

Religious beliefs and entrepreneurship among Dutch protestants

Cornelius A. Rietveld¹ and Elco van Burg²

¹Department of Applied Economics, Erasmus School of Economics, Erasmus University
Rotterdam, Rotterdam, The Netherlands

²Department of Management and Organization, Faculty of Economics and Business
Administration, VU University Amsterdam, Amsterdam, The Netherlands

Abstract: Religious beliefs affect the economic behavior of individuals. The aim of this study is to investigate the relation between religious beliefs and entrepreneurship. Empirical evidence that entrepreneurship rates differ among religions suggests that religious beliefs influence the pursuit of entrepreneurship. However, how and which specific religious beliefs play a role in this relationship remains unknown. Therefore, we study the relation between two key religious beliefs and entrepreneurship within one specific branch of Christianity, namely, Protestantism. Using a unique sample of 756 Christian protestant entrepreneurs and employees from the Netherlands, we show that protestant entrepreneurs have a stronger belief than comparable protestant employees that their work is a calling from God and that protestant entrepreneurs are more likely to perceive a duty to add value to society through their occupational work. These results indicate that research on the relation between religion and entrepreneurship is instrumental in explaining the engagement of people in entrepreneurship.

JEL codes: L26, Z12, Z13

Keywords: Entrepreneurship, religion, Christianity, Protestantism, beliefs

Corresponding author: Cornelius A. Rietveld, Department of Applied Economics, Erasmus School of Economics, Erasmus University Rotterdam, P.O. Box 1738, 3000 DR, Rotterdam, The Netherlands, nrrietveld@ese.eur.nl, tel.: +31104088935, fax: +31104089141

1. Introduction

Religion shapes values, beliefs and behavior and thus economic behavior and decision making (Iannaccone, 1998; Lehrer, 2004). Many studies have shown that a link exists between religion and economic development, although the results are inconclusive. Research shows that religion has both positive and negative effects on indicators of economic welfare and growth (Chiswick, 1983, 1993; Grier, 1985; Tomes, 1985; Heath et al., 1995; Steen, 1996; Barro and McCleary, 2003; Lipford and Tollison, 2003; Mangeloja, 2005; Bettendorf and Dijkgraaf, 2010). These divergent findings seem to result from heterogeneity in analyzed countries, regions, and religions. Barro and McCleary (2003) conjecture that stronger religious beliefs—relative to mere religious group membership—drive growth because such beliefs promote enduring aspects of individual behavior that increase productivity. Moreover, Guiso, Sapienza and Zingales (2003) find that religious beliefs are associated with higher per capita income and growth. Therefore, we study the link between religious beliefs and entrepreneurship as a specific contributor to economic growth (Audretsch et al., 2006; Carree and Thurik, 2003).

Religion and related beliefs are argued to shape entrepreneurship (Dodd and Gotsis, 2004; Dana 2009, 2010), but empirical evidence of such a relation is relatively scarce (Carroll & Mosakowski, 1989, Butler & Herring, 1991; Minns & Rizov, 2005; Nair & Pandey, 2006; Audretsch et al., 2007, 2013; Carswell & Rolland, 2007; Nunziata & Rocco 2011, Dougherty et al. 2013). Research findings indicate that the relation between religion and entrepreneurship is highly context and time specific, varying over time, social settings, and religions (Anderson et al., 2000; Dodd & Gotsis, 2007; Valliere, 2008). In our study, we therefore focus on the relation between religious beliefs and entrepreneurship within one country and within one religion. Specifically, this study investigates the intensity of two central religious beliefs among protestant Christian entrepreneurs and employees in the Netherlands. The culture, traditions, and values of the Netherlands are heavily influenced and shaped by Protestantism, a specific branch of Christianity (Inglehart & Baker, 2000). Moreover, the Western protestant work ethic has raised entrepreneurship to a privileged status in the Netherlands (Light, 2010). We study whether two core protestant values, *Vocation* and *Societal service*, are more important for entrepreneurs than for employees. This

analysis provides insight into how the intensity of specific religious beliefs is related to the pursuit of entrepreneurship.

This study is based on a survey among members of two small protestant trade unions in the Netherlands. These trade unions are very explicit in relating protestant beliefs to work and occupation. The survey resulted in a unique dataset of 756 protestant entrepreneurs and employees whose religious beliefs are very likely to influence their occupational choices and behavior. Interestingly, our results show that the entrepreneurs in our sample have a stronger belief than employees that they follow God's call in their occupational choices and that entrepreneurs are more likely than employees to perceive a duty to serve society. These findings confirm that the intensity of religious beliefs is associated with different degrees of entrepreneurial behavior.

The remainder of this paper is organized as follows. The next section provides a theoretical background and develops two hypotheses about the relation between religious beliefs and entrepreneurship. The third section describes the dataset and the empirical methodology. The fourth section presents the results of the empirical analyses, and the fifth section discusses the findings and presents the conclusions.

2. Theoretical background

A framework to study the relation between religion and entrepreneurship

The relation between religion and entrepreneurship can be analyzed on both the micro and the macro level. Where micro-level studies investigate the relation on the *individual* level, macro level studies work on a more *aggregated* level, such as an organizational or country level. In addition, the relationship between religion and entrepreneurship can be studied within one religion or across multiple religions. Using these two distinctions, in Table 1, we present a two-by-two framework with four different approaches to studying the relation between religion and entrepreneurship. For three of the quadrants, we were able to present exemplary studies.

<Insert Table 1 approximately here>

The studies mentioned in the introduction fall into the micro-level, across religion quadrant. Studies adopting a macro-level approach (the right quadrants) are occasionally large and influential studies (e.g., Weber, 1930), explaining the

relationship between one or more religions, such as Protestantism, and entrepreneurial culture or firm growth (Egnal, 1996, Anderson et al., 2000) or focusing on aspects of religions, such as transcendental and this-worldly orientation (Eisenstadt, 2003). On the micro level, examining differences within one religion, none of the existing studies explores the influence of religion on entrepreneurship. As such, the current study is the first study in the top left quadrant. The micro-level, within-religion approach of the current study has the advantage that specific religious beliefs can be tested in a homogenous group of people. Moreover, the findings may be instrumental for interpreting possible findings from macro-level studies, as this approach can reveal mechanisms that explain the relation between religion and entrepreneurship.

