Bachelor Thesis

Entrepreneurship, Strategy and Organisation

Religion Shapes the Entrepreneur

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Abstract

Religion and entrepreneurship are important phenomena in the economy. It has been proven that religion is related with entrepreneurship and the economy (Bonacich, 1973; Porter, 1990; Gianetti & Simonov, 2004; Wiseman & Young, 2013). This research aims to bring more clarity on the relationship between different measurements for religion on entrepreneurship. This is achieved by investigating different proxies for religion on the likelihood of being an entrepreneur. There are different studies on religion and entrepreneurship using different proxies for religion. In this study a comparison is made between these proxies. We use four different proxies for religion: religious upbringing, religious affiliation, church attendance and frequency of prayer. Analysing the proxies for religion on the likelihood of being an entrepreneur illustrates that some proxies have association with entrepreneurship and some do not. Turning to the literature, it can be seen that there is a lack of consistency when it comes to the relationship between religion and entrepreneurship. Religion is connected to entrepreneurship through a set of principles (Scott, 1986). Kunkel (1970) emphasized that religious minorities tend to be highly entrepreneurial. Giannetti and Simonov (2004) have shown that religion is a part of the cultural values that affects the individual's choice of being an entrepreneur. Other studies found that entrepreneurial decision is shaped by religion positively but also negatively (Audretsch, Boente, & Tamvada, 2007). Another study found that there were no differences between entrepreneurs and non-entrepreneurs when it came to religion (Drakapoulou Dodd & Seaman, 1998; Rietveld & Van Burg, 2013). The main findings of the quantitative research are that individuals with most religious affiliations are less likely to be business owners, this is also the case for individuals that pray weekly. Individual who attend church and those who do not does not differ significantly in the odds of being a business owner. Individual with a religious upbringing has a positive association with the likelihood of being a business owner. The quantitative research was at an individual level, hereby we could look at individual characteristic of the entrepreneur. This study contributes to the understanding of entrepreneurs and how religious behaviour impacted them. Further research can be conducted in other countries, with other proxies for religion or entrepreneurship. Religion can also impact other entrepreneurial processes such as successfulness or productiveness. Further research should examine these proxies for religion on other entrepreneurial activity or process.

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Introduction

Researchers like Adam Smith and Max Weber, acknowledge the fundamental role that religion has on the economic development (Weber, 2001; Audretsch, Boente, & Tamvada, 2007). In recent years there has been a lot of researches looking at the influence of religion on economic performance (see for example, Hirschman, 1983, and Sood and Nasu, 1995). In the article of Barro and McCleary (2003) it is stated that religious belief, for example in afterlife, positively influences economic growth. And that religious belonging, such as church attendance, has a negative effect on economic growth. Over the years also entrepreneurship has been proven to play an important role on the economic development (Porter, 1990; Wennekers & Thurick, 1999). Entrepreneurs have the role of carrying out innovation and bringing competition in the market, which leads to economic growth (Wennekers & Thurick, 1999). We are interested in investigating if these two important phenomena also relates to each other. This topic is fascinating because nowadays in the modern world, the importance of religion is diminishing and secularization is increasing. Nonetheless, one of the primary debates in sociology remains the changing role of religion in the increasingly secular societies of Western Europe (Drakopoulou Dodd & Seaman, 1998). The focus of this study lies on the question which proxies of religion have an association with the likelihood of being an entrepreneur. This research aims to shed some new light upon the religious aspects of entrepreneurship. This study will provide more insight in characteristic of an entrepreneur, given that religious behaviour influences management decision-making and possibly decision to found a new firm.

It was stated that religion both shapes and is shaped by society (Drakapoulou Dodd & Seaman, 1998). Giannetti and Simonov (2004) suggested that social norms play an important role in the decision of becoming an entrepreneur. Sociologists have identified that characteristics, such as religion, are linked to entrepreneurial behaviour (Bonacich, 1973). The purpose of this paper is to give further insight on the effect that religion has on being an entrepreneur. From a study in India it was concluded that religion shapes the entrepreneurial decision (Audretsch, Boente, & Tamvada, 2007). Religions, for instance, Christianity and Islam tend to stimulate entrepreneurship, whilst Hinduism restricts this. In another study it was concluded that Protestants and other non-Catholics are more likely of becoming entrepreneurs (Caroll & Mosakowski, 1987). There are still some unresolved issues when it comes to explaining the impact of religion upon the decision of new firm creation and growth. Another article concluded that religious dimension, such as beliefs and belonging are negatively correlated with productivity of entrepreneurship in a state (Wiseman & Young, 2013). They also concluded that being an atheist is positively and significantly correlated with productive entrepreneurship. The study of Uhlaner, Thurik and Hutjes (2002) investigated the effects of cultural variables (including religion) on entrepreneurial activity in 14 OECD countries. They concluded that

some religious behaviour are associated with self-employment. A limitation that was mentioned by Uhlaner, Thurik and Hutjes (2002) was that it could not control for individual characteristics that have an independent impact on the decision to start one's own business, because they are carried out with data aggregated at the regional level. Hence, with our study we will test the impact of religion on an individual level. This enables us to look at the impact of religion on the individual. Furthermore these observations led to important questions regarding religious values, beliefs and practices of individuals and if this can have an impact on entrepreneurship. This is the reason for looking at different indicators of religion and their impact on the likelihood of being entrepreneur. This might provide an explanation for the differences in results found in the existing literature. The following research question was formulated;

Research question: What is the impact of different proxies for religion on the likelihood of being an entrepreneur?

The objective of this paper is to investigate the relationship between different proxies for religion and odds of being an entrepreneur. There are countless proxies for religion, but in this paper we chose four proxies to research. These are religious upbringing, religious affiliation, church attendance and frequency of prayer. The different indicators for religion of an individual will be used to test, which has an effect on the decision of being an entrepreneur. This paper is a quantitative research; which means that hypotheses will be tested empirically to find an answer to the research question. The dataset is from a social indicator research in the United States, the General Social Surveys (GSS) of 2008. The GSS has been conducted by the National Opinion Research Centre (NROC) at the University of Chicago (Davis, Smith, & Marsden). This survey contains questions for example regarding attitudes towards science and technology, self-employment, global economics and religion. The questions on religion are for example church attendance, religious upbringing and personal beliefs. The data consist of 3559 observations and 898 variables. There are different religions in this dataset, such as Protestant, Catholics, Jewish, Buddhism, Hinduism, Christians and Muslims. There are also respondents that have indicated that they are not religious.

