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To What Extent Do Religious Institutions Provide a Societal Value? Is the Tax-Exempt Status Justified?

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**TO WHAT EXTENT DO RELIGIOUS INSTITUTIONS
PROVIDE A SOCIETAL VALUE? IS THE TAX-
EXEMPT STATUS JUSTIFIED?**

by

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**SUBMITTED TO SCRIPPS COLLEGE IN PARTIAL
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Abstract

Religious institutions have been tax-exempt from almost all taxes for more than two centuries. The two primary justifications used to protect this 'status' is the constitution and the concept that churches provide positive externalities that believers and non-believers all benefit from. This paper examines the relationship between religiosity and five socially important characteristics: high school graduation rate, a divorce rate, incidence of domestic violence, and levels of substance abuse and crime. I run multiple simple and full regressions across 207 counties in Texas. In four of the five analyses, religiosity has a strong statistically significant desirable impact. With the addition of control variables, other explanatory variables like median household income and number of divorces have coefficients with greater magnitude but the same statistical significance as that of religiosity.

Acknowledgments

I would like to express my sincere gratitude to the two professors who have agreed to be my senior thesis readers, Professor Roberto Pedace and Professor Andrew Finley. Thank you Professor Pedace for your support, encouragement, and guidance throughout the semester. There were countless instances where I would run into obstacles and question my ability to successfully carry-out and complete this research, but you believed in me and helped me get back on track. Likewise, a big thank you to Professor Finley for your timely responses and insightful comments.

In addition, I would like to thank my parents for their enthusiasm and general interest in my topic of research. Most importantly, my brother, Darren, for his support during the initial stages of writing this thesis, a time where I felt the most lost.

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Table of Contents

I.	Introduction.....	4
II.	Literature Review.....	8
III.	Theory.....	17
IV.	Model and Data.....	20
V.	Results.....	24
VI.	Conclusion.....	30
VII.	References.....	33

Introduction

For centuries, churches and religious organizations have been exempt from both state and federal taxes. The two most common and widely cited justifications for the continuation of such status are 1) to ensure the separation of the church and state according to the U.S. Constitution and 2) to maintain the benefits society receive from the presence of religious institutions. In this research, I will focus entirely on examining the social values churches render but not analyze nor review any discussion regarding the constitution. The purpose of my thesis is to study the relationship between religiosity and four components of civil society: education, health, family, and safety.¹

Why?

The desire and need to investigate this question is that churches are granted coveted tax benefits, but the extent to which they provide societal value is unclear. Currently, the lack of government oversight and transparency from these religious institutions is concerning. I assume this phenomenon is left untouched because religion is very much integrated within society, so it is hard to even think about potential wrongdoings. However, the population of the United States, especially that of young adults, are becoming less religious, and thus, I believe it is imperative to revisit this topic (Lipka, 2015).² From a purely economic standpoint, if no positive externalities are observed, why are churches still tax-exempt? The foregone tax revenue that the government could have used on public projects, such as building homeless shelters, would benefit a much larger group of people in need.

¹ To clarify, for this thesis, by health, I am examining substance abuse, not mortality rates nor life expectancy.

² This generational shift is observed in multiple conventional measures such as the decrease in attendance of religious events and the growth of the religiously unaffiliated (“Nones” on the Rise, 2012).

What Makes A Civil Society?

Rodney Stark, a Pulitzer Prize nominee, claims that religion benefits the US economy, and in dollar terms, it is a conservative estimate of \$2.6 trillion annually (2013). His assessment of the financial impact of those religious realities stems from the belief that religious participation, motivated by altruism, encourages prosocial behaviors. Thus, the studies I present below will explain how and why the components—family, education, health, and safety—create a civil society.

To start, I hypothesize that family, education, and substance use are interrelated. This means that the positive effects of one aspect will trickle into and impact the other factors like a positive feedback loop. Couples who practice the same faith report higher levels of marital and health satisfaction and are more likely to remain married, as concluded in a study in 2015 (Jafari et al.). Growing up in a loving and warm family has a profound impact on the development of young children. The sense of community, paired with the expectations from parents, allows for higher graduation rates and serves as a deterrent from socially deviant behaviors such as substance abuse. These all have a direct and indirect impact on the economy, with most manifested in the labor market and additional government expenditures. Especially in the face of rapid technological advancement, “education plays an increasingly important role in preparing new labor market entrants for the workforce” (Karoly, 2010). Substance abuse takes a significant toll on the economy as it decreases the number of productive labor participation. Not to mention, drug prevention, treatment, and rehabilitation programs are costly.

Furthermore, the criminal justice system is especially expensive, emphasizing how ensuring safety and reducing crime rates are important to create a civil society.

Stark states in an interview that the biggest contributor of the \$2.6 trillion savings is

through the criminal justice system, claiming that “if all Americans [commit] crimes at the same level as those who do not attend religious services, the costs of the criminal justice system would about double to perhaps, \$2 trillion annually” (Vogt, 2013). Past literature suggests that religious participation results in less juvenile delinquency and fewer crimes. This comes with huge savings because the hiring of law enforcement and running prisons are expensive. Upon release from prison, [ex-criminals] return to a society that is “challenging” and discourages them from pursuing or returning to any career. (The Challenges of Prisoner, 2016). Thus, the rate of recidivism increases. James (2015) found that within five years of release, 76.6% of ex-offenders get rearrested. This forces the taxpayer to pay a hefty price and contribute to a system that is arguably ineffective and broken. People living in communities with high crime rates have decreased chances of economic mobility (Sharkey and Torrats-Espinosa, 2017). Old firms relocate, and new businesses are hesitant to start, which leads to higher rates of unemployment.

Due to limited data, it is hard to study whether religious people are indeed generally happier and more charitable with their time and money (Stark and Maier, 2008; Francis et al., 2003; Mookerjee and Beron, 2005; Lewis and Cruise, 2007; Vaidyanathan et al., 2011). However, if the scenario above is tested to be true, then together, a civil society is maintained where believers and non-believers all benefit from the presence of religion.

How Will Civil Society Be Measured?

