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Donations in Canada

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Abstract:

This paper extends Kitchen's (1992) study on the determination of Canadian charitable giving by using an updated 2010 dataset. We have identified potential factors that could have affected the amount of monetary donations to religious, non-religious and all charities. We have found that a change in the price of giving or a change in the household size will significantly affect non-religious giving but not religious giving. It was also found that Atlantic Canadians contribute comparatively less in both religious and non-religious giving than the rest of the country.

Keywords: Religious Giving, Secular Giving, Tobit Regression

¹ We thank the Research Data Center within Social Science and Humanity Research Council of Canada for the use of confidential Survey of Household Spending micro data file to conduct this study. We also want to thank Ted McDonald for his guidance on getting the use of the dataset. The authors are especially grateful to Nan Zhou for his help in data re-coding and data analysis. We also want to thank Chantel Lewis for her help in editing this manuscript.

Every year, millions of Canadians donate to charitable organizations. Approximately 84 percent of Canadians donated in 2007 and 2010, and the total aggregate amounts of monetary donations were \$10,429,330 and \$10,609,533, respectively (Statistics Canada, 2009, 2012). There are many types of charitable organizations in Canada.² It is usually believed that among these different types of charitable organizations, religious charities accept the most donations in terms of total amount. The faith element in religious giving (tithing) may be the dominating force of the determination. This element is missing in non-religious giving. Scholars, therefore, have generally broken down charitable donations into two major categories: religious giving³ and non-religious giving. Kitchen and Dalton (1990) and Kitchen (1992) are the pioneer empirical papers in examining the reasons of charitable giving in Canada. Not surprisingly, these previous studies⁴ generally support the separation of religious and non-religious giving.

Over time, the importance of this area of monetary giving has not diminished; therefore, there is a need to update the literature and check if the determination of charitable giving in the newer generation has been changed. As List (2011) pointed out, many economic facts concerning the charitable market remain unknown today even though scholarly research in this area of giving started decades ago. Recent academic studies on charitable donations have concentrated on tax incentive policies⁵ rather than looking at donations in a broader extent. One important objective of this paper, therefore, is to re-study empirically the determination of religious and non-religious giving using a newer dataset⁶ that was collected in 2010.

As pointed out by Kitchen (1992) earlier, it is essential to separate the analysis between religious and non-religious donations. This distinction is necessary because the determinations of these two types of donations are likely not the same. In a recent study, however, Turcotte (2012) has pointed out religious givers in Canada have changed. Faith followers may have a lower religiosity, and the faith factor may no longer be significant. In other words, the determination of the

² In fact, the international classification of non-profit organizations are divided into fifteen main activity groups: (1) Arts and Culture, (2) Sports and Recreation, (3) Education and Research, (4) University and Colleges, (5) Health, (6) Hospitals, (7) Social Services, (8) Environment, (9) Development and Housing, (10) Law, Advocacy and Politics, (11) Grant-Making, Fundraising and Voluntarism Promotion, (12) International, (13) Religion, (14) Business and Professional Associations, Unions, and (15) Groups not elsewhere classified.

³ As pointed out by Chan and Lee (2014), there are three different types of religious giving: giving in terms of prayer, donations and time. The focus of this paper is solely on monetary giving.

⁴ Other pioneer U.S. studies include Clotfelter (1985), Lankford and Wyckoff (1991), and Barrett (1991).

⁵ For example, Brooks (2007); Carroll, McCarthy and Newman (2005); Chang (2005).

⁶ This paper used pooled data from the 2010 Canadian Survey of Household Spending to perform Tobit Regression Analysis.

amount of religious and non-religious monetary giving in Canada may not be that different to each other when compared to a decade ago. The incentive gap between religious and non-religious giving may be narrowed. This paper checks if the determination of both religious and non-religious donations has really been changed over the past decade in Canada.

Most rational choice economic models⁷ of religious activities are based on Gary Becker's (1976) theory of household production. These theoretical models assume an individual maximizes his/her utility by choosing the equilibrium level of giving through constraint optimization like the simple problem listed below.

$$\text{Max}_d U_i(C, d) \text{ subject to } C \leq \text{Income} - d$$

C: is the total consumption of goods and services

d: is the total amount of donations

Empirical papers⁸ have been trying to estimate the amount of giving by using the rational choice models. One major criticism is the unexplained skewness in monetary donations that is found in these U.S. studies. Iannaccone (1997) managed to modify the rational choice model and derived the skewness from three behavioral attributes: change in giving rates, change in income levels and the weak correlation between giving rates and income levels.