Results show that some measures of religion are associated with the likelihood of being an entrepreneur. Most religious affiliations have a negative association with the likelihood of being an entrepreneur. On the other hand, church attendance has no significant association with the likelihood of being an entrepreneur. Most religious Upbringings have positive association with the likelihood of being an entrepreneur and weekly prayers have negative association with likelihood of being an entrepreneur. This is only true when we estimate the regression with all the proxies for religion in one model. Hence, it can be concluded that it is highly relevant which measure for religion is used in

order to draw conclusions on the relationship between religion and the likelihood being an entrepreneur.

The structure of the research is as follows. In the first chapter, there is a review of the literature and the hypotheses are formulated. Chapter 2 describes the data and methodology that is used in this study. Chapter 3 describes the findings from the research. Finally, chapter 4 provides the discussion and conclusion. There will also be a discussion of the limitation of the research and suggestions for further research in the last chapter.

Chapter 1: Literature review

Firstly, there will be an explanation of the concept of entrepreneurship and religion in this chapter. Secondly, there will be a summary of published studies or articles on the relationship of entrepreneurship and religion. And lastly, the hypotheses are formulated on the basis of theories and previous literature.

1.1 The concept of entrepreneurship

An important and relevant field of study is entrepreneurship. As Baumol (2002) concludes, entrepreneurship may be the key to generate growth and development. Entrepreneurship is interdisciplinary; it is related to multiple fields, for example economic, management and sociology (Alvarez, Agarwal, & Sorenson, 2005). Entrepreneurship can be defined as involving: (1) the study of resources of opportunities, (2) the process of discovery, evaluation and exploitation of opportunities and (3) the set of individuals who discover, evaluate and exploit them (Gartner, 1988; Kuratko, 2007; McKenzie et al., 2007; schumpeter, 1911; Shane & Venkataraman, 2000). This definition is a recurrent and widely accepted in the literature, this view asserts that entrepreneurial activity is a function of individuals' personality (Kuratko, 2007; McKenzie et al., 2007). Characteristic of entrepreneurs can be split in two: (1) Personality characteristics and (2) socio-economic characteristics (Hisrich, Peters, & Shepherd, 2010). Personality characteristics of entrepreneurs are for example entrepreneurial intentions, self-efficacy, structural thinking and cognitive adaptation. Socio-economic characteristics included education, gender, and work experience. Integrative models of individual differences point out that a person's future behaviour will be influenced by three domains and the interplay between these domains over time; these are personality, ability and interests (Chamorro-Premuzic, 2011). According to Nair and Pandey (2006) religion is part of the socio-economic characteristic.

1.2 The concept of religion

In order to study religion it is important to first define the concept of religion. Stark (1985) defines religion as patterns of beliefs and practices that are socially organised and that concerns ultimate meaning about the existence of the supernatural. In this paper we will focus on these beliefs and

practice of individuals. Religion is positively associated with values that enhance transcendence, preserve the social order, and protect individuals against uncertainty (Schwartz & Huisman, 1995). In our society there is a variety of religions, but if we take a look at the value-system of these religions there is not much difference (Carswell & Rolland, 2007). The study of Carswell and Rolland (2007) pointed out that in most religions the focus lays on achieving a desired place in the afterlife by doing good work with and for mankind while on earth. Example of these religions is Christianity, Islam and Hinduism. The value-system of Christianity is based on the Ten Commandments that deal with (1) the relationship with God and parents and (2) ethical behaviour within a society (Hale, 1998). This is also reinforced in New Testament, where Jesus laid the importance of love for each other. The value-system of Islam is similar, in so far as there are two categories of Islamic law: on the relationship between humankind and God; and integrity of the human community. The aim of this latter category is to create and maintain a moral social order by directing Muslim to be faithful to the divine will and to act as a community (Gordon, 1998). And also Hinduism has two categories for the value-system. The first stresses importance of effort and striving to achieve transforming wisdom and the second supports devotion and reliance on God (Narayanan, 1998). Aside from Buddhism, there is little difference among major religions on how they view the contribution of entrepreneurial activities in the society and personal life (Carswell & Rolland, 2007). Major religions perceive entrepreneurial activity as an action that helps community. This counts as part of doing a good work with and for mankind while on earth and this is believed to lead to a desired place in the afterlife. On the contrary, the value-system of Buddhism is focused more upon things beyond the world, thus an individual's behaviour is directed on finding a way to Nirvana (Eckel, 1998). This indicates less importance of entrepreneurship for society, relative to other religion.

1.3 Relationship between entrepreneurship and religion

Scott (1986) relates entrepreneurship to a set of principles that are connected to religion. In this study small business is seen as an embodiment of principles of independence, thrift, integrity, straight-dealing and hard work (Scott, 1986). This theory is based on Weberian heritage; which assumes that religious roots are ascribed to notions of a calling to labour, thrift, duty and self-sufficiency. Kunkel (1970) carried Weber argument further by emphasising that religious, ethnic, displaced and immigrant's minorities often tend to be highly entrepreneurial.

Giannetti and Simonov (2004) analysed effects of cultural values on entrepreneurial activity to provide some insights into social norms. Culture is defined as those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation (Guiso, Sapienza & Zingales, 2006). Giannetti and Simonov (2004) have shown that cultural values

affect the individual choice of becoming an entrepreneur. Guiso, Sapienza and Zingales (2003) show that religion is positively associated with attitudes that are conducive to market-oriented institutions.

Another paper examined the influence of religion on the decision for people to become entrepreneur (Audretsch, Boente, & Tamvada, 2007). They concluded that religion matter when it comes to entrepreneurship. It was found that religion shapes entrepreneurial decision. Particularly, the religion, Islam and Christianity, are found to be conducive to entrepreneurship, while Hinduism inhibits entrepreneurship.

