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Religious attitudes and home bias: theory and evidence from a pilot study

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Introduction

Home bias (HB) is a well-documented phenomenon in international finance and trade (French and Poterba, 1991; McCallum, 1995; Tesar and Werner, 1995). It refers to a preference for goods and services that are home produced. HB constitutes an intangible barrier between countries that hampers deeper trade integration. Despite its relevance, the roots of HB are not yet fully understood. HB can be partly explained by physical barriers between countries, such as transportation costs (Obstfeld and Rogoff, 2000), administrative man-made restrictions such as international tariffs and duties (Frankel et al., 1995; Heliwell, 1998; Lewis, 1999), exchange rate risks (Stulz, 1981; Adler and Dumas, 1983), international asymmetric information (Ahearne et al., 2004; Stulz, 2005). Nonetheless, literature acknowledges that there is a residual portion of HB that still remains unexplained (Lewis, 1999; Bradford and Lawrence, 2002; Sercu and Vanpee, 2007). A large chunk of this unexplained component of HB may depend on individuals' embeddedness in a social network. Some authors have suggested that the degree to which individuals are enmeshed in a social web might affect trust and ultimately influence economic choices (Butler et al., 2009; Guiso et al., 2006 and 2009).

Religion is an important part of an individuals' life and it often provides a fundamental basis for social aggregation and the development of intangible networks. Religion can affect people through personal involvement, the influence of peers and local religious groups and institutions and also via the impact it may have on political decisions. Hence, religion is likely to shape several attitudes towards individuals belonging to the same and also other networks. Historically, sharing the same religious affiliation has helped to promote and enforce cooperative behaviours. For example, during the Middle Ages Maghribi traders successfully managed long-distance trade in the Mediterranean region as the common religion increased mutual trust within merchants belonging to the same religious network (Greif, 1989, 1992, 1993, 1994). Leeson (2005) provides a similar argument about trade in pre-colonial Africa where social proximity, signaled by religion and other social attributes, was the main support for trade. In contemporary societies religion appears to be related to trust and altruism (Schoenfeld, 1978; Bahr and Martin, 1983; Guiso et al., 2006; Hoff, 2010; Henrich et al., 2010) and these have important effects on economic activities and trade (Forsythe et al., 1994; Knack and Keefer, 1997; La Porta et al., 1997; Lindbeck and Nyberg, 2006; Laury and Taylor, 2008; Tabellini, 2008; Guiso et al., 2009).

The aim of this paper is to explore whether embeddedness into a religious network influences individuals' attitudes towards HB, i.e., whether it makes individuals more or less open to foreign goods and services. To this purpose, we propose a simple theoretical

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framework that outlines the relationship between religion and HB. In our model, countries interacting via their representative individuals show some degree of religion-enhanced international altruism that, in turn, may be associated to higher integration, even if countries engage in competitive international exchange. Subsequently we present individual-level information on religious attitudes and indicators of HB drawn from a pilot investigation that we have designed and carried out among university students in fifteen countries. To the best of our knowledge this is the first survey that attempts to collect comprehensive information on different dimensions of religious attitude and HB.⁵ Finally, we exploit this information and analyze empirically the degree of association between religious attitudes and HB.

