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# Religion, Moral Attitudes & Economic Behavior

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**Abstract:** Using data for a representative sample of the Dutch population with information about participants' religious background, we study the association between religion and moral behavior and attitudes. We find that religious people are less accepting of unethical economic behavior (e.g., tax evasion, bribery) and report more volunteering. They are equally likely as non-religious people to betray trust in an experimental game, where social behavior is unobservable and not directed to a self-selected group of recipients. Religious people also report lower preference for redistribution. Considering differences between denominations, Catholics betray less than non-religious people, while Protestants betray more than Catholics and are indistinguishable from the non-religious. We also explore the intergenerational transmission and the potential causality of these associations.

Highlights

- Religious people are less accepting of unethical behavior and report more volunteering
- Religious people are no more trustworthy in a trust game with an unknown person.
- Religious people have lower preference for redistribution
- Parental religion correlates with their children's moral attitudes

KEYWORDS: religion, ethics, redistribution, trust game

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## 1. Introduction

Thirty-nine percent of the participants in a representative panel of the Dutch population (used in this paper) have some religious affiliation. In contrast, sixty-five percent of those participants' parents were church members when our participants were aged 15. This significant decline, which documents a trend in line with other studies on the Netherlands,[1] is exemplary for the development of church membership and attendance in Western Europe (Tracey, 2012) but occurs despite an increase in the importance of religiosity in much of the rest of the world (Berger, 2001).

Our question is whether such a decline in the membership in religious organizations might be associated with changes in the social cohesion of the economy. More specifically, what is the relationship of religiosity with what we dub moral attitudes and behaviors: social behavior; redistribution of income; charity; and trustworthiness in economic interactions? Using a detailed data set on the general Dutch population, we first document the correlation of moral attitudes with religious affiliation and differences across denominations. We next assess whether these associations are transmitted from parents to their children when these are adults themselves. The observed associations may be caused by a pathway from religiosity to attitudes (via indoctrination), from attitudes to church membership (via self-selection, as the classical "religious communities as club goods" model of Iannaccone (1998) suggests), or by unobserved factors driving both attitudes and church membership. As a third step in the analysis, we therefore investigate the potential causality of the associations.

Research in economics and finance has paid much attention to the role of religion, and has uncovered some persistent relationships between religion and economic behavior. Important areas of investigation concerned the link between religion and risk taking and financial investment (Kumar et al., 2011; Noussair et al., 2013); managerial decision making (Hillary and Hui, 2009; Filistrucchi and Prüfer, 2017); education and human capital (Glaeser and Sacerdote, 2008; Becker and Woessmann, 2009); innovation (Benabou et al., 2015); and with economic and financial development (Barro and McCleary, 2003; Guiso et al., 2003; 2006). Studying World Value Survey data, Guiso et al. (2003) focused on the role of economic attitudes rather than outcomes.[2] While their data are fascinating as they cover a

[1] See e.g. Becker and de Hart (2006). Stoffels and Waringa (2005) report the following development of church membership in the Netherlands: 1970: 75%; 1980: 69%; 1990: 64%; 2000: 50%; 2005:45%.

[2] Guiso et al. (2003, p. 231) justify the focus on attitudes as follows: "[W]e reduce the effect of potentially spurious factors by looking at people's attitudes rather than at their economic outcome. Asking somebody his view on cheating on taxes is different from asking him if he has cheated on his taxes. The first question,

cross-section of 66 countries and many different religions and demographic data, we complement the approach of Guiso et al. (2003) by studying religiosity and moral attitudes of a representative sample of the population of one country, the Netherlands, and one main religion, Christianity, with a highly detailed data set (see details in section 2). On top, we combine survey data with the results of an experimental game played on the panel with real monetary payoffs.

The association between religion and moral attitudes and behavior is widely discussed in academic and popular discourses (e.g., Armstrong, 2014; Shariff et al., 2014). On the one hand, there is the potential effect of religion on behavior through ethical standards imposed on the faithful by their religion's moral code. For example, charity is an important aspect in many religions. On the other hand, there is the perception that much aggression and violence has been justified in religious terms throughout human history (e.g., Alt, 2015). Empirically, there is indeed little agreement on whether adherence to a faith is correlated with more or with less ethical behavior (e.g. Hermann, 2000, section 2, on crime; Sablosky, 2014, on generosity). Empirical assessments are complicated by the fact that morality differs for religious and non-religious people, and across faiths (Shariff et al., 2014). Moreover, religious affiliation may affect opportunity sets, which affects revealed behavior but not necessarily attitudes. For example, Schneider et al. (2015) report a positive link between religion and the shadow economy. They argue that it is not clear whether the effect is due to attitudes toward the state and taxation, or rather due to close-knit religious communities proving more opportunities for informal transactions. Clearly, the argument may also run in the other direction, where religious communities may provide more opportunity for charitable work and giving.

In the current paper, we aim to study a set of ethical judgments and behavior relevant to economic interactions, using individual-level variation in religiosity and ethical behavior. Using a demographically representative data set of Dutch households, we study whether religious people hold stricter views regarding a set of moral judgments (e.g., tax evasion, bribery), whether they favor income redistribution more or less, and whether they spend more or less time on charity and care than non-religious people. We also study whether they behave more trustworthy in an abstract experimental game with real monetary payoffs, as well as

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however, is more appropriate for our purposes than the second. The decision of whether to actually cheat is affected greatly by the probability of being caught. This is a function of a country's law enforcement, not of an individual's attitude. Therefore, looking at attitudes is a better way of identifying the effect of religious beliefs on people's preferences."

their self-reported trustworthiness. These dependent measures provide insight into moral attitudes, and have direct relevance to the effectiveness of economic institutions.[3] For instance, to which degree can other members of a society be expected to behave opportunistically; or which type of citizens may be more prone to help others when the help is organized by a socially visible organization or a less visible informal network, as opposed to the state?

We observe various dimensions of religiousness: church membership, frequency of attendance, frequency of prayer, as well as two measures of belief in God and theological concepts. In our data, there are two significant religious subgroups, Catholics and Protestants, and we study whether there are differences between adherents of these Christian denominations. Importantly, the variation in a person's religious background as observed in the current Dutch data set has shown to be related to attitudes toward financial risk (Noussair et al., 2013). That is, in the sample that we study, religion is an attribute of people's identity that is linked to economically relevant behavior. The novel question concerns whether associations with ethical judgment and behavior can be observed.

Our results can be summarized as follows. We find that religious people report more moral judgments (less accepting of ethical lapses), and report more hours of volunteering and informal care. However, in an abstract experimental game with an anonymous partner, religious people are equally likely to betray the other person's trust as the non-religious. At the same time, they are also less favorable towards increasing income redistribution than the non-religious. Importantly, these results are robust across the different dimensions of religiosity (participation vs. beliefs) that we observe. This is remarkable given that previous research suggests that social aspects of participation and private religious believes may have different associations with economic behavior and attitudes (e.g., McCleary and Barro 2006; Noussair et al. 2013). We find modest differences between Christian denominations. Protestants are more likely to spend time volunteering. In contrast, for the behavior in the experimental game, we find that Catholics betray less than non-religious people, while Protestants betray more than Catholics and are indistinguishable from the non-religious. We show that these results are mostly due to the very 'orthodox' Protestants (Graafland 2015), defined by high frequency of church attendance.

[3] Alesina and Giuliano (2015) provide a recent survey on the literature studying culture, institutions, and the associated economic effects. A consistently occurring determinant of culture in that article is religion. Keefer and Knack (2008) refer to these attitudes as norms of civic cooperation, and stress their importance for economic interactions by reducing enforcement costs.

Using data on the participants' parents' church membership and frequency of attendance when the participant was aged 15, we study the intergenerational transmission of the observed associations. We find evidence that religious upbringing is linked to moral attitudes and behavior when our participants are adults. We discuss possible pathways for this correlation across generations. Probing the endogeneity of religiosity in the association with moral attitudes, we find that the association persists if we control for non-religious organizational membership and participants' politics, both of which may proxy general social attitudes and behavior transmitted from parents to children. Using parental religious indicators as instruments, i.e. explicitly assuming a unique pathway from parental religion to children's religion, we find no evidence for a direct selection story in the spirit of club good models underlying the link between moral attitudes and religion.

The remainder of the paper is laid out as follows. In the next section we describe the data and define our variables of interest. Section 3 gives results for religiosity in general, and Section 4 gives results on denomination differences. Section 5 considers the intergenerational transmission, and Section 6 probes the endogeneity of religiosity. Section 7 provides a concluding discussion.

## 2. Data and Methodology

### 2.1. Participants

We use data from the LISS panel, managed by CentERdata, a research center affiliated with Tilburg University. The LISS panel consists of approximately 7,000 individuals from about 4,500 households, who complete a questionnaire over the internet each month. Respondents are reimbursed for the costs of completing the questionnaires four times a year. Additionally, incentivized economic experiments are conducted routinely on the LISS panel. A payment infrastructure is available to pay participants according to their decisions in experimental tasks.

