The Determinants of Religious Participation in Canada

Michael Faryniarz

Abstract

Many theories exist in the realm of economics to explain why individuals participate in religious activity. To this point, most studies have examined determinants separately and have analyzed the Catholic and Protestant religions. Using Canadian data, this paper tests a three stage least squares model for determinants of religious participation across eight different religions. To my knowledge this is the only study that examines religious participation using Canadian data. Results support any previous theories when examining all religions together; however, when testing each religion separately, the existing theories do not hold up. The 3SLS model controls for endogeneity of variables.

Introduction

Why do people go to church?[1] This question may seem simple. It also may not sound like something that should be dealt with in the realm of economics. Economics, however, is most commonly described as the study of scarcity. Very few would deny that time is something that can be quite scarce for the average person. There are only so many hours in the week to work, run errands, attend to family obligations, etc. On top of this, people like to enjoy their leisure time to do what they please. Balancing a schedule can be a tricky thing to do. Why then would people choose to consume their valuable hours attending church? No doubt there is the obvious explanation that people who are religious believe that attending church is their duty to the faith and, therefore, they simply must attend. I feel, however, that it is necessary to probe the question a bit further. What incentives do people have to increase or decrease their religious participation? Which activities coincide with participation and which conflict with it? In this paper, I use economic theory and statistical methods to provide some answers to these puzzling questions.

I also examine whether the results change when looking at different religious affiliations. Is religious participation determined by the same factors for all religions, or is there something inherently different among faiths that result in followers allocating their time in a different manner? This is important as it distinguishes this study from previous studies, which focus mainly on Catholic and Protestant faiths.

Section One of the paper gives some background information on religious participation in Canada, and discusses the previous economic studies of determinants of

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[1]For simplicity, the word 'church' has been used generically in the paper to denote an individual's place of religious worship, although the word is normally associated with the Christian faith in popular usage.

religious participation. Section Two presents the theoretical and empirical models along with a description of the data. Finally, Section Three presents my results, along with concluding remarks and some suggestions for future research.

1.   Religious Participation in Canada

While data from the 2001 census of Canada show that religious participation is on the decline, the number of people who participate regularly in religious activities is still considerable. While 84% of Canadians identified themselves as being religious, only about 20% attended a religious service on a weekly basis. These numbers are down from 86% and 28%, respectively, reported a decade earlier.

Roman Catholics and Protestants still account for the bulk of the religious population, garnering 43% and 29% respectively. These numbers are also down from the levels of a decade earlier, although the Protestant numbers have decreased more substantially.[2] The percentage of Canadians identifying themselves as Muslim, Hindu, and Sikh faiths all doubled or nearly doubled from 1991 to 2001. This is likely due to the commonly referenced increase in globalization, as well as Canada's relatively open immigration policy. Immigration has also likely contributed to the relatively smaller decrease in the Catholic population. Of the 1.8 million immigrants who came to Canada between 1991 and 2001, Catholics accounted for nearly one-quarter (23%) of this total, the highest proportion for any major religion among these recent arrivals.[3]

Also, levels of religious participation vary across religions. Mean data from 2001 shows that Muslims responded as participating the most frequently, followed by Hindus and Sikhs, then Catholics and Protestants. Finally, Buddhists and Jewish respondents participate least frequently. The aforementioned decrease in participation levels seem to coincide with the increase in religious diversity. This relationship between diversity of religions and religious participation has been studied in numerous instances. I construct a variable that measures this diversity and test whether or not it can explain variation in participation levels.

Previous Research

The first systematic study of religious participation from a microeconomic angle came from Azzi and Ehrenberg (1975). They introduce three reasons why individuals would participate in religious activity. The first is called the "salvation motive," whereby people believe they will see an increase in afterlife consumption if they have higher levels of religious participation in their current lives. The second reason, called the "consumption motive," is that inherent religious beliefs, for purely social reasons, provide current satisfaction from church membership. Finally, social pressures within their community may give individuals an incentive from a business perspective to

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[2]In 1991, Catholics had 45% and Protestants had 35%.

[3]These summary statistics come from the Statistics Canada (2001) article *Religions in Canada: Overview: Canada still predominantly Roman Catholic and Protestant*. The article uses figures from the Ethnic Diversity survey used for this study, so no sample restrictions exist in the data for these figures.

participate regularly in religious activity. This is called the "social pressure motive." The analysis of Azzi and Ehrenberg (1975) focuses more on the salvation motive than the others.

Many previous studies have also analyzed the determinants of religious participation. Findings have shown that there are a number of determinants that clearly contribute to levels of participation. For instance, males clearly attend church less often than females. Miller and Hoffman (1995) propose that this result stems from differences in risk preferences, describing religious behavior as risk averse and non-religious behavior as risk-taking.

Also, it has been shown consistently that religious participation increases with age. Inspired by the work of Becker (1965), Azzi and Ehrenberg (1975) develop a multi-period utility maximizing model where individuals get utility from current and future periods, as well as in the afterlife. The implications of the model are that the optimal amount of religious participation increases with age. As individuals grow closer to death, they think more about religious attendance as a means of investing in afterlife utility.

