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Essays on Political Economy

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«L’université de Strasbourg n’entend donner ni approbation ni improbation aux opinions exprimées dans cette thèse. Ces opinions doivent être considérées comme propres à leur auteur. »

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Introduction

Political economy emerged as a scientific dicipline in the late eighteenth century together with the works of scholars such as Adam Smith who investigated the ways nations prosper and the policies which procure nations' wealth (Hall, 1997: 174). According to Groenewegen (1991), the term political economy was first used by Montchrestien (1615) in France in the seventeenth century and the first English economist who used "political economy" in the title of his book was Sir James Steuart (1767).

Although the term "economics" generally represented "political economy" until the late nineteenth century political factors which are not easily formalized were downplayed by the development of Neoclassical Economics which emphasized optimization by economic agents under certain constraints (Drazen, 2000). However, by taking into account the rising interest in the effects of political factors on economic outcomes over the last decades, it is justified to state that "new political economy" appears as a significant research area in recent years (Drazen, 2000).

Political economy mainly focuses on three issues which generally separate it from economics (Hall, 1997):

1- Political economists investigate the issues about power and they specifically analyze how a given set of economic arrangements affect the distribution of power and resources among social groups.
2- Political economists stress the significance of institutional arrangements and they examine the influence of different institutional structures on the operation of markets.
3- Political economists dwell on the basic conceptions of the economy which are developed to model economic issues and they mainly seek for the origins of these conceptions and how these conceptions become influential.

Institutions as determinants of economic performance

Insititutions and the effect of different institional structures on the markets are among the main research areas of political economy.

As it is well-known, economists have long debated the determinants of differences in growth rates of countries. In 1960s, the Neoclassical Economic Growth

Model developed by Ramsey (1928), Solow (1956) and Swan (1956) was the main economic growth theory and this model attributed the different growth rates of countries to the different rates of capital per worker of every country. During 1980s, Endogenous Growth Theory emerged. While the first models of Endogenous Growth Theory developed by Romer (1986) and Lucas (1988) were similar to the Neoclassical Economic Growth Model except that capital was extended to contain human components, later models developed by Romer (1990), Aghion and Howitt (1992) and Grossman and Helpman (1991) emphasized technological progress as the determinant of differences in growth rates of different countries (Barro, 1996). However, the results of empirical analyses show that even if the differences in physical capital, human capital and technological progress are taken into account there are still substantial differences in growth rates of countries which can not be explained by these factors (Helpman, 2008).

In 1990s, it was clarified that the differences in growth rates of different countries could not be explained by solely addressing to capital accumulation or technological progress and this fact resulted to a new literature which focused on the relationship between institutions and economic performance (Ugur, 2010). The main proposition of this literature is that institutions are more influential on economic performance than capital accumulation or technological progress since they shape the environment in which these activities occur (Helpman, 2008). Hence, the differences in economic performance along with time and space stem from the different institutional structures of countries (North, 1990; Acemoglu and Robinson, 2013).

Although the term institutions have long been used in the realm of social sciences, there is still not a generally accepted definition of this term (Hodgson, 2006). Most of the researchers define institutions as "the rules of the game" (Voigt, 2013). According to North (1994), institutions are defined as "humanly devised formal (such as rules, laws) and informal (such as norms of behaviour, conventions) constraints that determine the incentive structures of communities and in particular economies". Hodgson (2006) identify institutions as "systems of established and prevailing social rules that shape social intereactions". Similarly, Greif (2006) defines institutions as "a system of rules, beliefs, norms and organizations that create a regularity of social behaviour together". Payne and Losada (1999) use a broader definition of institutions than the others. According to these authors, "institutions are the set of formal rules (laws, procedures etc.) and informal norms and rules (habits, social convictions etc.)

as well as the organizations which create, pursue and enforce these rules and norms." (Payne and Losada, 1999). However, Ugur (2010) argues that institutions and organizations are different concepts since instituitons may be created as solutions to collective action issues and they cannot be reduced to the actions of organizations or organizational rules.

As it clearly emerges from the above explanations, there is not a unanimous definition of institutions and different authors emphasize the different aspects of institutions.

Since the scope and dimensions of institutions are not clear-cut, there are different measures of institutions. According to Glaeser et al. (2004), the most frequently used indicators in recent analyses are survey indicators of institutional quality from the International Country Risk Guide, the Worldwide Governance Indicators collected by Kaufmann, Kraay and Mastruzzi (2011) and Polity IV data set (Marshall and Jaggers, 2007).

International Country Risk Guide provides financial, political, and economic risk information and forecasts for 140 countries. Moreover, International Country Risk Guide's business oriented model investigates country specific factors such as currency risk, the military and religion in politics and corruption.

The Worldwide Governance Indicators measure six dimensions of governance which are Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption (Kaufmann, Kraay and Mastruzzi, 2011). The aggregate indicators are calculated from several hundred individual variables and the data represents the views on governance of survey respondents and experts in public, private and NGO sectors (Kaufmann, Kraay and Mastruzzi, 2011).

Finally, the Polity IV data set measures the authority characteristics of states in the world system (Marshall and Jaggers, 2007). The latest data set of Polity IV Project covering the period over 1800-2016 represents democratic and autocratic "patterns of authority" and regime changes in 167 countries.

Although the above-mentioned data sets are frequently used to measure institutional quality in empirical analyses they are also crtiticized by some researchers. Woodruff (2006) argues that there is a high correlation between different measures of institutions and hence, separating the effects of different institutions is almost impossible. Glaeser et al. (2004) state that commonly used indicators of institutions

measure the outcome of policy choices instead of the institutions themselves. In recent years, there are some attempts to measure institutions more precisely (Voigt, 2013). However, there is still not a generally accepted, flawless measure of institutions. Hence, more analyses are needed in order to reach better measures of institutions.

Despite the fact that there is not a unanimous definition and a flawless measure of institutions there are numereous studies which prove that institutions affect economic performance (see for instance; Commander and Nikoloski, 2010; Nawaz, 2015 and Constantine, 2017). However, when it comes to the determinants of institutions and institutional quality, existing evidence is less organized (Straub, 2000).

The Determinants of Institutions

In the existing empirical literature, various factors are taken into account as potential determinants of institutions and institutional quality. These factors are categorized under four main groups (Straub, 2000; Mijiyawa, 2013): historical variables, political incentive variables, rent variables and cultural variables[1].

The first group contains historical variables. The pioneers of the argument that focuses on the influence of historical variables on institutions are Acemoglu, Johnson and Robinson (2001, 2003). According to these authors, Europeans' different colonization policies in different colonies leaded to extractive institutions that did not provide much protection for private property and checks and balances or institutions that underlined private property and checks against government power (Acemoglu, Johnson and Robinson, 2001, 2002).

The second group covers political incentive variables. According to the authors who emphasize the role of political system, institutions are determined by a group of individuals who control political power (Mijiyawa, 2013). Acemoglu (2002) puts forward that inefficient institutions are chosen by politicians or social groups who hold political power since the chosen institutions serve their interests. The empirical papers that investigate the effect of political factors on institutions find that stronger checks and balances lead to better institutions (Straub, 2000).

[1] According to Straub (2000), there are also bureaucratic incentives which can affect the institutions and institutional quality. However, Straub (2000) states that it is a complement to rents. Because of this fact, bureaucratic incentives are not explained here as a separate category.

The third group includes rent variables. In economic theory, it is stated that the existence of rents increases the likelihood of public officials to deviate from honest behaviour (Straub, 2000). Exogenous rents which stem from the natural resource endowments of a country and non-natural rents which emanate from dimensions of economic organizations that lead to monopolistic power are investigated in the literature (Siba, 2008). In the existing empirical literature, the results of many analyses show that natural and non-natural rents have negative effects on the quality of institutions (Treisman, 2000; Ades and Di Tella, 1999; Leite and Weidmann (1999); Acemoglu, Johnson and Robinson, 2001).

Finally, the fourth group involves cultural variables. In the literature, it is suggested that cultural variations or variations in ideological beliefs can result in differences in economic institutions (Mijiyawa, 2013). Culture is an ambiguous concept and has several dimensions. According to Gorodnichenko and Roland (2010), culture is generally described "as the set of values and beliefs people have about how the world works as well as the norms of behaviour derived from that set of values". In terms of institutional outcomes, Tabellini (2008) defines culture "as a set of principles and normative rules that motivate individuals".

Researchers who stress the effects of cultural factors on institutions put forward that different beliefs and behaviours of different communities form their collective action, the quality of their governments and institutions (Mijiyawa, 2013). This argument was first suggested by Weber (1930) in his book "Protestant Ethic and the Spirit of Capitalism". Weber (1930) stated that culture was a crucial factor in explaining differences in economic development. Putman, Leonardi and Nonetti (1993) investigated regional governments that were created by central government at the beginning of the 1970s. Although it was expected that these new regional governments would identically work, the authors stated that in practice their works were different. According to them, this difference stemmed from dissimilarities in levels of cooperation, participation, social interaction and trust which are the key features of social capital.

One of the core dimensions of culture is religion. There are quite a few studies that examine the impact of different religions and the level of religiosity on institutions and institutional quality in the existing literature. La Porta et al. (1999) argue that religion can determine cultural attitudes toward social hierarchy and empirically find that countries with high proportions of Catholics or Muslims experience poor quality

in governmental activities. Treisman (2000, 2007) examine the determinants of corruption and find that countries with Protestant tradition are less corrupt that the countries with other religions. North, Orman and Gwin (2013) investigate the relationship between religion, corruption and the rule of law by using an extensive data set covering 207 countries. According to the empirical results, North, Orman and Gwin (2013) suggest that both corruption and the rule of law are related with the religious heritage of a country.

Besides institutional quality, religion can also affect the level of individuals' happiness and their political choices. Many studies empirically examine the relationship between religion, religiosity and happiness. One of the first studies belongs to James (1902) who puts forward that religion played a crucial role with regard to the people's happiness. By reviewing existing empirical analyses, Lewis and Cruise (2006) state that while the results of many studies indicate a positive association between religion and happiness, there are also some studies with contradictory results (see for example; Lewis, Maltby and Burkinshaw, 2000). In a recent study, Ngamaba and Soni (2017) examine the influence of different religions on happiness and life satisfaction and investigate whether the effect of religion on happiness and life satisfaction can change together with the economic and cultural environment of the country. By using World Values Survey covering the period between 1981 and 2014 Ngamaba and Soni (2017) find that individual religiosity and the level of development of a country are significant determinants of individuals' subjective well-being. Moreover, the authors find that Protestants, Buddhists and Roman Catholics are happier in comparison to other religious groups (Ngamaba and Soni, 2017). Although there are numerous studies that focus on the relationship between religion, religiosity and happiness, further surveys and analyses are needed in order to reach more robust and certain results with regard to the effect of religion on happiness (Rizvi and Hossain, 2017).

As a significant aspect of culture, religion and religiosity can influence individuals' voting behaviour. Although religion and religiosity were disregarded as a determinant of voting behaviour during the 1990s, in recent years a number of researchers in Europe suggest that religion is still an important factor to be taken into account in voting analyses (Goldberg, 2014). In the existing literature, while some studies investigate the voting behaviour of individuals who belong to different religions, other studies analyse the relationship between religiosity and electoral

choices (Esmer and Pettersson, 2007). According to the results of many empirical studies, it is confirmed that religion and religiosity are significant determinants of voting behaviour in Western countries (Esmer and Pettersson, 2007). However, the number of studies that examine the relationship between religion, religiosity and electoral choices in other countries is very low. Thus, further empirical studies are needed in order to understand the effects of religion and religiosity on the voting behaviour of individuals who live in the countries outside the Western world.

Contents of the dissertation

The aim of this work is to investigate the effects of religion and religiosity on corruption, individuals' happiness and voting behaviour. Although there are many studies which examine these issues, we provide new evidence by using different data sets and methodologies and by focusing on the countries which are not analysed in the previous studies.

The first chapter[2] analyses the relationship between religion and the attitude toward corruption at the individual level. Corruption is a fundamental dimension of institutions, which has been shown to have detrimental effects on investment and growth (Mauro, 1995). A channel through which culture can shape institutions is the impact of religion on corruption. In the existing literature, there are many empirical studies which examine the determinants of corruption including religion. However, the majority of these studies draws on country-level data sets and hence, does not take into account the heterogeneity of individuals inside a country by aggregating all individuals. Moreover, these studies do not allow investigating whether the behaviour of individuals related to corruption is conditional to the fact that their religion dominates in their country.

The contribution of this chapter to the literature is twofold: First, by examining the impact of religion on attitude toward corruption at the individual level we provide a thorough analysis of this issue in comparison to country-level studies. Second, we assess the attitude toward corruption of individuals across countries with different majority religions and thus we check whether the impact of religious denominations on the attitude toward corruption is universal or conditional to the status of the religion.

[2] This chapter refers to the article co-written with Laurent Weill. The article was presented at the European Public Choice Society Conference in 2017.

Furthermore, we investigate the influence of religious denominations in four countries with several large religious groups in order to do a more comprehensive analysis.

In the empirical analysis of this chapter, we use World Values Survey Wave 6 covering the period between 2010 and 2014. Since we aim to explain attitude toward corruption we draw on the question to what extent *"Someone accepting a bribe in the course of their duties"* is justifiable. The answer to this question is a categorical variable on ten points scale with higher values represent more justifiability to corruption. We focus on the major religions in the world in line with the previous studies on the influence of religion. For religiosity, we draw on the frequency of attendance to the religious services and the frequency of pray.

As a first step, we estimate our model by using only one of the religion/religiosity variables together with the control variables. After that, we estimate the model once again by adding the interaction terms between religious denomination and religious attendance/pray. Then, we separately estimate the model for the countries in which the dominant religion is Roman Catholicism, Orthodox Christianity, Protestantism and Islam. Finally, we estimate our model for multi-religious countries, which are Germany, Lebanon, Malaysia and Nigeria.

The results of this empirical analysis indicate that religious people are less tolerant to corruption and attitudes toward corruption differ across religious denominations. Moreover, the results show that the effect of religious denominations is not universal and the attitude of individuals toward corruption can be influenced by the fact that their religion is majority or minority.

The second chapter[3] assesses the effect of religion on happiness. Although there are quite a few studies that investigate the relationship between religion and various economic indicators (for literature review, see Dolan et al. (2008)) the number of analyses that focus on the relationship between religion and happiness is very low. Existing empirical analyses take into account either the effect of religious denominations or religiosity on happiness (Bjørnskov et al., 2008, Clark and Lelkes, 2009, Deaton and Stone, 2013). In contrast to previous studies, we control for religious membership and intensity of religiosity at the same time. To the best of our knowledge,

[3] This chapter refers to the article co-written with Jan Fidrmuc. The article was presented at the European Public Choice Society Conference in 2015 and was published as a CESifo Working Paper (Working Paper No: 5437).

this is the first study which considers both the effect of belonging to a religion and intensity of religiosity on happiness.

In our empirical analysis, we use the first four waves of the European Social Survey carried out every two years between 2000 and 2008 in 30 countries in Europe and its neighborhood. Our dependent variable is the participants' answers to the following question: *"Taking all things together, how happy would you say you are?"*. Religious denominations that we take into account in our analysis are Roman Catholicism, Protestantism, Eastern Orthodox Christianity, Other Christianity, Judaism, Islam and another category which covers individuals with no religious affiliation and other non-Christian affiliation. For religiosity, we use a question on the intensity of respondents' devotion and we consider participation in religious activities

We observe that religion increases happiness. However, when we take into account both religious membership and religious devotion we find that religious membership without religious devotion lower happiness. So we argue that the spiritual and belief-based aspect of religion raises happiness. Moreover, the differences between men and women are significant. Women are more negatively affected by belonging to a religion and gain more due to religiosity.

The third chapter[4] investigates the determinants of voting behaviour of Turkish citizens and specifically focuses on how gender-related differences in voting behaviour shaped the rise of the AKP in Turkey. Although gender differences in political attitudes and voting behaviour have dramatic effects on the results of elections both in developed and developing countries, the majority of studies examines this issue for developed countries. This chapter contributes to the existing literature by providing evidence with regard to the voting behaviour of individuals in Turkey which is both a developing and a Muslim country.

In recent years, the Justice and Development Party (known as AKP, its Turkish acronym) has risen in the Turkish political sphere. Turkey under AKP has gradually abandoned the strict secularism. On the one hand, this has arguably increased religious freedom. On the other hand, the greater acceptance of Islamic norms may have an asymmetrically adverse effect on women's lives since a conservative interpretation of Islamic norms attributes different roles to men and women in most aspects of everyday

[4] This chapter refers to the article co-written with Jan Fidrmuc. The article was presented at the European Public Choice Society Conference in 2014 and was published as a CESifo Working Paper (Working Paper No: 5226).

life. Hence, there may be differences in support for the AKP among male and female voters.

In our empirical analysis, we investigate the determinants of support for the AKP and for the main opposition party which is the Republican's People Party (known as CHP, its Turkish acronym). We use European Social Survey Wave 2 (collected in 2004) and Wave 4 (collected in 2008) which include information on past voting behaviour in the 2002 and 2007 elections, respectively. Our dependent variable takes the value of 1 if the respondent voted for the party in question in the last election and zero otherwise. Our explanatory variables represent participants' socio-economic characteristics such as age, gender, number of years of education, marital status etc. together with religiosity.

The results of our empirical analysis indicate that education and religiosity are significant determinants of men's and women's voting behaviour. Whilst the effect of religiosity on men's and women's voting behaviour is same the effect of education differs with regard to gender. We find that women's support for the AKP falls with increasing education levels while men's support for the AKP rises first and then falls. The support for CHP, the main opposition party, is opposite. However, this result only prevails in the 2002 election. In the 2007 election, education has a negative effect on the votes for the AKP for both men and women. Moreover, a standard gender gap emerges in the 2007 election, with women more likely to vote for the CHP than men.

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CHAPTER 1

Is Corruption a Greater Evil than Sin?*

*This chapter refers to the article co-written with Laurent Weill. The article was presented at the European Public Choice Society Conference in 2017 and was submitted to the Economics of Governance.

Abstract

The aim of this paper is to provide new evidence on the relation between religion and attitude toward corruption at the individual level. We use World Values Survey data covering 59 countries during the period 2010-2014 to examine if religiosity and religious denominations are associated with attitude toward corruption. We find that religious people are more averse to corruption, supporting the view that religiosity favors honest behaviour. Attitudes toward corruption differ across religious denominations. Protestantism and Hinduism are associated with greater aversion to corruption than Atheism, while other religions do not have clear difference. This conclusion accords with the view that hierarchical religions favor greater tolerance to corruption than individualistic religions. Additional estimations on groups of countries with different dominant religions and on multi-religious countries show however that the relation between religious denomination and tolerance to corruption can vary with the religious environment of the country.

Keywords: religion, corruption.
JEL Codes: H11, K42, Z12

1. Introduction

"Corruption is a greater evil than sin"

– Pope Francis.

The debate on the causes of economic development is far from settled. Acemoglu and Robinson (2012) argue that institutions give rise to economic growth, considering little credit to the potential impact of culture. However, others claim that even if institutions explain why countries are rich or poor, culture can explain institutions in the first place (Greif, 1994; North, 2005).

A channel through which culture can shape institutions is the impact of religion on corruption. Corruption is a core dimension of institutions which has been shown to have detrimental effects on investment and growth (Mauro, 1995). As such, corruption constitutes a major piece of the institutions-growth nexus.

Religion can exert an impact on tolerance to corruption in different ways. First, religiosity is expected to promote honest behaviour in line with the abovementioned quotation of Pope Francis. North, Orman and Gwin (2013) observe that religion as a whole helps sustaining a social order by encouraging standards for behaviour. As a consequence, religious people might be more prone to good social behaviour and might then have lower tolerance to corruption. Second, religious denominations can exert different influences on attitude toward corruption depending on the fact that they are associated with hierarchical or individualistic religions. Putnam (1993) considers that hierarchical religions (Catholicism, Orthodox Christianity, and Islam) create vertical bonds of obligation in society. Thus, Treisman (2000) argues that they favor attitudes with respect for authority and therefore lead to lower contestation of office-holders. Hierarchical religions should therefore be associated to higher tolerance to corruption than individualistic religions like Protestantism.

A large body of empirical literature has investigated the determinants of corruption including religion. However, most works about the impact of religion on corruption consider a country-level investigation (La Porta et al., 1997; Treisman, 2000; Gokcekus, 2008; North, Orman and Gwin, 2013). As a consequence, they cannot take into account the heterogeneity of individuals inside a country by aggregating all individuals. Also they do not allow investigating whether the behaviour of individuals related to corruption is conditional to the fact that their religion dominates in their country, while the minority group status can influence attitudes (Kuran, 2004).

Very few works provide a micro-level analysis on the impact of religion on corruption. Guiso, Sapienza and Zingales (2003) provide a broad investigation on the links between religion and economic attitudes in which they document the relation between religion and attitude toward corruption. They find support for the impact of religiosity and religious denominations.

The aim of our paper is to investigate how religion affects attitude toward corruption. To address this issue, we use the latest wave of the World Values Survey. It contains information on human beliefs and values for 59 countries. We advance the understanding of the relation between religion and attitude toward corruption in two respects.

First, we provide a cross-country analysis investigating the relation between religion and attitude toward corruption at the individual level. Religion is considered through religious denominations and religiosity. We are therefore able to provide an in-depth investigation of the influence of religion on tolerance to corruption in comparison to country-level analyses. In comparison with Guiso, Sapienza and Zingales (2003) who use the three waves implemented between 1981 and 1997, we utilize the most recent available data with World Values Survey last wave performed on the period 2010-2014.

Second, we examine how the influence of religious denominations can be conditional to the importance of other religions. For instance, the behaviour of Protestants is different if it is a majority religion or a minority religion in a country. In that latter case, do Protestants behave more like the majority of the country or like Protestants all around the world? By comparing the attitude toward corruption of individuals across countries with different majority religion, we are able to check whether the relation between religious denominations and tolerance to corruption is universal or conditional to the status of the religion. To obtain a more complete picture, we also examine the impact of religious denominations in four countries with several large religious groups (Germany, Lebanon, Malaysia, Nigeria) so that we have a thorough comparison of the potential influence of Catholicism, Protestantism, and Islam, on attitude toward corruption. We thus provide a much deeper investigation of the impact of religion on corruption than Guiso, Sapienza and Zingales (2003).

Our paper relates to two current strands of the literature. The first strand of literature incorporates the debate on the influence of religion on economic outcomes. Following Barro and McCleary (2003), there is a considerable body of literature on

how religion shapes economic attitudes (Guiso, Sapienza, and Zingales, 2003; Kumar, Page, and Spalt, 2011). We contribute to propose a worldwide micro-level analysis taking into account the majority or minority status of a religion and therefore provide a contribution on how religion can shape institutions.

The second strand of literature deals to the determinants of corruption. We supplement the investigation of the determinants of corruption at the macro level (Treisman, 2000; Gokcekus, 2008) by adding information on how a key element of cultural values, religion, influences tolerance to corruption at the individual level and by focusing on attitude toward corruption rather than actual or perceived corruption. Understanding attitude toward corruption can contribute to enhance the efficiency of policies implemented to prevent and as such can help reducing it. If one religion favors tolerance to corruption in a global way, then reducing corruption in countries with this religion for the majority of people can be particularly difficult.

The paper is organized as follows. Section 2 presents hypotheses and related literature. Section 3 describes data and methodology. Section 4 presents the results. Section 5 provides concluding remarks.

2. Hypotheses and related literature

This section is devoted to the background of our research question. We first develop the hypotheses on the relation between corruption and religion. We then review the former studies on this link.

2.1 Hypotheses

Corruption is generally defined as *"the use of public office for private gains, where an official (the agent) entrusted with carrying out a task by the public (the principal) engages in some sort of malfeasance for private enrichment which is difficult to monitor for the principal"* (Bardhan, 1997: 1321). Although almost all countries have experienced corruption scandals, the frequency and intensity of these scandals dramatically change from one country to the other. However, researchers have taken these differences between countries as given for a long time (Treisman, 2007). In recent years, with the emergence of a number of indices which measure the

level of corruption at the country level, research has started to investigate the causes and the consequences of corruption.

Although there are many factors which affect the eagerness of a person to be involved in corruption religion can be one of the significant determinants of corrupt practices in a society (Beets, 2007). At first sight, since many religions establish some standards for behaviour a religious society may be more inclined to be honest and to obey the rules than a less religious society (North, Orman and Gwin, 2013). So it may be expected that corruption is a more severe problem in societies which are not pious than the ones in which religion is an important part of people's daily lives.

However, the observed discrepancies in terms of frequency and intensity of corruption among societies that adhere to different religions suggest that there may be significant differences between religions that explain why some countries are more corrupt than the others. In fact, majority of studies in the existing literature put forward that based on the prevalent values and belief systems in a specific religious sect religion could either help to decrease or increase corruption (Sommer, Bloom and Arikan, 2013).

Treisman (2000) states that religion determines the attitudes of a society towards social hierarchy and he argues that in societies where hierarchical religions (Catholicism, Eastern Orthodoxy and Islam) are dominant defying to a civil servant may be uncommon than in societies where egalitarian or individualistic religions (for example, Protestantism) are dominant[1]. Furthermore, hierarchical religions lay more emphasis on being loyal to family and friends than the individualistic religions. This is called as "familism" and may influence the level of nepotism in a society (Banfield, 1958). In addition to this, people who adhere to hierarchical religions trust less the others than the people who belong to individualistic religions. By referring to Putnam (1993), La Porta et al. (1997) argue that hierarchical religions have a negative effect on the formation of trust because of their emphasis on vertical ties between subordinate and superior and thus leads to higher corruption than individualistic religions.

Besides the differences between religion sects in terms of their values and belief systems, the degree of dominance of a religion in a society can be a determining factor of the level of corruption. People who belong to the same religion have shared cultural values with regard to positive and negative attitudes. For instance, while Protestants

[1] Treisman (2000) takes the taxonomy of Catholicism, Orthodox Christianity, and Islam as hierarchical religions from La Porta et al. (1997)'s study.

believe that avoiding committing a sin is the responsibility of people Catholicism admits the weaknesses of human beings and is more tolerant of errors and sins (Lipset and Lenz, 2000). Hence, it is plausible to expect that societies in which religions emphasizing the weaknesses of human beings are dominant experience corruption much more than the societies where the dominant religion is not tolerant of making mistakes.