Drakapoulou Dodd and Seaman (1998) argue that religion and enterprise have a complex and interdependent relationship. This study suggested that religion affects believers' entrepreneurial activity, influencing the decision of becoming an entrepreneur, enterprise management, and the entrepreneur's contact network. They concluded after the empirical study that British entrepreneurs were no different from non-entrepreneurs in religiosity or guided by religious values. A limitation that they mentioned in this paper was that the findings were inconclusive due to the small sample-size.

There are different articles on the relationship between entrepreneurship and religion, but there is a lack of consistency in the literature. This can be due to the sample difference (Audretsch, Boente, & Tamvada, 2007 in India; Drakopoulou Dodd & Seaman, 1998 in Britain), but also due to the differences in measurements of religion or entrepreneurship that is used. This research aims to study the latter and more specifically the difference between measurements of religion. Regarding different measurements for entrepreneurship we will make suggestions later in conclusions.

1.4 Hypotheses

Some studies have observed that important individual characteristics such as religion affect some aspects of the entrepreneurial process and not others (see for example Carroll & Mosakowski, 1987). This is the reason the focus lies on one aspect of the entrepreneurial process, which is the likelihood of being an entrepreneur, and investigate if religion has an influence on this. As was mentioned above, there is a lack of consistency when it comes to explaining the relationship between religion and entrepreneurship. In this study, we focus on different proxies for religion; religious upbringing, religious affiliation, attendance to religious service and prayer. By looking at these different proxies for religion, there can be identified which does have an influence on the likelihood of being an entrepreneur. Religious upbringing can affect entrepreneurship through the values that were learned in an individual's childhood. As was mentioned above, Schwartz and Huisman (1995) relate values to religion. Religious affiliation is the choice of an individual in his adulthood to be a member of a religion; here one indicates that he personally believes in a higher power. Church attendance is an

indicator of how committed one is to their religion (Schwartz & Huisman, 1995). An Individuals' frequency of prayer indicates a personal relationship with this supreme power. This study looks at upbringing, affiliation and commitment in terms of church attendance and frequency of prayer. A relationship between the different measurements for religion is possible, this is why a correlation test will be estimated in the following chapter. Next, the four proxies for religion are discussed and hypotheses are formulated accordingly.

1.4.1 Religious upbringing

Since Literature from Plato through Freud to the findings of contemporary survey research, there has been the notion that a basic human personality structure tends to be permanent by the time an individual reaches adulthood, with thereafter relatively little change (Inglehart, 1981). The socialization hypothesis states that 'relationship between socioeconomic environment and value priorities is not one of immediate adjustment: a substantial time lag is involved, for, to a large extent, one's basic values reflect the conditions that prevailed during one's pre-adult years' (Inglehart, 1981, p. 881). In his paper he concludes that human development seems to be far more rapid during pre-adult years than afterwards. Furthermore, the statistical likelihood of basic personality change declines sharply after an individual reaches adulthood. There is also some research that claimed high correlation between an individual's personality scales from young adulthood to middle age, or even old age (Block, 1981; Costa & McCrae, 1980). This means that a personality remains unchanged from young adulthood to middle age and old age. If we now turn to the definition of value, it is apparent that religion has an important role on this. Values are defined as the frame of reference that helps set priorities or determine right from wrong (Johnson, 2001). Values are determined early in life resulting in behaviour patterns that are consistent with culture context and enduring over time (Hofstede, 1980; Mueller & Thomas, 2000). Because there is link between values, beliefs and behaviour it is plausible that difference in culture, in which belief and values are imbedded, may influence the entrepreneurial behaviour (Mueller and Thomas, 2000). This is the reason the first hypothesis was formulated as follows;

Hypothesis 1: The religious upbringing of an individual is associated with the likelihood of being an entrepreneur.

1.4.2 Religious affiliation

The second indicator of religion that can influence the likelihood of being an entrepreneur is the fact that an individual affiliates with a religion. By affiliating with a religion you indicate that you believe in a higher power and life after death for example. An example of an entrepreneur that his personal belief was a direct result of the foundation and management strategies of the company, is the founder of the great Quaker chocolate dynasties, Cadburys, Rowntree, Fry, and Terry's (Drakapoulou

Dodd & Seaman, 1998). Another example is Calvin's watch-making social enterprise in Geneva, which was an employment-provision scheme (Troeltsch, 1959) such enterprises continue to associate themselves with religious individuals and church bodies. Drakapoulou Dodd and Seaman (1998) suggest that given an affiliation with a particular religious group, whether you are practicing or a non-practicing member, that an individuals' contacts will eventually also be affiliated with the same faith or the same meaning-system (Drakapoulou Dodd & Seaman, 1998). Thus, religious affiliation has an effect on networks, and for an entrepreneur these personal and professional networks are of importance. Audretsch, Boente and Tamvada (2007) concluded that religion shapes entrepreneurial decision; some religion stimulates entrepreneurship (Christianity and Islam) and others restricts this (Hinduism). This leads us to formulate the next hypothesis;

Hypothesis 2: The religious affiliation of an individual is associated with the likelihood of being an entrepreneur.

1.4.3 Church attendance

Thirdly, we also have evidence to believe that church attendance has an effect on the likelihood of being an entrepreneur. There are studies that indicate that high church attendance is correlated with higher level of entrepreneurship (Uhlaner, Thurik, & Hutjes, 2002). In a study it was found that church attendance negatively effects economic growth (Barro & McCleary, 2003). This was investigated further more specifically for entrepreneurial activity by Wiseman and Young (2013) and they also found that church attendance negatively correlates with productive entrepreneurship (Wiseman &Young, 2013). The question is if this is also the case for the likelihood of being an enrepreneur. There were several reasons why they explained that the relationship was negative. Some said that resources are used up by the religious sector, which could have been used for entrepreneurial activities (Barro & McCleary, 2003). Others stated that religion decreases institutional quality, leading to greater opportunities for rent seeking (Wiseman & Young, 2013). From these articles we see that church attendance is influential for entrepreneurship and this is the reason why we formulated this hypothesis.

Hypothesis 3: The church attendance of an individual is associated with the likelihood of being an entrepreneur.

