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Entrepreneurship and Religion: using values as a mediator to explain gender differences in entrepreneurial rates

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Abstract

Can gender differences in self-employment be explained by the relative importance to a gender of specific religious values? To answer this question, I use Schwartz's theory of basic human values which identifies ten distinct values based on the type of goal or motivation that the value expresses (Schwartz, 1992, 2006). Examples of these include power, benevolence and tradition. With data from the ninth wave (2018) of the European Social Survey (31 countries) and by creating three linear probability models, I first investigate the relationship between religion and entrepreneurship, then the role of values in this relationship and finally whether these values can help explain why less females are entrepreneurs compared to males. I find no significant association between religion and entrepreneurship. I also find that the values achievement, stimulation and self-direction are positively significantly associated with the rate of entrepreneurship, while universalism, security, conformity and hedonism are negatively significantly associated with entrepreneurship. Finally, I find that males, who value power, tradition and self-direction as much as a female individual does, are significantly associated with a greater likelihood to become entrepreneur, while universalism would lower this likelihood. I contribute to the existing literature by empirically testing the relationship between religion and entrepreneurship using Schwartz's theory of basic human values and furthermore by investigating whether these religious values can explain why females are less likely to be entrepreneurs compared to males. Finally, I advise policymakers to investigate individual's value preferences through questionnaires or social experiments to tailor the job market to their preferences.

Key words: Religion, Entrepreneurship, Self-employment, Human Values, Gender

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1. Introduction

The relationship between religion and economics has been investigated for decades. On one hand, already scholars such as Adam Smith and Max Weber acknowledge that religion plays a fundamental role in economics (D. B. Audretsch et al., 2007). On the other hand, famous economists such as Joseph Schumpeter argue that entrepreneurs rely less on tradition because they tend to be more self-centered (Schumpeter, 1934). In the years that followed, numerous researchers attempt to investigate and explain the relationship further with divergent findings.

On average, across OECD countries and over the years 1998-2022, young firms account for around 20% of employment but create almost 50% of the new jobs (OECD, 2023). Moreover, in 2021, the European Union had 30.1 million enterprises of which 99% were micro and small enterprises (0-49 employees) (Eurostat, 2022). These figures stress the importance of entrepreneurship for job creation and the overall welfare of the economy. Furthermore, research also shows that entrepreneurship is known to matter for economic growth and for enhancing productivity, efficiency and job creation (Audretsch & Keilbach, 2004; Pinillos & Reyes, 2011; Wennekers & Thurik, 1999).

Entrepreneurship is among many other options one can choose from a fairly popular choice of employment in the current economy (CEDEFOP, 2020). Individuals choose between becoming self-employed or a wage worker by using the occupational choice model (Jovanovic, 1994; Lucas, 1978). Because entrepreneurship is so important for economic growth, what exactly drives the decision to become an entrepreneur is a very popular field of interest among many researchers (Engle et al., 2011). Topics such as personality traits, education, genetics and various types of capital are extensively investigated to try and obtain an explanation (Blanchflower & Oswald, 1998; Fairlie & Robb, 2007; Lüthje & Franke, 2003; Nanda & Sørensen, 2010; Nicolaou et al., 2008; Oosterbeek et al., 2010; von Graevenitz et al., 2010; Zhao & Seibert, 2006). Understanding what drives entrepreneurial activity is crucial from a policy perspective as policymakers get a better insight into which triggers might work to influence the behaviors of entrepreneurs and move them into a certain direction (Bosma & Levie, 2020). Governments often want to promote entrepreneurship, but doing this in the right way can only be done if policymakers can understand what drives the decisions of the entrepreneurs. Only in this way can a country move towards their entrepreneurship equilibrium relevant for economic growth (Audretsch et al., 2006).

In the years 2011-2020 the European average self-employment rate laid around 14%. Interestingly however, even though the European Institute of Innovation and Technology reported that women constitute 51% of the total European population, only 31.4% of the self-employed individuals are women (EIT, 2016). What exactly drives these differences is also an attractive field of investigation. Explanations such as systemic disadvantages due to systemic factors, inherent disparities between the genders, different networks or different personality traits are given to explain this gender gap in entrepreneurship (Fischer et al., 1993; Klyver & Grant, 2010; Koellinger et al., 2013; Sánchez Cañizares & Fuentes García, 2010).

In this context, the role of religion in entrepreneurship is also continuously investigated. It is argued that religion shapes an individual's cultural and social norms which influence the choice in becoming an entrepreneur (Audretsch et al., 2007; Giannetti & Simonov, 2004). Different pathways are used in the literature to explain the relationship between religion and entrepreneurship. These include social capital, normative and cognitive institutions and values (Audretsch et al., 2013; Balog et al., 2014; Hoogendoorn et al., 2016).

The role that values play in this relationship is an interesting one. Different frameworks have been developed to investigate the role of values as a mediator in the relationship. One of these is the theory of the ten basic human values developed by Schwartz. This theory identified ten motivationally distinct value orientations that are all valued by an individual on a different level (Schwartz, 1992, 2006).

My work will focus on the role religion plays in becoming an entrepreneur and more specifically, whether there are certain values that are more important to religious individuals that influence the choice of entrepreneurship. It will also investigate whether there are specific values that are more important to a specific gender that could explain the difference in the entrepreneurial rate between men and women. I have formulated the following research question:

Can gender differences in self-employment be explained by the relative importance to a gender of specific religious values?

In order to answer the research question, I have developed three hypotheses. They will further be justified in the next section (Theoretical framework). They are the following:

Hypothesis 1: The rate of self-employment in Europe differs among religious and non-religious individuals.

Hypothesis 2: There are specific human values that explain whether a religious individual is self-employed or not.

Hypothesis 3: There are religious human values that are more important to a specific gender which explains the difference in the rate of self-employment among men and women.

The objective of my paper is to investigate the role of religious human values in explaining the gender gap in entrepreneurship. There are many proxies that could be used to proxy 'religion'. In my research, the first proxy is whether an individual belongs to a religion, the second to which denomination this individual belongs and the third how religiously active this individual is. The dataset that will be used is the 2018 wave of the European Social Survey (ESS). It contains 31 countries and, after modifications, 29,593 observations.

My results show no significant associations between any proxy for religion with entrepreneurship. Furthermore, the values achievement, stimulation and self-direction are positively associated with entrepreneurship, whereas the values universalism, security, conformity and hedonism are negatively associated with entrepreneurship. Finally, when a male values the values power, tradition and self-direction as much as a female it is more likely to become self-employed, and less likely when males values universalism as much as a female.

The religious population still accounts for about 85% of Europe in 2020, whereas it was 99% in the 1990's (Zurlo, 2021). However, as the world is evolving the behavior of the religious population changes. It is believed that although the group of non-affiliated individuals is growing now, it will fall again in 2060. Religious individuals are found to be more conservative, nevertheless as time will evolve it is believed that a left-wing form of Christianity will evolve (Connaughton, 2020). These findings show that now, more than ever, it is important to investigate religion as an influencer in decision-making as it seems to be a strong determinant. Especially because it is observed that the value priorities of the entrepreneur and that of people belonging to a religion are opposite, which is important information for policymakers who desire to foster job creation and economic growth (Rietveld & Hoogendoorn, 2022).

This research adds on to the existing literature in distinct ways. Firstly, where previous research focused on the direct relationship between religion and entrepreneurship, this research addresses an indirect relationship by investigating the role of values as a mediator (Audretsch et al., 2013; Butler & Herring, 1991; Carroll & Mosakowski, 1987; Carswell & Rolland, 2007; Dodd & Seaman, 1998; Dougherty et al., 2013; Minns & Rizov, 2005). Secondly, while previous research has often hinted at the usage of values as a mediator in the relationship between religion and entrepreneurship, this research actually empirically tests it (Dougherty et al., 2013). Thirdly, this paper uncovers a new pathway through which the explanation of the gender gap in entrepreneurship could be explained and investigated more thoroughly. Previous research shows explanations such as personality differences, risk aversion, initiative or lack of social, financial and human capital (Fischer et al., 1993; Klyver & Grant, 2010; Koellinger et al., 2013; Malach Pines et al., 2010; Sánchez Cañizares & Fuentes García, 2010). My research investigates a new pathway, namely values using Schwartz's theory of basic human values.

The remainder of my paper is structured as follows. The next section will present a theoretical framework in which the literary background related to the topics of entrepreneurship and religion as well as related research and their outcomes will be discussed. Section 3 will present a description of the data used for this research. Section 4, the empirical strategy, will present the models that will be investigated, as well as a justification of the choice of the model and other manipulations to the data. Section 5 will show the results that will help provide an answer to the research question using the three hypotheses. Section 6 will conclude the research, provide an answer to the research question and will discuss the limitations of the model, the contributions, future recommendations and policy implications.

2. Theoretical Framework

In this section, I will start by conceptualizing the term Entrepreneurship (Section 2.1) and its relationship with gender (Section 2.2). Thereafter, I will evaluate the existing studies of the relationship between religion and entrepreneurship (Section 2.3). Furthermore, the theories of human basic values will be presented (Section 2.4) whereafter I will discuss the role of values in the relationship between religion and entrepreneurship (Section 2.5).

2.1 Conceptualization of Entrepreneurship

Scholars commonly approach the decision of an individual to become an entrepreneur by using the occupational choice model. This model involves comparing the income generated from entrepreneurship with the wages earned as an employee (Holmes & Schmitz, 1990; Jovanovic, 1994; Lucas, 1978).

Various factors specific to individuals are found to influence the choice of entrepreneurship. These include personality traits such as risk aversion, openness and conscientiousness (Lüthje & Franke, 2003; Segal et al., 2005; Zhao & Seibert, 2006). Education is also believed to have an influence. Some find positive effects of entrepreneurial education on the desirability to start a business, while others find negative effects because of more realistic representations (Oosterbeek et al., 2010; Peterman & Kennedy, 2003; von Graevenitz et al., 2010). Furthermore, academia argue that entrepreneurship can be explained by genetic factors and argue for little effect of nurturing factors (Nicolaou et al., 2008). On the other hand, more recent research finds that the nurturing effect of parental entrepreneurship plays twice as much of a role in explaining entrepreneurship where parental role modelling is crucial (Lindquist et al., 2015). Finally, there is also supporting evidence for inheritances and gifts, human capital, prior work experience and peer effects (Blanchflower & Oswald, 1998; Fairlie & Robb, 2007; Nanda & Sørensen, 2010; Zucker et al., 1994).

As a result, a significant body of research emerges with the aim of identifying the reasons why some individuals opt to start a new business while others refrain from entrepreneurship. This is understandable as entrepreneurship is an important job creator and known to matter for economic growth and for enhancing productivity and efficiency (Wennekers & Thurik, 1999; D. Audretsch & Keilbach, 2004).

2.2 Entrepreneurship and Gender

As it is commonly known, the proportion of females that are entrepreneurs is below that of males (Fischer et al., 1993; Klyver & Grant, 2010; Koellinger et al., 2013; Malach Pines et al., 2010; Sánchez Cañizares & Fuentes García, 2010). Scholars seek to provide explanations for this phenomenon by investigating two main theories. The theory of liberal feminism argues that women experience disadvantages due to pervasive discrimination and systemic factors that hinder their access to vital resources, including business education and experience.

Conversely, the theory of social feminism posits that inherent disparities between women and men emerge from variances in early and ongoing socialization processes (Fischer et al., 1993).

Several factors contribute to the lower rates of female entrepreneurship. One explanation is that women exhibit lower confidence in their entrepreneurial skills compared to men, often due to different social networks and a higher fear of failure (Koellinger et al., 2013). Additionally, women may have lesser experience working in similar firms and lack access to entrepreneurial resources and role models (Fischer et al., 1993; Klyver & Grant, 2010).

Moreover, research shows gender differences in the association between certain traits and entrepreneurial behavior. Females tend to demonstrate a stronger link between initiative and creativity, whereas males show a stronger connection between the desire for new challenges and willingness to take risks (Sánchez Cañizares & Fuentes García, 2010).

In examining the concept of necessity versus opportunity entrepreneurship, it becomes evident that countries with limited options for women to earn a livelihood tend to have higher rates of female entrepreneurship (Malach Pines et al., 2010). This highlights the significance of external factors in shaping entrepreneurial choices for women.

2.3 Relationship between Religion and Entrepreneurship

Many scholars investigate whether belonging to a particular religion or denomination affects the choice to become an entrepreneur. This relationship is explored in different ways and findings continuously contradict each other. For instance, some find that Protestants and Jews become entrepreneur more often compared to Catholics (Butler & Herring, 1991; Carroll & Mosakowski, 1987; Minns & Rizov, 2005). However, other studies find that there are no significant differences between wage workers and entrepreneurs when investigating religious denominations or activities (Carswell & Rolland, 2007; Dodd & Seaman, 1998; Dougherty et al., 2013). Other research finds that Hinduism and Buddhism restrict self-employment and Islam and Jaidism encourage it, while Christianity is not significantly associated with self-employment (Audretsch et al., 2013). Some simply find that non-Christians are more likely to be self-employed than Christians even though Christians prefer to be self-employed compared to non-Christians (Hill et al., 2015). Finally, others find that being a Protestant positively influences both entrepreneurial intention and actual self-employment (Wyrwich, 2018).

