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Religion in European Countries 2002-2018: Is There a Happiness Advantage?

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Abstract:

There is no convergence in empirical literature about the effects of religion on subjective wellbeing although religious denomination is increasingly used as an important explanation of different developments in modern societies. In this study it is assessed whether religious denomination affects happiness through application of the European Social Survey that covers 2002-2018. Descriptive results indicate a advantage for Protestants. Once we control background factors, this advantage is considerably reduced. Although the advantage is statistically significant it has a low magnitude, and the happiness across religions is practically the same. In contrast, there is a huge effect of the degree of religiosity, while prayer load and the frequency of visiting places of worship are negligible. Results are generally stable across survey years and countries.

Keywords: Europe, European Social Survey, happiness, religion.

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1. Introduction and Theory:

With the increased globalization and large flows of immigrants, religious denomination has gained as an explanation for structural problems or solutions faced by societies. Regarding the relationship between religion and subjective wellbeing, different theories have been put forward, but empirical evidence so far has not reached consensus on how religion affects subjective wellbeing. Among the theories are, that religious involvement insures individuals' subjective wellbeing (SWB) against stressful events (divorce, unemployment, death of loved ones, etc.) that almost necessarily occurs during a life span, and it is explained by religious persons' ability to recover due to favourable personalities in terms of value systems, attitudes, and norms (Maltby & Day, 2003). Religious people can also be a part of religious networks that can be helpful during times of adverse instances, and more concretely be helpful when individuals are liquidity constrained at times of income or business losses (Dehejia, DeLeire & Luttmer, 2007). Also one should not underestimate the peace of mind when the complexities of the world is systemized and made meaningful through belief systems. In short, religion provides meaning in life and also operates as an effective coping mechanism (Pargament & Park, 1997; Park, 2005). Religion is a multidimensional phenomenon, and broadly can include religious denomination, the degree of religiosity regardless of religious denomination, including frequency of prayer, and formal and informal religious practices. For further and other explanations, see Steiner, Leinert, and Frey (2010) for an extensive review of the relation between economics and religion and SWB, and Ellison (1991) regarding sociological theories for religion and SWB. The economics science has a particular and somewhat explicit link to SWB since contrary to popular perception one important starting point in economic theory regarding individual optimization involves the concept of utility, e.g., the pleasure derived from consumption, rather than income per se. According to Diener, Suh, Lucas, and Smith (1999) and Sandvik, Diener, and Seidlitz (1993) respondents' answers to happiness or life satisfaction questions are reliable measures of experienced utility. On an operational level the link breaks down a little since economic theory (see any introduction to microeconomics, e.g., Salvatore, 2003) usually assumes that utility is not comparable between individuals, while SWB

analysts happily are ready to make interpersonal comparisons of SWB, and in practice treat the ordinal SWB measure as a cardinal measure of SWB. But, in economics many results are obtained using the weaker assumption requiring utility to be only ordinal, which means we are back at how SWB is actually measured in surveys (including in the European Social Survey; ESS), for example as an ordinal measure (see Method section). Empirically, the disagreement on effects of religion on SWB is found in numerous studies (e.g., Clark & Lelkes, 2006; Eichhorn, 2012; Ellison, 1991; Mochon, Norton, & Ariely, 2008; Stark & Maier, 2008).

Another strand of the literature on religion and happiness investigates whether there is a difference in the reported wellbeing depending on denomination, which is justified by the differing value system and institutional structures of churches. The assumption is that Protestants derive greater utility due to a higher autonomy in their belief, due to the collective identity and due to better social integration (Steiner et al., 2010). Both in the present study, because of data limitations, but also most frequently in other studies, denomination is usually in terms of broad religious groups, which means likely sub-group differences are disregarded. For example, one could expect SWB differences among Protestant sub-denominations like Lutheranism, Reformed churches, and Pentecostalism, etc. In terms of empirical evidence some studies points to higher SWB among Protestants or Christians (Ellison, 1991; Steiner et al., 2010; Tao, 2008), others point to lack of an effect in western (Greene & Yoon, 2004) as well as eastern Europe (Hayo, 2007), while Popova (2014) and Lelkes (2006) finds that religion insures against adverse effect of economic reforms in transition countries. None of Greene and Yoon (2004), Hayo (2007), and Tao (2008) uses a linear regression (OLS) approach but instead relies on ordered logit models with varying number of levels on the SWB Scale. In contrast, the Steiner et al.'s (2010) study for Switzerland in 2007 applies an OLS using 0-10 scale of SWB (life satisfaction). The Steiner approach is also used here, but with multiple years, various countries and background variables, and a higher number of religious denominations. Fidrmuc and Tunali (2015) also utilize the ESS, but for the years 2000-2008, while our data also includes the two rounds after 2008, e.g., after the financial and economic crises. Their analysis is comparable to this study since the

same happiness measure and also OLS is applied in addition to the main regressions using an ordered logit model. They conclude that happiness is higher for people belonging to an organized religion - Protestants, Roman Catholics, Jewish, and Muslims, but not Eastern Orthodox - when excluding the religiosity variable. This effect is reversed to significantly negative happiness effects for several organized religions (Protestants, Roman Catholics, Eastern Orthodox, and Muslims) once they control for religiosity. The contribution of this paper is to reduce bias in estimates by including controls for survey years, countries, and other religions such as Other Christian, Eastern religions, Other non-Christian, No religion, and Missing religion. Furthermore, in this study ESS variables are not entered as interval variables (except for the response variable SWB), which would have meant that observations with invalid values (missing, don't know, will not answer, etc.) have to be discarded. The approach pursued here also adds in terms of examining the sensitivity of religious denomination results over time and across nations.