Azzi and Ehrenberg (1975) also make the assumption that expected afterlife consumption is a normal good, implying that increases in income will lead to increases in religious participation. This relationship with income is a finding that has produced many conflicting results in years since. Not surprisingly, income is not the only determinant of religious participation that has been debated over the years.

Religious Market Density

In studying the effect of religious diversity on participation levels, a theory of a religious market structure has been put forward. In the first attempt to explain the religious market structure, Iannaconne (1991) revisits Adam Smith's suggestion that the market for religion works in much the same way as markets for any other sector in the economy. Iannaconne (1991) uses cross-national data to show that higher levels of religious market concentration are associated with lower levels of religious participation. The intuition behind this finding is that more religious diversity means more competition in the "religious services" sector and thus a higher quality product.

An alternative theory pertaining to the impact of the religious market structure on participation is the notion of religious market density. If a certain area is dominated by one religion, the social benefits of attending services and networking with other members should be greater. Gruber (2005) looks at census data from the US to analyze how religious density, defined as the share of the population in an area of a particular religion, is a major determinant of religious participation. Gruber (2005) looks at the variation within a country rather than between countries. He finds that higher market density leads to higher levels of religious participation and more beneficial outcomes of key economic indicators. Because of the lack of religious diversity for the population in the data, Gruber (2005), like Iannaconne (1991), is restricted to analyzing only a few different religions.

His study breaks down the groups into Catholics, Jews, and some differentiated Protestant groups.

One criticism from Chaves and Gorski (2001), using comparative and historical evidence mainly from North America and Western Europe, concludes that no connection can be made between religious market density and religious participation. They argue that the religious market is not an ordinary market, and that evidence supporting the opposite is only witnessed in a small number of cases.

Income

Lipford and Tollison (2000) use US state-level data to test a simultaneous equations model that compares the bicausal relationship between religious participation and income. They find that higher incomes discourage religious participation and that religious participation reduces participants' incomes. Doing the same for the Netherlands, Bettendorf and Dijkgraaf (2005) also use a simultaneous equations empirical model. Their findings show the cross-effects of religion and income to be insignificant. Both papers also address the issue of endogeneity for the two variables. It must be noted that Bettendorf and Dijkgraaf (2005) use a probit model where the dependent variable is a dummy with the value 1 if the household attends religious services at least once a week. This approach dismisses respondents who attend any less than once per week.

Education

Many theories that seek to explain the effect of education on religious participation rely on the secularization hypothesis. One argument for this theory is that as people obtain more education, they will be more likely to rely on scientific fact, and thus be less likely to participate in religious activities. This theory is now considered somewhat outdated, as more recent studies have actually found a positive effect of education on religious participation. Sacerdote and Glaeser (2001) argue that more highly educated persons will see a greater benefit from the social networking of attending church. Also, Barro and McCleary (2002) use cross-country panel data to show that religious attendance is positively related to education.

Chiswick (1988) and Lehrer (1999) put forth models of supply and demand of funds for education across different religious groups. They show that the costs and benefits of obtaining an education vary from religion to religion. For instance, Lehrer (1999) believes that since Jewish family sizes are usually smaller, parents devote more resources to their children in their formative years, thus increasing the productivity of a formal education. These types of variations can lead to education having differing effects on religious participation from religion to religion.

2.   Data

The data are from the Ethnic Diversity Survey (2002) which was conducted jointly by Statistics Canada and the Department of Canadian Heritage. The sample

obtained for the survey was taken from the previous Census, since respondents were selected on the basis of answers given to certain questions in the Census. The target population for the survey consisted of people aged 15 years and older living in Canada. A random sample was selected to represent the target population. Overall, 57,242 people were selected for the survey, but only 42,476 people participated. From here, I exclude any respondents who classify themselves as not being religious.[4] This leaves a final sample size of 30,391.[5] The survey data were collected between April and August 2002. Because the data set being used is the result of a survey conducted over the telephone, the majority of responses were given categorical values that represent a certain range.

The main variable being used for my study represents the frequency of religious participation of the respondent. The options given to respondents are: at least once a week (denoted by a 1), at least once a month (2), at least 3 times a year (3), once or twice a year (4), and not at all (0). Two other important variables are region and religious affiliation. These two will be used to calculate a density variable. The region indicator is sorted by Toronto, Vancouver, Montreal, other metropolitan areas, and non-metropolitan areas. The religions included in my study are Catholic, Protestant, Jewish, Orthodox, Muslim, Buddhist, Hindu, and Sikh. Standard descriptive variables such as age, sex, education, income, children (0,1,2,3,4 or more) and marital status are included. Other variables important for my study include: hours worked per week, mother/father/spouse religion, member of social group (yes/no),[6] number of income earners in the household, and volunteer work (yes/no).

Theoretical Framework

The level of religious participation is modeled as solving a utility maximizing function

$$U_i = U\ (C_{i1},\ C_{i2},\ ...C_{it},\ ...C_{in},\ R_{i1},\ R_{i2},\ ...R_{it},...R_{in},\ q_i)$$

where $C_{it} = C_{it}(x_{it},\ l_{it})$
and $R_{it} = R_{it}(r_{it},\ S_i)$

where C_{it} is personal consumption of individual i at time t and depends on x_{it} consumption goods and lit leisure hours. R_{it} is the consumption value of religious participation for individual i at time t. It depends on r_{it}, an individual's allocation of time to religious participation, and religious human capital, represented by S_i. The notion of religious human capital put forth by Iannaconne (1990; 1998) captures the level of knowledge and appreciation of one's own religion. This is used to explain the positive relationship between participation and age. As people better understand their religion,

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[4]The assumption is that people who are not religious will not attend church, and thus measuring the variation in their participation levels is meaningless.