In terms of Canadian empirical findings, Kitchen (1992) examined charitable giving using two datasets⁹ in 1982 and 1986. He found that family wealth and household age were important determinants of giving to all charities including religious charities. The price of giving, however, is important to all charities except religious charities. Using descriptive statistics in another Canadian dataset, Turcotte (2012) has reported that women are more likely to give than men in all charities, especially to organizations in the health sector. Monetary donations tend to increase with age. Individuals in the provinces of Alberta and British Columbia give more to charities. He also found a positive correlation between volunteering hours and monetary donations. The major reasons for not giving more are (1) affordability, (2) satisfaction with what they have already given, and (3) preference to give directly to those who are in need instead of to organizations.

⁷ For example, Azzi and Ehrenberg (1975), Sullivan (1985), Iannaccone (1990, 1992), and Montgomery (1995).

⁸ For example, Randolph (1995), Bakija (1998) and Auten, Sieg and Clotfelter (2002).

⁹ He used the same datasets that are employed in this paper, The Canadian Survey of Household Spending.

The rest of this paper is organized as follows: Section 2 looks at the data and methodology; Section 3 presents cross-sectional Tobit results for 2010; Section 4 discusses findings; and Section 5 concludes the study.

DATA AND METHODOLOGY

This paper uses the confidential micro data files of Survey of Household Spending collected by Statistics Canada in 2010. The permission to use this dataset was given by the Social Science and Humanities Research Council of Canada through the Research Data Center at the University of New Brunswick in Fredericton. In this dataset, the average religious giving amount is \$338.34 per person (which represents a giving rate of \$0.64 per \$100 earned), and the average non-religious giving amount is \$262.74 per person (which represents a giving rate of \$0.42 per \$100 earned). The coefficient of correlation between religious and non-religious giving is 0.1801. Table 1 below summarizes the giving amount to religious and non-religious organizations in the ten provinces: Newfoundland and Labrador (NL), Prince Edward Island (PE), Nova Scotia (NS), New Brunswick (NB), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), and British Columbia (BC).

Table 1: Religious and Non-religious Giving across Different Provinces

	Religious Giving (Mean)	Non-religious (Mean)	Ratio of Religious to Non-religious	Ranking
NL	413.55	165.48	2.50	2
PE	315.22	245.28	1.29	7
NS	296.74	289.16	1.03	9
NB	446.85	172.58	2.59	1
QC	99.47	149.01	0.67	10
ON	364.60	315.17	1.16	8
MB	522.65	297.04	1.76	3
SK	486.91	293.06	1.66	4
AB	452.64	346.07	1.31	6
BC	437.01	268.98	1.62	5
Canada	338.34	262.74	1.29	–

It is noted that among all provinces, New Brunswick has the highest religious to non-religious giving ratio, which is 2.59. This ratio means for every \$1 that a household donates to non-religious organization, on average, they will also donate \$2.59 to religious organizations. The lowest ratio is found in the province of Quebec, where for every \$1 donated to non-religious organization, only \$0.67 is

donated to religious organizations. Nevertheless, the average household donation to religious organizations exceeds the average household donation to non-religious organizations in all provinces except Quebec. In this descriptive summary, there is also an indication that geographic factors are an important determinant of religious and non-religious giving.

In terms of gender effects, it is found that males give more toward non-religious organizations, while females give more toward religious organizations on average. The total amount of giving is more for males than females. Table 2 summarizes this result:

Table 2: Religious and Non-religious across Genders

	Male	Female
Religious giving (mean)	442.82	345.92
Non-religious (mean)	448.84	318.95
Ratio of Religious to Non-religious	0.99	1.08

Religious, non-religious and total giving are the dependent variables of study. The independent (explanatory) variables are broken down into three major categories: Economic, Demographic and Geographic variables. It should be pointed out that the dataset does not collect information on the price of giving. The authors have manually created the give price variable using the respondent's marginal tax rates. Table 3 below lists all independent variables and their respective measurements.

