(-0.31)	(0.03)	(-2.87)	(-1.53)
Kids <18yrs	-0.013	-0.095	-0.384*	-0.281*
	(-0.29)	(-0.53)	(-1.95)	(-1.71)
Diploma	0.484***	0.470	0.482***	0.317
	(3.21)	(1.27)	(5.61)	(0.99)
University	0.694***	0.451	0.604**	0.358
	(3.43)	(0.99)	(2.35)	(0.59)
Age	0.879	3.543	1.725***	9.726
	(1.52)	(0.76)	(2.72)	(1.48)
Age2	-0.017	-0.064	-0.035***	-0.176
	(-1.54)	(-0.80)	(-2.71)	(-1.60)
Self-Employed	0.051	-0.187	-0.488***	-1.489***
	(1.23)	(-1.15)	(-2.61)	(-4.03)
Hours Worked	-0.005	-0.011**	0.010	0.001
	(-1.60)	(-2.33)	(1.38)	(0.12)
White Collar	-0.048	0.128	-0.095	0.006
	(-0.35)	(0.42)	(-1.45)	(0.02)
Abode <5yrs	-0.131**	-0.314***		
	(-2.35)	(-2.69)		
Abode 5 to <10yrs	0.190***	0.148	-0.027	0.013
	(3.65)	(0.77)	(-0.12)	(0.04)
Age Group	-0.676**	-0.691***	-1.217***	-1.335**
	(-2.35)	(-2.62)	(-3.06)	(-2.41)
ONT	-0.079	0.247***	0.180	0.974***
	(-1.52)	(3.55)	(1.57)	(3.88)
Age Group *ON	0.011	-0.212	-0.236	-0.855*
	(0.08)	(-0.95)	(-0.81)	(-1.80)
Constant	-11.271	-9.119	-10.858***	-13.521
	(-1.54)	(-0.73)	(-2.76)	(-1.36)
Observation	651	330	327	170

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (2) represent two separate regressions analysis for the samples 25 to 28years and 27 to 28 years cohorts.

Table C.13: DDD analyses on the impact of Ontario policy on the likelihood to voluntarily volunteer

	Dependent Variable - Volunteer			
	without migration condition		with migration condition	
Control Variable	(1)	(2)	(3)	(4)
Immigrant	-0.101	-0.162	0.219	0.669
	(-0.32)	(-0.79)	(0.56)	(1.34)
Religious	0.381**	0.397	0.280*	0.265
	(2.00)	(1.46)	(1.77)	(0.99)
English	0.390***	0.571***	0.453***	0.587***
	(8.85)	(3.90)	(6.62)	(3.44)
Male	-0.112**	-0.118	-0.352**	-0.431**
	(-2.18)	(-1.10)	(-2.51)	(-2.31)
Single/SWD	-0.134***	-0.182**	-0.305***	-0.306***
	(-2.73)	(-2.47)	(-7.32)	(-2.88)
Kids <18yrs	0.029	0.036	-0.074	0.034
	(0.49)	(0.25)	(-1.60)	(0.14)
Diploma	0.395***	0.080	0.377**	-0.216
	(4.44)	(0.57)	(2.52)	(-1.24)
University	0.575***	0.230	0.582***	-0.002
	(5.22)	(1.15)	(12.81)	(-0.02)
Age	-0.058	3.288	0.235	5.971
	(-0.14)	(1.21)	(0.31)	(1.63)
Age2	0.001	-0.057	-0.006	-0.106*
	(0.07)	(-1.20)	(-0.42)	(-1.70)
Self-Employed	0.151	0.329**	0.108	0.209
	(0.90)	(2.48)	(0.74)	(1.15)
Hours Worked	-0.002	-0.003	0.004	0.001
	(-0.96)	(-1.25)	(0.90)	(0.19)
White Collar	0.064	0.086	0.111***	0.055
	(0.93)	(0.45)	(4.68)	(0.30)
Abode <5yrs	-0.019	-0.083		
	(-0.34)	(-0.79)		
Abode 5 to <10yrs	0.196***	0.201**	0.354	0.090
	(3.75)	(2.19)	(1.45)	(0.29)
AGE_GRP	-0.121	0.010	-0.426	-0.196
	(-0.90)	(0.07)	(-1.52)	(-0.60)
ON	-0.279***	-0.549***	-0.268**	-0.466***
	(-14.40)	(-4.46)	(-2.56)	(-5.63)
POST	-0.038	-0.197	0.184	0.390
	(-0.23)	(-0.60)	(1.34)	(0.69)
AGE_GRP *ON	-0.096*	0.022	-0.152*	-0.155*
	(-1.77)	(0.30)	(-1.71)	(-1.74)
AGE_GRP*POST	-0.201	-0.261**	-0.187	-0.505
	(-1.11)	(-2.15)	(-0.71)	(-1.48)

Table C.13 (continued)

	Dependent Variable - Income			
Control Variable	(1)	(2)	(3)	(4)
POST*ON	0.184***	0.809***	0.237*	1.285***
	(5.01)	(4.30)	(1.94)	(3.81)
AGE_GRP*POST*ON	0.205	-0.248	0.053	-0.788**
	(1.14)	(-1.13)	(0.18)	(-1.99)
Constant	0.632	-47.725	-2.621	-84.422
	(0.11)	(-1.23)	(-0.26)	(-1.56)
Observations	1931	973	931	457

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (3) represent two separate regressions for 25 to 28years sample and (1) and (4) represent regressions for the 27 to 28 years cohorts.

Table C.14: DD analysis of the analysis of British Columbia Policy on income for cohort aged 25-32 and 27-32

	Dependent Variable - Income			
	without migration Condition		with migration condition	
Control Variable	(1)	(2)	(3)	(4)
Immigrant	-0.304***	-0.347**	-0.238*	-0.206
	(-4.23)	(-2.82)	(-2.26)	(-1.51)
Religious	0.032	0.082	0.041	0.112
	(0.40)	(0.87)	(0.64)	(1.15)
English	0.063	0.114	0.015	0.093
	(0.99)	(1.47)	(0.22)	(1.05)
Male	0.167**	0.238**	0.110	0.156
	(2.87)	(2.97)	(1.51)	(1.82)
Single/SWD	-0.189***	-0.205***	-0.250***	-0.251***
	(-5.11)	(-6.85)	(-5.13)	(-4.81)
Kids <18yrs	0.023	-0.055	0.020	-0.056
	(0.54)	(-1.28)	(0.30)	(-0.78)
Diploma	0.116**	0.151**	0.082	0.108
	(2.95)	(2.53)	(1.53)	(1.24)
University	0.248***	0.294**	0.231***	0.278**
	(4.57)	(3.07)	(3.72)	(2.55)
Age	0.147*	0.307***	0.154	0.473***
	(1.98)	(6.52)	(1.28)	(4.58)
Age2	-0.002	-0.004***	-0.002	-0.007***
	(-1.51)	(-7.62)	(-1.13)	(-4.09)
Self-Employed	-0.313**	-0.316***	-0.269***	-0.254**
	(-2.96)	(-3.59)	(-3.39)	(-2.75)
Hours Worked	0.016***	0.017***	0.016***	0.016***
	(19.05)	(18.12)	(5.54)	(5.06)
White Collar	0.139***	0.174***	0.067**	0.083**
	(5.62)	(5.05)	(2.83)	(2.65)
Abode <5yrs	0.032	0.072		
	(0.73)	(1.34)		
	0.095***	0.102**	0.241**	0.202
AGE_GRP	(4.92)	(2.62)	(2.79)	(1.49)
	-0.004	-0.033	-0.099***	-0.165
BC	(-0.06)	(-0.25)	(-4.81)	(-1.29)
	0.064	-0.044	0.034	-0.143
AGE_GRP*BC	(0.69)	(-0.39)	(0.32)	(-1.03)
	-0.154***	-0.028	-0.077*	0.125**
Constant	6.782***	4.151***	7.048***	2.000
	(5.85)	(3.97)	(3.88)	(1.34)
Observations	1452	1101	809	610

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (3) represent two separate regressions for 25 to 32years sample and (1) and (4) represent regressions for the 27 to 32 years cohorts.

Table C.15: DDD analysis of the analysis of British Columbia Policy on income for cohort aged 25-32 and 27-32

Control Variable	Dependent Variable - Income			
	Without migration condition		With migration condition	
	(1)	(1)	(3)	(2)
Immigrant	-0.194***	-0.259*	-0.154**	-0.204
	(-3.87)	(-1.91)	(-2.31)	(-1.08)
Religious	-0.010	0.000	0.034	-0.013
	(-0.22)	(0.00)	(0.85)	(-0.23)
English	0.038	0.060	-0.064	0.074
	(0.69)	(1.12)	(-1.10)	(1.24)
Male	0.279***	0.275***	0.263***	0.227***
	(6.18)	(4.75)	(5.54)	(4.57)
Single/SWD	-0.159***	-0.120***	-0.225***	-0.148***
	(-3.96)	(-4.57)	(-5.33)	(-3.36)
Kids <18yrs	-0.039	-0.026	-0.031	0.023
	(-1.49)	(-0.97)	(-0.66)	(1.03)
Diploma	0.112***	0.193***	0.113**	0.163**
	(4.59)	(4.00)	(2.81)	(2.43)
University	0.308***	0.367***	0.305***	0.416***
	(17.95)	(4.98)	(6.63)	(5.15)
Age	0.147***	0.123***	0.128	0.078
	(4.16)	(3.49)	(1.71)	(1.04)
Age2	-0.002**	-0.002***	-0.002	-0.001
	(-2.90)	(-3.59)	(-1.36)	(-0.92)
Self-Employed	-0.254***	-0.194***	-0.261***	-0.205***
	(-3.91)	(-6.14)	(-5.38)	(-4.80)
Hours Worked	0.015***	0.017***	0.015***	0.017***
	(12.26)	(11.20)	(4.51)	(20.62)
White Collar	0.167***	0.163***	0.125***	0.111**
	(8.38)	(4.08)	(4.37)	(2.44)
Abode <5yrs	0.048	0.043		
	(1.34)	(1.83)		
Abode 5 to <10yrs	0.075**	0.100***	0.247***	0.212
	(3.20)	(3.87)	(7.65)	(1.70)
AGE_GRP	0.087**	0.032	0.052	-0.043
	(2.31)	(0.55)	(0.59)	(-0.39)
BC	0.081	0.196***	0.207***	0.071
	(1.59)	(7.93)	(4.16)	(1.53)
POST	0.314***	0.468**	0.349***	0.496**
	(4.25)	(3.15)	(6.43)	(3.08)
AGE_GRP*BC	0.064	-0.345***	0.092*	-0.473***
	(1.15)	(-10.75)	(1.95)	(-17.18)

Table C.15: (continued)

Control Variable	Dependent Variable - Income			
	Without migration condition		With migration condition	
	(1)	(1)	(3)	(2)
Age24_YEAR1_BC	-0.098*	-0.159**	-0.083	-0.192***
	(-1.89)	(-2.81)	(-1.08)	(-4.03)
YEAR1_BC	-0.058	-0.174	-0.152*	-0.095
	(-0.61)	(-1.79)	(-2.13)	(-1.29)
DDD24_BC	-0.239***	0.323***	-0.202**	0.592***
	(-3.41)	(5.53)	(-2.92)	(12.54)
Constant	6.481***	6.777***	6.919***	7.819***
	(12.11)	(11.51)	(6.08)	(6.87)
Observations	3386	3213	1766	1616

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (3) represent two separate regressions for 25 to 32years sample and (1) and (4) represent regressions for the 27 to 32 years cohorts.