[5]Respondents who did not give a response for one or more of the variables being used in the regressions were also omitted.

[6]Social groups in this context refer to being a member of any community social activity group such as a choir, athletic group, Kiwanis, etc.

they see a higher return from religious activities. Also, q_i is the expected afterlife utility, and was introduced by Azzi and Ehrenberg (1975). This model also draws on and most closely resembles that of Heineck (2001).

The determinants of r_{it} are the main focus of this study. Being a time variable, r_{it} must satisfy the standard lifestyle budget constraint of working and leisure. In this respect, r_{it} is seen as a substitute for leisure (l_{it}). Thus $h_{it} = w_{it} + (l_{it} + r_{it})$, where h_{it} is the hourly time allotment to an individual in time period t, and w_{it} represents hours spent working. The level of religious participation will also depend on the personal characteristics of an individual and the environment in which that individual lives. The environmental factor being analyzed in this study is religious density. Thus,

$r_{it} = r(w_{it}, X_{it}, d_{iat})$

where X_{it} are personal characteristics that determine the level of religious participation or individual i and d_{ia} is the density of individual i's religion in area a at time t.

Empirical Model

The resulting empirical model being estimated for all religious individuals is

$$r_i = \alpha + \beta_1 \text{density}_{ia} + \beta_2 \text{male} + \beta_3 H_i + \beta_4 \text{degree}_i + \beta_5 \text{income}_i + \beta_6 \text{age}s_i + \beta_7 \text{volunteer}_i + \quad (1)$$
$$\beta_9 \text{selfemp}_i + \beta_{10} \text{children}_i + \beta_{11} \text{relparents}_i + \beta_{12} \text{relspouse}_i + \beta_{13} \text{religion}_i + \varepsilon$$

where density is the percentage of people of individual i's religion living in a particular area, and H is a measure of concentration for a particular religious market. The methodology used to calculate these variables will be discussed further. When analyzing the regression equation separately for each religion, the religion indicator is dropped. Since income level and volunteering are endogenous variables in this model, I use a 3 stage least squared (3SLS) model to test simultaneously these variables along with level of religious participation. I include variables in the income and volunteer equations that do not appear in the religious participation equation that should not determine participation levels. This should control for the endogeneity of income and volunteering. It is now necessary to give an overview of the variables being used in the model, as well as a description of the income and volunteering models being used.

Variables

Before running actual regressions, it was necessary to construct certain variables to allow the regressions to be analyzed. For the religious participation variable, r, I have changed the given values into yearly figures. Thus, at least once a week has been changed to 52, at least once a month to 12, at least 3 times a year to 3, and once or twice a year to 1.5. This treatment will allow for more accurate interpretation of the regression coefficients. Even though a greater range in answers would be ideal, as 52 does not accurately reflect the respondents who attend more than once a week, the given range should be sufficient for analysis.

It is not unreasonable to think of religious participation as a form of leisure activity. Most people need to work for a living, after which they can do what they please with the rest of their time. One simple way to confirm this assumption is by including a variable representing weekly work hours into the religious participation regression equation. A statistically significant negative coefficient will show that as work hours increase, religious participation decreases. As with participation levels, 'weekly hours worked' needed to be altered from categorical values representing ranges to meaningful values necessary for analysis. The middle values of the ranges were chosen to replace each categorical value. Even though religious participation levels and income levels are indicated on an annual basis, leaving working hours as a weekly measure should not distort the findings. The same method of choosing the middle value of each range was used to de-categorize the age variable.

Income

Basic microeconomic work-leisure theory says that increased wages should result in more time spent working. This conclusion is based on the widely accepted assumption that the substitution effect dominates the income effect, such that the increased price of leisure results in lower levels of leisure consumption. Extending this theory to my study, the regression should show a negative coefficient for personal annual income. This, of course, is assuming that annual income is an acceptable reflection of wages.

The income data from the EDS is categorical data where each participant indicates the appropriate range of their personal annual income. I have altered the numerical category values to the middle value of the range of income for the given category. For example, respondents indicated a 4 if they earned between \$40000 and \$60000 per year, so all 4's were changed to \$50000.

As mentioned earlier, previous studies have contended that income should be tested simultaneously with religious attendance. Therefore, I use a 3SLS model to test simultaneous equations of participation, income, and volunteering. The income equation takes the form

$$\text{income} = \alpha + \beta_1 r + \beta_2 \text{degree} + \beta_3 \text{wkhours} + \beta_4 \text{ages} + \beta_5 \text{metro} + \beta_6 \text{incearners} + \varepsilon \qquad (2)$$

where the variable *metro* indicates if the individual lives in a densely populated metropolitan area, and *incearners* represents the number of individuals earning an income in the respondents particular household. Other than religious participation, the variables in this income equation are standard determinants of income level. Variables that have been included in the income equation but not in the religious participation equation should not have an effect on religious participation, and thus are appropriate for this method of analysis.