In terms of observable background characteristics, the LISS panel is a representative sample of the Dutch population.[4] A large number of background variables are available, including data from a survey on religious beliefs and participation. We make use of various modules of the LISS data that were administered between 2008 and 2012. Sample sizes for the different analyses vary according to the number of panel members who participated in

[4] See https://www.lissdata.nl/lissdata/about-panel for details on the panel structure and representativeness.

each of the relevant modules. Exact samples sizes for each part of the analysis, and a list of all LISS modules that we have used for the current study, are provided in the Online Appendix.[5]

### 2.2. Measurement of Religiosity and Religious Participation

The survey on religion that LISS participants have completed contains data on the religious activities and beliefs of the survey participants at the date of the survey. The Netherlands are diverse in terms of faiths, with similar shares of Protestants and Catholics, and a large share of non-members (Table 1 for details). Within the group of church members, there is much variation in the level of activity and belief. Attendance ranges from irregular visits to attending service multiple times a week; some groups hold beliefs in a literal interpretation of the Bible. In terms of organization, in the Netherlands the faithful are members of the local congregation of their church, for which they pay regular voluntary contributions (through bank transfers), additionally to offerings collected during services. Through a registry that is connected to the municipality registration, churches can keep track of their members when they move to another parish. Our data are based on self-reports of membership.

Table 1 provides summary statistics of responses in five dimensions of religious activity that we employ as explanatory variables in our analyses. We show these summary statistics for different (sub)groups of the panel. In column (1) we report the means for each variable over all observations. In columns (2), (3) and (4) we report the mean for the subsample of church members, Roman Catholics and Protestants, respectively. For example, the second row of the table indicates that 19% of all panel members are Catholic, while 48% of all church members on the panel are Catholic.

The first dimension we consider is church membership. We define a dummy variable for being a *church member* of any religious group, as well as dummy variables for *Roman Catholic*, *Protestant* and *Other faiths*.[6] While these variables are measured with little noise, they are uninformative on the strength of religious beliefs or activities. We thus define as the second dimension the frequency of church attendance. Attendance is measured on a six-point scale ranging from "never" through "only on special religious days to "every day." As shown in Table 1, some of the categories apply to only a small share of the population. We aggregate these dimensions to obtain a 3-category measure *Church Attendance* ranging from never,

[5] Available in the online supplementary material and at https://heidata.uni-heidelberg.de/dataverse/awiexeco.

[6] Among the *Other faiths* group, about 43% report belonging to Christian churches other than Catholic or Protestant, and 39% are Muslim. See Table A1 in the Appendix for details.

through less than once a week (i.e., irregularly), to at least once a week (i.e., regularly). We also create the respective dummy variables for each category. We also differentiate between non-orthodox and orthodox church members (see Graafland, 2015, for a discussion of strictly protestant groups in the Netherlands), to be able to detect characteristics that correlate with strong religious affiliation. For Catholics and Protestants, we define church members as *orthodox* if they attend church at least once a week, and as *non-orthodox* if they attend church less than once a week or never.[7] The next dimension concerns private religious activity, in the form of praying. Private *Prayer* is less socially visible than church attendance and may thus have different underlying goals and determinants. As with church attendance, we define a 3-category measure ranging from *never*, through *less than once a week*, to *at least once a week*, and create the respective dummy variables for each category.

The next two categories concern the internal aspects of religion, that is, religious beliefs. We define two categories. First, *Belief in God* is reported on a six-point scale ranging from 0: "I do not believe in God" to 5: "I believe without any doubt in God." We also define the dummy variables of *strong belief* and *weak belief in God*, based on the median split of the answers to the Belief in God variable. Second, we measure the strength of *beliefs in theological concepts* by a count of the number of affirmative answers on a set of seven questions asking the participants whether they believe in specific Christian theological concepts. These are (i) *life after death*, (ii) *existence of heaven*, (iii) *the Bible as the word of God*, (iv) *existence of hell*, and (v) *the devil*, (vi) that *Adam and Eve existed*, and (vii) that it *makes sense to pray*.[8] We also define the dummy variables of *strong belief in theological concepts* and *weak belief in theological concepts* based on the median split of the aggregated answers to the strength of religious belief variable. Information on the correlation among the different measures of religiosity is provided in the Online Appendix.

Taken together, our data allow us to distinguish between the theological dimension ("believing") and the social dimension ("belonging") of religion and thereby to relate our findings to the literature (e.g., Barro and McCleary, 2003, Noussair et al., 2013). In this context, *Belief in God*, *belief in theological consepts*, and *private praying* relate to "believing," whereas *church membership* and *church attendance* relate to "belonging."

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[7] Summary statistics separated by orthodox and non-orthodox subgroups are shown in Table A2 in the Appendix.

[8] Cronbach's alpha for the seven questions about belief in theological concepts equals 0.94, indicating a unique factor driving the answer to these questions. Sample sizes are reduced here because respondents who answered questions with "maybe" or "I don't know" were treated as missing values.

< Table 1 here >

< Table 2 here >

### 2.3. Ethical Judgments and Behavior

We consider six dependent measures of ethics, shown in Table 2 (dependent variables shown in italics; information on the correlation among the different measures are provided in the Online Appendix). The first measure is an aggregate index of moral judgments. Participants indicated for seven unethical behaviors whether they thought that these were justified on a scale from 0 (always justified) to 9 (never justified). The seven questions concern a wide range of ethical behaviors: (i) claiming state benefits which you are not entitled to; (ii) cheating on tax; (iii) stealing someone else's car for a joyride; (iv) lying out of self-interest; (v) having an affair despite being married; (vi) accepting a bribe; and (vii) not paying the fare for public transport.[9] Taking the average of the seven questions and renormalizing low ethics to zero we obtain our aggregate indicator *Moral Judgment*, ranging from 0 (low ethics) to 9 (high ethics). Information on the correlation among the different moral judgments is provided in the Online Appendix.

Our second measure concerns the stated *preference for redistribution*. Participants indicated their views on income differences on a scale from 0 (differences should be larger) to 4 (differences should be smaller). Norms of sharing and generosity exist in all religions, and may thus potentially affect attitudes towards inequality and redistribution.

The next three measures focus on actual behavior rather than on stated judgments and preferences. The third measure indicates the participant's reported number of *hours of voluntary work* that he or she performs on average per week. The reported hours of voluntary work could be due to work in one or possibly more than one of the following categories: *volunteering in organizations*, *informal care*, or *other types of volunteering*. Table A3 in the Appendix gives an overview of the distribution of volunteers over different categories.

The fourth measure indicates the participant's reported number of *hours of informal care* that he or she performs on average per week. Informal care was mostly provided through

[9] Cronbach's alpha for the seven questions about moral judgment is 0.68. From a factor analysis we observe only one factor with eigenvalue greater than 1, suggesting that answers to the questions are driven by a unique source.

personal support and housekeeping. While volunteering in organizations might have a strong social visibility component, especially if performed within a close-knit community, informal care is less visible and potentially less socially rewarding. We may thus consider it a stronger test of charity and brotherly love. For 28% of those who do some volunteering, their activity consists of only informal care. In analyses of volunteering we include a dummy variable for these participants because informal care might be different in its nature from other types of volunteering.

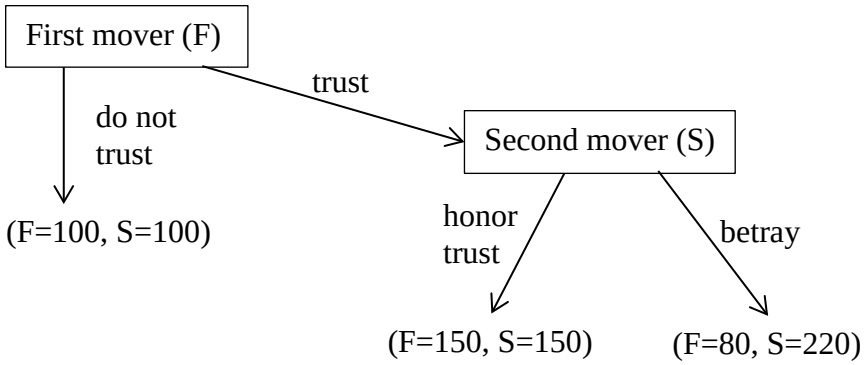


**Figure 1.** Unobservable Charity: The Trust Game

The fifth measure derives from an experimental game performed on the LISS panel with real monetary payments (see Trautmann et al., 2013), which is depicted in Figure 1. In particular, for N = 470 panel participants, we observe their decision to *honor trust* as a second mover in a trust game played with another (real) panel participant for monetary payments.[10] The trust game is defined as follows. The first mover chooses between two actions: not trust, which directly yields 100 points for each player, and trust, which increases the total payoff for the two players to 300, but turns responsibility for dividing it over to the second mover, the trustee. After the first mover's choice of trust, the second mover then has to decide between *honoring trust*, which yields 150 points for each player, and the *betraying trust*, which yields 80 points for the first mover and 220 points for the second mover (i.e., herself or himself). Each point is worth 5 eurocents, roughly 7 American cents at the time of the experiment (in October 2011). In the experiment, second movers have to indicate what they will do if given responsibility, without knowing yet whether or not the first mover acts trustfully. Actions are

[10] We focus on the second mover's choice as it directly relates to ethical behaviour, which is not the case for trust. Guiso et al. (2003) and Renneboog and Spaenjers (2011) report that religious people are more trusting than non-religious people, while Alesina and La Ferrara (2002) find no effect of religion on trust.

neutrally labeled as actions A and B for the first mover and as 1 and 2 for the second mover. Terms such as trust or honoring trust are never used. The game is one-shot, non-repeated, and anonymous; therefore, the second mover has no strategic incentive to honor the first mover's trust. However, participants may think it is unethical to betray (i.e., to cut the payoff to) a first mover who has expanded the pie in the hope that the second mover will reward trust, thus leading to greater payoffs for both. Participants are matched at random and paid, according to the two participants' choices.