We can therefore derive four testable hypotheses with respect to the effect of religion on corruption that we test in our empirical analysis:

H_1: Religion matters for attitude toward corruption.

H_2: Religiosity matters for attitude toward corruption.

H_3: Hierarchical religions are associated with greater tolerance to corruption than individualistic religions.

H_4: Religion affects attitude toward corruption depending on the fact that it is a majority or minority religion in a country.

2.2 Related literature

There is a large strand of empirical literature devoted to corruption. While some works document the effects of corruption,[2] others seek for the determinants of corruption.[3] The relation between religion and corruption has however been questioned only in a few studies with most of them providing country-level investigation. It has to be stressed that all these works concentrate on actual and perceived levels of corruption, which constitutes a major difference with our work focusing on attitude towards corruption.

One of the first studies that examine the relationship between corruption and religion is La Porta et al. (1997). While the focus of the paper is the impact of trust on the performance of large organizations, they also investigate the forces that help the formation of trust and state that hierarchical religions may be a factor that leads to

[2] See Mauro (1995), Ades and Di Tella (1997), Aidt, Dutta and Sena (2008) and Méon and Weill (2010) for the effects of corruption on investment, growth and productivity, Alesina and Weder (1999), Wei (2000) and Bellos and Subasat (2012) for the effects of corruption on foreign direct investment and Mauro (1998), and Clausen, Kraay and Nyiri (2011) for the effects of corruption on government expenditures, revenues and the quality of public institutions.

[3] See Fisman and Gatti (2002), Brunetti and Weder (2003), Sandholtz and Gray (2003), Dreher, Kotsogiannis and McCorriston (2007), Mocan (2008), Torgler and Valev (2010), Iwasaki and Suzuki (2012).

distrust and hence affect the performance of large organizations. They define Catholicism, Eastern Orthodoxy, and Islam as hierarchical religions and use the percentage of population adhering to these religions as the variable representing the hierarchical religions in their regressions. They find that countries with dominant hierarchical religions experience greater corruption.

In their investigation of the determinants of government performance, La Porta et al. (1999) find that countries whose dominant religion is Catholicism or Islam have worse governments than the countries whose dominant religion is Protestantism.

Treisman (2000) investigates the determinants of corruption by drawing on the country indices of perceived corruption from Transparency International for the years 1996, 1997 and 1998. As a robustness check, he also uses perceived corruption index of Business International for the early years of 1980s. By taking into account the percentage of Protestants in 1980 in the countries under investigation together with other institutional (common law or civil law systems, legal system and colonial experience, democracy, political instability, state intervention, ethno-linguistic fractionalization and political system) and economic (GDP per capita, trade liberalization and large endowments of valuable natural resources) explanatory variables, Treisman (2000) argues that Protestant tradition are linked to lower corruption. According to the author, this result stems from the positive influence of Protestantism on economic development (the Weber argument) and stable democracy along with the higher toleration to different opinions or a higher commitment to ethics in Protestant societies. Treisman (2000) also puts forward that this finding may be related to the fact that Protestantism generally arose as an opposing institution to the state and hence the Protestant Church may serve as a monitoring mechanism of the state officials.

Sandholtz and Koetzle (2000) examine the relationship between corruption and religion by offering a theoretical framework which puts forward that the level of corruption is determined by political-economic structures of incentives and cultural norms. The authors use the 1996 corruption index from Transparency International to measure corruption and take into account several explanatory variables such as GDP per capita, economic freedom, democracy, democratic years and trade. With regard to religion they reach a conclusion similar to Treisman's (2000) study and suggest that the level of corruption is lower in predominantly Protestant countries.

Paldam (2001) seeks for the influence of culture on corruption by drawing on a

data set that covers 100 countries for the year 1999. The author states that culture is a vague concept which is not easily quantified. However, he argues that religion can be used as a proxy since it is one of the main elements of culture. In the empirical analysis, Paldam (2001) takes into account 11 religion groups (Old Christianity, Catholicism, Protestantism, Anglicanism, Islam, Hinduism, Buddhism, Oriental Religions, Tribal Religions, Atheists and Others) and the calculations of Herfindahl Index which represents religious diversity. At the end of the empirical estimations, Paldam (2001) comes to the conclusion that Reform Christianity (which covers Protestantism and Anglicanism) and Tribal Religions reduce the level of corruption whilst Pre-Reform Christianity (which covers Old Christianity, Catholicism and Orthodoxy) increases it. Furthermore, Paldam (2001) suggests that Pre-Reform Christians and Muslims are equally corrupt and Islam can be added to the Pre-Reform Christianity in terms of its effect on corruption.

Beets (2007) analyzes the impact of religion on corruption by using non-parametric statistical measure of Kruskal-Wallis for 133 countries. In the empirical analysis, Beets (2007) draws on Corruption Perceptions Index of Transparency International for the year 2003, the dominant religion practiced in each country, the importance of religion to the citizens, religious freedom and GDP per capita. The results of this study indicate that the level of corruption in countries whose citizens are well-off, have more freedom in terms of religion and do not think that religion is an important part of their life is low. In contrast, those whose citizens are poorer have comparatively less religious freedom and think that religion is an important part of their life is confronted with high level of corruption. Beets (2007) suggests that countries where the dominant religion is Christianity incline to be in the first group while overwhelmingly Muslim countries incline to be in the second group.

Gokcekus (2008) investigates whether religious tradition whose influence emanates from 100 years ago or present and religious composition has an effect on the level of corruption by utilizing 2003 Corruption Perceptions Index of Transparency International and the percentages of Protestants in 1900, 1970, 1990 and 2000. He finds that the percentage of Protestants has a negative and significant impact on corruption with greater coefficient in absolute value for the percentage of Protestants in 1900 and 1970 than for the one in 2000. In the additional estimations, he comes to the conclusion that the percentage of Protestants in 1900 is a better explanatory variable of corruption than the percentage of Protestants in 2000.

In a related vein, North, Orman and Gwin (2013) investigate the effects of the country's dominant religious culture on corruption and rule of law in 203 countries with governance indicators from the World Bank for 2004. They find that corruption is lowest in countries where the dominant religion was Protestantism in 1900 and is highest in countries where the dominant religion was Orthodox Christianity in 1900. They conclude that the effect of religion on corruption becomes evident only over centuries instead of years.

Dincer (2008) analyzes how ethnic and religious diversity affect the level of corruption in 48 US states over the period 1980-1989 and 1990-1999. The author measures the level of corruption by calculating 10 year averages of the number of government officials per 100.000 people convicted in a state for crimes and uses fractionalization and polarization indexes for ethnic and religious diversity. The empirical results of this study show that while religious polarization has a linear and positive impact on corruption the relationship between religious fractionalization and corruption is inverse-U-shaped. Hence, religious fractionalization has a positive impact on corruption until reaching an inflection point and after this point the relationship between religious fractionalization and corruption turns out to be negative.

Unlike the other studies, Sommer, Bloom and Arikan (2013) seek for the impact of religion on corruption by using religious regulation and religious discrimination against minorities as variables representing religion. The main argument of this study is that the effect of religion on corruption is conditional upon the institutional framework. They find that while religious freedom has a decreasing effect on corruption in a democratic environment it is unlikely to reduce corruption in a non-democratic environment. Hence, the authors conclude that religion may be an important factor in the fight against corruption if and only if with the adequate institutional framework.

Mensah (2014) examines the effects of religion and culture on the levels of perceived corruption in 187 countries over the period 2000-2010. In the empirical analysis, the author uses the cultural clusters from House et al. (2004) in order to identify cultural dimensions in the world. By categorizing 187 countries into 12 cultural clusters and by drawing on 3 different corruption measures, Mensah (2014) asserts that cultural and religious elements are significant determinants of corruption together with political institutions and structures. Furthermore, unlike previous studies, the results of this analysis also suggest that not only Protestantism but also

Buddhism and to a limited extent Hinduism have a preventive impact on the level of perceived corruption. However, non-Protestant Christianity and Islam have much lesser preventive impact on corruption in comparison to Protestantism, Buddhism and Hinduism. According to these findings, Mensah (2014) concludes that earlier results related to Protestantism mainly emanate from the failure to categorize the religions adequately.

In summary, most of the empirical studies in the existing literature focus on the macro level effects of religion on corruption and do not take into account the differences across individuals with regard to religion and devotion. However, there might be significant dissimilarities even among the individuals who adhere to the same religion in terms of religious commitment, interpretation of the religion's teachings and the attitudes to ethical issues.

3. Data and methodology

In our empirical analysis, we use World Values Survey (WVS) Wave 6 covering 2010-2014 wave (Inglehart et al. (eds.), World Values Survey: Round Six, 2014). The WVS is composed of nationally representative surveys carried out in around 100 countries and investigates beliefs and values. Wave 6 of the survey includes data which is obtained from the interviews with more than 85.000 respondents in 59 countries (Inglehart et al. (eds.), World Values Survey: Round Six, 2014).

We aim to explain attitude toward corruption and consequently we use the question from the WVS which asks the respondents to what extent the statement of *"Someone accepting a bribe in the course of their duties"* is justifiable. The answer to this question is a categorical variable on ten points scale with higher values represent more justifiability to corruption, which we use to create the variable *Bribe*.

For religious denomination, there are 98 different religious groups in the WVS. Since most options drew very few responses, we decide to focus on the major religions in the world in line with former papers on the influence of religion. We therefore consider the following religious denominations: Atheism, Buddhism, Protestantism, Hinduism, Judaism, Islam, Orthodox Christianity, and Catholicism. All other religions are included in a heterogeneous category entitled "other religion", which covers the Others category in the questionnaire together with the religious groups that we do not

take into account as a separate category in our models.

We then create seven dummy variables equal to one if the respondent declares that he or she belongs to one of the associated religious denominations: *Catholic, Protestant, Orthodox, Jew, Muslim, Hindu, Buddhist, Other religion*, and *Atheist*. *Atheist* is used as the omitted variable.

For religiosity, we consider two variables. First, we use the frequency of attendance to the religious services (*Attendance*). It is based on the response on a scale from 1 to 7 to the statement: *"Apart from weddings and funerals, about how often do you attend religious services these days?"* Second, we consider the frequency of pray (*Pray*) of the respondents. It is based on the response on a scale from 1 to 7 to the statement: *"Apart from weddings and funerals, about how often do you pray".* In the WVS, higher values of these variables represent less frequency of religious attendance and pray. For interpretation purposes, we reversed these variables in our models so that higher values of *Attendance* and *Pray* indicate higher frequency of religious attendance and pray, hence greater religiosity.

To isolate the effect of religion from other effects, we control for country-fixed effects and an assortment of individual characteristics. Gender is a dummy variable which equals to 1 if the respondent is male. Age is the number of years that the respondents have lived. Education level is a 9 points scale variable which takes values from 1 to 9 with higher values indicates more education. Income level is a 10 points scale variable on which 1 represents lowest income group and 10 represents highest income group in the country that the respondents live. State of health is a dummy variable which takes the values from 1 to 4 with higher values shows worse state of health. We reversed this variable so that higher values indicate better state of health for our interpretation purposes. Marital status is a dummy variable which takes the value of 1 if the respondent is married and 0 otherwise. Having children is a dummy variable which takes the value of 1 if the respondent has a child or children and 0 otherwise. We also take into account the frequency of using TV news to obtain information, the frequency of using internet to obtain information, in line with evidence that mass media can influence the perception of corruption (Besley and Prat, 2006; Enikolopov, Petrova and Sonin, 2016). Both TV news and internet are 5 points scale variables which take the values from 1 to 5 with higher values indicate less frequent use of TV and internet in order to obtain information. Similar to religiosity and state of health variables, we reversed the values of TV news and internet so that

higher values represent more frequent use of TV and internet in order to obtain information.

In our empirical analysis, we first estimate our model by using only one of the religion/religiosity variables (religious denomination or religious attendance or pray) together with the control variables. Then, we estimate the model once again by taking into account the interaction terms between religious denomination and religious attendance/pray. After these estimations, we separately estimate the model for the countries in which the dominant religion is Roman Catholicism, Orthodox Christianity, Protestantism and Islam. Lastly, we estimate our model for multi-religious countries in our data set. These countries are Germany, Lebanon, Malaysia and Nigeria.

Since our dependent variable is a categorical variable on ten points scale we use ordered probit estimator for our estimations. As a robustness check, we also estimate our main regressions by employing probit and OLS estimators.

4. Results

Our investigation of the relation between religion and corruption takes place in three steps. We first display the main estimations. We then continue with results by groups of countries based on the majority religion. We complete the analysis with estimations on multi-religious countries and conclude with robustness tests.

4.1 Main estimations

Table 3 reports the main estimations on the relation between religion and corruption. We consider five specifications based on alternative combinations of religion variables to control for the sensitivity of our results on the relation between religion and corruption. Column (1) considers religious denominations. Columns (2) and (3) alternatively include one religiosity measure, *Pray* or *Attendance*. Columns (4) and (5) analyze the simultaneous inclusion of one religiosity measure (*Pray* or *Attendance*) and religious denomination variables.

Overall our evidence supports the notion that religion influences tolerance to corruption with two main findings. Our first finding is that religiosity reduces tolerance

to corruption. We observe a negative and significant coefficient for *Pray* and *Attendance* in all estimations. In other words, religious people tend to be more averse to corruption in line with the expectation that religion fosters honest behaviour and makes people obey the rules.

Our second finding concerns the impact of religious denominations on attitude toward corruption. Recalling that the Atheist denomination is the omitted category, we detect a negative coefficient for *Protestant* and for *Hindu*. These coefficients are significant in two specifications (only religious denomination variables, and with Attendance) and not significant in one specification (with *Pray*). In addition, we observe a positive coefficient for *Catholic*, but it is only significant when *Pray* is included in the specification. In contrast, the coefficients for *Buddhist*, *Jew*, *Muslim*, and *Orthodox*, are never significant. We can therefore extract two main conclusions from these results. On the one hand, Protestants and Hindus tend to be more averse to corruption than Atheists. On the other hand, the other religious affiliations do not seem to be associated with higher or lower tolerance to corruption than atheism.

These results correspond roughly with our predictions. We find results in line with the view that religiosity encourages standards for behaviour and as such encourages good social behaviour. We find support to the view that individualistic religions are associated to lower tolerance to corruption than hierarchical religions (Catholicism, Orthodox Christianity, and Islam), with both religions associated with greater aversion of corruption being individualistic religions.

Our findings overall accord with what has been found at the country level in studies explaining the perceived corruption. The finding of lower tolerance to corruption for Protestants is in line with the common observation that Protestantism is associated with lower perception of corruption (La Porta et al., 1999; Treisman, 2000; Paldam, 2001). The absence of significant difference for tolerance to corruption between Catholicism and Islam is in accordance with former works (e.g., Paldam, 2001). Finally, the finding that Hinduism would be associated with higher aversion to corruption has also been observed by Mensah (2014).

Regarding control variables, we observe consistent and significant results across all five specifications. Women, married, older and more educated have a more negative attitude toward corruption. In opposition, greater income, better health, and having children are associated with more tolerance to corruption. Interestingly higher frequency of using TV news is positively related to tolerance to corruption, while

higher frequency of using internet is negatively related.

A natural question that emerges concerns the influence of religiosity on how religious denominations are associated with corruption. Namely we can wonder if for instance Protestants who are not religious have the same aversion toward corruption than non-religious Protestants.

To this end, we perform additional estimations by including interaction terms between religiosity and religious affiliation variables. Table 3 displays these estimations. The first column considers interaction terms for religious denominations with *Pray*, while the second column includes those with *Attendance*.

The main result is the significantly negative coefficient of all interaction terms between religious denominations and both religiosity variables with one exception. Therefore, our main conclusion is that religiosity reduces tolerance to corruption whatever the religion type. It consequently corroborates our conclusion that religiosity is associated with higher aversion to corruption. The only exception is for Judaism, for which interaction terms are negative but not significant, which can result from the fact that it is the religion with the lowest number of observations in the sample.

The analysis of the coefficients for religious denomination variables provides interesting findings. We observe that *Catholic* is significantly positive in both estimations. It therefore suggests that Catholics have a greater tolerance to corruption than Atheists. However, this greater tolerance diminishes with the intensity of religiosity of Catholics. The same conclusion stands to a lower degree for Hinduism, Islam, Orthodox Church, and Buddhism, with significant and positive coefficients in one of both estimations. At the same time, we observe no significant coefficient for *Protestant* variable. Therefore, these results complement our findings on the effect of religious denominations on attitude toward corruption.

Our main estimations have shown the average effect of religious denominations without considering how religiosity can influence it. The additional estimations with interactions between religious denominations and religiosity therefore show that the conclusions on religious denominations need to be qualified by religiosity for most religion types.

4.2 Estimations by dominant religion

The main estimations have shown the effect of religious denominations on attitude toward corruption. However, the fact that a religion dominates or is only practiced by a minority can exert an impact on how religion shapes social behaviour. We then redo our estimations by distinguishing groups of countries based on the dominant religion.

We define a country as belonging to one group if at least 50% of the respondents in a country state they have this religious denomination. Only two countries in our sample can then be considered as Protestant countries (Ghana, and Zimbabwe). The lack of representativeness of both countries coming from the same continent and the small number of countries leads us not to consider Protestant countries. We thus consider three groups of countries: Catholic countries, Orthodox countries, and Muslim countries. Catholic countries are Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, the Philippines, Poland, Rwanda, and Slovenia[4]. Orthodox countries are Belarus, Cyprus, Romania, Russia, and Ukraine[5]. Muslim countries are Algeria, Azerbaijan, Iraq, Jordan, Kazakhstan, Kyrgyz Republic, Lebanon, Libya, Malaysia, Morocco, Pakistan, Tunisia, Turkey, and Uzbekistan[6].

Tables 4 to 6 report the results for each dominant religion. Do we observe the same results for religious denominations whatever their majority or minority status? The answer is negative for Catholicism and Orthodox Church, but positive for Islam.

Catholics do not have the same attitude toward corruption if they represent the majority or the minority of the population. When Catholicism is the dominant religion, Catholics have more tolerance toward corruption than Atheists as observed in Table 4. However, in Muslim countries, Catholics have greater aversion toward corruption than Atheists as shown in Table 6, while in Orthodox countries, the relation between being Catholic and attitude toward corruption is not significant as pointed out in Table 5.

Orthodox persons tend to have higher aversion toward corruption than Atheists

[4] The percentage of Roman Catholics in the total respondents is as follows: Argentina (70.16), Brazil (53.11), Chile (64.90), Colombia (61.51), Ecuador (62.70), Mexico (69.69), Peru (74.50), the Philippines (69.12), Poland (94.19), Rwanda (55.73), and Slovenia (65.44).

[5] The percentage of Orthodox Christians in the total respondents is as follows: Belarus (73.33), Cyprus (67.50), Romania (85.46), Russia (62.56), and Ukraine (73.20).

[6] The percentage of Muslims in the total respondents is as follows: Algeria (99.50), Azerbaijan (97.01), Iraq (99.00), Jordan (97.00), Kazakhstan (50.30), Kyrgyz Republic (89.42), Lebanon (55.09), Libya (98.23), Malaysia (63.08), Morocco (99.25), Pakistan (99.67), Tunisia (100.00), Turkey (99.13), and Uzbekistan (95.70).

when they are the majority. We find a negative coefficient for *Orthodox* in Table 5 for estimations with Orthodox Christianity as dominant (not always significant). But they have more tolerance toward corruption than Atheists in Catholic countries, while the relation between being Orthodox and attitude toward corruption is not significant in Muslim countries.

For Islam, the results do not change when this religion is majority or minority. In all tables, we observe no significant coefficient for *Muslim* in line with our previous finding that Muslims do not have a significantly different attitude toward corruption than Atheists.

Thus these results are particularly interesting to appraise the relation between hierarchical Christian religions and tolerance to corruption. They show that this relation is influenced by the status of dominant religion. Interestingly, Catholics can be more tolerant toward corruption than Atheists when they represent the majority, and less averse when they are the minority, while the opposing view is observed for Orthodox. In other words, the status of minority religion would favor a greater or lower lenience toward corruption for individuals belonging to both these hierarchical Christian religions but in opposing directions.

4.3 Multi-religious countries

We prolong the in-depth investigation on the relation between religious denominations and corruption by considering specific countries in greater detail. WVS includes four countries which are characterized by multi-confessional environment in the sense that they are not dominated by one religion but rather see a coexistence of significant religious groups. These countries therefore provide relevant frameworks to analyze the influence of religious affiliations on attitude toward corruption since they allow comparing religions in the same institutional framework.

We do not claim at all that the results in these countries can be generalized to all countries. The key idea of our investigation here is to provide additional investigation to check if our previous findings on the effect of religious denominations on corruption even stand for these multi-religious countries. These four countries are Germany, Malaysia, Lebanon, and Nigeria.

Germany is historically a European country in which neither Catholics, nor

Protestants represent the overwhelming majority. In comparison with predominantly Catholic Southern European countries or mostly Protestant Northern European countries, Germany is therefore a country of prime interest to compare the behaviour of Catholics and Protestants.

Table 7 reports the estimations for Germany. Interestingly we find evidence of a negative coefficient for both *Catholic* and *Protestant*, which is significant in some estimations. Hence the result of lower tolerance to corruption for Protestants relative to Atheists tends to be confirmed in Germany. At the same time, Germany shows no clear difference in behaviour toward corruption between Protestants and Catholics.

Lebanon can be considered as a relevant country to compare the behaviour of Christians and Muslims. It has a very religiously diverse society with broadly speaking one half of the population belonging to Islam and one half of the population affiliating with Christian religions. Each half is not at all homogenous which creates the highest level of religious diversity in the Middle East. In our investigation, we will concentrate on the main religions we examine, i.e. Islam, Orthodox, Catholicism, and Protestantism, which are represented in Lebanon.

Table 8 provides estimations for Lebanon. We observe significant and positive coefficients for all four religious denominations in all specifications. In other words, the different Christian religions and Islam are all associated with greater tolerance to corruption than Atheists in Lebanon.

The Lebanese case gives us motives to qualify our main findings in the sense that they might not be universal. It is not in line with our former finding of negative relation for Protestantism and no significant relation for the three hierarchical religions. However, Lebanon appears to be a specific country in our sample of countries with findings obtained in this country which differ from the results on the full sample. Even for religiosity, the results differ with the fact that *Pray* is positive but not significant, while *Attendance* is significantly positive which means that greater frequency of attendance is associated with tolerance to corruption. All in all, all religions and religiosity are associated with lower aversion to corruption in Lebanon.

Nigeria has similarities with Lebanon in the sense that the country is nearly equally divided between Islam and Christian religions. Each half is however not so heterogeneous than in Lebanon with the majority of Nigerian Muslims being Sunni, while Christians are divided between a majority of Protestants and a minority of Catholics (approximately one quarter of Christians).

Table 9 reports the results for Nigeria. We observe no significant coefficient for *Protestant* and *Catholic*, while the coefficient for *Muslim* is significantly negative. Thus, in Nigeria, Islam is associated with lower tolerance to corruption than for Atheism, while no significant relation is observed for both dominant Christian religions in the country. It therefore presents a different view than our cross-country estimations concluding to a negative relation for Protestantism and a non-significant one for Islam, even if the non-significant coefficient is still observed for Catholicism.

Malaysia is a multicultural country with a Muslim majority and significant Buddhist and Hindu minorities. As such, Malaysia is of particular interest to compare Islam, Hinduism, and Buddhism. Table 10 reports estimations for Malaysia. The coefficient of *Buddhist* is not significant, in line with the results on the full sample of countries. *Muslim* is positive but not significant in two of the three specifications. We therefore observe some limited support for the positive relation between Islam and tolerance to corruption, which differs from our conclusion on the full sample of countries. However, the main difference between Malaysia and the full sample of countries deals with Hinduism. While the coefficient for *Hindu* is significantly negative for all countries, it is significantly positive in Malaysia.

But all findings on Malaysia should also be considered by taking into account the majority or minority status of each religious denomination. Namely Islam is the dominant religion, while Buddhism and especially Hinduism are practiced by minorities. Therefore, the observed results for Malaysia can be interpreted by this status.

All in all, the estimations on multi-religious countries show that the main conclusions on the relation between religious denominations and tolerance to corruption are not necessarily observed in such countries. Hence they suggest moderating the view that universal findings could be observed for the impact of religious denominations on attitude toward corruption. They therefore add to the estimations by majority group in this perspective.

4.4 Robustness checks

We perform robustness checks to test the sensitivity of our results. Since the main estimations have been performed with ordered probit model, we redo the

estimations in two ways.

First, we estimate a probit model. To this end, we recode the dependent variable for tolerance to corruption as a dummy variable equal to one if *Bribe* is from 6 to 10 and to zero if *Bribe* is from 1 to 5. Table 11 displays the results. We observe the confirmation of our main findings. First, both religiosity variables are significantly negative in all estimations, supporting the conclusion that religious people have a lower tolerance to corruption. Second, we find the same negative association between being Protestant or Hindu and tolerance to corruption: *Protestant* and *Hindu* are significantly negative in all specifications.

We observe one significantly positive coefficient for *Catholic* in one estimation, but it remains non-significant in two other estimations in line with our findings with the ordered probit model. We also point out now a negative relation between Buddhism and tolerance to corruption. While *Buddhist* was not significant in our main estimations, it is now significantly negative in all specifications. It therefore moderates our finding of no relation between Buddhism and tolerance to corruption. However, it strengthens our conclusion that individualistic religions have a more negative attitude toward corruption than hierarchical religions, in line with the view of Treisman (2000).

Second, we estimate an OLS model. The variable for attitude to corruption is a variable on a scale from 1 to 10 so an ordered probit model is more appropriate than a model considering a continuous variable. Nonetheless, several former studies like Guiso, Sapienza and Zingales (2003) have performed OLS estimations with such variable. Table 12 reports the estimations.

These additional regressions again confirm both our main findings. On the one hand, religiosity is negatively associated with tolerance to corruption. Coefficients for *Pray* and *Attendance* are significantly negative in all estimations. On the other hand, we again observe that Protestantism and Hinduism are associated with greater aversion toward corruption. For the rest, all coefficients for religious denominations are not significant in all estimations with one exception for *Catholic* in one specification.