Table 3: List of Independent Variables

Economic Variables		Demographic Variables		Geographic Variables	
<i>Variable</i>	<i>Measurement</i>	<i>Variable</i>	<i>Measurement</i>	<i>Variable</i> ¹⁰	<i>Measurement</i>
Give Price	Ratio	Marital Status	Dummy	NL (Newfoundland and Labrador)	Dummy
Household Income	Ratio	Gender	Dummy	PE (Prince Edward Island)	Dummy
		Respondent Age	Ratio	NS (Nova Scotia)	Dummy
		Spouse Age	Ratio	NB (New Brunswick)	Dummy
		Bachelor Degree	Dummy	QC (Quebec)	Dummy
		Household Size	Ratio	MB (Manitoba)	Dummy
					SK (Saskatchewan)
			AB (Alberta)	Dummy	
			BC (British Columbia)	Dummy	

TOBIT REGRESSION

The determinants that affect various types of monetary giving can be expressed by the following equation:

$$G_i^j = \beta_0 + \beta_1 Econ_i + \beta_2 Demo_i + \beta_3 Geog_i + u_i$$

G_i^j = j type of monetary giving by individual i

j = religious giving, non-religious giving and total giving

Econ: a set of economic variables such as household income, give price, etc.

Demo: a set of demographic variables such as gender, marital status, respondent age, respondent education level, household size, and spouse age, etc.

Geog: a set of dummy variables for various regions (NL, PE, NS, NB, etc.)

u = stochastic error term

¹⁰ Note: Ontario (ON) is used as the benchmark of study; ON is therefore left out because of the problem of perfect multi-collinearity.

Monetary giving G_i^j cannot be negative, and so its negative values are censored. The vector of the parameters of β cannot be estimated by ordinary least squares because their estimators will be inconsistent. It will yield an upward-biased estimate of the intercept β_0 and a downward-biased estimate of the slope of the coefficients of β . Instead, the Tobin estimators are consistent and unbiased (Tobin 1958, Amemiya 1973).¹¹

Determinants of Total Giving

Total giving is the sum of religious and non-religious giving. We can identify potential economic, demographic and geographic factors that affect the overall generosity among Canadians. The Tobit regression result is tabulated in Table 4.

Table 4: Determinants of Total Giving

<i>Tobit Regression Results</i> <i>n = 9460, Pseudo R² = 0.0710</i>				<i>Summary:</i>
<i>Variable</i>		<i>Coefficient</i>	<i>p-value</i>	
Economic	Household Income	0.5168856	0.000***	Factors that increase total giving (Economic) Household Income (Demographic) Age, Degree, Spouse Age, Household Size (Geographic) None
	Give Price	-0.3128914	0.454	
Demographic	Male	-0.04592	0.116	Factors that decrease total giving (Economic) None (Demographic) Married (Geographic) NL, PE, NS, NB, QC
	Married	-0.1359514	0.184	
	Age	0.0314078	0.000***	
	Degree	0.5577915	0.000***	
	Household Size	0.0504926	0.001***	
	Spouse Age	0.0048375	0.004***	
Geographic	NL	-0.2093193	0.001***	
	PE	-0.1967179	0.011**	
	NS	-0.2866745	0.000***	
	NB	-0.3378435	0.000***	
	QC	-0.8814061	0.000***	
	MB	0.0697506	0.257	
	SK	0.0555618	0.353	
	AB	-0.0033332	0.957	
	BC	-0.035016	0.554	
	Constant	-1.691624	0.016	

* Significance at 10% level; ** Significance at 5% level; *** Significance at 1% level

¹¹ The β coefficients should not be interpreted as the marginal effect of the explanatory variable on giving, G , as defined in a linear regression model. It should be interpreted as the combination of (1) an effect on the mean of G and (2) an effect on the probability of G being observed. For details, see McDonald and Moffitt (1980).

In terms of demographics, total giving increases with age, education, spouse age, as well as household size but decreases with marriage. Seniors are more generous in their giving, and those who have received university degrees are more willing to give back to society. These findings are generally consistent with existing literature. One surprising finding, however, is that total giving increases with household size. This finding indicates further research is needed in this area.

The findings regarding geographic region are interesting. Those who reside east of Ontario (Atlantic Canada and the province of Quebec) tend to give a lesser total amount even after controlling for other variables.

Determinants of Religious Giving

One key objective of this paper is to explore possible determinants of religious giving. With Christianity being the primary religion among Canadians, it is expected that religious giving is independent of the give price and not reduced by certain demographic (like gender and household size) or geographic factors. The Tobit regression result on religious giving is tabulated in Table 5 below.