The results of this game are particularly interesting from the perspective of economic governance institutions because they capture an extreme situation: The players have a strong incentive to betray trust (and thereby earn EUR 11 instead of EUR 7.50, with a mouse click) without fearing any legal or social repercussion. If they resist the temptation to betray the anonymous trustor in this extreme situation, where only their own ethical standards may prevent them from simple profit-maximization, they can be expected to cooperate even more in other social dilemma situations, where reputational losses, shame, or social exclusion await them.

Finally we consider a measure of stated self-perceived Trustworthiness. Participants indicate to what extent they agree with the statement that people can trust them, on a scale from 0 (disagree entirely) to 6 (agree entirely). The measure allows us to observe possibly biased self-perceptions of trustworthiness when compared to the experimental betrayal measurement.

### 2.4. Control Variables

We control for various demographic attributes in our analyses. Table 3 provides summary statistics of the control variables. The set *Controls A* consist of the unambiguously exogenous variables of *gender* and *age*. The set *Controls B* additionally includes a set of socioeconomic background variables. These consist of *marital status*, *number of children living in the household*, *personal net monthly income (median split)*, *urban vs. rural character of residence*, *health status*, as well as *educational* and *occupational status* (*self-employed* or not).

< Table 3 here >

## 3. Results: Church Membership, Religious Activities and Beliefs

We present results in an aggregated way that illustrates the relevant patterns and the robustness of the results. All detailed results are given in the accompanying Online Appendix. In Table 4 we show the correlation of the five dimensions of religiosity with our six measures of ethics. For each religious explanatory variable, the table shows the marginal effects and significance levels for both sets of controls A and B, demonstrating the observed patterns in an accessible way.[11] The excluded category in the regression analyses is indicated in italics in the table. For each set of analyses we also indicate the sample size of the group comparisons, which vary across analyses because of the variation in the number of participants in the different modules of the LISS surveys.

< Table 4 here >

The following patterns emerge from the analyses. First, we observe positive associations of the religious indicators with moral judgments, on volunteering, and on informal care. These associations are consistent across the five dimensions of religiosity. That is, although the correlations vary in size and significance across different measures, there is little indication of a systematic qualitative difference between participation and belief measures for these outcome measures. Comparison of the general volunteering measure with the informal care measure shows the correlations for the latter are less pronounced, and most strongly show up for private prayer. Both praying and informal care are activities conducted in private, where the social dimension of the activity is weaker than for other activities such as church membership and attendance. Although private prayer and church attendance are positively correlated, there seems to be a group of religious people spending more time than others both on privately exercising their religion and on informal care. In contrast, church membership and attendance per se seems to be less strongly related to the more private domains of charity. We also observe that the size of the associations is economically relevant. For example, for volunteering we find that church members volunteer about 1.3 hours more per week than non-members, a difference of about 40%. Differences are even more pronounced for attendance

[11] Additional analyses in Tables B5 and B6 in the online appendix demonstrate the robustness of the results with respect to wealth differences.

and prayer. Differences in informal care are somewhat less substantial in economic terms, falling in the range of 10% to 15%.

Consistent with the view that observability is important, we find no association of religion with trustworthiness in the anonymous experimental game. Indeed, simple mean comparisons across categories show that there are no systematic differences across the percentages of trustworthy choices across groups in the trust game. Thus, the lack of a significant correlation is not merely due to a lack of statistical power. Similar results were obtained by Benjamin et al. (2016), who find that making people's religious identity more salient has no significant effect on generosity in dictator games (while they do find various other effects). The absence of link between prayer or beliefs and behavior in the anonymous game puts the above discussed charitable behavior of those who pray in private into perspective. Presumably, informal care, while less observable than other types of charity, is special in the sense that it is directed to those close to the person who volunteers for the activity. Interestingly, self-reported trustworthiness is largely consistent with the absence of differences in the experimental game. Although church members perceive themselves as more trustworthy than non-members do, no significant differences are found for the other indicators of religiosity.

Finally, we observe a negative association of religiosity with preference for redistribution. The result replicates findings for the US reported in Guiso et al. (2006), as well as experimental results by Neustadt (2011), who finds that religious people have a negative willingness to pay for redistribution. The result is also consistent with evidence from cross-country studies (Elgin et al., 2013), and suggests that the reported cross-country results are indeed related to religiosity rather than other, unobserved institutional differences. Theoretically, these differences are sometimes explained in terms of membership in religious groups as an insurance against adverse life events: religious individuals prefer less income redistribution by the state because the church provides some degree of insurance (Scheve and Stasavage, 2006). This explanation is roughly consistent with our data because the correlation with redistribution seems weaker for the measures of belief and private prayer. More generally, the distinction between indicators of religious belief and indicators of participation has been emphasized in previous work (Keely, 2003; Noussair et al., 2013). In our current study, such a distinction is thus only suggested for redistribution preferences.

The overall picture that emerges from the analyses shows that religious people seem to hold stronger moral values and show more pro-social activity in the form of volunteering.

Presumably, volunteering will be observable by others, and directed towards certain goals and groups that match well with a person's religious identity. In contrast, there seems to be no generally stronger tendency towards social behavior or generosity among religious people. In an anonymous setting where the participant could either share an amount of money with another person who trusted her, or keep the money for herself, religious people are just as likely as non-religious (or less religious) people to not reciprocate trust.[12]

To get more insights into the mechanisms underlying our results on religious affiliation in general, we will next provide analyses that look at the roles of different Christian denominations. Moreover, the category-predictions for multi-category variables shown in Table 4 suggest that the affiliations may not just relate to the religious vs. non-religious comparison, but also to the strength of the religious affiliation. We will thus also consider how strongly people are involved in religious activities. As a benchmark for the economic significance of the associations with religion in our data, we also consider the role of people's political attitudes (as a dependent variable) on moral judgments and behavior.

## 4. Results: Catholics and Protestants

Table 5 present results on the role of denominations, in particular regarding the differences between the significant subgroups in our sample, Catholics and Protestants. The setup of the table is identical to the setup described for Table 4.[13] We consider three types of comparisons. First, we compare Catholics, Protestants, and others to the non-religious. Then we directly compare Catholics to Protestants. Third, we additionally distinguish between orthodox and non-orthodox members of these denominations, where *orthodox* refers to believers with very regular church attendance (at least once per week) and *non-orthodox* attend church less than once per week.

Panel Denomination I in Table 5 basically replicates results shown in Table 4. Although not all coefficients are significant, the patterns of Table 4 emerge here for all denominations, with one exception. For Catholics, we observe a positive association with trustworthiness in the experimental game, compared to the non-religious. Interestingly, the finding holds also true for the self-reported trustworthiness measure. Panel Denomination II refines these results.

[12] Participants with "other faiths" may be culturally different from the Christian or non-member majority, and may hold different norms in their communities. Excluding participants with other faiths from the analyses in Table 4 to control for such effects does not affect the reported results (results available in the Online Appendix).

[13] Additional analyses in Tables B5 and B7 in the online appendix demonstrate the robustness of the results with respect to wealth differences.

It shows that Protestants spend more time on volunteering than Catholics do, but that they are less likely to share equally with the first-mover in the trust game. Table Denomination III demonstrates the role of orthodox adherents of each denomination for these results. Compared to the group of non-orthodox Catholics, orthodox Protestants hold the strictest moral judgments of the four groups. Both orthodox Catholics and Protestants spend more time on volunteering than the non-orthodox. The negative attitude towards redistribution among the religious is strongest for orthodox Protestants, who are also least likely to honor trust in the trust game.

< Table 5 here >

Thus, we do observe clear variation between denominations, consistent with previous empirical work on differences between Catholics and Protestants, for instance in terms of management style, which is closely related to the current social attitudes (Filistrucchi and Prüfer, 2017). However, for our results on trustworthiness, there is little evidence yet in the literature. For example, Fehr et al. (2002) implement a sequential prisoners' dilemma in a survey of a representative sample of the German population. They show that denomination has no influence on the trustworthiness of the second-mover, i.e. on how much money they transfer to the first mover.

Given the reported associations in tables 4 and 5, we can ask how these differences across denominations, as well as those between religious and non-religious participants in general, compare to other benchmarks associated with differences in moral attitudes. To this end we report the variation of our moral behaviors across the political spectrum: political attitudes directly relate to many ethical and social issues, and we would expect them to have substantial associations with our ethics measures. We use a median split indicator based on a question that asks participants to place themselves on a 10-point scale of the political spectrum, from 0 meaning "left" to 10 meaning "right." Using self-reported political party preferences, Trautmann et al. (2013) show that the indicator maps exactly on the spectrum of Dutch political parties, as it is typically perceived.

Except for preferences for redistribution, we do not find any significant associations with political orientation (panel Political orientation in Table 5). That shows that a person's moral attitudes and behavior is closely linked to her religion, and more so than to her politics. This is consistent with views that people sometimes vote for parties that do not represent their interest in economic policy terms (Frank, 2004).

We obtain a set of more nuanced results by studying the correlation between political orientations across religious subgroups. This is motivated by recent findings in the United States, that religion and political attitudes appear to be closely intertwined. Based on Pew Research Center (2014), Catholics are more likely to vote Democrats than Protestants and Protestants are more likely to vote Republicans than Catholics. In our Dutch sample, a different picture arises. Table 6 shows that there is no significant difference in political orientation between (non-)orthodox Catholics and Protestants in the Netherlands. However, we find that frequent churchgoers have significantly more right-wing attitudes than those who attend church less than once per week. We will come back to the potential role of political attitudes in Section 6 when investigating potential channels underlying the observed correlations.