2. Method

Sample

The primary data source is the bi-annual European Social Survey (ESS) covering the years from 2002 to 2018, representing all available nine completed survey rounds (ESS 2020). A few macro variables (purchasing power adjusted GDP per capita, relative GDP change, the Gini coefficient, and the poverty rate) were obtained from Eurostat (Eurostat 2015). A subset of eight-teen countries was selected for analyses since a survey for these countries was carried out in at least seven rounds (average is 8.3 rounds). A closer investigation of the data showed that either information was missing for a whole survey year or there was no information about religion for some years, and thus a survey form a year nearby was used in order to reduce bias in estimation averages at the country level (across religions) or at the religion level (across countries), see Box 1.

Box 1. "Imputation" of unavailable variables in order to have sensible averages across countries and across religions.

	Missing year	Year used instead
Survey unavailable:		
CZ	2006	2004
DK	2016	2014
DK	2018	2014
EE	2002	2004
ES	2018	2016
PT	2018	2016
SE	2018	2016
Religion questions unavailable:		
FI	2004	2006
FR	2002	2006
FR	2004	2006
GB	2004	2002
GB	2006	2008
HU	2004	2006

Note: See Table 1 for full country names.

Explanation: For instance, Denmark was not surveyed in 2016 and 2018, and thus the latest survey (2014) was used instead of those two years. Also, for instance, a survey was available for Finland in 2004, but there was no information about religion, and thus the 2006 survey was used instead for that year.

Table 1. Sample size by year and country. 2002-2018.

		2002	2004	2006	2008	2010	2012	2014	2016	2018	Total	Average
BE	Belgium	1,891	1,775	1,797	1,757	1,704	1,869	1,767	1,765	1,764	16,089	1,788
CH	Switzerland	2,036	2,135	1,800	1,817	1,506	1,489	1,532	1,523	1,541	15,379	1,709
CZ	Czech Rep.	1,348	2,996	2,996	2,002	2,367	1,963	2,119	2,263	2,371	20,425	2,269
DE	Germany	2,913	2,858	2,906	2,739	3,013	2,955	3,040	2,849	2,355	25,628	2,848
DK	Denmark	1,489	1,481	1,490	1,603	1,571	1,645	1,496	1,496	1,496	13,767	1,530
EE	Estonia	1,978	1,978	1,484	1,644	1,792	2,369	2,049	2,014	1,904	17,212	1,912
ES	Spain	1,703	1,655	1,874	2,570	1,884	1,885	1,923	1,953	1,953	17,400	1,933
FI	Finland	1,995	1,894	1,894	2,191	1,877	2,193	2,086	1,922	1,752	17,804	1,978
FR	France	1,982	1,982	1,982	2,071	1,726	1,968	1,914	2,068	2,001	17,694	1,966
GB	Great Britain	2,051	2,352	2,352	2,352	2,418	2,277	2,260	1,958	2,199	20,219	2,247
HU	Hungary	1,678	1,508	1,508	1,535	1,553	2,007	1,691	1,610	1,687	14,777	1,642
IE	Ireland	2,033	2,274	1,794	1,764	2,570	2,621	2,386	2,756	2,213	20,411	2,268
NL	Netherlands	2,359	1,878	1,885	1,776	1,826	1,842	1,919	1,678	1,671	16,834	1,870
NO	Norway	2,034	1,755	1,748	1,546	1,548	1,619	1,435	1,544	1,403	14,632	1,626
PL	Poland	2,101	1,711	1,715	1,601	1,680	1,875	1,598	1,653	1,482	15,416	1,713
PT	Portugal	1,501	2,048	2,174	2,361	2,142	2,142	1,260	1,267	1,267	16,162	1,796
SE	Sweden	1,989	1,934	1,920	1,827	1,495	1,846	1,785	1,542	1,542	15,880	1,764
SI	Slovenia	1,510	1,433	1,466	1,280	1,393	1,254	1,220	1,302	1,314	12,172	1,352
Total		34,591	35,647	34,785	34,436	34,065	35,819	33,480	33,163	31,915	307,901	
Average		1,922	1,980	1,933	1,913	1,893	1,990	1,860	1,842	1,773		1,901

Source: Own calculations based on ESS rounds 1 to 9 representing bi-annual years 2002 to 2018 (ESS 2020).

An overview of sample sizes is displayed in Table 1. Each survey round varied with between 1,260 and 3,040 respondents, with an average of 1,901 respondents. Any statistical modelling was conducted at a more aggregated level, e.g., years (covering all countries) and countries (covering all years). The yearly sample sizes were 33,933 - 37,831 with an average of 36,221 per year, which shows very small sample size variation over time. In contrast the country sample sizes showed much greater variation starting from 12,172 (Slovenia) to 25,628 (Germany), and with an average of 17,106 respondents per country. In any case we see large sample sizes in absolute terms. The total sample size is 307,901.