5. Conclusions

This study has examined the relation between religion and tolerance toward corruption. We have performed a cross-country investigation with World Values Survey data to check if religiosity and religious denominations are associated with attitude toward corruption. We obtain two main findings.

First, religious people are more averse to corruption. This finding can be explained by the fact that religiosity favors honest behaviour or at least good social behaviour. In other words, to speak with Pope Francis's words, corruption seems to be considered as evil by religious people.

Second, attitudes toward corruption differ across religious denominations. Protestantism and Hinduism are associated with lower tolerance to corruption than Atheism, while other religions do not have clear difference. This conclusion accords with the view from Treisman (2000) that hierarchical religions (Catholicism, Orthodox Christianity, Islam) favor attitudes with respect for authority and thus diminish contestation of office-holders. As such, individualistic religions like Protestantism and Hinduism lead to lower tolerance to corruption.

However, the influence of religious denomination cannot be considered as universal. The behaviour of individuals can be influenced by the fact that their religion is majority or minority. We observe that Catholics and Orthodox people do not have the same tolerance to corruption whether they live in a Catholic or an Orthodox country. We also find that the impact of religious denominations on attitude toward corruption varies with the religious environment through the comparison of results on four multi-religious countries. Taken together, these findings cast doubt on a general, global relation between religious denominations and attitude toward corruption.

We therefore contribute to the identification of the determinants of corruption by showing that religiosity matters while religious denomination plays a role which can differ across countries. These findings also contribute to the literature on the influence of religion on economic outcomes by providing additional evidence that religion is not neutral. All in all, the main lesson from our investigation is that religion matters for institutions. As such it cannot be ignored in the debate on the causes of economic development, even for the advocates of the key role of institutions.

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Table 1 Descriptive statistics

Variables	Mean	Std dev.	Min	Max	Observations
Bribe	1.9700	1.9026	1	10	68,934
Religious Denomination					
Other	0.0829	0.2758	0	1	68,934
Atheist	0.1865	0.3895	0	1	68,934
Buddhist	0.0479	0.2136	0	1	68,934
Protestant	0.0968	0.2957	0	1	68,934
Hindu	0.0238	0.1525	0	1	68,934
Jew	0.0054	0.0731	0	1	68,934
Muslim	0.2719	0.4449	0	1	68,934
Orthodox	0.0976	0.2967	0	1	68,934
Catholic	0.1872	0.3901	0	1	68,934
Attendance	3.9640	2.1812	1	7	68,934
Pray	5.3263	2.6800	1	8	68,934
Gender	0.4762	0.4994	0	1	68,934
Age	41.96	16.53	16	98	68,934
Education	5.7857	2.3356	1	9	68,934
Income	4.9109	2.0936	1	10	68,934
Health	2.0789	0.8445	1	4	68,934
Tvnews	1.4531	0.9905	1	5	68,934
Internet	3.2370	1.7818	1	5	68,934
Marital Status	0.5533	0.4972	0	1	68,934
Children	0.7028	0.4570	0	1	68,934

Source: Inglehart, R., C. Haerpfer, A. Moreno, C. Welzel, K. Kizilova, J. Diez-Medrano, M. Lagos, P. Norris, E. Ponarin & B. Puranen et al. (eds.) (2014). World Values Survey: Round Six-Country-Pooled Datafile Version: http://www.worldvaluessurvey.org/WVSDocumentationWV6.jsp, 2014, Madrid: JD Systems Institute.

Table 2 Main estimations

	(1)	(2)	(3)	(4)	(5)
Gender	0.0819***	0.0725***	0.0851***	0.0720***	0.0826***
	(0.0098)	(0.0098)	(0.0097)	(0.0098)	(0.0098)
Age	-0.0072***	-0.0068***	-0.0071***	-0.0068***	-0.0071***
	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Education	-0.0295***	-0.0290***	-0.0295***	-0.0289***	-0.0294***
	(0.0026)	(0.0026)	(0.0026)	(0.0026)	(0.0026)
Income	0.0406***	0.0406***	0.0409***	0.0403***	0.0406***
	(0.0027)	(0.0027)	(0.0027)	(0.0027)	(0.0027)
Health	0.0530***	0.0525***	0.0524***	0.0526***	0.0525***
	(0.0065)	(0.0065)	(0.0065)	(0.0065)	(0.0065)
Tvnews	0.0647***	0.0624***	0.0642***	0.0627***	0.0641***
	(0.0049)	(0.0049)	(0.0049)	(0.0049)	(0.0049)
Internet	-0.0195***	-0.0195***	-0.0199***	-0.0194***	-0.0196***
	(0.0035)	(0.0035)	(0.0035)	(0.0035)	(0.0035)
Marital Status	-0.0816***	-0.0801***	-0.0809***	-0.0802***	-0.0804***
	(0.0123)	(0.0123)	(0.0123)	(0.0123)	(0.0123)
Children	0.0291**	0.0322**	0.0297**	0.0317**	0.0294**
	(0.0141)	(0.0141)	(0.0141)	(0.0141)	(0.0141)
Other	-0.1449***			-0.0813***	-0.1238***
	(0.0234)			(0.0242)	(0.0243)
Buddhist	-0.0295			0.0128	-0.0182
	(0.0309)			(0.0312)	(0.0311)
Protestant	-0.1017***			-0.0332	-0.0790***
	(0.0214)			(0.0224)	(0.0224)
Hindu	-0.1172**			-0.0534	-0.0985**
	(0.0460)			(0.0463)	(0.0461)
Jew	0.0377			0.0802	0.0512
	(0.0714)			(0.0717)	(0.0715)
Muslim	-0.0347			0.0337	-0.0165
	(0.0250)			(0.0259)	(0.0256)
Orthodox	-0.0367			0.0242	-0.0187
	(0.0254)			(0.0260)	(0.0260)
Catholic	0.0011			0.0606***	0.0204
	(0.0182)			(0.0191)	(0.0192)
Pray		-0.0276***		-0.0277***	
		(0.0023)		(0.0025)	
Attendance			-0.0126***		-0.0095***
			(0.0026)		(0.0028)
Observations	68,934	68,934	68,934	68,934	68,934
Pseudo R-squared	0.0627	0.0632	0.0625	0.0635	0.0628

Ordered probit model estimations. The dependent variable is the ordinal variable *Bribe*. *, **, *** denote an estimate significantly different from 0 at the 10%, 5%, or 1% level. Standard errors are in parentheses. All regressions are estimated by robust standard errors. Country fixed effects are included. Definitions of all variables used are presented in the Appendix.

Table 3 Main estimations with interaction terms

	(1)	(2)
Religiosity measure	**Pray**	**Attendance**
Gender	0.0741***	0.0817***
	(0.0098)	(0.0099)
Age	-0.0068***	-0.0072***
	(0.0004)	(0.0004)
Education	-0.0285***	-0.0291***
	(0.0026)	(0.0026)
Income	0.0400***	0.0403***
	(0.0027)	(0.0027)
Health	0.0527***	0.0520***
	(0.0065)	(0.0065)
Tvnews	0.0628***	0.0643***
	(0.0049)	(0.0049)
Internet	-0.0194***	-0.0192***
	(0.0035)	(0.0035)
Marital Status	-0.0794***	-0.0796***
	(0.0123)	(0.0123)
Children	0.0320**	0.0293**
	(0.0141)	(0.0141)
Other	0.0968*	0.1417***
	(0.0498)	(0.0488)
Buddhist	0.0915	0.1820***
	(0.0581)	(0.0564)
Protestant	0.0840	0.0379
	(0.0576)	(0.0526)
Hindu	0.2969***	0.1230
	(0.0910)	(0.0832)
Jew	0.0269	0.1107
	(0.1594)	(0.1392)
Muslim	0.2144***	0.0448
	(0.0394)	(0.0370)
Orthodox	0.1301***	0.0500
	(0.0429)	(0.0473)
Catholic	0.1426***	0.0899**
	(0.0412)	(0.0387)
Pray	0.0050	
	(0.0050)	
Attendance		0.0280***
		(0.0071)
Other×Religiosity	-0.0457***	-0.0763***
	(0.0086)	(0.0109)
Buddhist× Religiosity	-0.0304***	-0.0696***
	(0.0109)	(0.0141)
Protestant× Religiosity	-0.0356***	-0.0447***
	(0.0093)	(0.0110)
Hindu× Religiosity	-0.0739***	-0.0693***
	(0.0141)	(0.0174)
Jew× Religiosity	-0.0019	-0.0315

	(0.0307)	(0.0367)
Muslim× Religiosity	-0.0461***	-0.0335***
	(0.0066)	(0.0084)
Orthodox× Religiosity	-0.0358***	-0.0360***
	(0.0083)	(0.0117)
Catholic× Religiosity	-0.0293***	-0.0355***
	(0.0074)	(0.0093)
Observations	68,934	68,934
Pseudo R-squared	0.0639	0.0631

Ordered probit model estimations. The dependent variable is the ordinal variable *Bribe*. *, **, *** denote an estimate significantly different from 0 at the 10%, 5%, or 1% level. Standard errors are in parentheses. All regressions are estimated by robust standard errors. Country fixed effects are included. Definitions of all variables used are presented in the Appendix.

Table 4 Catholic countries

	(1)	(2)	(3)	(4)	(5)
Other	-0.1647***			-0.1203**	-0.1577***
	(0.0552)			(0.0570)	(0.0584)
Buddhist	-0.5133			-0.4766	-0.5048
	(0.5283)			(0.5317)	(0.5289)
Protestant	0.0175			0.0622	0.0243
	(0.0443)			(0.0465)	(0.0476)
Hindu	-0.1434			-0.1265	-0.1398
	(0.4177)			(0.4208)	(0.4182)
Jew	0.2802			0.2769	0.2837
	(0.4240)			(0.4225)	(0.4241)
Muslim	0.0526			0.0967	0.0585
	(0.0865)			(0.0875)	(0.0875)
Orthodox	0.3006**			0.3513***	0.3067**
	(0.1274)			(0.1279)	(0.1284)
Catholic	0.0510*			0.0848***	0.0559*
	(0.0306)			(0.0324)	(0.0334)
Pray		-0.0169***		-0.0198***	
		(0.0054)		(0.0058)	
Attendance			-0.0026		-0.0026
			(0.0059)		(0.0066)
Control Variables	Yes	Yes	Yes	Yes	Yes
Observations	13,147	13,147	13,147	13,147	13,147
Pseudo R-squared	0.0621	0.0615	0.0613	0.0624	0.0621

Ordered probit model estimations. The dependent variable is the ordinal variable *Bribe*. *, **, *** denote an estimate significantly different from 0 at the 10%, 5%, or 1% level. Standard errors are in parentheses. All regressions are estimated by robust standard errors. Country fixed effects are included. Definitions of all variables used are presented in the Appendix.

Table 5 Orthodox Christian countries

	(1)	(2)	(3)	(4)	(5)
Other	-0.2686**			-0.2166	-0.2764**
	(0.1335)			(0.1348)	(0.1347)
Buddhist	0.4247			0.4572	0.4195
	(0.4659)			(0.4704)	(0.4631)
Protestant	-0.0372			0.0125	-0.0461
	(0.1259)			(0.1272)	(0.1280)
Hindu	0.1524			0.1702	0.1548
	(0.6101)			(0.5878)	(0.6088)
Jew	-0.1003			-0.0247	-0.1072
	(0.3027)			(0.3077)	(0.3018)
Muslim	0.1009			0.1302	0.0971
	(0.0766)			(0.0781)	(0.0771)
Orthodox	-0.0901			-0.0482	-0.0968**
	(0.0427)			(0.0457)	(0.0460)
Catholic	-0.0880			-0.0298	-0.0976
	(0.0819)			(0.0853)	(0.0861)
Pray		-0.0216***		-0.0183	
		(0.0067)		(0.0072)	
Attendance			-0.0060		0.0038
			(0.0093)		(0.0101)
Control Variables	Yes	Yes	Yes	Yes	Yes
Observations	7,317	7,317	7,317	7,317	7,317
Pseudo R-squared	0.0478	0.0474	0.0469	0.0481	0.0478

Ordered probit model estimations. The dependent variable is the ordinal variable *Bribe*. *, **, *** denote an estimate significantly different from 0 at the 10%, 5%, or 1% level. Standard errors are in parentheses. All regressions are estimated by robust standard errors. Country fixed effects are included. Definitions of all variables used are presented in the Appendix.

Table 6 Muslim countries

	(1)	(2)	(3)	(4)	(5)
Other	-0.3423***			-0.2940***	-0.3392***
	(0.1078)			(0.1085)	(0.1080)
Buddhist	-0.1841*			-0.1690	-0.1834*
	(0.1086)			(0.1090)	(0.1086)
Protestant	0.1541			0.2338	0.1596
	(0.1897)			(0.1866)	(0.1899)
Hindu	0.2542*			0.3181**	0.2574*
	(0.1307)			(0.1317)	(0.1308)
Jew	0.9844***			1.0656***	0.9862***
	(0.2055)			(0.2158)	(0.2055)
Muslim	0.0057			0.0842	0.0095
	(0.0691)			(0.0701)	(0.0695)
Orthodox	-0.0787			-0.0151	-0.0746
	(0.0780)			(0.0789)	(0.0785)
Catholic	-0.2082**			-0.1396	-0.2036**
	(0.0990)			(0.0999)	(0.0994)
Pray		-0.0373***		-0.0399***	
		(0.0046)		(0.0046)	
Attendance			-0.0025		-0.0026
			(0.0050)		(0.0050)
Control Variables	Yes	Yes	Yes	Yes	Yes
Observations	17,411	17,411	17,411	17,411	17,411
Pseudo R-squared	0.0413	0.0415	0.0397	0.0434	0.0413

Ordered probit model estimations. The dependent variable is the ordinal variable *Bribe*. *, **, *** denote an estimate significantly different from 0 at the 10%, 5%, or 1% level. Standard errors are in parentheses. All regressions are estimated by robust standard errors. Country fixed effects are included. Definitions of all variables used are presented in the Appendix.

Table 7 Germany

	(1)	(2)	(3)	(4)	(5)
Other	-0.2819			-0.2397	-0.3871
	(0.3569)			(0.3614)	(0.3526)
Buddhist	-3.8652***			-3.8704***	-4.0368***
	(0.1908)			(0.1899)	(0.1903)
Protestant	-0.0895			-0.0667	-0.1507*
	(0.0720)			(0.0823)	(0.0827)
Hindu	-0.1803			-0.1763	-0.1999
	(0.3867)			(0.3849)	(0.3900)
Jew	0.9804			0.9842	0.9674
	(0.7095)			(0.7097)	(0.7099)
Muslim	-0.5068**			-0.4601*	-0.6353***
	(0.2225)			(0.2402)	(0.2442)
Orthodox	0.9353***			0.9699***	0.8497***
	(0.2303)			(0.2361)	(0.2373)
Catholic	-0.1578**			-0.1228	-0.2436**
	(0.0801)			(0.0990)	(0.0965)
Pray		-0.0267*		-0.0119	
		(0.0139)		(0.0187)	
Attendance			-0.0024		0.0369
			(0.0171)		(0.0228)
Control Variables	Yes	Yes	Yes	Yes	Yes
Observations	1,882	1,882	1,882	1,882	1,882
Pseudo R-squared	0.0244	0.0182	0.0172	0.0245	0.0251

Ordered probit model estimations. The dependent variable is the ordinal variable *Bribe*. *, **, *** denote an estimate significantly different from 0 at the 10%, 5%, or 1% level. Standard errors are in parentheses. All regressions are estimated by robust standard errors. Definitions of all variables used are presented in the Appendix.

Table 8 Lebanon

	(1)	(2)	(3)	(4)	(5)
Protestant	1.5804***			1.5927***	1.6352***
	(0.2605)			(0.2650)	(0.2816)
Muslim	1.2559***			1.2584***	1.3045***
	(0.1844)			(0.1848)	(0.1940)
Orthodox	1.2244***			1.2288***	1.2186***
	(0.2081)			(0.2087)	(0.2154)
Catholic	0.9198***			0.9237***	0.9087***
	(0.1951)			(0.1956)	(0.2023)
Pray		0.0137		0.0179	
		(0.0183)		(0.0187)	
Attendance			0.0786***		0.0998***
			(0.0208)		(0.0224)
Control Variables	Yes	Yes	Yes	Yes	Yes
Observations	1,067	1,067	1,067	1,067	1,067
Pseudo R-squared	0.0361	0.0154	0.0195	0.0363	0.0426

Ordered probit model estimations. The dependent variable is the ordinal variable *Bribe*. *, **, *** denote an estimate significantly different from 0 at the 10%, 5%, or 1% level. Standard errors are in parentheses. All regressions are estimated by robust standard errors. Definitions of all variables used are presented in the Appendix.

Table 9 Nigeria

	(1)	(2)	(3)	(4)	(5)
Other	-0.7617*			-0.7551*	-0.8329**
	(0.4423)			(0.4439)	(0.4008)
Protestant	-0.1130			-0.1136	-0.0650
	(0.0983)			(0.0985)	(0.0989)
Hindu	-0.9213*			-0.8985*	-1.0128**
	(0.4821)			(0.5029)	(0.4420)
Jew	-0.2573			-0.2572	-0.2210
	(0.2558)			(0.2556)	(0.2582)
Muslim	-0.3489***			-0.3512***	-0.3020**
	(0.1001)			(0.1013)	(0.1009)
Orthodox	-0.3405*			-0.3426*	-0.2676
	(0.1777)			(0.1781)	(0.1777)
Catholic	-0.0680			-0.0674	-0.0196
	(0.1030)			(0.1030)	(0.1036)
Pray		-0.0079		0.0056	
		(0.0269)		(0.0286)	
Attendance			-0.0813***		-0.0792***
			(0.0198)		(0.0202)
Control Variables	Yes	Yes	Yes	Yes	Yes
Observations	1,759	1,759	1,759	1,759	1,759
Pseudo R-squared	0.0158	0.0112	0.0142	0.0158	0.0186

Ordered probit model estimations. The dependent variable is the ordinal variable *Bribe*. *, **, *** denote an estimate significantly different from 0 at the 10%, 5%, or 1% level. Standard errors are in parentheses. All regressions are estimated by robust standard errors. Definitions of all variables used are presented in the Appendix.

Table 10 Malaysia

	(1)	(2)	(3)	(4)	(5)
Other	0.4409			0.4856	0.5398*
	(0.2951)			(0.3062)	(0.3034)
Buddhist	0.2840			0.3241	0.3560
	(0.2897)			(0.3010)	(0.2971)
Hindu	0.6945**			0.7609**	0.8161***
	(0.2998)			(0.3164)	(0.3089)
Muslim	0.4453			0.5199	0.5804**
	(0.2849)			(0.3043)	(0.2948)
Pray		-0.0054		-0.02191*	
		(0.0171)		(0.0192)	
Attendance			-0.0396**		-0.0538***
			(0.0165)		(0.0171)
Control Variables	Yes	Yes	Yes	Yes	Yes
Observations	1,298	1,298	1,298	1,298	1,298
Pseudo R-squared	0.0083	0.0054	0.0068	0.0087	0.0107

Ordered probit model estimations. The dependent variable is the ordinal variable *Bribe*. *, **, *** denote an estimate significantly different from 0 at the 10%, 5%, or 1% level. Standard errors are in parenthesis. All regressions are estimated by robust standard errors. Definitions of all variables used are presented in the Appendix.

Table 11 Robustness checks with probit

	(1)	(2)	(3)	(4)	(5)
Gender	0.0801***	0.0754***	0.0843***	0.0730***	0.0804***
	(0.0164)	(0.0164)	(0.0163)	(0.0164)	(0.0164)
Age	-0.0048***	-0.0046***	-0.0048***	-0.0045***	-0.0047***
	(0.0007)	(0.0007)	(0.0007)	(0.0007)	(0.0007)
Education	-0.0289***	-0.0288***	-0.0291***	-0.0285***	-0.0288***
	(0.0043)	(0.0043)	(0.0043)	(0.0043)	(0.0043)
Income	0.0495***	0.0496***	0.0500***	0.0493***	0.0496***
	(0.0043)	(0.0043)	(0.0043)	(0.0043)	(0.0043)
Health	0.0358***	0.0357***	0.0351***	0.0356***	0.0352***
	(0.0109)	(0.0109)	(0.0109)	(0.0109)	(0.0109)
Tvnews	0.0835***	0.0819***	0.0829***	0.0820***	0.0828***
	(0.0076)	(0.0076)	(0.0075)	(0.0076)	(0.0076)
Internet	-0.0237***	-0.0237***	-0.0240***	-0.0234***	-0.0237***
	(0.0056)	(0.0056)	(0.0056)	(0.0056)	(0.0056)
Marital Status	-0.0931***	-0.0932***	-0.0932***	-0.0913***	-0.0912***
	(0.0206)	(0.0206)	(0.0206)	(0.0206)	(0.0206)
Children	0.0218	0.0252	0.0238	0.0230	0.0219
	(0.0234)	(0.0234)	(0.0233)	(0.0234)	(0.0234)
Other	-0.1621***			-0.1141***	-0.1317***
	(0.0362)			(0.0376)	(0.0379)
Buddhist	-0.1107**			-0.0797	-0.0942*
	(0.0561)			(0.0565)	(0.0565)
Protestant	-0.1875***			-0.1361***	-0.1560***
	(0.0376)			(0.0391)	(0.0393)
Hindu	-0.1868***			-0.1396**	-0.1590**
	(0.0674)			(0.0681)	(0.0679)
Jew	0.1702			0.2091*	0.1917
	(0.1178)			(0.1180)	(0.1180)
Muslim	-0.0196			0.0322	0.0066
	(0.0404)			(0.0418)	(0.0415)
Orthodox	-0.0412			0.0045	-0.0155
	(0.0440)			(0.0451)	(0.0451)
Catholic	0.0073			0.0518*	0.0342
	(0.0299)			(0.0314)	(0.0316)
Pray		-0.0231***		-0.0212***	
		(0.0038)		(0.0041)	
Attendance			-0.0175***		-0.0133***
			(0.0043)		(0.0047)
Observations	68,934	68,934	68,934	68,934	68,934
Pseudo R-squared	0.1606	0.1599	0.1593	0.1614	0.1608

Probit model estimations. The dependent variable is the dummy variable equal to one if *Bribe* is from 6 to 10 (high values) and zero if *Bribe* is from 1 to 5 (low values). *, **, *** denote an estimate significantly different from 0 at the 10%, 5%, or 1% level. Standard errors are in parentheses. Country fixed effects are included. All regressions

are estimated by robust standard errors. Definitions of all variables used are presented in the Appendix.

Table 12 Robustness checks with ols

	(1)	(2)	(3)	(4)	(5)
Gender	0.1020***	0.0925***	0.1083***	0.0908***	0.1033***
	(0.0137)	(0.0138)	(0.0136)	(0.0137)	(0.0137)
Age	-0.0075***	-0.0071***	-0.0075***	-0.0071***	-0.0075***
	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0005)
Education	-0.0388***	-0.0386***	-0.0390***	-0.0382***	-0.0387***
	(0.0036)	(0.0036)	(0.0036)	(0.0036)	(0.0036)
Income	0.0561***	0.0561***	0.0566***	0.0556***	0.0561***
	(0.0039)	(0.0039)	(0.0039)	(0.0039)	(0.0039)
Health	0.0683***	0.0682***	0.0680***	0.0678***	0.0679***
	(0.0093)	(0.0093)	(0.0093)	(0.0093)	(0.0093)
Tvnews	0.1046***	0.1024***	0.1042***	0.1026***	0.1040***
	(0.0081)	(0.0081)	(0.0081)	(0.0081)	(0.0081)
Internet	-0.0281***	-0.0278***	-0.0284***	-0.0278***	-0.0282***
	(0.0049)	(0.0049)	(0.0049)	(0.0049)	(0.0049)
Marital Status	-0.1180***	-0.1176***	-0.1182***	-0.1166***	-0.1167***
	(0.0170)	(0.0170)	(0.0170)	(0.0170)	(0.0170)
Children	0.0309	0.0353*	0.0323	0.0341*	0.0313
	(0.0203)	(0.0203)	(0.0203)	(0.0203)	(0.0203)
Other	-0.2299***			-0.1554***	-0.2064***
	(0.0366)			(0.0378)	(0.0377)
Buddhist	-0.0502			-0.0024	-0.0383
	(0.0427)			(0.0431)	(0.0429)
Protestant	-0.1783***			-0.1017***	-0.1533***
	(0.0301)			(0.0316)	(0.0317)
Hindu	-0.2711***			-0.1992**	-0.2510***
	(0.0875)			(0.0879)	(0.0874)
Jew	0.1136			0.1583	0.1281
	(0.1083)			(0.1087)	(0.1084)
Muslim	-0.0352			0.0403	-0.0158
	(0.0413)			(0.0423)	(0.0418)
Orthodox	-0.0568			0.0135	-0.0369
	(0.0362)			(0.0373)	(0.0371)
Catholic	-0.0075			0.0596**	0.0135
	(0.0265)			(0.0278)	(0.0278)
Pray		-0.0322***		-0.0302***	
		(0.0031)		(0.0034)	
Attendance			-0.0162***		-0.0101***
			(0.0035)		(0.0038)
Observations	68,934	68,934	68,934	68,934	68,934
R-squared	0.1597	0.1598	0.1588	0.1607	0.1598

OLS estimations. The dependent variable is the ordinal variable *Bribe*. *, **, *** denote an estimate significantly different from 0 at the 10%, 5%, or 1% level. Standard errors are in parentheses. All regressions are estimated by robust standard errors. Country fixed effects are included. Definitions of all variables used are presented in the Appendix.

Appendix
Definitions of variables

Name	Definition
Dependent variable	
Bribe	Ordinal variable based on response to the question: *Please tell me for the following action whether you think it can always be justified, never be justified, or something in between: someone accepting a bribe in the course of their duties.* Scoring from 1 (*never justifiable*) to 10 (*always justifiable*).
Independent variables	
Gender	Dummy variable equals to one if the individual is a male and zero otherwise.
Age	The number of years that the respondents have lived.
Education	Dummy variable based on the response on a scale from 1 to 9 with higher values indicates more education (1: No formal education, 2: Incomplete primary school, 3: Complete primary school, 4: Incomplete secondary school: technical/vocational type, 5: Complete secondary school: technical/vocational type, 6: Incomplete secondary school: university-preparatory type, 7: Complete secondary school: university-preparatory type, 8: Some university-level education, without a degree, 9: University-level education, with degree) to the statement: What is the highest educational level that you have attained?
Income	Self-reported level of income of the respondent relative to his country. It is based on the question: *On this card is an income scale on which 1 indicates the lowest income group and 10 the highest income group in your country. We would like to know in what group your household is?* The figure reported ranges from 1 for lowest decile to 10 for highest income decile.
Health	Dummy variable based on the response on a scale from 1 to 4 with higher values represents worse state of health to the statement: *All in all, how would you describe your state of health these days? Would you say it is: 1: very good, 2: good, 3: fair, 4: poor.* We reversed this variable so that higher values indicate better state of health.