To test the four proxies for societal value, I will run multiple regressions where religiosity is the independent variable for every case. The primary purpose of the proxies is to examine the impact, if any, of the mere presence of churches because counties in Texas, like Stafford, have proclaimed that “churches [are] putting [the] town out of business” (Hart, 2006).³ Thus, in this study, the sample size is all 254 counties in Texas, and the measure of religiosity is the number of congregations in a county per ten-thousand people. Since multiple factors feed into the outcome variables, they are proxies for the four broad categories that in turn give insight on the magnitude and types of social benefits that churches provide. To answer the research question, I will assess the aggregate effect of all measures while controlling for other factors that may simultaneously affect the outcomes of interest.

To reiterate, I hypothesize that if religious institutions contribute to a civil society, then their tax-exempt status is justified, and vice versa. After analyzing my results, I find that overall, religiosity does contribute to a civil society. In addition, the magnitude varies depending on the outcome variable tested; this increases the difficulty to provide a white or black answer to my initial question. Nevertheless, my findings generally remained consistent with past researches except in the case of legal substance use where I observed an insignificant and positive relationship with religiosity.

³ At the time, Stafford county had “51 churches and other religious institutions packed into its 7-square miles” (Hart, 2006). This led to the community’s outcry because this left less than “300 undeveloped, potentially revenue-producing acres...in Stafford” (Hart, 2006). With no source of revenue, how will the police, firemen, and more be paid?

Literature Review

Overview: Why Religion is Good and Important to Society

According to an update of a 1996 report written by Fagan, the practice of religion provides positive benefits in a multitude of areas such as marriage, charitable-giving, education attainment, substance use, and crime rates (2006). The report is a systematic review of a collection of empirical journals performed prior to 2006. Fagan holds the firm belief that religion touches upon all, starting from the individual, to its immediate family, then to the neighborhood/community, and at last, to society as a whole. Thus, he states that policymakers at all levels should continue to protect the church's rights guaranteed by the constitution and encourage religious practice within society (Fagan, 2006).

However, up until the late 1990s, many experts in the realm of social science and criminology did not believe that religion had an impact on human behavior, much less on social outcomes. For this section of my senior thesis, I will review prior works of literature to see the role of religiosity as an agent of socialization.⁴ This learned ability to process and behave in a socially acceptable manner is at the core of the four proxies I am using to approximate for and define civil society.

Effects of Religiosity on Education

Prior research found religion to be conducive to multiple ideal social outcomes including educational attainment. In 1988, Hansen and Ginsburg's findings from an

⁴ The term socialization refers to the process of learning and internalizing “the necessary skills, knowledge, values, and roles that enable [individuals]...to function effectively in a society affected by the rapid technological change and growing cultural diversity (Brown and Gary, 1991; Bush and Simmons, 1990).” This learning continues throughout the course of life and is evident in both adults and children.

empirical analysis reveal a positive relationship between values and high school success. The values examined in their research models include the “students’ religious, work ethic, and educational values” (Hansen and Ginsburg, 1988).⁵ Religiosity is measured by self-reported answers on questions related to “attendance at religious services and involvement in church activities” (Hansen and Ginsburg, 1988). Aside from the similar use of questionnaire answers for religiosity and multiple common controls, Brown and Gary’s measure of educational attainment is the “number of years of schooling completed” (1991).⁶ Initially, no statistically significant relationships are observed; however, when multiple regressions are run for separate age groups, they find a positive relationship between religiosity and educational attainment for African Americans under 46 years of age (Brown and Gary, 1991). The Pearson correlation coefficient with a p-value less than one percent suggests that the association is strongest for individuals in the 18 to 29 age bracket (Brown and Gary, 1991).⁷ By utilizing interaction variables, they find that for African Americans, religious socialization has a greater impact on educational attainment than that of “belonging to any particular denomination or the effect of having a particular family structure during childhood” (Brown and Gary, 1991).⁸

⁵ They performed two models: the cross-sectional model and the change model. The former focuses on the cumulative effect of all variables and provides insight into the “consequences of values for the high school outcomes of dropouts as well as non-dropouts (Hansen and Ginsburg, 1988).” An advantage of the change model is the “time ordering of the values and achievement variables” because the values collected in 1980 are used to predict fluctuations in achievement throughout the years from 1980 to 1982 (Hansen and Ginsburg, 1988). The main measures for achievement are test scores and grades.

⁶ The general common control variables include denominational affiliation, age, gender, family structure, and more.

⁷ Pearson correlation coefficient, or commonly referred to as Pearson’s r , measures the strength of the linear association between two variables by providing a value between negative and positive one.

⁸ Religious socialization is defined in the study as “the process by which an individual learns and internalizes attitudes, values, and behaviors within the context of a religious system of beliefs and practices” (Brown and Gary, 1991).

Muller and Ellison's 2001 study used a sample that is limited to those enrolled in public schools. By doing this, they will not have to account for the potential influence of mandated religious practice on their subjects in religious private schools. This is a good attempt to avoid potential biases and ensure objectivity, but even for public schools, the level of religiosity is affected by an abundance of external influences such as the residential districts they serve. Despite the use of the same measure of religiosity, the research is fundamentally based on Coleman's theories about social capital. Religious communities can be perceived as social capital through the installation of values, the provision of resources, and the forging of meaningful relationships that can contribute to positive social outcomes (Muller and Ellison, 2001). The figure below, taken directly from the article, illustrates the relationship between the three variables that the study sets out to explore.

