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RELIGION, ENTREPRENEURSHIP, INCOME AND EMPLOYMENT

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Abstract

This exploratory study compares the entrepreneurial tendency and family income across religious denominations in the United States. Information from the General Social Survey (GSS) database on self-employed and a matched sample of those employed by others is used to compare the family income and incidence of entrepreneurship by religion. We show that Protestants are more likely to be self-employed than Catholics, although both are less likely than those that are not religious or Jews. Religious affiliation has a mixed result on income, although increased attendance at religious services increases income for those employed by others.

Key words: religion; entrepreneurship; income; employment

> "*So he who had received five talents came and brought five other talents, saying, 'Lord, you delivered to me five talents; look, I have gained five more talents besides them.' His lord said to him, 'Well done, good and faithful servant; you were faithful over a few things, I will make you ruler over many things. Enter into the joy of your lord*." Matthew 25:20-21 (NKJV)

Introduction

As early as Max Weber's classic book *The Protestant Ethic and the Spirit of Capitalism*, first published in 1905, there has been a long literature on the relationship between religion and entrepreneurship. In it Weber links the early Protestant leaders and their work ethic to the rise of European entrepreneurs. Successful Protestant entrepreneurs were shown "God's favor" with blessings of wealth. This thesis was reinforced by Farmer and Richman (1965) when they noted that the countries with the greatest per capita incomes were predominantly protestant. Becker and Woessmann (2009) attribute economic growth in protestant countries to an increase in literacy encouraged by Martin Luther. Sombart (1911), however, attributed the shift in European entrepreneurship and industry to the migration of Jews into Europe during this time.

Much of the literature on religion and entrepreneurship has been qualitative in nature. In this paper, we offer quantitative research on the effect of religion on entrepreneurship. We use propensity score matching for this purpose. In this exploratory study, we test three hypotheses using data from the General Social Survey (GSS).

1. Does affiliation with different religious groups make a difference in the inclination propensity to be an entrepreneur?
2. Is there a difference in income, for entrepreneurs or those employed by others, based on affiliation with different religious organizations?
3. Is there a difference in income, for entrepreneurs or those employed by others, based on the frequency of attendance at religious services?

We find evidence that Catholics are less likely to be entrepreneurs than Protestants and both are less likely to be entrepreneurs than those who indicate they are not religious. There is some evidence that frequency of attendance at services increases the chance of being

self-employed. We also find that family income is higher for Presbyterians and Episcopalians and for those that attend church services, regardless of whether one is self-employed or employed by others, although these effects are statistically significant only for those employed by others.

This paper begins with a theoretical discussion and literature review on the effect of religion on entrepreneurship. This section is followed by a discussion of the data used in this study. Section four presents the methodology for our paper. Section five reports the results of regression models and section six discusses the results and concludes.

Background

Researchers can find a history of entrepreneurship in the background of each religious sect. However, the deeper question is whether religious affiliation and observance has an impact on one's decisions to be entrepreneurial, one's work ethic, or level of financial success. Dana (2009) reported that "various religions value entrepreneurship to different degrees" and will impact the tendency toward entrepreneurship based on their acceptance and exploitation of networks for credit, information, employment, and supply. Anderson et al. (2000) found that religion—in particular Margaret Thatcher's Christian values—played a significant part in the economic resurgence of Britain in the 1980's.

Religious observation may make one better suited to entrepreneurship or employment. Observance of religious ceremony and authority, and childhood religious education may provide excellent training for employment when working for someone else or oneself. The Protestant Ethic may provide a level of self-discipline needed to maximize the value of labor and prevent shirking theorized by Shapiro and Stiglitz (1984). Shapiro and Stiglitz theorized that workers have an incentive to shirk if he or she can immediately be rehired. A self-employed person on the other hand, would not shirk on himself. Since shirking would only occur when working for someone else, and a religious upbringing may provide a greater value when working for others than working for oneself.de Pillis (1998, p. 7) and Berger (1991) also argue that the practices required by Calvinism also happen to be precursors to success in the business world:

> Under Calvinism, work became a tool for salvation. Honesty was required, as was responsibility in business dealings. Calvinism's emphasis was on the individual, who was required to account for his or her deeds directly to God on a daily basis—a habit which may have translated into thoroughness in bookkeeping. The Calvinist strove to lead a simple and frugal life, which together with diligence in business, led to the accumulation of unspent wealth.