In the past the relationship between religion and economic behaviour has captured the attention of prominent scholars such as Adam Smith and Max Weber.⁶ More recently the literature on the relationships between religion, economic activities and growth has flourished rapidly (Blum and Dudley, 2001; Ekelund et al., 2002; Barro and McCleary, 2003, 2005; Guiso et al., 2003; Glaeser et al., 2004; Cavalcanti et al., 2007; Becker and Woessmann, 2009). A stream of studies has focused on the nature of religious organizations, the "religious market", its "competitiveness" and how these influence religious participation. According to these studies, in the spirit of Adam Smith's work, religious denominations compete in the market to attract affiliates or maximize alternative objective functions (Iannaccone, 1992, 1998; Finke and Stark, 1988, 1989; Voas et al., 2002; Montgomery, 2003; Gruber and Hungerman, 2008; Hungerman, 2011). Previous studies have also analysed the impact of religion on international trade. Lewer and Van den Berg (2007a,b) employ a gravity model that allows for religion to explain pairwise international trade flows between countries. These studies attempt to disentangle institutional and network effects of sharing a common religion. Helble (2007) also uses a gravity approach but focuses on specific religious denominations and their impact on trade. His findings highlight that religious adherence, measured in this case by the variety of religions in a country, is among the most important determinants of bilateral trade. Both Lewer and Van den Berg (2007 a,b) and Helble (2007) aim at identifying the impact of shared religious affiliations on country-level trade flows. Guiso et al. (2009) focus on the influence of culture on trade. The authors employ several proxies of cultural traditions, including sharing a common religion, to explain bilateral trade. They find that culture affects bilateral trade and that this has a large impact on both trade and investment between countries. Finally, Benjamin et al. (2010) attempt to identify the effects of religious affiliations on a series of economic attitudes using individual level data collected through experiments on individuals' contribution to public goods. The use of experiments is mainly due to the lack of both data and sound empirical evidence on the influence of religion on economic choices. According to their results, Protestants appear to be more inclined to pay for public goods while lower risk aversion may explain the reduced level of contribution of Catholics.

Our paper contributes to the literature in several ways. First, our theoretical framework offers a description of the interactions between religious adherence, altruism and HB through a two-stage game model between countries' representative individuals. According to our model, religion (more precisely, religious openness) boosts between nations' altruism, which ultimately makes countries more likely to trade. Second, we focus our analysis at the individual rather than aggregate level and examine the influence of

⁵ This study is part of a larger research project that aims at exploring the relationships between religion, culture and HB in a institutionally comparative perspective. The questionnaire presented here is a pilot for a future broader survey.

⁶ Adam Smith in his seminal book "The Wealth of Nations" (1776) is believed to be the first author to have analyzed religion as a market. Max Weber (1930) famously argued that the Protestant ethic was crucial for the development of own enterprises and the accumulation of wealth in modern Northern Europe.

individuals' religious attitudes on a series of individual-level choices that proxy HB in several economic contexts (e.g. labour market decisions, choices about consumption of goods and services, cultural media). Third, contrary to most of the literature we focus on religious adherence as being associated to a certain level of HB towards a generic trading partner. Our analysis does not specify the specific confession prevalent in partner countries. In this sense we depart from bilateral trade models where a common religion is supposed and, often found, to favour trade. Finally, unlike most previous studies, we enquire beyond religious affiliation and we account for a much wider set of attitudes such as religious openness, intensity of belief and importance of religion in an individual's life.

The rest of the paper is structured as follows. Section 2 illustrates our theoretical framework while section 3 presents the survey we have designed and the data we have collected. Section 4 provides the empirical strategy and its results. Section 5 concludes.

1. A simple theoretical approach to religion and home bias

We present a simple theoretical framework that describes the relationship between religion and HB. The starting point is a two-country model based on the analysis of institutional governance provided by Dixit (2009). The model shows how the religious attitude of each country's representative individual may be associated to more cooperative behaviour and lower cultural barriers towards goods and services produced in a foreign country. Our approach emphasises the role of religious openness, i.e. an open and tolerant attitude towards religion and other religions rather than sharing or the attitude of a specific confession.

We assume that income (y) is generated by the representative individual's production effort (x). The production effort may be enhanced by the extent of the representative individual's degree of openness (z), that measures the individual's political and cultural stance towards free trade, the attractiveness of foreign consumption patterns and the goodwill towards foreign fellow workers. However, openness is beneficial, yet costly, to individual welfare. Moreover, the beneficial effect of openness increases if it is reciprocated. Therefore, partner countries' openness boosts the per capita income of a community which eventually makes for a larger welfare. In this sense, each country's representative individual may care about the welfare of partner countries as a kind of international altruism. Here comes religion, since the extent of reciprocation may be affected by the degree of confessional adherence or, more generally, by the attitude towards religion. These considerations are embedded in the ensuing formal relationships.

The representative individual in country i derives her income y_i according to the following relation:

$$y_i = \left(1 + \frac{\sum_{i=1}^2 z_i}{2}\right) x_i, \quad (1)$$

with $i = 1, 2$ countries engaging in reciprocal trade and constituting the world. z_i is the openness commitment of each individual in country i and x_i is the individual effort commitment or the extent of resources individually devoted to production. Then, from the above relationship it appears that the internal commitment to production can be magnified in terms of income according to the degree of openness of the representative individual-country and of trade partners.