Variable definitions:

Happiness is defined using question "C1" phrased as: "Taking all things together, how happy would you say you are? Please use this card". The card refers to Card 17 with the possible answers listed as: "00 01 02 03 04 05 06 07 08 09 10 88". The answer 00 is denoted as "Extremely unhappy" on the card and 10 is denoted as "Extremely happy", while 88 is denoted as "Don't know". The number 00 and 10 together with their labels are further away from their neighbour compared to the internal distance between 01 to 09, which means visually the distance to the two extremes is larger than between the other happiness scores, which is a (further) indication that the end values (00 and 10) are indeed extreme happiness values. In sum, an ordinal eleven-point scale from 0 - 10 is used for happiness. Although this is an ordinal variable it is treated as an interval variable in this study since this gives a much simpler and intuitive representation of data while at the same time being a good approximation (Ferrer-i-Carbonell & Frijters, 2004).

The central control variables measure different issues related to religion. First of all, there is religion or denomination, where the possible answers are: "Roman Catholic", "Protestant", "Eastern Orthodox", "Other Christian denomination", "Jewish", "Islamic", "Eastern religions", and "Other non-Christian" religions. The religiosity of respondents is measured on

an eleven-point scale, where 00 represents "Not at all religious" and 10 represents "Very religious" (the exact question is "Regardless of whether you belong to a particular religion, how religious would you say you are? Please use this card"). Information on praying and services attendance intensity is obtained through the question "Apart from when you are at religious services, how often, if at all, do you pray? Please use this card" and the question "Apart from special occasions such as weddings and funerals, about how often do you attend religious services nowadays? Please use this card". The possible answers are listed in descending order: "Every day", "More than once a week", "Once a week", "At least once a month", "Only on special holy days", "Less often", "Never", and "Don't know".

Background control variables includes (number of categories): gender (2), age (7), household size (6), whether having children (2), marital status (5), educational level (5), health (5), income sufficiency (4), unemployment (2), and loneliness (2). Marital status was aggregated for the last four rounds (2006 - 2018) in order to make it comparable to the initial two rounds (2002 – 2004). Similarly, education was also recoded in some years to make it comparable over time. Respondents are classified as unemployed regardless of whether or not they were looking for a job during the past seven days. Lonely people are defined as those who never or less than monthly socially meet with friends, relatives or colleagues, and who much less or less than most take part in social activities compared to others of the same age.

In addition to the individual and household level variables, four macroeconomic indicators were included: real change in per capita GDP, the PPS adjusted GDP per capita, the Gini coefficient, and the poverty rate (60 % of contemporaneous national median poverty line). Finally, year and country indicators were included when appropriate, e.g., when pooling data across years and/or across nations.

All individual/family variables were transformed into 0/1 dummy variables. For nearly all these variables a missing category was almost always created in order to avoid leaving out an observation based on one or more missing variables. The missing category includes missing observations in the data sets as well as people refusing to answer or who

did not know the answer. No missing category was created for children, loneliness or unemployment. In contrast, all four macroeconomic indicators were entered as interval variables. A few missing observations regarding the macro indicators were imputed (details available from the author upon request).

An overview over the entire set of variables is displayed in Table 2. The respondents of this data set for the European Union / European Economic Community countries (EU/EEC) for nine years are characterized by a large fraction without a religion (unweighted 49 % in 2018), and primarily Roman Catholic (29 %) or Protestant (16 %) otherwise. Nevertheless, 81 % are religious to some degree, but not so often by attending religious services apart from special holy days (12 % attends at least weekly) or by praying (29 % prays at least weekly). There is a nearly equal distribution across genders in the sample. The modal age group shifts from 31-40 years (18.4 %) in 2002 to 51-60 years (17.1 %) in 2018 reflecting the ageing population in Europe. The most common household size is two persons (36 %) and having children is widespread (34 %). Half of the sample is married while 31 % have never married. In terms of educational attainment upper secondary school is the largest group, but tertiary education has gained momentum over the analysed years. Nearly half of the respondents report good health, while about a quarter report very good respectively fair health. A very large fraction's feelings about present household income is positive (37 % is living comfortably and nearly half is coping), and the fraction with difficulties has decreased 2.3 percentage points from 2002 to 2018, and similarly unemployment has decreased, which is a reflection that the financial crisis back in around 2008 was well over. Loneliness only increased modestly.

Table 2. Variable averages. Unweighted. 2002, 2010 and 2018.