Table C.16: DD analysis of BC Policy on income for the sample of voluntary volunteers

	Dependent Variable - Income			
	without migration		with migration	
Control Variable	(1)	(2)	(3)	(4)
Immigrant	-0.233**	-0.239**	-0.307*	-0.126
	(-3.01)	(-2.49)	(-1.91)	(-1.21)
Religious	0.029	0.121	0.036	0.129
	(0.28)	(1.27)	(0.33)	(1.11)
English	0.077	0.097	0.080	0.102
	(1.24)	(1.50)	(0.91)	(1.05)
Male	0.207***	0.223***	0.185**	0.166*
	(4.21)	(3.95)	(2.59)	(2.23)
Single/SWD	-0.071	-0.057	-0.126	-0.118***
	(-1.25)	(-1.69)	(-1.85)	(-4.62)
Kids <18yrs	0.060	0.102*	0.046	0.124
	(1.24)	(2.24)	(0.54)	(1.62)
Diploma	0.111**	0.126*	0.143	0.165
	(2.68)	(2.19)	(1.81)	(1.57)
University	0.286***	0.327***	0.320***	0.392**
	(5.92)	(3.68)	(3.79)	(2.79)
Age	0.169	0.129	0.074	0.054
	(1.38)	(0.93)	(0.58)	(0.34)
Age2	-0.002	-0.002	-0.001	-0.001
	(-1.19)	(-0.90)	(-0.38)	(-0.28)
Self-Employed	-0.214*	-0.182	-0.076	0.113
	(-1.90)	(-1.13)	(-0.68)	(0.55)
Hours Worked	0.017***	0.019***	0.013**	0.015**
	(4.16)	(4.69)	(2.38)	(3.09)
White Collar	0.148***	0.188***	0.054	0.121*
	(4.44)	(5.15)	(0.83)	(1.94)
Abode <5yrs	0.093	0.143**		
	(1.73)	(2.48)		
Abode 5 to <10yrs	0.065	0.054	0.219*	0.189**
	(1.06)	(0.89)	(1.88)	(2.50)
AGE_GRP	0.061	-0.064	0.042	-0.063
	(0.50)	(-0.36)	(0.84)	(-0.38)
BC	-0.026	-0.123	0.003	-0.175
	(-0.25)	(-1.00)	(0.02)	(-1.18)
AGE_GRP*BC	-0.222***	0.003	-0.277**	0.133
	(-4.53)	(0.07)	(-2.42)	(1.39)
Constant	6.149**	7.180**	8.054***	8.633**
	(2.87)	(2.76)	(4.03)	(2.93)
Observation	1402	1101	777	610

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (3) represent two separate regressions for 25 to 32years sample and (1) and (4) represent regressions for the 27 to 32 years cohorts.

Table C.17: DDD analysis of BC Policy on income for the sample of voluntary volunteers

	Dependent Variable - Income			
	without migration		with migration	
Control Variable	(1)	(2)	(3)	(4)
Immigrant	-0.196***	-0.158	-0.197*	-0.050
	(-4.24)	(0.45)	(-1.90)	(-1.63)
Religious	-0.032	0.007	0.017	-0.020
	(-0.55)	(0.11)	(0.27)	(-0.30)
English	0.038	0.055	-0.011	0.100
	(0.67)	(0.97)	(-0.17)	(1.30)
Male	0.320***	0.288***	0.303***	0.282***
	(7.71)	(5.53)	(5.70)	(4.00)
Single/SWD	-0.111*	-0.015	-0.156**	-0.026
	(-2.08)	(-0.45)	(-3.10)	(-1.01)
Kids <18yrs	-0.000	0.019	-0.002	0.060
	(-0.01)	(0.33)	(-0.03)	(1.09)
Diploma	0.121***	0.211***	0.162***	0.189**
	(5.60)	(4.29)	(3.81)	(3.05)
University	0.332***	0.414***	0.395***	0.395***
	(20.09)	(9.40)	(7.77)	(7.34)
Age	0.156*	0.055	0.064	0.128
	(1.89)	(0.44)	(0.55)	(0.87)
Age2	-0.002	-0.001	-0.001	-0.002
	(-1.72)	(-0.34)	(-0.36)	(-0.74)
Self-Employed	-0.190***	-0.245***	-0.159***	-0.235***
	(-5.91)	(-7.75)	(-3.69)	(-3.65)
Hours Worked	0.017***	0.021***	0.015***	0.018***
	(7.46)	(7.75)	(3.51)	(4.66)
White Collar	0.189***	0.224***	0.125**	0.227***
	(8.91)	(8.00)	(2.97)	(4.15)
Abode <5yrs	0.088**	0.037		
	(2.55)	(1.12)		
Abode 5 to <10yrs	0.055*	0.044	0.195	0.253***
	(2.24)	(1.80)	(1.59)	(3.36)
AGE_GRP	0.136	0.183***	0.109	0.241
	(1.48)	(0.82)	(0.92)	(1.99)
BC	0.207***	0.157***	0.457***	0.139***
	(3.80)	(8.16)	(6.07)	(5.00)
POST	0.396***	0.506***	0.443***	0.513*
	(7.99)	(3.93)	(6.68)	(1.98)
AGE_GRP*BC	-0.142***	-0.311***	-0.162*	-0.324***
	(-5.54)	(-7.48)	(-2.27)	(-7.07)
AGE_GRP*POST	-0.157***	-0.171**	-0.091	-0.209***
	(-3.96)	(-2.52)	(-0.66)	(-3.83)

Table C.17: (continued)

	Dependent Variable - Income			
	without migration		with migration	
Control Variable	(1)	(2)	(3)	(4)
POST*BC	-0.238***	-0.223*	-0.432***	-0.239*
	(-4.18)	(-2.18)	(-6.07)	(-2.19)
Age Group*POST* BC	-0.056	0.330*	-0.133	0.407
	(-1.66)	(1.78)	(-0.97)	(1.50)
Constant	6.164***	7.665***	-0.133	6.397**
	(4.27)	(3.63)	(-0.97)	(2.91)
Observations	2153	2046	1155	1064

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (3) represent two separate regressions for 25 to 32years sample and (1) and (4) represent regressions for the 27 to 32 years cohorts.

Table C.18: DD analyses on the impact of BC policy on the likelihood to voluntarily volunteer

	Dependent Variable			
	Without migration condition		With migration condition	
Control Variable	(1)	(2)	(3)	(4)
Immigrant	-0.358***	-0.278***	-0.358***	-0.278***
	(-5.58)	(-2.99)	(-5.58)	(-2.99)
Religious	0.445***	0.542**	0.445***	0.542**
	(3.18)	(2.47)	(3.18)	(2.47)
English	0.427***	0.405***	0.427***	0.405***
	(4.74)	(4.21)	(4.74)	(4.21)
Male	-0.139***	-0.189***	-0.139***	-0.189***
	(-3.23)	(-3.44)	(-3.23)	(-3.44)
Single/SWD	-0.118	-0.094	-0.118	-0.094
	(-1.52)	(-0.71)	(-1.52)	(-0.71)
Kids <18yrs	0.177*	0.161*	0.177*	0.161*
	(1.66)	(1.87)	(1.66)	(1.87)
Diploma	0.114	-0.012	0.114	-0.012
	(0.72)	(-0.08)	(0.72)	(-0.08)
University	0.377**	0.205	0.377**	0.205
	(2.29)	(1.61)	(2.29)	(1.61)
Age	0.160	0.218	0.160	0.218
	(0.79)	(0.72)	(0.79)	(0.72)
Age2	-0.002	-0.002	-0.002	-0.002
	(-0.78)	(-0.54)	(-0.78)	(-0.54)
Self-Employed	0.243***	0.329***	0.243***	0.329***
	(5.03)	(6.25)	(5.03)	(6.25)
Hours Worked	-0.006**	-0.011***	-0.006**	-0.011***
	(-2.10)	(-3.22)	(-2.10)	(-3.22)
White Collar	0.104	0.106	0.104	0.106
	(1.29)	(1.07)	(1.29)	(1.07)
Abode <5yrs	-0.361***	-0.305***	-0.361***	-0.305***
	(-7.08)	(-5.72)	(-7.08)	(-5.72)
Abode 5 to <10yrs	-0.075	-0.049	-0.075	-0.049
	(-0.60)	(-0.29)	(-0.60)	(-0.29)
AGE_GRP	0.132	0.315**	0.132	0.315**
	(1.35)	(2.49)	(1.35)	(2.49)
BC	0.080	-0.051	0.080	-0.051
	(1.21)	(-0.81)	(1.21)	(-0.81)
AGE_GRP*BC	0.261***	0.254***	0.261***	0.254***
	(4.62)	(5.04)	(4.62)	(5.04)
Constant	-3.229	-4.692	-3.229	-4.692
	(-0.94)	(-0.93)	(-0.94)	(-0.93)
Observation	1402	1101	1402	1101

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (3) represent two separate regressions for 25 to 32years sample and (1) and (4) represent regressions for the 27 to 32 years cohorts.