Volunteering

Volunteering is represented in the model by a binary variable that takes the value of 1 if the individual participates in volunteer work and 0 if they do not. Since volunteer work does not provide income and is a measure of time, it can also be thought of as a form of leisure activity. In this regard, volunteering and going to church can be thought of as substitutes. However, since both involve people participating in an activity that they believe is morally proper, it is reasonable to assume that people who volunteer more will also attend church more. Also, much volunteer work is done through religious institutions. Hence, religious participation and volunteering would be complements. Because attending church and volunteering are so closely related, it is necessary to test the two simultaneously to control for endogeneity. The equation being used for volunteering is

$$\text{volunteer} = \alpha + \beta_1 r + \beta_2 \text{degree} + \beta_3 \text{wkhours} + \beta_4 \text{metro} + \beta_5 \text{socialgroup} + \beta_6 \text{selfemp} + \varepsilon \quad (3)$$

where the variable *wkhours* represents the number of hours worked for an individual in a particular week, and *socialgroup* takes the value of 1 if the individual is a member of a social group in the community and 0 if they are not. The reason that the *wkhours* variable is included in the volunteer equation and not in the religious participation equation is that income is assumed to reflect the number of hours worked, and income is included in the participation equation. Being a member of a social group should have a large effect on whether or not an individual does volunteer work. I do not include the *socialgroup* variable in the church participation equation because the *socialgroup* indicator represents non-religious social groups, and thus should not have a direct impact on participation levels.

Market Concentration and Density

The region indicator in the study will allow me to test the theories of religious density and market concentration. I construct a variable representing religious density for individual *i* in region *a*. To accomplish this, I have simply taken the number of people of a particular religious affiliation in a given area, and then divided by the total number of survey respondents from that area. This gives what can be considered the market share of each religion in each area. Upon calculation, I input the relative densities for each respondent into the data set. Using these density figures for each area, I then calculate the Herfindal Index (*H*) of market concentration for each region. Including the density and *H* variables should give a clear picture of the impact that the religious market plays on levels of religious participation. These variables will allow for testing the theory of a competitive religious market, and thus the theory for quality of religious experience. The density variable can also reflect the social networking or social pressure motives of religious participation.

Education

Education levels for individuals have been included to test the theory of social networking benefits from religious activity. Although there are a number of different levels of education noted for individuals in the survey, I have included a dummy variable that takes the value of 1 if an individual has a university degree or higher. Clearly those who have a university degree or higher are more educated than those who do not, so the characteristic of being more educated is captured with the degree variable. Including a dummy for every level of education should give the same results, namely the effect of higher education on religious participation levels. The economic theory previously advanced says that more education means more benefits from social networking. This should lead to a positive coefficient on the degree variable.

Self-Employed

I have included a variable that represents whether or not an individual is self-employed in order to test the theory of religious attendance for the purpose of social networking. The argument is similar to that put forth by proponents of higher levels of education leading to higher religious participation. Namely, the benefits from social networking for people who are self-employed and for those who are more educated is likely greater than for those who are not. Individuals who are self-employed should therefore have a greater incentive to attend church, resulting in a positive coefficient. A binary variable takes the value of 1 if the individual is self-employed and 0 if not. Including the self-employed variable in the religious participation equation and the volunteering equation allows for testing the social networking theory in two cases. Comparing the two effects shows how self-employed people interpret the networking benefits of going to church versus volunteering.

Religious Affiliation

One of the unique aspects of my analysis is that the data being used have information on a fairly wide variety of religions. This is unlike previous studies that have analyzed mainly the differences between Protestants, Catholics, and Jews. By separating the data into different religious groups, then running the 3SLS regression equations separately on each group, it is possible to compare results. Results come from the data set that contains all religious groups, another that contains just Christians, another just Protestants, etc. This allows me to examine the effects on religious participation for people who consider themselves religious in general, and then for each individual religion. When using the main data set of all religions, I include a set of dummy variables for each religion in order to control for the distinct level of participation for each religion.[7] However, since I am also interested in how the theories play out for each type of religion, the process of separating the data set into religious groups should allow for comparing the regression results for each group.

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[7]One dummy variable for each religious affiliation.

If different religions teach different doctrines, there should be some variation between religions with respect to the effect of personal characteristics and environment on religious attendance. For instance, some forms of Protestantism stress that acting in a morally correct way and working hard on a daily basis is the only way to achieve salvation.[8] This differs from the Catholic and Islamic religions, where salvation is possible at any time in life. Also, different beliefs in the afterlife mean that afterlife consumption may hold more weight with some religions than others. For instance, Buddhists do not believe in an afterlife at all. They believe that there is a cycle of reincarnation that only ceases when the eternal self is enlightened enough to reach nirvana, where it dissolves into nothingness. This alternative view of an afterlife should provide different results for the age variable, and possibly others.

3.   Results

Table 1 shows summary statistics for each variable. The means indicate that levels of religious participation vary across different religious groups. Muslims and Sikhs participate in religious activities most frequently, with Jewish and Buddhist individuals participating least frequently. Catholics and Protestants participate at nearly the same average level. Also, since Catholics and Protestants make up a substantially large proportion of the overall sample, their mean participation levels are very close to the overall mean.