< Table 6 here >

## 5. Intergenerational Transmission of Moral Attitudes

Expecting that both religious affiliation and moral norms are typically transmitted across generations, we next examine whether the observed associations between religiosity and ethics hold when we extend the analysis to indicators of the participants' parent's religiosity. We use the church membership of the participant's parents and their frequency of attending church when the participant was aged 15 (summary statistics in Table A4 in the Appendix), to test if religious upbringing correlates with ethical judgment/behavior of the participant today. Table 7 shows the pattern of the parents' and the participants' church membership. Parental membership status is strongly correlated with participants' membership status ($\rho$=0.49, $p<0.001$). If membership status differs between the parents and the participant, this is almost exclusively in the direction of a participant not being a church member whose parents were church members.

< Table 7 here >

Table 8 shows results for the association of parental membership and church attendance, respectively, when the participant was aged 15 with our six measures of ethics, replicating the analyses in the first two panels of Table 4. We find that for both membership and church attendance the pattern of relationships found for the participants' own religious indicators

above is replicated. This constitutes evidence for an intergenerational transmission of the association between religion and moral attitudes.

< Table 8 here >

## 6. Investigating Causality

The associations identified in the previous sections provide important insights regarding the different moral contexts in more or less religious environments. An additional important step is the identification of the underlying mechanisms leading to these associations. For example, coming back to the question posed in the Introduction, does a decline in church membership have an effect on moral behavior and attitudes? Or is it that different types of people select in or out of religious groups (Iannaccone, 1998, Keely, 2003)? While an unambiguous identification of the causal mechanism will not be feasible given the available data, in this section we make an attempt to probe the potential pathway from religious indoctrination by parents to moral behavior of their children years later.

In Section 5 we observed that parental religion, and not just the participants' current religion, correlates with participants' moral behavior. This suggests that a direct self-selection channel, according to which believers with lower moral judgment and volunteering levels leave the church, cannot fully explain the relationship. To further explore this mechanism, we conduct a 2-stage instrumental variable regression for each dependent variable with each religious dimension, using the two sets of control variables. We instrument the respondent's religious indicators by the parents' membership and their degree of activity (church attendance) when the participant was aged 15. The model is given by the two-stage structure

$$\hat{x}_i = \hat{\alpha}_1 + z_i\hat{\beta}_1 + c_i\hat{\gamma}_1 \,, \tag{1}$$

$$E(y_i^*|\hat{x}_i, c_i) = \alpha + \hat{x}_i\beta + c_i\gamma, \tag{2}$$

where $z_i$ is a vector of dummy variables for parents' membership and degree of activity (church attendance) of the parents, $x_i$ is the participant's measure of religiosity considered, and $c_i$ is the vector of the control variables A or B. $\hat{x}_i$, $\hat{\alpha}_1$, $\hat{\beta}_1$, and $\hat{\gamma}_1$ are the fitted values of the first stage regression. $y_i$ denotes the ethics measure under consideration. The approach thus assumes that the parents' religion is a strong determinant of the participant's religion, and that any influence of parental religion on moral behavior participant runs only through the

participant's religion. That is a strong assumption given the multitude of potential social and genetic transmission channels fur cultural traits, such as religion, and moral and social behavior. However, if endogeneity is driven by self-selection at the level of the participant, we may identify it in this setup if the correlations observed in Table 4 vanish if participants' religiosity is instrumented by their parents' religiosity. Below we will come back to alternative channels for the association of parental religion and participants' ethics.

< Table 9 here >

Table 9 shows the results for the instrumented variable in the second stage regressions for each of our dependent variables.[14] The results do not support the self-selection explanation. We find that the results for the instrumented variables replicate the previously observed pattern of associations. An interesting difference with the previously observed pattern is that for preference for redistribution and for informal care, the instrumental variable regressions indicate a more consistent relevance across the dimensions of religiosity. The above discussed distinction between social participation and internal beliefs may thus not be substantial, but potentially be related to larger measurement error in some dimensions. Indeed, marginal effects are somewhat larger than those found in the regression analyses in Section 3. Attenuation due to measurement bias is a likely candidate for this effect, given the self-reported and self-perception nature of our religious indicators. However, unobserved factors may also be at play, which we consider next.

While a pathway from moral attitudes to religious affiliation and practice is not directly supported by our analyses, there may be unobserved factors that influence both. In particular, the correlation between parental religion and participants' moral attitudes might be driven by some predisposition of the parents, leading to selection into the church for more moral individuals, and which is then transmitted to the children through genetic and cultural channels other than religiosity. While we find no evidence for selection at the participants' level, it is conceivable that for the parents' generation, where church membership was far

[14] Table A5 reports the test statistics for under-identification and weak identification. Overall Kleibergen and Paap (2006) tests indicate the clear relevance of the instruments for the five different dimensions of religiosity of the participant. We can reject the null hypothesis that the instruments are not correlated with the different dimensions of religiosity of the participant in all cases (p-value < 0.01). We can reject the null hypothesis that the instruments are weak except for the combination of moral judgment with belief in theological concepts.

more common and important, leaving the church was much stronger related to attitudes and behavior (rather than a general lack of interest).

We consider two variables that are closely linked to these unobserved aspects that may result in a correlation between religion and moral attitudes at the parents' level, absent a causal effect from religion to ethics. First, a general level of sociability may positively influence church attendance and time spent on voluntary work and care. Second, political attitudes correlate with religious attitudes, but clearly also with the moral attitudes and behavior we observe. To control whether the partial correlations of religious activities and beliefs with our ethics measures are possibly driven by the unobserved degree of sociability and political preferences, we include controls for both aspects in the basic framework presented in Section 3. For political preferences we use the political orientation indicator introduced in Section 4. Sociability we measure through information on the participant's membership in other, non-religious organizations, available from the Social Integration and Leisure module of the LISS panel. Indeed, we find that children of church members are relatively more likely to be members in other, non-religious organizations than are children of parents who were no church members. Summary statistics on these variables are given at the bottom of Table 3. We include dummy variables for each type of organization.

< Table 10 here >

Results for the associations between religious measures and ethics in the specifications where we control for these alternative pathways (additionally to the full set of Controls B) are shown in Table 10. The previously observed pattern replicates. Some associations become smaller and less significant, notable those for Preference for Redistribution. Organizational membership and political orientation are linked to the moral attitudes considered here, and may contribute to the association with religious variables shown in Table 4. However, overall the findings in Table 4 persist when controlling for these variables.

In sum, the robustness of our basic results when instrumenting with parental religion (given the discussed caveats) or when controlling for alternative pathways for the link between religious affiliation and moral attitudes and activities, does not allow us to reject the pathway from indoctrination to ethics. Moreover, the observed consistency of our results across the different dimensions of religiosity (except for preference for redistribution) also suggests that a simple selection process does not fully explain the observed associations: if social types select into social activities in churches, this may not necessarily lead them to hold stronger religious beliefs. However, because we cannot eliminate the possibility that other,

unobserved factors affect both religiosity and ethics, we abstain from strong conclusions regarding causal effects.

## 7. Conclusion

We started with the observation that church membership and religiosity is much less prevalent in the generation of respondents in our sample of the Dutch population, compared to the generation of their parents. Our question was whether a religious environment differs from a less religious one in terms of moral attitudes and behaviors that are a key ingredient to economic interaction. Our results suggest that this is the case. We find that religious people differ from non-religious people by holding stricter moral attitudes, and by spending more time on volunteering and informal care. Moreover, the religious have lower preferences for redistribution. However, we do not find differences in trustworthiness between the religious and the non-religious in an anonymous experimental game, and that church membership alone (rather than indicators of potentially private, religious activities) is not a strong predictor for the time someone spends on informal care. This suggests that observability of charitable deeds and the fact that the recipient of charity is typically selected from the participant's social network, both of which relate to the "belonging" aspect of religious activities, play an important role for these activities. Our observations thus indicate that a religious society might be quite different in terms of social fabric, both its formal and its informal institutions, compared to a non-religious society. Our findings on parents' religion show that such differences may be persistent.

Zooming in on different Christian denominations, we find several differences. Catholics are more generous in the anonymous trust game returns. Protestants have a lower preference for redistribution, but spend more time on volunteering. These effects are especially pronounced for orthodox Protestants, who also hold stricter moral attitudes. The content and structure of a religious denomination, over and beyond the distinction between the religious and non-religious, seems associated with attitudes and behaviors relevant to economic institutions (Filistrucchi and Prüfer, 2017).

The interpretation of the observed associations in terms of causal pathways is not trivial though. Religious affiliation affecting moral attitudes, and moral attitudes leading to selection into church, are both conceivable. Unobserved factors may affect both church membership and moral attitudes. With the current data, we cannot unambiguously identify causal effects.

However, we probe whether we can reject the interpretation in terms of a causal effect from religion to moral behavior. We find no evidence suggesting self-selection of moral individuals into churches. Unobservable factors may matter, but controlling for political orientation and membership in organizations to proxy for social attitudes and the general level of sociability does not reduce the associations substantially. While our data thus do not reject the pathway from religiosity to behavior, we abstain from strong conclusions regarding causality. Future research may make progress in this dimension by using events that externally affect church membership, such as scandals affecting some congregations or parishes more strongly than others. Moreover, even if a causal effect from religion to moral behavior could be clearly established, it were unclear whether such an effect would work through indoctrination, social pressure, or opportunities (e.g. in the case where church organizations offer more opportunities to participate in volunteering; or where they offer social insurance). Given the associations established in the current paper, these are important questions to approach next, to provide insights into the underlying mechanisms in the relationship between religion and moral attitudes and behavior.