In our sample of Dutch protestants, we focus on two core values that are related to occupational choices and behavior in daily life, *Vocation* and *Societal service*, and their relation with entrepreneurship. In the next two paragraphs, we discuss these two core values and develop two hypotheses about how these core values relate to entrepreneurship.

Vocation

It is deeply rooted in the Christian tradition that vocation, or calling, is central to Christian life. Vocation refers to a personal or collective summon by God (Badcock, 1998; Goossen, 2006). The actual behavior of Christians may therefore be influenced by their perception of the will of God. Where occupational work may seem a natural necessity, it can simultaneously be the realization of serving God's will in an everyday sense (Badcock, 1998).

In the Bible, the calling of many different people is described: not only prophets and disciples but also ordinary people, such as mothers and servants. Later in the Christian tradition, the concept of calling maintained its central place (For an overview see Placher, 2005). For instance, in the second century, the influential lawyer and apologist Tertullian argued in his book *De Corona Militis* that Christians are called to hold some occupations (e.g., church ministry) but not others (e.g., the army). In the sixteenth century, the German reformer Martin Luther became well known for his influential theological concept of vocation in which he proclaimed the priesthood of all believers, defining not only church work but every job as being divine (Luther, 1832, p. 60). Based upon Luther's and John Calvin's (another

influential Reformer) understanding of vocation, the sociologist Max Weber formulated a theory of how protestant ethic influences economic behavior and, in particular, economic growth. Weber (1930) argues, in his famous book *The Protestant Ethic and the Spirit of Capitalism*, that Protestantism positively affected economic development and the birth of modern economic life in Western Europe. The religious doctrines of Lutheranism and Calvinism have promoted capital accumulation and economic development owing to the propagation of the earthly calling and the avoidance of unimportant pleasures (Weber, 1930).

Vocation is not only a central concept in the Christian belief system but also an important concept in popular culture, such as in the advertorials and best-selling books of the Dalai Lama. In contemporary career research, career calling has recently been introduced as an important concept, referring to “an approach to work that reflects the belief that one's career is a central part of a broader sense of purpose and meaning in life and is used to help others or advance the greater good in some fashion” (Duffy & Dik, 2013, p. 420). This sense of a career calling can result from strong religious beliefs in which, for instance, God calls someone to pursue a particular career or a call perceived from specific life events, and thus, the source of perceived callings may vary widely (Dik & Duffy, 2009). In different study samples, the number of people who perceive to have a calling varies, with studies reporting percentages ranging from 30% up to 60% (Duffy & Dik, 2013). Individuals who feel that their work responds to a calling are likely to be more committed to their jobs, to perceive a strong fit of their work with their personal preferences, and to perceive their work to be meaningful (Duffy & Dik, 2013). Moreover, the perception of a career calling leads to higher levels of job satisfaction, mediated by organizational commitment, but, interestingly, is also related to somewhat higher levels of withdrawal intentions if people are less committed to their current job, likely because these people feel that their calling lies elsewhere (Duffy, Dik, & Steger, 2011).

Although existing studies on the relationship between religious beliefs and entrepreneurship do not study the role of vocation or calling, considering both the theological concept of vocation and the psychological definition, vocation likely plays a central role in this relationship. In this respect, it is very interesting that research on career calling finds that career calling could also lead to job withdrawal, indicating that a calling could be motivation to make different career choices. Based on the

Christian understanding of vocation, vocation likely plays a central role in the relationship between religious beliefs and entrepreneurship, as not only clerical but also regular jobs are considered vocations. In this respect, a greater perception of a calling may be found in entrepreneurship compared with non-entrepreneurial occupations, as entrepreneurship often involves a number of conscious decisions regarding particular products, markets and activities, while in existing organizations, many of these decisions have been made previously. An entrepreneur has the ability to make his/her own decisions, follow his/her vocation and serve the will of God. Moreover, it is less common for individuals to decide to become an entrepreneur than to decide to procure a regular job. Thus, vocation may be more important for Christian entrepreneurs than for Christian employees. This leads to the following hypothesis:

H1: Protestant entrepreneurs have a more intense belief than protestant non-entrepreneurs that their work is a vocation of God.

Societal service

The second key aspect of the Christian religion that may influence entrepreneurship relates to the prosocial motivations promoted by Christianity and the societal service flowing from such motivations. In the Christian tradition, societal service is imperative according to the summary of the law given by Jesus ('loving God and neighbor'). Biblical stories and parables such as the one about the good Samaritan emphasize the importance of social justice. Nevertheless, social service is not unique to Christianity, and prosocial behavior is found among all people. Moreover, the prosocial motivations promoted by Christianity are not equally embraced by all religious people, although studies find that religious (Christian) people have a greater propensity toward prosocial and altruistic behavior than non-religious individuals (Batson, 1976; Bernt, 1989; Hansen, Vandenberg, & Patterson, 1995; Preston, Ritter, & Ivan Hernandez, 2010).

Entrepreneurship studies argue that prosocial and altruistic motivations form one of the important antecedents for identifying opportunities for social and sustainable entrepreneurship (Patzelt & Shepherd, 2011). In general, sustainable entrepreneurship, including social entrepreneurship, focuses on "the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring

into existence future products, processes, and services for gain, where gain is broadly construed to include economic and non-economic gains to individuals, the economy, and society” (Shepherd & Patzelt, 2011, p. 142).