These findings contradict each other because studies employ different measures for religion and entrepreneurship in different parts of the world. For example, some distinguish between different religious affiliations such as Protestantism and Catholicism, while others simply combine them into Christianity, meanwhile others divide them into even more specific denominations such as Evangelism (Rietveld & Hoogendoorn, 2022). Moreover, different measures for engagement in religion are used. Some use attendance to church, some look at the frequency of prayer, while others simply look at the self-considered religiousness (Dodd & Seaman, 1998; Dougherty et al., 2013; Hill et al., 2015). Finally, some even look at different types of entrepreneurship or differentiate between young and established businesses (Dougherty et al., 2013) and others investigate social entrepreneurship (Spear, 2010).

The literature identifies a few main channels through which religion and entrepreneurship could be related (Rietveld & Hoogendoorn, 2022). The first is social capital (Balog et al., 2014; Hoogendoorn et al., 2016) which is believed to be positively associated with entrepreneurship. Its effect is strengthened when one belongs to a minority religion (Nunziata & Rocco, 2011). The second channel are normative and cognitive institutions (Audretsch et al., 2013). Authors investigate entrepreneurship in India and find that normative institutions, being closely related to norms and values, are positively associated with entrepreneurship because individuals adhere to the social norms in which they find themselves. Lastly, values are also a channel through which religion and entrepreneurship are related (Audretsch et al., 2013; Dougherty et al., 2019; Hoogendoorn et al., 2016). This was already the case about a century ago when the Weber thesis was developed, in which it was believed that the Protestant work ethic played a role in the rise of the capitalist enterprise through the values promoted by the Protestant faith (Audretsch et al., 2013; Tracey, 2012; Weber, 1930). It is argued that Protestants worked hard to discern themselves because they were elected and predestined to fulfill their duty to serve others through their work (Rietveld & Hoogendoorn, 2022). The role of values in religion and entrepreneurship will be further explored in the following sections.

Hypothesis 1: The rate of self-employment in Europe differs among religious and non-religious individuals.

2.4 The theories of human basic values

The study of values is crucial to many fields in social sciences and humanities. Over the past few decades, extensive research is dedicated to exploring the content, structure, and implications of personal values across diverse cultures (Roccas & Sagiv, 2017). Values are found to provide a framework through which individuals evaluate and make decisions, influencing their choices and subsequent behavior (Parks-Leduc et al., 2015; Rokeach, 1969). Values refer to desirable end states that guide behavior, extending beyond specific situations. Furthermore, they can be ranked based on their relative importance. They serve as guiding principles that shape individuals' actions and choices in various contexts (Hitlin, 2003).

Values represent foundational components of an individual's identity, and individuals strive to avoid behaviors that contradict their values. Consequently, individuals may make distinct choices when faced with seemingly similar options due to variations in their value priorities. The prioritization of values influences decision-making processes and shapes the alignment between personal values and chosen actions.

Various theories revolving around human values have been developed. The Theory of Basic Human Values by Schwartz (1992) identifies ten universal values that each have a different goal or motivation. The Rokeach Value Survey requires respondents to rank 18 terminal values (desired end states) and 18 instrumental values (desired modes of behavior) (Beatty et al., 1985; Rokeach, 1969). Another way to assess individual's value preferences is using the List of Values (Kahle et al., 1986) which identifies nine values that closely reflect the daily life and include values such as belonging, excitement and warm relationships. Lastly, the World Value Survey Cultural Map of the World, developed by Inglehart and Baker (2000), assesses individual's behavior towards all major areas of human concern of which two dimensions dominate traditional/secular-rational values and survival/self-expression values.

This study will rely on the theory of basic human values as developed by Schwartz, a social psychologist. This theory provides a clear structure of the organization of values. One value is distinguished from another through the type of goal or motivation that the value expresses. Every individual holds several values but with varying degrees of importance. The theory identifies ten motivationally distinct value orientations. Some values contradict each other (e.g., benevolence and power) while others are compatible (e.g., conformity and security) (Schwartz, 1992, 2006).

A visualization of the ten human basic values can be seen as a circle (Figure A1, Appendix A). The human basic values that are adjacent to each other have overlapping motivational goals, whereas values on the opposite sides of the circle have competing and opposing goals (Schwartz, 1992). These ten basic human values can then be organized into four value groups along two bipolar dimensions. These are also represented in figure A1 but will not be used further in this study as the focus will lay on the role of every single value.

2.5 The role of values in the relationship between Religion and Entrepreneurship

There have thus been two main pathways to investigate the relationship between religion and entrepreneurship with values. On one hand the Weber thesis and on the other the ten basic human values by Schwartz have been used to somewhat identify a relationship between religion and entrepreneurship (Schwartz, 1992; Weber, 1930). Even though the role of values have been mentioned often, empirical tests using values as mediators in this relationship have not frequently been conducted, except for two recent studies that provide support for the moderating role of values (Dougherty et al., 2019; Rietveld & Hoogendoorn, 2022).

The most recent study also uses Schwartz's theory of ten basic human values by classifying the values into four categories that lie along two bipolar dimensions. By investigating the motivational goal of each value, it is observed that the value priorities of the entrepreneur and that of people belonging to a religion are opposite. The authors find that religious entrepreneurs prioritize self-transcendence values (universalism and benevolence) over self-enhancement values (achievement, power and hedonism). This is interesting as individuals who belong to a religion generally prioritize values related to conservation (tradition, security and conformity) while entrepreneurs prioritize those related to openness to change (self-direction and stimulation). This study finds that values can explain the relation between religion and entrepreneurship. (Rietveld & Hoogendoorn, 2022).

Hypothesis 2: There are specific human values that explain whether a religious individual is self-employed or not.

Hypothesis 3: There are religious human values that are more important to a specific gender which explains the difference in the rate of self-employment among men and women.

3. Data

3.1 Data Sources

The data I used for this research comes from the European Social Survey (ESS). This is a publicly available dataset constructed every two years through face-to-face interviews with individuals since 2002. I will use the ninth round of interviewing, data from the year 2018, as it is the most complete and recent dataset available from the ESS. The survey collects information on different subjects varying from social indicators to political ideology but also media (European Social Survey European Research Infrastructure (ESS ERIC), 2021).¹

In the ninth round of the ESS, 31 countries have participated.² The full dataset consists of 49,519 observations. After dropping all observations with missing values for the relevant variables, the dataset includes 29,593 observations.

3.2 Dependent variable

The dependent variable that I will use in all models is that of Entrepreneurship, proxied by *self-employment*. It is a binary variable equal to 1 if the individual is self-employed, hence those who have no supervisors and operate their businesses independently, and zero if it is not.

3.3 Independent variables

I will estimate three hypotheses for which the independent variables of the models will differ. The first hypothesis investigates the effect of religion on self-employment. Religion will be proxied by three measures. The first variable that I will use is that of *religious belonging*. The ESS constructed this variable using the question 'Do you belong to a particular religion or denomination'. This binary variable takes on the value of 1 for the answer 'yes' and 0 for 'no'.

The second variable that I will use to proxy religion is that of a particular *religious denomination*. The ESS constructed this variable using the question 'To which religion or denomination do you belong at present?'. The respondents could choose between nine

¹ The full list of topics includes social conditions and indicators, Social behavior and attitudes, General health and well-being, Political behavior and attitudes, Political ideology, Minorities, Cultural and national identity, Media, Equality, inequality and social exclusion, Language and linguistics, Religion and values, Elderly, Youth, Children, Family life and marriage.

² The full list of countries includes Albania, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Montenegro, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

options.³ After modifications, the categorical variable takes on 0 or 1 if the individual belongs to any of: Roman Catholic, Protestant, Eastern Orthodox, Islam or Other. 'Other' includes Other Christian denomination, Jewish, Eastern religions and non-Christian religions.

The third variable I use to proxy religion is that of *religiously active*. Following Billiet's recommendation, I constructed this variable as a first standardized principal component of the three variables *religious attendance*, *praying* and *religiousness* (Billiet, 2001). To get an indication of the internal reliability of this score, I calculated Cronbach's α which is equal to 0.84, indicating high internal reliability. If an individual scores high on this variable, the individual is more religiously active. The first two variables I use to construct *Religiously active* are religious attendance and praying. The ESS constructed these using the questions 'How often do you attend religious services apart from special occasions?' and 'how often do you pray apart from at religious services?'. The possible answers are never, less often than all other options but more than never, only on special holy days, at least once a month, at least once a week, more than once a week, every day. The third variable I use to construct *Religiously active* is that of religiousness. This variable is a self-reported measure and is constructed by asking the question 'how religious are you?'. The categorical variable ranges from 0 (not at all religious) to 10 (very religious).

The second hypothesis investigates whether there are specific human values that explain the choice of self-employment for religious individuals. For this, I use the ten basic human values from Schwartz's theory of basic human values (Schwartz, 1992). I constructed the values using 21 questions that ask how much like themselves the statement is. An overview of which question belongs to which basic human value can be found in appendix A (Table A1). The ten basic human values are power, achievement, stimulation, benevolence, universalism, security, conformity, tradition, self-direction and hedonism. The data have been manipulated so that 1 indicates the statement is 'not like me at all', 2 'not like me', 3 'a little like me', 4 'somewhat like me', 5 'like me' and 6 'very much like me'. Then, the average of the responses pertaining to the questions of each specific basic human value will reflect the importance of the value. The third hypothesis investigating whether there is a difference in the relative importance of the basic human values for each gender will use the same dependent variables as those above.

³ The options regarding religious denomination include the following: none, Roman Catholic, Protestant, Eastern Orthodox, Other Christian denomination, Jewish, Islam, Eastern religions and non-Christian religions.

3.4 Control variables

This research will be using control variables in every model. Firstly, I will use *gender* as a binary control variable which will be 1 if the individual is male and 0 if the individual is female. In the literature it is found that males are more likely to engage in entrepreneurship (Fischer et al., 1993; Verheul et al., 2006). On the other hand, males are less likely than females to be engaged in religion (Loewenthal et al., 2002; Stolzenberg et al., 1995).

Secondly, literature shows an inverse U-shaped relationship between age and the rate of entrepreneurship (Lévesque & Minniti, 2006). It is also found that there is a positive effect of age on religiosity for both males and females (Argue et al., 1999; Stolzenberg et al., 1995). Therefore, I will use *age* and *age*² as a control variable and will denote the respondents age at the time of completing the survey and its squared value respectively. Only the respondents older than 18 and younger than 65 will be used, as to restrict to the working-class population.

Furthermore, literature shows positive effects of the marital status on self-employment; both married and divorced individuals are more likely to be entrepreneurs (Audretsch et al., 2007; Fairlie & Meyer, 1996; Giannetti & Simonov, 2004; Taylor, 1996). Additionally, the chances of belonging to a religious organization are higher for married individuals, this is because it is thought that religious organizations provide married couples with emotional and social support (Stolzenberg et al., 1995). The relationship between divorced individuals and religious activity has also been investigated. For females being divorced has a positive effect on religious participation whereas it has a negative effect for males. This seems to be because women tend to have more social capital invested in religious organizations than men do (Stolzenberg et al., 1995). In my research, the variable *Marital status* is constructed and denotes whether the individual is married, divorced or none of these two and will be equal to 0 if it is married, 1 if divorced and 2 if none.

Lastly, my research controls for the number of *years of education* the individual has completed. Although some argue that it is likely to be an endogenous variable as one's education attainment could be a function of someone's religious upbringing, which might affect value priorities and could affect the choice of entrepreneurship, other literature points to including it in the model (Rietveld & Hoogendoorn, 2022). Others also include age as a control variable when investigating religion and entrepreneurship (Audretsch et al., 2007). It has been found that education has positive effects on self-employment (Blanchflower, 2000). However, it has

also been suggested that some individuals may not be willing to take the risks associated with entrepreneurship (Evans & Leighton, 1989). And some researchers find negative effects of education on self-employment (Blanchflower et al., 2001; Georgellis & Wall, 2000). With regards to religion, evidence is found that the more years of education one completed, the more likely that person is to participate religiously (Perrin et al., 1997). Conversely, there is also evidence that higher levels of education increase the likelihood of claiming no religion (Baker & Smith, 2009; Hayes, 2000). The variable *years of education* will denote the number of years of education the individual has had.

3.5 Summary statistics

All the relevant summary statistics can be seen in Table 1. Of the respondents, 11.2% of the individuals report to be self-employed. The remaining 89.8% are employees or work in their family business. This percentage does not vary much when dividing the population up into non-religious and religious (11.4% and 11% respectively).