## Appendix

This appendix provides tables A1 to A5 with additional summary statistics and data analyses referred to in the main text.

< Tables A1 to A5 here >

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## TABLES

**Table 1.** *Summary Statistics: Religion*

| | # obs. | All | Church members | Catholics | Protestants |
|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) |
| **Religious status** | | | | | |
| Church membership | 5581 | 39% | | | |
| Roman Catholic | 5561 | 19% | 48% | | |
| Protestant | 5561 | 15% | 40% | | |
| Other faiths | 5561 | 5% | 13% | | |
| Orthodox Roman Catholic[a] | 1024 | | | 10% | |
| Orthodox Protestants[a] | 857 | | | | 44% |
| **Church attendance** | | | | | |
| More than once a week | 5599 | 4% | 10% | 3% | 13% |
| Once a week | 5599 | 7% | 18% | 8% | 31% |
| At least once a month | 5599 | 6% | 15% | 16% | 16% |
| Only at special days | 5599 | 12% | 22% | 31% | 12% |
| Rarely | 5599 | 13% | 17% | 21% | 15% |
| Never | 5599 | 57% | 17% | 21% | 12% |
| **Private Prayer** | | | | | |
| More than once a week | 5587 | 25% | 55% | 37% | 73% |
| Once a week | 5587 | 3% | 6% | 8% | 4% |
| At least once a month | 5587 | 4% | 6% | 8% | 4% |
| Only at special days | 5587 | 3% | 5% | 7% | 2% |
| Rarely | 5587 | 16% | 17% | 24% | 11% |
| Never | 5587 | 49% | 11% | 16% | 6% |
| **Belief in God** | | | | | |
| Degree of belief in God (0-5) | 5656 | 2.36 | 3.78 | 3.30 | 4.19 |
| Strong belief in God[b] | 5656 | 43% | 78% | 69% | 88% |
| **Belief in theological concepts** | | | | | |
| Believe in life after death | 3724 | 50% | 75% | 63% | 85% |
| Believe in existence of heaven | 4024 | 37% | 72% | 49% | 88% |
| Believe in existence of hell | 4796 | 13% | 28% | 8% | 39% |
| Believe in existence devil | 4784 | 16% | 34% | 10% | 51% |
| Believe that Adam and Eve existed | 3704 | 38% | 65% | 40% | 82% |
| Believe in Bible as the word of God | 4454 | 37% | 76% | 60% | 91% |
| Believe that prayer makes sense | 4235 | 49% | 91% | 85% | 96% |
| Belief in theological concepts (0-7) | 1866 | 2.50 | 5.29 | 3.29 | 6.09 |
| Strong belief in theological concepts[b] | 1866 | 45% | 90% | 75% | 97% |

*Notes:* Percentages or means of all (1), church members (2), Roman Catholics (3) and Protestants (4) are reported. The first column shows the number of observations for sample (1) except for Orthodox Roman Catholic and Protestant. There the number of observations for sample (3) and (4) are reported, respectively. a: defined as those Catholic/Protestant participants who visit church at least once a week; b: Indicator for degree of belief in God [resp. belief in theological concepts]: 0 (≤ median), 1 (> median). Values from the same dimension may not add to 100% due to rounding.

**Table 2.** *Summary Statistics: Ethical Judgment and Behavior*

| | # obs. | All | Church members | Catholics | Protestants |
|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) |
| **Moral Judgment**[a] | | | | | |
| Social benefit fraud | 565 | 8.53 | 8.62 | 8.56 | 8.67 |
| Cheating on tax | 565 | 7.64 | 7.76 | 7.65 | 7.96 |
| Stealing someone else's car for a joyride | 564 | 8.66 | 8.73 | 8.77 | 8.74 |
| Lying out of self-interest | 565 | 6.78 | 7.10 | 7.05 | 7.25 |
| Adultery | 565 | 7.55 | 8.02 | 7.89 | 8.28 |
| Accepting a bribe | 564 | 8.23 | 8.53 | 8.59 | 8.56 |
| Fare evasion in public transport | 564 | 7.38 | 7.62 | 7.61 | 7.60 |
| *Moral judgment*[b] | 562 | 7.82 | 8.05 | 8.00 | 8.15 |
| **Preferences for Redistribution** | | | | | |
| *Prefer lower income differences in society*[c] | 5022 | 2.80 | 2.79 | 2.84 | 2.76 |
| **Public Charity** | | | | | |
| *Hours spent on voluntary work per week*[d] | 5638 | 3.10 | 3.85 | 3.93 | 3.94 |
| **Private Charity** | | | | | |
| *Hours spent on informal care per week* | 5638 | 1.95 | 2.21 | 2.14 | 2.33 |
| **Unobservable Charity: Trust game** | | | | | |
| *Responder honors the trust* | 470 | 51% | 56% | 62% | 48% |
| **Self-perceived Trustwortiness** | | | | | |
| *People can trust me* | 3161 | 5.06 | 5.16 | 5.19 | 5.17 |

*Notes:* Percentages or means of all (1), church members (2), Roman Catholics (3) and Protestants (4) are reported. The first column shows the number of observations for sample (1). a: Individual questions were asking whether activity can be justified, individual statements scored on a scale of 0 (always) to 9 (never); b: aggregate measure normalized such that zero indicates low and 9 indicates high moral judgement; c: On a scale from 0 (prefer an increase in income differences) to 4 (prefer a decrease in income differences); d: Includes hours spent on informal care. For one individual the time spend on voluntary work was 24 hours per day. Since this is not plausible, we excluded this observation.

**Table 3.** *Summary Statistics: Control Variables*

| | # obs. | All | Church members | Catholics | Protestants |
|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) |
| **Demographics** | | | | | |
| Age | 11422 | 39.82 | 53.82 | 56.32 | 53.98 |
| Male | 11422 | 49% | 43% | 44% | 43% |
| Number of at home living children | 11422 | 1.25 | 0.85 | 0.71 | 0.85 |
| Having a partner | 11422 | 81% | 78% | 79% | 80% |
| Divorced | 11422 | 6% | 7% | 8% | 6% |
| Married | 11422 | 46% | 68% | 68% | 70% |
| **Housing** | | | | | |
| Urban character of residence (0-4) [a] | 11360 | 1.96 | 1.83 | 1.84 | 1.65 |
| **Education** | | | | | |
| Higher education | 11422 | 24% | 31% | 31% | 31% |
| **Employment** | | | | | |
| Self-employed | 6362 | 5% | 4% | 4% | 6% |
| Personal net monthly income (€) | 10801 | 1186 | 1529 | 1502 | 1546 |
| **Health** | | | | | |
| Health status (0-4) [b] | 5718 | 2.10 | 2.07 | 2.03 | 2.12 |
| **Membership in organization** | | | | | |
| Being a member [c] | 5647 | 51% | 54% | 55% | 58% |
| Cultural | 5647 | 13% | 17% | 17% | 18% |
| Environmental, peace, animal rights | 5647 | 10% | 8% | 8% | 10% |
| Humanitarian aid, human rights | 5647 | 6% | 6% | 5% | 6% |
| Political party | 5647 | 4% | 7% | 4% | 10% |
| Sports, outdoor | 5647 | 35% | 33% | 37% | 32% |
| Social society | 5647 | 7% | 10% | 10% | 12% |
| **Political Orientation** | | | | | |
| Political orientation (0-10)[d] | 4624 | 5.39 | 5.75 | 5.74 | 5.97 |
| Right leaning indicator[e] | 4624 | 37% | 41% | 39% | 46% |

*Notes:* Percentages or means of all (1), church members (2), Roman Catholics (3) and Protestants (4) are reported. Controls A: age, male; Controls B: Control A and number of at home living children, having a partner, divorced, married, urban character of residence, personal net monthly income, education, health status, self-employment; a: from 0 (least urban) to 4 (most urban); b: from 0 (poor health) to 4 (excellent health); c: dummy variable indicating the membership in at least one of the following types of organizations: cultural, environmental, peace, or animal rights, humanitarian aid or human rights, political party, sports or outdoor, and social society; d: from 0 (most left wing) to 10 (most right wing); e: Indicator for Political orientation variable being strictly above median (i.e., right wing).