Weber (1905), McClelland (1961), and de Pillis (1998) argue on the other hand that Catholicism relies on the Church and its representatives to make decisions on the behalf of believers. This philosophy may reduce independence and individualism and make less likely for someone to be self-employed.

Being a member of a religious organization has obvious network effects, connecting the believer to other members of the congregation for sales or employment. Trust in one's fellow congregants may provide a mechanism to avoid market "lemons" as theorized by Akerlof (1970) and increase the value and revenues of a religious entrepreneur who is a member of a formal congregation. Conversely, if a believer limits their sales or employment network only to those in the congregation it may diminish their network. Choi (2010) finds evidence of the former hypothesis. He argues that the Korean church acts as an incubator of sorts for Korean-owned businesses. Korean immigrants (who are overwhelmingly Protestant) in Los Angeles have developed informal capital markets called "Kyes." According to Choi, p. 379, "A *Kye*is a rotating credit association that consists of a groupthat lends members' credit until all members have receivedthe aggregate amount in each month." Many of these Kyes have formed through networking among church members. Businessmen who were members of a Korean church also held regular meetings where they shared both personal and business information.

The relationship between religion and entrepreneurship may be partly the result of self-selection. For example, it may be that entrepreneurs who tend to be individualistic and industrious, select religions that encourage these values. Becker and Woessmann (2009) find that Protestantism led to higher rates of education. MacDonald (1972) concludes that Protestants tend to have a higher tendency for an internal locus of control than Catholics. This characteristic has been shown to be a significant psychological characteristic of entrepreneurs (Zelekha, Avinimelech, & Sharabi, forthcoming).

Table 1: Descriptive Statistics General Social Survey

Variables	Mean	Standard Deviation	Minimum	Maximum
Dependent Variable				
Self-employed	0.116	0.320	0.000	1.000
Log of real total family income in 1986 dollars	10.028	0.926	5.590	11.999
Independent Variables				
Religion Variables				
Any religion	0.919	0.302	0.000	1.000
Christian	0.856	0.355	0.000	1.000
Protestant	0.599	0.491	0.000	1.000
Baptist	0.199	0.199	0.000	1.000
Methodist	0.096	0.096	0.000	1.000
Lutheran	0.065	0.065	0.000	1.000
Presbyterian	0.040	0.040	0.000	1.000
Episcopal	0.024	0.024	0.000	1.000
Other	0.127	0.127	0.000	1.000
No denomination	0.048	0.048	0.000	1.000
Catholic	0.248	0.432	0.000	1.000
Orthodox Christian	0.002	0.040	0.000	1.000
Other Christian	0.007	0.085	0.000	1.000
Jewish	0.021	0.143	0.000	1.000
None	0.081	0.302	0.000	1.000
Other	0.018	0.132	0.000	1.000
Buddhism	0.002	0.045	0.000	1.000
Hinduism	0.001	0.030	0.000	1.000
Other eastern religion	0.018	0.133	0.000	1.000
Moslem/Islam	0.001	0.039	0.000	1.000
Native-American religion	0.000	0.017	0.000	1.000
Inter-denominational	0.002	0.044	0.000	1.000
Church attendance				
Never	0.160	0.365	0.000	1.000
Less than once a year	0.078	0.267	0.000	1.000
Once a year	0.133	0.339	0.000	1.000
Several times a year	0.130	0.335	0.000	1.000
Once a month	0.073	0.259	0.000	1.000
2-3 times a month	0.090	0.284	0.000	1.000
Nearly every week	0.057	0.230	0.000	1.000
Every week	0.203	0.401	0.000	1.000
More than once a week	0.077	0.265	0.000	1.000
Age	45.639	17.061	18.000	89.000
Age squared	2374.003	1718.662	324.000	7921.000
Educational attainment				
Less than high school degree	0.211	0.408	0.000	1.000
High school degree	0.577	0.493	0.000	1.000
Bachelors degree	0.144	0.350	0.000	1.000
Graduate degree	0.069	0.253	0.000	1.000
Male	0.440	0.496	0.000	1.000
Marital status				
Married	0.553	0.497	0.000	1.000
Separated, divorced, or widowed	0.254	0.435	0.000	1.000
Single, never married	0.193	0.395	0.000	1.000
Race				
White	0.821	0.383	0.000	1.000
Black	0.135	0.342	0.000	1.000
Other	0.044	0.205	0.000	1.000