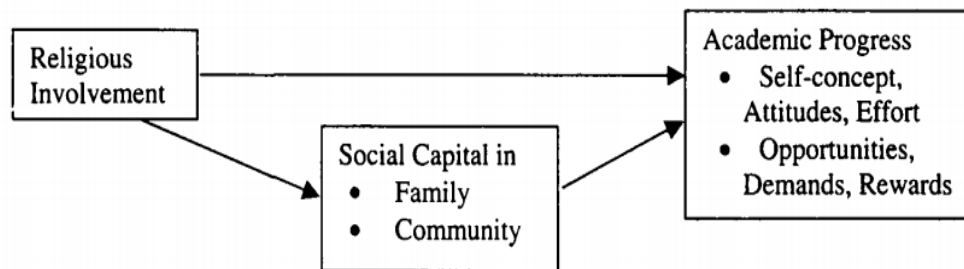


Figure 1. Postulated Indirect Relationship of Religious Involvement on Academic Progress (Muller and Ellison, 2001).⁹

It is important to acknowledge that family social capital refers mainly to parent-child relations, whereas community social capital includes peer groups and intergenerational

⁹ Source: Muller, C., Ellison, C.G., 2001. Religious Involvement, Social Capital, and Adolescents' Academic Progress: Evidence from the National Education Longitudinal Study of 1988. *Sociological Focus* 34, 155–183. <https://doi.org/10.1080/00380237.2001.10571189>

relationships (Muller and Ellison, 2001). The final results indicate that the postulated two-part relationship better depicts the impact of religious involvement on academic progress, as most of the observed effect on academic achievement is explained by its association with family and community social capital (Figure 1, Muller and Ellison, 2001). Contrary to popular belief in the significance of different denominations, Muller and Ellison's analyses suggest no apparent effects of these subcultures on academic outcomes.

Effects of Religiosity on Marriage and Family Relationship

A systematic review of a collection of empirical journals, published in six major marriage and family journals between the years 1995 and 1999, found that 13.2% of the 864 empirical articles have at least one variable of religiosity (Weaver et al., 2002).¹⁰ The review highlighted a study performed by Amato and Rogers in 1997 where, with the use of longitudinal data, they observe a statistically significant inverse relationship between church attendance and divorce rates (Weaver et al., 2002). Another study accounts for the reciprocal nature of the relationship between religiosity and family behaviors by separating the National Survey of Families and Households panel data into two waves (Call and Heaton, 1997). The first wave was collected in 1987, and the second interval was surveyed five years later to see if there were signs of marital dissolution (Call and Heaton, 1997).¹¹ They ran multiple regressions. The simplest form included just the individual religious variables, then layers of complexity were added by

¹⁰ The six major journals examined are: American Journal of Family Therapy, Families in Society, Family Process, Journal of Family Psychology, Journal of Marriage and the Family, and Journal of Marital and Family Therapy (Weaver et al., 2002)

¹¹ Marital disruption is when the couples in the first survey reported having separated (Call and Heaton, 1997).

controlling for demographic and marriage characteristics (Call and Heaton, 1997).¹² As expected, religiosity has a strong and positive relationship with marital stability for both men and women. Their results show that individuals who are not religious have higher rates of dissolution than any other group (Call and Heaton, 1997).¹³ But, the effects of denominations diminish when demographic characteristics are controlled for. The main takeaway is that when both husbands and wives share the importance of religion, the likelihood of separation greatly reduces. However, the reverse is true when there is a disparity. For example, couples have a higher risk of divorce “if one spouse attends church regularly and the other never attends than for couples when both never attend” (Call and Heaton, 1997).

The Effect of Religiosity on Substance Use and Crime Level

Alcohol and drugs are the two most commonly tested variables for substance abuse. In 1985, a study investigated both variables to see the influence of religiosity as a deterrent among various other potential explanatory variables for patients with affective syndromes (Hasin et al.).¹⁴ The measures of religiosity used are the individuals' religious identification, level of religious involvement, and religious background (Hasin et al., 1985). There was no in-depth explanation on how each of them is defined or estimated. Results from running multiple regressions reveal a negative relationship between religious involvement and both types of substance abuse (Hasin et al., 1985).

¹² The religious dimensions examined are “frequency of attendance...and importance of religious belief” (Call and Heaton, 1997). Similarly, the marriage characteristics used include “marital satisfaction... and attitudes toward nonmarital sex” (Call and Heaton, 1997).

¹³ The other religious affiliations examined are “liberal Protestant, moderate Protestant, conservative Protestant, Catholic, Jewish, and other” (Call and Heaton, 1997).

¹⁴ The four groups of affective syndromes analyzed in the research are: “Schizoaffective (manic or depressed), Bipolar I, Bipolar II, or Unipolar” (Hasin et al., 1985). Other independent variables used include sex, age, socioeconomic status, and more (Hasin et al., 1985).

Interestingly, their results coincide with Cahalan's finding in 1972 that Catholics are more prone to problems related to alcohol abuse (Hasin et al., 1985.)

Another report clearly defined the measures for alcohol and marijuana use by taking into account the common trend of consumption among seniors in 125 public and private high schools (Amoateng and Bahr, 1986). For example, for alcohol, it is possible for an individual to drink infrequently but in large quantities; therefore, the questionnaire accounts for the frequency and amount (Amoateng and Bahr, 1986). In addition, the measure of religiosity is the importance of faith and participation of church events. Other independent variables include different religious denominations and family characteristics. While the outcome is consistent with previous studies in that religiosity has a significant inverse relationship with substance use, this study suggested that gender and race have predictive value.

Furthermore, multiple studies show an inverse relationship between religiosity and delinquency (Higgins and Albrecht, 1977; Tittle and Welch, 1983; Freeman 1985; Larson and Johnson, 1998; Donahue and Benson, 1995). For example, in Richard R. Freeman's 1985 study, church-going is the principal determinant on inner-city African American youths' ability to break the school-to-prison pipeline.¹⁵ His regression results show that church-going and socially deviant activities are negatively correlated (Freeman, 1985). Thus, Freeman concludes that church-going and other background factors affect African American youths' behaviors and increase their chances of escaping an almost predetermined path (1985).

¹⁵ That ability is captured by three factors: 1) allocation of time, 2) socially deviant behavior, and 3) labor force behavior (Freeman 1985). Allocation of time is a useful determinant for this study because the income and spending of the sample group are similar to that of relevant age group, so the problem lies in the ill-use of time (Freeman 1985).

Larson and Johnson (1998) extended Freeman's study above to fit their proposed model into a criminological framework. With the similar use of national longitudinal data on urban black youth, they modified the core hypothesis to "whether a youth's church attendance has any independent effect on delinquent behavior, especially among inner-city black youths (Larson and Johnson, 1998)." They introduced more dimensions of religiosity and two dependent variables of drug and alcohol use to Freeman's original study (Larson and Johnson, 1998).¹⁶ Despite a slightly different context, Larson and Johnson's result remains consistent with Freeman's original findings. Consequently, one of the policies suggested by the study is to encourage the utilization of religious institutions instead of relying on school and family bonds to deter socially deviant behaviors of at-risk youths.¹⁷ However, the outcome could be more insightful if a distinction was made between victimless and victim crimes (Elifson et al., 1983).¹⁸ Middleton and Putney (1962) find that church attendance has a "much stronger negative relationship to victimless crimes than victim crimes."