**Table 4**. *Religiosity and Ethics – Adjusted Predictions*

| | Moral judgment (0-9) | | | | Preference for redistribution (0-4) | | | | Hours spent on voluntary work per week[a] | | | | Hours spent on informal care per week | | | | Honor trust in Trust Game | | | Self-perceived Trustworthiness (0-6) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | | | | (2) | | | | (3) | | | | (4) | | | | (5) | | | (6) | | | |
| Dimension of religiosity | N | A | B | | N | A | B | | N | A | B | | N | A | B | | N | A | B | N | A | B | |
| **Church membership** | | | | | | | | | | | | | | | | | | | | | | | |
| *Not a church member* | 192 | 7.71 | 7.76 | | 2928 | 2.91 | 2.92 | | 3216 | 3.31 | 3.45 | | 3216 | 2.32 | 2.49 | | 245 | 49% | 48% | 1763 | 5.04 | 5.04 | |
| Church member | 152 | 7.93 | 7.93 | *A,#B | 1906 | 2.78 | 2.80 | ***A,B | 2070 | 4.65 | 4.84 | ***A,B | 2070 | 2.64 | 2.71 | #A | 189 | 55% | 54% | 1164 | 5.14 | 5.13 | *A#B |
| **Church attendance** | | | | | | | | | | | | | | | | | | | | | | | |
| *Never* | 201 | 7.74 | 7.79 | | 2771 | 2.92 | 2.92 | | 3017 | 3.16 | 3.32 | | 3018 | 2.24 | 2.38 | | 245 | 52% | 52% | 1682 | 5.08 | 5.09 | |
| Less than once a week | 111 | 7.81 | 7.80 | | 1540 | 2.81 | 2.85 | **A,*B | 1683 | 4.33 | 4.50 | ***A,B | 1682 | 2.65 | 2.81 | *A,B | 136 | 49% | 49% | 924 | 5.07 | 5.06 | |
| Once a week or more | 37 | 8.28 | 8.31 | ***A,B | 543 | 2.67 | 2.68 | ***A,B | 604 | 5.77 | 5.95 | ***A,B | 604 | 2.68 | 2.75 | #A | 53 | 52% | 50% | 334 | 5.07 | 5.03 | |
| **Praying** | | | | | | | | | | | | | | | | | | | | | | | |
| *Never* | 157 | 7.79 | 7.85 | | 2378 | 2.89 | 2.91 | | 2580 | 3.22 | 3.33 | | 2581 | 2.14 | 2.25 | | 206 | 53% | 53% | 1414 | 5.06 | 5.05 | |
| Less than once a week | 92 | 7.68 | 7.63 | #B | 1114 | 2.82 | 2.84 | #A | 1208 | 4.04 | 4.29 | ***A,B | 1208 | 2.83 | 2.99 | **A,B | 90 | 48% | 49% | 685 | 5.06 | 5.09 | |
| Once a week or more | 98 | 8.00 | 8.06 | #A,*B | 1355 | 2.82 | 2.84 | #A,B | 1502 | 4.72 | 4.90 | ***A,B | 1501 | 2.61 | 2.74 | *A,B | 138 | 52% | 50% | 836 | 5.13 | 5.11 | |
| **Belief in God** | | | | | | | | | | | | | | | | | | | | | | | |
| *Belief ≤ Median* | 217 | 7.72 | 7.75 | | 2837 | 2.88 | 2.90 | | 3068 | 3.56 | 3.69 | | 3069 | 2.28 | 2.44 | | 240 | 51% | 49% | 1695 | 5.05 | 5.04 | |
| Belief > Median | 133 | 7.98 | 8.03 | **A,B | 2038 | 2.83 | 2.83 | *B | 2283 | 4.19 | 4.41 | ***A,B | 2282 | 2.64 | 2.73 | *A | 196 | 53% | 53% | 1265 | 5.11 | 5.11 | |
| **Belief in theological concepts** | | | | | | | | | | | | | | | | | | | | | | | |
| *Belief ≤ Median* | 62 | 7.66 | 7.63 | | 910 | 2.86 | 2.86 | | 966 | 3.07 | 3.08 | | 967 | 2.12 | 2.27 | | 77 | 52% | 47% | 549 | 4.94 | 4.95 | |
| Belief > Median | 54 | 8.06 | 8.06 | *A,B | 687 | 2.75 | 2.73 | #A,*B | 799 | 4.58 | 4.88 | ***A,B | 798 | 2.59 | 2.65 | | 78 | 51% | 52% | 451 | 5.08 | 5.02 | #A |

*Notes*: Column N presents the number of observations of the raw mean for each category. Columns A and B present adjusted predictions for each ethical measure for the regression including Controls A, B, respectively. The average marginal effect is the difference between the adjusted prediction of the category and the excluded category. The excluded category is indicated in italics. The significance of each comparison is based on regression analyses of the ethical measure on the dimensions of religiosity including Controls A or B. # p<0.10, $^{*}$ $p < 0.05$, $^{**}$ $p < 0.01$, $^{***}$ $p < 0.001$, Regression type: (1)-(4), and (6): Tobit regression; (5): Probit regression. Controls A: age, male; Controls B: Controls A, number of children, partner, divorced, married, urban character of residence, median split indicator of personal net monthly income, education, health status, self-employment; a: We include additionally a dummy variable taking the value 1 if no voluntary work other than informal care is done. Throughout all regressions this dummy variable is significant for both specifications.

**Table 5.** *Denomination and Ethics –Adjusted Predictions*

| | Moral judgment (0-9) | | | | Preference for redistribution (0-4) | | | | Hours spent on voluntary work per week[a] | | | | Hours spent on informal care per week | | | | Honor trust in Trust Game | | | | Self-perceived Trustworthiness (0-6) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | | | | (2) | | | | (3) | | | | (4) | | | | (5) | | | | (6) | | | |
| Dimension of religiosity | N | A | B | | N | A | B | | N | A | B | | N | A | B | | N | A | B | | N | A | B | |
| **Denomination I** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Not a church member* | 192 | 7.71 | 7.77 | | 2928 | 2.91 | 2.92 | | 3216 | 3.31 | 3.45 | | 3216 | 2.33 | 2.51 | | 245 | 49% | 47% | | 1763 | 5.04 | 5.04 | |
| Catholic | 78 | 7.81 | 7.82 | | 935 | 2.81 | 2.83 | *A.B | 982 | 4.28 | 4.29 | ***A,B | 982 | 2.60 | 2.57 | | 92 | 60% | 61% | #A,*B | 569 | 5.15 | 5.17 | *A,B |
| Protestant | 57 | 8.04 | 8.08 | **A,*B | 756 | 2.72 | 2.75 | ***A,B | 818 | 5.21 | 5.50 | ***A,B | 818 | 2.49 | 2.59 | | 75 | 47% | 45% | | 456 | 5.14 | 5.10 | |
| Other Religion | 14 | 7.99 | 7.92 | | 202 | 2.85 | 2.76 | | 250 | 4.41 | 5.05 | **A,***B | 250 | 3.34 | 3.79 | *A,**B | 22 | 62% | 56% | | 128 | 5.08 | 5.07 | |
| **Denomination II** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Catholic* | 78 | 7.94 | 7.95 | | 935 | 2.88 | 2.89 | | 982 | 4.45 | 4.47 | | 982 | 2.82 | 2.84 | | 92 | 62% | 63% | | 569 | 5.18 | 5.19 | |
| Protestant | 57 | 8.15 | 8.20 | #B | 756 | 2.80 | 2.82 | #A | 818 | 5.29 | 5.67 | *A,**B | 818 | 2.71 | 2.91 | | 75 | 49% | 47% | #A,*B | 456 | 5.16 | 5.13 | |
| **Denomination III** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Non-orthodox Catholic* | 72 | 7.96 | 7.96 | | 830 | 2.90 | 2.91 | | 874 | 4.25 | 4.23 | | 874 | 2.84 | 2.83 | | 81 | 59% | 62% | | 507 | 5.16 | 5.18 | |
| Orthodox Catholic | 6 | 7.76 | 7.85 | | 102 | 2.73 | 2.78 | | 103 | 5.96 | 6.29 | *A,B, | 103 | 2.46 | 2.73 | | 9 | 75% | 67% | | 59 | 5.32 | 5.31 | |
| Non-orthodox Protestant | 34 | 7.96 | 8.07 | | 427 | 2.85 | 2.85 | | 462 | 4.57 | 5.08 | #B | 462 | 2.44 | 2.80 | | 44 | 51% | 50% | | 259 | 5.20 | 5.18 | |
| Orthodox Protestant | 23 | 8.40 | 8.39 | **A,*B | 328 | 2.74 | 2.77 | **A,*B | 355 | 6.23 | 6.40 | ***A,B | 355 | 3.09 | 3.07 | | 31 | 45% | 42% | #B | 197 | 5.11 | 5.05 | |
| **Political orientation** | | | | | | | | | | | | | | | | | | | | | | | | |
| *Left leaning* | 180 | 7.72 | 7.77 | | 2879 | 3.05 | 3.07 | | 2772 | 3.97 | 4.05 | | 2773 | 2.43 | 2.50 | | 246 | 56% | 55% | | 1565 | 5.07 | 5.06 | |
| Right leaning | 102 | 7.90 | 7.89 | #A | 1659 | 2.44 | 2.45 | ***A,B | 1597 | 3.70 | 3.84 | | 1597 | 2.29 | 2.38 | | 122 | 50% | 51% | | 893 | 5.13 | 5.11 | |

*Notes*: Column N presents the number of observations of the raw mean for each category. Columns A and B present the adjusted predictions for each ethical measure for the regression including Controls A, B, respectively. The average marginal effect is the difference between the adjusted prediction of the category and the excluded category. The excluded category is indicated in italics. The significance of each comparison is based on regression analyses of the ethical measure on the dimensions of religiosity including Controls A or B. # p<0.10, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, Regression type: (1)-(4), and (6): Tobit regression; (5): Probit regression. Controls A: age, male; Controls B: Controls A, number of children, partner, divorced, married, urban character of residence, median split indicator of personal net monthly income, education, health status, self-employment; a: We include additionally a dummy variable taking the value 1 if no voluntary work other than informal care is done. Throughout all regressions this dummy variable is significant for both specifications.