Results from the empirical estimates are shown in Table 2. When running the original regression using all religious affiliations, all variables other than *male* and *selfemp* show up as statistically significant. Supporting the theory of expected afterlife utility, ageing has a positive impact on religious attendance.

Results differ from previous studies with respect to gender. For instance, previous studies have found that females are more religious than males. Results from Table 2 indicate that there is no significant effect of sex on levels of religious participation.[9]

When regressions are run on each religion separately results vary from religion to religion. Given that almost 80% of the main dataset consists of individuals who are either Catholic or Protestant, the religion specific results for Catholics and Protestants are very similar to those put forth above. For the other religions that are in the minority, results differ substantially from one to another. In fact, very few of the variables that were statistically significant using all religions are significant for religions in the minority.

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[8]This ideology is particularly significant among Calvinists.

[9]The coefficient for males is negative but not significant.

Religion as a Substitute for Leisure

Results from the 3SLS regressions show that personal income does have a negative effect on church attendance, even when endogeneity is accounted for. This supports the theory that religious participation is a substitute for leisure goods and higher incomes will lead to less church consumption. The results for income are actually stronger than those for any other variable other than volunteering. Income appears to have a negative effect on participation when looking at all religions together, as well as each religion individually.

Market Concentration and Density – Competitive Market Theory

When looking at all religious groups together, the density variable is showing as significantly negative. This is likely due to the fact that the significant majority of respondents are either Catholic or Protestant, and density shows up as negative for both Catholics and Protestants. The theory of religion market competition explained earlier may be a good explanation of why we see this result. This theory is further supported when the regression is run using *H* instead of the density variable in order to test how concentrated a particular region is. It is statistically significant that higher levels of *H* lead to lower participation levels.

Except for Judaism, higher levels of market concentration lead to lower participation levels for all religions. This provides more support to the religious competitive market theory. However, this coefficient is only statistically significant for Christians and Muslims at the five percent significance level. This leads to the conclusion that market concentration likely does have a negative effect on religious participation for religions in the minority. It must be noted that the density variable is not statistically significant for any of the particular religions when tested separately.

Social Networking Theory

With respect to the social networking theory, education has a positive effect on religious participation. However, being self-employed does not appear to have a significant effect on levels of religious participation. This does not rule out the social networking theory, however, since being self-employed does have a statistically significant positive effect on volunteering. This could imply that self-employed individuals see higher benefits from networking at volunteer events than from doing so at church. It must be noted that while being self-employed does not have a statistically significant effect on church attendance for the majority, it does have a significant positive effect for Protestants.[10] Conversely, having at least a university bachelor's degree is quite significant as it should increase religious participation by over two times per year.

The strong negative value for being self-employed is puzzling for Muslims. The social networking benefit is likely less evident for Muslims who are self-employed since the

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[10]See Table 3a.

majority of their clientele is likely Catholic or Protestant, given that most of Canada is Catholic or Protestant.

Other Notable Results

Individuals who participate in volunteer work attend church more often. This very strong effect indicates that volunteering and attending church are strong complements to one another. This is possibly due to the fact that most volunteer work is organized by individuals' respective churches. Not only is this result seen when looking at all religions together, but also at each religion separately. This finding can be considered concrete evidence that volunteering and religious attendance are complements of one another.

For Muslims, no variables other than volunteering, H value, male and self employed are significant. The male coefficient is strongly positive for Muslims. This strongly positive coefficient does not appear when looking at any other religion. Given the prominent role played by males in Islam, this result is understandable.

Although males do attend more often for individuals that are Jewish, the coefficient is significantly weaker than for Muslims. Other than volunteering, and being male, the number of children and having a spouse that is also Jewish have positive effects on synagogue attendance. This indicates a large emphasis on family within the Jewish religion.

Sikhs and Hindus appear to have more significant effects than some of the other minor religions. Both are similar in scripture and in culture, thus these results are not surprising. Education affects religious attendance positively for both, as does volunteering. Sikhs are also influenced substantially by the religions of their parents and spouse.

Concluding Remarks

Although this study provides interesting insight into the determinants of religious participation, there is still much more to be done. It appears that we know very little about the determinants of religious participation for religions other than those of the Christian faith. Also, a dataset with a greater range of values for variables such as *religious participation*, *age* and *income* would provide more precise results. The density and market concentration analysis was also limited by the fact that there were only five region indicators in this data set. An ideal data set would include very precise region variables, such as municipality. Further research should aim to understand more about the determinants of religious participation for religions other than the Christian faith. A comprehensive understanding of the different beliefs and value structures present in these other religions is essential in determining what makes them want to attend their respective places of worship.