The representative agent in each country has a utility function which looks as follows:

$$u_i = y_i - \alpha (z_i + x_i)^2 + r_i r_j u_j \quad \forall i, j = 1, 2; j \neq i \quad (2)$$

where u_i is the utility or welfare of the representative individual of country i , while $\alpha \in]0, 1[$ is a discomfort sensitivity parameter. The quadratic form in brackets captures the discomfort related to both the effort and the willingness to be open. The third part of (2) is

associated to altruism (Lindbeck and Nyberg, 2006; Tabellini, 2008). The introduction of cross border altruism in the individual's utility function implies an appreciation of the welfare of a fellow individual in a partner country: in other words we think of countries as not rival but, on the contrary, somewhat altruist. This sort of collective altruism may interact - i.e., may be enhanced or decreased - by the extent of religious openness in all countries, which is represented by an individual scalar index $[r_{i,j} \in (0,1)]$ multiplied by the corresponding index of the foreign representative individual. The religious scalar index ($r_{i,j}$) may be seen as the extent of cross border altruism of a country towards other communities as a result of the attitude towards religion. In other words, the utility of a representative individual of country i grows with the utility of individual of country j and the extent of religious openness in both countries. Following this assumption we are able to introduce a direct relationship between religion and willingness to be internationally open, which is the opposite of HB. Notice that the influence of u_j on u_i also reveals a kind of love for variety attitude, since the utility of one country is positively affected by its own output and foreign output. Therefore the positive relationship between the utilities of the two countries is also the expression of a preference for international variety.

The representative individuals of the two countries interact as Nash players to maximize their utility using two controls: openness and effort. The timing of the game is as follows. First, individuals set their openness, which becomes a sort of first fundamental step. Second, they set their optimal production effort. The game is solved using standard backward induction with sub-game perfection. In that case, the resulting equilibrium may be described in its properties and comparative statics, in the following:

Proposition 1

- (i) Suppose that countries interact via their representative individuals and show some degree of international altruism enhanced by religion. Then, there may exist an international equilibrium in efforts and openness with non-negative levels of both per capita income and individual welfare.
- (ii) A higher degree of religious openness should be associated with more trade openness and, as a consequence, with a higher income.

Proof. (i) We proceed by getting the reduced forms of each country's representative individual welfare function:

$$u_i = \frac{2 \left[(x_i + z_i)^2 + r_i r_j (x_j + z_j)^2 \right] \alpha - (x_i + r_i r_j x_j)(2 + z_i + z_j)}{2(r_i^2 r_j^2 - 1)},$$

The two countries' representative individuals maximize their respective utility. A Nash equilibrium of the two stage game in both production effort (x_i) and openness (z_i) may be found. The equilibrium utility and production for country i and j are:

$$\begin{aligned} x_i^* &= \frac{4\alpha}{\theta} = x_j^*, \\ z_i^* &= \frac{1+r_i r_j - 4\alpha}{\theta} = z_j^*, \\ u_i^* &= \frac{(1+r_i r_j)(1+r_i r_j - 8\alpha)\alpha}{(r_i r_j - 1)\theta^2} = u_j^*, \\ y_i^* &= \frac{8(1+r_i r_j)\alpha^2}{\theta^2} = y_j^*, \end{aligned}$$

where: $\theta = 6\alpha + r_i r_j(2\alpha - 1) - 1$.

The non-negativity of the two endogenous variables z and x , for any $r_{i,j} \in [0,1)$, requires that: $\alpha \in [\alpha_1, \alpha_2]$

where $\alpha_1 = [(r_i r_j - 1)/(6 + 2 r_i r_j)]$ and $\alpha_2 = [(1 + r_i r_j)/4]$. The same holds for $u_{i,j}^*$ and $y_{i,j}^*$.