**Table 6**. *Denomination, and Politics*

| Denomination | N | Mean political orientation[a] |
|---|---|---|
| Non-orthodox Catholic | 758 | 5.68[b] |
| Orthodox Catholic | 90 | 6.20[c] |
| Non-orthodox Protestant | 383 | 5.77[b] |
| Orthodox Protestant | 307 | 6.21[c] |

Notes: a: Mean of political orientation conditional on belonging into the respective group; 0 (most left wing) to 10 (most right wing); b, c: Entries that do not share the same letter differ significantly from each other at at least 10% significance level, Wilcoxon tests.

**Table 7.** *Participants' vs. Participants' Parents' Church Membership*

| Participant \ Parents | Church member | No church member |
|---|---|---|
| Church member | 2021 (37%) | 137 (2%) |
| No church member | 1535 (28%) | 1812 (33%) |

*Notes:* There are in total 5505 observations with information on both: church membership of the participant and the church membership of the parents of the participant at age 15. Spearman's rho is 0.49 with p-value < 0.001.

**Table 8**. *Parents' Church Membership and Church Attendance and Participants' Ethics: Intergenerational Transmission –Adjusted Predictions*

| | Moral judgment (0-9) | | | | Preference for redistribution (0-4) | | | | Hours spent on voluntary work per week[a] | | | | Hours spent on informal care per week | | | | Honor trust in Trust Game | | | Self-perceived Trustworthiness (0-6) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | | | | (2) | | | | (3) | | | | (4) | | | | (5) | | | (6) | | | |
| Dimension of religiosity | N | A | B | | N | A | B | | N | A | B | | N | A | B | | N | A | B | N | A | B | |
| **Church membership** | | | | | | | | | | | | | | | | | | | | | | | |
| *Not a church member* | 108 | 7.68 | 7.80 | | 1643 | 2.93 | 2.92 | | 1849 | 3.27 | 3.44 | | 1849 | 2.28 | 2.42 | | 140 | 50% | 45% | 1035 | 5.04 | 5.05 | |
| Church member | 240 | 7.89 | 7.88 | *A | 3175 | 2.82 | 2.85 | **A,#B | 3429 | 4.15 | 4.30 | ***A,B | 3429 | 2.55 | 2.67 | | 293 | 53% | 54% | 1887 | 5.10 | 5.09 | |
| **Church attendance** | | | | | | | | | | | | | | | | | | | | | | | |
| *Never* | 103 | 7.68 | 7.79 | | 1562 | 2.95 | 2.93 | | 1730 | 3.17 | 3.37 | | 1731 | 2.17 | 2.28 | | 144 | 50% | 49% | 955 | 5.02 | 5.03 | |
| Less than once a week | 84 | 7.75 | 7.73 | | 1187 | 2.80 | 2.83 | ***A,*B | 1332 | 3.77 | 3.92 | **A,*B | 1331 | 2.39 | 2.56 | | 91 | 55% | 53% | 692 | 5.07 | 5.08 | |
| Once a week or more | 161 | 7.94 | 7.95 | *A | 2099 | 2.82 | 2.86 | ***A,#B | 2240 | 4.34 | 4.46 | ***A,B | 2240 | 2.65 | 2.77 | *A,B | 201 | 51% | 52% | 1289 | 5.13 | 5.12 | *A |

*Notes*: Column N presents the number of observations of the raw mean for each category. Columns A and B present the adjusted predictions for each ethical measure for the regression including Controls A, B, respectively. The average marginal effect is the difference between the adjusted prediction of the category and the excluded category. The excluded category is indicated in italics. The significance of each comparison is based on regression analyses of the ethical measure on the dimensions of religiosity including Controls A or B. # p<0.10, $^{*}$ $p < 0.05$, $^{**}$ $p < 0.01$, $^{***}$ $p < 0.001$, Regression type: (1)-(4), and (6): Tobit regression; (5): Probit regression. Controls A: age, male; Controls B: Controls A, number of children, partner, divorced, married, urban character of residence, median split indicator of personal net monthly income, education, health status, self-employment; a: We include additionally a dummy variable taking the value 1 if no voluntary work other than informal care is done. Throughout all regressions this dummy variable is significant for both specifications.

**Table 9.** *Instrumental Variables: Parents' Church Membership and Church Attendance – Average Marginal Effects*

| | Moral judgment (0-9) | | | Preference for redistribution (0-4) | | | Hours spent on voluntary work per week[a] | | | Hours spent on informal care per week | | | Honor trust in Trust Game | | Self-perceived Trust-worthiness (0-6) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | | | (2) | | | (3) | | | (4) | | | (5) | | (6) | | |
| Dimension of religiosity | A | B | | A | B | | A | B | | A | B | | A | B | A | B | |
| **Church membership** | | | | | | | | | | | | | | | | | |
| *Not a church member* | | | | | | | | | | | | | | | | | |
| Church member | 0.38 | 0.19 | *A | -0.23 | -0.12 | ***A | 2.03 | 1.98 | ***A,B | 0.71 | 0.76 | #A,B | 2% | 9% | 0.15 | 0.12 | #A |
| **Church attendance** | | | | | | | | | | | | | | | | | |
| *Never Attend* | | | | | | | | | | | | | | | | | |
| Attend[b] | 0.44 | 0.32 | *A | -0.29 | -0.15 | ***A,#B | 2.29 | 2.18 | ***A,B | 0.84 | 0.85 | *A,#B | 1% | 7% | 0.19 | 0.16 | #A |
| **Praying** | | | | | | | | | | | | | | | | | |
| *Never Pray* | | | | | | | | | | | | | | | | | |
| Pray[b] | 0.46 | 0.28 | *A | -0.29 | -0.14 | ***A,#B | 2.45 | 2.29 | ***A,B | 0.91 | 0.89 | *A,#B | 1% | 7% | 0.18 | 0.16 | #A |
| **Belief in God** | | | | | | | | | | | | | | | | | |
| *Belief ≤ Median* | | | | | | | | | | | | | | | | | |
| Belief > Median | 0.63 | 0.29 | *A | -0.28 | -0.15 | ***A,#B | 2.58 | 2.45 | ***A,B | 0.93 | 0.94 | *A,#B | 4% | 13% | 0.19 | 0.15 | #A |
| **Belief in theological concepts** | | | | | | | | | | | | | | | | | |
| *Belief ≤ Median* | | | | | | | | | | | | | | | | | |
| Belief > Median | 1.17 | 1.30 | #A,B | -0.23 | -0.15 | #A | 2.99 | 2.67 | ***A,B | 1.68 | 1.30 | *A | 8% | 13% | 0.33 | 0.29 | #A |

*Notes*: Columns A and B present the average marginal effects for each ethical measure for the regression including Controls A, B, respectively. The excluded category is indicated in italics. The significance of each comparison is based on regression analyses of the ethical measure on the dimensions of religiosity including Controls A or B. The dimension of religiosity is instrumented by the parents' church membership and the parents' church attendance at the responders age 15. # p<0.10, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, Regression type: Maximum likelihood estimator, (1)-(4), and (6): 2. Stage Tobit regression; (5): 2. Stage Probit regression. Controls A: age, male; Controls B: Controls A, number of children, partner, divorced, married, urban character of residence, median split indicator of personal net monthly income, education, health status, self-employment; a: We include additionally a dummy variable taking the value 1 if no voluntary work other than informal care is done. Throughout all regressions this dummy variable is significant for both specifications; b: The categories "attend church (resp. pray) less than once a week" and "attend church (resp. pray) at least once a week" are combined into one category.

**Table 10**. *Controlling for Membership in Organizations and Political Orientation*

| Dimension of religiosity | Moral judgment (0-9) (1) | Preference for redistribution (0-4) (2) | Hours spent on voluntary work per week[a] (3) | Hours spent on informal care per week (4) | Honor trust in Trust Game (5) | Self-perceived Trustworthiness (0-6) (6) |
|---|---|---|---|---|---|---|
| **Church membership** | | | | | | |
| *Not a church member* | 7.72 | 2.88 | 3.41 | 2.49 | 49% | 5.05 |
| Church member | 7.94 # | 2.80 * | 4.75 *** | 2.43 | 58% | 5.14 # |
| **Church attendance** | | | | | | |
| *Never* | 7.75 | 2.89 | 3.30 | 2.30 | 54% | 5.10 |
| Less than once a week | 7.77 | 2.83 | 4.37 *** | 2.65 | 52% | 5.08 |
| Once a week or more | 8.33 *** | 2.72 ** | 5.81 *** | 2.59 | 49% | 5.04 |
| **Praying** | | | | | | |
| *Never* | 7.77 | 2.87 | 3.33 | 2.21 | 54% | 5.05 |
| Less than once a week | 7.63 | 2.82 | 4.21 ** | 2.90 * | 50% | 5.13 |
| Once a week or more | 8.07 * | 2.85 | 4.74 *** | 2.49 | 53% | 5.11 |
| **Belief in God** | | | | | | |
| *Belief ≤ Median* | 7.72 | 2.86 | 3.64 | 2.41 | 51% | 5.04 |
| Belief > Median | 7.99 * | 2.84 | 4.39 *** | 2.52 | 56% | 5.15 * |
| **Belief in theological concepts** | | | | | | |
| *Belief ≤ Median* | 7.69 | 2.80 | 3.10 | 2.40 | 46% | 4.95 |
| Belief > Median | 8.02 | 2.78 | 4.93 *** | 2.46 | 56% | 5.03 |

*Notes*: We present the adjusted predictions for each ethical measure for the regression including Controls B and controlling for political orientation and membership in organizations. The average marginal effect is the difference between the average adjusted prediction of the category and the excluded category. The excluded category is indicated in italics. The significance of each comparison is based on regression analyses of the ethical measure on the dimensions of religiosity including dummy variables indicating the membership in following types of organizations: cultural, environmental, peace, or animal rights, humanitarian aid or human rights, political party, sports or outdoor, and social society and an indicator for political orientation variable being strictly above median (i.e., right wing) and Controls B. # p<0.10, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ Regression type: (1)-(4), and (6): Tobit regression; (5): Probit regression. Controls B: age, male, number of children, partner, divorced, married, urban character of residence, median split indicator of personal net monthly income, education, health status, self-employment; a: We include additionally a dummy variable taking the value 1 if no voluntary work other than informal care is done. Throughout all regressions this dummy variable is significant.