54.50% of the individuals belong to a religion. The largest denomination is Roman Catholic (29.2%), followed by Protestant (11.5%), then Eastern Orthodox (8.80%) and then Islam (2.70%). *Religiously active* is a standardized variable, with mean 0 and standard deviation 1. Religious individuals are more religiously active. Interestingly, non-religious individuals still report to pray. Furthermore, religious people find the power, achievement, benevolence, security, conformity and tradition slightly more important than non-religious individuals.

Regarding the control variables, around 47.7% of the sample is male. This percentage is 4% higher for non-religious individuals. The mean age of the individuals is 44.52 years. Approximately 50% of the individuals is married and 10% is divorced. For non-religious individuals, the percentage of married individuals lays below that of religious individuals, 40% and 55% respectively. The percentage of divorced individuals remains the same, around 10%, for both religious and non-religious individuals. On average, the respondents had 13.9 years of education. The difference between religious and non-religious individuals is on average 0.6 years (14.2 for non-religious and 13.6 for religious individuals).

3.6 Correlation tests

My research included two correlation tests of which the results and interpretation can be found in Appendix B.

Table 1: Summary statistics for all variables

Variable	(1) Full sample	Mean (2) Non- religious	(3) Religious	Difference (4) Non- religious - Religious
Self-employed	0.112 (0.315)	0.114 (0.318)	0.110 (0.313)	0.003 (0.004)
Religious belonging	.545 (.498)	0.000 (0.000)	1.000 (0.000)	-1.000 (0.000)
Religious denomination				
Roman Catholic	.292 (.455)	0 (0)	0.540 (0.454)	-0.537 (0.004)
Protestant	.115 (.319)	0 (0)	0.210 (0.319)	-0.210 (0.002)
Eastern Orthodox	.088 (.284)	0 (0)	0.162 (0.368)	-0.162 (0.003)
Islam	.027 (.161)	0 (0)	0.048 (0.215)	-0.049 (0.002)
Other	.023 (.149)	0 (0)	0.042 (0.200)	-0.042 (0.002)
Religiously active	0 (1)	-0.448 (0.860)	0.752 (0.615)	1.200 (0.009)
Religious attendance				
0 (never)	.372 (.483)	0.647 (0.477)	0.142 (0.349)	0.505 (0.005)
1 (less often)	.201 (.401)	0.193 (0.395)	0.207 (0.003)	-0.013 (0.005)
2 (only on special holy days)	.237 (.426)	0.132 (0.338)	0.326 (0.004)	-0.194 (0.005)
3 (once a month)	.093 (.291)	0.160 (0.125)	0.158 (0.364)	-0.141 (0.003)
4 (at least once a week)	.074 (.262)	0.008 (0.088)	0.129 (0.336)	-0.121 (0.003)
5 (more than once a week)	.017 (.130)	0.003 (0.050)	0.030 (0.001)	0.027 (0.002)
6 (every day)	.005 (.071)	0.0001 (0.026)	0.009 (0.093)	-0.008 (0.001)
Praying				
0 (never)	.429 (.495)	0.723 (0.447)	0.183 (0.386)	0.541 (0.005)
1 (less often)	.173 (.378)	0.147 (0.169)	0.195 (0.396)	-0.048 (0.004)
2 (only on special holy days)	.067 (.250)	0.029 (0.163)	0.099 (0.298)	-0.070 (0.003)
3 (once a month)	.064 (.245)	0.027 (0.163)	0.095 (0.293)	-0.068 (0.003)
4 (at least once a week)	.057 (.231)	0.020 (0.140)	0.087 (0.283)	-0.067 (0.003)
5 (more than once a week)	.069 (.254)	0.019 (0.135)	0.111 (0.315)	-0.092 (0.003)
6 (every day)	.141 (.348)	0.034 (0.182)	0.229 (0.421)	-0.195 (0.004)
Religiousness				
0 (not at all religious)	.200 (.400)	0.405 (0.491)	0.029 (0.167)	0.376 (0.004)
1 (1)	.068 (.251)	0.117 (0.321)	0.027 (0.161)	0.090 (0.003)
2 (2)	.081 (.272)	0.113 (0.316)	0.054 (0.226)	0.058 (0.003)

3 (3)	.082 (.275)	0.086 (0.280)	0.080 (0.270)	0.006 (0.003)
4 (4)	.064 (.245)	0.054 (0.226)	0.073 (0.260)	-0.019 (0.003)
5 (5)	.143 (.350)	0.092 (0.290)	0.185 (0.389)	-0.093 (0.004)
6 (6)	.096 (.295)	0.047 (0.211)	0.137 (0.344)	-0.090 (0.003)
7 (7)	.101 (.301)	0.038 (0.191)	0.153 (0.360)	-0.115 (0.003)
8 (8)	.085 (.278)	0.027 (0.163)	0.132 (0.339)	-0.105 (0.003)
9 (9)	.031 (.173)	0.038 (0.191)	0.153 (0.356)	-0.115 (0.003)
10 (very religious)	.050 (.217)	0.013 (0.112)	0.081 (0.275)	-0.068 (0.003)
Values				
Power	2.275 (1.021)	2.215 (1.025)	2.326 (1.015)	-0.111 (0.012)
Achievement	2.828 (1.171)	2.747 (1.166)	2.896 (1.171)	-0.149 (0.014)
Stimulation	2.603 (1.162)	2.723 (1.157)	2.503 (1.157)	0.219 (0.014)
Benevolence	3.994 (0.800)	3.966 (0.799)	4.016 (0.799)	-0.050 (0.009)
Universalism	3.834 (0.771)	3.822 (0.776)	3.843 (0.766)	-0.022 (0.009)
Security	3.609 (1.015)	3.439 (1.039)	3.751 (0.972)	-0.312 (0.012)
Conformity	2.960 (1.071)	2.796 (1.092)	3.096 (1.033)	-0.300 (0.012)
Tradition	3.226 (0.999)	2.945 (1.011)	3.460 (0.927)	-0.515 (0.011)
Self-direction	3.625 (0.921)	3.693 (0.894)	3.567 (0.939)	0.126 (0.011)
Hedonism	3.102 (1.110)	3.217 (1.059)	3.006 (1.142)	0.212 (0.013)
Controls				
Gender	.477 (0.499)	.511 (0.500)	.448 (0.497)	0.063 (0.006)
Age	44.52 (12.927)	42.87 (13.009)	45.9 (12.694)	-3.031 (0.150)
Marital status				
Married (0)	.479 (0.500)	.398 (0.490)	.546 (0.498)	-0.147 (0.006)
Divorced (1)	.097 (0.296)	.097 (0.296)	.096 (0.295)	0.001 (0.003)
None (2)	.425 (0.494)	.398 (0.500)	.546 (0.498)	-0.147 (0.006)
Years of education	13.884 (3.874)	14.197 (3.839)	13.621 (3.884)	0.576 (0.045)

Notes: Summary statistics calculated from the adapted dataset, restricting to individuals aged 18-65, with only individuals that did not have missing values for the relevant variables. All variables are binary variables, taking on the value of 1 if applicable to the individual and 0 if not, except for Religiously active which is a standardized variable with mean 1 and standard deviation 0, and for Marital status which is a categorical variable taking on 0 if married, 1 if divorced and 2 if none of these two apply to the individual. Standard deviations (in columns 1-3) and standard errors (in column 4) in parentheses. *p<0.1, ** p<0.05, *** p<0.01.

4 Empirical Strategy

4.1 Models

The goal of my study is to estimate the effect of different religious human values that can explain the gender difference in the rate of self-employment. To do so, I will present a model in which *self-employment* will be regressed on the different independent variables using a linear probability model constructed in Stata (version 17, 64 bits). This section will cover the methodology used to investigate the hypotheses using *religious belonging* as an explanatory variable. The two other models that use *religious denomination* and *religiously active* as explanatory variables will be presented in the section Sensitivity analyses (Section 4.5).

4.1.1 Relationship between religion and entrepreneurship

As a reminder, the first hypothesis investigates the relationship between Religion and Self-employment. In the first model, Religion will be proxied by looking at whether an individual belongs to a religion. Its relationship with *Self-employment in Europe* is estimated. The following shows the equation for the model:

$$\mathbf{Self - employed}_i = \beta_0 + \beta_1 \mathbf{Religious belonging}_i + \beta_2 \mathbf{X}_i + \gamma_i + \varepsilon_i \quad (1.1)$$

where $\mathbf{Self - employed}_i$ is the rate that an individual i is self-employed. $\mathbf{Religious belonging}_i$ is an indicator equal to one if the individual self-identifies as belonging to a religion. β_1 is the coefficient of interest, which captures the change in the rate of individual i being self-employed if the individual self-identifies as belonging to a religion. A positive coefficient would indicate that an individual is more likely to become self-employed if it belongs to a religion, while a negative coefficient would indicate the individual is less likely to become self-employed. \mathbf{X}_i is a vector of individual-level controls. This vector captures the effect of all the control variables Gender, Age, Age², Marital status and Years of education. γ_i captures the country-fixed effects. Finally, ε_i is the idiosyncratic error term.

4.1.2 Role of values in the relationship between religion and entrepreneurship

The second hypothesis investigates whether there are certain basic human values that can explain whether an individual becomes self-employed. This means that the models I use to investigate hypothesis three will, in addition to the variables used for hypothesis 1, include the 10 human basic value variables.

The first model that I will use to investigate the second hypothesis will look at whether an individual belongs to a religion. The equation for the model is the following:

$$\begin{aligned}
 \textit{Self} - \textit{employed}_i = & \beta_0 + \beta_1 \textit{Religious belonging}_i + \beta_2 \textit{Power}_i + \beta_3 \textit{Achievement}_i \\
 & + \beta_4 \textit{Stimulation}_i + \beta_5 \textit{Benevolence}_i + \beta_6 \textit{Universalism}_i + \beta_7 \textit{Security}_i \\
 & + \beta_8 \textit{Conformity}_i + \beta_9 \textit{Tradition}_i + \beta_{10} \textit{Self} - \textit{direction}_i \\
 & + \beta_{11} \textit{Hedonism}_i + \beta_{12} X_i + \gamma_i + \varepsilon_i
 \end{aligned} \tag{2.1}$$

where *Self – employed_i* is the rate that an individual *i* is self-employed. *Religious belonging_i* is an indicator equal to one if the individual self-identifies as belonging to a religion. β_1 captures the change in the rate of individual *i* being self-employed if the individual self-identifies as belonging to a religion. Its interpretation is the same as in equation 1.1. $\beta_2 - \beta_{11}$ are the coefficients of interest which capture the effect of valuing a certain basic human value. A positive coefficient would indicate the valuing that value has a greater likelihood of becoming self-employed, while a negative coefficient would indicate that the individual is less likely to become self-employed if it values that value.

X_i is a vector of individual-level controls. This vector captures the effect of all the control variables Gender, Age, Age², Marital status and Years of education. γ_i captures the country-fixed effects. Finally, ε_i is the idiosyncratic error term.

4.1.3 Gender differences explained by values in entrepreneurship

The third hypothesis investigates whether a relative importance of certain human basic values exists between males and females, which could explain the difference in self-employment rates by gender. Hence, in addition to the variables included in the previous models, the models used for hypothesis three will use interaction terms.

The first model I to investigate hypothesis three, uses whether an individual belongs to a religion as an explanatory variable. The equation for this model is the following:

$$\begin{aligned}
 \textit{Self} - \textit{employed}_i = & \beta_0 + \beta_1 \textit{Religious belonging}_i + \beta_2 \textit{Power}_i + \beta_3 \textit{Achievement}_i \\
 & + \beta_4 \textit{Stimulation}_i + \beta_5 \textit{Benevolence}_i + \beta_6 \textit{Universalism}_i + \beta_7 \textit{Security}_i \\
 & + \beta_8 \textit{Conformity}_i + \beta_9 \textit{Tradition}_i + \beta_{10} \textit{Self} - \textit{direction}_i + \beta_{11} \textit{Hedonism}_i \\
 & + \beta_{12} \textit{Power} \times \textit{Gender}_i + \beta_{13} \textit{Achievement} \times \textit{Gender}_i \\
 & + \beta_{14} \textit{Stimulation} \times \textit{Gender}_i + \beta_{15} \textit{Benevolence} \times \textit{Gender}_i \\
 & + \beta_{16} \textit{Universalism} \times \textit{Gender}_i + \beta_{17} \textit{Security} \times \textit{Gender}_i \\
 & + \beta_{18} \textit{Conformity} \times \textit{Gender}_i + \beta_{19} \textit{Tradition} \times \textit{Gender}_i + \beta_{20} \textit{Self} \\
 & - \textit{direction} \times \textit{Gender}_i + \beta_{21} \textit{Hedonism} \times \textit{Gender}_i + \beta_{22} X_i + \gamma_i + \varepsilon_i
 \end{aligned} \tag{3.1}$$

where *Self – employed_i* is the rate that an individual *i* is self-employed. *Religious belonging_i* is an indicator equal to one if the individual self-identifies as belonging

to a religion. β_1 captures the change in the rate of individual i being self-employed if the individual self-identifies as belonging to a religion. Its interpretation is the same as in equation 1.1 and 2.1. $\beta_2 - \beta_{11}$ are the coefficients which capture the effect of valuing a certain basic human value. Their interpretations are the same as those for equation 2.1.