Television	Dummy variable based on the response on a scale from 1 to 5 with higher values indicates less frequent use of internet to obtain information to the statement: *People learn what is going on in this country and the world from various sources. For television, please indicate whether you use it to obtain information daily, weekly, monthly, less than monthly or never*. We reversed this variable so that higher values indicate more frequent use of televison to obtain information.
Internet	Dummy variable based on the response on a scale from 1 to 5 (higher values indicate less frequent use of internet to obtain information)to the statement: *People learn what is going on in this country and the world from various sources. For internet, please indicate whether you use it to obtain information daily, weekly, monthly, less than monthly or never*. We reversed this variable so that higher values indicate more frequent use of internet to obtain information.
Catholic	Dummy variable equal to one if individual declares he or she belongs to Catholic religion and zero otherwise.
Protestant	Dummy variable equal to one if the individual declares he or she belongs to Protestant religion and zero otherwise.
Orthodox	Dummy variable equal to one if the individual declares he or she belongs to Orthodox religion and zero otherwise.
Muslim	Dummy variable equals to one if the individual declares he or she belongs to Catholic religion and zero otherwise.
Jew	Dummy variable equal to one if the individual declares he or she belongs to Jewish religion and zero otherwise.
Hindu	Dummy variable equal to one if the individual declares he or she belongs to Hindu religion and zero otherwise.
Buddhist	Dummy variable equal to one if the individual declares he or she belongs to Buddhist religion and zero otherwise.
No religion	Dummy variable equal to one if the individual declares he or she does not belong to any religion and zero otherwise.
Other	Dummy variable equal to one for all the other religious denominations with a small number of respondents.
Pray	Dummy variable based on the response on a scale from 1 to 7 with higher values of this variable represents less frequency of pray (1:

	More than once a week, 2: Once a week, 3: Once a month, 4: Only on special holy days, 5: Once a year, 6: Less often, 7: Never, practically never) to the statement: *"Apart from weddings and funerals, about how often do you pray?"*. We reversed this variable so that higher values indicate more frequency of pray.
Attendance	Dummy variable based on the response on a scale from 1 to 7 with higher values of this variable represents less frequency of religious attendance (1: More than once a week, 2: Once a week, 3: Once a month, 4: Only on special holy days, 5: Once a year, 6: Less often, 7: Never, practically never) to the statement: *"Apart from weddings and funerals, about how often do you attend religious services these days?"*. We reversed this variable so that higher values indicate more frequency of religious attendance.

Source: Inglehart, R., C. Haerpfer, A. Moreno, C. Welzel, K. Kizilova, J. Diez-Medrano, M. Lagos, P. Norris, E. Ponarin & B. Puranen et al. (eds.) (2014). World Values Survey: Round Six-Country-Pooled Datafile Version: http://www.worldvaluessurvey.org/WVSDocumentationWV6.jsp, Madrid: JD Systems Institute.

CHAPTER 2

Happiness and Religion†

†This chapter refers to the article co-written with Jan Fidrmuc. The article was presented at the European Public Choice Society Conference in 2015 and was published as a CESifo Working Paper (Working Paper No: 5437).

Abstract

We use four ways of the European Social Survey, covering 2000 to 2008, to analyze the effect of religion on happiness. Our findings confirm that religious individuals are generally happier than non-religious ones. When we seek to disentangle the effects of belonging to an organized religion from the effect of holding religious beliefs, we find that the former lowers happiness while the latter raises it. We interpret this as evidence that the tangible aspects of religion (such as abiding by restrictions on consumption and behaviour) decrease happiness while the spiritual aspects increase it. We also find important differences among members of different religious denominations, and between men and women, with females more adversely affected by the tangible aspects of belonging to a religion.

Keywords: religion, happiness.
JEL Codes: I31, Z12

1. Introduction

Although there are many empirical studies that examine the relationship between happiness (or subjective wellbeing) and various economic indicators[1], relatively few focus on the effects of religion on happiness[2]. Those that do tend to find a robustly positive effect (see for example; Deaton and Stone, 2013, and the references therein)[3]. Clark and Lelkes (2009) and Dehejia, DeLeire and Luttmer (2005) find that being a member of a religion not only increases overall happiness but it also serves to protect believers against adverse shocks such as a drop in income or incidence of unemployment. Moreover, Clark and Lelkes (2009) find that the positive effect of religion is not limited to the believers: the reported happiness of religious and non-religious people alike is positively correlated with the average religious activity in the respondents' region. Mookerjee and Beron (2005) consider the role of religious fragmentation and find that higher levels of religious diversity decrease the level of happiness. Finally, Campante and Yanagizawa and Drott (2013) show that even costly religious sacrifices, such as fasting during the Ramadan, can raise subjective well-being.

In this paper, we seek to decompose the effect of religion on happiness into two components: the benefits – both material and spiritual – and the costs, in particular the need to comply with the various rules and restrictions imposed by religion. On the side of the benefits, being a member of a religion yields a range of tangible benefits, such as social contacts (including access to potential spouses and matchmaking), emotional and material support in times of need, dispute resolution, as well as immaterial and spiritual benefits such the prospect of eternal life in heaven, favorable reincarnation and the like.

Religious membership is also costly as religions typically bring with them complex rules such as basic tenets of one's behaviour (for example the Ten Commandments in Christianity or the hadith in Islam), restrictions on what foods one

[1] See for example Di Tella, McCulloch and Oswald (2001) for inflation and unemployment, Clark, Georgellis and Sanfey (2001) for labor market outcomes, Easterlin (1995, 2001) for income and Oswald (1997) for economic performance. For literature review, see Dolan, Peasgood and White (2008).

[2] Most of the early empirical analyses on the impact of the religion on happiness have been done by psychologists: see Diener et al. (1999) for a literature review.

[3] Other studies that find a positive effect of religion on happiness in a broad range of countries and contexts include Soydemir, Bastida and Gonzales (2004), Mochon, Norton and Ariely (2008), Tao (2008), Lelkes (2006), Easterlin (2009), Florea and Caudill (2014) and Popova (2014).

can eat, what constitutes acceptable clothing, under what circumstances men and women can meet, which aspects of modern technology can be embraced, and even invasive and painful actions and body modifications such as self-flagellation or male and female genital circumcision (mutilation). Berman (2000) explains such restrictions by likening religions to clubs that offer benefits (club goods) and require costly sacrifices (membership dues) to prevent freeriding.

However, while the tangible benefits of religion may have been important in the past, they have lost much of their importance in modern societies with well-functioning secular institutions providing the legal system, health care, redistributive transfers, counseling, and the like. Furthermore, modern science increasingly undermines also the immaterial benefits of religion. As the relative benefits of being a member of a religion decline, the relative cost of complying with religious restrictions should rise. At the same time, the rising complexity of modern societies and the rapidly growing range of consumption options make complying with religious prescriptions increasingly costly or even ambiguous[4]. Therefore, it is reasonable to expect religion to play less of a role in people's lives. Indeed, Paldam and Grundlach (2010) hypothesize an inverse relationship between religiosity and the level of economic development, which they confirm using World Values Survey data for a broad range of countries.

In our analysis, we use the first four waves of the European Social Survey (ESS), collected between 2000 and 2008, to address these issues. These surveys allow us to control for membership in a broad range of major religions: given that the benefits and restrictions associated with different religions are not the same, it is reasonable to expect their effect on happiness not to be the same. In addition to religious membership, we also control for the intensity of religious devotion, which we interpret as a proxy for the immaterial aspects of religion, and participation in religious activities.

Our results suggest that, when controlling for religious affiliation, membership in most major religions is associated with significantly greater happiness after controlling for a broad range of individual-level characteristics. When we add

[4] For example, most Old World religions do not ban tobacco because it was only introduced from the Americas relatively late, long after those religions formulated their religious restrictions. Given its addictive properties and harmful health effects, it would be reasonable to expect at least some religions to ban the use of tobacco if they were to revise their rules or formulate then anew.

religiosity and allow its effect to vary across religions, a striking result emerges: religious membership lowers happiness but this is countered by a positive effect of religiosity. We interpret the effect of religious membership as capturing the tangible aspects of religion (both costs and benefits) while religiosity reflects the immaterial aspects. Our results therefore suggest that membership in a religion is costly but this is compensated by the spiritual and immaterial benefits for those who are sufficiently devoted. We also observe important differences across religions in this respect. Finally, when we replace religiosity by the frequency of praying, this dichotomous pattern disappears, suggesting that it is really the intensity of beliefs and not participation in religious activities that increases happiness.

Bjørnskov, Dreher and Fischer (2008), Clark and Lelkes (2009) and others have considered the differences across religious denominations in their impact on happiness. Deaton and Stone (2013), in turn, consider religiosity rather than membership of a religion, which in their analysis is a dichotomous variable (yes/no answer to a question whether religion plays an important role in one's life). Our religiosity variables measure the intensity of beliefs on a 0-10 scale, thus allowing for much greater differentiation in the degree of religious devotion. Furthermore, to the best of our knowledge, we are the first to control for religious membership and intensity of religiosity at the same time, while allowing for differences across religious denominations, so as to differentiate between the material (tangible) and spiritual aspects of religion.

The rest of the paper is organized as follows: In section 2, we introduce our data set and the variables we use in the empirical analysis. In section 3, we discuss our empirical results and in the last section, we summarize and discuss our findings.

2. Data

The analysis is based on the first four waves of the European Social Survey (European Social Survey, 2002, 2004, 2006, 2008) (ESS henceforth) carried out every two years between 2000 and 2008 in 30 countries in Europe and its neighborhood: besides the EU/EEA countries, Turkey, Russia and Israel are also included. While the surveys are carried out in the same countries repeatedly, the data takes the form of repeated cross-sections rather than a panel. The dependent variable collects the respondents' responses to a standard happiness question:

"Taking all things together, how happy would you say you are?"

The answers are coded between 0 (extremely unhappy) and 10 (extremely happy). Religiosity is measured by a question on the intensity of respondents' devotion, coded also between 0 (not at all religious) and 10 (very religious). We also consider participation in religious activities, which we measure by how often respondents pray, ranging between 1 (every day) and 7 (never). As for membership in major religious denominations, we have information whether the respondents are Roman Catholic, Protestant, Eastern Orthodox, other Christian, Jewish, Islamic, Eastern, or belong to any other (non-Christian) religions. The basic statistics for all countries and for all four waves are summarized in Table 1.

A non-negligible share of respondents in virtually every country declared no religious denomination (with the exceptions of Turkey, Greece, Poland and Israel in which more than 90% of respondents identify with a religion). The share of unaffiliated respondents is reported also in Table 1 in the column denoted as None. In a number of countries (France, Sweden, the UK, the Czech Republic and Estonia), more than two-thirds of respondents report no religious denomination. While we do not know for sure what it means when a respondent fails to report a religious affiliation, we interpret this as an indication that these respondents are not very religious and that they are unlikely to comply with religious restrictions. Indeed, the five countries with especially high shares of non-affiliated respondents all have average religiosity below 4[5].

The last column reports the average happiness. The happiest place in Europe is Denmark while the gloomiest country is Bulgaria. Turkey wins on religiosity and the least God-fearing place in Europe is the Czech Republic.

3. Does Religion Raise Happiness?

Since the dependent variable, happiness, takes values from 0 to 10 (with increasing values representing more happiness), we use ordered logit to study the determinants of happiness. We control for a broad range of individual socio-economic

[5] 29 percent of respondents without a religious denomination report their religiosity to be 0, the median religiosity is 3 and only 1 percent reports the highest possible value, 10. Among respondents belonging to a religion, 2 percent say they are not at all religious (reporting 0), the median is 6 and 9 percent report being very religious (10 out of 10). Similarly, 7 percent of respondents without a religious denomination say they pray every day while 64 percent never pray. Among those with a religious denomination, 34 percent pray every day and 15 percent never.

characteristics: gender (we also estimate separate regressions for males and females to allow the individual variables to have gender-specific effect on happiness), age, education, household composition and marital status, degree of urbanization, relative income[6] and labor-market status, in addition to religiosity and religious denomination. The regression results for this baseline specification are reported in Table 2, with country and ESS-wave effects included but not reported.

Our regressions reproduce a number of well-known findings. Men are less happy than women. Education increases happiness (even after controlling for relative income and labor-market status). The effect of age is non-linear, with middle-aged individuals being less happy than either young or old ones (men attain lowest happiness aged 58, women at 60). Having a larger household increases happiness but children reduce it (after controlling for household size). Married individuals are happier. Rural residents are happier than urban folks. Being well-off gives a powerful boost to happiness. Finally, students are generally happy whereas the unemployed, sick/disabled and retirees are unhappy. As for belonging to an organized religion, we identify happiness-boosting effects for all religions except the Eastern Orthodox. These results suggest that religious people are significantly happier than non-religious individuals.

Considering men and women separately reveals a few gender-specific differences. The positive effect of education is more than double that for women as for men. The same goes for the (negative) effect of having children. Women's happiness is also more affected by relative income. As for religion, Jewish and Muslim women gain substantially more from belonging to a religion than males.

Our main results are presented in Table 3 where we add religiosity, both as a stand-alone determinant of happiness and interacted with the various religious denominations. The regressions include the same broad range of socio-economic characteristics as in Table 2, but to save space, we are not reporting these (the estimated coefficients are very similar to those in Table 2). As we argued above, this allows us to distinguish between the material and spiritual aspects of religion, the former captured by membership of a religion while the latter are measured by the intensity of religious beliefs. The effect of adding religiosity is striking: belonging to a religion

[6] Rather than use absolute income, which is difficult to compare across countries at different level of economic development due to differences in purchasing power, we use the question asking the respondents how well they are faring with their income, ranging from being comfortable to finding it very difficult to cope.

now reduces rather than increases happiness, significantly so for Protestants, Roman Catholics, Eastern Orthodox and Muslims. This is countered by happiness-boosting effect of religiosity: on its own and also through the interaction terms. In other words, being a member of a religion appears to lower happiness (possibly because of the restrictions on behaviour and consumption); the increased happiness stems from religious devotion rather than from membership in a religion itself. Moreover, the happiness-boosting effect of religious devotion is not the same across the various religions, as the significant coefficients of the interaction terms demonstrate.

One way to assess the counteracting effects of religious affiliation and religiosity is to consider how religious a person has to be so that religion has no effect on happiness[7]. Since the reference category is individuals who report no religious denomination, this exercise will yield the level of religiosity when a member of a particular religion is as happy as a person without a declared religion. For Roman Catholics, this zero-happiness religiosity is 3.1 when taking all respondents together, 2.7 for men and 3.7 for women (recall that religiosity takes values from 0 to 10). Protestants are even better off: 1.4 overall, 0.7 for men and 2 for women. For Eastern Orthodox, the zero-happiness point is higher: 4 overall, 3.6 for men and 4.6 for women; 2.6 for other Christians (1.3 for men and 3.7 for women); 0.9 for Jews (2.2 for men and 0.1 for women); and 4.3 for Muslims (4.6 for men and 4.3 for women). Hence, while for some religious denominations, even a mildly religious person can experience no negative effect on happiness, for others one must be at least moderately religious.

In Table 4, we replace religiosity with an indicator how often the respondent prays: note that increasing values of this variable indicate praying less often. Again, socio-economic characteristics of the respondents are included but not reported. The effects of religious denominations now appear mixed: some are positive while others are negative or insignificant. Hence, adding the frequency of religious activities does not have the same effect as controlling for the intensity of religious beliefs. This is possibly because the frequency of praying is one of the restrictions imposed by some religions and, as such, need not reflect the intensity of religious beliefs. Furthermore, most of the interaction terms are insignificant. The coefficient on praying is strongly significant: the negative sign implies that praying more often increases happiness. The

[7] For this, we divide the coefficient for religious denomination (in absolute value) by the sum of the coefficient on the interaction effect and that of religiosity on its own). For example, for Roman Catholics, the calculation is 0.30224/(0.055686+0.042264)=3.08.

fact that most of the interaction terms are insignificant, however, suggests that the effect of praying on happiness is largely uniform across all religions.

Next, we present a number of robustness checks. In Tables 5-7, we replace the indicator of happiness (which takes values between 0 and 10) with a dummy variable equal to one if the respondent reports happiness level of 9 or 10 and zero otherwise. This means that we only consider the very happy respondents. An additional advantage is that this allows us to report marginal effects, unlike in the previous Tables. Table 5 presents the results with only religious denominations, Table 6 adds religiosity and Table 7 adds praying. The results are qualitatively very similar to those reported above. Finally, in Tables 8-10, we estimate the regressions using OLS rather than logit or ordered logit. While this is not an appropriate method to analyze categorical variables, the dependent variable is close to being continuous, taking 11 different values (0-10). Again, a useful byproduct of using this technique is that we can compare the magnitude of the various effects more easily. The results are once more very similar to those in Tables 2-4.

4. Conclusions

Our results confirm the previous finding that religion increases happiness. In our analysis, we seek to disentangle the tangible aspects of membership in an organized religion from the more abstract effects of religiosity: the former reflecting the club goods provided by religious congregations as well as the various religious restrictions while the latter being essentially spiritual. When doing so, we find that religious membership without religious devotion lower happiness. It is the spiritual and belief-based aspect of religion, as captured by the intensity of religious attachment, which raises happiness. Differences between men and women are non-negligible, with women being both more negatively affected by religious membership and gaining more due to religiosity. Differences across religious denominations are important too. In contrast, although praying frequently also raises happiness, this effect does not vary much across the various religions.

Hence, belonging to a religion and abiding by its rules is costly. Religious people's happiness stems from the intensity of their beliefs, not from tangible benefits associated with religious membership.

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Table 1 Religiosity and happiness in Europe

Variable [Scale]	Roman Catholic	Protestant	Eastern Orthodox	Other Christian	Jewish	Islamic	Eastern religions	Other	None	Religious [0-10]	Pray [1-7]	Happy [0-10]
Austria	62.1%	3.4%	0.7%	1.1%	0.1%	1.3%	0.9%	0.3%	30.1%	5.10	4.35	7.5
Belgium	39.0%	0.7%	0.3%	0.8%	0.1%	3.0%	0.3%	0.4%	55.4%	4.80	5.22	7.7
Bulgaria	0.3%	0.5%	50.3%	0.6%	0.0%	10.9%	0.0%	0.1%	37.2%	4.33	5.09	5.3
Switzerland	31.6%	30.1%	0.9%	1.1%	0.1%	2.4%	0.8%	0.4%	32.4%	5.28	4.06	8.0
Cyprus	0.5%	0.0%	69.0%	0.2%	0.0%	0.1%	0.1%	0.1%	30.2%	6.89	2.85	7.5
Czech Rep.	23.1%	1.9%	0.1%	0.9%	0.0%	0.0%	0.1%	0.3%	73.5%	2.65	6.03	6.7
Germany	22.3%	27.8%	0.6%	1.5%	0.1%	2.0%	0.4%	0.1%	45.1%	3.91	5.17	7.2
Denmark	1.0%	56.2%	0.1%	0.8%	0.1%	1.5%	0.3%	0.3%	39.6%	4.23	5.63	8.3
Estonia	0.5%	7.6%	14.1%	1.2%	0.1%	0.2%	0.0%	0.2%	76.0%	3.55	5.94	6.6
Spain	68.4%	0.4%	0.7%	1.0%	0.0%	1.5%	0.1%	0.2%	27.8%	4.49	4.60	7.5
Finland	0.1%	49.2%	0.9%	0.8%	0.0%	0.1%	0.1%	0.1%	48.7%	5.32	4.56	8.0
France	26.6%	1.0%	0.1%	0.5%	0.3%	2.1%	0.1%	0.2%	69.1%	3.70	5.45	7.1
UK	5.6%	19.5%	0.1%	1.0%	0.2%	1.4%	0.9%	0.3%	71.1%	4.17	4.90	7.4
Greece	0.8%	0.3%	89.5%	0.2%	0.0%	1.9%	0.1%	0.1%	7.2%	6.87	2.78	6.5
Croatia	75.4%	0.2%	3.8%	0.5%	0.0%	0.3%	0.1%	0.1%	19.6%	6.14	3.29	6.7
Hungary	34.6%	12.7%	0.0%	1.2%	0.1%	0.0%	0.1%	0.1%	51.2%	4.33	4.81	6.3
Ireland	76.5%	2.8%	0.2%	1.1%	0.0%	0.4%	0.2%	0.1%	18.6%	5.52	2.85	7.6
Israel	2.1%	0.1%	0.5%	0.2%	72.5%	14.3%	0.1%	1.0%	9.3%	4.82	4.65	7.4
Italy	78.0%	0.4%	0.1%	0.4%	0.0%	0.1%	0.1%	0.1%	20.8%	6.06	3.71	6.3
Luxembourg	51.9%	0.9%	0.5%	16.1%	0.1%	1.6%	0.4%	0.4%	28.0%	4.29	5.12	7.8
Netherlands	20.1%	16.4%	0.2%	2.9%	0.1%	2.0%	0.6%	0.3%	57.4%	4.94	4.83	7.7
Norway	1.3%	47.9%	0.3%	1.7%	0.0%	1.3%	0.4%	0.8%	46.2%	3.92	5.43	7.9
Poland	90.6%	0.4%	0.5%	0.6%	0.0%	0.1%	0.0%	0.0%	7.8%	6.43	2.68	6.9
Portugal	83.5%	0.8%	0.2%	1.9%	0.1%	0.1%	0.2%	0.1%	13.2%	5.69	3.36	6.5
Russia	0.3%	0.2%	48.4%	0.2%	0.1%	5.5%	0.1%	0.0%	45.2%	4.47	4.99	6.0
Sweden	1.1%	26.1%	0.5%	1.2%	0.1%	1.4%	0.3%	0.2%	69.0%	3.54	5.78	7.9
Slovenia	50.2%	0.9%	1.3%	0.3%	0.0%	1.0%	0.1%	0.1%	46.2%	4.75	4.99	7.2
Slovakia	63.5%	7.8%	0.7%	5.2%	0.1%	0.1%	0.1%	0.2%	22.4%	5.96	3.74	6.5
Turkey	0.0%	0.0%	0.0%	0.0%	0.0%	96.1%	0.0%	1.1%	2.7%	7.07	1.79	6.0

Ukraine	8.2%	1.4%	60.0%	1.5%	0.0%	0.5%	0.1%	0.5%	27.8%	5.16	3.80	5.5
Average	29.6%	12.6%	10.2%	1.3%	2.3%	3.6%	0.3%	0.3%	39.8%	4.82	4.51	7.1

Notes: The answers to the questions on generalized trust, perceived fairness and helpfulness (columns 1-3) range between 0 and 10. Meeting people socially takes values 1 through 7. Having someone to discuss personal/intimate matters takes values 0 and 1. Participating in social activities takes values 1 through 5. Higher values always indicate higher stock of social capital. Religiosity ranges from Not at all religious (0) to Very religious (10). Praying ranges from Every day (1) to Never (7).

Source: European Social Survey (ESS) (2002, 2004, 2006, 2008). ESS Wave-1, ESS Wave-2, ESS Wave-3, ESS Wave-4, www.europeansocialsurvey.org.

Table 2 Religion and happiness: ordered logit

Variables	All	Males	Females
Male	-0.1302***		
	(0.0091)		
Age	-0.05606***	-0.06423***	-0.04977***
	(0.0016)	(0.0025)	(0.0022)
Age sqrd	0.000476***	0.000555***	0.000412***
	(0.0000)	(0.0000)	(0.0000)
Education years	0.012345***	0.007303***	0.015556***
	(0.0013)	(0.0018)	(0.0018)
Household size	0.039875***	0.039898***	0.039645***
	(0.0043)	(0.0062)	(0.0059)
Children	-0.04542***	-0.03951**	-0.06664***
(dummy)	(0.0123)	(0.0191)	(0.0163)
Married/cohabitating	0.640778***	0.730828***	0.559753***
	(0.0109)	(0.0175)	(0.0145)
Suburb of city(1)	-0.03134*	-0.03087	-0.03488
	(0.0161)	(0.0237)	(0.0218)
Town(1)	0.018864	0.017407	0.016346
	(0.0126)	(0.0189)	(0.0170)
Village(1)	0.061427***	0.07757***	0.046836***
	(0.0129)	(0.0192)	(0.0174)
Farm/countryside(1)	0.110451***	0.133829***	0.095133***
	(0.0213)	(0.0307)	(0.0299)
Income: coping(2)	-0.47535***	-0.50669***	-0.45724***
	(0.0110)	(0.0158)	(0.0153)
Income: difficult(2)	-1.11935***	-1.15606***	-1.09804***
	(0.0149)	(0.0223)	(0.0201)
Income: v. difficult(2)	-1.81038***	-1.90935***	-1.74006***
	(0.0214)	(0.0338)	(0.0279)
Paid work(3)	-0.03811***	0.05047*	-0.09597***
	(0.0148)	(0.0277)	(0.0184)
Student(3)	0.181319***	0.277164***	0.101601***
	(0.0200)	(0.0320)	(0.0267)
Unemployed(3)	-0.38571***	-0.41158***	-0.32436***
	(0.0260)	(0.0407)	(0.0356)
Inactive(3)	-0.27345***	-0.26756***	-0.24929***
	(0.0334)	(0.0533)	(0.0436)
Sick/disabled(3)	-0.57207***	-0.50233***	-0.61936***
	(0.0278)	(0.0430)	(0.0372)
Retired(3)	-0.00721	0.063356*	-0.0641***
	(0.0190)	(0.0333)	(0.0243)
Homeworker(3)	0.073006***	0.070782***	0.083989***
	(0.0121)	(0.0221)	(0.0151)
Roman Catholic(4)	0.141687***	0.181401****	0.11059***
	(0.0129)	(0.0188)	(0.0178)
Protestant(4)	0.193347***	0.194028***	0.182532***
	(0.0148)	(0.0218)	(0.0201)
East Orthodox(4)	-0.02894	0.040285	-0.06807**
	(0.0244)	(0.0378)	(0.0323)
Other Christian(4)	0.249879***	0.321205***	0.189769***
	(0.0387)	(0.0584)	(0.0518)

Jewish(4)	0.231532***	0.10846	0.326169***
	(0.0589)	(0.0862)	(0.0809)
Muslim(4)	0.204344***	0.152294***	0.242279***
	(0.0385)	(0.0537)	(0.0558)
Foreign born	-0.05245***	0.002987	-0.09593***
	(0.0167)	(0.0253)	(0.0223)
Ethnic minority	-0.12348***	-0.15419***	-0.09827***
	(0.0220)	(0.0321)	(0.0302)

Standard errors in parentheses. Significance: ***p<0.01; **p<0.05; *p<0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity; and (4) no religious affiliation or other non-Christian affiliation.