		2002	2010	2018
Response variable	Happiness	7.36	7.35	7.62
Religion/ denomination	Roman Catholic	0.330	0.327	0.291
	Protestant	0.196	0.172	0.155
	Eastern Orthodox	0.010	0.011	0.016
	Other Christian	0.014	0.013	0.013
	Jewish	0.001	0.001	0.001
	Islamic	0.010	0.016	0.022
	Eastern religions	0.003	0.004	0.005
	.Other non-Chr	0.003	0.003	0.004
	No religion	0.428	0.449	0.486
	Missing religion	0.006	0.005	0.007
Religiousity	0	0.132	0.166	0.211
	1	0.056	0.068	0.069
	2	0.076	0.078	0.077
	3	0.089	0.086	0.077
	4	0.068	0.070	0.060
	5	0.179	0.162	0.139
	6	0.099	0.093	0.092
	7	0.114	0.105	0.097
	8	0.097	0.089	0.088

	9	0.037	0.037	0.034
	10	0.047	0.040	0.050
Praying frequency	Never	0.384	0.424	0.457
	Less often	0.173	0.160	0.157
	Special holy days	0.035	0.040	0.037
	At least monthly	0.055	0.054	0.050
	Once a week	0.055	0.055	0.052
	More than weekly	0.079	0.071	0.064
	Every day	0.206	0.186	0.170
Attending religious services	Never	0.348	0.384	0.407
	Less often	0.211	0.199	0.203
	Special holy days	0.191	0.187	0.184
	At least monthly	0.091	0.088	0.081
	Once a week	0.124	0.109	0.091
	More than weekly	0.026	0.023	0.022
	Every day	0.006	0.007	0.006
	Missing	0	0	0
Year	2002	1	0	0

	2004	0	0	0
	2006	0	0	0
	2008	0	0	0
	2010	0	1	0
	2012	0	0	0
	2014	0	0	0
	2016	0	0	0
	2018	0	0	1
Country	Belgium	0.055	0.050	0.055
	Switzerland	0.059	0.044	0.048
	.Czech Rep	0.039	0.069	0.074
	Germany	0.084	0.088	0.074
	Denmark	0.043	0.046	0.047
	Estonia	0.057	0.053	0.060
	Spain	0.049	0.055	0.061
	Finland	0.058	0.055	0.055
	France	0.057	0.051	0.063
	Great Britain	0.059	0.071	0.069
	Hungary	0.049	0.046	0.053
	Ireland	0.059	0.075	0.069
	Netherlands	0.068	0.054	0.052
	Norway	0.059	0.045	0.044
	Poland	0.061	0.049	0.046
	Portugal	0.043	0.063	0.040
	Sweden	0.058	0.044	0.048

	Slovenia	0.044	0.041	0.041
Macroeconomy	GDP pc, PPS	22.288	27.412	33.560
	% ,GDP change	1.773	1.922	2.570
	Gini	28.463	28.545	28.664
	Poverty	14.098	14.528	15.269
Gender	Male	0.476	0.473	0.476
	Female	0.523	0.527	0.524
	Missing	0.001	0.000	0.000
Age group	-20	0.078	0.076	0.062
	30 - 21	0.139	0.138	0.122
	40 - 31	0.184	0.158	0.152
	50 - 41	0.178	0.174	0.165
	60 - 51	0.166	0.167	0.171
	70 - 61	0.128	0.150	0.168
	- 71	0.120	0.136	0.155
	Missing	0.008	0.001	0.004
Household size	1	0.184	0.202	0.210
	2	0.318	0.339	0.358
	3	0.183	0.183	0.175
	4	0.193	0.177	0.172
	5	0.081	0.067	0.058
	6-	0.039	0.030	0.026
	Missing	0.001	0.001	0.002
Children in household	No	0.299	0.318	0.315

	Yes	0.294	0.317	0.342
	Missing	0.407	0.365	0.343
Marital status	Married	0.501	0.471	0.491
	Separated	0.015	0.010	0.018
	Divorced	0.067	0.087	0.084
	(Widow(er	0.087	0.081	0.075
	Never married	0.269	0.290	0.308
	Missing	0.061	0.061	0.024
Education	Primary	0.141	0.138	0.087
	.Lower secon	0.206	0.168	0.137
	.Upper secon	0.400	0.372	0.370
	.Post seconda	0.020	0.055	0.064
	Tertiary	0.227	0.261	0.335
	Missing	0.006	0.005	0.005
Health	Very good	0.214	0.227	0.238
	Good	0.440	0.426	0.438
	Fair	0.262	0.262	0.251
	Bad	0.070	0.071	0.060
	Very bad	0.015	0.014	0.013
	Missing	0.001	0.001	0.001
Feelings about income	Comfortable	0.321	0.307	0.370
	Coping	0.467	0.457	0.445
	Difficult	0.160	0.165	0.137
	Very difficult	0.042	0.062	0.035

Labour market	Unemployed	0.056	0.071	0.046
Socialisation	Loneliness	0.064	0.071	0.074

Source: Same as Table 1.

Although there was some change in some variables during the survey period 2002-2018, one of the most striking features of the data set is a very high degree of lack of change of characteristics. One prime example is the response variable happiness, which only changed 0.26 points from 7.36 to 7.62. In fact, the year to year correlation coefficient between the averages is above 0.99. And even for the two series ten years apart presented in Table 2, we see a correlation of 0.981. When excluding the year dummies we are even closer to perfect correlation. This does not at all imply that peoples' circumstances are constant over time, but at the aggregate level many of these changes at the individual level nets out.