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APPENDIX

Table 1

Summary Statistics

Variables	All religions Mean	Catholic Mean	Protestant Mean	Orthodox Mean	Jewish Mean	Muslim Mean	Buddhist Mean	Hindu Mean	Sikh Mean
r	17.01	16.11	17.18	12.37	11.28	20.1	9.53	15.7	22.32
	(21.77)	(21.26)	(22.13)	(18.4)	(16.87)	(23.02)	(16.26)	(19.06)	(21.38)
Income	32.46	32.36	34.16	33.63	39.69	23.94	24.62	27.28	24.96
	(25.29)	(24.79)	(25.39)	(26.37)	(30.78)	(24.69)	(24.56)	(25.2)	(23.14)
Children	0.77	0.8	0.81	0.78	0.79	1.13	0.77	0.81	1
	(1.06)	(1.06)	(1.09)	(1.05)	(1.1)	(1.34)	(1.04)	(1.08)	(1.13)
Age	42.59	41.89	46.35	41.06	42.82	34.16	37.92	32.8	32.43
	(16.24)	(15.72)	(16.13)	(16.2)	(16.98)	(14.28)	(16.9)	(14.1)	(14.28)
Income Earners	1.99	1.99	1.96	2.02	2.03	1.91	2.08	2.22	2.38
	(0.72)	(0.7)	(0.62)	(0.73)	(0.73)	(0.83)	(0.85)	(0.76)	(0.7)
H	35.75	37.24	35.16	35.67	34.41	31.93	32.09	28.82	28.06
	(8.55)	(9.33)	(6.73	(10.46)	(11.15)	(8.87)	(9.54)	(6.26)	(5.37)
Density	36.12	47.7	38.48	3.4	4.07	3.29	2.57	3.19	4.38
	(18.93)	(11.65)	(9.05)	(1.48)	(1.84)	(1.45)	(1.62)	(1.51)	(3.75)

Table 2

3SLS simultaneous equations estimate of Religious Participation, Income, and Volunteering

All Religions

Variable	r Coefficient	(std. errors)	Variable	Income Coefficient	(std. errors)	Variable	Volunteering Coefficient	(std. errors)
H	-0.29441*	(0.015)	r	0.018523	(0.018)	r	0.02286*	(0.0003)
reldensity	0.15995*	(0.006)	degree	12.72079*	(0.256)	degree	0.006927	(0.004)
male	-0.45616	(0.261)	wkhours	0.647011*	(0.005)	wkhours	0.000205*	(0.00009)
degree	2.09063*	(0.313)	age	0.383759*	(0.007)	metro	-0.049628*	(0.004)
incpers	-0.1758*	(0.009)	metro	2.546836*	(0.236)	socialgroup	0.72616*	(0.004)
age	0.11541*	(0.008)	incearners	0.988296*	(0.156)	selfemp	0.01469*	(0.006)
volunt	6.96099*	(0.307)	Constant	-7.07721*	(0.549)	Constant	0.002117	(0.006)
selfemp	0.04287	(0.406)						
children	0.88051*	(0.115)						
relparents	0.53352*	(0.247)						
relspouse	6.05045*	(0.253)						
protestant	2.61219*	(0.269)						
muslim	9.55094*	(0.858)						
buddhist	0.10268	(1.042)						
hindu	4.7326*	(1.021)						
sikh	12.7101*	(0.998)						
jewish	1.70747	(0.955)						
orthodox	4.14445*	(0.819)						
Constant	13.1379*	(0.622)						
R^2	0.1093			0.4655			0.5963	
N	30391			30391			30391	

*Significant at 5 percent level

Table 3a

Religion Specific Annual Religious Participation Regression Results

Variable	Catholic			Protestant		
	r	Income	Volunteering	r	Income	Volunteering
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
Constant	19.95393* (1.09)	-5.3583* (0.92)	-0.00764 (0.011)	23.39555* (1.556)	-7.47332* (1.306)	-0.02731* (0.013)
age	0.299949* (0.014)	0.30428* (0.016)	\ \	-0.0234831 (0.015)	0.39182* (0.013)	\ \
degree	3.848267* (0.556)	13.24807* (0.442)	0.00643 (0.007)	4.45177* (0.659)	14.13795* (0.509)	0.00759 (0.008)
H	-0.40911* (0.039)	\ \	\ \	-0.07743 (0.042)	\ \	\ \
reldensity	-0.01303 (0.03)	\ \	\ \	-0.01585 (0.032)	\ \	\ \
male	-0.26835 (0.452)	\ \	\ \	-0.30026 (0.557)	\ \	\ \
incpers	-0.194* (0.016)	\ \	\ \	-0.24964* (0.019)	\ \	\ \
volunt	8.147517* (0.562)	\ \	\ \	4.882443* (0.575)	\ \	\ \
children	0.599488* (0.202)	\ \	\ \	0.839001* (0.225)	\ \	\ \
relparents	0.230264 (0.464)	\ \	\ \	-1.81682* (0.446)	\ \	\ \
relspouse	4.284117* (0.434)	\ \	\ \	10.35103* (0.499)	\ \	\ \
selfemp	-1.27984 (0.717)	\ \	0.01132 (0.011)	1.929174* (0.818)	\ \	0.012445 (0.011)
r	\ \	0.094534* (0.036)	0.001915* (0.0005)	\ \	0.019874 (0.036)	0.002635* (0.001)
wkhours	\ \	0.661737* (0.009)	0.000518* (0.0001)	\ \	0.647045* (0.01)	0.000267 (0.0002)
metro	\ \	2.422797* (0.393)	-0.04687* (0.007)	\ \	3.755732* (0.42)	-0.0338* (0.006)
incearners	\ \	0.7624* (0.27)	\ \	\ \	0.902782* (0.304)	\ \
socialgroup	\ \	\ \	0.688616* (0.007)	\ \	\ \	0.790191* (0.007)
R^2	0.1085	0.4511	0.5556	0.0784	0.4371	0.6522
N	10975	10975	10975	8762	8762	8762