Table 3 Religiosity and happiness: ordered logit

Variables	All	Males	Females
Individual Controls	YES	YES	YES
Roman Catholic(4)	-0.30224***	-0.2602***	-0.39136***
	(0.0260)	(0.0368)	(0.0372)
Protestant(4)	-0.11753***	-0.04722	-0.18244***
	(0.0321)	(0.0443)	(0.0473)
East Orthodox(4)	-0.32665***	-0.32238***	-0.38827***
	(0.0478)	(0.0705)	(0.0660)
Other Christian(4)	-0.22573**	-0.10633	-0.36959**
	(0.1084)	(0.1531)	(0.1550)
Jewish(4)	-0.07145	-0.16804	0.007617
	(0.0786)	(0.1172)	(0.1065)
Muslim(4)	-0.67239***	-0.6822***	-0.69608***
	(0.0806)	(0.1081)	(0.1226)
Roman Catholic*R(5)	0.055686***	0.061293***	0.062125***
	(0.0043)	(0.0065)	(0.0060)
Protestant*R(5)	0.040733***	0.032749***	0.047246***
	(0.0055)	(0.0081)	(0.0077)
East Orthodox*R(5)	0.038494***	0.054914***	0.04072***
	(0.0073)	(0.0113)	(0.0097)
Other Christian*R(5)	0.045605***	0.044144**	0.054942***
	(0.0148)	(0.0218)	(0.0205)
Jewish*R(5)	0.041646***	0.038931**	0.045242***
	(0.0112)	(0.0174)	(0.0145)
Muslim*R(5)	0.113159***	0.113268***	0.118462***
	(0.0110)	(0.0152)	(0.0162)
Religiosity (R)	0.042264***	0.035709***	0.043844***
	(0.0025)	(0.0037)	(0.0035)

Standard errors in parentheses. Significance: ***p<0.01; **p<0.05; *p<0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity; and (4) no religious affiliation or other non-Christian affiliation. (5) Interactions terms involving religious denomination and religiosity.

Table 4 Pray and happiness: ordered logit

Variables	All	Males	Females
Individual Controls	YES	YES	YES
Roman Catholic(4)	0.052841*	0.135342***	0.049935
	(0.0291)	(0.0501)	(0.0362)
Protestant(4)	0.145429***	0.125054**	0.146224***
	(0.0336)	(0.0587)	(0.0413)
East Orthodox(4)	-0.17459***	-0.03507	-0.18247***
	(0.0421)	(0.0742)	(0.0524)
Other Christian(4)	0.181232***	0.265262**	0.159717*
	(0.0653)	(0.1077)	(0.0827)
Jewish(4)	0.480763***	0.224887	0.699911***
	(0.0933)	(0.1382)	(0.1275)
Muslim(4)	0.115803*	0.086141	0.143069*
	(0.0600)	(0.0874)	(0.0842)
Roman Catholic*P(5)	0.002003	-0.00867	-0.00329
	(0.0052)	(0.0084)	(0.0069)
Protestant*P(5)	-0.0031	0.001271	-0.00399
	(0.0061)	(0.0100)	(0.0081)
East Orthodox*P(5)	0.022463***	0.004944	0.016763
	(0.0080)	(0.0131)	(0.0107)
Other Christian*P(5)	-0.01482	-0.01898	-0.02535
	(0.0167)	(0.0244)	(0.0239)
Jewish*P(5)	-0.06486***	-0.04136*	-0.08691***
	(0.0151)	(0.0229)	(0.0203)
Muslim*P(5)	-0.00294	-0.01566	0.008793
	(0.0128)	(0.0181)	(0.0183)
Pray (P)	-0.03853***	-0.04299***	-0.03151***
	(0.0039)	(0.0065)	(0.0049)

Standard errors in parentheses. Significance: ***p<0.01; **p<0.05; *p<0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity; and (4) no religious affiliation or other non-Christian affiliation. (5) Interactions terms involving religious denomination and pray.

Table 5 Religion and happiness (happiness>=9): Logit

Variables	All	Males	Females
Male	-0.03343***		
	(0.0022)		
Age	-0.01087***	-0.01189***	-0.01007***
	(0.0004)	(0.0006)	(0.0005)
Age sqrd	0.000095***	0.000105***	8.63E-05***
	(0.0000)	(0.0000)	(0.0000)
Education years	-0.00093***	-0.00156***	-0.00059
	(0.0003)	(0.0004)	(0.0004)
Household size	0.006939***	0.005461***	0.008154***
	(0.0010)	(0.0015)	(0.0014)
Children	-0.0014	-0.00273	-0.00268
(dummy)	(0.0030)	(0.0046)	(0.0041)
Married/cohabitating	0.110419***	0.120762***	0.100566***
	(0.0027)	(0.0044)	(0.0037)
Suburb of city(1)	-0.00487	-0.01026*	-0.00065
	(0.0040)	(0.0058)	(0.0055)
Town(1)	0.005503*	0.004242***	0.005811
	(0.0032)	(0.0047)	(0.0044)
Village(1)	0.014228***	0.017455***	0.010692**
	(0.0032)	(0.0047)	(0.0045)
Farm/countryside(1)	0.022897***	0.020866***	0.02586***
	(0.0050)	(0.0071)	(0.0070)
Income: coping(2)	-0.0931***	-0.09175***	-0.09533***
	(0.0025)	(0.0036)	(0.0035)
Income: difficult(2)	-0.1668***	-0.15411***	-0.17795***
	(0.0037)	(0.0055)	(0.0050)
Income: v. difficult(2)	-0.20589***	-0.19862***	-0.21214***
	(0.0059)	(0.0093)	(0.0076)
Paid work(3)	-0.01491***	-0.00222	-0.0233***
	(0.0036)	(0.0066)	(0.0045)
Student(3)	0.011303**	0.021952***	0.002228
	(0.0047)	(0.0075)	(0.0064)
Unemployed(3)	-0.04572***	-0.05069***	-0.03866***
	(0.0069)	(0.0108)	(0.0093)
Inactive(3)	-0.03464***	-0.01867	-0.04428***
	(0.0088)	(0.0140)	(0.0116)
Sick/disabled(3)	-0.04716***	-0.02721**	-0.06346***
	(0.0074)	(0.0110)	(0.0101)
Retired(3)	0.007335	0.016364**	-0.00095
	(0.0047)	(0.0081)	(0.0061)
Homeworker(3)	0.015536***	0.013701***	0.018819***
	(0.0029)	(0.0052)	(0.0037)
Roman Catholic(4)	0.018261***	0.022203***	0.015169***
	(0.0032)	(0.0046)	(0.0044)
Protestant(4)	0.031896***	0.032259***	0.030469***
	(0.0034)	(0.0050)	(0.0047)
East Orthodox(4)	-0.00212	0.009142	-0.00715
	(0.0069)	(0.0102)	(0.0093)

Other Christian(4)	0.056861***	0.058636***	0.055063***
	(0.0089)	(0.0130)	(0.0122)
Jewish(4)	0.017685	-0.01466	0.044729**
	(0.0131)	(0.0189)	(0.0183)
Muslim(4)	0.026786***	0.012962	0.037573***
	(0.0092)	(0.0127)	(0.0134)
Foreign born	0.004354	0.017746***	-0.00655
	(0.0040)	(0.0059)	(0.0055)
Ethnic minority	-0.00412	-0.00354	-0.0049
	(0.0055)	(0.0078)	(0.0077)

Standard errors in parentheses. Significance: ***p<0.01; **p<0.05; *p<0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity; and (4) no religious affiliation or other non-Christian affiliation.

Table 6 Religiosity and happiness (happiness>=9): Logit

Variables	All	Males	Females
Individual Controls	YES	YES	YES
Roman Catholic(4)	-0.07498***	-0.05794***	-0.09817***
	(0.0066)	(0.0091)	(0.0096)
Protestant(4)	-0.03184***	-0.0259**	-0.03704***
	(0.0074)	(0.0101)	(0.0111)
East Orthodox(4)	-0.09667***	-0.07111***	-0.13355***
	(0.0144)	(0.0200)	(0.0207)
Other Christian(4)	-0.03158	-0.04403	-0.02422
	(0.0245)	(0.0336)	(0.0356)
Jewish(4)	-0.05405***	-0.06778**	-0.03836
	(0.0184)	(0.0269)	(0.0253)
Muslim(4)	-0.1219***	-0.14509***	-0.10379***
	(0.0205)	(0.0277)	(0.0305)
Roman Catholic*R(5)	0.012766***	0.012237***	0.014869***
	(0.0011)	(0.0016)	(0.0015)
Protestant*R(5)	0.009373***	0.009895***	0.009076***
	(0.0013)	(0.0018)	(0.0018)
East Orthodox*R(5)	0.01415***	0.013258***	0.018246***
	(0.0021)	(0.0030)	(0.0029)
Other Christian*R(5)	0.009233***	0.013023***	0.007054
	(0.0033)	(0.0047)	(0.0047)
Jewish*R(5)	0.010376***	0.008146**	0.011829***
	(0.0025)	(0.0039)	(0.0033)
Muslim*R(5)	0.018992***	0.022154***	0.016832***
	(0.0027)	(0.0037)	(0.0039)
Religiosity (R)	0.006026***	0.003957***	0.00717***
	(0.0006)	(0.0009)	(0.0008)

Standard errors in parentheses. Significance: ***p<0.01; **p<0.05; *p<0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity; and (4) no religious affiliation or other non-Christian affiliation. (5) Interactions terms involving religious denomination and religiosity.

Table 7 Pray and happiness (happiness>=9): Logit

Variables	All	Males	Females
Individual Controls	YES	YES	YES
Roman Catholic(4)	-0.00162	0.006688	0.000188
	(0.0069)	(0.0115)	(0.0088)
Protestant(4)	0.013923*	0.019345	0.009746
	(0.0077)	(0.0131)	(0.0097)
East Orthodox(4)	-0.01861*	-0.00257	-0.01186
	(0.0112)	(0.0185)	(0.0145)
Other Christian(4)	0.044023***	0.057017**	0.040316**
	(0.0147)	(0.0232)	(0.0193)
Jewish(4)	0.044634**	-0.00261	0.087743***
	(0.0200)	(0.0294)	(0.0276)
Muslim(4)	-0.01324	-0.03358*	0.007238
	(0.0142)	(0.0204)	(0.0199)
Roman Catholic*P(5)	0.000184	-0.00098	-0.00077
	(0.0013)	(0.0020)	(0.0017)
Protestant*P(5)	0.000998	-0.0002	0.002226
	(0.0014)	(0.0022)	(0.0019)
East Orthodox*P(5)	0.000314	-0.0007	-0.00302
	(0.0022)	(0.0034)	(0.0031)
Other Christian*P(5)	-0.00458	-0.00765	-0.00338
	(0.0038)	(0.0054)	(0.0055)
Jewish*P(5)	-0.00912***	-0.00684	-0.01196***
	(0.0033)	(0.0050)	(0.0044)
Muslim*P(5)	0.005194*	0.005898	0.003892
	(0.0030)	(0.0042)	(0.0043)
Pray (P)	-0.00932***	-0.01007***	-0.0081***
	(0.0009)	(0.0015)	(0.0012)

Standard errors in parentheses. Significance: ***p<0.01; **p<0.05; *p<0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity; and (4) no religious affiliation or other non-Christian affiliation. (5) Interactions terms involving religious denomination and pray.

Table 8 Religion and happiness: OLS

Variables	All	Males	Females
Male	-0.09737***		
	(0.0091)		
Age	-0.05339***	-0.05864***	-0.04894***
	(0.0016)	(0.0024)	(0.0022)
Age sqrd	0.000446***	0.000498***	0.000399***
	(0.0000)	(0.0000)	(0.0000)
Education years	0.017075***	0.010916***	0.021516***
	(0.0013)	(0.0018)	(0.0018)
Household size	0.04108***	0.045259***	0.0375***
	(0.0042)	(0.0060)	(0.0060)
Children	-0.05452***	-0.055***	-0.07438***
(dummy)	(0.0123)	(0.0185)	(0.0167)
Married/cohabitating	0.640213***	0.707551***	0.57685***
	(0.0108)	(0.0168)	(0.0147)
Suburb of city(1)	-0.03918**	-0.03331	-0.04621**
	(0.0162)	(0.0232)	(0.0225)
Town(1)	0.009486	0.008965	0.006837
	(0.0127)	(0.0184)	(0.0175)
Village(1)	0.04185***	0.060306***	0.025839
	(0.0129)	(0.0186)	(0.0179)
Farm/countryside(1)	0.087116***	0.114661***	0.067739**
	(0.0216)	(0.0301)	(0.0309)
Income: coping(2)	-0.41003***	-0.42818***	-0.39949***
	(0.0110)	(0.0154)	(0.0158)
Income: difficult(2)	-1.08673***	-1.09958***	-1.08258***
	(0.0146)	(0.0211)	(0.0203)
Income: v. difficult(2)	-1.90225***	-1.95247***	-1.86665***
	(0.0205)	(0.0312)	(0.0274)
Paid work(3)	-0.01277	0.072081***	-0.07044***
	(0.0148)	(0.0267)	(0.0188)
Student(3)	0.206793***	0.2956***	0.130446***
	(0.0202)	(0.0311)	(0.0277)
Unemployed(3)	-0.3855***	-0.40361***	-0.32496***
	(0.0256)	(0.0388)	(0.0360)
Inactive(3)	-0.26765***	-0.25923***	-0.24412***
	(0.0328)	(0.0506)	(0.0442)
Sick/disabled(3)	-0.6444***	-0.57072***	-0.69369***
	(0.0268)	(0.0402)	(0.0370)
Retired(3)	-0.01074	0.066705**	-0.07321***
	(0.0188)	(0.0320)	(0.0247)
Homeworker(3)	0.067345***	0.063441***	0.080499***
	(0.0121)	(0.0216)	(0.0155)
Roman Catholic(4)	0.154361***	0.186585***	0.125407***
	(0.0130)	(0.0183)	(0.0183)
Protestant(4)	0.196893***	0.199721***	0.183911***
	(0.0150)	(0.0215)	(0.0209)
East Orthodox(4)	-0.02889	0.041864	-0.07483**
	(0.0243)	(0.0364)	(0.0330)

Other Christian(4)	0.209994***	0.30245***	0.131866**
	(0.0382)	(0.0559)	(0.0522)
Jewish(4)	0.242206***	0.140634*	0.33156***
	(0.0568)	(0.0807)	(0.0801)
Muslim(4)	0.192673***	0.149316***	0.224559***
	(0.0370)	(0.0499)	(0.0548)
Foreign born	-0.06032***	-0.00577	-0.10422***
	(0.0166)	(0.0242)	(0.0228)
Ethnic minority	-0.13079***	-0.15456***	-0.10898***
	(0.0215)	(0.0303)	(0.0304)

Standard errors in parentheses. Significance: ***p<0.01; **p<0.05; *p<0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity; and (4) no religious affiliation or other non-Christian affiliation.

Table 9 Religiosity and happiness: OLS

Variables	All	Males	Females
Individual Controls	YES	YES	YES
Roman Catholic(4)	-0.21501***	-0.18704***	-0.28755***
	(0.0257)	(0.0352)	(0.0377)
Protestant(4)	-0.0716**	-0.00772	-0.13843***
	(0.0322)	(0.0431)	(0.0484)
East Orthodox(4)	-0.27561***	-0.25622***	-0.34989***
	(0.0470)	(0.0669)	(0.0667)
Other Christian(4)	-0.16815	0.048954	-0.41161***
	(0.1033)	(0.1418)	(0.1501)
Jewish(4)	0.043265	-0.03783	0.118932
	(0.0765)	(0.1108)	(0.1060)
Muslim(4)	-0.59684***	-0.60036***	-0.62162***
	(0.0749)	(0.0975)	(0.1161)
Roman Catholic*R(5)	0.042568***	0.04901***	0.047054***
	(0.0043)	(0.0062)	(0.0060)
Protestant*R(5)	0.032607***	0.026068***	0.039348***
	(0.0055)	(0.0079)	(0.0078)
East Orthodox*R(5)	0.028955***	0.043319***	0.031815***
	(0.0071)	(0.0107)	(0.0097)
Other Christian*R(5)	0.031674**	0.017973	0.052886***
	(0.0141)	(0.0201)	(0.0198)
Jewish*R(5)	0.017196	0.014955	0.020883
	(0.0107)	(0.0163)	(0.0142)
Muslim*R(5)	0.098959***	0.099764***	0.103138***
	(0.0101)	(0.0135)	(0.0151)
Religiosity (R)	0.041908***	0.034527***	0.044182***
	(0.0025)	(0.0036)	(0.0035)

Standard errors in parentheses. Significance: ***p<0.01; **p<0.05; *p<0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity; and (4) no religious affiliation or other non-Christian affiliation. (5) Interactions terms involving religious denomination and religiosity.

Table 10 Pray and happiness: OLS

Variables	All	Males	Females
Individual Controls	YES	YES	YES
Roman Catholic(4)	0.079652***	0.174735***	0.065605*
	(0.0286)	(0.0476)	(0.0366)
Protestant(4)	0.171759***	0.167907***	0.174426***
	(0.0335)	(0.0566)	(0.0422)
East Orthodox(4)	-0.14298***	0.022656	-0.17395***
	(0.0415)	(0.0706)	(0.0532)
Other Christian(4)	0.169837***	0.280309***	0.140852*
	(0.0637)	(0.1012)	(0.0831)
Jewish(4)	0.413994***	0.221888*	0.59521***
	(0.0890)	(0.1286)	(0.1238)
Muslim(4)	0.16887***	0.16235**	0.186334**
	(0.0572)	(0.0812)	(0.0818)
Roman Catholic*P(5)	0.001847	-0.01185	-0.00055
	(0.0052)	(0.0080)	(0.0071)
Protestant*P(5)	-0.00598	-0.00298	-0.00919
	(0.0062)	(0.0097)	(0.0083)
East Orthodox*P(5)	0.017353**	-0.00275	0.013717
	(0.0080)	(0.0125)	(0.0109)
Other Christian*P(5)	-0.01916	-0.02078	-0.03685
	(0.0163)	(0.0231)	(0.0238)
Jewish*P(5)	-0.04772***	-0.03075	-0.06439***
	(0.0145)	(0.0216)	(0.0197)
Muslim*P(5)	-0.01687	-0.02975*	-0.00584
	(0.0121)	(0.0166)	(0.0177)
Pray (P)	-0.03154***	-0.03103***	-0.02697***
	(0.0038)	(0.0062)	(0.0050)

Standard errors in parentheses. Significance: ***p<0.01; **p<0.05; *p<0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity; and (4) no religious affiliation or other non-Christian affiliation. (5) Interactions terms involving religious denomination and pray.

CHAPTER 3

The Female Vote and the Rise of AKP in Turkey[‡]

[‡]This chapter refers to the article co-written with Jan Fidrmuc. The article was presented at the European Public Choice Society Conference in 2014 and was published as a CESifo Working Paper (Working Paper No: 5226).

Abstract

We investigate how gender-related differences in voting behaviour shaped the rise of the AKP, the moderately Islamic party that has ruled Turkey since 2002. We find that education level and religiosity are the main determinants of voting behaviour of both men and women in Turkey. The effect of education on the support for the AKP, however, is dramatically different for men and women in 2002: it is negative for women but hump-shaped for men. We argue that this difference may be driven by expected distributional implications of adopting more conservative religious norms for low-skilled men and women.

Keywords: Gender gap, voting, Turkey, Justice and Development Party (AKP), democracy, Islam.
JEL Codes: O15, P48, Z12

1. Introduction

Gender differences in political attitudes and voting behaviour have gained importance with the enfranchisement of women at the beginning of the twentieth century. This has led to the preponderance of studies on the political "gender gap" along three dimensions: gender differences in mass political participation (falling in recent years), differences between men's and women's votes (electoral gap), and different party identification of men and women (partisan gap).[1] For the purpose of our study, we use the term gender gap to denote the different voting behaviour of men and women. Although the gender gap in voting behaviour has significant effects on the results of elections both in developed and developing countries, almost all of studies investigate this phenomenon for developed countries. In contrast, we examine the gender gap in voting behaviour of Turkish men and women. Hence, our study fills two important gaps in the literature by considering a country that is both developing and Muslim at the same time.

The most dramatic political development in Turkey's recent history has been the rise of the Justice and Development Party (known as AKP, its Turkish acronym), which was founded in 2001 as a moderately Islamic party. Departing from the previously mainly secular orientation of Turkish mainstream political parties, the AKP advocates a greater role for religious (Islamic) values in the public and private life. The AKP scored a landslide victory in the 2002 election, when it won 34 percent of votes and captured almost two thirds of seats in the parliament (Turkish electoral rules require parties to receive at least 10% of all votes to be represented in the parliament; those that fail to attain this threshold see their votes redistributed to the more successful parties). This was followed by further electoral success in 2007, when the AKP saw its support reach 47 percent, and again in 2011 and 2015 (50 percent on both occasions). In 2014, the AKP leader and incumbent Prime Minister, Recep Tayyip Erdoğan, won in the first round of the presidential election with 52% of the vote and became the first directly-elected President of Turkey.

Turkey under AKP has gradually abandoned the strict secularism that was in place since Atatürk's founding of the modern Turkish state. On the one hand, this has arguably increased religious freedom, for example, by allowing religious symbols such

[1] See Hill (2003: 69), Conover (1988: 985), and the references therein.

as headscarves in public buildings, schools and workplaces. On the other hand, the greater acceptance of Islamic norms in everyday life can potentially have an asymmetrically adverse effect on women's lives. A conservative interpretation of Islamic norms ascribes different roles to men and women in most aspects of everyday life, and it gives more power to men than to women. As a result, women's participation in politics, the labor market, social life and/or their equality with men in the legal system are often circumscribed in Muslim countries[2]. Since 2002, the government's actions and pronouncements increasingly reveal such conservative attitudes towards women.

Whether the ascent of AKP in 2002 indeed affected the position of women in the society and the labor market is not clear. Female labor force participation rate fell from 29 percent in 2002 (and 31 percent in 1999, see Table 1) to 25 percent by 2005. The decline in female participation, however, was relatively short-lived: it recovered after 2005, rising to 32 percent in 2013. Male participation rate also fluctuated during the same period although the swings were more modest (especially when considering the much higher initial level) and the decline even more short-lived: from 78 percent in 1999 to 73 percent in 2003, rising subsequently to 76 percent by 2013. It is therefore not clear whether the fall in female participation after the rise of AKP can be attributed to its policy decisions rather than to some other causes, such as the economic crisis that hit Turkey just before the AKP's rise, in 2001.

In fact, it is even possible that the rise of the AKP could improve the labor-market position of women. Myersson (2014) considers an earlier episode in 1994 when a different Islamic party (*Refah*) won in a number of local elections in Turkey. His results suggest that the municipalities controlled by this party subsequently experienced increased secondary-school and high-school enrollment and completion rates. His interpretation of this effect is that pious female students may have been discouraged by the strict secular policies (in particular, the headscarf ban) followed in schools elsewhere. In the longer term, increased human-capital acquisition translated into adolescent marriage rates, higher political participation, and even lower subsequent support for Islamic parties among female voters. In a similar vein,

[2] For example, some Muslim societies impose restrictions (either formal or informal) on women's dress, labor-market participation, education, property and inheritance rights, ability to testify in a court of law on equal terms with men, freedom to marry non-Muslims (allowed for men but not for women), entitlements to seek divorce and/or custody over children, or even issues as basic as being allowed to leave one's house unaccompanied or to drive.

Çörekçioğlu (2015) considers the effect of AKP on female employment at the level of municipalities. She finds that towns with AKP mayors do not have significantly different gender composition of municipal employment compared to towns with mayors from other parties.

Given the different roles ascribed to men and women in traditional Muslim societies, it is reasonable to expect differences in the support for the AKP among male and female voters. Similarly, greater application of traditional Islamic norms may have different effects on urban vs rural voters, young vs old, highly skilled/educated vs low-skilled, and so on. This is because the impact of behavioural restrictions imposed by traditional norms should depend on the composition of consumption: household with relatively modern (Westernized) pattern of consumption should be affected more than household following traditional lifestyles. We therefore consider the determinants of support for the AKP, and for the Republican People's Party (CHP), the main opposition party, in the 2002 election, when the AKP rose to power, as well as the subsequent election in 2007, which confirmed its primacy in Turkish politics. Using the European Social Survey, we relate the support for these two parties to a broad array of socio-economic characteristics of respondents, including their gender, education, and religiosity. The results of our analysis suggest that education and religiosity are the main drivers of voting behaviour: votes for the AKP increase with religiosity and fall with education, both among male and female voters. When we allow for a non-linear effect of education, however, we observe a remarkable difference between men and women in the 2002 election: while formal education always translates into lower support for AKP among women, the pattern is hump-shaped for men. The peak support for AKP among men is attained at approximately five years of education, which, in Turkey, corresponds to completed primary school education. The pattern of support for the CHP is roughly the reverse of that for the AKP.

The remainder of the paper proceeds as follows. In the next section, we briefly outline the existing literature on the gender gap in voting behaviour. In section 3, we express our data sources and methodology. In section 4, we discuss our empirical results in detail and, in section 5, we conclude.