1.4.4 Frequency of prayer

Entrepreneurs pray more frequently than non-entrepreneurs and are more likely to believe that God was personally responsive to them (Doughtery, Griebel, Neubert, & Park, 2013). Wiseman and Young (2013) conclude that prayer has significant effect on entrepreneurship, but that this is negative. The reason for this was resources are used up by the religious sector that could have been used

productively (Barro & McCleary, 2003). This reasoning is doubtful, because eventhough an individual is not religious they spend time on leisure (sports, driving, watching tv), and who can say for certain that they are praying in the "business time' and not in the leisure time. According to Weaver and Agle (2002) the influence of religion on behaviour is related to identity salience. Graafland, Mazereeuw and Yahiha (2006) try to explain this. The salience of identity relates to various religious practices of an individual, such as the intensity of praying, participation in communal religious activities and studying of religious books. This leads us to formulate the last hypothesis;

Hypothesis 4: The frequency of prayer of an individual is associated with the likelihood of being an entrepreneur.

The study was set out to give insight in existing literature regarding the relation between entrepreneurship and religion. In the literature review there is a gap within the specific relationship of different proxies for religion on the likelihood of being an entrepreneur. After testing these four proxies for religion the research question will be answered. The research question is: what is the impact of different proxies for religion on the likelihood of being an entrepreneur? We aim to further understand the relationship between religion and entrepreneurship after this research. We will be testing the following hypotheses;

1. *The religious upbringing of an individual is associated with the likelihood of being an entrepreneur.*
2. *The religious affiliation of an individual is associated with the likelihood of being an entrepreneur.*
3. *The church attendance of an individual is associated with the likelihood of being an entrepreneur.*
4. *The frequency of prayer of an individual is associated with the likelihood of being an*

Chapter 2: Data & Methodology

In this chapter the methodology applied to test the hypotheses will be explained. There will be a description of the data; measures used and how variable are operationalized. There will also be description of which research method is applied in this study.

2.1 Data

Since 1972 the General Social Surveys (GSS) has been annually conducted by the National Opinion Research centre (NROC) at the University of Chicago (Davis, Smith & Marsden). The NROC is an independent research organisation in the United States that is dedicated to the public interest for over 70 years and supports informed decision-making through objective social science research. In

the GSS of 2008 there are 3559 observations and 898 variables. The samples procedures of NROC consist since 2004 of face-to-face surveys among adult population in the United States. The survey consists of an in-person interview of approximately 90 minutes. The survey covered several areas on attitudes toward, science and technology, self-employment, terrorism preparation, global economics, sports and leisure, social inequality, sexual behaviours and religion. Questions about religion covered denominational affiliation, church attendance, religious upbringing, personal beliefs and religious experiences.

2.1.1 Dependent variable

There are different measurements for entrepreneurship. In the dataset there is both business ownership and self-employment. These are both proxies for entrepreneurship that are widely used in literatures. In this thesis business ownership is used as a measure of entrepreneurship. Firstly, the difference between business ownership and self-employment is that self-employment is a job and owning a business is not. A self-employed individual is someone who creates his own business, where he is both the boss and employee (Balkin, 1989). A business owner does the coordination of production and distribution with the aim to make profit, while the firm intermediates between land, labour, and capital and consumers (Balkin, 1989). Secondly, there are debates about which measurement for entrepreneurship should be used. There is evidence that demonstrates that self-employment is not a good indicator for entrepreneurship (Hurst & Pugley, 2011). Hurst and Pugley (2011) used a variety of U.S surveys to demonstrate that the self-employed are not particularly innovative nor do they have high business growth rates. Self-employment is often also an indicator of poor economic conditions where wage employment is scarce (Rissman, 2003). Lastly, the variable for self-employment in the dataset also includes former self-employed, and we will focus only on current entrepreneurs. The variable for business ownership does includes only current entrepreneur. For these reasons we use in this study business owner as the dependent variable. The respondents were asked if they are, alone or with others, currently the owner of a business they help manage, including self-employment or selling any goods or services to others. Their responses were recorded as a two-point scale; yes or no. In the empirical analysis we kept a 2-point scale; respondents who are business owner are coded one and all other respondents are coded zero. A total of 3553 respondents provided answer to the question, which 12.7% of the respondents answered that they are a business owner and 87.1% answered that they are not (Table 1). The latter category includes every other occupation and also the unemployed.

2.1.2 Independent variables

The measurements of religion are defined in four ways in this paper; religious upbringing, religious affiliation, church attendance and frequency of prayer. Next, the independent variables of this empirical study are described (more information in Table 2):

Religious upbringing: Respondents were asked in what religion they were raised, their responses were recorded on a twelve-point nominal scale. The religions are Protestant, Catholic, Jewish, Buddhism, Hinduism, Islam, Orthodox-Christian, Christian, Native American and inter-/non-denominational. In the empirical analysis we kept a four-point nominal scale running; none (coded 0), Protestant (coded 1), Catholic (coded 2), and others (coded 3). This is done because most of the respondents answered Protestant or Catholic, and for the other religion the responses were low.

Religious affiliation: Respondents were asked what their religious preference is. Their responses were recorded idem to 'a person's religious upbringing' and we kept also the same four-point nominal scale as the variable for religious upbringing.

Church attendance: Respondents were asked how often they attend religious service. Their responses were recorded on an eight-point ordinal scale; never, less than once a year, once a year, several times a year, once a month, two or three times a month, nearly every week, every week, more than once a week. In the empirical analysis we kept a four-point ordinal scale; never (coded 0), yearly (coded 1), monthly (coded 2) and weekly (coded 3). Yearly includes respondents that answered less than once a year, once a year and several times a year. Monthly includes respondents who answered once a month and two or three times a month. Weekly includes respondents who answered nearly every week, every week, more than once a week.

Frequency of prayer: Respondents were asked how often they pray. Their responses were recorded on a six-point ordinal scale; several times a day, once a day, several times a week, once a week, less than once a week and never. In the empirical analysis we kept a three-point ordinal scale; never (coded 0), weekly (coded 1) and daily (coded 2). This is to make the interpretation later of the frequency of prayer less complicated. Weekly includes respondents who answered several times a week, once a week and less than once a week. Daily includes respondents that answered several times a day, once a day.