*Significant at 5 per cent level

Table 3b

Religion Specific Annual Religious Participation Regression Results

Variable	Jewish			Orthodox		
	r	Income	Volunteering	r	Income	Volunteering
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
Constant	2.145179 (4.17)	-20.5856* (7.198)	0.1112677 (0.095)	11.71797* (3.548)	-11.5981* (4.713)	-0.0379033 (0.047)
age	-0.0635019 (0.057)	0.4856407* (0.067)	\ \	0.034221 (0.047)	0.3765186* (0.055)	\ \
degree	2.714501 (1.889)	10.29329* (2.345)	0.0011396 (0.039)	3.007153 (2.013)	12.97102* (1.864)	-0.0008774 (0.029)
H	0.0021086 (0.068)	\ \	\ \	-0.0980131 (0.065)	\ \	\ \
reldensity	0.1858453 (0.416)	\ \	\ \	-0.0702701 (0.443)	\ \	\ \
male	7.70152* (1.65)	\ \	\ \	-0.9453759 (1.472)	\ \	\ \
incpers	-0.0801378 (0.054)	\ \	\ \	-0.0679904 (0.067)	\ \	\ \
volunt	11.77902* (2.296)	\ \	\ \	11.57201* (2.009)	\ \	\ \
children	2.082358* (0.748)	\ \	\ \	0.648867 (0.711)	\ \	\ \
relparents	1.197166 (2.206)	\ \	\ \	-2.541121 (1.464)	\ \	\ \
relspouse	4.488947* (1.717)	\ \	\ \	6.018492* (1.666)	\ \	\ \
selfemp	-1.287041 (2.078)	\ \	0.0057794 (0.049)	0.4516516 (2.51)	\ \	-0.0150752 (0.045)
r	\ \	0.5011392* (0.175)	0.0027238 (0.004)	\ \	-0.0027309 (0.152)	0.0092511* (0.003)
wkhours	\ \	0.7615472* (0.049)	-0.0002903 (0.001)	\ \	0.5765856* (0.038)	-0.0004967 (0.0007)
metro	\ \	8.366316 (5.453)	-0.1256521 (0.092)	\ \	3.617079 (2.852)	-0.0299001 (0.042)
incearners	\ \	0.9332745 (1.438)	\ \	\ \	3.343846* (1.186)	\ \
socialgroup	\ \	\ \	0.6323482* (0.049)	\ \	\ \	0.6370343* (0.033)
R^2	0.1451	0.4717	0.4442	0.1249	0.4324	0.5534
N	433	433	433	595	595	595

*Significant at 5 per cent level

Table 3c

Religion Specific Annual Religious Participation Regression Results

	Muslim			Buddhist		
	r	Income	Volunteering	r	Income	Volunteering
Variable	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
Constant	13.93916 (7.533)	-7.71858 (4.901)	0.032645 (0.059)	12.315220* (5.020)	1.896770 (5.012)	-0.079866 (0.057)
age	0.079706 (0.089)	0.256* (0.066)	\ \	0.056098 (0.052)	0.284034* (0.057)	
degree	-0.293131 (2.438)	12.88306* (1.911)	-0.012004 (0.027)	-0.764483 (2.336)	13.748900* (2.209)	0.035490 (0.041)
H	-0.269825* (0.121)	\ \	\ \	-0.100653 (0.096)	\ \	\ \
reldensity	0.752663 (0.687)	\ \	\ \	-0.233491 (0.542)	\ \	\ \
male	10.8657* (1.898)	\ \	\ \	-1.584276 (1.598)	\ \	\ \
incpers	-0.126407 (0.079)	\ \	\ \	-0.048559 (0.064)	\ \	\ \
volunt	15.58239* (2.632)	\ \	\ \	12.031150* (2.383)	\ \	\ \
children	-0.589612 (0.814)	\ \	\ \	0.618681 (0.772)	\ \	\ \
relparents	3.085555 (3.636)	\ \	\ \	-3.147145 (1.765)	\ \	\ \
relspouse	1.384003 (2.302)	\ \	\ \	-2.086890 (1.736)	\ \	\ \
selfemp	-8.467607* (3.038)	\ \	-0.072969 (0.048)	-2.228585 (3.310)	\ \	0.081331 (0.068)
r	\ \	0.473718* (0.111)	0.0004273 (0.002)	\ \	-0.115552 (0.190)	0.011531* (0.006)
wkhours	\ \	0.602846* (0.042)	0.000456 (0.001)	\ \	0.650412* (0.043)	0.000275 (0.001)
metro	\ \	-4.879289 (3.909)	-0.043397 (0.062)	\ \	-4.957871 (3.370)	-0.004518 (0.061)
incearners	\ \	-0.422993 (0.934)	\ \	\ \	0.517372 (1.099)	\ \
socialgroup	\ \	\ \	0.696153* (0.032)	\ \	\ \	0.601567* (0.064)
R^2	0.1348	0.2904	0.585	0.099	0.5306	0.5245
N	559	559	559	357	357	357