2. Literature Review

The political attitudes of women have become a hotly debated issue as women started to receive the right to vote at the beginning of the twentieth century (the first country to introduce women's suffrage being New Zealand in 1893). In this period, it was speculated that women's vote would be distinctive and induce dramatic changes to party fortunes (Hill, 2003: 70). During the 1950s and 1960s, the difference between the men's and women's votes was modest but nonetheless women were more inclined to support conservative parties both in Western Europe and the United States. This phenomenon came to be referred to as the "traditional gender gap" (Inglehart and Norris, 2000: 443).

At the end of the 1970s and during the early 1980s, the traditional gender gap seemed to disappear and women begun to move to the left of men in the United States and in many European countries (Emmenegger and Manow, 2014; Iversen and Rosenbluth, 2006: 12). This new cleavage between men's and women's political attitudes was denoted as the "modern gender gap" (Inglehart and Norris, 2000: 444). Since the political differences between men and women are not identical across countries, recent studies of the gender gap have often reached contradictory results about the nature and the extent of the phenomenon.

Previous studies have put forward several explanations of the differing political attitudes of men and women. One of the earliest explanations for the gender gap, namely socialization, emphasizes the childhood experiences of men and women (Studlar, McAllister and Hayes 1998: 782). According to this approach, political differences between men and women result from the sex-role conditioning and contrasting moral values conveyed to boys and girls by their parents (Manza and Brooks, 1998: 1240). As a consequence of this traditional socialization, based on the belief that the main responsibility of women is child rearing, women become conditioned to be more concerned about the protection of life and cooperative decision making than men (Alexandre, 2004: 548).

The second approach to gender differences in political attitudes is based on the women's autonomy thesis and asserts that women who are more autonomous from men have a tendency to deviate more from men also in their political behaviours (Howell and Day, 2000: 860). In Becker's influential study on family (1985), it is assumed that the interests of family members are fully harmonized and therefore their

political attitudes are expected to be the same. However, because of the differences between the interests of divorced and single women's and the others, some researchers argue that Becker's model becomes inaccurate when the rising divorce rates are taken into account (Iversen and Rosenbluth, 2006; Aidt and Dallal, 2008). Indeed, with the rising divorce rates since 1960s, a number of analysts have found evidence in favor of women's autonomy thesis (Edlund and Pande, 2002; Iversen and Rosenbluth, 2006).

The third approach to explaining the gender gap in political attitudes focuses on women's labor-force participation. This approach observes that although rising participation of women in the labor force has strengthened the position of women, it has not resulted in full equality in the labor market, political life or family. This explains why women are more concerned about unequal treatment and tend to be more leftist than men (Togeby, 1994: 217). According to this approach, there are three different ways in which increasing labor force participation of women results in a gender gap in political behaviour (Manza and Brooks, 1998: 1243): First, the integration of women in the labor force exposes them to policy debates and other information about political campaigns. Hence, political awareness of women rises with their participation in the labor force. Second, since paid employment exposes women to gender inequalities, women tend to support political activism and feminist political goals. Finally, women are more dependent on the public sector for employment than men and they rely much more on social programs for supporting their families. Since leftist parties are generally more biased towards redistributive policies than the rightist parties, working women are apt to vote for the leftist parties.

Increasing labor force participation plays a crucial role in the Developmental Theory of the Gender Gap which has been proposed by Inglehart and Norris (2000). This theory states that in traditional societies, women are dissuaded from participating in the labor force since child bearing and child rearing are regarded as their main objectives. However, in post-industrial societies, increasing labor force participation of women and other cultural changes have had dramatic impact on women's voting behaviour.

The fourth explanation of political differences between men's and women's attitudes suggests that the main reason behind the gender gap is the feminist identity and consciousness (Conover, 1988: 988). Conover (1988) states that in the absence of feminism, women's values are dominated by male-oriented values. However, by

becoming a feminist, women realize their basic values and form their own attitudes on political issues. According to this approach, feminists generally advocate egalitarian attitudes and thus support left-wing parties far more than non-feminists (Bergh, 2007: 238).

The final approach propounds two alternative hypotheses about this phenomenon (Kaufmann and Petrocik, 1999: 864-866): The Attitude Hypothesis and the Salience Hypothesis. While the Attitude Hypothesis argues that the gender gap stems from the distinct preferences of men and women on different political issues, the Salience Hypothesis asserts that the main reason of the gender gap is the differing weights men and women apply to political issues. For example, while most women may prefer increased social welfare spending and consider abortion as one of the most important issues determining their voting behaviour, most men may prefer decreased social welfare spending and give relatively little weight to abortion in their voting decisions (Chaney, 1998: 312). Similarly, economic issues can have differential impacts on men's and women's political choices. As stated by Welch and Hibbing (1994), in contrast to men who behave egocentrically and consider their own economic circumstances in their voting decisions, women have a tendency to behave sociotropically and to take into account the country's economic conditions instead of their family's while determining their political choices. Although the Attitude and the Salience Hypotheses shed some light on the different political attitudes of men and women about policy issues that directly relate to a person's gender, they are incapable of explaining different political choices about issues in which gender does not play a role. Thus, other socioeconomic and cultural variables should be taken into account when dealing with issues that are not directly related to a person's gender (Bergh, 2007: 239).

Given that few Muslim countries are democracies with free and fair elections, it is not surprising that there is limited literature on the determinants of electoral outcomes in Muslim countries. Nevertheless, the sea change to Turkish politics brought about by the AKP victory in 2002 has resulted in some (limited) interest in the background of AKP's rise. Çarkoğlu and Hinich (2006) emphasize the role played by the main cleavages in Turkish politics and argue that the Islamism vs secularism and Turkish vs Kurdish nationalism dimensions matter more than the standard left-right dimension dominant in Western politics. Çarkoğlu (2012), in turn, argues that the rise

of AKP has been attributable to ideological rather than to economic concerns of voters. Başlevent, Kirmanoğlu and Şenatalar (2005) consider voting intentions and find that AKP supporters include mainly young voters, in particular males, and those who are not in favor of Turkey's entry into the European Union.

As the preceding discussion illustrates, much of the literature on the differences in political preferences of male and female voters focuses on advanced democratic countries, with studies on Muslim countries being particularly rare.[3] In this paper, we seek to help fill this gap.

3. Data and Methodology

Our empirical analysis is based on individual survey data from the European Social Survey (ESS henceforth). The ESS surveys are carried out every two years in around 30 countries in Europe and its neighborhood (not all countries feature in every wave). They follow a unified methodology and use the same basic questionnaire (while allowing for country-specific questions). The surveys address a wide range issues such as media exposure, political interest and participation, economic, political and social attitudes, and collect also detailed information on socio-economic characteristics of the respondents and their households. Importantly, the ESSs include retrospective questions on the respondents' voting behaviour in the most recent election. For our analysis, we are interested in the electoral preferences of Turkish voters at the time of AKP's rise to power in 2002. Therefore, we use ESS Waves 2 (collected in 2004) (European Social Survey, 2004) and 4 (2008) (European Social Survey, 2008), which contain information on past voting behaviour in the 2002 and 2007 elections, respectively.

The ESS typically features 1-2 thousand respondents per country per wave; we have 1156 observations with information on voting behaviour in the 2nd wave (European Social Survey, 2004) and 1304 in the 4th wave (European Social Survey, 2008). The dependent variable equals to 1 if the respondent voted for the party in question in the last election and zero otherwise. We consider the two main parties, the AKP and the CHP: these were the only two parties to be represented in the parliament following the 2002 election (they were joined by the Nationalist Movement Party,

[3] Appendix C summarizes the main contributions to the literature.

MHP, as well as by a number of independent MPs, in 2007). These two political parties together received approximately 54% and 68% of total votes in the 2002 and 2007 elections, respectively (see Appendix B)[4]. They represent two contrasting political views: the AKP is a right-wing and religious party while the CHP represents the left-wing side of the spectrum and espouses largely secular values.

We include a number of explanatory variables which capture socio-economic characteristics of the respondents: age, gender, number of years of education, marital status, household composition, urban vs rural residence, economic situation of the household, labor-market status of the respondent during the preceding week, belonging to an ethnic minority (which, in Turkey, mainly captures the Kurds[5]), and religiosity. Detailed explanations of these variables are in Appendix A. The regressions are estimated using the logit model.

4. Empirical Results

We estimate regressions relating voting for AKP and CHP to the respondents' socio-economic characteristics including gender, age, years of education, labor-market participation, place of residence, living with husband/wife/partner, having children in the household, belonging to an ethnic minority and subjective perception about the household's income. To control for the effect of religiosity on voting behaviour, we add a set of dummy variables that capture how often the respondent prays (results with self-reported degree of religiosity are very similar). All of the regressions are estimated for both genders together as well as for male and female respondents separately.

Table 2 shows the determinants of support for the AKP, with socio-economic variables only (i.e. without religiosity). The first three models show the results of regressions estimated with the ESS 2 data set, while the last three models show the results based on ESS 4, corresponding to the 2002 and 2007 elections, respectively. Gender does not have an effect on the support for AKP in either the 2002 or 2007 election (see columns 1 and 4). Few of the remaining variables (age, living with husband/wife/partner, place of residence and belonging to an ethnic minority) are

[4] The regression results for other parties are available upon request.
[5] No further information is available in the ESS on the ethnic identity of those respondents who declare to belong to an ethnic minority.

statistically significant. However, an important difference appears with respect to education when we consider male and female votes in 2002 separately. The effect of education is hump-shaped for males: more years of formal education initially translate into greater support for AKP, before the effect levels off and becomes negative. The maximum effect is attained at just over 5 years of education, which, in Turkey, is equivalent to completed primary education. The effect for women, in contrast, is effectively negative throughout: it is u-shaped but the minimum is attained at 19 years (post-graduate level), which very few women possess.

Figure 1 depicts the distribution of education, by year, for men and women. Women are more represented at the bottom of the distribution: staggering 19 percent report to have no education at all, compared to 7 percent of men. Most respondents, 39 percent of men and women alike, completed only primary education. Middle school, which requires further 3 years, was not compulsory until 1997[6], so that many ESS respondents finished their education when only 5 years of schooling was mandatory. The next smaller peak, at 11 years, corresponds to completed high school, a level that is attained by 15% of males and 12% of females in our data. Only relatively few attain more than high-school education, with university (at 15 years) completed by 4% of men and 3% of women. This, effectively, means that nearly 50% of men and some 65% of women in Turkey have between 0 and 5 years of education. In other words, the divergent effect of education on voting behaviour of male and female voters affects a large share of Turkish voters.

The different relationship between education and support for AKP among low-skilled men and women may stem from the fact that men with low level of education can potentially benefit from low-skilled women being excluded from the labor market, as may happen if Islamic social norms become more prevalent in Turkey. Therefore, such men could expect to see their labor-market outcomes improving under an AKP government. Women, whether low skilled or high skilled, in contrast, stand to gain little, as far as their labor-market position is concerned, from voting for the AKP.

Interestingly, the aforementioned effect of education can only be observed during the 2002 election. In 2007, education has a negative effect on all voters (and, in unreported regression with education featuring linearly, on males and females too); it does not have a different effect on the men's and women's votes for AKP.

[6] In 2012, compulsory education was further extended to 12 years.

Seemingly, once the AKP assumed power, the voting behaviour of male and female voters has converged. A possible explanation could be based on the fact that the rise of AKP did not translate into a permanent fall in employment of women, as the aforementioned statistics presented in Table 1 document.

Table 3 shows the results for the AKP support, when we explain voting behaviour with both socio-economic variables and religiosity. Specifically, we use a question on how often respondents pray; the answers to this question are summarized in Figure 2. Clearly, Turkey is a very religious society, with 65 percent of men and 77 percent of women claiming to pray every day. Nevertheless, we observe some change over time, with the share of those who pray every day falling slightly between 2004 and 2008 while the shares of those praying only on religious holy days rises (these figures are available upon request).

The regression results with religiosity are very similar to the previous results. As it is expected, people's attitude about religion is one of the most significant determinants of voting for the AKP: respondents who pray rarely or never do not vote for AKP. As in the previous regressions, the gender dummy does not have an effect on the votes for AKP. Hence, taking into account religiosity does not change the results in respect to the gender gap in voting behaviour. The differentiated effect of the quadratic polynomial of education, nevertheless, occurs also when controlling for religiosity. The pattern for men is again hump-shaped while that for women is u-shaped, with the respective turning points attained at almost identical education levels as in the preceding analysis without religiosity.

Tables 4 and 5 show the results for the CHP. Again, we first consider only socio-economic variables and then add religiosity. As in Tables 2 and 3, the first three models show the results of regressions estimated by using ESS 2, while the last three models show the results of regressions estimated using ESS 4.

Similar to the analysis for AKP, education plays an important role in determining support for the CHP. For men and women together, the effect of education is positive. When considering the two genders separately, the pattern for males is u-shaped while that for females is hump-shaped, the reverse of the results for the AKP. The lowest support among males is attained at just under 6 years of education. For females, the maximum is at over 11 years of formal education (equivalent to a high-school diploma). The pattern is very similar again when we add religiosity.

As with the AKP support, the differentiated effect of education disappears in the 2007 election. Nevertheless, gender does appear as a statistically significant determinant of voting for the CHP in the 2007 election: males are significantly less likely to vote for this party than females. This indicates that a gender gap in voting for CHP appeared in that year, in contrast to 2002. Since the CHP is a center-left party and tends to support redistributive policies, this result is compatible with the view that women generally advocate egalitarian attitudes and vote for leftist parties. Finally, respondents who rarely or never pray are significantly more likely to vote for the CHP. Thus, with the AKP, religiosity is an important determinant of voting for the CHP.

In summary; education and religiosity are the most important determinants of voting for both AKP and CHP. Moreover, the effect of education on voting behaviour is different for males and females in an important way in the 2002 election. In contrast, religiosity affects the voting behaviour of men and women in the same way. Furthermore, there is a gender gap between men and women in terms of voting for the CHP in 2007, with women more likely to vote for this party than men.

5. Conclusions

The differences between the voting behaviour of men and women have become one of the most controversial issues in political-behaviour research in recent years. Although there are quite a number of studies on the gender gap in voting behaviour in developed countries, almost none of the analyses investigate this phenomenon in the context of developing or Muslim countries.

In this study, we examine the voting behaviour of Turkish voters in the 2002 and 2007 elections, which heralded and cemented, respectively, the rise to power of the Justice and Development Party (AKP). We are particularly interested in the differences between the voting behaviour of male and female voters, given that Islamic cultural and social norms impose important restrictions on the behaviour of both genders, with the restrictions on women's behaviour rather more onerous. To the best of our knowledge, this is the first comprehensive analysis of gender differences in voting behaviour in Turkey, and one of only few for Muslim countries in general.

According to our results, education and religiosity are both important determinants of men's and women's votes. While religiosity affects the votes of men

and women in the same way, the effect of education differs with respect to gender. In particular, we find that the support for the AKP among female voters falls with increasing education while the pattern for males is non-monotonic, rising first, peaking around the equivalent of primary education (5 years of schooling) and only then falling. The support for the main opposition party, the Republican People's Party (CHP), is the opposite, hump-shaped for women and u-shaped for men, with almost the same turning point for men as in the case of the AKP support. It is striking that this pattern only prevails in the 2002 election; in the subsequent 2007 election, education shows a negative (positive) effect on the votes for the AKP (CHP) for both men and women alike. Instead, a standard gender gap appears in the 2007 election, with female voters more likely to vote for the CHP than males.

We believe our results reflect two kinds of distributional effects of greater application of traditional Islamic norms in the society: it strengthens the position of men at the expense of women, and it imposes more restrictions on the quality of life and consumption options of highly educated individuals (who tend to be more Westernized) than on those of less educated. The different effect of education on male and female voting behaviour in 2002 may be driven by the first of these two effects. In particular, low-skilled men may have expected to benefit from restrictions being placed on labor-market participation by women (who are on average less skilled than men in Turkey). Hence, the rise of political Islam in Turkey may have been assisted by gender conflict in the labor market. Female labor force participation indeed fell from 2002 to 2005 (see Table 1). However, this trend proved only temporary and female participation started rising again from 2006 onwards. The fact that the AKP did not significantly restrict women's participation in the labor market may explain why the hump-shaped effect of education on men's voting behaviour only appears in 2002 and not in 2007. In the latter election, instead, the second effect of Islamization seems to dominate.

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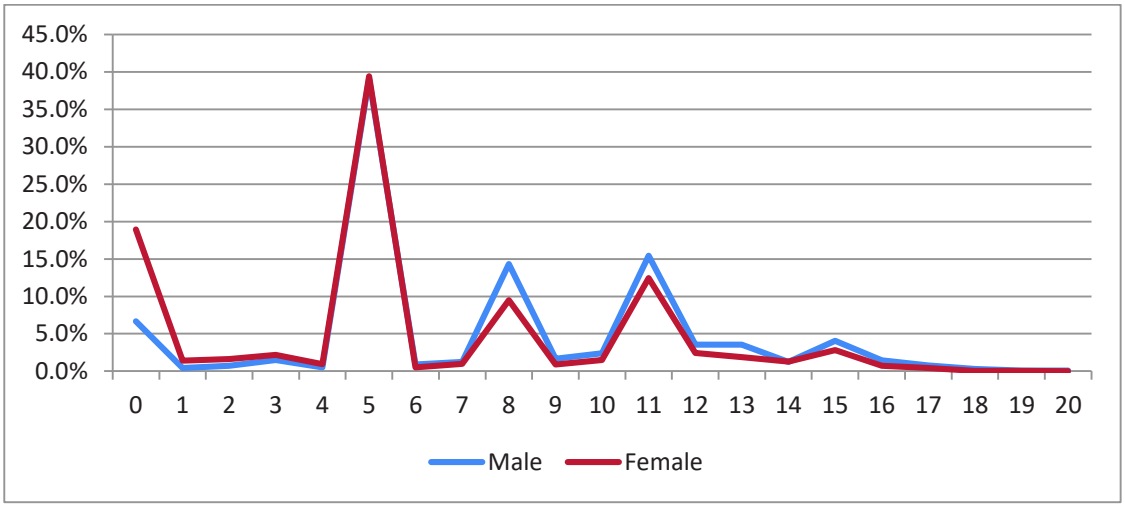
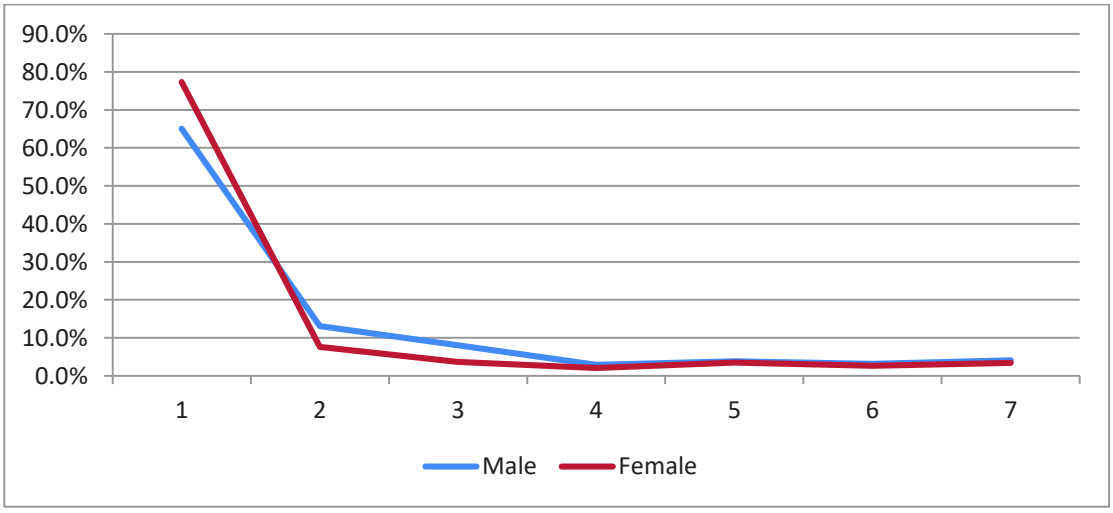
Figure 1 Years of education by gender



Notes: Primary education comprises 5 years and is compulsory. Middle school is completed at 8 years (and has been compulsory since 1997). 11 years corresponds to completed high school and 15 years is an undergraduate degree.

Source: European Social Survey (ESS) (2004, 2008). ESS Wave-2, ESS Wave-4-Turkey, www.europeansocialsurvey.org.

Figure 2 Religiosity



Notes: Responses to the question "How often pray apart from at religious services." The possible answers were every day (1), more than once a week (2), once a week (3), at least once a month (4), only on special holy days (5), less often (6), and never (7).

Source: European Social Survey (ESS) (2004, 2008). ESS Wave-2, Wave-4-Turkey, www.europeansocialsurvey.org.

Table 1 Basic statistics, Turkey

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Unemployment	7.7	6.5	8.4	10.4	10.5	10.8	10.6	10.2	10.3	11	14	11.9	9.8	9.2	10
LF Participation Rate [15-64]	54.3	51.5	51.3	51.2	49.9	49.2	49.4	49.3	49.4	50.2	51.3	52.4	53.4	53.5	53.5
LF Participation Rate [15-64 Males]	78.4	76.1	75.3	74.2	72.9	74.3	74.7	74.2	74.2	74.7	75.3	75.5	76.3	75.6	75.6
LF Participation Rate [15-64 Females]	31.3	27.9	28.4	29.3	28	25.2	25.2	25.6	25.6	26.7	28.4	30.2	31.5	32.2	32.2
GDP growth	-3.4	6.8	-5.7	6.2	5.3	9.4	8.4	6.9	4.7	0.7	-4.8	9.2	8.8	2.1	4.2
GDP pc growth	-4.8	5.2	-7.1	4.6	3.8	7.9	7.0	5.6	3.4	-0.5	-6.1	7.6	7.5	0.9	2.9

Source: World Bank, World Development Indicators (2015). http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators.

Table 2 Determinants of voting for AKP

	ESS Wave 2 (2004)			ESS Wave 4 (2008)		
	1	2	3	4	5	6
Variables	(Both genders)	(Males)	(Females)	(Both genders)	(Males)	(Females)
Male	0.0587			0.0661		
	(0.0535)			(0.0533)		
Age	-0.0143***	-0.0143	-0.0120	-0.0022	-0.0053	0.0093
	(0.0071)	(0.0116)	(0.0099)	(0.0065)	(0.0110)	(0.0088)
Age sqrd	0.0001*	0.0002	0.0001	0.00002	0.00009	-0.00010
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Education years	-0.0086	0.0492**	-0.0344**	-0.0275**	-0.0183	-0.0255
	(0.0127)	(0.0236)	(0.0161)	(0.0133)	(0.0225)	(0.0174)
Education years sqrd	-0.0010	-0.0046***	0.0009	-0.0007	-0.0014	-0.0008
	(0.0008)	(0.0014)	(0.0010)	(0.0008)	(0.0013)	(0.0012)
Household size	-0.0034	0.0043	-0.0088	0.0061	-0.0162	0.0291*
	(0.0097)	(0.0148)	(0.0133)	(0.0104)	(0.0157)	(0.0163)
Children (dummy)	0.0576	-0.0037	0.1059*	0.0226	0.0342	0.0136
	(0.0434)	(0.0691)	(0.0581)	(0.0396)	(0.0627)	(0.0530)
Married/cohabitating	0.1138**	0.1583**	0.1145*	0.0148	-0.0545	0.0376
	(0.0458)	(0.0784)	(0.0627)	(0.0451)	(0.0822)	(0.0557)
Suburb of city(1)	-0.1852***	-0.2632**	-0.1176	-0.0702	0.0014	-0.1309
	(0.0654)	(0.1145)	(0.0827)	(0.0666)	(0.1040)	(0.0868)
Town(1)	-0.0627	-0.0639	-0.0625	-0.0388	-0.0558	-0.0362
	(0.0422)	(0.0637)	(0.0587)	(0.0499)	(0.0791)	(0.0657)
Village(1)	0.0365	-0.0530	0.1247**	-0.0522	-0.1119*	0.0069
	(0.0424)	(0.0612)	(0.0621)	(0.0396)	(0.0579)	(0.0574)
Farm/countryside(1)	-0.2883	-0.3427	0 (omitted)	0 (omitted)	0 (omitted)	0 (omitted)
	(0.3032)	(0.3085)				

Income: coping(2)	0.0405	0.0034	0.0741	-0.0536	-0.1881**	0.0544
	(0.0590)	(0.0948)	(0.0805)	(0.0643)	(0.0958)	(0.0884)
Income: difficult(2)	0.0077	-0.0924	0.0914	-0.0399	-0.1509	0.0445
	(0.0641)	(0.1034)	(0.0868)	(0.0671)	(0.1015)	(0.0913)
Income: v.difficult (2)	-0.0114	-0.1069	0.0293	-0.0945	-0.2385**	0.0249
	(0.0700)	(0.1140)	(0.0941)	(0.0729)	(0.1098)	(0.1002)
Paid work(3)	0.0174	0.0350	-0.0247	0.0243	-0.0026	0.0934
	(0.0677)	(0.0844)	(0.1277)	(0.0951)	(0.1200)	(0.1662)
Student(3)	-0.0174	-0.1499	0.1597	0.0315	0.0125	0.0462
	(0.1319)	(0.1818)	(0.2194)	(0.1293)	(0.1731)	(0.2074)
Unemployed(3)	-0.0035	0.0268	0.0373	0.0650	0.0758	0.1947
	(0.0922)	(0.1110)	(0.2264)	(0.1044)	(0.1304)	(0.2000)
Inactive(3)	0.0175	0.2028	-0.1620	0.0187	-0.0018	0.0191
	(0.0989)	(0.1419)	(0.1575)	(0.1144)	(0.1419)	(0.2167)
Sick/disabled(3)	0.2783	0.3099	0 (omitted)	-0.2144	-0.0571	0 (omitted)
	(0.2188)	(0.2392)		(0.2689)	(0.3528)	
Retired(3)	0.1244	0.0704	0.1462	-0.0671	-0.1439	-0.0924
	(0.0765)	(0.0993)	(0.1503)	(0.0998)	(0.1272)	(0.1838)
Homeworker(3)	0.1139	0.4798**	0.0473	0.1110	-0.1400	0.1154
	(0.0717)	(0.2111)	(0.1034)	(0.0999)	(0.3845)	(0.1550)
Ethnic minority	-0.1780***	-0.1157	-0.2463***	-0.1906***	-0.1910**	-0.1908**
	(0.0599)	(0.0909)	(0.0845)	(0.0613)	(0.0878)	(0.0895)

Marginal effects, with standard errors in parentheses. Significance: ***p < 0.01: **p < 0.05 *p< 0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity.