As Christian believers may tend to engage in more prosocial and altruistic behavior, they might also be more likely to pursue social and sustainable entrepreneurship. A Christian may feel the moral duty to serve and add value to society. For instance, Graafland, Kaptein & Mazereeuw-van der Duijn Schouten (2006) explore the relation between religious belief and possible dilemmas perceived by executives and find that the frequency at which dilemmas are perceived is directly related to religious beliefs. The relationship among the conception of God, norms and values and business conduct is also shown in a different study by these authors (Graafland, Kaptein & Mazereeuw-van der Duijn Schouten, 2007). Thus, Christian values trigger the perception of moral dilemmas, and entrepreneurs might find a way to solve such a dilemma in a social and/or sustainable entrepreneurial venture. In summary, Christian beliefs might affect individuals’ tendency to engage in social and sustainable entrepreneurship.

Based upon these insights, we argue that entrepreneurs may act to fulfill this ‘duty’ to serve society in their entrepreneurial activities, while fulfilling such a duty is more difficult for non-entrepreneurs. Therefore, a greater perceived duty to serve society is more likely among entrepreneurs, and we thus propose the following hypothesis:

H2: Protestant entrepreneurs have a more intense belief than protestant non-entrepreneurs that it is their duty to serve society.

3. Method

Setting and data collection

With the aid of two small Christian trade unions in the Netherlands, we conducted an online survey to test our hypotheses among a population of highly religious people. The two trade unions, *Reformatrische Maatschappelijke Unie* (RMU, Reformed Social Union) and *Christennetwerk Gereformeerd Maatschappelijk Verbond* (CGMV, Christiannetwork Reformed Social Alliance), circulated a link to the online questionnaire among their members. Both trade unions were selected

because they have an explicit Christian mission, in contrast to more generic Dutch trade unions. RMU mentions in its mission statement that its activities are conducted in accordance with the Bible and three important protestant confessional documents from the sixteenth and seventeenth century. CGMV also explicitly declares that they provide their services in accordance with the Christian religion. Therefore, this population consists of people who intentionally decided to become members of explicitly Christian trade unions. Thus, we might expect these individuals to also be conscious of how their religious beliefs affect their choices in daily life, including their career choices.

The members of the two unions live throughout the country. The 16,000 members of RMU (established in 1983) include employees, entrepreneurs and own-account workers in all age categories. CGMV has 11,000 members and also functions as a network for Christians by offering opportunities for Christians to get in contact with other people in the work field. It was established in 1952 by members of a particular church in the Netherlands, namely, Reformed Churches in the Netherlands (Liberated). Its members include employers, employees, benefit recipients, and volunteers.

Measurement

The questionnaire respondents were asked to provide information about their employment status, demographic background, and personality as well as the intensity of their religious beliefs related to *Vocation* and *Societal service*. Employment status is measured using the binary variable *Entrepreneurship*, which takes a value of 1 if a respondent indicates that entrepreneurship is his/her main occupation and a value of 0 otherwise. *Entrepreneurship* is defined as self-employment in the survey because self-employment is the most commonly used proxy for entrepreneurship in the literature (Parker, 2009).

The intensity of *Vocation* is assessed using four questions, answered on a 5-point scale ranging from 'Not at all' to 'Fully agree': My faith has influenced my occupation choice (*Vocation 1*); I see my work as a vocation of God (*Vocation 2*); In my work, I am driven by the tasks that God gives me (*Vocation 3*); I don't switch from a job before I know that God has called me somewhere else (*Vocation 4*). The intensity of *Societal service* is also assessed with four questions, with possible

responses on the same 5-point scale: A company with Christian directors should be more concerned about corporate social responsibility than a company without Christian directors (*Societal service 1*); As a Christian, I'm more serviceable to society than a non-Christian (*Societal service 2*); My work has a positive influence on society (*Societal service 3*); I see it as my Christian duty to be serviceable to society through my job (*Societal service 4*).

We control for the demographic background of the respondents in the analysis using the following set of variables: *Sex* (0: Female, 1: Male), *Birth year* (Year of birth), *Married* (0: Single, divorced, widowed, 1: Married), *Education* (1: Secondary education, 2: Vocational education, 3: Higher education, 4: Other education), *Children < 12* (Number of children aged < 12), *Children ≥ 12* (Number of children aged ≥ 12) and *Entrepreneurial parent* (0: No parent is/has been an entrepreneur, 1: At least one parent is/has been an entrepreneur).

In addition, we control for personality characteristics that are known from the literature to be associated with entrepreneurship. The binary variable *Skills* takes a value of 1 if a respondent indicates that he/she thinks he/she has the knowledge, skills and experience to start up a business and a value of 0 otherwise. *Fear* is also a binary variable and takes a value of 1 if a respondent indicates that the chance of failure would prevent him/her from starting a business and a value of 0 otherwise. The categorical variables *Risk* and *Locus* are measured on a 5-point scale ranging from 'Not at all' to 'Fully agree' and indicate whether the respondent is, in general, willing to take risks and whether the life of the respondent is determined by him/herself and not by others or external changes, respectively.

The questionnaire was accessible from April 8, 2013, until July 8, 2013. During this period, the survey was accessed 1,198 times, and 901 individuals filled in at least one question. We removed 9 individuals who indicated that they were not a member of a church and 57 individuals who indicated that they did not have a job for more than 12 hours per week. The threshold of 12 hours per week is the official minimum imposed by Statistics Netherlands for active labor force membership (Dirven & Janssen, 2012). Furthermore, we excluded respondents for which not all control variables were measured from the analysis. Although the respondents had to fill each question to the complete questionnaire, for each question, it was possible to indicate that the respondent was not willing to answer. Thus, the final sample was 756

individuals. The efforts to collect new data thus resulted in a substantial dataset that enabled us uniquely to test our hypotheses.