In the first section of Larson and Johnson's report, they did a systematic review on 40 journal articles that examine the effect of religion on juvenile delinquency,

¹⁶ The six dimensions of religiosity explored in Larson and Johnson's report are: 1) attendance; 2) salience; 3) denomination; 4) prayer -- the degree of active and importance in one's life; 5) study of scripture -- the frequency of reading sacred texts; and 6) religious activities (1998).

¹⁷ The argument behind this policy is that religion deters delinquency. Given the circumstances of at-risk youths in poor communities, churches and houses of worships can be viewed as a "remnant of social organization amidst the otherwise disorganized and trouble areas...found in inner-cities"(Larson and Johnson, 1998)." Therefore, more funding should go to religious institutions as they could be inner-cities-youths' last hope.

¹⁸ For this study, victimless crimes refer to alcohol and marijuana use, whereas victim crimes include acts like hitting another individual, setting fire to a property, threatening someone for money, and more (Elifson et al., 1962). The proper terms are 'anti-ascetic actions' and 'anti-social actions' (Middleton and Putney, 1962; Elifson et al., 1962).

published between January of 1980 and December 1997 (1998).¹⁹ Their overall assessment of the sample studies relies on two components: quality of research and religiosity measures. For the first part, eleven items are derived from Cook and Campbell's research to measure the methodology of the studies (Larson and Johnson, 1998).²⁰ Moreover, the majority of studies designates religion as the main explanatory variable for different types of delinquency (Larson and Johnson, 1998). Here, delinquency is defined as "any criminal, delinquent, or status offense committed by a juvenile (Larson and Johnson, 1998)." Altogether, Larson and Johnson conclude that the use of a more multidimensional measure for religiosity leads to a stronger negative relationship finding between religiosity and delinquency than that of studies using less than two dimensions (1998).

Contrary to the aforementioned conclusion, other journals show results with a mixed or insignificant relationship between church-going and delinquency (Hirschi and Stark, 1969; Elifson et al., 1983; Benda, 1997; Cochran et al., 1994).²¹ First, Elifson et al. conducted interviews with a random sample of 600 high school students from grades 9 through 12 and used multivariate procedures as a way to determine the importance of religion (1983). The observed results corroborate those of Albrecht et al., (1977) and previous studies in that religiosity has a stronger negative relationship with victimless

¹⁹ Only 402 criminology journals met the four criteria carefully noted in the study. And within those studies, only approximately 10%, or 40 articles, looked at the relationship between religiosity and an aspect of juvenile delinquency (Larson and Johnson, 1998).

²⁰ The eleven criteria are: "1) no ambiguity about causal inference; 2) the use of prospective data; 3) specification of response rate; 4) specification of missing data; 5) specification of race of subjects; 6) specification of gender of subjects; 7) specification of reliability of measures; 8) no mono-operation bias; 9) no mono-method bias; 10) use of multivariate statistics; and 11) interpretation of statistical findings (Larson and Johnson, 1998)."

²¹ Frequency of church attendance is the most common measure of religiosity amongst past literature on this topic.

crimes.²² A plausible explanation for this phenomenon is that churches have “spoken out and used sanctions while other moral influences in society have been mute” (Elifson et al., 1983). However, despite the slightly stronger relationship, the study discovers that religion as a predictor within a multivariate context becomes statistically insignificant (Elifson et al., 1983). This could be the case because, similar to the conclusion that is drawn from Hirschi and Stark’s 1969 study, religion is not the only moral influence in society. Two decades later, Cochran et al. (1994) tested two claims of spuriousness with regards to the inverse religion-deviance relationship:

- 1) **The arousal theory** is that “those prone toward criminality...tend to be...risk-taking thrill-seekers, and they are unlikely to find religion and/or religious services neurologically satisfying,” and vice versa.
- 2) **The social control theory** argues that the “effects of religion are mediated or duplicated by other sources of social control.”

The test was against six self-reported socially deviant acts, and the outcome is that when the variables from the two theories are controlled, the effects of religiosity for all deviant behaviors, (except for the use of legalized drugs) are insignificant.²³

Purpose of My Study: Building off of Past Research

Different research methods and purposes have produced mixed results, which add to the confusion regarding the extent religiosity provide social value. Many studies were conducted before the year 2000, a period in which the United States population was considered to be quite religious. It would be interesting to see if the same test was

²² The term “victimless crimes” encompasses delinquent acts such as the use of a substance (drugs and/or alcohol), unsanctioned sexual behavior, and more.

²³ The six dependent variables are interpersonal delinquencies, property-theft delinquencies, property-damage delinquencies, illicit drug use, legalized drug use, and truancy (Cochran et al., 1994).

done in the present, would the results be the same? In addition, the measure of religiosity and other variables is often based on longitudinal data which allows for a multidimensional examination of the problem. A potential downside to the use of panel data is that if the models are not specified correctly and carefully performed, conclusions drawn from the results may be erroneous due to issues with autocorrelation and heteroskedasticity. Also, none of the past works of literature I reviewed examine all four aspects together. Thus, the objective of my thesis is to see if the mere presence of religious institutions, regardless of denominations, provides a social benefit to society that in turn justifies their tax-exempt status. I am fully aware of the danger of using a one-dimensional measure for religiosity, but I do believe there is substantial value to my results because most of the controversy regarding church tax-exemption resides in the governments' foregone property tax revenue. I hope that, by assessing the impact of religiosity on various desirable social outcomes in a more comprehensive manner, the findings will provide insight on the extent to which religious institutions contribute to a civil society.