(ii) As for the comparative statics results, we can show that:

$$\frac{\partial z_j}{\partial r_i} = \frac{8r_j\alpha^2}{\theta^2} \geq 0,$$

$$\frac{\partial z_j}{\partial r_j} = \frac{8r_i\alpha^2}{\theta^2} \geq 0,$$

$$\frac{\partial x_j}{\partial r_i} = \frac{4r_j(1-2\alpha)\alpha}{\theta^2} \geq 0,$$

$$\frac{\partial x_j}{\partial r_j} = \frac{4r_i(1-2\alpha)\alpha}{\theta^2} \geq 0,$$

$$\frac{\partial u_i}{\partial r_i} = \frac{r_j\alpha[(1+r_i r_j)^3 - 2(1+r_i r_j)^2(7+r_i r_j)\alpha + 32(2+r_i r_j(1+r_i r_j))\alpha^2]}{(r_i r_j - 1)^2\theta^3} \geq 0,$$

$$\frac{\partial y_i}{\partial r_i} = \frac{8r_j\alpha^2[1+2\alpha+r_i r_j(1-2\alpha)]}{\theta^3} \geq 0.$$

Cross effects are:

$$\frac{\partial u_i}{\partial r_j} = \frac{r_i\alpha[(1+r_i r_j)^3 - 2(1+r_i r_j)^2(7+r_i r_j)\alpha + 32(2+r_i r_j(1+r_i r_j))\alpha^2]}{(r_i r_j - 1)^2\theta^3} \geq 0,$$

$$\frac{\partial y_i}{\partial r_j} = \frac{8r_i\alpha^2[1+2\alpha+r_i r_j(1-2\alpha)]}{\theta^3} \geq 0.$$

All inequality signs hold in the feasible set, i.e., for $\alpha \in [\alpha_1, \alpha_2]$. ♦

Discussion

We proposed a rather stylised model to highlight how religious attitudes may be associated to trade openness. The mechanism we outline relies on cross-border altruism. If religious openness enhances international altruism, then the latter has a beneficial influence on income and finally feeds back on the productive effort. Clearly, religious adherence may relate (positively or negatively) to religious openness. It is the latter, however, to motivate individuals to be more altruistic, for example by reducing the relative cost of work discomfort or increasing the preference for foreign products. In equilibrium, then, religious openness is associated to a more open attitude towards trade and, hence, should imply a lower HB. Religious enhanced altruism has an effect on the foreign country as well: the cross effects highlight how religious openness may also positively affect partner country's income and overall welfare. Our model is quite general and as such it lends itself to many interpretations; however, it is a very stylised description and does not aim to model in detail the mechanisms that lead to trade between the two countries. Keeping in mind the limits of the approach, our conclusions lead us to formulate an important testable prediction: on the basis of the previous results and discussion, we may expect religious openness to be associated to lower levels of HB. This is ultimately an empirical issue and it will be tackled in the rest of the paper. So far empirical and theoretical studies have emphasized the increase of international altruism among countries and communities sharing the same confession, even when they are separated by national borders. Our research aims to go a step further and preliminarily evaluate the theoretical relation outlined: an open religious attitude adds to altruism and reduces HB, no matter the religious affiliation.

2. Data

In this section we present individual-level data on religious and economic attitudes obtained through a survey questionnaire that we designed and collected. We subsequently use this data to examine empirically the relationship between religion and home bias. Copies of the questionnaire were distributed to students in 16 universities of 15 countries during the period 2008-2010.⁷ After collecting the data, our final sample consists of 1849 individuals. With the exception of Finland (76), Argentina (86), Ukraine (95) and Japan (99), we received more than 100 completed questionnaires from each country (see Table 1). The largest amount of replies were obtained from Germany (200), followed by India (162) and Italy (148).

The survey focuses on a series of questions that attempt to proxy both religious attitudes and home bias.^{8 9} More specifically, religious attitudes are identified through a set of questions that attempt to define religious openness; the relevance of religion in an individual's life; religious intensity; as well as religious affiliation. Home bias is captured by questions that aimed at revealing individuals' preferences in three main dimensions: labour market decisions; consumption of home-produced versus foreign goods and services (including health care); and interests in foreign cultures and consumption of foreign media. The survey also contains questions on respondents' demographic characteristics such as age, gender and nationality.¹⁰

Table 1. Number of respondents by country

| | | | |
|-----------|-----|-------------|-----|
| Argentina | 86 | Japan | 99 |
| China | 130 | Spain | 114 |
| Finland | 76 | Switzerland | 139 |
| France | 103 | Turkey | 101 |
| Germany | 200 | Ukraine | 95 |
| India | 162 | UK | 138 |
| Italy | 148 | USA | 144 |
| Israel | 114 | | |

Descriptive statistics

Religion and religious attitudes

Table 2 proposes the basic descriptive statistics and clarifies the content of the questions about religion.