Table 3 Determinants of voting for AKP (with religiosity)

	ESS Wave 2 (2004)			ESS Wave 4 (2008)		
	1	2	3	4	5	6
Variables	(Both genders)	(Males)	(Females)	(Both genders)	(Males)	(Females)
Male	0.0764			0.0641		
	(0.0548)			(0.0546)		
Age	-0.0155**	-0.0138	-0.0140	-0.0006	0.0041	0.0070
	(0.0073)	(0.0119)	(0.0101)	(0.0067)	(0.0113)	(0.0090)
Age sqrd	0.0001*	0.0001	0.0001	0.0000	0.0000	-0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Education years	-0.0128	0.0453*	-0.0364**	-0.0302**	-0.0236	-0.0265
	(0.0128)	(0.0238)	(0.0163)	(0.0137)	(0.0234)	(0.0178)
Education years	-0.0007	-0.0043***	0.0009	-0.0006	-0.0012	-0.0007
sqrd	(0.0008)	(0.0014)	(0.0010)	(0.0009)	(0.0013)	(0.0012)
Household size	-0.0027	0.0032	-0.0061	0.0023	-0.0236	0.0260
	(0.0098)	(0.0152)	(0.0135)	(0.0107)	(0.0166)	(0.0166)
Children	0.0461	-0.0068	0.0806	0.0362	0.0292	0.0501
(dummy)	(0.0440)	(0.0708)	(0.0592)	(0.0407)	(0.0656)	(0.0547)
Married/ cohabitating	0.1122**	0.1467*	0.1266**	0.0015	-0.1057	0.0347
	(0.0464)	(0.0810)	(0.0637)	(0.0467)	(0.0882)	(0.0573)
Suburb of city(1)	-0.1977***	-0.2803**	-0.1270	-0.0929	0.0018	-0.1646*
	(0.0661)	(0.1153)	(0.0838)	(0.0684)	(0.1074)	(0.0907)
Town(1)	-0.0552	-0.0571	-0.0730	-0.0471	-0.0718	-0.0337
	(0.0433)	(0.0669)	(0.0600)	(0.0510)	(0.0822)	(0.0665)
Village(1)	0.0301	-0.0692	0.1111*	-0.0487	-0.1490**	0.0349
	(0.0430)	(0.0627)	(0.0634)	(0.0410)	(0.0611)	(0.0598)
Farm/countrysid e(1)	-0.2937	-0.3552	0 (omitted)	0 (omitted)	0 (omitted)	0 (omitted)
	(0.3075)	(0.3164)				
Income: coping(2)	0.0625	0.0201	0.0837	-0.0568	-0.1863*	0.0436
	(0.0592)	(0.0954)	(0.0816)	(0.0665)	(0.1006)	(0.0909)

Income: difficult(2)	0.0289	-0.0753	0.0982	-0.0445	-0.1374	0.0351
	(0.0645)	(0.1049)	(0.0880)	(0.0693)	(0.1072)	(0.0936)
Income: v. difficult (2)	0.0066	-0.0946	0.0329	-0.0939	-0.2426**	0.0303
	(0.0703)	(0.1156)	(0.0952)	(0.0751)	(0.1148)	(0.1031)
Paid work(3)	0.0308	0.0581	0.0022	0.0333	0.0153	0.0760
	(0.0694)	(0.0877)	(0.1300)	(0.0977)	(0.1225)	(0.1740)
Student(3)	0.0107	-0.0846	0.1333	0.1137	0.1274	0.0954
	(0.1374)	(0.1913)	(0.2211)	(0.1339)	(0.1806)	(0.2166)
Unemployed(3)	0.0253	0.0717	0.0930	0.0639	0.0792	0.1638
	(0.0954)	(0.1159)	(0.2416)	(0.1069)	(0.1333)	(0.2065)
Inactive(3)	0.0514	0.2601*	-0.1216	0.0254	0.0302	-0.0134
	(0.1015)	(0.1481)	(0.1610)	(0.1184)	(0.1488)	(0.2225)
Sick/disabled(3)	0.2748	0.3117	0 (omitted)	-0.2197	-0.0083	0 (omitted)
	(0.2200)	(0.2410)		(0.2739)	(0.3649)	
Retired(3)	0.1344*	0.0860	0.1789	-0.0737	-0.1478	-0.1034
	(0.0776)	(0.1005)	(0.1522)	(0.1025)	(0.1301)	(0.1917)
Homeworker(3)	0.1235*	0.5446**	0.0642	0.1136	-0.1082	0.0880
	(0.0728)	(0.2320)	(0.1052)	(0.1030)	(0.3812)	(0.1636)
Ethnic minority	-0.1869***	-0.1123	-0.2670***	-0.1905***	-0.1479	-0.2010**
	(0.0611)	(0.0930)	(0.0859)	(0.0645)	(0.0980)	(0.0916)
Pray more than once per week	-0.0468	-0.1005	0.0106	-0.0786	-0.0814	-0.0877
	(0.0546)	(0.0719)	(0.0915)	(0.0541)	(0.0713)	(0.0886)
Pray	-0.0240	-0.0039	-0.0675	-0.1267*	-0.1865**	-0.1057
once per week	(0.0730)	(0.0922)	(0.1321)	(0.0710)	(0.0946)	(0.1137)
Pray at least	-0.1224	-0.1542	-0.1118	0.05787	0.0876	0.0741
once a month	(0.1221)	(0.1566)	(0.2153)	(0.1002)	(0.1564)	(0.1316)
Pray only on	-0.0929	0.12160	-0.4505	-0.1480**	-0.3948***	-0.0336
Special holidays	(0.1366)	(0.1938)	(0.2774)	(0.0752)	(0.1398)	(0.0959)
Pray less often	-0.4251***	-0.3625**	-0.4856**	-0.2452**	-0.5845**	-0.1363
	(0.1180)	(0.1521)	(0.1976)	(0.1211)	(0.2715)	(0.1456)
Pray never	-0.3683***	-0.4190**	-0.3363	-0.5058***	-0.6107***	-0.4303***
	(0.1301)	(0.1694)	(0.2253)	(0.1088)	(0.1964)	(0.1333)

Marginal effects, with standard errors in parentheses. Significance: ***p < 0.01: **p < 0.05 *p< 0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity.

Table 4 Determinants of voting for CHP

	ESS Wave 2 (2004)			ESS Wave 4 (2008)		
	1	2	3	4	5	6
Variables	(Both genders)	(Males)	(Females)	(Both genders)	(Males)	(Females)
Male	-0.0475			-0.0689**		
	(0.0305)			(0.0327)		
Age	0.0104**	0.0130*	0.0053	0.0094**	0.0223***	-0.0005
	(0.0046)	(0.0074)	(0.0058)	(0.0047)	(0.0084)	(0.0057)
Age sqrd	-0.0001*	-0.0001*	-0.00002	-0.0001	-0.00022***	0.00003
	(0.0000)	(0.0001)	(0.0001)	(0.0000)	(0.0001)	(0.0001)
Education years	0.0159**	-0.0137	0.0285***	0.0190**	-0.0020	0.0217*
	(0.0078)	(0.0131)	(0.0097)	(0.0094)	(0.0157)	(0.0115)
Education years	-0.0004	0.0012*	-0.0013**	0.0001	0.0011	0.0001
sqrd	(0.0004)	(0.0007)	(0.0006)	(0.0005)	(0.0009)	(0.0007)
Household size	-0.0101	-0.0030	-0.0167*	-0.0154*	0.0006	-0.0312**
	(0.0072)	(0.0098)	(0.0098)	(0.0088)	(0.0118)	(0.0126)
Children	-0.0273	0.0341	-0.0580*	0.0079	-0.0197	0.0261
(dummy)	(0.0271)	(0.0437)	(0.0325)	(0.0279)	(0.0426)	(0.0356)
Married/cohabitating	-0.0354	-0.0954**	0.0041	-0.0407	-0.0510	-0.0415
	(0.0270)	(0.0460)	(0.0339)	(0.0288)	(0.0533)	(0.0338)
Suburb of city(1)	-0.0729	-0.0794	-0.0798	-0.0872	-0.0102	-0.1520*
	(0.0499)	(0.0830)	(0.0559)	(0.0588)	(0.0768)	(0.0903)
Town(1)	-0.0105	0.0012	-0.0198	-0.0556	-0.0335	-0.0519
	(0.0253)	(0.0362)	(0.0325)	(0.0374)	(0.0577)	(0.0473)
Village(1)	-0.0457	-0.0080	-0.0792**	0.0314	0.0556	0.0025
	(0.0274)	(0.0366)	(0.0381)	(0.0274)	(0.0396)	(0.0380)
Farm/countryside(1)	0.0922	0.0948	0 (omitted)	0 (omitted)	0 (omitted)	0 (omitted)
	(0.1374)	(0.1349)				
Income: coping(2)	0.0489	0.1015	0.0152	0.0040	0.0754	-0.0396
	(0.0381)	(0.0623)	(0.0461)	(0.0395)	(0.0643)	(0.0489)
Income: difficult(2)	0.0204	0.0466	0.0083	-0.0005	0.1012	-0.0647
	(0.0425)	(0.0701)	(0.0505)	(0.0424)	(0.0688)	(0.0521)

Income: v.difficult (2)	0.0936**	0.1424**	0.0804	0.0173	0.0773	-0.0136
	(0.0443)	(0.0715)	(0.0538)	(0.0475)	(0.0763)	(0.0588)
Paid work(3)	0.0191	-0.0257	0.1063	0.0089	0.0153	-0.0113
	(0.0429)	(0.0512)	(0.0709)	(0.0649)	(0.0811)	(0.1106)
Student(3)	0.0302	0.0668	0.0075	-0.0638	-0.0569	-0.0573
	(0.0705)	(0.0816)	(0.1315)	(0.0888)	(0.1254)	(0.1293)
Unemployed(3)	0.0337	-0.0107	0.0755	-0.0861	-0.0991	-0.0911
	(0.0560)	(0.0645)	(0.1070)	(0.0771)	(0.0947)	(0.1412)
Inactive(3)	0.0225	-0.0615	0.1158	-0.0100	-0.0047	-0.0368
	(0.0633)	(0.0945)	(0.0842)	(0.0794)	(0.0946)	(0.1645)
Sick/disabled(3)	0.0079	0.0287	0 (omitted)	0 (omitted)	0 (omitted)	0 (omitted)
	(0.1278)	(0.1329)				
Retired(3)	-0.0188	0.0300	-0.0446	-0.0090	0.0008	0.0197
	(0.0472)	(0.0610)	(0.0834)	(0.0675)	(0.0852)	(0.1158)
Homeworker(3)	-0.0146	-0.0854	0.0397	-0.0528	0 (omitted)	-0.0145
	(0.0453)	(0.1224)	(0.0624)	(0.0669)		(0.1042)
Ethnic minority	-0.0375	-0.1038	0.0314	-0.0259	-0.1470*	0.0684
	(0.0434)	(0.0692)	(0.0524)	(0.0475)	(0.0828)	(0.0583)

Marginal effects, with standard errors in parentheses. Significance: ***p < 0.01: **p < 0.05 *p< 0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity.

Table 5 Determinants of voting for CHP (with religiosity)

	ESS Wave 2 (2004)			ESS Wave 4 (2008)		
	1	2	3	4	5	6
Variables	(Both genders)	(Males)	(Females)	(Both genders)	(Males)	(Females)
Male	-0.0711**			-0.0746**		
	(0.0301)			(0.0323)		
Age	0.0111**	0.0117	0.0092	0.0072	0.0136*	0.0012
	(0.0044)	(0.0074)	(0.0056)	(0.0046)	(0.0079)	(0.0055)
Age sqrd	-0.0001*	-0.0001	-0.0001	-0.0001	-0.0001	0.0000
	(0.00004)	(0.0001)	(0.0001)	(0.0000)	(0.0001)	(0.0001)
Education years	0.0188**	-0.0121	0.0296***	0.0208**	0.0026	0.0195*
	(0.0076)	(0.0133)	(0.0092)	(0.0094)	(0.0151)	(0.0115)
Education years	-0.0006	0.0010	-0.0013**	-0.0001	0.0007	0.0002
sqrd	(0.0004)	(0.0007)	(0.0006)	(0.0005)	(0.0008)	(0.0007)
Household size	-0.0103	-0.0035	-0.0184**	-0.0110	0.0060	-0.0274**
	(0.0070)	(0.0096)	(0.0092)	(0.0086)	(0.0115)	(0.0124)
Children	-0.0146	0.0500	-0.0343	-0.0064	-0.0087	-0.0096
(dummy)	(0.0265)	(0.0447)	(0.0308)	(0.0273)	(0.0412)	(0.0357)
Married/cohabitating	-0.0316	-0.0981**	-0.0076	-0.0304	-0.0375	-0.0358
	(0.0264)	(0.0487)	(0.0319)	(0.0284)	(0.0509)	(0.0334)
Suburb of city(1)	-0.0655	-0.0775	-0.0650	-0.0714	-0.0070	-0.1319
	(0.0490)	(0.0832)	(0.0524)	(0.0563)	(0.0732)	(0.0858)
Town(1)	-0.0146	0.0029	-0.0163	-0.0448	-0.0272	-0.0421
	(0.0249)	(0.0370)	(0.0306)	(0.0365)	(0.0549)	(0.0458)
Village(1)	-0.0352	0.0063	-0.0591*	0.0330	0.0765**	-0.0148
	(0.0267)	(0.0369)	(0.0355)	(0.0274)	(0.0388)	(0.0387)
Farm/countryside(1)	0.0797	0.0704	0 (omitted)	0 (omitted)	0 (omitted)	0 (omitted)
	(0.1398)	(0.1421)				
Income: coping(2)	0.0358	0.0928	0.0050	-0.0145	0.0687	-0.0583
	(0.0373)	(0.0627)	(0.0433)	(0.0399)	(0.0653)	(0.0486)
Income: difficult(2)	0.0083	0.0394	-0.0094	-0.0162	0.0921	-0.0788
	(0.0416)	(0.0708)	(0.0479)	(0.0424)	(0.0693)	(0.0515)

Income: v.difficult (2)	0.0782*	0.1229*	0.0761	-0.0035	0.0784	-0.0396
	(0.0434)	(0.0721)	(0.0507)	(0.0475)	(0.0765)	(0.0585)
Paid work(3)	0.0078	-0.0397	0.0866	0.0007	-0.0099	0.0452
	(0.0416)	(0.0510)	(0.0680)	(0.0683)	(0.0794)	(0.1295)
Student(3)	0.0134	0.0233	0.0390	-0.1394	-0.1591	-0.0847
	(0.0712)	(0.0854)	(0.1234)	(0.0921)	(0.1226)	(0.1460)
Unemployed(3)	0.0112	-0.0249	0.0337	-0.0819	-0.1118	-0.0232
	(0.0550)	(0.0650)	(0.1016)	(0.0798)	(0.0932)	(0.1556)
Inactive(3)	-0.0040	-0.1079	0.1115	-0.0290	-0.0487	-0.0005
	(0.0618)	(0.0957)	(0.0794)	(0.0823)	(0.0942)	(0.1755)
Sick/disabled(3)	0.0199	0.0280	0 (omitted)	0 (omitted)	0 (omitted)	0 (omitted)
	(0.1225)	(0.1305)				
Retired(3)	-0.0241	0.0192	-0.0776	0.0056	-0.0030	0.0736
	(0.0456)	(0.0603)	(0.0799)	(0.0707)	(0.0835)	(0.1348)
Homeworker(3)	-0.0238	-0.1025	0.0374	-0.0510	0 (omitted)	0.0545
	(0.0435)	(0.1202)	(0.0597)	(0.0705)		(0.1267)
Ethnic minority	-0.0318	-0.1057	0.0588	-0.0395	-0.2169***	0.0744
	(0.0427)	(0.0695)	(0.0483)	(0.0479)	(0.0829)	(0.0560)
Pray more than	0.0555*	0.0475	0.0749*	0.1208***	0.1084***	0.1211**
once per week	(0.0322)	(0.0420)	(0.0440)	(0.0330)	(0.0408)	(0.0524)
Pray	0.07415*	0.0164	0.1568***	0.1090**	0.1165**	0.0897
once per week	(0.0404)	(0.0558)	(0.0554)	(0.0420)	(0.0551)	(0.0630)
Pray at least	0.1425**	0.1264*	0.1191	0.0458	-0.0752	0.0952
once a month	(0.0558)	(0.0698)	(0.0889)	(0.0655)	(0.1301)	(0.0748)
Pray only on	0.0958	0 (omitted)	0.2445***	0.1113***	0.1949***	0.0655
Special holidays	(0.0720)		(0.0926)	(0.0435)	(0.0690)	(0.0529)
Pray less often	0.14051***	0.0780	0.1732***	0.1982***	0.2947***	0.1625**
	(0.0470)	(0.0684)	(0.0598)	(0.0606)	(0.0996)	(0.0761)
Pray never	0.1958***	0.1598***	0.2259**	0.3008***	0.3042***	0.2832***
	(0.0493)	(0.0603)	(0.0890)	(0.0485)	(0.0703)	(0.0651)

Marginal effects, with standard errors in parentheses. Significance: ***p < 0.01: **p < 0.05 *p< 0.10. Omitted categories: (1) Resident in big city; (2) comfortable with current income; (3) last 7 days any other activity.

Appendix A

Descriptions of independent variables in the empirical analysis

Name	**Description**
Male	The gender of respondent: 1 if male and 0 if female.
Age	Age of respondent
Education years	Number of the years of education
Household size	Number of household members
Children	Children present in the household (dummy)
Married/cohabitating	Respondent lives with husband/wife/partner
Place of residence	Place of residence, respondent's description: 1: A big city (omitted category), 2: Suburbs or outskirts of big city, 3: Town or small city, 4: Country village, 5: Farm or home in countryside
Income	Feeling about household's income nowadays: 1: Living comfortably on present income (omitted category), 2: Coping on present income, 3: Difficult on present income, 4: Very difficult on present income
Paid work	Doing last 7 days; paid work
Student	Doing last 7 days; education
Unemployed	Doing last 7 days; actively looking for a job
Inactive	Doing last 7 days; not actively looking for a job
Sick/disabled	Doing last 7 days; permanently sick or disabled
Retired	Doing last 7 days; retired
Homeworker	Doing last 7 days; housework, looking after children, others
Ethnic	Belong to ethnic minority group in country
Pray	How often pray apart from religious services; 1: Everyday (omitted category), 2: More than once a week, 3: Once a week, 4: At least once a month, 5: Only on special holidays, 6: Less often, 7: Never

Source: European Social Survey (ESS) (2004, 2008). ESS Wave-2, ESS Wave-4-Turkey, www.europeansocialsurvey.org.

Appendix B
The results of 2002 and 2007 Turkish elections

	2002	**2007**
Number of registered voters	41407027	42799303
Number of Actual Voters	32768161	36056293
Turnout Rate (%)	79.1	84.2
Vote Shares of Political Parties		
Justice and Development Party (AKP)	34.3	46.6
Motherland Party (ANAP)	5.1	---
Great Union Party (BBP)	1.0	---
Republican People's Party (CHP) Democratic People's Party (DEHAP)	19.4 6.2	20.9 ---
Democratic Left Party (DSP)	1.2	---
True Path Party (DYP)	9.5	---
Virtue Party (FP)	---	---
Young Party (GP)	7.2	3.0
Nationalist Action Party (MHP)	8.4	14.3
Felicity Party (SP)	2.5	2.3
New Turkey Party (YTP)	1.2	---
Country Party (YT)	0.9	---
Independents	1.0	5.2
Other	2.0	7.7

Source: Turkish Statistical Institute (2013). Justice and Election Statistics, www.tuik.gov.tr.

Appendix C
Studies examining the gender gap in political attitudes

Study	Coverage and Data	Findings
Hayes (1997)	UK (1992 British Election Survey)	Gender does not have an impact on votes. Feminism explains party choice.
Chaney, Alvarez and Nagler (1998)	US (1980, 1984, 1988, 1992 National Election Studies)	The main determinants of the gender gap are economic conditions, social programs, military action, abortion and ideology.
Studlar, McAllister and Hayes (1998)	Australia, UK, US (1993 Australian Election Survey, 1992 British Election Survey, 1992 American National Election Survey)	In Australia and the UK, socioeconomic and situational factors (women's adult responsibilities) explain the gender gap. In the US, political factors have much more effect on the gender gap.
Kaufmann and Petroick (1999)	US (1992, 1996 National Election Surveys)	Gender gap results from the changing partisanship of men. Differences in social welfare opinions may be the main contributor to the gender gap.
Inglehart and Norris (2000)	60 countries (World Values Survey Data over the period 1980s and 1990s)	In postindustrial countries modern gender gap persists while in developing countries traditional gender gap prevails.

Appendix C (continued)

Study	Coverage and Data	Findings
Howell and Day (2000)	US (1996 National Election Study)	Egalitarian attitudes of women, their cultural roles and education are the main determinants of the gender gap.
Knutsen (2001)	Denmark, Norway and Sweden (Election Surveys from 1970s to 1990s)	Gender has an important effect on voting behaviour. Different sector employment (public versus private) explains part of the gender gap.
Kaufmann (2002)	US (National Election Studies from 1988 to 2000)	Reproductive rights, female equality, legal protection for homosexuals are increasingly significant determinants of party identification for women.
Edlund and Pande (2002)	US (National Election Studies, March Current Population Surveys over the period 1964-1996)	Strong positive correlation between divorce prevalence and the gender gap.
Brooks, Nieuwbeerta and Manza (2006)	Australia, Austria, Germany, The Netherlands, UK and US (International Social Cleavages and Politics (ISCP) Data Set over the period 1964-1998)	With the exception of the US, gender is not statistically significant variable for explaining the voting behaviour.

Appendix C (continued)

Study	Coverage and Data	Findings
Iversen and Rosenbluth (2006)	Australia, Canada, France, Germany, Ireland, Norway, New Zealand, Sweden, UK and US (1996 International Social Survey Program Data)	In countries with high divorce rates, working women vote for left parties.
Bergh (2007)	Netherlands, Norway, US (1996 National Election Study for the US, 1996 Euro Barometer Data for the Netherlands and Citizenship Survey from 2000 for Norway)	In the US and in Norway, there is a strong effect of feminist consciousness on the gender gap.
Giger (2009)	12 Western Europe countries (Euro Barometer, Eurostat, OECD, Abramson and Inglehart (1995), Huber et al. (2004) Data Sets over the period 1974-2000)	In 1976 and 1985, women tended to vote more for conservative parties while in 2000 they have given higher support to leftist parties. The main determinant of the modern gender gap is the increasing labor force participation of women.
Finseraas, Jakobsson and Kotsadam (2012)	Norway	There is a gender gap in political preferences. However, it cannot be explained by the risk of women's divorce.

Concluding remarks

The dissertation has shed light on how and to what extent religion and religiosity influence the attitude toward corruption, the level of happiness of individuals and the voting behaviour of men and women.

The first chapter has stressed that religious people are less tolerant to corruption and attitudes toward corruption differ across religious denominations. While Protestants and Hindus are more averse to corruption than Atheism other religions do not have clear difference. Moreover, the results show that the effect of religious denominations is not universal and the attitude of individuals toward corruption can be influenced by the fact that their religion is majority or minority.

The second chapter has revealed that religion increases happiness. When we take into account both religious membership and religious devotion we find that religious membership without religious devotion decreases happiness. Hence, we argue that it is the intensity of religious attachment which raises happiness. Moreover, it is found that there are differences between men and women and women are more negatively affected by religious membership and gain more due to religiosity.

The third chapter has shown that education and religiosity are significant determinants of men's and women's voting behaviour in Turkey which is a developing and a Muslim country. The results of the empirical analysis indicate that while the effect of religiosity on the voting behaviour of men and women is same the effect of education differs with regard to gender.

The research questions investigated in this dissertation should be prolonged in the future. On the relationship between religion, religiosity and attitude toward corruption, more analyses which use micro-level data sets are needed in order to strengthen existing evidence at the individual level. Since our analysis on the relationship between religion and happiness is the first study which takes into account the effect of belonging to a religon and intensity of religiosity at the same time, future studies which consider both of these factors by using more comprehensive data sets would improve our understanding with regard to the impact of religion and religiosity on happiness. Finally, in terms of the determinants of voting behaviour, future research should focus on developing and Islamic countries in order to increase existing evidence and hence, to reach more reliable results for these countries.

Résumé de la thèse en Français

L'économie politique est apparue comme une discipline scientifique à la fin du XVIIIe siècle, parallèlement aux travaux de chercheurs tels que Adam Smith, qui a étudié la manière dont les nations prospèrent et les politiques qui procurent la richesse des nations (Hall, 1997: 174). Selon Groenewegen (1991), le terme d'économie politique a été utilisé pour la première fois par Montchrestien (1615) en France au XVIIe siècle et Sir James Steuart (1767) fut le premier économiste anglais à utiliser «l'économie politique» dans son livre.

Bien que le terme «économie» ait généralement représenté une «économie politique» jusqu'à la fin du XIXe siècle, le développement de l'économie néoclassique a minimisé les facteurs politiques, qui ont mis l'accent sur l'optimisation par les agents économiques (Drazen, 2000). Cependant, en prenant en compte l'intérêt croissant pour les effets des facteurs politiques sur les résultats économiques des dernières décennies, il est justifié d'affirmer que la «nouvelle économie politique» apparaît comme un domaine de recherche important ces dernières années (Drazen, 2000).

L'économie politique se concentre principalement sur trois questions qui la séparent généralement de l'économie (Hall, 1997):

1- Les économistes politiques examinent les questions de pouvoir et analysent spécifiquement comment un ensemble donné d'arrangements économiques affecte la répartition du pouvoir et des ressources entre les groupes sociaux.

2- Les économistes politiques soulignent l'importance des arrangements institutionnels et examinent l'influence de différentes structures institutionnelles sur le fonctionnement des marchés.