Theory

In theory, the government should subsidize goods and services that provide positive externalities, and vice versa, as a way to ensure economic efficiency and enable greater social stability. The subsidy allows for the move from free market equilibrium A (where marginal private benefit equals marginal private cost) to a new equilibrium B (where marginal social benefit equals marginal social cost) that achieves social efficiency and eliminates the deadweight loss. In a similar fashion, religious institutions have been receiving an implicit subsidy, their tax-exempt status, for decades, so the

question remains: is it justified? Does religion contribute to civil society? To evaluate the relationship between religiosity and the four factors—education, health, family, and safety—it is essential to understand the theory and rationale behind why religion is now considered the hidden determinant.

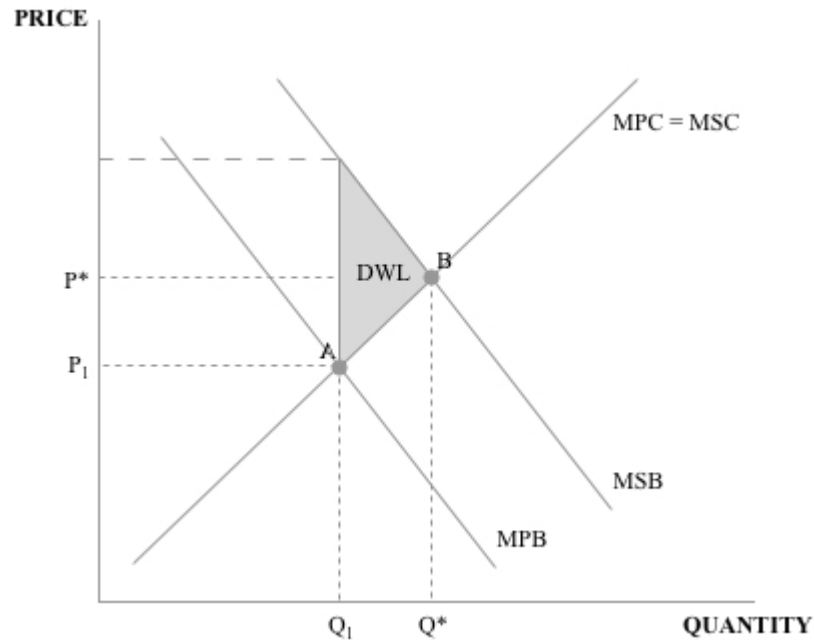


Figure 2. Positive Externalities (this figure is drawn in my Microeconomics class).

Education

The human capital theory is based on the assumption that education is the key to economic growth, concluding that “investment in human capital will lead to greater economic outputs” (Almendarez, 2011). Education plays a vital role in the economy as a well-educated labor force enhances productivity and provides an opportunity for upward social mobility. This will prove to be a benefit for local businesses as well

because it is costly to train workers. Furthermore, in terms of supply and demand, with a limited supply of labor that is educated, there are two choices:

- 1) To hire the more educated workers at a higher cost, as they have more of bargaining power, but spend less on training or
- 2) To employ the less educated workers at a lower cost, but spend more valuable resources like money and time on training them.

Either way, it is costly, and depending on the circumstances, the first choice would not be available because many may choose to move to bigger cities for better opportunities. Therefore, with a more educated labor, the economy will be more productive and efficient. Many scholars postulate that an increase in religiosity leads to higher overall educational level. “They posit that religious involvement enhances an individual’s social capital in the form of family and peer networks, which promote educational success” (How Religion Affect Education, 2016). For example, in the study mentioned above conducted by Richard Freeman, church-going is positively correlated with school attendance of inner-city African American youths (1985).

Family and Substance Use

The general belief is that couples who share the same faith tend to remain together and report higher levels of marital satisfaction (Wilcox and Wolfinger, 2008). In theory, coming from a loving and happy family has profound positive impacts on the development of young children. They have an inspirational role model, a sense of community, and supportively righteous expectations from their parents. The expectation, albeit from the individual’s immediate family or religious community, deters socially deviant behaviors like the use of legal and illegal substances. Thus, this

benefits the society because drug abuse inflicts harm on public safety and health. The economic costs manifest itself in prevention and treatment care, and most importantly, the losses from labor non-participation (Report of the INCB, 2013).

Safety

The incentive-based economic model of crime can help to explain why certain actions are taken in a risky situation. The individuals that commit these crimes are assumed to be “rational decision-makers who engage in either legal or illegal activities according to the expected utility from each activity. An individual's participation in an illegal activity is, therefore, explained by the opportunity cost of the illegal activity and factors that influence the returns to illegal activity” (Crime Causation, 2002). Therefore, within that model, the role of religiosity will most likely be in the factors that influence the returns. For example, if the person is a firm believer of life after death, then no amounts of money received in an ill-manner will outweigh the consequences.

Model and Data

Model

The basic regression model that was used to test the impact of religiosity on the four proxies for a civil society mentioned above was:

$$Y_i = \beta_0 + \beta_1 r_i + \beta_2 X_i + u_i$$

In all four cases, the primary independent variable, denoted as r_i , was religiosity. I chose to measure the level of religiosity by using the number of congregations in a county per ten-thousand people instead of dimensions like salience and frequency of prayers. This, as previously mentioned, allows me to estimate the impact of the mere

presence of churches by using Ordinary Least Squares (OLS) Regression model. A potential downside of using this measure is that it is more difficult to decipher whether the relationship is caused directly by the influence of churches or other factors. X_i was a vector that comprises all of the control variables for the dependent variables, Y_i , being estimated (including high school graduation rate, log number of family violence, log number of divorces, population percentage of excessive drinking, and log of number of county crimes committed), and u_i was the error term. The table below details the definition for all the variables and the five proxies used in the regressions.

Table 1. Variable Definition.