Table C.19: DDD analysis of the impact of BC Policy on the likelihood to volunteer

	Dependent Variable -Volunteer			
	Without migration condition		With migration condition	
Control Variable	(2)	(2)	(3)	(4)
Immigrant	-0.220***	-0.168**	-0.151	-0.142
	(-5.68)	(-2.09)	(-1.18)	(-0.80)
Religious	0.437***	0.479***	0.431***	0.495***
	(5.46)	(4.00)	(5.89)	(5.02)
English	0.470***	0.435***	0.469***	0.424***
	(10.58)	(6.05)	(7.53)	(9.30)
Male	-0.153***	-0.179***	-0.191***	-0.269***
	(-5.06)	(-3.73)	(-3.38)	(-3.43)
Single/SWD	-0.125***	-0.085	-0.244***	-0.232*
	(-3.27)	(-0.96)	(-2.60)	(-1.91)
Kids <18yrs	0.198***	0.194***	0.202**	0.093
	(3.20)	(3.17)	(1.98)	(0.75)
Diploma	0.173**	0.057	0.215***	0.069
	(2.04)	(0.47)	(2.74)	(0.70)
University	0.464***	0.315***	0.482***	0.306***
	(3.89)	(2.84)	(3.63)	(3.13)
Age	0.258*	0.189	0.250	0.263
	(1.81)	(0.83)	(0.98)	(0.61)
Age2	-0.004*	-0.002	-0.004	-0.003
	(-1.84)	(-0.73)	(-0.96)	(-0.53)
Self-Employed	0.789***	0.808***	0.633***	0.482***
	(8.90)	(14.96)	(3.08)	(3.70)
Hours Worked	-0.005*	-0.008**	-0.001	-0.005
	(-1.92)	(-2.54)	(-0.45)	(-1.44)
White Collar	0.071	0.110	0.165***	0.237***
	(1.18)	(1.52)	(2.79)	(4.78)
Abode <5yrs	-0.303***	-0.254***		
	(-6.86)	(-4.20)		
Abode 5 to <10yrs	0.006	0.011	-0.050	0.269
	(0.09)	(0.10)	(-0.22)	(0.81)
AGE_GRP	-0.319***	-0.174***	-0.335***	-0.128
	(-6.41)	(-3.67)	(-2.81)	(-0.63)
BC	0.042	0.101**	-0.024	0.145**
	(0.52)	(2.56)	(-0.27)	(2.39)
POST	-0.305**	-0.263***	-0.220*	-0.237***
	(-2.46)	(-3.81)	(-1.89)	(-2.73)
AGE_GRP*BC	0.123***	-0.105**	0.396***	-0.222***
	(3.60)	(-2.30)	(7.30)	(-3.20)
AGE_GRP*POST	0.368***	0.281***	0.448***	0.303**
	(4.10)	(4.33)	(2.62)	(2.03)
POST*BC	-0.030	-0.211***	0.013	-0.300***
	(-0.21)	(-2.96)	(0.09)	(-2.78)

Table C.19: (continued)

	Dependent Variable -Volunteer			
	Without migration condition		With migration condition	
Control Variable	(2)	(2)	(3)	(4)
Age Group*POST* BC	0.153	0.444***	-0.029	0.604***
	(1.40)	(6.26)	(-0.15)	(3.69)
Constant	-4.404*	-3.585	-4.773	-5.189
	(-1.86)	(-0.92)	(-1.11)	(-0.68)
Observations	3386	3213	1766	1616

Clustered standard *z* statistics in parentheses, * p<.10, ** p<.05, *** p<0.0. (1), (3) represent two separate regressions for 25 to 32years sample and (1) and (4) represent regressions for the 27 to 32 years cohorts.

Table C.20: OLS and IV estimates of the Impact of Voluntary Volunteering on Income - for cohort A, aged 25 to 28 years

	Dependent Variable-Income					
Control	OLS			IV		
Variable	(1)	(2)	(3)	(1)	(2)	(3)
Volunteer	0.067			0.201		
	(1.40)			(0.50)		
#Hours		0.003			0.047	
		(0.27)			(0.60)	
#Organisation			0.038			0.202
			(0.84)			(0.61)
Immigrant	-0.024	-0.027	-0.024	-0.016	-0.014	-0.007
	(-0.29)	(-0.33)	(-0.30)	(-0.17)	(-0.15)	(-0.07)
Religious	0.006	0.015	0.010	-0.017	-0.023	-0.024
	(0.08)	(0.19)	(0.12)	(-0.13)	(-0.17)	(-0.18)
English	0.024	0.025	0.026	0.019	0.009	0.024
	(0.49)	(0.51)	(0.53)	(0.19)	(0.09)	(0.26)
Male	0.188**	0.189**	0.190**	0.185***	0.178***	0.189***
	(3.17)	(3.25)	(3.16)	(3.30)	(3.16)	(3.26)
Single/SWD	-0.170***	-0.173***	-0.172***	-0.163**	-0.162**	-0.163**
	(-6.35)	(-6.49)	(-6.37)	(-2.26)	(-2.29)	(-2.37)
Kids <18yrs	-0.123***	-0.125***	-0.124***	-0.118*	-0.118*	-0.118*
	(-5.18)	(-5.48)	(-5.30)	(-1.77)	(-1.80)	(-1.82)
Diploma	0.091	0.097	0.094	0.075	0.077	0.077
	(1.54)	(1.69)	(1.60)	(0.91)	(1.00)	(1.02)
University	0.159***	0.170***	0.163***	0.133	0.130	0.126
	(3.76)	(4.41)	(4.07)	(1.37)	(1.43)	(1.32)
Age	-0.532	-0.475	-0.492	-0.669	-0.656	-0.614
	(-0.42)	(-0.38)	(-0.39)	(-0.49)	(-0.50)	(-0.48)
Age2	0.011	0.010	0.010	0.014	0.014	0.013
	(0.47)	(0.43)	(0.45)	(0.54)	(0.54)	(0.53)
Self-Employed	-0.106	-0.099	-0.102	-0.124*	-0.133*	-0.126*
	(-1.49)	(-1.43)	(-1.45)	(-1.67)	(-1.69)	(-1.75)
Hours Worked	0.014***	0.014***	0.014***	0.014***	0.013***	0.013***
	(7.75)	(7.82)	(7.83)	(6.01)	(5.93)	(5.97)
Management	0.217***	0.228***	0.222***	0.196*	0.219**	0.196**
	(4.13)	(4.93)	(4.45)	(1.94)	(2.50)	(2.05)
Business	0.266***	0.271***	0.269***	0.255***	0.261***	0.258***
	(7.36)	(7.11)	(7.13)	(3.40)	(3.40)	(3.40)
Science	0.382***	0.384***	0.382***	0.378***	0.386***	0.371***
	(8.30)	(8.92)	(8.37)	(4.76)	(4.55)	(4.71)
Health	0.416***	0.422***	0.421***	0.403***	0.409***	0.413***
	(3.37)	(3.37)	(3.36)	(3.33)	(3.30)	(3.39)
Education	0.175***	0.188***	0.181***	0.141	0.137	0.136
	(3.90)	(4.10)	(3.67)	(1.28)	(1.26)	(1.26)

Table C.20: (continued)

Control Variable	Dependent Variable-Income					
	OLS			IV		
	(1)	(2)	(3)	(1)	(2)	(3)
Arts	0.009	0.024	0.014	-0.026	-0.006	-0.038
	(0.09)	(0.26)	(0.14)	(-0.20)	(-0.05)	(-0.29)
Trade	0.181***	0.181***	0.180***	0.183**	0.189**	0.181**
	(4.46)	(4.36)	(4.25)	(2.35)	(2.30)	(2.34)
Resource	-0.009	-0.004	-0.008	-0.020	-0.021	-0.031
	(-0.17)	(-0.08)	(-0.15)	(-0.18)	(-0.18)	(-0.26)
Manufacturing	0.286***	0.282***	0.282***	0.296**	0.296**	0.284**
	(3.61)	(3.41)	(3.40)	(2.54)	(2.57)	(2.55)
Newfoundland	-0.066***	-0.062***	-0.065***	-0.075	-0.072	-0.079
	(-3.45)	(-3.28)	(-3.43)	(-0.96)	(-0.92)	(-1.02)
Prince Edward Island	-0.069***	-0.067***	-0.067***	-0.072	-0.063	-0.066
	(-5.10)	(-4.67)	(-4.85)	(-0.92)	(-0.77)	(-0.82)
Nova Scotia	-0.096***	-0.092***	-0.094***	-0.105	-0.112	-0.110
	(-16.86)	(-16.50)	(-18.57)	(-1.49)	(-1.55)	(-1.56)
New Brunswick	-0.067**	-0.069**	-0.068**	-0.065	-0.072	-0.068
	(-2.41)	(-2.44)	(-2.43)	(-0.81)	(-0.93)	(-0.85)
Quebec	-0.073*	-0.077*	-0.073*	-0.064	-0.075	-0.055
	(-2.17)	(-2.18)	(-2.24)	(-0.66)	(-0.77)	(-0.55)
Manitoba	-0.173***	-0.170***	-0.173***	-0.183*	-0.188*	-0.190*
	(-20.56)	(-22.50)	(-21.97)	(-1.87)	(-1.85)	(-1.89)
Saskatchewan	0.000	0.007	0.003	-0.017	-0.024	-0.022
	(0.02)	(0.44)	(0.19)	(-0.19)	(-0.28)	(-0.26)
Alberta	0.054**	0.056***	0.056**	0.049	0.051	0.056
	(3.10)	(3.25)	(3.12)	(0.68)	(0.68)	(0.74)
British Columbia	-0.022**	-0.019*	-0.021*	-0.030	-0.043	-0.034
	(-2.33)	(-2.13)	(-2.10)	(-0.33)	(-0.45)	(-0.38)
Abode <5yrs	0.042	0.043	0.043	0.042	0.047	0.048
	(1.42)	(1.54)	(1.55)	(0.86)	(0.90)	(0.92)
Abode 5 to <10yrs	0.039	0.043*	0.041*	0.028	0.032	0.030
	(1.60)	(2.00)	(1.85)	(0.39)	(0.45)	(0.43)
YEAR_13	0.001	-0.000	0.001	0.005	0.009	0.011
	(0.01)	(-0.00)	(0.01)	(0.08)	(0.15)	(0.18)
YEAR_07	-0.367***	-0.369***	-0.368***	-0.360***	-0.361***	-0.360***
	(-4.97)	(-4.92)	(-4.95)	(-3.46)	(-3.44)	(-3.43)
Constant	15.650	14.914	15.121	17.446	17.285	16.694
	(0.93)	(0.90)	(0.91)	(0.97)	(0.99)	(0.99)
Observations	1375	1375	1375	1375	1375	1375

z statistics in parentheses

* p<.10, ** p<.05, *** p<0.01

Table C.21: OLS and IV estimates of the Impact of Voluntary Volunteering on Income - for cohort aged 27 to 28 years