$\beta_{12} - \beta_{21}$ are the coefficients of interest which capture by how much the likelihood to become an entrepreneur changes when individual i is male and values that specific human value as much as a female individual would. A positive coefficient would indicate that being a male and valuing a value as much as a female, increases the likelihood to become self-employed, while a negative coefficient would indicate that the male individual is less likely to become self-employed if it values the value as much as a female. X_i is a vector of individual-level controls. This vector captures the effect of all the control variables Gender, Age, Age², Marital status and Years of education. γ_i captures the country-fixed effects. Finally, ε_i is the idiosyncratic error term.

4.2 Justification choice of model

The outcome variable in my research is always *self-employment*, and this is a binary variable that is equal to 1 if an individual is self-employed and 0 if it is not. I recognize that literature and the mainstream thoughts in education, suggest that in these cases a logit model should be used (Wright, 1995). My choice to use a linear probability model instead stems mainly from the fact that the intuition behind the outcomes of a logit model, namely the odds-ratio, is not easily understandable and interpretable. Furthermore, literature suggests that in very many types of analysis, the outcomes for both types of methods are the same (Hellevik, 2009). Only in a few cases, the relationship between the probability and the log odds are so nonlinear that a logit model should be used. In the literature, there has thus been a rising opinion that there are compelling arguments for preferring the linear probability model approach to logistic regressions. My research thus will be using linear probability models to estimate the three models mentioned above. However, some predictions using the linear probability model fall outside of the 0-1 range, this can be seen in the appendix (Table C1). Therefore, I will run the same models using logit regression and they will be available in the appendix for comparison (Tables C2-C4). A subsection in the results analysis will briefly discuss the robustness of my results using these logistic models.

4.3 Further manipulations to the data

Lastly, before running any models I adjusted the data for the relevant weights. The data included different countries, of different geographical and population sizes, and a different percentage of the population that contributed to the survey. Hence, countries differ in magnitude of selection probabilities, the variation among them, the clustering and the stratification. This means that if there is no correction for the selection probabilities, the samples will be heavily skewed towards people living alone. There is variation in non-response processes, for this post-stratification weights have been used which also correct for coverage and sampling error. These are provided by the ESS and are based on gender, age, education and geographical region. Furthermore, not correcting for sample clustering and variation in selection probabilities tend to increase the standard errors of estimates, which will lead to under-estimated standard errors, over-fitted models and biased hypothesis tests.

I included country fixed effects as to make sure that the differences that can be seen are not led by within-country differences. Every model will show that country fixed effects are used.

4.4 Assumptions

My research uses an existing dataset which contains only a limited number of variables. Hence, only a limited number of control variables were usable in my research. In all estimated regressions that will follow, there are many other control variables, variables that influence both religion and entrepreneurship but are not influenced by religion, that could have been used in this research. These omitted variables caused selection bias, which means the zero conditional mean assumption will never hold in my research. Hence, the established relationships can never be interpreted as causal.

4.5 Sensitivity analyses

All three of the hypotheses have been investigated using two alternative definitions for religion, namely the type of *religious denomination* an individual belongs to, and how *religiously active* the individual is. This is done because, as established in the Theoretical Framework section of this paper, it is shown that there have been many different findings about the relationship between religion and entrepreneurship influenced by the type of proxy for religion. The equations, and their interpretations, can be found in Appendix D.

5. Results

In this section, I will present the results of the linear probability models. In what follows, three tables will investigate the effect of certain variables on *Self-employment*, ordered by proxy of *Religion*. This means that the first table will show whether an individual belongs to a religion, the second table will show the type of religious denomination an individual belongs to, and the third will show the religious activity of an individual. The two last tables are to be found in the sensitivity analyses section.

Each table will then have three distinct columns. The first one shows the ‘basic model’ in which only the proxy for religion is used as a dependent variable and the control variables, and the country fixed effects are included. The second column shows the ‘basic model’, and added are the ten human basic values. The third column shows the ‘basic model’, the ten human basic values and added are the ten human basic values interacted with gender.

5.1 Results Religious belonging

The results for the investigation of equation 1.1, in which the relationship between *religious belonging* and *Self-employment in Europe* is estimated (hypothesis one) can be seen in Table 2 Column 1. Because the estimated coefficient of *religious belonging* is not significant, the first null-hypothesis of no difference in self-employment rate among religious and non-religious individuals, using *religious belonging* as a proxy for religion, cannot be rejected. The coefficients of the control variables are in the expected direction: males are more often engaged in entrepreneurship than females, and the relation between age and self-employment follows an inverse U-shape. If the coefficient of religious belonging was significant, its magnitude would mean that belonging to a religion is associated with an increase of 0.127% in an individual’s likelihood to become self-employed.

Religious belonging is then used to investigate hypothesis two, hence whether religious human basic values play a role in determining self-employment (equation 2.1). The results for this hypothesis can be seen in Table 2 Column 2. As can be seen in the table, the significance of the *religious belonging* coefficient does not change, but it does increase, meaning that it was suppressed when not including the values if it was significant. The values achievement (0.836%), stimulation (0.694%) and self-direction (4.920%) have a positive significant association with the rate of self-employment. Conversely, the values universalism (1.450%), security (1.550%), conformity (0.747%) and hedonism (1.370%) all have a negative significant

association with the rate of self-employment. The magnitude of the coefficients can be interpreted as follows. When using the coefficient of achievement (0.00836) as an example, it means that an individual's likelihood to become self-employed is associated with an increase of 0.836% if it scores 1 point higher on the power scale ranging from 1-6 (Table 1 Column 2). Hence, it can be argued that these seven values matter in becoming self-employed when using *religious belonging* as a proxy for religion.

The third hypothesis, estimating whether religious human basic values help explain the gender different in self-employment rate, is investigated in the third column. Based on the results for equation 3.1, where *religious belonging* is used as a proxy for religion, the significance of the religious belonging coefficient still does not change (Table 2 Column 3). The values achievement and self-direction have a positive significant association with the rate of self-employment. Furthermore, the values security and hedonism have a negative significant association with self-employment. Hence, compared to the previous column (without the interaction effects), the coefficients of stimulation, universalism and conformity became insignificant.

The interaction terms of gender with power, tradition and self-direction have a positive significant association with the rate of self-employment. This means that a male individual who values power, tradition and self-direction as much as a female individual does, is associated with an increase in the likelihood of becoming self-employed by 1.27%, 2.16% and 2.79% respectively. The interaction term of gender and universalism has a negative significant association with the rate of self-employment. This means that a male individual, who values universalism just as much as a female who values universalism, reduces the likelihood to become self-employed by 2.48%.

Table 2- Linear probability model with religious belonging as a proxy for religion

	(1) Basic Model	(2) Basic Model and values	(3) Basic Model, values and interaction terms
Religious belonging	0.00127 (0.00676)	0.00594 (0.00684)	0.00583 (0.00682)
Values			
Power		0.00184 (0.00376)	-0.00470 (0.00489)
Achievement		0.00836** (0.00367)	0.0116*** (0.00432)
Stimulation		0.00694** (0.00341)	0.00452 (0.00408)
Benevolence		0.00418 (0.00560)	0.00284 (0.00659)
Universalism		-0.0145** (0.00567)	-0.00144 (0.00640)
Security		-0.0155*** (0.00410)	-0.0128** (0.00513)
Conformity		-0.00747** (0.00380)	-0.00687 (0.00444)
Tradition		0.00448 (0.00397)	-0.00648 (0.00470)
Self-direction		0.0492*** (0.00421)	0.0352*** (0.00518)
Hedonism		-0.0137*** (0.00366)	-0.0100** (0.00409)
Interaction terms			
Gender × Power			0.0127* (0.00742)
Gender × Achievement			-0.00665 (0.00707)
Gender × Stimulation			0.00473 (0.00672)
Gender × Benevolence			0.00151 (0.0102)
Gender × Universalism			-0.0248** (0.0106)
Gender × Security			-0.00432 (0.00734)
Gender × Conformity			-0.000916 (0.00736)
Gender × Tradition			0.0216*** (0.00730)
Gender × Self-direction			0.0279*** (0.00844)
Gender × Hedonism			-0.00701 (0.00692)

Control variables			
Gender	0.0620*** (0.00606)	0.0585*** (0.00604)	-0.00503 (0.0411)
Age	0.00877*** (0.00153)	0.00927*** (0.00154)	0.00928*** (0.00154)
Age ²	-7.51e-05*** (1.76e-05)	-7.79e-05*** (1.75e-05)	-7.80e-05*** (1.75e-05)
Marital Status			
Married	Reference	Reference	Reference
Divorced	-0.00781 (0.0105)	-0.0166 (0.0105)	-0.0167 (0.0106)
None	0.000806 (0.00766)	-0.00807 (0.00756)	-0.00740 (0.00755)
Years of education	0.00325*** (0.000825)	0.00167* (0.000853)	0.00173** (0.000851)
Constant	-0.191*** (0.0335)	-0.270*** (0.0408)	-0.244*** (0.0457)
Observations	29,593	29,593	29,593
Country dummies	YES	YES	YES
R-squared	0.033	0.054	0.056

Notes: Standard errors in parentheses. * p<0.1, ** p<0.05, *** p<0.01. These regressions use the 2018 survey wave, restricting to individual aged 18-65. Religious belonging is an indicator of whether the individual belongs to a religion. To estimate the effects of all the values, they are included. Interaction terms between every value and gender are have also been included. All the control variables are included, these are gender, age, marital status and years of education. The country dummies are included in every regression. The basic model (column 1) estimates the effect of belonging to a religion on self-employment and includes the control variables and country fixed effects. The basic model + values (column 2) estimates the effect of belonging to a religion on self-employment and of the every value and includes the control variables and country fixed effects. The basic model, values + interaction terms (column 3) estimates the effect of belonging to a religion on self-employment, the effect of the every value, and the effect of being male and valuing a value as much as a female and includes the control variables and country fixed effects.

5.2 Results Sensitivity analyses

5.2.1 Results Religious denomination

The results for hypothesis 1, when using the *religious denominations* as a proxy for religion (equation 1.2), can be found in Table 3 Column 1. However, because none of the coefficients are significant, the null-hypothesis of no effect cannot be rejected when using *religious denomination* as a proxy for religion. If the coefficients would have been significant, the magnitude could be explained as follows. Using the coefficient of Roman Catholic (-0.00167), an individual's likelihood to become self-employed would be associated with a decrease of 0.167% if it self-identifies as a Roman Catholic.

The results investigating whether religious human basic values play a role in determining self-employment using *religious denomination* as a proxy for religion (equation 2.2) can be seen in Table 3 Column 2. Similarly as when *religious belonging* is used as a proxy for religion, the significance of the proxy does not change, however, certain values do show significance. Achievement (0.827%), stimulation (0.679%) and self-direction (4.920%) again have a positive significant association with self-employment. Universalism (1.440%), security (1.560%), conformity (0.757%) and hedonism (1.350%) again have a negative significant association with self-employment. This means that, for example, if an individual scores an additional point on the 1-6 scale of achievement, it's likelihood to become self-employed is associated with an increase of 0.827%.

The third hypothesis estimating whether religious human basic values help explain the gender differences in self-employment rate using *religious denomination* as a proxy for religion (equation 3.2) can be seen in Table 3 Column 3. The significance of the different religious denominations still does not change when adding interaction effects. Again, the values achievement and self-direction have a positive significant association with the rate of self-employment. Furthermore, the values security and hedonism have a negative significant association with self-employment. Hence, compared to the results without interaction effects, the coefficients of stimulation, universalism and conformity became insignificant. Furthermore, the interaction terms of gender with power, tradition and self-direction have a positive significant association with the rate of self-employment. This means that a male individual who values power, tradition and self-direction as much as a female individual does, is associated with an increase in the likelihood of becoming self-employed by 1.25%, 2.15%

and 2.78% respectively. The interaction term of gender and universalism has a negative significant association with the rate of self-employment. This means that a male individual, who values universalism just as much as a female who values universalism, reduces the likelihood to become self-employed by 2.47%.