2.3. Missing observations:

As mentioned in the previous section nearly all control variables' were created such that it was not necessary to exclude any observations, e.g., a missing category was formed. Because we have chosen to include subjective wellbeing as an interval variable, we are not able to similarly create a missing category for happiness. Individuals with missing information on happiness are therefore excluded from the analysis. This does not represent a problem because it only affects 1,230 respondents or .40 % of the original sample containing 309,131 observations (307,901 used in estimations). The distribution of the missing observations across countries is nevertheless briefly presented in the next section.

2.4. Regression approach:

Since happiness is an ordinal variable the theoretically correct statistical model is the ordered logit model when we disregard the "don't know" and "missing" categories. Nevertheless, we here apply the simpler ordinary least squares model since it has a reasonable fit (Ferrer-i-Carbonell & Frijters 2004). The OLS regressions are conducted with all years and countries pooled, and then regressions are conducted for each year separately (pooling all countries) and for each country separately (pooling all years).

3. Results:

3.1. Descriptive measures:

Regardless of religion and regardless of whether or not belonging to a religion or denomination, the modal self-reported happiness level is always 8, and this is the single happiness level most often chosen by any religious disaggregation (Table 3). Protestants are particularly inclined to this happiness level (31.6 %), while people with the Islamic faith are less so (25.6 %). A peculiarity is that the happiness distribution is often bimodal with the other mode being the happiness level 5. This level is probably "overrepresented" in the sense that people without firm sense about their happiness level just chose something "easy in between", which is the round number 5.

Table 3. Religions distribution across the happiness scale and the religion premium. All countries, 2002-2018. %.

	Roman Catholic	Prote-stant	Eastern Orthodox	Other Christian	Jewish	Islamic	Eastern religions	Other non-Chr.	No religion	No infor-mation	Total
Extremely unhappy	0.5	0.3	0.8	1.0	0.0	0.6	0.2	0.6	0.4	0.7	0.4
1	0.4	0.4	0.6	0.7	0.0	0.4	0.0	0.7	0.4	0.5	0.4
2	1.1	0.7	2.0	1.1	3.7	1.2	0.7	1.8	1.1	1.2	1.0
3	2.0	1.6	2.5	2.2	2.5	3.0	2.1	3.1	2.1	3.2	2.0
4	2.6	2.0	2.8	2.0	2.4	2.5	2.1	2.4	2.8	2.4	2.6
5	10.2	6.0	9.2	7.1	12.5	9.5	7.6	8.0	8.8	12.5	8.9
6	9.0	6.1	7.9	5.9	6.2	9.0	8.6	9.1	8.1	10.8	8.2
7	19.0	16.3	17.8	17.2	18.1	16.9	24.0	15.2	19.4	19.3	18.7
8	28.7	31.6	29.0	29.6	32.4	25.6	27.3	29.6	30.3	26.0	29.7
9	15.1	21.8	16.5	19.1	10.5	15.2	16.0	12.3	16.6	10.5	16.8
Extremely happy	11.0	13.0	10.8	13.7	10.0	15.9	11.2	17.1	9.8	9.2	11.0
Refusal	0.1	0.1	0.0	0.0	1.0	0.0	0.0	0.0	0.1	1.0	0.1
Don't know	0.3	0.1	0.1	0.5	0.7	0.3	0.2	0.0	0.2	1.4	0.2
No answer	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.1
Total	100	100	100	100	100	100	100	100	100	100	100
Average happiness	7.35	7.76	7.31	7.58	7.17	7.44	7.50	7.43	7.40	7.05	7.44
Religion premium	-0.05	0.36	-0.09	0.18	-0.23	0.04	0.10	0.03	0	-0.35	0.04
Protestantism premium	0.41	0	0.45	0.18	0.59	0.32	0.26	0.33	0.36	0.71	0.32

Source: Same as Table 1.

At the bottom of the table an average happiness level is calculated for people who gave a valid answer, e.g., gave an answer between 0 and 10. The average happiness level is 7.44, which is close to the happiness level

reported by people without a religion (7.40). A first attempt to estimate the religion effect is thus any excess happiness compared to this happiness level (7.40), and a religion premium as reported in the second to last row of Table 3. A positive religion premium is, to a varying degree, seen for Protestants (.36), other Christians (.18), and Eastern religions (0.10), and to a very small extent Islamic and other non-Christians (0.04 and 0.03 respectively). The remaining religion groups have a lower happiness level, e.g., no or rather a negative premium in the range 0.05 - 0.23 (Roman Catholic respectively Jewish at the two ends). This religion premium distribution means that Protestants reports the highest happiness level (7.76). The excess happiness for Protestants is .41 compared to the largest religion in the data set (Roman Catholic) and even larger (.59) compared to smallest religion in data set (Jewish).

For the other available religion variables, we see the happiness pattern presented in Table 4. Low to middle religiousness levels leaves happiness practically unaffected (7.31 – 7.37), while higher religiousness is associated with higher happiness (7.48 – 7.70). Similarly, frequent visits to attend religious services is associated with higher happiness, while there is a disconnect between praying intensity and happiness.

Table 4. Happiness by religious practice. All countries, 2002-2018. Average.