	Dependent Variable-Income					
Control	OLS			IV		
Variable	(1)	(2)	(3)	(1)	(2)	(3)
Volunteer	0.051			0.627		
	(1.25)			(1.31)		
#Hours		0.001			0.113	
		(0.08)			(1.32)	
#Organisation			0.053			0.584
			(1.22)			(1.41)
Immigrant	0.118	0.116	0.122	0.151	0.181	0.188
	(1.70)	(1.61)	(1.67)	(1.32)	(1.53)	(1.54)
Religious	0.049	0.062	0.047	-0.116	-0.086	-0.119
	(0.46)	(0.60)	(0.43)	(-0.49)	(-0.40)	(-0.52)
English	0.069	0.073	0.071	0.025	0.032	0.052
	(1.21)	(1.27)	(1.31)	(0.18)	(0.24)	(0.42)
Male	0.233**	0.233**	0.235**	0.239**	0.223**	0.257**
	(2.35)	(2.40)	(2.35)	(2.53)	(2.51)	(2.54)
Single/SWD	-0.096	-0.098	-0.095	-0.071	-0.087	-0.063
	(-1.73)	(-1.75)	(-1.69)	(-0.66)	(-0.89)	(-0.59)
Kids <18yrs	0.008	0.006	0.009	0.030	0.027	0.046
	(0.13)	(0.10)	(0.15)	(0.34)	(0.31)	(0.49)
Diploma	0.080	0.079	0.081	0.095	0.082	0.101
	(0.89)	(0.85)	(0.91)	(1.10)	(0.93)	(1.18)
University	0.227***	0.230***	0.226***	0.202**	0.202**	0.185**
	(3.89)	(3.78)	(3.87)	(2.21)	(2.31)	(1.97)
Age	0.000	0.000	0.000	0.064	0.091	0.079
	(.)	(.)	(.)	(1.02)	(1.43)	(1.27)
Age2	0.002**	0.002**	0.002**			
	(2.66)	(2.84)	(2.69)			
Self-Employed	-0.095	-0.088	-0.095	-0.176	-0.171*	-0.176
	(-1.35)	(-1.26)	(-1.38)	(-1.56)	(-1.65)	(-1.56)
Hours Worked	0.021***	0.021***	0.021***	0.021***	0.021***	0.021***
	(5.10)	(5.21)	(5.21)	(5.55)	(5.62)	(5.57)
Management	0.100*	0.106**	0.098*	0.032	0.070	0.022
	(1.99)	(2.29)	(1.95)	(0.27)	(0.67)	(0.19)
Business	0.207**	0.211**	0.208**	0.154	0.190*	0.172
	(2.84)	(2.81)	(2.86)	(1.37)	(1.65)	(1.53)
Science	0.314**	0.324**	0.314**	0.194	0.226**	0.214*
	(2.78)	(2.83)	(2.77)	(1.52)	(2.08)	(1.83)
Health	0.503***	0.507***	0.505***	0.461***	0.495***	0.493***
	(5.47)	(5.26)	(5.43)	(3.10)	(3.21)	(3.21)
Education	0.165	0.180	0.165	-0.008	0.024	0.004
	(1.47)	(1.59)	(1.48)	(-0.06)	(0.18)	(0.03)

Table C.21: (continued)

Control Variable	Dependent Variable-Income					
	OLS			IV		
	(1)	(2)	(3)	(1)	(2)	(3)
Arts	-0.028	-0.011	-0.032	-0.227	-0.147	-0.249
	(-0.17)	(-0.06)	(-0.20)	(-1.09)	(-0.84)	(-1.15)
Trade	0.166***	0.168***	0.165***	0.140	0.147	0.136
	(4.33)	(4.35)	(4.35)	(1.31)	(1.39)	(1.27)
Resource	-0.235	-0.231	-0.237	-0.285**	-0.260*	-0.302**
	(-1.71)	(-1.64)	(-1.73)	(-1.98)	(-1.85)	(-2.02)
Manufacturing	0.232***	0.231***	0.228***	0.241*	0.243*	0.199
	(3.49)	(3.36)	(3.40)	(1.66)	(1.71)	(1.38)
Newfoundland	-0.116***	-0.114***	-0.116***	-0.137	-0.135	-0.137
	(-4.58)	(-4.53)	(-4.58)	(-1.13)	(-1.18)	(-1.17)
Prince Edward Island	-0.049	-0.040	-0.046	-0.154	-0.068	-0.103
	(-1.23)	(-0.92)	(-1.11)	(-1.16)	(-0.54)	(-0.83)
Nova Scotia	-0.060***	-0.056***	-0.060***	-0.107	-0.091	-0.107
	(-6.46)	(-5.85)	(-6.39)	(-0.91)	(-0.84)	(-0.97)
New Brunswick	-0.058*	-0.060*	-0.060*	-0.040	-0.047	-0.059
	(-2.02)	(-1.99)	(-2.06)	(-0.32)	(-0.38)	(-0.49)
Quebec	-0.001	-0.002	0.001	0.009	-0.013	0.030
	(-0.03)	(-0.04)	(0.01)	(0.07)	(-0.11)	(0.25)
Manitoba	-0.236***	-0.233***	-0.239***	-0.273*	-0.275*	-0.296*
	(-9.50)	(-9.13)	(-9.08)	(-1.89)	(-1.81)	(-1.91)
Saskatchewan	0.054*	0.063**	0.054*	-0.048	-0.033	-0.035
	(1.88)	(2.33)	(1.94)	(-0.42)	(-0.31)	(-0.32)
Alberta	0.132***	0.130***	0.134***	0.152	0.150	0.173
	(7.32)	(7.30)	(6.92)	(1.39)	(1.38)	(1.50)
British Columbia	0.073***	0.075***	0.070***	0.049	0.035	0.018
	(4.55)	(5.00)	(4.96)	(0.41)	(0.31)	(0.15)
Abode <5yrs	0.096**	0.099**	0.098**	0.057	0.078	0.085
	(2.97)	(3.08)	(2.95)	(0.91)	(1.23)	(1.29)
Abode 5 to <10yrs	-0.054	-0.054	-0.054	-0.057	-0.065	-0.053
	(-1.15)	(-1.13)	(-1.12)	(-0.57)	(-0.64)	(-0.51)
YEAR_13	0.277***	0.277***	0.279***	0.283**	0.313***	0.303**
	(8.53)	(8.77)	(8.70)	(2.31)	(2.72)	(2.52)
YEAR_07	0.064	0.060	0.064	0.107	0.101	0.104
	(0.65)	(0.63)	(0.65)	(1.09)	(1.07)	(1.10)
Constant	7.518***	7.481***	7.504***	7.079***	6.412***	6.658***
	(12.14)	(12.31)	(11.97)	(4.22)	(3.63)	(3.84)
Observations	753	753	753	753	753	753

z statistics in parentheses

* p<.10, ** p<.05, *** p<0.01

Table C.22: OLS and IV estimates of the Impact of Voluntary Volunteering on Income - for cohort aged 27 to 28 years

	Dependent Variable-Income					
Control	OLS			IV		
Variable	(1)	(2)	(3)	(1)	(2)	(3)
Volunteer	0.051			0.627		
	(1.25)			(1.31)		
#Hours		0.001			0.113	
		(0.08)			(1.32)	
#Organisation			0.053			0.584
			(1.22)			(1.41)
Immigrant	0.118	0.116	0.122	0.151	0.181	0.188
	(1.70)	(1.61)	(1.67)	(1.32)	(1.53)	(1.54)
Religious	0.049	0.062	0.047	-0.116	-0.086	-0.119
	(0.46)	(0.60)	(0.43)	(-0.49)	(-0.40)	(-0.52)
English	0.069	0.073	0.071	0.025	0.032	0.052
	(1.21)	(1.27)	(1.31)	(0.18)	(0.24)	(0.42)
Male	0.233**	0.233**	0.235**	0.239**	0.223**	0.257**
	(2.35)	(2.40)	(2.35)	(2.53)	(2.51)	(2.54)
Single/SWD	-0.096	-0.098	-0.095	-0.071	-0.087	-0.063
	(-1.73)	(-1.75)	(-1.69)	(-0.66)	(-0.89)	(-0.59)
Kids <18yrs	0.008	0.006	0.009	0.030	0.027	0.046
	(0.13)	(0.10)	(0.15)	(0.34)	(0.31)	(0.49)
Diploma	0.080	0.079	0.081	0.095	0.082	0.101
	(0.89)	(0.85)	(0.91)	(1.10)	(0.93)	(1.18)
University	0.227***	0.230***	0.226***	0.202**	0.202**	0.185**
	(3.89)	(3.78)	(3.87)	(2.21)	(2.31)	(1.97)
Age	0.000	0.000	0.000	0.064	0.091	0.079
	(.)	(.)	(.)	(1.02)	(1.43)	(1.27)
Age2	0.002**	0.002**	0.002**			
	(2.66)	(2.84)	(2.69)			
Self-Employed	-0.095	-0.088	-0.095	-0.176	-0.171*	-0.176
	(-1.35)	(-1.26)	(-1.38)	(-1.56)	(-1.65)	(-1.56)
Hours Worked	0.021***	0.021***	0.021***	0.021***	0.021***	0.021***
	(5.10)	(5.21)	(5.21)	(5.55)	(5.62)	(5.57)
Management	0.100*	0.106**	0.098*	0.032	0.070	0.022
	(1.99)	(2.29)	(1.95)	(0.27)	(0.67)	(0.19)
Business	0.207**	0.211**	0.208**	0.154	0.190*	0.172
	(2.84)	(2.81)	(2.86)	(1.37)	(1.65)	(1.53)
Science	0.314**	0.324**	0.314**	0.194	0.226**	0.214*
	(2.78)	(2.83)	(2.77)	(1.52)	(2.08)	(1.83)
Health	0.503***	0.507***	0.505***	0.461***	0.495***	0.493***
	(5.47)	(5.26)	(5.43)	(3.10)	(3.21)	(3.21)
Education	0.165	0.180	0.165	-0.008	0.024	0.004
	(1.47)	(1.59)	(1.48)	(-0.06)	(0.18)	(0.03)

Table C.22: (continued)

Control Variable	Dependent Variable-Income					
	OLS			IV		
	(1)	(2)	(3)	(1)	(2)	(3)
Arts	-0.028	-0.011	-0.032	-0.227	-0.147	-0.249
	(-0.17)	(-0.06)	(-0.20)	(-1.09)	(-0.84)	(-1.15)
Trade	0.166***	0.168***	0.165***	0.140	0.147	0.136
	(4.33)	(4.35)	(4.35)	(1.31)	(1.39)	(1.27)
Resource	-0.235	-0.231	-0.237	-0.285**	-0.260*	-0.302**
	(-1.71)	(-1.64)	(-1.73)	(-1.98)	(-1.85)	(-2.02)
Manufacturing	0.232***	0.231***	0.228***	0.241*	0.243*	0.199
	(3.49)	(3.36)	(3.40)	(1.66)	(1.71)	(1.38)
Newfoundland	-0.116***	-0.114***	-0.116***	-0.137	-0.135	-0.137
	(-4.58)	(-4.53)	(-4.58)	(-1.13)	(-1.18)	(-1.17)
Prince Edward Island	-0.049	-0.040	-0.046	-0.154	-0.068	-0.103
	(-1.23)	(-0.92)	(-1.11)	(-1.16)	(-0.54)	(-0.83)
Nova Scotia	-0.060***	-0.056***	-0.060***	-0.107	-0.091	-0.107
	(-6.46)	(-5.85)	(-6.39)	(-0.91)	(-0.84)	(-0.97)
New Brunswick	-0.058*	-0.060*	-0.060*	-0.040	-0.047	-0.059
	(-2.02)	(-1.99)	(-2.06)	(-0.32)	(-0.38)	(-0.49)
Quebec	-0.001	-0.002	0.001	0.009	-0.013	0.030
	(-0.03)	(-0.04)	(0.01)	(0.07)	(-0.11)	(0.25)
Manitoba	-0.236***	-0.233***	-0.239***	-0.273*	-0.275*	-0.296*
	(-9.50)	(-9.13)	(-9.08)	(-1.89)	(-1.81)	(-1.91)
Saskatchewan	0.054*	0.063**	0.054*	-0.048	-0.033	-0.035
	(1.88)	(2.33)	(1.94)	(-0.42)	(-0.31)	(-0.32)
Alberta	0.132***	0.130***	0.134***	0.152	0.150	0.173
	(7.32)	(7.30)	(6.92)	(1.39)	(1.38)	(1.50)
British Columbia	0.073***	0.075***	0.070***	0.049	0.035	0.018
	(4.55)	(5.00)	(4.96)	(0.41)	(0.31)	(0.15)
Abode <5yrs	0.096**	0.099**	0.098**	0.057	0.078	0.085
	(2.97)	(3.08)	(2.95)	(0.91)	(1.23)	(1.29)
Abode 5 to <10yrs	-0.054	-0.054	-0.054	-0.057	-0.065	-0.053
	(-1.15)	(-1.13)	(-1.12)	(-0.57)	(-0.64)	(-0.51)
YEAR_13	0.277***	0.277***	0.279***	0.283**	0.313***	0.303**
	(8.53)	(8.77)	(8.70)	(2.31)	(2.72)	(2.52)
YEAR_07	0.064	0.060	0.064	0.107	0.101	0.104
	(0.65)	(0.63)	(0.65)	(1.09)	(1.07)	(1.10)
Constant	7.518***	7.481***	7.504***	7.079***	6.412***	6.658***
	(12.14)	(12.31)	(11.97)	(4.22)	(3.63)	(3.84)
Observations	753	753	753	753	753	753

z statistics in parentheses

* p<.10, ** p<.05, *** p<0.01

Table C.23: OLS and IV estimates of the Impact of Voluntary Volunteering on Income - for cohort aged 25 to 32 years