5.2.2 Results Religiously active

Finally, Table 4 Column 1 shows the results when using *religiously active* as a proxy for religion (equation 1.3) and investigates the effect of religion on self-employment. Again, the coefficient of the *religiously active* variable is not significant. As a reminder, *religiously active* is a standardized variable with mean equal to zero and standard deviation equal to one, this variable ranges from -2.483 to 1.281 for this dataset. If the coefficient would have been significant, the magnitude (0.00127) could be interpreted as follows. If an individual is, for example, 0.1 more religiously active, then the individual's likelihood to become self-employed would be associated with an increase of $0.00127 \times 0.1 (=0.0127\%)$.

The results when *religiously active* is used as a proxy for religion to investigate the effect of the values on self-employment (equation 2.3) can be seen in Table 4 Column 2. Again, the significance of the coefficient of *religiously active* does not change when adding the values to the basic model. Again, achievement (0.846%), stimulation (0.694%) and self-direction (4.900%) have a positive significant association with becoming self-employed. The values universalism (1.490%), security (1.550%), conformity (0.736%) and hedonism (1.390%) are negatively associated with becoming self-employed. Interpreting the percentages means that, for example, if an individual scores an additional point on the 1-6 scale of achievement, it's likelihood to become self-employed is associated with an increase of 0.846%. This means that these values again might matter in becoming self-employed.

Finally, the hypothesis estimating whether religious human basic values help explain the gender difference in self-employment rate is investigated using *religiously active* as a proxy for religion (equation 3.3) in Table 4 Column 3. Again, the coefficient of *religiously active* is insignificant. The values achievement and self-direction have a positive significant association with *self-employment*. The values security and hedonism are negatively associated with self-employment. This means that, compared to the investigation of the previous hypothesis (only values) with *religiously active* (equation 2.3), the values stimulation, universalism and conformity lost their significance. Furthermore, the interaction terms with gender power,

tradition and self-direction have a positive significant association with *self-employment*. This means that a male individual who values power, tradition and self-direction as much as a female individual does, is associated with an increase in the likelihood of becoming self-employed by 1.28%, 2.17% and 2.78% respectively. The interaction term with gender of universalism has a negative association with *self-employment*. This means that a male individual who values universalism as much as a female does, is associated with a reduction in the likelihood to become self-employed by 2.50%.

5.3 Robustness check using the logistic models

As mentioned before, the robustness of my results will be checked using the logistic regressions displayed in Appendix C. The tables are organized in the same way as the linear probability models, however the interpretation of the log-odds ratios is more difficult. The coefficients require to be exponentiated and using that outcome, I can say something about the percent change of the odds. Intuitively, it is useful to remember that when my coefficient is equal to a value less than one, then the probability of becoming self-employed falls as that event occurs, and if the coefficient is greater than 1, then the probability of becoming self-employed rises as the event occurs.

Regarding hypothesis 1, which investigates the relationship between religion and self-employment (Columns 1 of Tables C2-C4), unlike the linear probability model, there is one significant coefficient, and this occurs when religious belonging is used as a proxy for religion (Table C2). The coefficient is equal to 0.931. This model suggests, holding all other (control) variables at a constant value, the odds of becoming self-employed when belonging to a religion over the odds of becoming self-employed when not belonging to a religion is $\exp(0.931) = 2.537$. This means that, in terms of percent change, I can say that the odds for individuals belonging to a religion are 154% higher than the odds for individuals not belonging to a religion. Comparing the logistic outcome to the findings using a linear probability model, they are similar as most coefficients are insignificant but the logistic regression shows one significant outcome which points at a negative association between religion and entrepreneurship because the coefficient is still lower than one.

Hypothesis two investigates the effect of religious values on self-employment (Columns 2 of Tables C2-C4). The results of the logistic regressions are in line with the findings when using a linear probability model. I find significant associations between the values achievement,

stimulation, self-direction, universalism, security, conformity and hedonism. Considering that the coefficients of the values achievement, stimulation and self-direction are over the value of 1, I can say that when an individual values one of these four basic values more, becoming self-employed is more likely to occur (hence there is a positive significant association with these four values). For the values universalism, security, conformity and hedonism there is a negative significant association since the coefficients are below the value of 1. An example of an interpretation of the magnitude of the coefficients will be given using the coefficient of achievement (1.085) when using religious belonging as a proxy for religion (Table C2, Column 2). The model suggests that, holding all other (control) variables constant, there will be a 196% increase in the odds of becoming self-employed for a one-unit increase in the value of achievement (on the 1-6 scale) since $\exp(1.085) = 2.959$. The findings regarding hypothesis two in terms of significance and sign are the same for the seven values described above. The magnitude cannot be easily compared.

The third hypothesis investigates whether religious human basic values explain the gender differences in self-employment rate. Using the logistic regressions, I find that becoming self-employed is significantly less likely for a male individual to occur, who values universalism as much as a female individual does, because the coefficients of the interaction terms of gender with universalism is less than 1. Using the same reasoning I find that becoming self-employed is more likely to occur for males who value tradition as much as female individuals. These findings are the same as when a linear probability model is used, however using the latter approach more significant associations were found with other human values as well.

Table 3- Linear probability model using religious denominations as a proxy for religion

	(1) Basic Model	(2) Basic Model and values	(3) Basic Model, values and interaction terms
Religious denominations			
Roman Catholic	-0.00167 (0.00789)	0.00294 (0.00794)	0.00320 (0.00793)
Protestant	0.00329 (0.0121)	0.00997 (0.0122)	0.00922 (0.0121)
Eastern Orthodox	0.0149 (0.0280)	0.0162 (0.0273)	0.0151 (0.0265)
Islam	0.0195 (0.0214)	0.0229 (0.0213)	0.0218 (0.0210)
Other	-0.0101 (0.0218)	-0.00714 (0.0217)	-0.00628 (0.0215)
Values			
Power		0.00171 (0.00376)	-0.00474 (0.00489)
Achievement		0.00827** (0.00367)	0.0115*** (0.00431)
Stimulation		0.00679** (0.00343)	0.00428 (0.00409)
Benevolence		0.00435 (0.00555)	0.00303 (0.00656)
Universalism		-0.0144** (0.00566)	-0.00146 (0.00639)
Security		-0.0156*** (0.00410)	-0.0129** (0.00512)
Conformity		-0.00757** (0.00379)	-0.00692 (0.00443)
Tradition		0.00432 (0.00396)	-0.00659 (0.00470)
Self-direction		0.0492*** (0.00421)	0.0353*** (0.00520)
Hedonism		-0.0135*** (0.00369)	-0.00986** (0.00409)
Interaction terms			
Gender × Power			0.0125* (0.00741)
Gender × Achievement			-0.00660 (0.00704)
Gender × Stimulation			0.00494 (0.00672)
Gender × Benevolence			0.00144 (0.0102)
Gender × Universalism			-0.0247** (0.0105)
Gender × Security			-0.00430 (0.00732)

Gender × Conformity			-0.00102 (0.00734)
Gender × Tradition			0.0215*** (0.00727)
Gender × Self-direction			0.0278*** (0.00842)
Gender × Hedonism			-0.00696 (0.00693)
Control variables			
Gender	0.0616*** (0.00601)	0.0583*** (0.00603)	-0.00477 (0.0410)
Age	0.00880*** (0.00153)	0.00931*** (0.00154)	0.00932*** (0.00154)
Age ²	-7.49e-05*** (1.77e-05)	-7.80e-05*** (1.76e-05)	-7.80e-05*** (1.75e-05)
Marital Status			
Married	Reference	Reference	Reference
Divorced	-0.00787 (0.0105)	-0.0167 (0.0106)	-0.0167 (0.0106)
None	0.00122 (0.00764)	-0.00773 (0.00755)	-0.00708 (0.00755)
Years of education	0.00332*** (0.000826)	0.00172** (0.000855)	0.00179** (0.000853)
Constant	-0.194*** (0.0339)	-0.272*** (0.0410)	-0.246*** (0.0459)
Observations	29,593	29,593	29,593
Country dummies	YES	YES	YES
R-squared	0.033	0.054	0.057

Notes: Standard errors in parentheses. * p<0.1, ** p<0.05, *** p<0.01. These regressions use the 2018 survey wave, restricting to individual aged 18-65. All the religions are an indicator of whether the individual belongs to the specific religion. To estimate the effects of all the values, they are included. Interaction terms between every value and gender are have also been included. All the control variables are included, these are gender, age, marital status and years of education. The country dummies are included in every regression. The basic model (column 1) estimates the effect of belonging to specific religious denomination on self-employment and includes the control variables and country fixed effects. The basic model + values (column 2) estimates the effect of belonging to specific religious denomination on self-employment and of the every value and includes the control variables and country fixed effects. The basic model, values + interaction terms (column 3) estimates the effect of belonging to a specific religious denomination on self-employment, the effect of the every value, and the effect of being male and valuing a value as much as a female and includes the control variables and country fixed effects.

Table 3- Linear probability model using religious activity as a proxy for religion

	(1) Basic Model	(2) Basic Model and values	(3) Basic Model, values and interaction terms
Religiously active	0.00242 (0.00370)	0.00115 (0.00382)	0.00117 (0.00381)
Values			
Power		0.00200 (0.00376)	-0.00458 (0.00488)
Achievement		0.00846** (0.00368)	0.0117*** (0.00433)
Stimulation		0.00694** (0.00343)	0.00448 (0.00410)
Benevolence		0.00417 (0.00560)	0.00277 (0.00659)
Universalism		-0.0148*** (0.00566)	-0.00168 (0.00639)
Security		-0.0155*** (0.00410)	-0.0127** (0.00513)
Conformity		-0.00736* (0.00381)	-0.00674 (0.00446)
Tradition		0.00551 (0.00399)	-0.00549 (0.00476)
Self-direction		0.0490*** (0.00421)	0.0351*** (0.00517)
Hedonism		-0.0139*** (0.00367)	-0.0103** (0.00412)
Interaction terms			
Gender × Power			0.0128* (0.00742)
Gender × Achievement			-0.00666 (0.00707)
Gender × Stimulation			0.00480 (0.00672)
Gender × Benevolence			0.00164 (0.0102)
Gender × Universalism			-0.0250** (0.0106)
Gender × Security			-0.00440 (0.00734)
Gender × Conformity			-0.000950 (0.00736)
Gender × Tradition			0.0217*** (0.00730)
Gender × Self-direction			0.0278*** (0.00845)
Gender × Hedonism			-0.00703 (0.00693)
Control variables			

Gender	0.0613*** (0.00622)	0.0579*** (0.00617)	-0.00498 (0.0411)
Age	0.00877*** (0.00153)	0.00925*** (0.00154)	0.00927*** (0.00153)
Age ²	-7.49e-05*** (1.76e-05)	-7.77e-05*** (1.75e-05)	-7.77e-05*** (1.75e-05)
Marital Status			
Married	Reference	Reference	Reference
Divorced	-0.00842 (0.0105)	-0.0173 (0.0106)	-0.0174 (0.0106)
None	0.000119 (0.00764)	-0.00874 (0.00755)	-0.00806 (0.00755)
Years of education	0.00322*** (0.000827)	0.00167* (0.000854)	0.00173** (0.000852)
Constant	-0.190*** (0.0334)	-0.267*** (0.0410)	-0.241*** (0.0459)
Observations	29,593	29,593	29,593
Country dummies	YES	YES	YES
R-squared	0.033	0.054	0.056

Notes: Standard errors in parentheses. * p<0.1, ** p<0.05, *** p<0.01. These regressions use the 2018 survey wave, restricting to individual aged 18-65. Religiously active is an indicator of how religiously active an individual is. To estimate the effects of all the values, they are included. Interaction terms between every value and gender are have also been included. All the control variables are included, these are gender, age, marital status and years of education. The country dummies are included in every regression. The basic model (column 1) estimates the effect of being religiously active on self-employment and includes the control variables and country fixed effects. The basic model + values (column 2) estimates the effect of being religiously active on self-employment and of the every value and includes the control variables and country fixed effects. The basic model, values + interaction terms (column 3)) estimates the effect of being religiously active on self-employment, the effect of the every value, and the effect of being male and valuing a value as much as a female and includes the control variables and country fixed effects.

6. Conclusion and Discussion

My paper shows evidence for an explanation on the difference in entrepreneurial participation by males and females. Based on Schwartz's theory of basic human values, which entail ten values that are based on a specific goal or motivation, I analyzed how religion and entrepreneurship are linked through values and whether there is a difference in value judgements between religious males and females which can help explain the gender difference in entrepreneurial rates. The sample used is constructed from the 2018 wave of the ESS survey, which includes 31 countries. The total number of observations is 29,593. In this chapter the conclusions on every hypothesis will be presented that helped answer the main research question:

Can gender differences in self-employment be explained by the relative importance to a gender of specific religious values?

Furthermore, the limitations of this research will be discussed, as well as the relevance of the research, the recommendations for future research and finally some policy implications.