Religiousity:		Praying:		Attending religious service:	
Not at all religious	7.37	Every day	7.44	Every day	7.65
1	7.37	More than once a week	7.41	More than once a week	7.61
2	7.37	Once a week	7.46	Once a week	7.43
3	7.31	At least once a month	7.48	At least once a month	7.48
4	7.37	Only on special holy days	7.33	Only on special holy days	7.51
5	7.48	Less often	7.47	Less often	7.46
6	7.54	Never	7.45	Never	7.39
7	7.61				
8	7.68				
9	7.70				
Very religious	6.85				
Refusal	6.85		7.09		6.74
Don't know	7.19		7.31		7.18
No answer	6.98		6.89		6.78
Total	7.44		7.44		7.44

Source: Same as Table 1.

In general, the happiness level show only small variation over time (7.29 - 7.52), but it varies considerably across nations with Danes (8.24 - 8.38) at the top and Hungarians (5.94 - 6.81) at the bottom.

The huge happiness variation across countries and possible variation across background variables (mentioned in Table 2), makes the religion premium (displayed in Table 3) uncertain. For example, it is necessary to control for background factors in order to investigate whether any religion premium is present after controlling for changes in other factors than those related to religion. This happens in the next section where a wider set of happiness determinants will be included using a regression approach.

Table 5. Happiness by year and country. Average.

	2002	2004	2006	2008	2010	2012	2014	2016	2018	Total
BE	7.76	7.75	7.67	7.65	7.83	7.69	7.75	7.75	7.81	7.74
CH	8.05	8.10	8.11	7.98	8.06	8.08	8.09	8.18	8.18	8.10
CZ	6.96	6.95	6.95	6.93	6.70	6.77	6.96	6.96	7.06	6.92
DE	7.23	7.07	7.07	7.27	7.45	7.71	7.66	7.82	7.82	7.46
DK	8.32	8.31	8.33	8.37	8.28	8.38	8.24	8.24	8.24	8.30
EE	6.27	6.27	6.78	6.70	6.91	6.82	6.94	7.24	7.33	6.80
ES	7.48	7.33	7.64	7.69	7.57	7.59	7.43	7.73	7.73	7.58
FI	8.03	8.00	8.00	8.02	7.96	8.09	8.04	8.15	8.18	8.05
FR	7.26	7.26	7.26	7.23	7.13	7.29	7.38	7.40	7.37	7.29
GB	7.62	7.52	7.52	7.52	7.50	7.56	7.58	7.68	7.65	7.57
HU	6.32	6.40	6.40	5.94	6.42	6.11	6.37	6.81	6.69	6.38
IE	7.88	7.98	7.77	7.54	7.00	7.14	7.31	7.57	7.75	7.54
NL	7.86	7.79	7.72	7.81	7.88	7.95	7.86	7.96	8.02	7.87
NO	7.88	7.90	7.93	7.98	8.01	8.16	7.98	8.11	7.99	8.00
PL	6.43	6.72	6.96	7.15	7.31	7.33	7.25	7.48	7.26	7.10
PT	6.97	6.54	6.55	6.62	6.71	6.49	6.89	7.41	7.41	6.84
SE	7.89	7.84	7.89	7.83	7.91	7.82	7.91	7.85	7.85	7.86
SI	6.93	7.18	7.24	7.23	7.28	7.26	7.07	7.47	7.62	7.26
Total	7.31	7.26	7.32	7.37	7.41	7.50	7.50	7.65	7.62	7.44

Source: Same as Table 1.

3.2. Regression estimates:

The importance of controlling for additional variables is illustrated in Table 6. An initial regression controlling for nothing else than whether persons belongs to a religion or not shows a positive and significant parameter (.096), e.g., there is a small positive effect of belonging to a religious community. Including all controls on the other hand gives an estimate of only .028, e.g., happiness is .028 points higher for people belonging to one of the eight mentioned religions compared to not belonging to a religion.

Table 6. Religion premiums via happiness regressions. All years and countries pooled.

Controls:	None	All	Year, country	Year, country, gender, age	Other religion related	All
Any religion	0.096***	0.028**				
Roman Catholic			0.068***	0.135***	0.017	0.010
Protestant			0.211***	0.279***	0.181***	0.078***
Eastern Orthodox			-0.223***	-0.198***	-0.307***	-0.093**
Other Christian			0.154***	0.179***	-0.066*	0.002
Jewish			-0.014	0.022	-0.099	-0.202*
Islamic			-0.067*	-0.161***	-0.389***	-0.140***
Eastern religions			0.038	0.013	-0.146**	-0.073
Other non-Chr.			-0.045	-0.051	-0.237***	-0.062
Missing religion	-0.350***	-0.123**	-0.163***	-0.136**	-0.193***	-0.128**
R^2	0.001	0.267	0.080	0.090	0.099	0.267
Adj. R^2	0.001	0.267	0.080	0.090	0.099	0.267
N	307901	307901	307901	307901	307901	307901

* p<0.05, ** p<0.01, *** p<0.001.

Source: Same as Table 1.