Table 2. Religious attitudes

| <i>Religious openness</i> | |
|---|-------------------------|
| Attended services of other religion in your country | ...in a foreign country |

⁷ The questionnaire was distributed in the following universities and countries: University of Bologna in Buenos Aires, Argentina; Zhejiang University in Hangzhou, China; University of Turku, Finland; University of Marseille - Aix en Provence, France; University of Hamburg, Germany; National Law School in Bangalore, India; University of Bologna in Forlì, Italy; Recanatì Graduate School of Business Administration in Tel Aviv, Israel; Ryukoku University, Japan; University Carlos III in Madrid, Spain; University of Lausanne, Switzerland; Bilgi University in Istanbul, Turkey; Kiev School of Economics, Ukraine; University of York, United Kingdom; Brown University and New York University at Binghamton, United States.

⁸ The English language version of the questionnaire used in the US is available in Appendix A.

⁹ The questionnaire was issued in the language predominantly used during lectures of each university (e.g. English in India, etc.).

¹⁰ Questions on individual or household income have not been included due to the important share of missing answers in a related previous survey, reported in Reggiani and Rossini (forthcoming).

| | | | | | |
|------|------|-------|------|------|-------|
| Once | More | Never | Once | More | Never |
| 524 | 257 | 932 | 301 | 221 | 1092 |
| 30% | 15% | 53% | 17% | 13% | 62% |

| | | | | | | | |
|-----------------------------------|-----|----------|---|---------|-----------|---------|----------|
| Read holy text of other religions | | | Respect or think positive of strong believers | | | | |
| Never | Yes | Not sure | Both | Respect | Think pos | Neither | Not Sure |
| 455 | 979 | 265 | 273 | 416 | 177 | 587 | 263 |
| 26% | 56% | 15% | 16% | 24% | 10% | 33% | 15% |

Religious importance

| | | | | | |
|-----------------------------------|------|----------|---------------------------------------|------|----------|
| Religion as guidance for abortion | | | Religion as guidance to welfare state | | |
| Yes | No | Not Sure | Yes | No | Not Sure |
| 313 | 1082 | 321 | 286 | 1097 | 333 |
| 18% | 62% | 18% | 16% | 63% | 19% |

| | | | | | |
|---------------------------------|------|----------|--|------|----------|
| One religion supported by state | | | Should religion have influence on politics | | |
| Yes | No | Not Sure | Yes | No | Not Sure |
| 129 | 1397 | 205 | 178 | 1429 | 125 |
| 7% | 80% | 12% | 10% | 82% | 7% |

| | | | | | |
|--|-----|----------|---|------|----------|
| Trade with country without religious freedom | | | Should common religions be supported by state | | |
| Yes | No | Not Sure | Yes | No | Not Sure |
| 776 | 394 | 549 | 239 | 1138 | 295 |
| 44% | 22% | 31% | 16% | 65% | 17% |

| | | | | | |
|---|-----|------------|--|----------|------------|
| Should religious principles be taught at school | | | Importance of religion in private life | | |
| Yes | No | No opinion | Very | Not very | Not at all |
| 688 | 799 | 265 | 356 | 746 | 609 |
| 39% | 44% | 15% | 20% | 43% | 35% |

Religious intensity

Believer - "Do you consider yourself as a ..."

| | | |
|-------------------------------|-----------------------------------|--------------------------------|
| Believer attending services % | Believer not attending services % | Believer with no affiliation % |
| 237 | 452 | 255 |
| 14% | 26% | 15% |
| Syncretistic | Atheist | Agnostic |
| 101 | 371 | 226 |
| 6% | 21% | 13% |