6.1 Relationship between religion and entrepreneurship

The first hypothesis stated that the rate of self-employment in Europe differs among religious and non-religious individuals. Overall, I found no significant association between religion and entrepreneurship using different proxies for religion namely (1) belonging to a religion, (2) a religious denomination or (3) being religiously active. However, the signs of the coefficients of these proxies point towards a positive association which would be in line with the findings of Hill et al. (2015), Wyrwich (2018) and Rietveld & Hoogendoorn (2022) who all show a positive but significant association between religion and entrepreneurship.

6.2 Role of values in the relationship between religion and entrepreneurship

The second hypothesis stated that there are specific human values that explain whether a religious individual is self-employed or not. When using the ten human basic values developed by Schwartz, I found that values do explain, to some extent the relation between religion and entrepreneurship.⁴ Namely, I found that the values achievement (0.830%), stimulation (0.694%) and self-direction (4.900%) are all positively significantly associated with the rate of

⁴ As a reminder, the ten human basic values are power, achievement, stimulation, benevolence, universalism, security, conformity, tradition, self-direction and hedonism.

entrepreneurship. On the other hand, the values universalism (1.450%), security (1.550%), conformity (0.750%) and hedonism (1.370%) are all negatively significantly associated with entrepreneurship. These associations do not change when varying the proxies for religion and their magnitudes remain around the same value.

The study by Rietveld & Hoogendoorn (2022) found that religious entrepreneurs prioritize the values universalism and benevolence over achievement, power and hedonism. Generally, religious individuals prioritize conservation values (tradition, security and conformity), while entrepreneurs prioritize values related to openness to change (self-direction and stimulation). Hence, my findings are not all in line with previous similar research, where previously universalism was positively associated with entrepreneurship, in my research it is associated with a negative influence on the likelihood to become an entrepreneur. Additionally, where previously achievement was found to be negatively associated with entrepreneurship, in my research it was found to be positively associated with entrepreneurship. The findings about hedonism are the same, in that it was found to be negatively associated with entrepreneurship in previous research, as well as mine (Rietveld & Hoogendoorn, 2022).

6.3 Gender differences explained by values in entrepreneurship

The third hypothesis investigated whether there are religious human values that are more important to a specific gender which explains the difference in the rate of self-employment among men and women. Again, Schwartz's theory of human basic values was used to investigate this hypothesis. When adding interaction terms to the models to account for gender differences, I found that males who value power, tradition and self-direction as much as a female individual does, are significantly associated with a greater likelihood to become an entrepreneur. The sizes of the effects remain constant when using different proxies for religion. This means that a male is more likely to become an entrepreneur compared to a female individual who values power (1.27%), tradition (2.16%) and self-direction (2.79%) as much as the male individual. Additionally, I found that a male who values universalism as much as a female individual does, is significantly associated with a smaller likelihood (2.50%) to become an entrepreneur.

6.4 Limitations of the research

While conducting this research, several limitations arose. The results should therefore be treated with care and more research should be conducted before adequate, clear and reliable policy recommendations can be made.

As has been mentioned before, I have used an existing dataset which contains only a limited number of variables. Hence, I could only use the available variables as control variables, of which only a limited number was relevant for my research. In the relationship between religion and entrepreneurship, with or without values acting as mediators, there are without doubt further control variables that could have been used in this research. These omitted variables caused selection bias, which means the zero conditional mean assumption has never held in my research. Hence, I could never make causal assumptions. Furthermore, many of my regressions did not have significant effects.

Secondly, the dataset that was used only contained countries in Europe, the majority of which are developed countries. In these countries, Christianity has historically been the most prominent religion. Even though I used different religious denominations to account for factors that are associated with the different religions, my results may not be generalizable to other parts of the world where other religions or cultures dominate.

Thirdly, the ESS collects data about the current employment status of an individual by asking about the 'main job' that an individual is in currently. This means that in my research I was not able to account for individuals who are entrepreneurs in a side job which may hold different results (Schulz et al., 2017). The same applies to individuals who have chosen entrepreneurship as a second career opportunity (Baucus & Human, 1995; Liang et al., 2018)

6.5 Relevance of the research

My findings supplement the literature in several ways. Firstly, I contribute to the research on the relationship between religion and entrepreneurship but through investigating a specific mediator through which religion and entrepreneurship could be linked. Past research has focused more on the direct relationship between religion and entrepreneurship (Audretsch et al., 2013; Butler & Herring, 1991; Carroll & Mosakowski, 1987; Carswell & Rolland, 2007; Dodd & Seaman, 1998; Dougherty et al., 2013; Minns & Rizov, 2005). My research investigates the pathway of values that could explain the relationship.

Secondly, past research has often hinted at the importance of investigating values as a mediator in the relationship between religion and entrepreneurship (Dougherty et al., 2019), I have actually used available data to empirically test this data.

Thirdly, where past research has focused on many other reasons that could explain why less females are engaged in entrepreneurship, such as personality differences, risk aversion, initiative, creativity or lack of social, financial and human capital (Fischer et al., 1993; Klyver & Grant, 2010; Koellinger et al., 2013; Malach Pines et al., 2010; Sánchez Cañizares & Fuentes García, 2010), this research has used a new channel which could explain the gap.

6.6 Recommendations for future research

It could be worth investigating other areas using the theory of basic human values in entrepreneurship. For example, what type of business male entrepreneurs set up, compared to females; whether these have different goals. It is shown that religious individuals do not prioritize responsibilities of the firm differently, but do hold broader conceptions of social responsibilities in business running than non-religious individuals do (Brammer et al., 2007). It could be interesting to see whether business decisions depend on the gender of the decision-makers, and whether values play a role herein. It is found that religious entrepreneurs run their businesses guided by faith, as a calling (Griebel et al., 2014; Rietveld & van Burg, 2014).

Furthermore, it would be valuable to investigate the influence of religion on different types of entrepreneurship. These could include social entrepreneurship, growth entrepreneurship, innovative entrepreneurship, opportunity or necessity entrepreneurship, or family entrepreneurship and what role values would play in this relationship. For example, it might be the case that there is a stronger relationship between religion and social entrepreneurship due to religiously oriented values, while the role of religion would be less pronounced in growth or innovative entrepreneurship (Spear, 2010).

Lastly, it could be interesting to investigate the relationship between religious values and the quality of entrepreneurship. Much has been written about the quantity of jobs created by entrepreneurs, but about the quality such as offering health care coverage, and retirement plans have not been extensively investigated (Block et al., 2018). Researchers find start-up companies often do not provide their employees with health or retirement benefits because of small scale, constrained resources, and protection from institutional pressures (Litwin &

Phan, 2013). It is relevant to investigate whether religious individuals are driven by certain values and offer better-quality jobs defined as those offering health and/or retirement plans.

6.7 Policy implications

In this section, I will discuss some policy implications regarding my results. Regarding the relationship between religion and entrepreneurship, it is difficult to make any policy implications since I have found no significant associations. Regarding the role of values in the relationship between religion and entrepreneurship, I have found that the values achievement, stimulation and self-direction are positively significantly associated with the rate of entrepreneurship, while universalism, security, conformity and hedonism are negatively associated with entrepreneurship. This is valuable information for policymakers depending on what they are aiming to attain for. If policymakers desire to increase the rate of entrepreneurship, I would advise to investigate their population's importance of certain values and encourage or incentivize those individuals who value achievement, stimulation and self-direction but discourage or disincentivize those individuals who value universalism, security, conformity and hedonism. This could also be done if policymakers would like other changes to the working environment related to entrepreneurship or employment rates. This could be investigated through questionnaires in which the questions asked by the ESS are asked, or other social experiments involving the choice between certain values.

My findings indicate that males who value power, tradition and self-direction as much as a female individual does, are significantly associated with a higher likelihood to become an entrepreneur, while males who value universalism as much as a female are associated with a lower likelihood to become an entrepreneur. These findings can primarily be used as an explanation of a gender difference in entrepreneurial rates but can secondly also be used as information for policymakers. If policymakers desire a more gender balanced environment, they could investigate, using methods discussed in the previous paragraphs, the value orientations of males and females to make their environment more to their likeness.

It is important to mention that these policy implications are based on the rate of entrepreneurship, i.e. how many individuals become entrepreneur, but say nothing about the quality of these entrepreneurs. Hence, it is advisable for policymakers to gather information on what makes an entrepreneur of good quality and whether some values have influenced the quality of entrepreneurs.

Appendix A

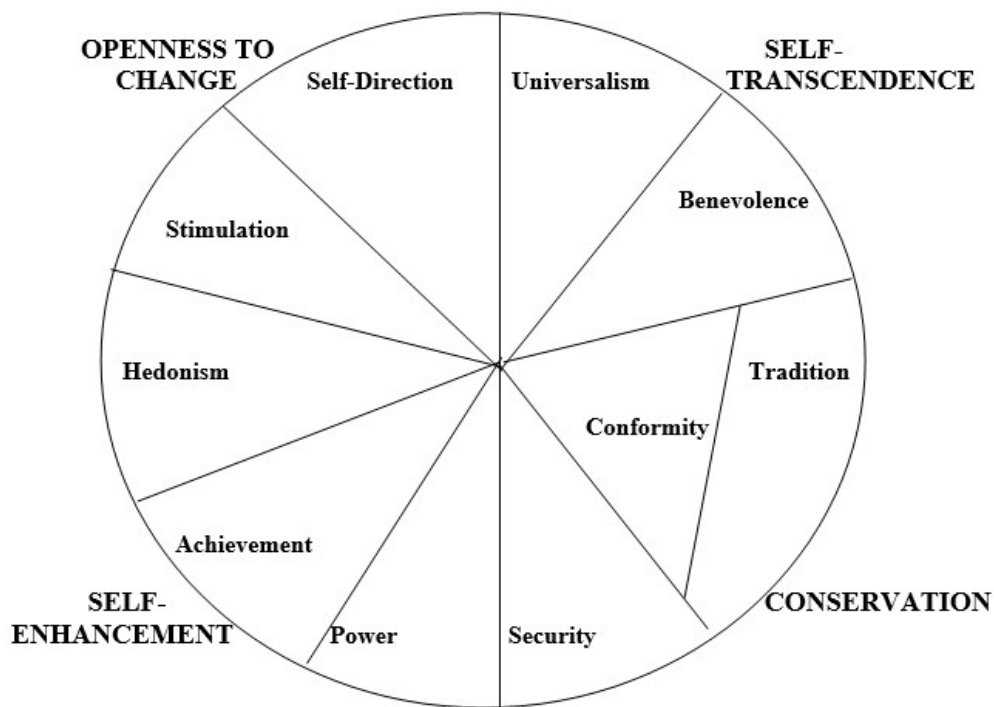


Figure A1 Theoretical model of relations among the ten basic human values by Schwartz (1992)

Table A1

Human Value		Description
Power	(i)	Important to be rich, have money and expensive things
	(ii)	Important to get respect from others
Achievement	(i)	Important to show abilities and be admired
	(ii)	Important to be successful and that people recognize achievements
Stimulation	(i)	Important to try new and different things in life
	(ii)	Important to seek adventures and have an exciting life
Benevolence	(i)	Important to help people and care for others well-being
	(ii)	Important to be loyal to friends and devote to people close
Universalism	(i)	Important that people are treated fairly and have equal opportunities
	(ii)	Important to understand different people
	(iii)	Important to care for nature and environment
Security	(i)	Important to live in secure and safe surroundings
	(ii)	Important that government is strong and ensures safety
Conformity	(i)	Important to do what is told and follow rules
	(ii)	Important to behave properly
Tradition	(i)	Important to be humble and modest, not draw attention
	(ii)	Important to follow traditions and customs
Self-direction	(i)	Important to think new ideas and being creative
	(ii)	Important to make own decisions and be free
Hedonism	(i)	Important to have a good time
	(ii)	Important to seek fun and things that give pleasure