2.2 Methodology

A cross-sectional analysis will be done in SPSS. The research method is binominal logistic regression analysis. This is a regression where the dependent variable is a binary variable (Field, 2009). This regression can predict which of the two categories a person is likely to belong to given certain other information. There will be four models with each of the independent variables regressed on the

dependent variable business owner. Additionally, there will be an estimation of a fifth model with all the independent variables included. The binary logistic regression analysis is to test which variables are associated with a person's likelihood of being a business owner. The explanatory variables are; religious upbringing, religious affiliation, church attendance and frequency of prayer. The control variables included in the regression are age, gender and marital status. This is to correct for alternative variables that can influence the relationship between the dependent and independent variable.

Here is a description of the control variables and the expected association with business owner. The variable age is a scale variable with a mean of 48 years old. Age is expected to be negative associated with business owner. An individual's age, which is negatively correlated with degree of risk aversion, is also negatively correlated with the decision of being an entrepreneur (Evans & Leighton, 1989). Gender is a binominal variable: female (coded 0) and male (coded 1). Some studies have concluded that there is a difference between gender when it comes to entrepreneurship (for example Carree & Verheul, 2012). Giannetti and Simonov (2004) concluded that men are more likely to be entrepreneurs. The variable marital status; the respondents were asked if they are currently married, widowed, divorced, separated, or have never been married. The responses were a five-point nominal scale; never married (coded 0), married (coded 1), widowed (coded 2), divorced (coded 3), separated (coded 4). Married individuals are more likely to be entrepreneurs (Giannetti & Simonov, 2004). Another paper states that both married and divorced people are more likely to be entrepreneurs than unmarried individuals (Audretsch, Boente, & Tamvada, 2007).

The significance level of 5% will be used to accept our hypotheses in this study. The significance level is the probability of rejecting the null-hypothesis in a statistical test when it is true. If the t-value exceeds a certain critical level, the null-hypothesis is rejected, and the alternative hypothesis is accepted. In logistic regression instead of the t-statistic there is the Wald-statistic, which is analogues to t-statistics (Field, 2009). The Wald-statistic tells us whether the b coefficient for that predictor is significantly different from zero. If it is significantly different then it can assumed that the predictor is making a significant contribution to the prediction of the outcome. The interpretation of logistic regression is through the value of the odds ratio (exp (B)), which explains the change in odds resulting from a unit change in the predictor.

To summarize, our data is from the United States General Social Surveys, there will be a binominal logistic regression estimated with dependent variable business owner and independent variable religious upbringing, affiliation, church attendance and frequency of prayer. Control variables are age, marital status and gender.

Chapter 3: Results

In this chapter the estimation of the Chi-square test, correlation test and binominal logistic regression will be reported. There is also a test for robustness. There will be indicated if the hypotheses are accepted or rejected. As a reminder, here are the hypotheses that are tested;

1. *The religious upbringing of an individual is associated with the likelihood of being an entrepreneur.*
2. *The religious affiliation of an individual is associated with the likelihood of being an entrepreneur.*
3. *The church attendance of an individual is associated with the likelihood of being an entrepreneur.*
4. *The frequency of prayer of an individual is associated with the likelihood of being an entrepreneur.*

3.1 Chi-square test

Firstly we estimated the chi-square test, to test if two variables are independent (Field, 2009). The test is to see if there are significant difference between business owner and non-business owner. If the value of the chi-square statistics is significant, it indicates that the variables for religion are in some way related to whether an individual is a business owner. The results of the chi-square test can be seen in Table 3 and there is also a description of the number of observation that fall into each category. There are no unusual values between the variables nor between the categories of the variables of the sample. For all the categories of the independent variables 10-20% of the respondents indicated that they were business owner and 80 to 90% indicated that they were not (Table 3). The value of chi-statistics for the variable religious upbringing is 7.779, this indicates a significant association between religious upbringing and whether a person is business owner or not (10% significance level). Religious affiliation has a value of chi-statistics of 11.684, which is highly significant (1% significance level). This indicates that there is an association between religious affiliation and whether a person is a business owner or not. The variables, church attendance and frequency of prayer, have insignificant values of chi-statistic. From the chi-square test can conclude that there is neither significant association between church attendance and being a business owner nor between frequency of prayer and being a business owner.

3.2 Pearson correlation test

The Pearson correlation test indicates if there is correlation between the variables. A correlation test was done to see if there is relationship between the independent variables. This is important for our fifth model, when we estimate a regression with all the proxies for religion in one model. This test will check if there is multicollinearity, this is a statistical phenomenon in which two or more independent

variables in a multiple regression model are highly correlated. High multicollinearity leads to increase in standard error of estimates of the coefficient (decrease in reliability) and can often lead to misleading results(Farrar & Glauber, 1967). In Table 4 the result of the correlation test can be observed. The lowest correlation is between religious upbringing and frequency of prayer, this is 0.037 at 5% significance level; also with church attendance this was low, 0.039 at 5% significance level. The correlation between religious affiliation and church attendance is 0.199 at 1% significance level and the correlation between frequency of prayer and religious affiliation is 0.229 at 1% significance level. There is high correlation between religious upbringing and religious affiliation; this is 0.491 at a 1% significance level. Also for the variables church attendance and frequency of prayer the correlation is high, this is 0.485 at 1% significance level. All the correlations between the variables are lower than 0.6, this means that we can do the regression estimation of our fifth model. Though, we have to take into account the high correlations between some variables. This can have implications for the results.

3.3 Binary logistic regression

Our analysis consists of five models, the results can be found in Table 5. In Model 1 we estimated the regression of religious upbringing on the probability of being a business owner (Table 5:M1). The odds of an individual with a religious upbringing of being an entrepreneur does not significantly differ from an individual that does not have a religious upbringing. From this model we would reject the first hypothesis, because the fact that an individual was brought up in a religion does not have a significant association with the likelihood of being an entrepreneur.

Model 2 regards religious affiliation (Table 5, M2). Individual that have religious affiliation are less likely to be business owner than non-religious affiliated individual. The odds of being a business owner for a Protestant affiliated individual is less than for a non- religious affiliated individual, this also counts for Catholic and 'Other religions'. Hereby, we can conclude that the second hypothesis is accepted, an individual's religious affiliation is indeed associated with the likelihood of being an entrepreneur.