We use principal component analysis to reduce the dimensionality of *Vocation* 1-4 and *Societal service* 1-4 and to determine whether these variables load on one underlying factor. The resulting factors are included in a logit model explaining *Entrepreneurship*. In the analysis, we control for demographic background using *Sex*, *Birth year*, *Married*, *Education*, *Children < 12*, *Children ≥ 12*, and *Entrepreneurial parent*. We further control for personality characteristics with measures for *Skills*, *Fear*, *Risk* and *Locus*.

4. Results

Descriptive statistics for our sample are presented in Table 2. Mean values are reported for the total sample, as well as the non-entrepreneurs and entrepreneurs subsamples. Differences between entrepreneurs and non-entrepreneurs are assessed using the Pearson χ^2 test for categorical data. For transparency, the four levels of *Education* are transformed to dummy variables. The total sample consists of 20% entrepreneurs, which is a little higher than percentages reported in the literature for entrepreneurship participation rates in the Netherlands (Van Stel, 2005), suggesting a slight oversampling of entrepreneurs. This result is not surprising, given that the survey was promoted as a study on entrepreneurs among Dutch protestants. We therefore focus on the direction and significance of the regression coefficient, rather than the magnitude. Differences in the means between non-entrepreneurs and entrepreneurs are found for three of the *Vocation* variables and two of the *Societal service* variables. For the control variables, significant differences in *Sex*, *Married*, *Higher education*, *Children < 12*, *Children ≥ 12*, *Skills*, *Fear* and *Risk* are found. This underscores the importance of controlling for demographic background and personality characteristics in regression analysis. The correlations between all the variables that are included in the analysis are reported Table 3.

<Insert Table 2 approximately here>

<Insert Table 3 approximately here>

Table 4 presents the results of the principal component analysis for *Vocation* and *Societal service*. The screeplots for these two analyses are presented in Figure 1.

Although the variance explained by the first factor is relatively low (56% for *Vocation* and 39% for *Societal service*), the elbow of the screeplot lies on the second factor. This result indicates that both the four variables underlying *Vocation* and the four variables underlying *Societal service* can be combined into one factor. Cronbach's alpha is 0.71 and 0.46 for *Vocation* and *Societal service*, respectively.

<Insert Table 4 approximately here>

<Insert Figure 1 approximately here>

The results of the logit regressions explaining *Entrepreneurship* are presented in Table 3. The first model includes the factor score for *Vocation*. The regression coefficient for *Vocation* is positive and significant, thus providing support for Hypothesis 1. In addition to *Vocation*, *Skills*, *Fear*, and *Risk* have a significant regression coefficient. The second model includes the factor score for *Societal service*. Again, we find a positive significant regression coefficient, thus providing support for Hypothesis 2. *Skills*, *Fear*, and *Risk* again have significant predictive power for *Entrepreneurship*. In the third model, we include both *Vocation* and *Societal service* in the regression. In this model, the coefficients for both variables are no longer significant. However, an *F*-test for the joint significance of the two variables indicates that the two variables together have significant explanatory power ($p = 0.030$).

<Insert Table 5 approximately here>

The regression coefficients in the third model are no longer significant on their own because of the strong correlation between *Vocation* and *Societal service*. The Pearson correlation between these two factors is 0.435 ($p < 0.001$), and a joint principal component analysis on the eight variables underlying *Vocation* and *Societal service* (Cronbach's alpha 0.70) indicates that the first factor can be used to analyze the eight variables together (Eigenvalue = 2.80, Variance explained = 35%). This factor has a positive significant ($p = 0.008$) regression coefficient in the logit model explaining *Entrepreneurship* (using the same control variables as in the previous models). This result supports our theoretical arguments that *Vocation* and *Societal service* are two core values of the same religion. Thus, we can conclude that the intensity of specific religious beliefs is positively associated with entrepreneurship.

5. Discussion, limitations, and conclusion

The empirical results of our analysis reveal that entrepreneurs have a stronger belief than employees that their work is a calling from God and that entrepreneurs perceive a duty to add value to society through their occupational work. These two core protestant values thus seem to better fit entrepreneurship than wage work as an employee. These findings are in line with those of Dougherty et al. (2013), who find that American entrepreneurs are more likely to see God as personal and to pray, although they did not find differences in religious affiliation, belief in God, or religious service attendance between entrepreneurs and non-entrepreneurs. Thus, also in their sample (which includes respondents from multiple religions), entrepreneurs seem to be more intense believers than non-entrepreneurs.

Our findings are related to the debate initiated by Weber (1930) that Protestantism positively affects economic behavior, as we show that particular protestant values affect entrepreneurship. The existence of a protestant work ethic has also been demonstrated by previous studies. For instance, Van Hoorn (2013) finds strong support for the existence of a protestant work ethic, by showing that unemployment has a stronger effect on the well-being of protestants than on that of non-protestants. Adding to this stream of literature, our study finds that differences in the intensity of specific religious beliefs within one religion are related to the pursuit of entrepreneurship. Stronger perceptions of vocation and duty to serve society are found among entrepreneurs than among employees.

The link between vocation and entrepreneurship provides interesting new research directions for scholarly inquiry. The recent findings of predominantly psychology studies that career callings influences career transitions (Duffy & Dik, 2013) have not been applied to studies on entrepreneurship. Based on a sample of protestant Christians, our results indicate that a career calling is more important for entrepreneurs than for non-entrepreneurs. This finding suggests that career callings, including those among non-Christian, might be an interesting explanation for some currently unexplained transitions of people into entrepreneurial careers.

Limitations

Although we were able to gather a unique and large dataset to test our hypotheses, this study has four important limitations. First, this study only

investigates the micro-level influence of two core values of one specific branch of Christianity within one country. Although our unique dataset provides interesting insights into the effect of within-religion differences on entrepreneurship, the external validity of the study is limited. Future studies should examine whether these results also hold in other countries and with other religions. Second, the survey was conducted as an open, online questionnaire. Therefore, it is not possible to assess the response rate, the extent to which certain groups are overrepresented in the final sample or the extent to which the respondents are related to each other (e.g., respondents from the same family). Third, we were only able to construct a cross-sectional dataset. Thus, causal inferences cannot be drawn from our results, and whether entrepreneurship causes more intense religious beliefs, religious beliefs cause entrepreneurship, or both remains unknown. Fourth, the economic performance of the individuals in the sample is not known. It would be interesting to determine whether stronger religious beliefs are also related to better economic performance.