	Dependent Variables	Details
Educational Attainment	Highschool Graduation	Percent of 9th grade students that graduates in four years (2011)
Family Relationship	Divorce	Number of divorces in a county where a divorce decree was granted (2010)
	Family Violence	Number of family violence case reported in each county (2010)
Substance Use	Excessive Drinking	Percent of county population reported binge or heavy drinking over the past month (2017)
Safety (Crime)	Crimes Committed in County	Number of crimes committed in each county (2010)
Independent Variables		
	<u>Variable of Interest</u>	
Religiosity	Number of Congregations per 10K	The number of congregations in a county per ten-thousand people (2010)
<u>Control Variables</u>		
Income	Median Household Income	The median household income for each county (2010)
Population Education	Bachelors Degree or Higher	Percent of the county population with a bachelors degree or higher (2018)
Substance Use	Excessive Drinking	Percent of county population reported binge or heavy drinking over the past month (2017)
Family Relationship	Divorce	Number of divorces in a county where a divorce decree was granted (2010)
Safety (Crime)	Crimes Committed in County	Number of crimes committed in each county (2010)
Race	White	Racial makeup (percentage) for each county (2012)
	Hispanic	
	Black	
	Asian	
	Other	
Age	Age Under 17	Percent of the county population that is under 17 years old (2018)
	Age 85 and Older	Percent of the county population that is 85 years old or older (2018)

My analysis for each social outcomes test comprised of both a simple and full regression model. The simple model included just my primary independent variable. Then the full regression model included multiple independent variables to control for other the isolated impact of religiosity. Family violence was not included as a control variable because it led to a high-collinearity problem due to its shared characteristics

with county crime. The aggregate of all regression results was used to determine and answer the research question. One potential problem with the empirical model described above is that it is impossible to identify, capture, and measure all variables that may, directly and indirectly, affect the dependent variables. Thus, the model will not capture every dimension of this complex problem.

Data

The primary data set was collected at the county level in Texas. This decision is due to a multitude of reasons. First, Texas has the second most numbers of megachurches—207, to be exact—compared to other states, and roughly 20% of the largest and most successful churches are scattered across Texas.²⁴ Second, there is a range of the numerous religious congregations present in the county that reflects both extremes of high and low levels of religious organization presence. This is a phenomenon that I believe can be observed nationally.

Most of the data were obtained from the *United States Census Data, Texas Department of Public Safety, Texas Department of Criminal Justice, Texas Association of Counties, the Texas Department of State Health Services*. The sample size was originally 254 counties; however, to conduct the regression, I dropped observations with missing values, resulting in a new sample size of 207. Observations were thrown out because there was either no data reported by the local agency or, in other cases, values were left intentionally unpublished to protect the anonymity of the individual(s). In addition, there was a mismatch with the time period of the data I collected for all

²⁴ Hartford Institute's official definition for megachurch is "congregations with a consistent weekly attendance of at least 2000 persons" (2010).

variables. The data for the number of congregations per ten-thousand people in a county was observed in 2010. Yet, most of the information on crime, education, health, and more were primarily recorded 2011 onwards, with some of the time gap being over five years (specific years for each variable is provided in Table 1). This causes a potential problem where the change or trend does not capture the effect of religiosity but an aggregate of multiple changes over the years.

Table 2. Summary Statistics for All Variables.

Variables	Descriptive Statistics				
	Sample Size	Mean	Standard Deviation	Min	Max
Number of Congregations per 10K	207	23.01	10.62	6.00	56.00
Crimes Committed in County	207	1720.02	6141.23	11.00	61344.00
Log of Crimes Committed in County	207	5.99	1.57	2.40	11.02
Highschool Graduation (%)	207	0.77	0.09	0.55	1.00
Divorces	207	393.48	1300.29	1.00	13516.00
Log of Number of Divorces	207	4.64	1.63	0.00	9.51
Family Violence	207	946.22	3320.76	1.00	34913.00
Log of Number of Family Violence	207	4.97	1.90	0.00	10.46
Excessive Drinking (%)	207	0.17	0.02	0.12	0.24
Median Household Income	207	43806.04	10026.00	19959.00	80504.00
Log of Median Household Income	207	10.66	0.22	9.90	11.30
Bachelors Degree or Higher (%)	207	18.18	7.39	7.30	50.20
White (%)	207	57.44	20.30	3.20	91.30
Hispanic (%)	207	31.16	22.27	2.80	94.10
Black (%)	207	7.65	6.86	0.50	34.20
Asian (%)	207	1.18	1.90	0.10	18.10
Other (%)	207	2.57	0.75	0.90	6.10
Age Under 17 (%)	207	24.54	3.58	15.30	35.99
Age 85 and Older (%)	207	2.03	0.68	0.86	4.99

Results

Education

The relationship between religiosity and the percent of ninth-grade students that eventually graduate in four years is shown in the table below. From this multivariable regression, religiosity and median household income are the two explanatory variables that are statistically significant at the 0.1% level and have a positive impact on graduation rate. In addition, despite the introduction of control variables, the coefficient and probability value (p-value) for my measure of religiosity remained consistent. Notably, holding all other factors constant, the magnitude of the natural log of median household income, though with a larger standard error, is arguably greater than my measure of religiosity. For example, if there is a one unit increase in the number of congregations per 10K, it leads to a 0.27% increase in graduation rate, whereas, a one percent increase in the median household income in an observed county results in a 16.9% increase in graduation rate. Given the mean value for the household median income of \$43,806, the mere increase of \$438 in household income leads to a subsequent rise in the mean graduation rate from 77% to 93.9%.

Median household income provides insight into the quality of life. The mean household income in Texas is slightly below the 2010 United States median household income of \$57,652 reported by the U.S. Census Bureau. Thus, potential policy recommendations could encourage the introduction of more public investment in counties by the government and employment programs that will direct new jobs opportunities to areas facing high levels of unemployment (Mishel and Eisenbrey, 2015). This is because raising the average median household income is more effective in dramatically increasing educational attainment.

Table 3. OLS Regression on High School Graduation Population Percentage.

Independent Variables	Highschool Graduation Population %			
	Full Model		Basic Model	
	coefficient	p-value	coefficient	p-value
Congregations per 10K	0.00269 (0.0001)	0.001	0.00259 (0.0005)	0.000
Log Number of County Crimes	-0.00400 (0.0063)	0.524		
Excessive Drinking %	0.83329 (0.4278)	0.053		
Log Number of Divorces	-0.01058 (0.0062)	0.091		
Log Median Household Income	0.16866 (0.0372)	0.000		
Age under 17 Population %	-0.00229 (0.0021)	0.269		
Age 85 and Older Population %	0.02525 (0.0122)	0.040		
White Population %	0.00028 (0.0004)	0.493		
Black Population %	-0.00128 (0.0009)	0.139		
Asian Population %	0.00434 (0.0034)	0.200		
Other Population %	-0.00692 (0.0077)	0.370		
Constant	-1.19917 (0.3513)	0.001		

Note: The R-squared values for the full and basic regression models are 0.4018 and 0.0942, respectively. The sample size for both is 207. Also, the standard error for all variables are in parentheses and is rounded to the fourth decimal place.