Note: There are 49539 observations.

Data

The main source of data for this study is the General Social Survey (GSS), 1972-2008. These data are collected by the National Opinion Research Center, a part of the University of Chicago. From 1972 to 2004 the survey consisted of approximately 1.5 hour interviews of randomly-selected English speakers, 18 years of age or older. In 2006, Spanish-speakers were added to the survey. Block quota sampling was used in the 1972, 1973, and 1974 surveys and for half of the 1975 and 1976 surveys. Full probability sampling was employed in half of the 1975 and 1976 surveys and the 1977, 1978, 1980, 1982-1991, 1993-1998, 2000, 2002, 2004, 2006, and 2008 surveys (Davis, Smith, & Marsden, 2009). The depth and breadth of data in the GSS makes it arguably the nation's best source on demographic, behavioral and attitudinal trends. Data from the GSS is publicly available and include information on self-employment and religion, making it ideal for our study. Table 1 shows descriptive statistics for the GSS data.

Methodology

There are two models this study is interested in estimating. The first model is interested in analyzing the impact of religion on self-employment. The second model is interested in understanding the role religion and self-employment play in family income. These two models can be represented as equations (1) and (2)

$$SELF_i = \alpha I_i + \beta RELIGION_i + \varepsilon_i; \quad (1)$$

$$INCOME_i = \gamma I_i + \zeta SELF_i + \delta RELIGION_i + \mu_i \; . \quad (2)$$

In equation (1), self-employment (*SELF*) for individual i is a function of a set of individual characteristics (*I*), a set of religion variables (*RELIGION*) and a random error term ε_i; In equation (2), the log of total family income for individual i is a function of a set of individual characteristics (*I*), self-employment (*SELF*), a set of religion variables (*RELIGION*) and a random error termμ_i

In an ideal situation, a researcher could randomly assign religion or self-employment to a treatment and control group. Then, if one were interested in the impact of religion on self-employment, one could derive a treatment effect by taking the difference in means of self-employment between the treatment and control group. Likewise, if one were interested in the impact of self-employment on family income, one could take the differences in means of family income between treatment and control groups.

We would be interested in randomly assigning these treatments because of selection. It is possible, perhaps likely, that individuals who are religious and self-employed and those who are not are different in other ways as well. For example, the religious may also be more risk-taking. Not only do they have faith in their god, they may also have more faith in themselves. They may also believe that it is God's will that they start a successful venture. If it is really risk-taking that is associated with self-employment and not religion, the treatment effect of religion on self-employment would be biased.

In practice however, this research design is exceedingly difficult to implement. One cannot assign religion. Religion requires faith. Faith has to come from within and cannot be randomly assigned. Self-employment similarly is also difficult to assign. A researcher cannot simply tell a group of individuals that they are self-employed. First, not every individual in a sample has the capacity to work for themselves. Second, not every individual in a sample has the desire to work for themselves.

As a result of these issues, we rely on propensity score matching (PSM) methods to estimate equations (1) and (2). Matching of any type involves creating treatment and comparison units that are similar in terms of their observable characteristics. Propensity score matching has the advantage over other types of matching by matching units along a number of different dimensions (Dehejia & Wahba, 2002).