Model 3 consists of the independent variable church attendance (Table 5, M3). From this estimation can be seen that the odds of being a business owner for weekly, monthly and yearly church attendance of an individual does not significantly differ from individual who does not attend church. Hereby, we conclude that the third hypothesis is rejected. This means that church attendance is not associated with the likelihood of being an entrepreneur.

Model 4 is an estimate of the regression for the frequency of prayer on business owner (Table 5, M4). An individual who prays weekly has lower odds of being a business owner than someone who never

prays (significance level of 10%). There is no significant difference in the likelihood of being a business owner between individual that pray daily and those who never pray. Hereby, we conclude that the fourth hypothesis is rejected for individuals that pray daily. The hypothesis is also rejected for individuals that pray weekly. This is because a weekly frequency of prayer is not significant at a 5% significance level, this was at 10%.

Model 5 is a regression with all the four measurements for religion included in one model (Table 5, M5). Individuals with a religious upbringing, with exception to Protestant, is in this model significant at 1% level. They are significantly more likely to be business owners than individuals without religious upbringing. The odds of being a business owner for religious affiliated individual, with exception of Protestant affiliation, is significantly less than non-religious affiliated individual. Compared to Model 2, the odds has negatively increased and Protestant affiliation is no longer significant. The likelihood of being a business owner for individuals who attend weekly, monthly and yearly still differ insignificantly from individual that does not attend church; it supports the results in Model 3 that church attendance is not significantly associated with the likelihood of being a business owner. The results of the frequency of prayer remains almost the same as Model 4, individual that pray weekly are less likely of being a business owner than individual that does not pray, but now it is at a 5% significance level. In Model 5 an individual that pray weekly has slightly less chance of being a business owner than what we have observed in Model 4. After estimating this model, the first hypothesis can be accepted under the condition that the other three variables are included to the model. The second hypothesis is accepted for individual with a religious affiliation, with exception to protestant affiliation. The third hypothesis is rejected and the fourth hypothesis is accepted for individuals who pray weekly and rejected for those who pray daily.

Regarding our control variables, age has a negative significant association with the likelihood of being a business owner (<5% significance level). This means that the odds of being a business owner decreases the older you get. Gender is also significant at 1% significance level; this is negative for male indicating that males are less likely to be business owner compared to females. In the first model marital status has no significant association with the likelihood of being a business owner, although in the other four models there are significant values. We observed that widowed (5% significance level) and separated (10% significance level) individuals are more likely to be business owners than non-married individuals. There is no significant difference in the odds of being a business owner for married or divorced and non-married individuals. This is in line with four of the five models we previously estimated.

3.4 Test for robustness

The dependent variable business owner was used for the empirical study so far, but is this the right variable to use as indicator for entrepreneur? In the survey of the United States there is, as we mentioned in chapter 2, a question regarding self-employment. We will test for the robustness of the results by using another measurement for entrepreneurship. A binary logistic regression is estimated with self-employment as the dependent variable. The results can be found in Table 6. From all the proxies for religion only individuals with Catholic affiliation differ significantly from non- religious affiliated individual when it comes to the likelihood of being self-employed (Table 6:M2). The odds of being self-employed for an individual with Catholic affiliation is less than for non-affiliated individual (10% significance level). In Model 5 of Table 6 can be observed that the results of self-employed and business owner do not differ much. Individual with religious upbringing are more likely to be self-employed than individual without religious upbringing. Individuals with religious affiliation (with exception to Protestant) are less likely to be self-employed than non-religious affiliated individuals. An individual that attends church (weekly, monthly or yearly) or pray (weekly or daily) have no significant difference in the odds of being self-employed compared to an individual that does not attend church or pray weekly (Table 6, M5). As can be seen, the major differences between self-employment and business ownership in this model is that Protestant upbringing is in Table 6 significant and weekly prayer is not significant (Table 6:M5). While Protestant religious upbringing was not significant in Table 5 and weekly prayer was. Regarding the control variables, gender is still significant in all the models at 1% significance level. A male individual is less likely than a female to be self-employed. Age is only positively significant in the fifth model at a 10% significance level (Table 6, M5). This result differs from the regression of business owner, the relationship between age and business owner is negative (Table 5). Widowed and separated individuals are more likely to be self-employed than non-married individuals at 10% significant level. Though, this only counts for Model 5. There are differences between the two regressions estimated, this can be explained by a correlation test. There is no significant correlation between the variable for self-employment and business ownership (Table 7), which means that these two variables are two different indicators. Thus, it is not strange that there are differences between these two logistic regression results.

In conclusion, the second hypothesis is accepted for most religions, with exception to protestant. The third hypothesis is rejected. The first and the fourth hypothesis are accepted only when all the proxies for religion are added in one model. The first hypothesis is accepted for all religion, with exception to Protestant and the fourth hypothesis is accepted only for individuals who pray weekly.

Chapter 4: Discussion and Conclusion

In this section the discussion and conclusion are presented. It consists of interpretation of how the findings relate to the literature. The limitations of the research are discussed, suggestions for further research are given and also the answer to the research question.

4.1 Discussion

An empirical research was done to study the relationship between religion and entrepreneurship in the United States. From the literature review broad view was provided on articles that studied the relationship between religion and entrepreneurship. There were some unresolved issues and discrepancies that we aimed to resolve. Some articles concluded that there is a positive relationship, some articles negative relationship and others argue that there is no relationship at all. What can be observed from the articles is that several different proxies for religion are used. This study aims to explain the lack of consistency between the articles due to the different proxies used for religion. The effect of religion on the likelihood of being entrepreneur was estimated by the binary logistic regression. In the study there are two dependent variables, business owner and self-employment. The results used to test the hypothesis and answer the research question are of the binary logistic regression with business owner as dependent variable. The binary logistic regression with dependent variable self-employed was to test for robustness and it is discussed further in limitations and further research suggestions.