Family

The results from the regressions on the two proxies for family dynamic—log number of family violence and log number of divorce cases—are below. For both dependent variables, a statistically significant inverse relationship with religiosity is observed. In addition, comparing the basic and full models, the coefficient for religiosity drops significantly in magnitude. Once other variables—like race and gender—are controlled for, the same unit increase in the number of congregations causes the percentage decrease in the number of family violence and divorces to fall by more than half. For example, in the case of family violence, originally, a unit increase in the number of congregations leads to a 12.7% decrease in family violence, but in the comprehensive model, the coefficient drops to 5.8%. Despite the drop in magnitude, a 5.8% decrease translates to 55 cases, quite significant, considering the mean number of family violence cases is 947. Similarly, for divorce rates, the beta coefficient drops from

9.5% to 2.7%. Given the mean number of divorces of 394, the 2.7% decrease roughly translates to 11 cases. This phenomenon shows that the magnitude of religiosity found in the basic model also captures the influence of the relationship between religiosity and other explanatory variables.

Taking a closer look at Table 4, the natural log on the number of divorces has a positive and statistically significant relationship. This is not a surprise because cases of family violence often serve as the main precursor to divorce. Although my educational attainment and median household income variable are both significant, the opposing signs suggest that education and income may not have a direct impact on the number of cases of family violence. Instead, the characteristics of higher income and education level are commonly found in major cities; therefore, I would expect more reported cases with a larger population. In addition, analyzing the results from the latter regression, all of the control variables that I thought would have a statistically significant influence turn out to be insignificant except for county crime and race, as it has a collective significance with 99% confidence. The positive relationship between crime and divorce coincides with multiple studies that show “both divorce and crime can lead to one another, with only time as the contributing factor the results of the action taken” (Khamis Al-Shamari, 2016; Criminal Activity, 2017).

Table 4. OLS Regression on the Natural Log Number of Family Violence.

Independent Variables	Log Number of Family Violence			
	Full Model		Basic Model	
	coefficient	p-value	coefficient	p-value
Congregations per 10K	-0.05837 (0.0086)	0.000	-0.12709 (0.0088)	0.000
Bachelors Degree or Higher Population %	0.03323 (0.0120)	0.006		
Excessive Drinking %	-7.38005 (4.7917)	0.125		
Log Number of Divorces	0.69260 (0.0532)	0.000		
Log Median Household Income	-2.34598 (0.4191)	0.000		
Age under 17 Population %	0.09182 (0.0229)	0.000		
Age 85 and Older Population %	-0.11266 (0.1376)	0.414		
White Population %	0.00017 (0.0046)	0.971		
Black Population %	0.03429 (0.0094)	0.000		
Asian Population %	0.03150 (0.0436)	0.471		
Other Population %	0.15897 (0.0856)	0.065		
Constant	26.1409 (3.9245)	0.000		

Note: The R-squared values for the full and basic regression models are 0.8401 and 0.5029, respectively. The sample size for both is 207. Also, the standard error for all variables are in parentheses and is rounded to the fourth decimal place.

Table 5. OLS Regression on the Natural Log Number of Divorces.

Independent Variables	Log Number of Divorces			
	Full Model		Basic Model	
	coefficient	p-value	coefficient	p-value
Congregations per 10K	-0.02748 (0.0089)	0.002	-0.09469 (0.0084)	0.000
Bachelors Degree or Higher Population %	0.00903 (0.0123)	0.464		
Log Number of County Crime	0.64918 (0.0549)	0.000		
Excessive Drinking %	-0.91044 (4.9278)	0.854		
Log Median Household Income	0.51331 (0.4380)	0.243		
Age under 17 Population %	-0.02777 (0.0238)	0.244		
Age 85 and Older Population %	-0.06224 (0.1415)	0.660		
White Population %	0.00723 (0.0047)	0.125		
Black Population %	-0.00034 (0.0101)	0.973		
Asian Population %	0.08894 (0.0444)	0.047		
Other Population %	0.18953 (0.0869)	0.030		
Constant	-4.47123 (4.1501)	0.283		

Note: The R-squared values for the full and basic regression models are 0.7701 and 0.3789, respectively. The sample size for both is 207. Also, the standard error for all variables are in parentheses and is rounded to the fourth decimal place.

Legal Substance Use

At first glance, it is interesting to note that the presence of religious congregations has a statistically insignificant relationship with the percent of the population that drinks excessively (Table 6).²⁵ The only two variables that are significant in the full model are median household income and age. I ran a variance inflation factor test (VIF) to detect for high collinearity as the sign for the coefficient of the first and main variable seems to be incorrect. However, the results are negative as all the individual VIF values for each variable is less than three.²⁶

The statistical significance, sign, and coefficient for my measure of religiosity dramatically change when going from the basic to the full model. Numerically, the original magnitude for religiosity went from -0.00056 to 0.00008. This instance highlights the importance of adopting an appropriately specified model and suggests that the presence of religious entities does not deter or decrease the use of the legal substance. A potential explanation for the positive relationship could be because churches rarely prohibit the consumption of alcohol. In addition, the percent of populations drinks excessively are higher in counties with more residents between the ages of 18 and 84. The impact of median household income could manifest itself through the availability of disposable income. For reference, a one percent increase in income leads to an approximate four percent increase in the population that drinks excessively.

²⁵ The definition of excessive drinking is defined in the model section above.

²⁶ The general approach used is that any variable with a VIF value greater than or equals to five indicates a case of high-collinearity.

Table 6. OLS Regression on the Excessive Drinking Population Percent.