*Significant at 5 per cent level

Table 3d

Religion Specific Annual Religious Participation Regression Results

Variable	Hindu			Sikh		
	r	Income	Volunteering	r	Income	Volunteering
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
Constant	18.75687 (9.726)	-16.82329* (8.11)	-0.1877931 (0.132)	5.67067 (11.181)	-5.491691 (4.569)	-0.0183862 (0.058)
age	0.0536657 (0.087)	0.2715375* (0.072)	\ \	0.3247175* (0.09)	0.2313722* (0.091)	\ \
degree	-5.065446* (2.304)	13.59551* (2.004)	0.0360739 (0.042)	-2.788658 (2.612)	7.970631* (1.945)	0.0067541 (0.029)
H	-0.2881207 (0.203)	\ \	\ \	-0.3785288 (0.231)	\ \	\ \
reldensity	-0.2018843 (0.822)	\ \	\ \	-0.2891287 (0.377)	\ \	\ \
male	1.837549 (1.85)	\ \	\ \	2.059042 (2.213)	\ \	\ \
incpers	-0.0831249 (0.072)	\ \	\ \	-0.2076909* (0.103)	\ \	\ \
volunt	12.94757* (2.485)	\ \	\ \	7.416231* (2.79)	\ \	\ \
children	0.9223451 (1.071)	\ \	\ \	1.514442 (1.26)	\ \	\ \
relparents	-0.0502511 (3.933)	\ \	\ \	17.34385* (6.447)	\ \	\ \
relspouse	3.285245 (2.367)	\ \	\ \	7.765837* (3.077)	\ \	\ \
selfemp	1.715633 (4.521)	\ \	0.0185679 (0.074)	-0.3258681 (4.719)	\ \	0.0354653 (0.059)
r	\ \	0.1980717 (0.167)	0.0044306 (0.005)	\ \	0.1628735 (0.166)	0.0016576 (0.002)
wkhours	\ \	0.6786191* (0.04)	0.0000263 (0.0007)	\ \	0.5588378* (0.039)	0.0011555 (0.0006)
metro	\ \	6.84002 (7.74)	0.1254033 (0.147)	\ \	-2.865512 (3.034)	-0.0617983 (0.046)
incearners	\ \	1.898736 (1.118)	\ \	\ \	2.108169 (1.169)	\ \
socialgroup	\ \	\ \	0.7209461* 0.052)	\ \	\ \	0.7917094* (0.026)
R^2	0.0909	0.5481	0.5985	0.1488	0.4453	0.7011
N	379	379	379	399	399	399

*Significant at 5 per cent level

Table 4

Density and Religious Market Concentration by Region

	Overall		
	N	Density	Density^2
Catholics	14077	45.192462	2042.3586
Protestants	10714	34.3959677	1183.0826
Other Christian	2714	8.7129602	75.915675
Orthodox	747	2.3981508	5.7511273
Jewish	630	2.0225368	4.0906551
Muslim	663	2.1284792	4.5304237
Hindu	426	1.3676201	1.8703847
Buddhist	504	1.6180294	2.6180191
Sikh	493	1.5827153	2.5049877
Total	31149	100	3322.7225

	Toronto			Montreal			Vancouver			Other CMA			Non CMA		
	N	Density	Density^2	N	Density	Density^2	N	Density	Density^2	N	Density	Density^2	N	Density	Density^2
Catholics	2532	41.037277	1684.0581	2423	72.285203	5225.1505	602	29.4376528	866.5754	4486	44.922892	2018.0662	4034	42.038349	1767.2228
Protestants	1758	28.492706	811.8343	259	7.7267303	59.702361	684	33.4474327	1118.7308	3384	33.887442	1148.3588	4629	48.23885	2326.9866
Other Christian	760	7.6106549	57.922068	162	4.8329355	23.357266	313	15.3056234	234.26211	760	7.6106549	57.922068	719	7.4927052	56.140631
Orthodox	267	4.3273906	18.726309	171	5.1014319	26.024607	21	1.0268948	1.0545129	220	2.2030843	4.8535804	68	0.7086286	0.5021545
Jewish	319	5.1701782	26.730743	169	5.0417661	25.419405	15	0.73349633	0.5380169	107	1.0715001	1.1481125	20	0.2084202	0.043439
Muslim	296	4.7974068	23.015112	83	2.4761336	6.1312376	60	2.9339853	8.6082697	194	1.9427198	3.7741602	30	0.3126303	0.0977377
Hindu	263	4.2625607	18.169424	20	0.5966587	0.3560016	47	2.2982885	5.28213	89	0.8912477	0.7943225	7	0.0729471	0.0053213
Buddhist	161	2.1555915	4.6465747	63	1.8794749	3.5324259	112	5.4767726	29.995038	126	1.2617664	1.5920544	42	0.4376824	0.1915659
Sikh	133	2.6094003	6.8089699	2	0.0596659	0.00356	191	9.3398533	87.23286	120	1.2016823	1.4440404	47	0.4897874	0.2398917
Total	6170	100	**2651.9116**	3352	100	**5369.6774**	2045	100	**2352.2791**	9986	100	**3237.9533**	9596	100	**4151.4302**

* $H = \Sigma \, (Density)^2$