**Table A1**. *Denominations of Other faiths*

| Denomination | % of Other faiths |
|---|---|
| Eastern Orthodox Christian Church | 3% |
| Other Christian church community | 43% |
| Hinduism | 5% |
| Buddhism | 3% |
| Judaism | 1% |
| Islam | 39% |
| Other non-Christian religion | 6% |

*Notes*: There are in total 272 observations of Other faiths.

**Table A2.** *Summary Statistics: Religion, by Religious Subgroup*

| | Non-orthodox Catholics (1) | Orthodox Catholics (2) | Non-orthodox Protestants (3) | Orthodox Protestants (4) |
|---|---|---|---|---|
| **Church attendance** | | | | |
| More than once a week | | 25% | | 30% |
| Once a week | | 75% | | 70% |
| At least once a month | 18% | | 29% | |
| Only at special days | 35% | | 22% | |
| Rarely | 24% | | 27% | |
| Never | 23% | | 22% | |
| **Private Prayer** | | | | |
| More than once a week | 31% | 87% | 54% | 97% |
| Once a week | 8% | 6% | 5% | 3% |
| At least once a month | 9% | 2% | 8% | |
| Only at special days | 8% | 2% | 4% | |
| Rarely | 27% | 2% | 19% | |
| Never | 17% | 2% | 11% | |
| **Belief in God** | | | | |
| Degree of belief in God (0-5) | 3.18 | 4.28 | 3.81 | 4.68 |
| Strong belief in God [a] | 66% | 92% | 81% | 97% |
| **Belief in theological concepts** | | | | |
| Believe in life after death | 62% | 75% | 74% | 95% |
| Believe in existence of heaven | 45% | 82% | 79% | 97% |
| Believe in existence of hell | 6% | 21% | 16% | 67% |
| Believe in existence devil | 8% | 23% | 24% | 81% |
| Believe that Adam and Eve existed | 37% | 63% | 74% | 90% |
| Believe in Bible as the word of God | 56% | 88% | 84% | 98% |
| Believe that prayer makes sense | 84% | 95% | 92% | 100% |
| Belief in theological concepts (0-7) | 3.05 | 5.09 | 4.99 | 6.60 |
| Strong belief in theological concepts [a] | 74% | 87% | 90% | 100% |

*Notes*: Percentages or means of non-orthodox Roman Catholics (1), Orthodox Roman Catholics (2), Non-orthodox Protestants (3) and Orthodox Protestants (4) are reported. Orthodox is defined as those Catholic/Protestant participants who visit church at least once a week. a: Indicator for degree of belief in God [resp. belief in theological concepts]: 0 (≤ median), 1 (> median). Values from the same dimension may not add to 100% due to rounding.

**Table A3.** *Summary Statistics: Reported Hours of Volunteering > 0*

| | All | Church members | Catholics | Protestants |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| **Reported hours of …** | | | | |
| Volunteering[a] | 7.36 | 7.31 | 7.73 | 6.97 |
| Volunteering w/o informal care only[b] | 6.40 | 6.73 | 7.52 | 6.07 |
| Informal care[c] | 4.58 | 4.18 | 4.20 | 4.08 |
| Informal care only[d] | 9.88 | 9.44 | 8.31 | 12.00 |
| **Informal care** | | | | |
| Do informal care[c] | 49% | 48% | 53% | 40% |
| Do informal care only[d] | 28% | 21% | 25% | 15% |
| **Volunteering in organizations** | | | | |
| Do volunteering in organizations | 52% | 55% | 50% | 61% |
| Sports or outdoor | 19% | 16% | 18% | 16% |
| Cultural | 9% | 9% | 10% | 9% |
| Trade Union | 1% | 1% | 1% | 1% |
| Business, agrarian | 2% | 2% | 2% | 2% |
| Consumers' organization, automobile club | 1% | 1% | 1% | 2% |
| Humanitarian aid or human rights | 6% | 6% | 4% | 8% |
| Environmental, peace or animal rights | 2% | 2% | 2% | 2% |
| Religious | 13% | 25% | 13% | 34% |
| Political party | 2% | 2% | 1% | 3% |
| Science, education, teachers' | 5% | 6% | 6% | 7% |
| Social society | 6% | 7% | 8% | 6% |
| Other organization, free to join | 11% | 12% | 13% | 11% |
| **Other volunteering** | | | | |
| Not in organization and not informal care | 41% | 47% | 48% | 48% |

*Notes*: Sample of participants who reported hours of volunteering greater than zero. Percentages or means of all (1) (N=2375), church members (2) (N=1090), Roman Catholics (3) (N=500) and Protestants (4) (N=463) are reported. a: Hours of voluntary work can be due to work in one or possible more of three different categories: informal care, volunteering in organizations, or other types of volunteering; b: Participants who do only informal care are excluded; c: Participants who do informal care and possible other types of volunteering; d: Participants who only do informal care

**Table A4.** *Summary Statistics: Religion of Parents when Participant was aged 15*

| | # obs. | All | Church members | Catholics | Protestants |
|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) |
| **Religious status** | | | | | |
| Church membership | 5574 | 65% | | | |
| Roman Catholic | 5556 | 34% | 53% | | |
| Protestant | 5556 | 24% | 38% | | |
| Other faiths | 5556 | 6% | 9% | | |
| Orthodox Roman Catholic[a] | 1897 | | | 65% | |
| Orthodox Protestants[a] | 1350 | | | | 64% |
| **Church attendance** | | | | | |
| More than once a week | 5602 | 11% | 17% | 12% | 19% |
| Once a week | 5602 | 31% | 47% | 52% | 45% |
| At least once a month | 5602 | 6% | 10% | 9% | 11% |
| Only at special days | 5602 | 12% | 14% | 16% | 10% |
| Rarely | 5602 | 6% | 6% | 6% | 6% |
| Never | 5602 | 33% | 6% | 4% | 9% |

*Notes*: Percentages or means of parents when participant was aged 15 of all (1), church members (2), Roman Catholics (3) and Protestants (4) are reported. The number of observations for sample (1) is reported in the first column. a: For Orthodox Catholic and Protestant the number of observations for sample (3) and (4) are reported, respectively.

**Table A5.** *Instrumental Variables: Parents' Church Membership and Church Attendance – Test statistics*

| | Moral judgment (0-9) | | Preference for redistribution (0-4) | | Hours spent on voluntary work per week | | Hours spent on informal care per week | | Honor trust in Trust Game | | Self-perceived Trustworthiness (0-6) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | | (2) | | (3) | | (4) | | (5) | | (6) | |
| Test statistics | A | B | A | B | A | B | A | B | A | B | A | B |
| Kleibergen-Paap Wald rk F statistic[a]: | | | | | | | | | | | | |
| Church membership | 67.73 | 49.06 | 695.60 | 550.50 | 761.70 | 603.90 | 761.60 | 603.70 | 118.50 | 110.70 | 445.50 | 371.40 |
| Church attendance | 39.16 | 26.22 | 439.30 | 325.10 | 483.30 | 368.00 | 484.00 | 368.10 | 59.73 | 45.45 | 299.20 | 239.90 |
| Praying | 23.44 | 16.46 | 367.40 | 292.40 | 399.20 | 321.50 | 400.00 | 321.60 | 52.81 | 47.23 | 247.80 | 209.50 |
| Belief in God | 17.52 | 21.53 | 342.70 | 289.00 | 361.20 | 299.60 | 362.30 | 299.90 | 62.40 | 45.55 | 230.10 | 200.60 |
| Belief in theol. concepts | 6.17 | 5.42 | 151.50 | 122.60 | 168.10 | 133.10 | 169.80 | 133.70 | 28.38 | 22.52 | 100.30 | 86.66 |
| Kleibergen-Paap rk LM p-value[b]: $p < 0.001$, except for combination of moral judgment and belief in theological concepts; there p-value<0.01 | | | | | | | | | | | | |

*Notes:* The first stage statistics are from STATA routine ivreg2, 2SLS. a: Weak identification test: Under the null hypothesis the instruments are weakly correlated with the endogenous regressor (heteroskedasticity-robust multivariate analogues to the 1. stage F statistic, for one endogenous regressor it is equal to the standard robust 1. stage F statistic). We apply the Stock and Yogo (2005) critical values. The critical values for the maximal bias of the 2SLS estimator to be no more than 5% (10%, 20%, 30%) of the bias of the OLS estimator are 13.91 (9.08, 6.46, 5.39) for one endogenous regressor and three instruments. b: Underidentification test. The null hypothesis of the Kleibergen Paap rk LM test is that the structural equation is underidentified, i.e. the instruments are not correlated with the endogenous regressor (Kleibergen and Paap, 2006).