Conclusion

Our results show the explanatory power of religious beliefs for entrepreneurship in a group of Dutch protestants, warranting further research on the relation between religion and entrepreneurship using a micro-level, within-religion (Table 1) approach. Christianity is the largest religion in the Western world, but Islam and other religions may be interesting to study as well. Concepts comparable to *Vocation* and *Societal service* may be present in other religions, but presumably, values and concepts specific to other religion likely influence economic behavior and decision making as well. In addition, people who do not adhere to a specific religion may hold the values of *Vocation* and *Societal service*.

The overview of the current literature on the relation between religion and entrepreneurship indicates that the empirical investigation of the relation between religion and entrepreneurship using a macro approach, both within and across religions, is scarce. The results in this study may be instrumental in interpreting findings in future macro-level studies by providing an underlying mechanism in Dutch protestants for such a relation. Therefore, we expect that more research on this topic will emerge.

6. Acknowledgments

The authors thank *Reformatorische Maatschappelijke Unie*, *Christennetwerk Gereformeerd Maatschappelijk Verbond*, and especially Maarten den Dekker for their help in collecting the data.

7. References

Anderson, A. R., Drakopoulou-Dodd, S. L., & Scott, M. G. (2000). Religion as an environmental influence on enterprise culture—The case of Britain in the 1980s. *International Journal of Entrepreneurial Behaviour & Research*, 6(1), 5-20.

Audretsch, D.B., Boente, W. & Tamvada, J.P. (2007). Religion and entrepreneurship. *Jena Economic Research Papers*, 75.

Audretsch, D.B., Boente, W. & Tamvada, J.P. (2013). Religion, social class, and entrepreneurial choice. *Journal of Business Venturing*, 28(6), 774–789.

Audretsch, D.B., Keilbach, M.C. & Lehmann, E.E. (2006). *Entrepreneurship and economic growth*. Oxford: Oxford University Press.

Badcock, G.D. (1998). *The way of life: a theology of Christian vocation*. Grand Rapids: Eerdmans.

Barro, R.J., and McCleary, R.M. (2003). Religion and economic growth. *American Sociological Review*, 68(5), 760-781.

Batson, C. D. (1976). Religion as prosocial : agent or double agent? *Journal for the Scientific Study of Religion*, 15(1), 29–45.

Bernt, F. M. (1989). Being religious and being altruistic: A study of college service volunteers. *Personality and Individual Differences*, 10(6), 663–669.

Bettendorf, L. & Dijkgraaf, E. (2010). Religion and income: Heterogeneity between countries. *Journal of Economic Behavior and Organization*, 74(1-2), 12-29.

Butler, J. S., & Herring, C. (1991). Ethnicity and entrepreneurship in America: Toward an explanation of racial and ethnic group variations in self-employment. *Sociological Perspectives*, 34(1), 79-94.

Carree, M.A. & Thurik, A.R. (2003). The impact of entrepreneurship on economic growth. In Z.J. Acs and D.B. Audretsch (Ed.), *Handbook of Entrepreneurship Research* (pp. 437-471). Boston: Kluwer Academic Publishers.

Carroll, G.R., & Mosakowski, E. (1987). The career dynamics of self-employment. *Administrative Science Quarterly*, 32(4), 570–589. doi:10.2307/2392884

Carswell, P. & Rolland, D. (2007). Religion and entrepreneurship in New Zealand. *Journal of Enterprising Communities: People and Places in the Global Economy*, 1(2), 162-174.

Chiswick, B.R. (1983). The earnings and human capital of American Jews. *Journal of Human Resources*, 18(3), 313-336.

Chiswick, B.R. (1993). The skills and economic status of American Jewry: Trends over the last half-century. *Journal of Labor Economics*, 11(1), 229-242.

Dana, L.P. (2009). Religion as an explanatory variable for entrepreneurship. *International Journal of Entrepreneurship and Innovation*, 10(2), 87-99.

Dana, L. P. (2010). *Entrepreneurship and religion*. Cheltenham: Edward Elgar Publishing.

Dik, B. J., & Duffy, R. D. (2009). Calling and vocation at work: Definitions and prospects for research and practice. *The Counseling Psychologist*, 37(3), 424–450.

Dirven, H.J. & Janssen, B. (2012). De Nederlandse beroepsbevolking: twee afbakeningen. In Centraal Bureau voor de Statistiek (Ed.), *Sociaaleconomische trends, 1e kwartaal 2012* (pp. 80-89). Den Haag: Centraal Bureau voor de Statistiek.

Dodd, S.D. & Gotsis, G. (2007). The interrelationships between entrepreneurship and religion. *International Journal of Entrepreneurship and Innovations*, 8(2), 93-104.

Dougherty, K.D., Griebel, J., Neuber, M.J. & Park, J.Z. (2013). A religious profile of American entrepreneurs. *Journal for the Scientific Study of Religion*, 52(2), 401-409.

Duffy, R. D., & Dik, B. J. (2013). Research on calling: What have we learned and where are we going? *Journal of Vocational Behavior*, 83(3), 428–436.

Duffy, R. D., Dik, B. J., & Steger, M. F. (2011). Calling and work-related outcomes: Career commitment as a mediator. *Journal of Vocational Behavior*, 78(2), 210–218.

Eisenstadt, S.N. (2003). *Comparative civilizations and multiple modernities*. Leiden: Brill.

Egnal, M. (1996). *Divergent Paths: How Culture and Institutions Have Shaped North American Growth*. New York: Oxford University Press.