Table 5: Determinants of religious giving

<i>Tobit Regression Results</i> n = 4390, Pseudo R ² = 0.0484				<i>Summary:</i>
Variable		Coefficient	p-value	
Economic	Household Income	0.3783802	0.000***	Factors that increase religious giving
	Give Price	-0.4959309	0.429	
Demographic	Male	-0.0361943	0.404	(Economic) Household Income (Demographic) Age, Degree, Spouse Age (Geographic) None
	Married	-0.3289152	0.047**	
	Age	0.0205245	0.000***	
	Degree	0.2161336	0.000***	
	Household Size	0.0237402	0.271	
Geographic	Spouse Age	0.0083556	0.001***	Factors that decrease religious giving
	NL	-0.2740824	0.001***	(Economic) None (Demographic) Married (Geographic) NL; NS; NB; QC
	PE	-0.0328328	0.763	
	NS	-0.2272548	0.011**	
	NB	-0.1698009	0.049**	
	QC	-1.181183	0.000***	
	MB	0.1020745	0.249	
	SK	0.1367424	0.113	
	AB	0.1059799	0.253	
	BC	0.0745162	0.411	
Constant	0.9788342	0.361		

* Significance at 10% level.; ** Significance at 5% level; *** Significance at 1% level

As expected, with a higher level of income, there is a higher level of religious giving. The coefficient of income is 0.3784, which means religious giving is likely to be income inelastic. Our result also indicates that the price of giving is not significant in the estimation of religious giving. This finding is consistent with Kitchen (1992).

In terms of demographics, both gender and household size are not significant. Males and females give relatively equal amounts of religious donations. One important finding is that change in household size is not reducing the amount of religious giving. Participant age, spouse age and education level also positively influence the level of religious giving.

All Maritime Provinces (except Prince Edward Island) and Quebec are less likely to give religious donations than the rest of the country. It is noted that the sign of the coefficient is negative for all provinces east of Ontario and positive for all provinces west of Ontario. This may hint at a decrease in religiosity from Western to Eastern Canada, which is probably opposite to what religious leaders think. Further research is necessary.

Determinants of Non-religious Giving

Non-religious giving includes giving to all organizations that are not classified as religious. They include a wide range of charities. They range from post-secondary institutions, to medical research groups, to culture promoting associations. Despite the heterogeneity of these charities, however, it is expected that the amount of giving to them is likely to be affected by a fuller array of factors. The Tobit regression results on religious giving are tabulated in Table 6 below.

It is noted that almost all independent variables employed in this study are significant. Non-religious giving increases by household income, age, spouse age, and education level. It is decreased by the price of giving, being married and increased household size. Unlike religious giving, non-religious giving is slowed by the price of giving and other unfavorable demographic factors. The coefficient of price is -1.03. When compared with religious giving, therefore, non-religious giving is found to be more sensitive to household income. This finding implies that non-religious giving is more sensitive to income changes and is more volatile in nature when compared to religious giving.

In researched literature, males tend to give less than females. In our study, however, gender does not play a significant role in the determination of non-religious giving. This finding may imply that the gender imbalance is gradually disappearing in our society for the better.

Table 6: Determinants of Non-religious Giving

<i>Tobit Regression Results</i> n = 8490, Pseudo R ² = 0.0949				<i>Summary:</i>
Variable		Coefficient	p-value	
Economic	Household Income	0.6105558	0.000***	Factors that increase non-religious giving (Economic) Household Income (Demographic) Age, Degree, Spouse
	Give Price	-1.034033	0.006***	
Demographic	Male	-0.0041072	0.876	Age (Geographic) BC
	Married	-0.2322169	0.012**	
	Age	0.0175781	0.000***	Factors that decrease non-religious giving
	Degree	0.5680239	0.000***	
	Household Size	-0.0504087	0.000***	
	Spouse Age	0.0045911	0.003***	
Geographic	NL	-0.6198753	0.000***	(Economic) Give Price (Demographic) Married, Household Size (Geographic) NL, PE, NS, NB, QC, MB
	PE	-0.3548606	0.000***	
	NS	-0.3611795	0.000***	
	NB	-0.5119422	0.000***	
	QC	-0.6785517	0.000***	
	MB	-0.0565675	0.311	
	SK	-0.0416372	0.440	
	AB	-0.007144	0.898	
	BC	0.09321	0.085*	
Constant		-1.786487	0.005	

* Significance at 10% level; ** Significance at 5% level; *** Significance at 1% level.