This multi-dimensional matching process is accomplished by estimating a logit regression with the treatment variable of interest on the left hand side of the regression and a set of observable characteristics on the right hand side. In equation (1), the treatment variable is whether or not the individual has a religion and in equation (2), the treatment variable is whether or not the individual is self-employed. These logistic regressions are used to predict a propensity score. Observations with propensity scores less than 0.1 or greater than 0.9 were dropped from the analysis. These were observations considered too unlikely to be religious or self-employed.

Equations (1) and (2) were estimated via logistic regression. Regressions with the GSS were weighted by the number of adults in a household. The GSS regressions were weighted by the number of adults in a household because only one adult per household was interviewed, so persons living in large households had lower probabilities of selection. The GSS regressions also include a set of year dummies to control for changes that occur to all observations within a single year such as the strength of the economy.

Results

Religion and the Propensity to be an Entrepreneur

Table 2 shows the results of logistic regressions on the probability of members of different religions being fulltime self-employed. According to the GSS data, there is a lower probability of being an entrepreneur for Catholics (0.569) than Protestants (0.695-0.829), regardless of denomination, although both Protestants and Catholics are less likely to be entrepreneurs than those that indicate they are not religious, the control group in this regression. There is a higher probability of being an entrepreneur for Jews (1.248) than all other groups. There is no statistically significant impact of regular attendance at religious services on the chance of being self-employed, except in the case of those who attend once a month. However, the coefficients on attendance in most cases are greater than 1.0, indicating those that attend services in any amount have a greater chance of being self-employed.

Table 2: Logit Regression Results for GSS Matched Sample, Self Employment as Dependent Variable

Protestant		
Baptist	0.695	***
Methodist	0.742	***
Lutheran	0.703	***
Presbyterian	0.788	**
Episcopal	0.810	*
Other	0.829	**
No denomination	0.812	**
Catholic	0.569	***
Orthodox Christian	0.797	
Other Christian	1.369	
Jewish	1.248	**
Other	1.173	
Buddhism	1.628	
Hinduism	1.452	
Other eastern religion	1.680	
Moslem/Islam	0.330	
Native-American religion	1.230	
Inter-non-denominational	0.940	
Church Attendance		
Attend services less than once a year	1.076	
Attend services once a year	1.021	
Attend services several times a year	1.050	
Attend services once a month	1.232	**
Attend services 2-3 times a month	0.972	
Attend services nearly every week	1.046	
Attend services every week	0.918	
Attend services more than once a week	1.134	
Age	1.039	***
Age squared	1.000	***
Educational attainment		
High school degree	0.807	***
Bachelors degree	0.923	
Graduate degree	0.904	
Log of real total family income in 1986 dollars	1.243	***
Male	1.047	
Marital status		
Married	1.015	
Separated, divorced, or widowed	0.867	
Number of children	1.036	***
Race		
Black	0.512	**
Other	0.858	
Pseudo R-squared	0.019	

Notes: There are 29770 observations. Samples are matched on probability of being religious. Odds ratios are presented. Regressions include a set of year fixed effects. Regressions are weighted by the number of adults in a household. *p<.10; **p<.05; ***p<.01.

Income and Religion

Table 3 shows mixed results for the impact of religion on income. The regression on the full sample shows that individuals who are self-employed, on average, have incomes 10.4 percent higher than those who are employed by others. The impact of religion is Presbyterians, Episcopalians, Jews, and those that are inter-denominational have on average higher incomes, while Baptists, other Protestants, non-denominational Protestants, other religious, and Muslims have on average lower incomes. The coefficients on Methodists, Lutherans, and Catholics and several other religious affiliations are not statistically significant.

While the results of religious affiliation on income are mixed, church attendance correlates with an increase in family income. Family income increases anywhere from 4.8 percent for attending services less than once a year to 8.3 percent for attending services several times a year.