The proxy for entrepreneur is business owner and the proxies for religion are; religious upbringing, religious affiliation, church attendance and frequency of prayer. The results are that most religious upbringing, if included in one model with the other measurements for religion, is associated with the likelihood of being an entrepreneur. This is a significantly positive relationship between religious upbringing (besides Protestant) and likelihood of being an entrepreneur. Most religious affiliation has a negative association with the likelihood of being an entrepreneur; with exception to the Protestant affiliation. Protestant affiliation is not significantly associated with the likelihood of being an entrepreneur. Church attendance does not have a significant association with likelihood of an entrepreneur. The frequency of prayer was significantly associated with likelihood of being an entrepreneur only for individual who pray weekly, not those who pray daily. In conclusion, the first hypothesis is accepted for all religious upbringings, except for Protestant. The second hypothesis is true for all religious affiliation, but Protestant. The third hypothesis is rejected for yearly, monthly and daily church attendance. Lastly, the fourth hypothesis is accepted only for individual who pray weekly.

The literature on religious upbringing led us to believe that religious values that are being transmitted in individual's childhood will impact entrepreneurship. Our first model in the empirical test did not

support this view, but in the fifth model it does suggest a positive relationship with likelihood of being an entrepreneur. The finding that religious upbringing is significant when it is includes the other proxies for religion was surprising, but that it is a positive association even more so. This positive association with the likelihood of being a business owner is not consistent with the other proxies for religion that we have encountered so far in this research; the other indicators for religion are all negatively associated with the likelihood of being a business owner. Also, we have seen in Table 3 that there is high correlation between religious upbringing and religious affiliation. This can be the reason why religious upbringing in a model with church attendance, religious affiliation and frequency of prayer became significantly associated with the likelihood of being an entrepreneur. From various examples in the literature it could be concluded that religious affiliation leads to firm formation. Our results concluded that religious affiliation has a negative association with the likelihood of being an entrepreneur. Our empirical study did not find any significant association between church attendance and the likelihood of being an entrepreneur. This supports the findings of Doughtery et al., who find that there is no difference between church attendance of American entrepreneurs and non-entrepreneurs (Doughtery, Griebel, Neubert, & Park, 2013). It is mentioned in the literature review that intensity of prayer influences behaviour; this is believed to be negative because of the opportunity cost that came along with it. Weekly prayer has a negative association with the likelihood of being an entrepreneur supporting the previous literature findings.

The study has some limitations. The first limitation is with regards to the measurement used for religious affiliation. As was mentioned in Chapter 2, we used for this variable the question from our dataset; what is your religious preference? A preference for a religion does not necessarily mean you are a member of that religion. Furthermore, there is a limitation with regards to indicator for entrepreneurship. In the last paragraph of Chapter 3 we estimated binary logistic regression with dependent variable self-employed and the results differ significantly from the logistic regression with dependent variable business owner. In the literature review it was explained why we prefer business owner instead of self-employed, self-employed includes individuals who are no longer self-employed. Regardless this leads to important discussion on which proxy to use for entrepreneurship. The literature on this subject demonstrates a very wide range of definitions used and lack of agreements among researchers on what should be the accepted definition (Moran, 1998). Lastly, from this research we could not draw a causal relation, which means it remains unknown if religion is a cause of entrepreneurship or if it is the opposite. There is a lot of literature that suggest a relationship between religion and entrepreneurship. This research solemnly looked at the association between religion and the likelihood of being an entrepreneur. Further research can focus on other aspect of entrepreneurship that can be associated with religion, for example entrepreneurs who turn to

religion for guidance, support and network. This can be in the managing process, customer collection and marketing. This will give more understanding on the association between religions and other entrepreneurial aspects. Furthermore, focusing on different indicators for entrepreneurship and testing one religion indicator is also an interesting further study opportunity. We saw that religious values transmitted in your childhood may have association with the likelihood of being an entrepreneur; this should be researched further to rule out a spurious relationship. This can be done by for example using other datasets from other countries or other proxies for religion.

4.2 Conclusion

Now we are able to answer the research question; what is the impact of different proxies for religion on the likelihood of being an entrepreneur? This study shows quite some different results regarding indicators of religion. The four proxies for religion on the likelihood of being an entrepreneur or not has been estimated. The proxy church attendance did not show any significant association with the likelihood of being an entrepreneur. Another Proxy is frequency of prayer, it was concluded that weekly prayer has a negative association with the likelihood of being an entrepreneur. This was also the case for the third proxy; religious affiliation (except for the Protestant affiliation). Regarding the last proxy in our study, the impact of religious upbringing on the likelihood of being an entrepreneur, this showed a positive association only when the other proxies were included in the model. The aim of this research is to shed light on different proxies of religion and test if religious behaviour, beliefs and practice differ in their association with entrepreneurship, focusing on likelihood of being an entrepreneur. It can be concluded from this study that religion does have a relation with the likelihood of being an entrepreneur; this can be positive or negative. This study makes clear that different proxies for religion indeed have different relationship with the likelihood of being an entrepreneur. This can help with interpretation of findings in the future.

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Appendix

Table 1: Description dependent variable

Coding	Business Owner	Frequency	Percentage
0	No	3100	87.1
1	Yes	453	12.7
	Total	**3553**	**99.8**
	Missing value	6	0.2
Total Observation		3559	100

Table 2: Description Independent Variables

Coding	Religious Upbringing	Frequency	Percentage
0	None	287	8.1
1	Protestant	1937	54.4
2	Catholic	1119	31.4
3	Others	193	5.4
	Total	**3536**	**99.4**
	Missing value	23	0.6
Total observation		3559	100
Coding	**Religious affiliation**	**Frequency**	**Percentage**
0	None	582	16.4
1	Protestant	1820	51.1
2	Catholic	841	23.6
3	Others	305	8.6
	Total	**3548**	**99.7**
	Missing value	11	0.3
Total observation		3559	100
Coding	**Attendance**	**Frequency**	**Percentage**
0	Never	739	20.8
1	Yearly	1114	31.3
2	Monthly	710	19.9
3	Weekly	984	27.6
	Total	**3547**	**99.7**
	Missing value	12	0.3
Total observation		3559	100
Coding	**Prayer**	**Frequency**	**Percentage**
0	Never	393	11.0
1	Weekly	1041	29.2
2	Daily	2095	58.9
	Total	**3529**	**99.2**
	Missing value	30	0.8
Total observation		3559	100

Table 3: Cross tabulation: Are you a business owner?