	Dependent Variable-Income					
Control	OLS			IV		
Variable	(1)	(2)	(3)	(1)	(2)	(3)
Volunteer	0.073**			0.470*		
	(2.36)			(1.73)		
#Hours		0.009			0.102*	
		(1.38)			(1.77)	
#Organisation			0.058**			0.402*
			(2.70)			(1.71)
Immigrant	-0.070	-0.071	-0.069	-0.061	-0.063	-0.058
	(-1.05)	(-1.00)	(-1.03)	(-0.96)	(-1.01)	(-0.93)
Religious	-0.038	-0.033	-0.036	-0.104	-0.111	-0.099
	(-0.55)	(-0.48)	(-0.53)	(-1.39)	(-1.44)	(-1.36)
English	-0.006	-0.002	-0.003	-0.055	-0.059	-0.043
	(-0.21)	(-0.07)	(-0.11)	(-0.76)	(-0.81)	(-0.63)
Male	0.230***	0.230***	0.232***	0.220***	0.210***	0.227***
	(6.24)	(6.31)	(6.20)	(5.43)	(5.00)	(5.69)
Single/SWD	-0.151***	-0.153***	-0.152***	-0.137***	-0.143***	-0.146***
	(-3.89)	(-3.87)	(-3.82)	(-3.08)	(-3.32)	(-3.44)
Kids <18yrs	-0.101***	-0.101***	-0.101***	-0.106***	-0.107***	-0.106***
	(-10.83)	(-10.69)	(-11.15)	(-2.74)	(-2.75)	(-2.75)
Diploma	0.158***	0.163***	0.159***	0.107*	0.120**	0.114**
	(4.89)	(4.91)	(4.85)	(1.79)	(2.19)	(1.99)
University	0.301***	0.308***	0.303***	0.225***	0.232***	0.226***
	(7.01)	(6.99)	(6.94)	(3.24)	(3.50)	(3.30)
Age	0.140	0.143	0.149	0.121	0.138	0.180
	(1.07)	(1.08)	(1.13)	(0.64)	(0.73)	(0.96)
Age2	-0.002	-0.002	-0.002	-0.002	-0.002	-0.003
	(-0.81)	(-0.83)	(-0.87)	(-0.47)	(-0.55)	(-0.78)
Self-Employed	-0.138**	-0.135**	-0.138**	-0.183***	-0.186***	-0.182***
	(-2.95)	(-2.95)	(-3.03)	(-3.49)	(-3.50)	(-3.48)
Hours Worked	0.015***	0.015***	0.015***	0.015***	0.015***	0.015***
	(9.08)	(9.01)	(9.17)	(7.96)	(7.85)	(7.91)
Management	0.258***	0.262***	0.259***	0.225***	0.237***	0.223***
	(8.72)	(9.81)	(9.45)	(3.39)	(3.80)	(3.47)
Business	0.232***	0.235***	0.233***	0.206***	0.213***	0.214***
	(5.81)	(5.73)	(5.71)	(3.58)	(3.74)	(3.77)
Science	0.284***	0.284***	0.283***	0.289***	0.295***	0.286***
	(9.02)	(8.90)	(8.93)	(3.90)	(3.97)	(3.84)
Health	0.359***	0.360***	0.362***	0.355***	0.358***	0.370***
	(7.59)	(7.47)	(7.63)	(4.35)	(4.30)	(4.63)
Education	0.148**	0.155**	0.151**	0.058	0.061	0.072
	(2.96)	(3.04)	(2.95)	(0.73)	(0.77)	(0.95)

Table C.23: (continued)

Control Variable	Dependent Variable-Income					
	OLS			IV		
	(1)	(2)	(3)	(1)	(2)	(3)
Arts	0.012	0.023	0.015	-0.096	-0.073	-0.087
	(0.14)	(0.28)	(0.18)	(-0.90)	(-0.75)	(-0.85)
Trade	0.247***	0.246***	0.246***	0.265***	0.271***	0.260***
	(11.45)	(11.17)	(10.83)	(4.56)	(4.60)	(4.57)
Resource	0.056	0.060	0.057	0.012	0.020	0.014
	(0.71)	(0.76)	(0.72)	(0.11)	(0.18)	(0.13)
Manufacturing	0.271***	0.271***	0.270***	0.278***	0.281***	0.269***
	(5.33)	(5.19)	(5.22)	(3.56)	(3.63)	(3.49)
Newfoundland	-0.146***	-0.145***	-0.146***	-0.164***	-0.165***	-0.163***
	(-35.22)	(-33.88)	(-32.72)	(-2.89)	(-2.95)	(-2.92)
Prince Edward Island	-0.188***	-0.188***	-0.188***	-0.175***	-0.160**	-0.173***
	(-11.68)	(-11.14)	(-11.83)	(-2.83)	(-2.52)	(-2.86)
Nova Scotia	-0.110***	-0.108***	-0.110***	-0.135***	-0.138***	-0.138***
	(-10.24)	(-10.05)	(-10.22)	(-2.66)	(-2.74)	(-2.77)
New Brunswick	-0.160***	-0.159***	-0.159***	-0.168***	-0.172***	-0.167***
	(-10.40)	(-10.13)	(-10.21)	(-2.91)	(-2.99)	(-2.93)
Quebec	-0.105***	-0.105***	-0.102***	-0.106	-0.115*	-0.089
	(-4.99)	(-4.83)	(-4.77)	(-1.58)	(-1.69)	(-1.34)
Manitoba	-0.096***	-0.094***	-0.095***	-0.121*	-0.115	-0.119*
	(-10.31)	(-9.68)	(-9.86)	(-1.79)	(-1.64)	(-1.74)
Saskatchewan	-0.023***	-0.019***	-0.022***	-0.061	-0.062	-0.061
	(-4.00)	(-3.66)	(-3.49)	(-1.02)	(-1.04)	(-1.01)
Alberta	0.047***	0.048***	0.047***	0.033	0.033	0.036
	(16.94)	(18.83)	(18.76)	(0.66)	(0.67)	(0.74)
British Columbia	-0.086***	-0.084***	-0.084***	-0.111	-0.117	-0.104
	(-21.18)	(-22.56)	(-22.18)	(-1.55)	(-1.61)	(-1.50)
Abode <5yrs	0.027	0.027	0.028	0.035	0.040	0.042
	(1.12)	(1.14)	(1.17)	(0.94)	(1.06)	(1.11)
Abode 5 to <10yrs	0.087**	0.089**	0.088**	0.066	0.077*	0.073
	(2.91)	(3.20)	(3.08)	(1.46)	(1.75)	(1.64)
YEAR_13	0.298***	0.297***	0.297***	0.307***	0.305***	0.296***
	(9.92)	(9.53)	(9.93)	(4.02)	(4.08)	(3.94)
YEAR_07	0.062	0.062	0.063	0.067*	0.075*	0.071*
	(1.05)	(1.05)	(1.06)	(1.65)	(1.82)	(1.76)
Constant	6.863***	6.821***	6.737***	7.122***	6.888***	6.278**
	(3.76)	(3.69)	(3.67)	(2.67)	(2.58)	(2.36)
Observations	3106	3106	3106	3106	3106	3106

z statistics in parentheses

* p<.10, ** p<.05, *** p<0.01

Table C.24: OLS and IV estimates of the Impact of Voluntary Volunteering on Income - for cohort aged 27 to 32 years

	Dependent Variable-Income					
Control	OLS			IV		
Variable	(1)	(2)	(3)	(1)	(2)	(3)
Volunteer	0.051			0.627		
	(1.25)			(1.31)		
#Hours		0.001			0.113	
		(0.08)			(1.32)	
#Organisation			0.053			0.584
			(1.22)			(1.41)
Immigrant	-0.040	-0.040	-0.040	-0.032	-0.023	-0.028
	(-0.57)	(-0.54)	(-0.56)	(-0.49)	(-0.37)	(-0.45)
Religious	-0.039	-0.034	-0.039	-0.144	-0.150	-0.134
	(-0.55)	(-0.49)	(-0.54)	(-1.60)	(-1.62)	(-1.54)
English	0.009	0.013	0.010	-0.076	-0.066	-0.059
	(0.51)	(0.78)	(0.56)	(-0.90)	(-0.82)	(-0.75)
Male	0.254***	0.254***	0.255***	0.243***	0.234***	0.251***
	(11.28)	(11.19)	(11.01)	(5.14)	(4.85)	(5.30)
Single/SWD	-0.128**	-0.130**	-0.129**	-0.112**	-0.130***	-0.123**
	(-3.21)	(-3.19)	(-3.16)	(-2.17)	(-2.67)	(-2.49)
Kids <18yrs	-0.057***	-0.056***	-0.056***	-0.069	-0.068	-0.066
	(-4.49)	(-4.49)	(-4.21)	(-1.59)	(-1.58)	(-1.53)
Diploma	0.177***	0.180***	0.176***	0.132**	0.145**	0.132**
	(3.40)	(3.41)	(3.39)	(2.17)	(2.52)	(2.21)
University	0.350***	0.355***	0.349***	0.273***	0.286***	0.269***
	(6.20)	(6.04)	(6.06)	(3.98)	(4.38)	(3.90)
Age	-0.068	-0.054	-0.050	-0.226	-0.154	-0.091
	(-0.27)	(-0.22)	(-0.21)	(-0.53)	(-0.37)	(-0.22)
Age2	0.002	0.001	0.001	0.004	0.003	0.002
	(0.39)	(0.33)	(0.32)	(0.58)	(0.42)	(0.27)
Self-Employed	-0.157***	-0.154***	-0.158***	-0.219***	-0.216***	-0.220***
	(-5.90)	(-5.98)	(-6.20)	(-3.53)	(-3.55)	(-3.53)
Hours Worked	0.018***	0.018***	0.018***	0.018***	0.018***	0.018***
	(7.53)	(7.51)	(7.59)	(7.57)	(7.49)	(7.58)
Management	0.239***	0.240***	0.237***	0.205***	0.200***	0.196***
	(5.53)	(5.53)	(5.46)	(2.91)	(2.83)	(2.79)
Business	0.215***	0.218***	0.216***	0.183***	0.195***	0.191***
	(3.54)	(3.52)	(3.51)	(2.59)	(2.80)	(2.74)
Science	0.245***	0.246***	0.247***	0.238***	0.240***	0.249***
	(4.94)	(4.86)	(4.92)	(2.80)	(2.81)	(2.92)
Health	0.379***	0.379***	0.381***	0.388***	0.392***	0.405***
	(11.90)	(11.23)	(11.46)	(4.55)	(4.58)	(4.74)
Education	0.148**	0.155**	0.150**	0.024	0.033	0.048
	(2.41)	(2.44)	(2.45)	(0.27)	(0.37)	(0.57)