Goossen, R.J. (2006). The Christian Entrepreneur: Worthy of His Calling? *Journal of Faith in Business Quarterly*, 10(3), 5-10.

Graafland, J., Kaptein, M. & Mazereeuw – van der Duijn Schouten, C. (2007). Conceptions of God, normative convictions and socially responsible business conduct: An explorative study among executives. *Business & Society*, 43(3), 331-369.

Graafland, J., Kaptein, M. & Mazereeuw – van der Duijn Schouten, C. (2006). Business dilemmas and religious belief: An explorative study among Dutch executives. *Journal of Business Ethics*, 66(1), 53-70.

Grier, R. (1995). The effect of religion on economic development: a cross national study of 63 former colonies. *Kyklos*, 50(1), 47-62.

Guiso, L., Sapienza, P. & Zingales, L. (2003). People's opium? Religion and economic attitudes. *Journal of Monetary Economics*, 50(1), 225-82.

Hansen, D. E., Vandenberg, B., & Patterson, M. L. (1995). The effects of religious orientation on spontaneous and nonspontaneous helping behaviors. *Personality and Individual Differences*, 19(1), 101–104.

Heath, W.C., Waters, M.S. & Watson, J.K. (1995). Religion and economic welfare: an empirical analysis of state per capita income. *Journal of Economic Behavior & Organization*, 27(1), 129-142.

Iannaccone, L.R. (1998). Introduction to the economics of religion. *Journal of Economic Literature*, 36(3), 1465–1495.

Inglehart, R. & Baker, W.E. (2000). Modernization, cultural change and the persistence of traditional values. *American Sociological Review*, 65(1), 19–51

Lehrer, E.L. (2004). Religion as a determinant of economic and demographic behavior in the United States. *Population and Development Review*, 30(4), 707-726.

Light, I. (2010). The religious ethic of the protestant ethnics. In L.P. Dana (Ed.), *Religion and Entrepreneurship* (pp. 168-183). Cheltenham UK: Edward Elgar.

Lipford, J.W. & Tollison, R.D. (2003). Religious participation and income. *Journal of Economic Behavior & Organization*, 51(2), 249-260.

Luther, M. (1832). *Dr. Martin Luthers' sämmtliche Werke: Homiletische und katechetische Schriften*. (J. G. Plochmann & J. C. Irmischer, Eds.) (Vol. 1). Erlangen: C. Heyder.

Mangeloja, E. (2005). Economic growth and religious production efficiency. *Applied Economics*, 37(20), 2349-2359.

Minns, C. & Rizov, M. (2005). The spirit of capitalism? Ethnicity, religion, and self-employment in early 20th century Canada. *Explorations in Economic History*, 42(2), 259–281.

Nair, K. R. G., & Pandey, A. (2006). Characteristics of entrepreneurs: an empirical analysis. *Journal of Entrepreneurship*, 15(1), 47-61.

Nunziata, L., & Rocco, L. (2011). The implications of cultural background on labour market choices: The case of religion and entrepreneurship. *Institute for the Study of Labor Discussion Paper series*, 6114.

Parker, S.C. (2009). *The economics of entrepreneurship*. Cambridge: Cambridge University Press.

Patzelt, H., & Shepherd, D. A. (2011). Recognizing opportunities for sustainable development. *Entrepreneurship Theory and Practice*, 35(4), 631–652.

Placher, W. C. (2005). *Callings: Twenty Centuries of Christian Wisdom on Vocation*. Grand Rapids (MI): Wm. B. Eerdmans Publishing.

Preston, J. L., Ritter, R. S., & Ivan Hernandez, J. (2010). Principles of religious prosociality: A review and reformulation. *Social and Personality Psychology Compass*, 4(8), 574–590.

Shepherd, D. A., & Patzelt, H. (2011). The new field of sustainable entrepreneurship: Studying entrepreneurial action linking “What is to be sustained”

with “What is to be developed.” *Entrepreneurship Theory and Practice*, 35(1), 137–163.

Steen, T.P. (1996). Religion and earnings: Evidence from the NLS Youth Cohort. *International Journal of Social Economics*, 23(1), 47-58.

Tomes, N. (1985). Religion and the earnings function. *American Economic Review*, 75(2), 245-250.

Valliere, D. (2008). Exploring Buddhist influence on the entrepreneurial decision. *International Journal of Entrepreneurial Behaviour & Research*, 14(3), 172-191.

Van Hoorn, A. & Maseland, R. (2013). Does a Protestant work ethic exist? Evidence from the well-being effect of unemployment. *Journal of Economic Behavior & Organization*, 91(3), 1– 12

Van Stel A. (2005). COMPENDIA: harmonizing business ownership data across countries and over time. *International Entrepreneurship and Management Journal*, 1(1), 105-123.

Weber, M. (1930). *The Protestant ethic and the spirit of capitalism*. New York: Scribner.

8. Tables & Figures

Table 1. Framework to study the relation between religion and entrepreneurship and current studies on this topic.

	Micro	Macro
Within one religion	Current study	Anderson et al. (2000) Egnal (1996) Weber (1930)
Across religions	Audretsch et al. (2007, 2013) Buttler (1991) Caroll & Mosakowski (1987) Carswell & Rolland (2007) Dougherty et al. (2013) Minns & Rizov (2005) Nair & Pandey (2006) Nunziata & Rocco (2011)	Eisenstadt (2003)

Table 2. Descriptive statistics of the sample. Mean values are reported, and standard deviations are given in parentheses. The p -values for differences between non-entrepreneurs and entrepreneurs are calculated using the Pearson χ^2 test for categorical data.