	Coding	Description	Business owner no	Business owner yes	Total observation	χ2	P-value
Religious Upbringing	0	None	87.8%	12.2%	287		
	1	Protestant	85.5%	12.2%	1935		
	2	Catholic	89.1%	10.9%	1116		
	3	Others	89.6%	10.4%	192		
		Total Count			3530	7.779	0.051
Religious affiliation	0	None	85.4%	14.6%	582		
	1	Protestant	87.5%	12.5%	1818		
	2	Catholic	89.5%	10.5%	838		
	3	Others	82.6%	17.4%	304		
		Total Count			3542	11.684	0.009
Church attendance	0	Never	88.3%	11.7%	738		
	1	Yearly	86.7%	13.3%	1111		
	2	Monthly	87.2%	12.8%	709		
	3	Weekly	87.3%	12.7%	983		
		Total Count			3541	1.127	0.770
Frequency of prayer	0	Never	88.0%	12.0%	393		
	1	Weekly	87.0%	13.0%	1036		
	2	Daily	87.3%	12.7%	2094		
		Total Count			3523	0.296	0.862

Table 4: Correlation between independent variables

	Upbringing	Affiliation	Attendance	Prayer
Upbringing	1			
Affiliation	0.491***	1		
Attendance	0.039**	0.199***	1	
Prayer	0.037**	0.229***	0.485***	1

Note: 10% significance level is *,5% is **and 1% is ***

Table 5: Results binominal logistic regression business owner

Variables	M1	M2	M3	M4	M5
Constant	-1.945***	-1.394***	-1.696***	-1.661***	-1.650***
	(0.467)	(0.433)	(0.422)	(0.411)	(0.493)
Non-religious upbringing (ref cat.)					
Protestant upbringing	0.116				0.447
	(0.301)				(0.339)
Catholic upbringing	0.354				0.881***
	(0.248)				(0.295)
Other upbringings	0.042				0.533*
	(0.258)				(0.315)
Non-religious affiliation (ref. Cat)					
Protestant affiliation		-0.329*			-0.313
		(0.196)			(0.234)
Catholic affiliation		-0.399**			-0.810***
		(0.171)			(0.206)
Other affiliation		-0.597***			-0.738***
		(0.192)			(0.245)
Non-church Attendance (ref.cat.)					
Yearly attendance			-0.210		-0.187
			(0.156)		(0.185)
Monthly attendance			-0.058		-0.052
			(0.136)		(0.147)
Weekly attendance			-0.077		-0.072
			(0.151)		(0.154)
Never pray (ref.cat.)					
Pray weekly				-0.337*	-0.470**
				(0.175)	(0.210)
Pray daily				-0.150	-0.133
				(0.117)	(0.126)
Age	-0.010***	-0.008**	-0.009**	-0.010***	-0.009**
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Female (ref.cat.)					
Male	-0.735***	-0.740***	-0.742***	-0.769***	-0.762***
	(0.105)	(0.106)	(0.106)	(0.108)	(0.109)
Never married (ref.cat.)					
Married	0.316	0.293	0.335	0.362	0.311
	(0.387)	(0.387)	(0.387)	(0.387)	(0.390)
Widowed	0.840	0.847**	0.844**	0.856**	0.831**
	(0.375)	(0.375)	(0.375)	(0.375)	(0.377)
Divorced	0.124	0.164	0.151	0.104	0.087
	(0.456)	(0.456)	(0.455)	(0.459)	(0.462)
Separated	0.635	0.649*	0.677*	0.680*	0.641*
	(0.392)	(0.392)	(0.392)	(0.392)	(0.394)

Note: dependent variable is business owner (coded 1). Values in brackets() are the standard errors. *: 10% significance level, **: 5% and ***: 1%

Table 6: Results binary logistic regression self-employed

Variables	M1	M2	M3	M4	M5
Constant	-2.793***	-2.168***	-2.470***	-2.400***	-2.749***
	(0.502)	(0.445)	(0.428)	(0.416)	(0.531)
Non-religious upbringing (ref cat.)					
Protestant upbringing	0.399				0.752**
	(0.319)				(0.359)
Catholic upbringing	0.257				0.684**
	(0.273)				(0.325)
Other upbringings	0.285				0.644*
	(0.280)				(0.342)
Non-religious affiliation (ref. Cat)					
Protestant affiliation		-0.104			-0.256
		(0.216)			(0.255)
Catholic affiliation		-0.338*			-0.633***
		(0.192)			(0.227)
Other affiliation		-0.241			-0.497*
		(0.207)			(0.260)
Non-church Attendance (ref.cat.)					
Yearly attendance			0.048		-0.037
			(0.162)		(0.192)
Monthly attendance			0.128		0.08
			(0.144)		(0.156)
Weekly attendance			0.059		0.054
			(0.162)		(0.165)
Never pray (ref.cat.)					
Pray weekly				-0.071	-0.227
				(0.177)	(0.214)
Pray daily				0.012	-0.037
				(0.123)	(0.132)
Age	0.005	0.006	0.005	0.005	0.006*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Female (ref.cat.)					
Male	-0.770***	-0.786***	-0.764***	-0.773***	-0.772***
	(0.111)	(0.113)	(0.112)	(0.114)	(0.116)
Never married (ref.cat.)					
Married	-0.916	0.182	0.223	0.243	0.366
	(1.17)	(0.391)	(0.391)	(0.391)	(0.414)
Widowed	-1.009	0.532	0.546	0.541	0.667*
	(1.18)	(0.377)	(0.376)	(0.376)	(0.400)
Divorced	-0.845	0.466	0.433	0.423	0.547
	(1.175)	(0.426)	(0.427)	(0.427)	(0.450)
Separated	-1.596	0.597	0.613	0.624	0.724*
	(1.233)	(0.392)	(0.391)	(0,391)	(0.415)

Note: dependent variable is self-employed (coded 1). Values in brackets() are the standard errors. *: 10% significance level, **: 5% and ***: 1%

Table 7: Correlation between dependent variables

	Business owner	Self-employed
Business owner	1	
Self-employed	0.019	1

Note: 10% significance level is *,5% is **and 1% is ***