Table C.24: (continued)

Control Variable	Dependent Variable-Income					
	OLS			IV		
	(1)	(2)	(3)	(1)	(2)	(3)
Arts	-0.014	-0.006	-0.014	-0.168	-0.156	-0.156
	(-0.13)	(-0.05)	(-0.13)	(-1.41)	(-1.31)	(-1.31)
Trade	0.262***	0.261***	0.262***	0.287***	0.285***	0.284***
	(15.46)	(15.06)	(15.15)	(4.06)	(4.16)	(4.15)
Resource	0.027	0.032	0.028	-0.041	-0.022	-0.031
	(0.19)	(0.22)	(0.19)	(-0.30)	(-0.16)	(-0.24)
Manufacturing	0.269***	0.269***	0.268***	0.268***	0.273***	0.263***
	(4.83)	(4.77)	(4.81)	(3.08)	(3.20)	(3.09)
Newfoundland	-0.182***	-0.181***	-0.181***	-0.204***	-0.212***	-0.200***
	(-22.72)	(-21.17)	(-22.29)	(-2.94)	(-3.12)	(-2.92)
Prince Edward Island	-0.210***	-0.207***	-0.208***	-0.210***	-0.175**	-0.199***
	(-12.33)	(-11.43)	(-11.96)	(-2.85)	(-2.34)	(-2.80)
Nova Scotia	-0.113***	-0.110***	-0.113***	-0.156**	-0.151**	-0.157***
	(-9.17)	(-9.43)	(-9.57)	(-2.47)	(-2.51)	(-2.61)
New Brunswick	-0.168***	-0.167***	-0.168***	-0.187***	-0.182***	-0.184***
	(-21.59)	(-20.88)	(-21.52)	(-2.74)	(-2.71)	(-2.76)
Quebec	-0.080***	-0.080***	-0.078***	-0.102	-0.105	-0.081
	(-6.28)	(-6.35)	(-6.09)	(-1.35)	(-1.40)	(-1.10)
Manitoba	-0.098***	-0.095***	-0.097***	-0.134	-0.120	-0.127
	(-12.82)	(-10.93)	(-11.94)	(-1.60)	(-1.39)	(-1.50)
Saskatchewan	-0.004	-0.000	-0.004	-0.057	-0.046	-0.052
	(-0.60)	(-0.05)	(-0.56)	(-0.88)	(-0.72)	(-0.83)
Alberta	0.067***	0.068***	0.067***	0.052	0.050	0.053
	(6.63)	(6.79)	(6.69)	(0.93)	(0.89)	(0.95)
British Columbia	-0.078***	-0.076***	-0.077***	-0.111	-0.107	-0.103
	(-32.23)	(-29.00)	(-35.99)	(-1.43)	(-1.41)	(-1.37)
Abode <5yrs	0.032	0.033	0.034	0.036	0.041	0.048
	(1.37)	(1.40)	(1.44)	(0.87)	(1.00)	(1.14)
Abode 5 to <10yrs	0.068*	0.070*	0.069*	0.049	0.056	0.054
	(2.05)	(2.18)	(2.08)	(0.95)	(1.11)	(1.06)
YEAR_13	0.270***	0.269***	0.268***	0.290***	0.293***	0.274***
	(9.81)	(9.46)	(9.91)	(3.39)	(3.55)	(3.25)
YEAR_07	0.099*	0.099*	0.099*	0.115**	0.122**	0.111**
	(1.94)	(1.96)	(1.96)	(2.40)	(2.52)	(2.40)
Constant	9.781**	9.573**	9.531**	12.130*	11.055*	10.158
	(2.62)	(2.55)	(2.55)	(1.93)	(1.77)	(1.63)
Observations	2484	2484	2484	2484	2484	2484

z statistics in parentheses

* p<.10, ** p<.05, *** p<0.01

Table C.25: OLS and IV estimates of the Impact of Voluntary Volunteering on Income - for cohort aged 27 to 32 years

	Dependent Variable-Income					
Control	OLS			IV		
Variable	(1)	(2)	(3)	(1)	(2)	(3)
Volunteer	0.082**			0.626**		
	(3.11)			(2.22)		
#Hours		0.012*			0.134**	
		(2.06)			(2.22)	
#Organisation			0.078***			0.548**
			(3.42)			(2.19)
Immigrant	-0.040	-0.040	-0.040	-0.032	-0.023	-0.028
	(-0.57)	(-0.54)	(-0.56)	(-0.49)	(-0.37)	(-0.45)
Religious	-0.039	-0.034	-0.039	-0.144	-0.150	-0.134
	(-0.55)	(-0.49)	(-0.54)	(-1.60)	(-1.62)	(-1.54)
English	0.009	0.013	0.010	-0.076	-0.066	-0.059
	(0.51)	(0.78)	(0.56)	(-0.90)	(-0.82)	(-0.75)
Male	0.254***	0.254***	0.255***	0.243***	0.234***	0.251**
	(11.28)	(11.19)	(11.01)	(5.14)	(4.85)	(5.30)
Single/SWD	-0.128**	-0.130**	-0.129**	-0.112**	-0.130***	-0.123**
	(-3.21)	(-3.19)	(-3.16)	(-2.17)	(-2.67)	(-2.49)
Kids <18yrs	-0.057***	-0.056***	-0.056***	-0.069	-0.068	-0.066
	(-4.49)	(-4.49)	(-4.21)	(-1.59)	(-1.58)	(-1.53)
Diploma	0.177***	0.180***	0.176***	0.132**	0.145**	0.132**
	(3.40)	(3.41)	(3.39)	(2.17)	(2.52)	(2.21)
University	0.350***	0.355***	0.349***	0.273***	0.286***	0.269**
	(6.20)	(6.04)	(6.06)	(3.98)	(4.38)	(3.90)
Age	-0.068	-0.054	-0.050	-0.226	-0.154	-0.091
	(-0.27)	(-0.22)	(-0.21)	(-0.53)	(-0.37)	(-0.22)
Age2	0.002	0.001	0.001	0.004	0.003	0.002
	(0.39)	(0.33)	(0.32)	(0.58)	(0.42)	(0.27)
Self-Employed	-0.157***	-0.154***	-0.158***	-0.219***	-0.216***	-0.220**
	(-5.90)	(-5.98)	(-6.20)	(-3.53)	(-3.55)	(-3.53)
Hours Worked	0.018***	0.018***	0.018***	0.018***	0.018***	0.018**
	(7.53)	(7.51)	(7.59)	(7.57)	(7.49)	(7.58)
Management	0.239***	0.240***	0.237***	0.205***	0.200***	0.196**
	(5.53)	(5.53)	(5.46)	(2.91)	(2.83)	(2.79)
Business	0.215***	0.218***	0.216***	0.183***	0.195***	0.191**
	(3.54)	(3.52)	(3.51)	(2.59)	(2.80)	(2.74)
Science	0.245***	0.246***	0.247***	0.238***	0.240***	0.249**
	(4.94)	(4.86)	(4.92)	(2.80)	(2.81)	(2.92)
Health	0.379***	0.379***	0.381***	0.388***	0.392***	0.405**
	(11.90)	(11.23)	(11.46)	(4.55)	(4.58)	(4.74)
Education	0.148**	0.155**	0.150**	0.024	0.033	0.048
	(2.41)	(2.44)	(2.45)	(0.27)	(0.37)	(0.57)

Table C.25: (continued)

Control Variable	Dependent Variable-Income					
	OLS			IV		
	(1)	(2)	(3)	(1)	(2)	(3)
Arts	-0.014	-0.006	-0.014	-0.168	-0.156	-0.156
	(-0.13)	(-0.05)	(-0.13)	(-1.41)	(-1.31)	(-1.31)
Trade	0.262***	0.261***	0.262***	0.287***	0.285***	0.284***
	(15.46)	(15.06)	(15.15)	(4.06)	(4.16)	(4.15)
Resource	0.027	0.032	0.028	-0.041	-0.022	-0.031
	(0.19)	(0.22)	(0.19)	(-0.30)	(-0.16)	(-0.24)
Manufacturing	0.269***	0.269***	0.268***	0.268***	0.273***	0.263***
	(4.83)	(4.77)	(4.81)	(3.08)	(3.20)	(3.09)
Newfoundland	-0.182***	-0.181***	-0.181***	-0.204***	-0.212***	-0.200***
	(-22.72)	(-21.17)	(-22.29)	(-2.94)	(-3.12)	(-2.92)
Prince Edward Island	-0.210***	-0.207***	-0.208***	-0.210***	-0.175**	-0.199***
	(-12.33)	(-11.43)	(-11.96)	(-2.85)	(-2.34)	(-2.80)
Nova Scotia	-0.113***	-0.110***	-0.113***	-0.156**	-0.151**	-0.157***
	(-9.17)	(-9.43)	(-9.57)	(-2.47)	(-2.51)	(-2.61)
New Brunswick	-0.168***	-0.167***	-0.168***	-0.187***	-0.182***	-0.184***
	(-21.59)	(-20.88)	(-21.52)	(-2.74)	(-2.71)	(-2.76)
Quebec	-0.080***	-0.080***	-0.078***	-0.102	-0.105	-0.081
	(-6.28)	(-6.35)	(-6.09)	(-1.35)	(-1.40)	(-1.10)
Manitoba	-0.098***	-0.095***	-0.097***	-0.134	-0.120	-0.127
	(-12.82)	(-10.93)	(-11.94)	(-1.60)	(-1.39)	(-1.50)
Saskatchewan	-0.004	-0.000	-0.004	-0.057	-0.046	-0.052
	(-0.60)	(-0.05)	(-0.56)	(-0.88)	(-0.72)	(-0.83)
Alberta	0.067***	0.068***	0.067***	0.052	0.050	0.053
	(6.63)	(6.79)	(6.69)	(0.93)	(0.89)	(0.95)
British Columbia	-0.078***	-0.076***	-0.077***	-0.111	-0.107	-0.103
	(-32.23)	(-29.00)	(-35.99)	(-1.43)	(-1.41)	(-1.37)
Abode <5yrs	0.032	0.033	0.034	0.036	0.041	0.048
	(1.37)	(1.40)	(1.44)	(0.87)	(1.00)	(1.14)
Abode 5 to <10yrs	0.068*	0.070*	0.069*	0.049	0.056	0.054
	(2.05)	(2.18)	(2.08)	(0.95)	(1.11)	(1.06)
YEAR_13	0.270***	0.269***	0.268***	0.290***	0.293***	0.274***
	(9.81)	(9.46)	(9.91)	(3.39)	(3.55)	(3.25)
YEAR_07	0.099*	0.099*	0.099*	0.115**	0.122**	0.111**
	(1.94)	(1.96)	(1.96)	(2.40)	(2.52)	(2.40)
Constant	9.781**	9.573**	9.531**	12.130*	11.055*	10.158
	(2.62)	(2.55)	(2.55)	(1.93)	(1.77)	(1.63)
Observations	2484	2484	2484	2484	2484	2484

z statistics in parentheses

* p<.10, ** p<.05, *** p<0.01

Table C.26: OLS and IV estimates of the Impact of Voluntary Volunteering on Income - for cohort aged 25 to 28 years (excluding Ontario and BC)