Independent Variables	Excessive Drinking Population %			
	Full Model		Basic Model	
	coefficient	p-value	coefficient	p-value
Congregations per 10K	0.00008 (0.0001)	0.528	-0.00056 (0.0001)	0.000
Bachelors Degree or Higher Population %	0.00021 (0.0002)	0.236		
Log Number of County Crime	0.00060 (0.0010)	0.563		
Log Number of Divorces	-0.00019 (0.0010)	0.854		
Log Median Household Income	0.03956 (0.0057)	0.000		
Age under 17 Population %	-0.00125 (0.0003)	0.000		
Age 85 and Older Population %	-0.01385 (0.0018)	0.000		
White Population %	0.00004 (0.0000)	0.560		
Black Population %	-0.00008 (0.0001)	0.554		
Asian Population %	-0.00155 (0.0006)	0.016		
Other Population %	0.00074 (0.0013)	0.564		
Constant	-0.20301 (0.0587)	0.001		

Note: The R-squared values for the full and basic regression models are 0.5808 and 0.1102, respectively. The sample size for both is 207. Also, the standard error for all variables are in parentheses and is rounded to the fourth decimal place.

Crime

Religiosity has a statistically significant inverse relationship with the level of crime in a county, as expected. According to my results, a unit increase in the number of congregations leads to a 3.3% decrease in the number of county crimes committed. To get a better grasp on the magnitude, the mean value of county crimes is 1720 reported cases; thus, a 3.3% decrease translates into a 57 decrease in the number of crimes committed. Although age does not have a collective influence on the dependent variable, the racial makeup of a county is statistically significant at the 99% confidence level. For example, shown in Table 7 below, a percent increase in the black population residing in a county results in the number of county crimes to increase by 4.4%. The inclusion of variables like demographic characteristics greatly reduces the impact (coefficient) of religiosity on crime levels. Once again, the relationship, statistical significance, and magnitude, between the number of divorces and crime rates align with

my finding above in Table 5. In multiple cases, the income variable exhibits a larger coefficient than religiosity. However, this does not automatically represent a larger impact as the underlying variable, compared to congregations per ten-thousand people, has a smaller mean and will translate to larger coefficient estimates with all else equal.

Table 7. OLS Regression on the Natural Log Number of County Crimes.

Independent Variables	Log Number of County Crimes			
	Full Model		Basic Model	
	coefficient	p-value	coefficient	p-value
Congregations per 10K	-0.03304 (0.0088)	0.000	-0.09028 (0.0082)	0.000
Bachelors Degree or Higher Population %	0.01028 (0.0122)	0.403		
Excessive Drinking %	2.83905 (4.9038)	0.563		
Log Number of Divorces	0.64388 (0.0544)	0.000		
Log Median Household Income	-1.22177 (0.4289)	0.005		
Age under 17 Population %	0.04777 (0.0235)	0.043		
Age 85 and Older Population %	0.07790 (0.1408)	0.581		
White Population %	0.00382 (0.0047)	0.418		
Black Population %	0.04395 (0.0096)	0.000		
Asian Population %	-0.00179 (0.0447)	0.968		
Other Population %	0.00596 (0.0876)	0.946		
Constant	14.3324 (4.0163)	0.000		

Note: The R-squared values for the full and basic regression models are 0.7541 and 0.3713, respectively. The sample size for both is 207. Also, the standard error for all variables are in parentheses and is rounded to the fourth decimal place.

Conclusion

This thesis investigates the relationships between religiosity and five proxies for the four components of a civil society—education, health, family, and safety—to determine whether religious institutions' tax-exempt status is justified. The two aspects of the research question are:

- a. To what extent do religious institutions provide societal value?
- b. With a better understanding of the value churches contribute, should they remain tax-exempt?

From the several simple and multiple-variable regressions, my measure of religiosity (the number of congregations per ten-thousand people) was statistically significant in four of the five cases. Religiosity is conducive to desirable social outcomes, like higher rates of high school graduation, stability in marriage, less reported cases of domestic abuse, and a safer community with lower levels of crime. In the case of alcohol consumption, there was a strong inverse relationship with religiosity in the simple model, but the opposite was shown once other control variables were included.

Numerically, the impact of religiosity (a unit increase in the number of congregations) on the dependent variables varied between 0.008% and 5.837%. All else equal, the contributions to a civil society by the presence of religious institutions are most prominent in cases of family violence, divorces, and crime rates. One important aspect to note is the existing relationship found between crime and divorce rates. The observed relationship between religiosity and the aforementioned outcome variables may be an indirect relationship, not a direct one as expected. Taken together, the mere presence of religious institutions does seem to provide a degree of social benefit to the greater community. The rather mixed and inconclusive results make it difficult to conclude whether religious institutions' tax-exempt status is justified or not; however, my findings support claims by politicians and religious leaders who argue that the social benefits of religion justify tax-exemption.

From a policy perspective, attention should also be directed to explanatory variables like median household income where its coefficient is generally observed to be larger than that of religiosity. But, there is a caveat: an increase in household income does not always lead to an improvement in socially desirable characteristics. Take the dependent variable excessive drinking, for example, a percent rise in household income

results in a roughly 4% increase in the population that consumes alcohol excessively, whereas, a 0.008% from a new congregation in a county. Similarly, though statistically insignificant, median household income has a positive relationship with the number of divorces. However, despite these potential adverse consequences, I believe that the government should focus on policies that decrease the wage gap as it is more effective in reducing crime, increasing graduation rates, and decreasing the number of reported family violence cases. Thus, economic reforms could be an alternative way of maintaining a civil society.

In hindsight, my original hypothesis for this thesis may have been too simple because it fails to account for the complex nature of the problem. There are multiple ways to define religiosity and a civil society, so finding the appropriate proxies was incredibly tricky. Another limitation includes the inability to access important data that could either be a better proxy for a specific explanatory variable or an additional control to add depth to my existing model. A definite fault to my research that should be taken into consideration is that not all the observations for each variable were observed in the same year. As a result, there is still room for improvement, especially with the collection of data, and other dimensions regarding the topic. It will also be useful if future studies can build off of the relationships found in this research and test for causation. Another extension could be to focus on counties with high concentrations of religious institutions and examine the marginal impact of a unit increase in the number of churches on various social outcomes. This may provide insight into the optimal number of congregations in a county.

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