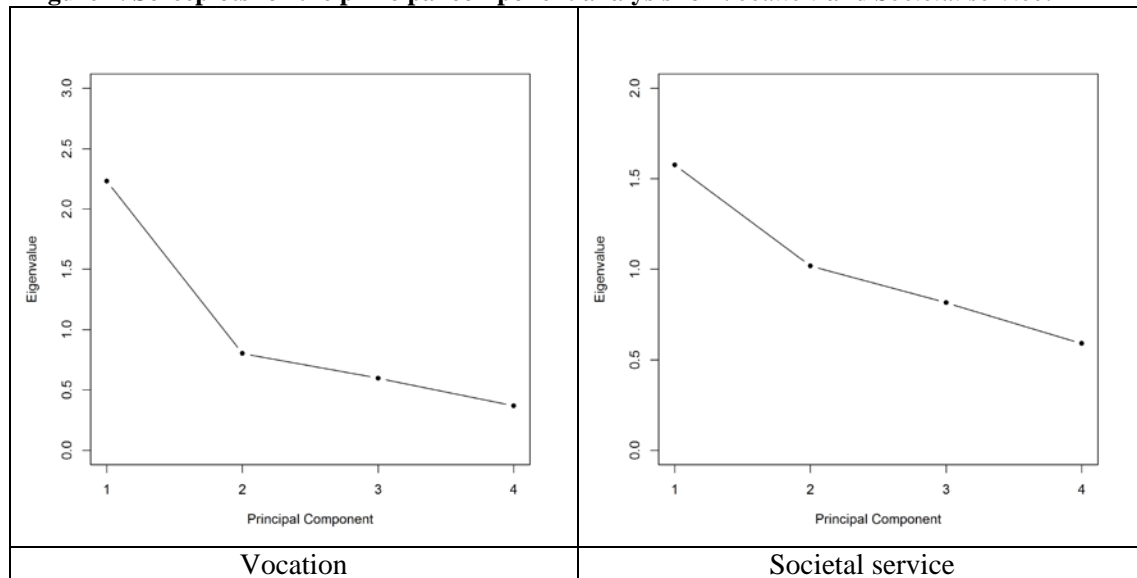
	Total Sample	Non- entrepreneurs	Entrepreneurs	p-value for difference
<i>Dependent variables</i>				
Vocation 1	3.01 (1.03)	2.97 (1.02)	3.16 (1.07)	0.061
Vocation 2	3.55 (0.89)	3.50 (0.88)	3.75 (0.91)	0.002
Vocation 3	3.60 (0.80)	3.56 (0.80)	3.77 (0.78)	0.005
Vocation 4	3.21 (0.94)	3.16 (0.92)	3.40 (1.01)	0.001
Societal service 1	3.90 (0.95)	3.88 (0.97)	4.01 (0.85)	0.265
Societal service 2	2.54 (0.91)	2.54 (0.91)	2.55 (0.93)	0.812
Societal service 3	3.41 (0.76)	3.37 (0.77)	3.56 (0.73)	0.007
Societal service 4	3.99 (0.62)	3.96 (0.63)	4.10 (0.57)	0.016
<i>Independent variables</i>				
Entrepreneur	0.20 (0.40)	0.00 (0.00)	1.00 (0.00)	-
Sex	0.75 (0.43)	0.72 (0.45)	0.91 (0.29)	<0.001
Birth year	1969.96 (13.34)	1970.25 (13.49)	1968.81 (12.73)	0.288
Married	0.80 (0.40)	0.78 (0.42)	0.91 (0.28)	<0.001
Secondary education	0.17 (0.38)	0.18 (0.39)	0.13 (0.33)	0.119
Vocational education	0.39 (0.49)	0.40 (0.49)	0.36 (0.48)	0.301
Higher education	0.39 (0.49)	0.37 (0.48)	0.49 (0.50)	0.008
Other education	0.04 (0.20)	0.05 (0.21)	0.03 (0.16)	0.296
Children < 12	0.95 (1.49)	0.87 (1.47)	1.28 (1.56)	<0.001
Children \geq 12	2.02 (2.27)	1.91 (2.29)	2.44 (2.13)	0.001
Entrepreneurial parent	0.37 (0.48)	0.36 (0.48)	0.42 (0.49)	0.198
Skills	0.45 (0.50)	0.35 (0.48)	0.88 (0.33)	<0.001
Fear	0.56 (0.50)	0.62 (0.49)	0.31 (0.46)	<0.001
Risk	3.13 (0.98)	2.97 (0.96)	3.79 (0.80)	<0.001
Locus	2.73 (0.96)	2.72 (0.95)	2.78 (1.01)	0.433
<i>N</i>	756	607	149	

Table 3. Correlations of included variables in the analysis. Spearman correlations are reported, and * indicates $p < 0.05$.