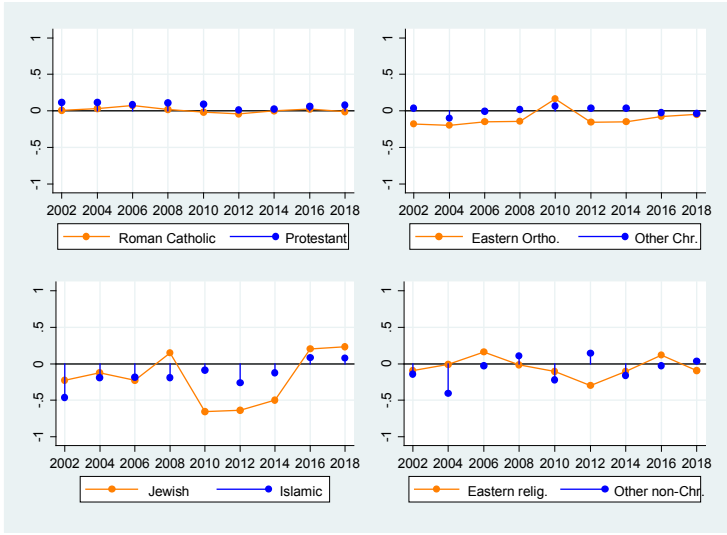
In the next set of regressions, the different religions enter the regressions separately. When we furthermore only control for year and country, there is a positive religion premium for Protestants (.21 points higher happiness compared to individuals without a religion), other Christians (.15), and Roman Catholics (0.07), while there is a negative religion premium for Eastern Orthodox (-0.22) and Islamic (-.07). The remaining religions have positive respectively negative premiums, but they are all insignificant.

When we control for gender and age, the significant parameters have a higher (absolute) magnitude (except for Eastern Orthodox and Other Christian). But interestingly, the initially three Christian (Roman Catholic, Protestant and Other Christian) denominations' religion positive premiums are reduced once taking into account other religion related controls (religiosity, and frequency of praying and attending religious services), and the premium for Roman Catholics even becomes insignificant, while the negative premium for Islamic becomes even more negative.

The full regression including all controls is displayed in the last column of Table 6. The only significant (positive) religion premium remaining is for Protestants (.08), while (Jewish (-.20), Islamic (-.14) and Eastern Orthodox (-0.09) have significant negative religion premiums. There is thus no religion premium associated with other types of Christianity (Roman Catholic and Other Christian), or other religions (Eastern Religion and Other non-Christian).

These regression results are temporally very stable regarding all religions (Figure 1), where the religion premium estimates from yearly regressions are displayed. The Jewish denomination seem to show some variation in the religion premium over the years, but the variation is not significant. Thus, an overall view for all countries shows that the positive religion for Protestants is positive and stable, while Jewish and Islamic have a stable negative religion premium.

Figure 1. Religion's happiness premium from regressions. By year. 2012-2018



Source: Same as Table 1.

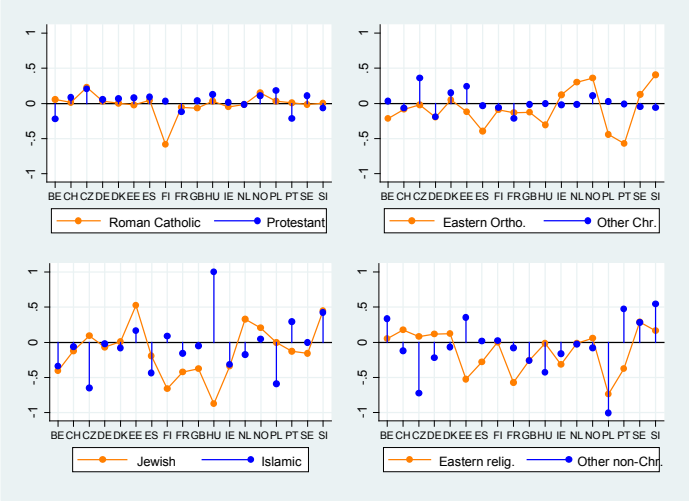
This temporal stability is somewhat also present when scrutinizing religion premiums across nations (Figure 2). And certainly there is not as much instability although sometimes large (positive/negative) religion premiums are present because these can all be traced back to small country-religion specific sample sizes as mentioned in the note to Figure 2. Nevertheless, some interesting deviations from the general picture are still present. For Protestants in Belgium we see a rather large negative religion premium (-.22), but this is statistically insignificant. While Eastern Orthodox usually has a negative premium, it is rather high and positive and significant in the Netherlands Slovenia, Netherlands and Norway (range .30 - .40). The somewhat high positive premiums for Jewish in the Estonia, Slovenia, Netherlands and Norway are insignificant. The high positive premiums for Islamic in Hungary, Slovenia and Portugal are all insignificant. The high positive premium for Eastern Religion in Switzerland (.42) is significant, which goes against the overall pattern of a negative religion premium for these religions. The few results going

against the overall picture is thus, that Eastern Orthodox in the Netherlands and Slovenia, and the Eastern Religions in Switzerland have a positive religion premium, while it was negative in general, thus people with those religions in these three countries have a significantly higher happiness level than the people without a religion in the countries.

There are many other variables in the regressions than those related to religion (available from the author upon request) though their effects will not be commented upon in detail, but generally many of the estimates resembles similar signs of parameter estimates as in previous studies (Fidrmuc & Tunali, 2015; Steiner et al., 2010).