	Dependent Variable-Income					
Control	OLS			IV		
Variable	(1)	(2)	(3)	(1)	(2)	(3)
Volunteer	0.140***			0.846**		
	(3.02)			(2.13)		
#Hours		0.014			0.174**	
		(1.16)			(2.11)	
#Organisation			0.109**			0.825**
			(2.33)			(2.05)
Immigrant	-0.162	-0.168	-0.161	-0.105	-0.107	-0.083
	(-1.53)	(-1.55)	(-1.50)	(-0.99)	(-0.98)	(-0.78)
Religious	0.001	0.022	0.006	-0.216	-0.213	-0.239
	(0.01)	(0.37)	(0.10)	(-1.62)	(-1.59)	(-1.59)
English	-0.029	-0.038	-0.031	-0.020	-0.120	-0.029
	(-0.27)	(-0.36)	(-0.29)	(-0.16)	(-0.84)	(-0.24)
Male	0.213***	0.216***	0.217***	0.179***	0.170**	0.195**
	(3.83)	(3.88)	(3.88)	(2.63)	(2.49)	(2.90)
Single/SWD	-0.188***	-0.190***	-0.189***	-0.168***	-0.165***	-0.173**
	(-3.59)	(-3.61)	(-3.61)	(-2.75)	(-2.71)	(-2.84)
Kids <18yrs	-0.049	-0.055	-0.051	0.005	0.006	0.010
	(-0.85)	(-0.93)	(-0.87)	(0.07)	(0.08)	(0.14)
Diploma	0.143**	0.150**	0.144**	0.073	0.073	0.061
	(2.32)	(2.40)	(2.33)	(0.91)	(0.91)	(0.74)
University	0.263***	0.274***	0.262***	0.162*	0.164*	0.122
	(3.86)	(3.92)	(3.78)	(1.68)	(1.76)	(1.14)
Age	1.806	1.782	1.821	2.175	2.330*	2.387*
	(1.48)	(1.44)	(1.48)	(1.60)	(1.71)	(1.76)
Age2	-0.033	-0.032	-0.033	-0.040	-0.043*	-0.044*
	(-1.43)	(-1.39)	(-1.43)	(-1.56)	(-1.67)	(-1.71)
Self-Employed	-0.188**	-0.179*	-0.179*	-0.318***	-0.360***	-0.288**
	(-2.07)	(-1.89)	(-1.95)	(-2.73)	(-2.70)	(-2.66)
Hours Worked	0.013***	0.013***	0.013***	0.013***	0.013***	0.014**
	(4.44)	(4.36)	(4.40)	(4.84)	(4.46)	(4.67)
Management	0.135	0.139	0.136	0.137	0.188	0.146
	(0.97)	(0.96)	(0.95)	(1.14)	(1.48)	(1.18)
Business	0.171**	0.168**	0.171**	0.183**	0.160*	0.192**
	(2.20)	(2.14)	(2.20)	(2.14)	(1.87)	(2.30)
Science	0.294***	0.295***	0.293***	0.281***	0.275***	0.273**
	(3.66)	(3.68)	(3.63)	(2.73)	(2.76)	(2.57)
Health	0.355***	0.360***	0.361***	0.332***	0.368***	0.378**
	(3.96)	(4.01)	(4.04)	(3.12)	(3.66)	(3.72)
Education	0.117	0.122	0.116	0.042	0.020	0.014
	(1.37)	(1.44)	(1.36)	(0.38)	(0.18)	(0.12)

Table C.26: (continued)

Control Variable	Dependent Variable-Income					
	OLS			IV		
	(1)	(2)	(3)	(1)	(2)	(3)
Arts	-0.123	-0.107	-0.123	-0.220	-0.143	-0.244
	(-1.05)	(-0.94)	(-1.06)	(-1.19)	(-1.00)	(-1.42)
Trade	0.115	0.105	0.107	0.190*	0.171*	0.155*
	(1.41)	(1.27)	(1.30)	(1.94)	(1.80)	(1.68)
Resource	-0.118	-0.125	-0.128	-0.074	-0.106	-0.138
	(-1.25)	(-1.28)	(-1.33)	(-0.73)	(-1.09)	(-1.39)
Manufacturing	0.193	0.179	0.181	0.306**	0.261**	0.247*
	(1.64)	(1.51)	(1.53)	(2.09)	(2.00)	(1.83)
Newfoundland	0.000	0.000	0.000	-0.160*	-0.148*	-0.200**
	(.)	(.)	(.)	(-1.79)	(-1.76)	(-2.08)
Prince Edward Island	-0.009	-0.011	-0.006	-0.138	-0.106	-0.145
	(-0.11)	(-0.13)	(-0.07)	(-1.25)	(-1.11)	(-1.39)
Nova Scotia	-0.028	-0.030	-0.028	-0.195**	-0.212**	-0.233**
	(-0.36)	(-0.38)	(-0.36)	(-2.09)	(-2.28)	(-2.40)
New Brunswick	-0.038	-0.050	-0.042	-0.132	-0.185*	-0.184*
	(-0.44)	(-0.57)	(-0.49)	(-1.38)	(-1.92)	(-1.88)
Quebec	-0.060	-0.081	-0.061	-0.104	-0.209	-0.117
	(-0.49)	(-0.66)	(-0.50)	(-0.78)	(-1.53)	(-0.90)
Manitoba	-0.107	-0.110	-0.109	-0.252**	-0.264**	-0.302**
	(-1.02)	(-1.04)	(-1.04)	(-2.30)	(-2.23)	(-2.54)
Saskatchewan	0.045	0.046	0.045	-0.156	-0.178	-0.204*
	(0.52)	(0.53)	(0.53)	(-1.41)	(-1.59)	(-1.69)
Alberta	0.121	0.116	0.125			
	(1.56)	(1.46)	(1.61)			
British Columbia	0.000	0.000	0.000			
	(.)	(.)	(.)			
Abode <5yrs	0.007	0.008	0.008	-0.001	-0.000	0.002
	(0.15)	(0.16)	(0.16)	(-0.01)	(-0.00)	(0.04)
Abode 5 to <10yrs	0.016	0.020	0.021	-0.015	-0.006	0.015
	(0.22)	(0.28)	(0.30)	(-0.17)	(-0.07)	(0.18)
YEAR_13	0.343***	0.338***	0.345***	0.363**	0.318**	0.386***
	(2.90)	(2.85)	(2.97)	(2.41)	(2.10)	(2.92)
YEAR_07	0.176***	0.176***	0.177***	0.183***	0.189***	0.192***
	(2.83)	(2.78)	(2.81)	(2.74)	(2.84)	(2.82)
Constant	-15.451	-15.110	-15.657	-20.260	-22.138	-23.117
	(-0.96)	(-0.92)	(-0.96)	(-1.12)	(-1.23)	(-1.28)
Observations	948	948	948	948	948	948

z statistics in parentheses

* p<.10, ** p<.05, *** p<0.01

Table C.27: First state regressions for cohort A and B, aged 25-28 years and aged 27 -28 years

Control Variable	Dependent Variable-Income					
	OLS			IV		
	(1)	(2)	(3)	(1)	(2)	(3)
Immigrant	-0.054	-0.200	-0.061**	-0.044	-0.297	-0.063
	(-1.40)	(-1.48)	(-2.00)	(-0.69)	(-1.36)	(-1.09)
Religious	0.154***	0.537***	0.129***	0.250***	0.792***	0.192***
	(2.98)	(2.91)	(3.07)	(4.87)	(4.19)	(4.72)
English	0.031	0.196	0.013	0.089	0.350**	0.062
	(0.86)	(1.55)	(0.46)	(1.63)	(2.33)	(1.51)
Male	0.017	0.144	0.008	-0.020	0.014	-0.025
	(0.71)	(1.64)	(0.32)	(-0.24)	(0.05)	(-0.38)
Single/SWD	-0.058***	-0.203***	-0.045***	-0.047	-0.131	-0.046
	(-2.90)	(-3.05)	(-3.03)	(-1.04)	(-0.86)	(-1.22)
Kids <18yrs	-0.038*	-0.137	-0.032	-0.038	-0.156	-0.046
	(-1.85)	(-1.42)	(-1.33)	(-0.98)	(-0.98)	(-1.39)
Diploma	0.112***	0.423***	0.099***	-0.040	-0.098	-0.038
	(2.98)	(2.69)	(3.12)	(-0.49)	(-0.30)	(-0.48)
University	0.179**	0.678**	0.169***	0.007	-0.001	0.010
	(2.28)	(2.38)	(2.79)	(0.07)	(-0.00)	(0.11)
Age	0.991	3.961	0.842	0.072*	0.155	0.043
	(1.21)	(1.38)	(1.31)	(1.82)	(1.05)	(1.36)
Age2	-0.019	-0.075	-0.016	0.000	0.000	0.000
	(-1.19)	(-1.37)	(-1.30)	(.)	(.)	(.)
Self-Employed	0.130***	0.498***	0.106***	0.159***	0.534***	0.118***
	(2.82)	(3.69)	(3.84)	(3.31)	(2.82)	(3.25)
Hours Worked	0.000	0.002	0.001	0.000	0.000	0.001
	(0.63)	(0.79)	(0.75)	(0.02)	(0.06)	(0.46)
Management	0.133	0.299	0.119	0.090	0.264	0.094*
	(0.98)	(0.73)	(1.10)	(1.61)	(1.42)	(1.76)
Business	0.079	0.252	0.066	0.090*	0.265	0.074
	(1.02)	(0.94)	(0.95)	(1.74)	(1.36)	(1.49)
Science	0.008	-0.011	0.028	0.188***	0.646***	0.149***
	(0.13)	(-0.04)	(0.48)	(3.68)	(3.70)	(5.03)
Health	0.080*	0.265*	0.057	0.061	0.166	0.041
	(1.96)	(1.65)	(1.39)	(0.60)	(0.43)	(0.47)
Education	0.215**	0.774***	0.186***	0.266***	0.969***	0.222***
	(2.57)	(2.68)	(2.98)	(4.02)	(4.56)	(4.47)