Appendix B

Table B1- Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) Self-employed	1.000																
(2) Religious belonging	-0.007	1.000															
(3) Roman-catholic	0.008	0.588***	1.000														
(4) Protestant	-0.010*	0.329***	-0.231***	1.000													
(5) Eastern-orthodox	-0.011*	0.284***	-0.200***	-0.112***	1.000												
(6) Islam	-0.012**	0.152***	-0.107***	-0.060***	-0.052***	1.000											
(7) Other	0.005	0.140***	-0.098***	-0.055***	-0.048***	-0.025***	1.000										
(8) Religiously-active	0.003	-0.619***	-0.386***	-0.112***	-0.188***	-0.141***	-0.142***	1.000									
(9) Religious attendance	-0.004	0.538***	0.352***	0.081***	0.171***	0.104***	0.110***	-0.856***	1.000								
(10) Praying	-0.002	0.509***	0.317***	0.073***	0.156***	0.133***	0.135***	-0.883***	0.637***	1.000							
(11) Religiousness	-0.003	0.573***	0.341***	0.136***	0.166***	0.130***	0.125***	-0.878***	0.615***	0.672***	1.000						
(12) Gender	0.098***	-0.063***	-0.063***	-0.016***	-0.008	0.035***	-0.006	0.141***	-0.082***	-0.153***	-0.134***	1.000					
(13) Age	0.076***	0.117***	0.091***	0.050***	0.035***	-0.053***	-0.004	-0.138***	0.098***	0.132***	0.129***	-0.007	1.000				
(14) Married	0.036***	0.147***	0.090***	0.049***	0.040***	0.031***	0.001	-0.161***	0.154***	0.127***	0.140***	0.001	0.313***	1.000			
(15) Divorced	0.013**	-0.002	-0.006	0.004	0.009	-0.017***	0.004	0.005	-0.032***	0.008	0.010	-0.051***	0.181***	-0.314***	1.000		
(16) None	0.036***	0.147***	0.090***	0.049***	0.040***	0.031***	0.001	-0.161***	0.154***	0.127***	0.140***	0.001	0.313***	1.000***	-0.314***	1.000	
(17) Years of education	0.033***	-0.074***	-0.073***	0.072***	-0.065***	-0.074***	0.026***	0.075***	-0.062***	-0.070***	-0.064***	-0.040***	-0.108***	-0.010*	-0.027***	-0.010	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B2- Spearman's rank correlation coefficients

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) Self-employed	1.000																
(2) Power	0.030***	1.000															
(3) Achievement	0.048***	0.518***	1.000														
(4) Stimulation	0.055***	0.244***	0.341***	1.000													
(5) Benevolence	-0.007	0.013**	0.167***	0.175***	1.000												
(6) Universalism	0.006	-0.035***	0.135***	0.184***	0.553***	1.000											
(7) Security	-0.019***	0.224***	0.295***	0.025***	0.304***	0.308***	1.000										
(8) Conformity	-0.028***	0.264***	0.217***	0.012**	0.204***	0.204***	0.383***	1.000									
(9) Tradition	-0.014***	0.065***	0.105***	-0.016***	0.314***	0.297***	0.381***	0.389***	1.000								
(10) Self-direction	0.128***	0.190***	0.312***	0.400***	0.338***	0.363***	0.183***	0.029***	0.065***	1.000							
(11) Hedonism	-0.004	0.236***	0.299***	0.489***	0.276***	0.214***	0.129***	0.039***	0.073***	0.354***	1.000						
(12) Gender	0.098***	0.080***	0.044***	0.071***	-0.113***	-0.087**	-0.094***	0.017***	-0.060***	0.004	0.041***	1.000					
(13) Age	0.072***	-0.108***	-0.180***	-0.235***	-0.056***	-0.008	0.056***	0.082***	0.122***	-0.090***	-0.215***	-0.006**	1.000				
(14) Married	0.036***	0.001	-0.032***	-0.140***	-0.019***	-0.009	0.049***	0.083***	0.110***	-0.093***	-0.119***	0.001	0.298***	1.000			
(15) Divorced	0.013**	-0.041***	-0.038***	-0.009	0.012**	0.008	-0.001	-0.006	-0.017**	0.029***	-0.006	-0.051***	0.178***	-0.314***	1.000		
(16) None	0.036***	0.001	-0.032***	-0.140***	-0.019***	-0.009	0.049***	0.083***	0.110***	-0.093***	-0.119***	0.001	0.298***	1.000***	-0.314***	1.000	
(17) Years of education	0.030***	-0.006**	0.024***	0.103***	0.070***	0.118***	-0.102***	-0.081***	-0.119***	0.142***	0.051***	-0.052***	-0.150***	-0.013**	-0.034***	-0.013**	1.000

Spearman rho = -0.013

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

These bivariate correlations between the variables of interest are performed to check for multicollinearity of the variables, and hence whether they should be rejected when testing some models. I present two correlation tests. The first one is the Pearson correlation test for all the continuous and categorical variables. The second one will use the Spearman correlation test because the basic human value variables are ordinal variables. Both of these correlation tests can be found in Table B1 and B2.

The first correlation test is a Pearson correlation test used to check the correlation between the *self-employment* variable, the *religion* variables and the control variables (Table B1). The results show negative correlations for the *self-employment* with *religious belonging*, the religion *Protestant*, *Eastern-Orthodox* and *Islam* (significant at 10%), *religious attendance and praying*. There are large correlations between all the religious variables which hints at multicollinearity if they were to be used all together in one model. However, this will not pose a threat as these variables will not all be used simultaneously in a model. There are no other significantly high correlations that would pose a threat to the analysis.

The second correlation test is the Spearman correlation test between the *self-employment* variable, the *Value* variables and the control variables. A spearman correlation test was used here because the variables measuring the importance of every value used ordinal scales. The values benevolence, security, conformity, tradition and hedonism are all negatively correlated to the variable of interest *self-employment*. On the other hand, power, achievement, stimulation, universalism and self-direction are positively correlated with *self-employment*. Furthermore, power and achievement are highly correlated (0.518), as well as benevolence and universalism (0.553)

Appendix C

Table C1 – Summary statistics predictions using linear probability models

Descriptive Statistics					
Model	Obs	Mean	Std. Dev.	Min	Max
Model 1.1	29593	.113	.055	-.099	.306
Model 1.2	29593	.112	.073	-.222	.398
Model 1.3	29593	.112	.074	-.203	.48
Model 2.1	29593	.113	.055	-.102	.31
Model 2.2	29593	.112	.073	-.221	.4
Model 2.3	29593	.112	.074	-.199	.482
Model 3.1	29593	.113	.055	-.1	.309
Model 3.2	29593	.112	.073	-.223	.396
Model 3.3	29593	.112	.074	-.208	.479

Table C2- Logistic regression using religious belonging as a proxy for religion

	(1) Basic Model Odds- ratio	(2) Basic Model and values Odds-ratio	(3) Basic Model, values and interaction terms Odds-ratio
Religious belonging	.931* (0.039)	1.066 (0.073)	1.063 (0.073)
Values			
Power		1.024 (0.038)	.959 (0.058)
Achievement		1.085** (0.040)	1.150*** (0.060)
Stimulation		1.075** (0.036)	1.053 (0.052)
Benevolence		1.019 (0.058)	0.995 (0.081)
Universalism		0.863*** (0.047)	0.974 (0.076)
Security		0.856*** (.034)	0.860** (0.051)
Conformity		0.924** (0.035)	0.927 (0.00444)
Tradition		1.053 (.042)	0.951 (0.054)
Self-direction		1.696*** (.079)	1.606*** (0.116)
Hedonism		0.880*** (0.031)	0.868*** (0.041)
Interaction terms			
Gender × Power			1.116 (0.084)
Gender × Achievement			0.908 (0.063)
Gender × Stimulation			1.035 (0.069)
Gender × Benevolence			1.037 (0.107)
Gender × Universalism			0.821* (0.085)
Gender × Security			0.995 (0.071)
Gender × Conformity			0.996 (0.072)
Gender × Tradition			1.192** (0.087)
Gender × Self-direction			1.090 (0.105)
Gender × Hedonism			1.023 (0.066)

Control variables

Gender	1.915*** (0.074)	1.783*** (0.109)	1.209 (0.553)
Age	1.136 *** (0.14)	1.133*** (0.022)	1.133*** (0.022)
Age ²	.999*** (0.000)	0.999*** (0.000)	0.999*** (0.000)
Marital Status			
Married	Reference	Reference	Reference
Divorced	1.069 (0.068)	0.852 (0.087)	0.850 (0.087)
None	0.972 (0.043)	0.931 (0.065)	0.931 (0.065)
Years of education	1.035*** (0.005)	1.016** (0.008)	1.016** (0.008)
Constant	0.002*** (0.001)	0.001*** (0.001)	0.001*** (0.001)
Observations	29,593	29,593	29,593
Country dummies	YES	YES	YES

Notes: Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. These regressions use the 2018 survey wave, restricting to individual aged 18-65. Religious belonging is an indicator of whether the individual belongs to a religion. To estimate the effects of all the values, they are included. Interaction terms between every value and gender are have also been included. All the control variables are included, these are gender, age, marital status and years of education. The country dummies are included in every regression. The basic model (column 1) estimates the effect of belonging to a religion on self-employment and includes the control variables and country fixed effects. The basic model + values (column 2) estimates the effect of belonging to a religion on self-employment and of the every value and includes the control variables and country fixed effects. The basic model, values + interaction terms (column 3) estimates the effect of belonging to a religion on self-employment, the effect of the every value, and the effect of being male and valuing a value as much as a female and includes the control variables and country fixed effects.

Table C3- Logistic regression using religious denomination as a proxy for religion

	(1) Basic Model Odds- ratio	(2) Basic Model and values Odds-ratio	(3) Basic Model, values and interaction terms Odds-ratio
Religious denomination			
Roman Catholic	0.992 (0.0742)	1.043 (0.0806)	1.045 (0.0807)
Protestant	1.039 (0.131)	1.110 (0.143)	1.097 (0.141)
Eastern Orthodox	1.171 (0.334)	1.195 (0.340)	1.194 (0.334)
Islam	1.178 (0.242)	1.248 (0.259)	1.228 (0.253)
Other	0.903 (0.210)	0.915 (0.218)	0.912 (0.217)
Values			
Power		1.022 (0.0378)	0.959 (0.0578)
Achievement		1.084** (0.0397)	1.148*** (0.0602)
Stimulation		1.074** (0.0359)	1.051 (0.0518)
Benevolence		1.021 (0.0572)	0.996 (0.0811)
Universalism		0.864*** (0.0471)	0.975 (0.0760)
Security		0.855*** (0.0335)	0.859** (0.0511)
Conformity		0.923** (0.0346)	0.926 (0.0501)
Tradition		1.051 (0.0420)	0.950 (0.0541)
Self-direction		1.698*** (0.0792)	1.608*** (0.116)
Hedonism		0.881*** (0.0310)	0.869*** (0.0410)
Interaction terms			
Gender × Power			1.114 (0.0839)
Gender × Achievement			0.910 (0.0632)
Gender × Stimulation			1.038 (0.0693)
Gender × Benevolence			1.037 (0.107)
Gender × Universalism			0.820* (0.0843)
Gender × Security			0.995 (0.0713)

Gender × Conformity			0.997 (0.0719)
Gender × Tradition			1.189** (0.0861)
Gender × Self-direction			1.088 (0.105)
Gender × Hedonism			1.023 (0.0663)
Control variables			
Gender	1.817*** (0.107)	1.779*** (0.109)	1.216 (0.554)
Age	1.127*** (0.0217)	1.134*** (0.0223)	1.133*** (0.0223)
Age ²	0.999*** (0.000208)	0.999*** (0.000212)	0.999*** (0.000212)
Marital Status			
Married	Reference	Reference	Reference
Divorced	0.935 (0.0918)	0.852 (0.0873)	0.851 (0.0869)
None	1.019 (0.0704)	0.933 (0.0652)	0.933 (0.0652)
Years of education	1.031*** (0.00713)	1.016** (0.00765)	1.017** (0.00768)
Constant	0.00288*** (0.00127)	0.00101*** (0.000513)	0.00124*** (0.000723)
Country dummies	YES	YES	YES
Observations	29,593	29,593	29,593

Notes: Standard errors in parentheses. * p<0.1, ** p<0.05, *** p<0.01. These regressions use the 2018 survey wave, restricting to individual aged 18-65. All the religions are an indicator of whether the individual belongs to the specific religion. To estimate the effects of all the values, they are included. Interaction terms between every value and gender are have also been included. All the control variables are included, these are gender, age, marital status and years of education. The country dummies are included in every regression. The basic model (column 1) estimates the effect of belonging to specific religious denomination on self-employment and includes the control variables and country fixed effects. The basic model + values (column 2) estimates the effect of belonging to specific religious denomination on self-employment and of the every value and includes the control variables and country fixed effects. The basic model, values + interaction terms (column 3) estimates the effect of belonging to a specific religious denomination on self-employment, the effect of the every value, and the effect of being male and valuing a value as much as a female and includes the control variables and country fixed effects.