For geographic factors, Atlantic Canadians, alongside Quebecers and Manitobans, give less to non-religious organizations when compared to the rest of the country. This finding is a significant provincial difference in terms of non-religious giving. It is also noted that the coefficient of all provinces is negative except for the province of British Columbia. This finding indicates that Ontario and British Columbia are where the most generous non-religious givers reside according to this dataset.

DISCUSSION AND SUMMARY

One major finding of this paper is that changes in the price of giving and household size will significantly affect non-religious giving but not religious giving. This distinctiveness tells us that religiosity is a key reason why Canadians give. Non-religious organizations may want to attract advocates the same way religious organizations do, which may include weekly events and volunteering (serving). If non-religious organizations can somehow mimic those activities, it is expected that the cyclicity of non-religious giving will be reduced.

Since the price of giving is not a significant determinant, religious organizations may have to use more creative ways to increase donations. According to this dataset, only two ways can increase religious giving, which are the age of the respondents and whether they have degrees or not. This finding may be an alarming sign for religious organizations. On one hand, individuals are giving more as they get older, but this pattern also implies that the younger generations are not used to giving. It is an observation that the majority of churches are facing the challenge of missing the generations in between. It may be beneficial for religious organizations to find ways to adapt or serve this working-age group. Otherwise, it may be detrimental to the future of religious organizations.

Another interesting finding is that Atlantic Canadians tend to be less generous to both religious and non-religious organizations compared to the rest of Canada. This finding comes after the adjustment of income and other potential influencing factors. Atlantic Canada is widely believed to be a distinct part of Canada because of its culture, but it has slower economic developments. Our finding indicates that those residing in this region are giving less compared to the rest of the nation. This finding may be explained by two potential economic reasons. First, we have the supply-side effect. Atlantic Canadians, on average, may not feel that they are able to give. They may believe that they are residing in one of the poorest regions in all of Canada, and giving may be a luxury for most of them. Second, there is the demand-side effect. Both religious and non-religious organizations are not demanding (advertising) enough in Atlantic Canada. Given the spatial conditions and the relatively low density of people residing in Atlantic Canada, the donor acquisition cost may be higher in this region. This region is not among the highest recruited areas in terms of monetary giving. As a result, the total amount of giving in this region is among the lowest in Canada.

CONCLUSION

This paper extends Kitchen's (1992) study on the determination of Canadian charitable giving by using an updated 2010 Survey of Household Spending. We have identified potential factors that affect the amount of monetary donations to religious, non-religious and all charities.

As expected, there are quite a few common determinants of religious and non-religious giving. First, total household income is one key determinant. The amount of monetary resources a family has directly affects its ability to give. The more resources a family has, the more it can give. This influence is the same for both religious and non-religious giving. It is also worth mentioning that the income elasticity of the amount of non-religious giving is greater than that of the

amount of religious giving. This finding indicates non-religious giving is more sensitive to the business cycle.

After controlling for household income, both religious and non-religious giving are also positively affected by age and education level. Those who are older are more generous to both religious and non-religious organizations, and those who have a degree tend to give more to both religious and non-religious organizations as well.

There is one geographical factor that discourages both religious and non-religious giving. In this dataset, we have found that Atlantic Canadians give less to both types of organizations. The authors suggest there are both a supply-side effect and a demand-side effect that can potentially explain this finding. On one hand, the supply side argues Atlantic Canadians may not be as generous in giving. On the other hand, the demand side argues that charities may not be focusing enough in this region. Further research is necessary to be able to draw deterministic conclusions on why this difference exists. Another common factor that discourages both religious and non-religious giving is the marital status of the individual. We have found that those who are married or common-lawed tend to give less.

Another key finding concerns factors that affect one type of giving but not the other. There are two factors (price of giving and household size) that fall into this category. Both of these factors discourage non-religious giving but not religious giving¹². The amount of religious giving is not affected by the price of giving or the household size. The price of giving and household size significantly decreases the amount of non-religious giving, however. This finding indicates that the determination of religious giving can somehow be simple despite the rationale being more complex. It is also worth mentioning that for the household size factor, even if it is significant, unlike non-religious giving, the coefficient is positive. This finding indicates that larger families are likely to give more religiously. This finding can seem like a mystery, but according to the Christian Bible, devoted religious followers may believe that the more they give, the more blessing (including offspring) they get back. Household size increases, therefore, with religious giving.

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¹² This finding may indicate that the act of tithing exists among certain religious households.

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