Table C.27: (continued)

	Dependent Variable-Volunteer, #Hours, #Organisations					
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Arts	0.252***	0.665**	0.223***	0.320*	0.926*	0.270**
	(3.04)	(2.20)	(2.86)	(1.94)	(1.93)	(2.08)
Trade	-0.012	-0.115	-0.008	0.045	0.127	0.034
	(-0.19)	(-0.49)	(-0.14)	(0.61)	(0.46)	(0.52)
Resource	0.085	0.251	0.080	0.073	0.177	0.073
	(0.60)	(0.49)	(0.72)	(0.50)	(0.35)	(0.68)
Manufacturing	-0.107	-0.459	-0.073	-0.049	-0.247	-0.014
	(-1.32)	(-1.35)	(-0.86)	(-0.46)	(-0.61)	(-0.15)
Newfoundland	0.046**	0.155***	0.048***	0.033	0.135	0.031
	(2.48)	(2.86)	(4.06)	(1.07)	(1.35)	(1.28)
Prince Edward Island	0.020	0.057	0.020	0.163***	0.396***	0.113***
	(1.07)	(0.85)	(1.30)	(18.06)	(15.77)	(24.84)
Nova Scotia	0.060**	0.270***	0.058***	0.060***	0.205***	0.055***
	(2.54)	(4.20)	(4.06)	(2.84)	(4.21)	(3.97)
New Brunswick	-0.016	0.014	-0.006	-0.033	-0.069	-0.005
	(-0.66)	(0.18)	(-0.35)	(-1.21)	(-0.99)	(-0.21)
Quebec	-0.069**	-0.159	-0.082***	-0.008	0.048	-0.023
	(-2.00)	(-1.26)	(-3.13)	(-0.20)	(0.40)	(-0.68)
Manitoba	0.059***	0.264***	0.066***	0.046*	0.236***	0.065***
	(4.59)	(6.17)	(8.27)	(1.66)	(3.63)	(4.12)
Saskatchewan	0.098***	0.412***	0.091***	0.146***	0.497***	0.107**
	(6.23)	(6.92)	(7.71)	(3.29)	(2.83)	(2.51)
Alberta	0.022	0.095	0.012	-0.052***	-0.173***	-0.054***
	(1.33)	(1.58)	(0.94)	(-4.19)	(-3.52)	(-4.94)
British Columbia	0.046***	0.278***	0.047***	0.008	0.117**	0.034***
	(3.20)	(8.01)	(6.55)	(0.31)	(2.24)	(2.80)
Abode <5yrs	0.003	-0.025	-0.009	0.070**	0.211	0.043*
	(0.07)	(-0.18)	(-0.28)	(2.52)	(1.56)	(1.74)
Abode 5 to <10yrs	0.080	0.246	0.060	0.009	0.081	0.006
	(1.46)	(1.21)	(1.30)	(0.28)	(0.71)	(0.22)
YEAR_13	-0.023	-0.116	-0.030	-0.066*	-0.275***	-0.063**
	(-0.44)	(-0.70)	(-0.75)	(-1.92)	(-3.15)	(-2.56)
YEAR_07	-0.110**	-0.376**	-0.096*	-0.138*	-0.339	-0.099
	(-2.06)	(-2.22)	(-1.70)	(-1.70)	(-1.51)	(-1.55)
Youth	0.156***	0.605***	0.151***	0.189***	0.731***	0.163***
	(12.85)	(17.85)	(15.30)	(10.18)	(6.81)	(5.79)
Observations	1375	1375	1375	753	753	753

z statistics in parentheses

* p<.10, ** p<.05, *** p<0.01

Table C.28: First state regressions for cohort A and B, aged 25-32 years and aged 27 -32 years

	Dependent Variable-Income					
Control	OLS			IV		
Variable	(1)	(2)	(3)	(1)	(2)	(3)
Immigrant	(-0.23)	(-0.21)	(-0.28)	(-0.07)	(-0.17)	(-0.12)
	0.148***	0.519***	0.117***	0.172***	0.593***	0.134***
Religious	(4.84)	(5.32)	(5.71)	(5.52)	(6.71)	(7.79)
	0.115***	0.441***	0.092***	0.155***	0.542***	0.127***
English	(4.79)	(8.94)	(5.19)	(4.14)	(5.09)	(4.91)
	0.022**	0.133***	0.014	0.020	0.106*	0.011
Male	(2.48)	(3.90)	(1.35)	(1.22)	(1.76)	(0.81)
	-0.037***	-0.104**	-0.023**	-0.028	-0.042	-0.017
Single/SWD	(-3.18)	(-2.17)	(-2.06)	(-1.12)	(-0.41)	(-0.79)
	0.015	0.055	0.013	0.027	0.092	0.021
Kids <18yrs	(1.16)	(0.91)	(1.20)	(1.34)	(1.02)	(1.61)
	0.123***	0.433***	0.116***	0.075**	0.251*	0.073**
Diploma	(9.99)	(7.22)	(10.22)	(2.02)	(1.66)	(1.99)
	0.175***	0.636***	0.166***	0.118***	0.398**	0.114***
University	(4.86)	(4.02)	(6.42)	(2.85)	(2.23)	(3.07)
	0.091	0.275*	0.019	0.348*	1.113	0.216
Age	(1.48)	(1.86)	(0.55)	(1.71)	(1.64)	(1.30)
	-0.001	-0.005*	-0.000	-0.006*	-0.018	-0.003
Age2	(-1.34)	(-1.70)	(-0.40)	(-1.65)	(-1.59)	(-1.24)
	0.112**	0.398***	0.096***	0.123**	0.403***	0.104***
Self-Employed	(2.23)	(2.94)	(3.21)	(2.42)	(3.05)	(3.33)
	-0.000	-0.001	-0.000	-0.001	-0.003	-0.001
Hours Worked	(-0.29)	(-0.39)	(-0.28)	(-0.79)	(-1.10)	(-0.71)
	0.073	0.211	0.067	0.050	0.187*	0.049
Management	(1.10)	(1.15)	(1.35)	(1.32)	(1.75)	(1.56)
	0.063*	0.207*	0.052*	0.058**	0.175**	0.047**
Business	(1.74)	(1.84)	(1.83)	(2.42)	(2.00)	(2.09)
	-0.017	-0.090	-0.012	0.017	0.042	0.003
Science	(-0.45)	(-0.60)	(-0.38)	(0.53)	(0.32)	(0.12)
	0.003	0.010	-0.010	-0.022	-0.090	-0.033
Health	(0.10)	(0.09)	(-0.39)	(-0.41)	(-0.46)	(-0.70)
	0.205***	0.682***	0.160***	0.213***	0.696***	0.159***
Education	(4.12)	(4.38)	(4.04)	(4.95)	(5.10)	(4.31)
	0.270***	0.785***	0.210***	0.272***	0.833***	0.203***

Table C.28: (continued)

	Dependent Variable-Volunteer, #Hours, #Organisation					
Control Variable	(1)	(2)	(3)	(1)	(2)	(3)
Arts	0.270***	0.785***	0.210***	0.272***	0.833***	0.203***
	(3.11)	(2.78)	(3.18)	(2.59)	(2.78)	(2.59)
Trade	-0.052***	-0.246***	-0.050***	-0.057***	-0.234***	-0.056***
	(-3.36)	(-5.02)	(-4.51)	(-4.78)	(-3.78)	(-5.47)
Resource	0.094	0.274	0.075	0.087	0.231	0.064
	(1.14)	(1.07)	(1.11)	(1.28)	(1.31)	(1.21)
Manufacturing	-0.024	-0.133	-0.018	-0.005	-0.055	-0.004
	(-0.60)	(-0.88)	(-0.51)	(-0.17)	(-0.56)	(-0.14)
Newfoundland	0.029***	0.130***	0.030***	0.029***	0.146***	0.026***
	(6.02)	(6.39)	(5.26)	(4.15)	(5.43)	(3.77)
Prince Edward Island	-0.027***	-0.133***	-0.019**	0.006	-0.071*	0.002
	(-2.95)	(-4.06)	(-2.52)	(0.58)	(-1.84)	(0.20)
Nova Scotia	0.057***	0.223***	0.055***	0.074***	0.253***	0.066***
	(10.60)	(11.31)	(8.72)	(10.18)	(7.07)	(6.88)
New Brunswick	0.021	0.104***	0.020*	0.033	0.122*	0.031*
	(1.60)	(2.75)	(1.76)	(1.59)	(1.91)	(1.85)
Quebec	-0.002	0.022	-0.024	0.041	0.156	0.016
	(-0.07)	(0.48)	(-1.48)	(1.20)	(1.45)	(0.62)
Manitoba	0.051***	0.155***	0.042***	0.055***	0.154***	0.043***
	(6.54)	(5.73)	(5.93)	(9.03)	(7.72)	(7.61)
Saskatchewan	0.081***	0.289***	0.071***	0.084***	0.256***	0.068***
	(8.27)	(9.17)	(10.34)	(12.13)	(9.99)	(12.87)
Alberta	0.026***	0.094***	0.020***	0.017***	0.063**	0.013*
	(3.73)	(3.20)	(2.66)	(2.66)	(2.50)	(1.93)
British Columbia	0.055***	0.227***	0.042***	0.051***	0.173***	0.039***
	(14.22)	(24.59)	(20.75)	(8.76)	(13.13)	(12.59)
Abode <5yrs	-0.020	-0.090	-0.025	-0.010	-0.045	-0.016
	(-0.92)	(-1.15)	(-1.29)	(-0.60)	(-0.78)	(-1.03)
Abode 5 to <10yrs	0.049**	0.137**	0.038*	0.032*	0.101***	0.026
	(2.10)	(1.98)	(1.94)	(1.89)	(2.71)	(1.50)
YEAR_13	-0.006	-0.045	-0.007	-0.023	-0.100	-0.015
	(-0.13)	(-0.34)	(-0.20)	(-0.51)	(-0.85)	(-0.46)
YEAR_07	-0.105	-0.390	-0.107	-0.108	-0.357	-0.101
	(-0.98)	(-0.98)	(-0.98)	(-0.96)	(-0.84)	(-0.92)
Yoouth	0.183***	0.660***	0.164***	0.203***	0.720***	0.174***
	(27.90)	(20.59)	(18.67)	(15.33)	(10.74)	(11.82)
Observations	3106	3106	3106	2484	2484	2484

z statistics in parentheses

* p<.10, ** p<.05, *** p<0.01