Table C4 - Logistic regression using religiously active as a proxy for religion

	(1) Basic Model Odds- ratio	(2) Basic Model and values Odds-ratio	(3) Basic Model, values and interaction terms Odds-ratio
Religiously active	1.023 (0.0363)	1.008 (0.0379)	1.011 (0.0379)
Values			
Power		1.026 (0.0379)	0.960 (0.0579)
Achievement		1.087** (0.0399)	1.151*** (0.0604)
Stimulation		1.075** (0.0360)	1.053 (0.0519)
Benevolence		1.019 (0.0576)	0.994 (0.0810)
Universalism		0.861*** (0.0470)	0.972 (0.0756)
Security		0.856*** (0.0335)	0.860** (0.0511)
Conformity		0.925** (0.0348)	0.928 (0.0504)
Tradition		1.064 (0.0426)	0.961 (0.0552)
Self-direction		1.693*** (0.0785)	1.604*** (0.115)
Hedonism		0.878*** (0.0309)	0.865*** (0.0410)
Interaction terms			
Gender × Power			1.117 (0.0843)
Gender × Achievement			0.909 (0.0634)
Gender × Stimulation			1.036 (0.0689)
Gender × Benevolence			1.038 (0.107)
Gender × Universalism			0.819* (0.0845)
Gender × Security			0.994 (0.0713)
Gender × Conformity			0.996 (0.0719)
Gender × Tradition			1.193** (0.0868)
Gender × Self-direction			1.089 (0.105)
Gender × Hedonism			1.023 (0.0663)

Control variables			
Gender	1.809*** (0.111)	1.773*** (0.111)	1.205 (0.552)
Age	1.127*** (0.0217)	1.134*** (0.0224)	1.133*** (0.0224)
Age ²	0.999*** (0.000207)	0.999*** (0.000211)	0.999*** (0.000212)
Marital Status			
Married	Reference	Reference	Reference
Divorced	0.929 (0.0913)	0.846 (0.0868)	0.844* (0.0864)
None	1.010 (0.0699)	0.925 (0.0646)	0.925 (0.0646)
Years of education	1.030*** (0.00715)	1.016** (0.00766)	1.016** (0.00769)
Constant	0.00298*** (0.00132)	0.00106*** (0.000539)	0.00130*** (0.000760)
Country dummies	YES	YES	YES
Observations	29,593	29,593	29,593

Notes: Standard errors in parentheses. * p<0.1, ** p<0.05, *** p<0.01. These regressions use the 2018 survey wave, restricting to individual aged 18-65. Religiously active is an indicator of how religiously active an individual is. To estimate the effects of all the values, they are included. Interaction terms between every value and gender are have also been included. All the control variables are included, these are gender, age, marital status and years of education. The country dummies are included in every regression. The basic model (column 1) estimates the effect of being religiously active on self-employment and includes the control variables and country fixed effects. The basic model + values (column 2) estimates the effect of being religiously active on self-employment and of the every value and includes the control variables and country fixed effects. The basic model, values + interaction terms (column 3)) estimates the effect of being religiously active on self-employment, the effect of the every value, and the effect of being male and valuing a value as much as a female and includes the control variables and country fixed effects.

Appendix D

Relationship between religion and entrepreneurship

The second model investigates whether there is a relationship between the type of religious denomination an individual belongs to and the rate of self-employment in Europe. The following shows the equation for the model:

$$\begin{aligned} \mathbf{Self} - \mathbf{employed}_i = & \beta_0 + \beta_1 \mathit{Roman\ Catholic}_i + \beta_2 \mathit{Protestant}_i + \beta_3 \mathit{Eastern\ Orthodox}_i \\ & + \beta_4 \mathit{Islam}_i + \beta_5 \mathit{Other}_i + \beta_6 X_i + \gamma_i + \varepsilon_i \end{aligned} \quad (1.2)$$

where $\mathit{Self} - \mathit{employed}_i$ is the rate that an individual i is self-employed. $\beta_1 - \beta_5$ are the coefficients of interest, which capture the change in the rate of individual i being self-employed if the individual belongs to one of the religions. A positive coefficient would indicate that an individual is more likely to become self-employed if it belongs to a religion, while a negative coefficient would indicate it is less likely to become self-employed. X_i is a vector of individual-level controls. This vector captures the effect of all the control variables Gender, Age, Age², Marital status and Years of education. γ_i captures the country-fixed effects. Finally, ε_i is the idiosyncratic error term.

The third model investigates whether there is a relationship between how active a religious individual is and the rate of self-employment in Europe. The following shows the equation for the model:

$$\mathbf{Self} - \mathbf{employed}_i = \beta_0 + \beta_1 \mathit{Religiously\ active}_i + \beta_2 X_i + \gamma_i + \varepsilon_i \quad (1.3)$$

where $\mathit{Self} - \mathit{employed}_i$ is the rate that an individual i is self-employed. $\mathit{Religiously\ active}_i$ is an indicator of the level of religious activity. β_1 is the coefficient of interest, which captures the change in the rate of individual i being self-employed if the individual is more religiously active. For the magnitude, one must multiply β_1 by the level of religious activity. A positive coefficient would indicate that an individual is more likely to become self-employed if it belongs to a religion, while a negative coefficient would indicate it is less likely to become self-employed. X_i is a vector of individual-level controls. This vector captures the effect of all the control variables Gender, Age, Age², Marital status and Years of education. γ_i captures the country-fixed effects. Finally, ε_i is the idiosyncratic error term.

Role of values in the relationship between religion and entrepreneurship

The second model will use the different religion denominations to measure the effect of the different values. The equation for the model is the following:

$$\begin{aligned} \mathbf{Self - employed}_i = & \beta_0 + \beta_1 \mathbf{Roman Catholic}_i + \beta_2 \mathbf{Protestant}_i + \beta_3 \mathbf{Eastern Orthodox}_i \\ & + \beta_4 \mathbf{Islam}_i + \beta_5 \mathbf{Other}_i + \beta_6 \mathbf{Power}_i + \beta_7 \mathbf{Achievement}_i + \beta_8 \mathbf{Stimulation}_i \\ & + \beta_9 \mathbf{Benevolence}_i + \beta_{10} \mathbf{Universalism}_i + \beta_{11} \mathbf{Security}_i + \beta_{12} \mathbf{Conformity}_i \\ & + \beta_{13} \mathbf{Tradition}_i + \beta_{14} \mathbf{Self - direction}_i + \beta_{15} \mathbf{Hedonism}_i + \beta_{16} \mathbf{X}_i \\ & + \gamma_i + \varepsilon_i \end{aligned} \quad (2.2)$$

where $\mathbf{Self - employed}_i$ is the rate that an individual i is self-employed. $\beta_1 - \beta_5$ captures the change in the rate of individual i being self-employed if the individual belongs to any of the religions. A positive coefficient would indicate that an individual is more likely to become self-employed if it belongs to a religion, while a negative coefficient would indicate it is less likely to become self-employed. $\beta_6 - \beta_{15}$ are the coefficients of interest which capture the effect of valuing a certain basic human value. A positive coefficient would indicate that valuing that value has a greater likelihood of becoming self-employed, while a negative coefficient would indicate that the individual is less likely to become self-employed if it values that value. \mathbf{X}_i is a vector of individual-level controls. This vector captures the effect of all the control variables Gender, Age, Age², Marital status and Years of education. γ_i captures the country-fixed effects. Finally, ε_i is the idiosyncratic error term.

The third model uses whether an individual is religiously active to proxy religion and to investigate whether there is an effect of the values. The equation for the model is the following:

$$\begin{aligned} \mathbf{Self - employed}_i = & \beta_0 + \beta_1 \mathbf{Religious active}_i + \beta_2 \mathbf{Power}_i + \beta_3 \mathbf{Achievement}_i \\ & + \beta_4 \mathbf{Stimulation}_i + \beta_5 \mathbf{Benevolence}_i + \beta_6 \mathbf{Universalism}_i + \beta_7 \mathbf{Security}_i \\ & + \beta_8 \mathbf{Conformity}_i + \beta_9 \mathbf{Tradition}_i + \beta_{10} \mathbf{Self - direction}_i \\ & + \beta_{11} \mathbf{Hedonism}_i + \beta_{12} \mathbf{X}_i + \gamma_i + \varepsilon_i \end{aligned} \quad (2.2)$$

where $\mathbf{Self - employed}_i$ is the rate that an individual i is self-employed. β_1 is the coefficient of interest, which captures the change in the rate of individual i being self-employed if the individual is more religiously active. For the magnitude, one must multiply β_1 by the level of religious activity. A positive coefficient would indicate that an individual is more likely to become self-employed if it belongs to a religion, while a negative coefficient would indicate it is less likely to become self-employed. $\beta_2 - \beta_{11}$ are the coefficients of interest which capture

the effect of valuing a certain basic human value. A positive coefficient would indicate the valuing that value has a greater likelihood of becoming self-employed, while a negative coefficient would indicate that the individual is less likely to become self-employed if it values that value. X_i is a vector of individual-level controls. This vector captures the effect of all the control variables Gender, Age, Age², Marital status and Years of education. γ_i captures the country-fixed effects. Finally, ε_i is the idiosyncratic error term.

Gender differences explained by values in entrepreneurship

The second model investigated hypothesis 3 uses the religion denomination to proxy religion. The equation is the following:

$$\begin{aligned}
 \text{Self} - \text{employed}_i = & \beta_0 + \beta_1 \text{Roman Catholic}_i + \beta_2 \text{Protestant}_i + \beta_3 \text{Eastern Orthodox}_i \\
 & + \beta_4 \text{Islam}_i + \beta_5 \text{Other}_i + \beta_6 \text{Power}_i + \beta_7 \text{Achievement}_i + \beta_8 \text{Stimulation}_i \\
 & + \beta_9 \text{Benevolence}_i + \beta_{10} \text{Universalism}_i + \beta_{11} \text{Security}_i + \beta_{12} \text{Conformity}_i \\
 & + \beta_{13} \text{Tradition}_i + \beta_{14} \text{Self} - \text{direction}_i + \beta_{15} \text{Hedonism}_i + \beta_{16} Y_i + \beta_{17} X_i \\
 & + \gamma_i + \varepsilon_i
 \end{aligned} \tag{3.2}$$

where $\text{Self} - \text{employed}_i$ is the rate that an individual i is self-employed. $\text{Religious belonging}_i$ is an indicator equal to one if the individual self-identifies as belonging to a religion. $\beta_1 - \beta_5$ captures the change in the rate of individual i being self-employed if the individual belongs to any religion. A positive coefficient would indicate that an individual is more likely to become self-employed if it belongs to a religion, while a negative coefficient would indicate it is less likely to become self-employed. $\beta_6 - \beta_{12}$ are the coefficients which capture the effect of valuing a certain basic human value. A positive coefficient would indicate the valuing that value has a greater likelihood of becoming self-employed, while a negative coefficient would indicate that the individual is less likely to become self-employed if it values that value.

Y_i represents the vector of all the interaction effects of all the values (Power, Achievement, Stimulation, Benevolence, Universalism, Security, Conformity, Tradition, Self-direction and Hedonism) with the binary variable Gender. X_i is a vector of individual-level controls. This vector captures the effect of all the control variables Gender, Age, Age², Marital status and Years of education. γ_i captures the country-fixed effects. Finally, ε_i is the idiosyncratic error term. The last model to investigate the third hypothesis uses religious activity as a proxy for religion. The equation is the following:

$$\begin{aligned}
\mathbf{Self} - \mathbf{employed}_i = & \beta_0 + \beta_1 \mathbf{Religious} \mathbf{active}_i + \beta_2 \mathbf{Power}_i + \beta_3 \mathbf{Achievement}_i \\
& + \beta_4 \mathbf{Stimulation}_i + \beta_5 \mathbf{Benevolence}_i + \beta_6 \mathbf{Universalism}_i + \beta_7 \mathbf{Security}_i \\
& + \beta_8 \mathbf{Conformity}_i + \beta_9 \mathbf{Tradition}_i + \beta_{10} \mathbf{Self} - \mathbf{direction}_i \\
& + \beta_{11} \mathbf{Hedonism}_i + \beta_{12} Y_i + \beta_{13} X_i + \gamma_i + \varepsilon_i
\end{aligned} \tag{3.3}$$

where $\mathbf{Self} - \mathbf{employed}_i$ is the rate that an individual i is self-employed. β_1 is the coefficient of interest, which captures the change in the rate of individual i being self-employed if the individual is more religiously active. For the magnitude, one must multiply β_1 by the level of religious activity. A positive coefficient would indicate that an individual is more likely to become self-employed if it belongs to a religion, while a negative coefficient would indicate it is less likely to become self-employed. $\beta_2 - \beta_{11}$ are the coefficients which capture the effect of valuing a certain basic human value. A positive coefficient would indicate the valuing that value has a greater likelihood of becoming self-employed, while a negative coefficient would indicate that the individual is less likely to become self-employed if it values that value.

$\beta_{12} - \beta_{21}$ are the coefficients of interest which capture by how much the likelihood to become an entrepreneur changes when individual i is male and values that specific human value as much as a female individual would. A positive coefficient would indicate that being a male and valuing a value as much as a female, increases the likelihood to become self-employed, while a negative coefficient would indicate that the male individual is less likely to become self-employed if it values the value as much as a female.

Y_i represents the vector of all the interaction effects of all the values (Power, Achievement, Stimulation, Benevolence, Universalism, Security, Conformity, Tradition, Self-direction and Hedonism) with the binary variable Gender. X_i is a vector of individual-level controls. This vector captures the effect of all the control variables Gender, Age, Age², Marital status and Years of education. γ_i captures the country-fixed effects. Finally, ε_i is the idiosyncratic error term.

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