3- Les économistes politiques se concentrent sur les conceptions fondamentales de l'économie développées pour modéliser les questions économiques et recherchent principalement les origines de ces conceptions et la manière dont ces conceptions deviennent influentes.

Les institutions en tant que déterminants de la performance économique

Les institutions et l'effet de différentes structures d'institution sur les marchés sont parmi les principaux domaines de recherche de l'économie politique.

Comme on le sait, les économistes débattent depuis longtemps des déterminants des différences de taux de croissance des pays. Dans les années 1960, le modèle de croissance économique néoclassique élaboré par Ramsey (1928), Solow (1956) et Swan (1956) était la principale théorie de la croissance économique et ce modèle attribuait les différents taux de croissance des pays aux différents taux de capital par travailleur pays. Au cours des années 1980, la théorie de la croissance endogène a émergé. Alors que les premiers modèles de théorie de la croissance endogène développés par Romer (1986) et Lucas (1988) étaient similaires au modèle de croissance économique néoclassique, sauf que le capital a été étendu aux composants humains, des modèles ultérieurs développés par Romer (1990), Aghion et Howitt (1992) et Grossman et Helpman (1991) ont souligné le progrès technologique comme déterminant des différences de taux de croissance de différents pays (Barro, 1996). Cependant, les résultats des analyses empiriques montrent que, même si les différences de capital physique, de capital humain et de progrès technologique sont prises en compte, il existe encore des différences notables dans les taux de croissance des pays (Helpman, 2008).

Dans les années 90, il a été précisé que les différences de taux de croissance des différents pays ne pouvaient s'expliquer par la seule prise en compte de l'accumulation de capital ou du progrès technologique.). La principale proposition de cette littérature est que les institutions ont plus d'influence sur la performance économique que l'accumulation de capital ou le progrès technologique, car elles façonnent l'environnement dans lequel ces activités se déroulent (Helpman, 2008). Par conséquent, les différences de performance économique avec le temps et l'espace proviennent des différentes structures institutionnelles des pays (North, 1990; Acemoglu et Robinson, 2013).

Bien que le terme d'institutions ait longtemps été utilisé dans le domaine des sciences sociales, il n'existe toujours pas de définition généralement acceptée de ce terme (Hodgson, 2006). La plupart des chercheurs définissent les institutions comme «les règles du jeu» (Voigt, 2013). Selon North (1994), les institutions sont définies comme des contraintes «formellement conçues par l'homme (telles que règles, lois) et informelles (telles que normes de comportement, conventions) qui déterminent les structures incitatives des communautés et des économies particulières». Hodgson

(2006) identifie les institutions comme des «systèmes de règles sociales établies et dominantes qui façonnent les interactions sociales». De même, Greif (2006) définit les institutions comme «un système de règles, de croyances, de normes et d'organisations qui créent ensemble une régularité du comportement social». Payne et Losada (1999) utilisent une définition plus large des institutions que les autres. Selon ces auteurs, «les institutions sont l'ensemble des règles formelles (lois, procédures, etc.) et les normes et règles informelles (habitudes, convictions sociales, etc.) ainsi que les organisations qui créent, poursuivent et appliquent ces règles et normes». (Payne et Losada, 1999). Cependant, Ugur (2010) soutient que les institutions et les organisations sont des concepts différents puisque les instituts peuvent être créés comme solutions aux problèmes d'action collective et qu'ils ne peuvent être réduits aux actions des organisations ou des règles organisationnelles.

Comme il ressort clairement des explications ci-dessus, il n'ya pas de définition unanime des institutions et différents auteurs insistent sur les différents aspects des institutions.

La portée et les dimensions des institutions n'étant pas claires, il existe différentes mesures des institutions. Selon Glaeser et al. (2004), les indicateurs les plus fréquemment utilisés dans les analyses récentes sont les indicateurs d'enquête de la qualité institutionnelle du Guide international du risque pays, les indicateurs de gouvernance mondiale collectés par Kaufmann, Kraay et Mastruzzi (2011) et l'ensemble de données Polity IV (Marshall et Jaggers, 2007).

International Country Risk Guide fournit des informations et des prévisions sur les risques financiers, politiques et économiques pour 140 pays. De plus, le modèle axé sur les affaires du International Country Risk Guide examine des facteurs spécifiques à un pays tels que le risque de change, l'armée et la religion dans la politique et la corruption.

Les indicateurs de gouvernance dans le monde mesurent six dimensions de la gouvernance: voix et responsabilité, stabilité politique et absence de violence / terrorisme, efficacité du gouvernement, qualité de la réglementation, primauté du droit et contrôle de la corruption (Kaufmann, Kraay et Mastruzzi, 2011). Les indicateurs agrégés sont calculés à partir de plusieurs centaines de variables individuelles et les données représentent les points de vue sur la gouvernance des répondants et des experts des secteurs public, privé et des ONG (Kaufmann, Kraay et Mastruzzi, 2011).

Enfin, l'ensemble de données Polity IV mesure les caractéristiques d'autorité des États dans le système mondial (Marshall et Jaggers, 2007). Le dernier ensemble de données du projet Polity IV couvrant la période 1800-2016 représente des «modèles d'autorité» démocratiques et autocratiques et des changements de régime dans 167 pays.

Bien que les ensembles de données susmentionnés soient fréquemment utilisés pour mesurer la qualité institutionnelle dans les analyses empiriques, ils sont également validés par certains chercheurs. Woodruff (2006) soutient qu'il existe une forte corrélation entre les différentes mesures des institutions et qu'il est donc presque impossible de séparer les effets des différentes institutions. Glaeser et al. (2004) indiquent que les indicateurs communément utilisés des institutions mesurent le résultat des choix politiques au lieu des institutions elles-mêmes. Ces dernières années, on a tenté de mesurer les institutions plus précisément (Voigt, 2013). Cependant, il n'existe toujours pas de mesure des institutions généralement acceptée et sans faille. Par conséquent, d'autres analyses sont nécessaires pour parvenir à de meilleures mesures des institutions.

Bien qu'il n'y ait pas de définition unanime et une mesure sans faille des institutions, de nombreuses études prouvent que les institutions affectent la performance économique (voir par exemple Commander et Nikoloski, 2010; Nawaz, 2015 et Constantine, 2017). Cependant, en ce qui concerne les déterminants des institutions et la qualité institutionnelle, les preuves existantes sont moins organisées (Straub, 2000).

Les déterminants des institutions

Dans la littérature empirique existante, divers facteurs sont pris en compte en tant que déterminants potentiels des institutions et de la qualité institutionnelle. Ces facteurs sont classés en quatre groupes principaux (Straub, 2000; Mijiyawa, 2013): variables historiques, variables d'incitation politique, variables de loyer et variables culturelles[24].

[24] Selon Straub (2000), il existe également des incitations bureaucratiques pouvant affecter la qualité des institutions et des institutions. Cependant, Straub (2000) affirme qu'il s'agit d'un complément aux loyers. De ce fait, les incitations bureaucratiques ne sont pas expliquées ici comme une catégorie distincte.

Le premier groupe contient des variables historiques. Les pionniers de l'argument centré sur l'influence des variables historiques sur les institutions sont Acemoglu, Johnson et Robinson (2001, 2003). Selon ces auteurs, les différentes politiques de colonisation menées par les Européens dans différentes colonies conduisaient à des institutions extractives qui ne protégeaient pas beaucoup la propriété privée et les contrepoids ou institutions qui soulignaient la propriété privée et les pouvoirs publics (Acemoglu, Johnson et Robinson, 2001). 2002).

Le deuxième groupe couvre les variables d'incitation politique. Selon les auteurs qui soulignent le rôle du système politique, les institutions sont déterminées par un groupe d'individus qui contrôlent le pouvoir politique (Mijiyawa, 2013). Acemoglu (2002) avance que les institutions inefficaces sont choisies par les politiciens ou les groupes sociaux qui détiennent le pouvoir politique puisque les institutions choisies servent leurs intérêts. Les études empiriques qui examinent l'effet des facteurs politiques sur les institutions constatent que de meilleurs freins et contrepoids conduisent à de meilleures institutions (Straub, 2000).

Le troisième groupe comprend les variables de loyer. En théorie économique, il est dit que l'existence de rentes augmente la probabilité que les fonctionnaires s'écartent des comportements honnêtes (Straub, 2000). La littérature étudie les loyers exogènes issus des ressources naturelles d'un pays et les rentes non naturelles émanant des dimensions des organisations économiques qui mènent à un pouvoir monopolistique (Siba, 2008). Dans la littérature empirique existante, les résultats de nombreuses analyses montrent que les rentes naturelles et non naturelles ont des effets négatifs sur la qualité des établissements (Treisman, 2000; Ades et Di Tella, 1999; Leite et Weidmann (1999); Acemoglu, Johnson et Robinson, 2001).

Enfin, le quatrième groupe comprend des variables culturelles. Dans la littérature, il est suggéré que les variations culturelles ou les variations des croyances idéologiques peuvent entraîner des différences dans les institutions économiques (Mijiyawa, 2013). La culture est un concept ambigu et a plusieurs dimensions. Selon Gorodnichenko et Roland (2010), la culture est généralement décrite comme «l'ensemble des valeurs et des croyances que les gens ont sur le fonctionnement du monde et sur les normes de comportement découlant de cet ensemble de valeurs». En termes de résultats institutionnels, Tabellini (2008) définit la culture «comme un ensemble de principes et de règles normatives qui motivent les individus».

Les chercheurs qui insistent sur les effets des facteurs culturels sur les institutions avancent que les différentes croyances et comportements des différentes communautés forment leur action collective, la qualité de leurs gouvernements et de leurs institutions (Mijiyawa, 2013). Cet argument a été suggéré pour la première fois par Weber (1930) dans son livre «Ethique protestante et esprit du capitalisme». Weber (1930) a déclaré que la culture était un facteur crucial pour expliquer les différences de développement économique. Putman, Leonardi et Nonetti (1993) ont enquêté sur les gouvernements régionaux créés par le gouvernement central au début des années 1970. Bien que l'on s'attendait à ce que ces nouveaux gouvernements régionaux travaillent de manière identique, les auteurs ont déclaré que dans la pratique leurs travaux étaient différents. Selon eux, cette différence découle de différences dans les niveaux de coopération, de participation, d'interaction sociale et de confiance, qui sont les principales caractéristiques du capital social.

L'une des dimensions fondamentales de la culture est la religion. Il existe de nombreuses études qui examinent l'impact des différentes religions et le niveau de religiosité sur les institutions et la qualité institutionnelle dans la littérature existante. La Porta et al. (1999) soutiennent que la religion peut déterminer les attitudes culturelles à l'égard de la hiérarchie sociale et constate empiriquement que les pays où la proportion de catholiques ou de musulmans est élevée sont de mauvaise qualité dans les activités gouvernementales. Treisman (2000, 2007) examine les déterminants de la corruption et constate que les pays de tradition protestante sont moins corrompus que les pays d'autres religions. North, Orman et Gwin (2013) étudient la relation entre la religion, la corruption et l'État de droit en utilisant un vaste ensemble de données couvrant 207 pays. Selon les résultats empiriques, North, Orman et Gwin (2013) suggèrent que la corruption et la primauté du droit sont liées à l'héritage religieux d'un pays.

Outre la qualité institutionnelle, la religion peut également influer sur le niveau de bonheur des individus et leurs choix politiques. De nombreuses études examinent empiriquement la relation entre religion, religiosité et bonheur. L'une des premières études appartient à James (1902) qui affirme que la religion a joué un rôle crucial dans le bonheur des personnes. En examinant les analyses empiriques existantes, Lewis et Cruise (2006) affirment que si les résultats de nombreuses études indiquent une association positive entre la religion et le bonheur, certaines études ont des résultats

contradictoires (voir par exemple Lewis, Maltby et Burkinshaw, 2000). Dans une étude récente, Ngamaba et Soni (2017) examinent l'influence de différentes religions sur le bonheur et la satisfaction de vivre et examinent si l'effet de la religion sur le bonheur et la satisfaction de vivre peut changer avec l'environnement économique et culturel du pays. En utilisant le World Values Survey couvrant la période comprise entre 1981 et 2014, Ngamaba et Soni (2017) ont constaté que la religiosité individuelle et le niveau de développement d'un pays sont des déterminants importants du bien-être subjectif des individus. De plus, les auteurs trouvent que les protestants, les bouddhistes et les catholiques romains sont plus heureux que les autres groupes religieux (Ngamaba et Soni, 2017). Bien que de nombreuses études se concentrent sur la relation entre religion, religiosité et bonheur, d'autres enquêtes et analyses sont nécessaires pour parvenir à des résultats plus robustes et sûrs concernant l'effet de la religion sur le bonheur (Rizvi et Hossain, 2017).

En tant qu'aspect important de la culture, la religion et la religiosité peuvent influer sur le comportement de vote des individus. Bien que la religion et la religiosité aient été ignorées comme facteur déterminant du comportement électoral au cours des années 1990, un certain nombre de chercheurs européens ont suggéré ces dernières années que la religion reste un facteur important à prendre en compte dans les analyses de vote (Goldberg, 2014). Dans la littérature existante, alors que certaines études étudient le comportement électoral d'individus appartenant à différentes religions, d'autres études analysent la relation entre la religiosité et les choix électoraux (Esmer et Pettersson, 2007). Selon les résultats de nombreuses études empiriques, il est confirmé que la religion et la religiosité sont des déterminants importants du comportement électoral dans les pays occidentaux (Esmer et Pettersson, 2007). Cependant, le nombre d'études examinant les relations.

Contenu de la thèse

Le but de ce travail est d'étudier les effets de la religion et de la religiosité sur la corruption, le bonheur des individus et le comportement électoral. Bien que de nombreuses études examinent ces questions, nous fournissons de nouvelles preuves en utilisant différents ensembles de données et méthodologies et en nous concentrant sur les pays qui n'ont pas été analysés dans les études précédentes.

Le premier chapitre[25] analyse la relation entre la religion et l'attitude envers la corruption au niveau individuel. La corruption est une dimension fondamentale des institutions, dont les effets négatifs sur l'investissement et la croissance ont été démontrés (Mauro, 1995). L'impact de la religion sur la corruption est un moyen par lequel la culture peut façonner les institutions. Dans la littérature existante, de nombreuses études empiriques examinent les déterminants de la corruption, y compris la religion. Cependant, la majorité de ces études s'appuient sur des ensembles de données nationaux et ne tiennent donc pas compte de l'hétérogénéité des individus à l'intérieur d'un pays en regroupant tous les individus. De plus, ces études ne permettent pas de déterminer si le comportement des individus liés à la corruption est subordonné au fait que leur religion domine dans leur pays.

La contribution de ce chapitre à la littérature est double: premièrement, en examinant l'impact de la religion sur l'attitude à l'égard de la corruption au niveau individuel, nous fournissons une analyse approfondie de cette question par rapport aux études nationales. Deuxièmement, nous évaluons l'attitude envers la corruption des individus à travers les pays avec des religions majoritaires différentes et nous vérifions donc si l'impact des confessions religieuses sur l'attitude envers la corruption est universel ou conditionnel au statut de la religion.

De plus, nous étudions l'influence des confessions religieuses dans quatre pays avec plusieurs grands groupes religieux afin de procéder à une analyse plus complète. Dans l'analyse empirique de ce chapitre, nous utilisons World Values Survey Wave 6 pour la période 2010-2014. Puisque nous cherchons à expliquer l'attitude envers la corruption, nous nous demandons dans quelle mesure «Quelqu'un acceptant un pot-de-vin dans l'exercice de ses fonctions "Est justifiable. La réponse à cette question est qu'une variable catégorielle sur une échelle de dix points avec des valeurs plus élevées est plus justifiable que la corruption. Nous nous concentrons sur les principales religions du monde, conformément aux études précédentes sur l'influence de la religion. Pour la religiosité, nous utilisons la fréquence de la participation aux services religieux et la fréquence de la prière.

Dans un premier temps, nous estimons notre modèle en utilisant une seule des variables de religion / religiosité avec les variables de contrôle. Après cela, nous

[25] Ce chapitre fait référence à l'article co-écrit avec Laurent Weill. L'article a été présenté à la conférence European Public Choice Society en 2017.

estimons à nouveau le modèle en ajoutant les termes d'interaction entre la dénomination religieuse et la présence / prière religieuse. Ensuite, nous estimons séparément le modèle pour les pays dans lesquels la religion dominante est le catholicisme romain, le christianisme orthodoxe, le protestantisme et l'islam. Enfin, nous estimons notre modèle pour les pays multi-religieux, à savoir l'Allemagne, le Liban, la Malaisie et le Nigeria.

Les résultats de cette analyse empirique indiquent que les personnes religieuses sont moins tolérantes à la corruption et que les attitudes à l'égard de la corruption diffèrent selon les confessions religieuses. De plus, les résultats montrent que l'effet des dénominations religieuses n'est pas universel et que l'attitude des individus envers la corruption peut être influencée par le fait que leur religion est majoritaire ou minoritaire.

Le deuxième chapitre[26] évalue l'effet de la religion sur le bonheur. Bien que de nombreuses études étudient la relation entre la religion et divers indicateurs économiques (pour une revue de la littérature, voir Dolan et al. (2008)), le nombre d'analyses portant sur la relation entre religion et bonheur est très faible. Les analyses empiriques existantes prennent en compte soit les effets des confessions religieuses, soit la religiosité sur le bonheur (Bjørnskov et al., 2008, Clark et Lelkes, 2009, Deaton et Stone, 2013). Contrairement aux études précédentes, nous contrôlons simultanément l'appartenance religieuse et l'intensité de la religiosité. À notre connaissance, il s'agit de la première étude qui considère à la fois l'effet de l'appartenance à une religion et l'intensité de la religiosité sur le bonheur.

Dans notre analyse empirique, nous utilisons les quatre premières vagues de l'enquête sociale européenne réalisée tous les deux ans entre 2000 et 2008 dans 30 pays d'Europe et ses environs. Notre variable dépendante est la réponse des participants à la question suivante: «Toutes choses confondues, dans quelle mesure diriez-vous que vous êtes? Les dénominations religieuses que nous prenons en compte dans notre analyse sont le catholicisme romain, le protestantisme, le christianisme orthodoxe oriental, l'autre christianité, le judaïsme, l'islam et une autre catégorie qui couvre les individus sans appartenance religieuse et autres affiliations non chrétiennes. Pour la

[26] Ce chapitre fait référence à l'article co-écrit avec Jan Fidrmuc. L'article a été présenté à la conférence European Public Choice Society en 2015 et a été publié sous la forme d'un document de travail CESifo (document de travail n ° 5437).

religiosité, nous utilisons une question sur l'intensité du dévouement des répondants et nous considérons la participation à des activités religieuses

Nous observons que la religion augmente le bonheur. Cependant, lorsque nous prenons en compte à la fois l'adhésion religieuse et la dévotion religieuse, nous trouvons que l'appartenance religieuse sans dévotion religieuse réduit le bonheur. Nous soutenons donc que l'aspect spirituel et fondé sur la croyance de la religion suscite le bonheur. De plus, les différences entre hommes et femmes sont importantes. Les femmes sont plus touchées par l'appartenance à une religion et par la religiosité.

Le troisième chapitre[27] examine les déterminants du comportement de vote des citoyens turcs et se concentre spécifiquement sur la manière dont les différences liées au sexe dans le comportement de vote ont façonné la montée de l'AKP en Turquie. Bien que les différences entre les sexes dans les attitudes politiques et les comportements de vote aient des effets dramatiques sur les résultats des élections tant dans les pays développés que dans les pays en développement, la majorité des études examinent cette question pour les pays développés. Ce chapitre contribue à la littérature existante en fournissant des éléments de preuve concernant le comportement de vote des individus en Turquie, pays à la fois en développement et musulman. Ces dernières années, le Parti de la justice et du développement (connu sous le nom d'AKP, son acronyme turc) a pris de l'ampleur dans la sphère politique turque. La Turquie sous le régime de l'AKP a progressivement abandonné la laïcité stricte. D'un côté, cela a sans doute accru la liberté de religion. En revanche, une plus grande acceptation des normes islamiques peut avoir un effet asymétrique négatif sur la vie des femmes, car une interprétation conservatrice des normes islamiques attribue des rôles différents aux hommes et aux femmes dans la plupart des aspects de la vie quotidienne. Par conséquent, il peut y avoir des différences dans le soutien à l'AKP parmi les électeurs masculins et féminins.

Dans notre analyse empirique, nous étudions les déterminants du soutien à l'AKP et au principal parti d'opposition, le Parti du peuple républicain (connu sous le nom de CHP, son acronyme turc). Nous utilisons l'enquête sociale européenne Vague 2 (collectée en 2004) et la vague 4 (collectées en 2008), qui incluent des informations sur le comportement électoral passé lors des élections de 2002 et 2007, respectivement.

[27] Ce chapitre fait référence à l'article co-écrit avec Jan Fidrmuc. L'article a été présenté lors de la conférence European Public Choice Society en 2014 et a été publié sous la forme d'un document de travail CESifo (document de travail n ° 5226).

Notre variable dépendante prend la valeur 1 si le répondant a voté pour le parti en question lors de la dernière élection et zéro sinon. Nos variables explicatives représentent les caractéristiques socioéconomiques des participants, telles que l'âge, le sexe, le nombre d'années d'études, l'état matrimonial, etc., ainsi que la religiosité.

Les résultats de notre analyse empirique indiquent que l'éducation et la religiosité sont des déterminants importants du comportement électoral des hommes et des femmes. Si l'effet de la religiosité sur le comportement électoral des hommes et des femmes est le même, l'effet de l'éducation diffère selon le sexe. Nous constatons que le soutien des femmes à l'AKP diminue avec l'augmentation des niveaux d'éducation, alors que le soutien des hommes à l'AKP s'accroît d'abord puis diminue. Le soutien à la cogénération, principal parti d'opposition, est opposé. Cependant, ce résultat ne prévaut que lors des élections de 2002. Lors des élections de 2007, l'éducation a eu un effet négatif sur les votes de l'AKP, tant pour les hommes que pour les femmes. De plus, un écart type entre les sexes se dégage lors des élections de 2007, les femmes étant plus susceptibles de voter pour le CHP que les hommes.

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Çiğdem Börke TUNALI

Essays on Political Economy

Résumé

Le but de ce travail est d'examiner les effets de la religion et de la religiosité sur la corruption, le bonheur des individus et le comportement électoral. Nous contribuons à la littérature existante en fournissant de nouvelles preuves et en nous concentrant sur les pays non analysés dans les études précédentes.

Le premier chapitre analyse les relations entre religion, religiosité et attitude face à la corruption au niveau individuel. L'analyse empirique révèle que les personnes religieuses sont moins tolérantes à la corruption et que les attitudes à l'égard de la corruption diffèrent d'une confession religieuse à l'autre. De plus, les résultats montrent que l'effet des confessions religieuses n'est pas universel et que l'attitude des individus à l'égard de la corruption peut être influencée par le fait que leur religion est majoritaire ou minoritaire.

Le deuxième chapitre évalue l'effet de la religion sur le bonheur. Selon les résultats de notre analyse empirique, la religion augmente le bonheur. Cependant, lorsque l'appartenance religieuse et la dévotion religieuse sont prises en compte ensemble, on constate que l'appartenance à une religion sans dévotion religieuse diminue le bonheur. Nous soutenons donc que l'aspect spirituel et religieux de la religion suscite le bonheur. De plus, les différences entre hommes et femmes sont significatives. L'appartenance à une religion affecte plus négativement les femmes et leur gagne davantage en raison de leur religiosité.

Le troisième chapitre étudie les déterminants du comportement électoral des citoyens turcs et s'intéresse plus particulièrement à la manière dont les différences de comportement électoral liées au sexe ont façonné l'essor de l'AKP en Turquie. Les résultats de notre analyse empirique indiquent que l'éducation et la religiosité sont des déterminants importants du comportement électoral des hommes et des femmes. Si l'effet de la religiosité sur le comportement électoral des hommes et des femmes est le même, l'effet de l'éducation diffère en ce qui concerne le sexe. Nous constatons que le soutien des femmes à l'AKP diminue avec l'augmentation des niveaux d'éducation, tandis que celui des hommes à l'AKP augmente tout d'abord, puis diminue. Le soutien au CHP, le principal parti d'opposition, est opposé. Cependant, ce résultat ne prévaut

que lors de l'élection de 2002. Lors de l'élection de 2007, l'éducation a un effet négatif sur les votes pour l'AKP, tant pour les hommes que pour les femmes. En outre, un écart type entre hommes et femmes se dégage des élections de 2007, les femmes étant plus susceptibles que les hommes de voter pour le PSC.

Mots Clés: institutions, religion, religiosité, corruption, bonheur, vote, fossé des genres

Résumé en Anglais

The aim of this work is to investigate the effects of religion and religiosity on corruption, individuals' happiness and voting behaviour. We contribute to the existing literature by providing new evidence and by focusing on the countries which are not analysed in the previous studies.

The first chapter analyses the relationship between religion, religiosity and the attitude toward corruption at the individual level. In the empirical analysis it is found that religious people are less tolerant to corruption and attitudes toward corruption differ across religious denominations. Moreover, the results show that the effect of religious denominations is not universal and the attitude of individuals toward corruption can be influenced by the fact that their religion is majority or minority.

The second chapter assesses the effect of religion on happiness. According to the results of our empirical analysis, religion increases happiness. However, when religious membership and religious devotion are taken into account together it is found that religious membership without religious devotion lowers happiness. So, we argue that the spiritual and belief-based aspect of religion raises happiness. Moreover, the differences between men and women are significant. Women are more negatively affected by belonging to a religion and gain more due to religiosity.

The third chapter investigates the determinants of voting behaviour of Turkish citizens and specifically focuses on how gender-related differences in voting behaviour shaped the rise of the AKP in Turkey. The results of our empirical analysis indicate that education and religiosity are significant determinants of men's and women's voting behaviour. Whilst the effect of religiosity on men's and women's voting behaviour is same the effect of education differs with regard to gender. We find

that women's support for the AKP falls with increasing education levels while men's support for the AKP rises first and then falls. The support for CHP, the main opposition party, is opposite. However, this result only prevails in the 2002 election. In the 2007 election, education has a negative effect on the votes for the AKP for both men and women. Moreover, a standard gender gap emerges in the 2007 election, with women more likely to vote for the CHP than men.

Keywords: institutions, religion, religiosity, corruption, happiness, voting, gender gap