Table 3 separates the regressions into the self-employed (column II) and those employed by others (column III) to show the impact on family income of different denominations and frequency of attendance at services. Column IV shows the coefficient differences between the self-employed (II) and those employed by others (III).

For the self-employed (II), there are only a few cases when there is an impact of religious denomination on family income. The exceptions include the statistically significant coefficient on being Lutheran, however this shows only a 1.6 percent increase on income. Being Jewish increases income of the self-employed by 25.6 percent while believing in a Native American religion decreases income of the self-employed by 22.3 percent. All other denominations show no statistically significant effect although most Christian denominations have a positive coefficient. Likewise, attendance at religious services has a statistically significant effect only when attending services less than once a year or several times a year. All other categories of attending services are not statistically significant, but are positive indicating attending services may increase income.

For those employed by others (III) the results are strikingly different as most of the coefficient estimates are statistically significant. Decreased family income is associated with being Baptist, Methodist, Lutheran, non-denominational or other Protestant, Orthodox Christian, Muslim, or other religion relative to being non-religious. The most severe impact is associated with being Muslim for which, on average, there is a 29.6 percent lower level of income. Increased family income for those employed is associated with being Presbyterian, Episcopalian, or Jewish.

Church attendance for those employed by others also has more coefficients that are statistically significant than for the self-employed. Attendance at services is correlated with an increase in income for all those employed by others with the exception of those that attend services more than once a week. Church attendance is associated with an increase in income of between 4.1 percent for attending services once a year to 8.3 percent for those that attend services several times a year.

Evidence of the Protestant ethic can be seen in the positive coefficients for Presbyterians and Episcopalians for the self-employed and those employed by others, as well as the positive coefficients for church attendance. The statistical significance of the coefficients for church attendance provides some evidence of the greater income or salary return to religious affiliation for those who work for others if this is a signal of a greater work ethic and evidence that the employee is less likely to shirk.

Column IV identifies the differences between the coefficients and shows which ones are statistically significant. Although some denominations are associated with higher or lower income for those employed by others, for most the effect is smaller and not statistically significant. For Methodists, Lutherans, Presbyterians, other Protestant denominations, Orthodox Christians, and Jews who are entrepreneurs, the impact on family income is greater than for those employed by others. For these religions, being employed by others may depress income. Only for Native Americans is the impact on family income of being employed greater than being self-employed.

Conclusion

This paper uses GSS data to examine the relationship between entrepreneurship and level of family income for the self-employed and those employed by others among different religions in the United States. The ability to compare the self-employed with a like group of those employed by others enables us to show the impact of religious affiliation on entrepreneurship. We find evidence that Catholics are less likely to be entrepreneurs than Protestants and both are less likely to be entrepreneurs than Jews and those who indicate they are not religious. This is consistent with Zelekha et al. (forthcoming), who also find that Jews had the highest entrepreneurial tendencies, and that Protestants had higher entrepreneurial tendencies than Catholics using a unique data set of entrepreneurs collected from LinkedIn.

This may provide evidence that Protestant religious affiliation provides a signal of a greater work ethic and therefore a high return when working for someone else than being self-employed. There is some evidence that frequency of attendance at services increases the chance of being self-employed. Network effects for the self-employed may be an advantage for regularly attending services. Family income is higher for Presbyterians and Episcopalians and for those that attend church services, regardless of whether one is self-employed or employed by others, although these effects are statistically significant only for those employed by others. One's religious affiliation and church attendance may provide more networking opportunities and be a signal of work ethic which, in both cases, may have more significant return in the workforce than as an entrepreneur.

This exploratory study raises many more questions than it answers. What is it about these Christian denominations that result in a lower propensity to be an entrepreneur than those that are not religious? What is it about some Protestant denominations that result in higher family income than others? Are there cultural norms that are part of religious beliefs that result in different propensities for entrepreneurship and have a greater impact on family income? Is there some common personality or social trait that draws the same people to a religion as to a form of employment? Does church attendance provide a networking effect, signal of work ethic, or have another more divine impact on family income?

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