The R2 is .27, which is higher than many studies in the area. Unfortunately, this determination coefficient cannot be compared to Fidrmuc and Tunali (2015) since they do not report it. In Steiner et al. (2010) the R2 is down at .08 - .09. There are issues with multicollinearity, but using the VIF to exclude variables such that all VIFs are below 5, we do not see major differences regarding the religious denomination variables (estimates available from author upon request).

Figure 2. Religion's happiness premium from regressions. By country. 2012-2018



Note: Sample sizes are particularly low, e.g. less than 10, for Eastern Orthodox (HU), Jewish (DK, EE, ES; FI, NO, PL and SI), Islamic (CZ, HU and PL), Eastern Religion (HU and PL), and Other Christian (PL). Islamic in Hungary has been censored to 1, while the actual value is 2.1.

3.3. The magnitude of religion premiums:

Going back to the main regressions modelling happiness as the SWB measure we did see some effects for Protestants, Eastern Orthodox, Jewish, and Islamic (Table 6). All four effects were clearly significant. At the same time, we also see that the magnitudes were between negative .20 and positive .08, which is not a lot when taking into account that the general happiness level among these three religions is 7.17 - 7.76 (Table 3), meaning the effects as a percentage of the happiness levels is between -2.8 % (Jewish) and 1.0 % (Protestant). Thus, although there are some statistically significant religion premiums, it is not the case that the effects of belonging to a religion are large in a relative sense.

3.4. Other religion results:

While there are not many significant results regarding religious denomination, there are more significant and larger effects of the three other religion variables (Table 7). First of all, we can here confirm that religiosity is significantly associated with happiness such that low levels of religiosity (0-4) actually negatively affects happiness (-.11 to -.06), while high levels positively affects happiness (.10 to .72). In fact, the largest religion effect is the mentioned .72, which is found for very religious people, e.g., they are roughly 10 % happier (ceteris paribus).

Any intensity of praying has a clearly significant and negative association with happiness (-.18 to -.08). Low levels (less often or only on special holy days) of religious services attendance have no significant effect on happiness, and frequent attendance (at least monthly) has a significantly negative effect (-.08 to -.04), while attendance daily has positive effect (.18 points more happiness).

Table 7. Religion practice premiums in happiness OLS regressions. All years and countries pooled.

Religiousity:		Praying:		Attending religious service:	
Not at all religious	Base	Every day	-0.083***	Every day	0.151***
1	-0.087***	More than once a week	-0.179***	More than once a week	-0.066**
2	-0.058***	Once a week	-0.170***	Once a week	-0.071***
3	-0.084***	At least once a month	-0.130***	At least once a month	-0.063***
4	-0.071***	Only on special holy days	-0.104***	Only on special holy days	0.020*
5	0.107***	Less often	-0.077***	Less often	-0.01
6	0.139***	Never	Base	Never	Base
7	0.242***				
8	0.420***				
9	0.555***				
Very religious	0.729***				

* p<0.05, ** p<0.01, *** p<0.001.

Source: Same as Table 1.

4. Conclusions:

A long series of regressions with happiness as the response variable were made such that the religion premium could be estimated controlling for other factors including religious practice. All nine rounds of the European Social Survey were used for the years covering 2002 - 2018. The regressions had many significant parameters and comparatively high explanatory power. The overall results are that a positive religion premium is only present for Protestants, while there is a negative premium for Jewish, Islamic, and Eastern Orthodox. The results hold over the years and across nations with few exceptions. Although these religion premiums are significant in a statistical sense their magnitude are so low that their practical significance is not large (-3 to 1 % effect relative to the happiness level). The conclusion is thus, that a few religion premiums are found but they are relatively small. This is seemingly in contrast to popular debate where different religious denominations sometimes are used as explanations for good or bad behaviour.

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الدين في الدول الأوروبية 2002-2018: هل هناك علاوة سعادة؟

محمد أزهر حسين[1]

ملخص البحث:

لا يوجد تقارب في الأدبيات التجريبية حول آثار الدين على الرفاهية الذاتية على الرغم من استخدام الطائفة الدينية بشكل متزايد كتفسير مهم للتطورات المختلفة في المجتمعات الحديثة. في هذه الدراسة تم تقييم ما إذا كانت الطائفة الدينية تؤثر على السعادة بتطبيق المسح الاجتماعي الأوروبي الذي يغطي 2002 - 2018. تشير النتائج الوصفية إلى علاوة البروتستانت. بمجرد التحكم في عوامل الخلفية، يتم تقليل هذا القسط بشكل كبير. على الرغم من أن العلاوة ذات دلالة إحصائية، إلا أنها ذات حجم منخفض، والسعادة عبر الأديان هي نفسها تقريبًا. في المقابل، هناك تأثير كبير لدرجة التدين، في حين أن شدة الصلاة وتكرار زيارة أماكن العبادة لا تكاد تذكر. النتائج مستقرة بشكل عام عبر سنوات المسح والبلدان.

الكلمات الدالة: أوروبا ، المسح الاجتماعي الأوروبي ، السعادة ، الدين.

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