	Entrepreneur	Vocation 1	Vocation 2	Vocation 3	Vocation 4	Societal service 1	Societal service 2	Societal service 3	Societal service 4	Sex	Birth year	Married	Secondary education	Vocational education	Higher education	Other education	Children < 12	Children ≥ 12	Entrepreneurial parent	Skills	Fear	Risk	Locus		
Entrepreneur	1.00																								
Vocation 1	0.07	1.00																							
Vocation 2	0.11*	0.33*	1.00																						
Vocation 3	0.10*	0.37*	0.58*	1.00																					
Vocation 4	0.12*	0.20*	0.38*	0.43*	1.00																				
Societal service 1	0.04	0.07*	0.13*	0.17*	0.21*	1.00																			
Societal service 2	0.01	0.08*	0.07	0.12*	0.18*	0.15*	1.00																		
Societal service 3	0.10*	0.22*	0.24*	0.32*	0.16*	0.10*	0.16*	1.00																	
Societal service 4	0.09*	0.21*	0.34*	0.40*	0.21*	0.21*	0.07	0.36*	1.00																
Sex	0.17*	0.17*	0.02	0.08*	0.00	0.01	0.08*	0.11*	0.00	1.00															
Birth year	-0.04	0.00	0.10*	-0.07	-0.05	0.06	0.08*	-0.02	-0.01	0.18*	1.00														
Married	0.14*	0.12*	0.08*	0.00	0.00	-0.03	0.11*	-0.05	-0.01	0.59*	0.23*	1.00													
Secondary education	-0.06	-0.02	0.03	-0.05	0.05	0.00	0.06	0.11*	-0.01	0.03	0.13*	0.03	1.00												
Vocational education	-0.04	-0.05	0.08*	0.02	-0.01	-0.05	0.08*	-0.02	-0.02	0.12*	0.08*	0.09*	0.36*	1.00											
Higher education	0.10*	0.07	0.05	0.04	-0.04	0.05	0.03	0.14*	0.05	0.09*	0.05	0.07	0.37*	0.65*	1.00										
Other education	-0.04	0.00	0.01	0.07*	0.01	-0.02	0.00	0.08*	-0.05	0.01	-0.07	0.00	0.10*	0.17*	0.17*	1.00									
Children < 12	0.13*	-0.06	0.04	0.00	0.02	0.00	0.04	0.01	0.02	0.32*	0.27*	0.36*	0.09*	0.00	0.09*	-0.05	1.00								
Children ≥ 12	0.12*	-0.07	0.11*	0.03	0.05	0.09*	0.08*	-0.04	-0.02	0.34*	0.61*	0.44*	0.12*	0.09*	-0.03	0.08*	0.14*	1.00							
Entrepreneurial parent	0.05	0.06	0.03	0.02	0.07	0.03	0.06	0.11*	0.03	0.08*	0.09*	-0.05	-0.01	-0.06	0.07	-0.01	0.11*	0.05	1.00						
Skills	0.42*	-0.01	0.07	0.04	0.03	-0.02	0.02	0.10*	0.00	0.30*	-0.01	0.25*	0.08*	0.09*	0.18*	0.07*	0.21*	0.07	0.14*	1.00					
Fear	0.25*	-0.02	-0.07	-0.04	-0.05	0.10*	-0.03	0.08*	-0.04	-0.04	-0.03	-0.02	-0.02	0.08*	-0.05	-0.02	0.08*	0.00	-0.05	0.28*	1.00				
Risk	0.33*	0.05	0.11*	0.08*	0.08*	-0.04	0.06	0.12*	0.09*	0.19*	-0.04	0.11*	0.08*	-0.02	0.07*	0.02	0.09*	0.11*	0.06	0.38*	0.36*	1.00			
Locus	0.03	0.06	0.00	-0.05	-0.01	-0.07	0.09*	0.02	-0.07	0.01	-0.05	-0.03	-0.02	0.01	-0.01	0.05	0.07*	0.02	-0.05	0.07	-0.02	0.14*	1.00		

Table 4. Principal component analysis results for *Vocation* and *Societal service*.

Component	1	2	3	4
<i>Vocation</i>				
Eigenvalue	2.23	0.80	0.60	0.37
Variance explained	0.56	0.20	0.15	0.09
<i>Societal service</i>				
Eigenvalue	1.58	1.01	0.82	0.59
Variance explained	0.39	0.26	0.20	0.15

Figure 1. Screeplots for the principal component analysis for *Vocation* and *Societal service*.**Table 5. Logit regression results explaining *Entrepreneurship*. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.**

	Vocation	Societal service	Vocation & Societal service
Vocation	0.18** (0.08)		0.14* (0.08)
Societal Service		0.18** (0.09)	0.11 (0.10)
Sex	0.13 (0.40)	0.07 (0.41)	0.09 (0.41)
Birth year	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Married	-0.07 (0.44)	-0.12 (0.44)	-0.07 (0.44)
Secondary education	Base category	Base category	Base category
Vocational education	0.19 (0.34)	0.21 (0.34)	0.20 (0.34)
Higher education	0.19 (0.33)	0.21 (0.33)	0.18 (0.33)
Other education	-0.37 (0.69)	-0.29 (0.68)	-0.34 (0.69)
Children < 12	0.06 (0.07)	0.07 (0.07)	0.07 (0.07)
Children \geq 12	0.10* (0.06)	0.12** (0.06)	0.11* (0.06)
Entrepreneurial parent	-0.15 (0.23)	-0.16 (0.23)	-0.17 (0.23)
Skills	2.14*** (0.30)	2.17*** (0.30)	2.16*** (0.30)
Fear	-0.66*** (0.23)	-0.63*** (0.23)	-0.64*** (0.23)
Risk	0.59*** (0.14)	0.60*** (0.14)	0.58*** (0.14)
Locus	-0.06 (0.11)	-0.07 (0.11)	-0.07 (0.11)
Constant	-1.08 (20.82)	-2.62 (20.84)	-2.31 (20.89)
<i>N</i>	756	756	756
χ^2	203.26	201.65	204.60
<i>p</i> -value	<0.001	<0.001	<0.001
Pseudo R^2	0.271	0.269	0.273

ERIM Report Series <i>Research in Management</i>	
ERIM Report Series reference number	ERS-2013-015-STR
Date of publication	2013-10-10
Version	10-10-2013
Number of pages	22
Persistent URL for paper	http://hdl.handle.net/1765/41554
Email address corresponding author	nrietveld@ese.eur.nl
Address	Erasmus Research Institute of Management (ERIM) RSM Erasmus University / Erasmus School of Economics Erasmus University Rotterdam PO Box 1738 3000 DR Rotterdam, The Netherlands Phone: +31104081182 Fax: +31104089640 Email: info@erim.eur.nl Internet: http://www.erim.eur.nl
Availability	The ERIM Report Series is distributed through the following platforms: RePub, the EUR institutional repository Social Science Research Network (SSRN) Research Papers in Economics (RePEc)
Classifications	The electronic versions of the papers in the ERIM Report Series contain bibliographic metadata from the following classification systems: Library of Congress Classification (LCC) Journal of Economic Literature (JEL) ACM Computing Classification System Inspec Classification Scheme (ICS)