The largest percentage of respondents (26%) considers themselves as believers, although they report not attending religious services. Atheists are the second-largest group (21%) followed by believers attending services (14%). About a third of the respondents have attended services from religions they do not share and about a quarter of the entire sample of respondents self-report reading holy texts from other religions. Even though 55% of individuals report being believers, the amount of those who wish to have the state comply with religion on matters such as abortion is relatively low (18%). 10% of individuals in the sample would favour the state to support religion (one or the most professed ones) and to have religion affecting politics (10%); the same percentage would like a state religion. Also, 39% would like religious principles to be taught at school. Only 16% of our sample of respondents wishes religion to be a guide for the welfare state. The low importance attributed to religion in public choices and moral guidelines is also reflected by the low percentage of those who believe religion has a high importance for their private matters (20%). Almost half of respondents (44%) think home-based firms should trade with a country without religious freedom. Only 20% think that there should definitely be no trade with countries with no religious freedom.

As for religious affiliations, Christians represent the largest religious group (with 15.7% of Catholics 10.2% of Protestants and 10% on other non-specified Christians). The largest non-Christian groups are formed by Hindus (9.1%) and Jews (8.2%). Members of Orthodox churches constitute the smallest groups with 5.8% of respondents while non-believers amount to up 7.5% of our respondents.

Overall, replies also indicate that despite the relatively large percentage of believers, about one third of them neither respects nor thinks positively of strong believers. Moreover, less than 20% consider religion to offer guidance for important personal and institutional issues such as abortion and the welfare state. Nonetheless, a good disposition towards strong believers touches almost half of the sample. This might mean that religion is considered as an important phenomenon to be open to, yet not much to comply with.

Proxies of home bias

Table 3 reports descriptive statistics and contents of the questions related to home bias.

Table 3. Home Bias Indicators

| <i>Labour Market</i> | | | | | |
|--|-----|----------|---------------------------------|-----|-------------|
| Willing to take up a job abroad... | | | ...for a 20% higher salary | | |
| Yes | No | Not Sure | Yes | No | Not Sure |
| 820 | 502 | 410 | 1146 | 225 | 356 |
| 47% | 29% | 23% | 65% | 13% | 20% |
| <i>Consumption of goods and services</i> | | | | | |
| Would you buy a local brand car | | | Prefer local over imported food | | |
| Yes | No | Not Sure | Yes | No | Indifferent |
| 705 | 348 | 694 | 971 | 62 | 510 |
| 40% | 20% | 40% | 55% | 4% | 29% |

| Prefer local over non-local doctor | | |
|------------------------------------|-----|-------------|
| Yes | No | Indifferent |
| 983 | 121 | 637 |
| 56% | 7% | 36% |

Foreign culture and international socialization

| Prefer writer of own nationality | | | Interest in foreign cultures | | | |
|----------------------------------|-----|----------|------------------------------|-----|----------|--|
| Yes | No | Not Sure | Yes | No | Not Sure | |
| 445 | 692 | 603 | 1453 | 116 | 174 | |
| 25% | 39% | 34% | 83% | 7% | 10% | |

| Follow foreign media | | | How many friends from abroad | | | |
|----------------------|-----|----------|------------------------------|--------|---------|-----|
| Yes | No | Not Sure | None | 1 to 5 | 6 to 10 | 10+ |
| 834 | 154 | 760 | 255 | 736 | 242 | 505 |
| 48% | 9% | 43% | 15% | 42% | 14% | 29% |

| No. of travels abroad in last 2 years | | |
|---------------------------------------|---------|-----|
| 5 or less | 5 to 10 | 10+ |
| 1337 | 310 | 85 |
| 76% | 18% | 5% |

Home bias and labour market choices

We have included two questions about the respondents' willingness to accept a temporary job abroad (up to three years) with the same work conditions as in the home country. 47 % of individuals in our sample would accept such a job offer. This percentage increases to 65% when we consider a foreign wage a 20% higher than the home salary.¹¹

Home bias and consumption of home versus foreign goods and services

We ask respondents to choose between buying a nationally manufactured and/or branded car or a foreign car with analogous features. According to our interpretation, a preference for the home manufactured car may signal a potential home bias. In our sample, 40% of respondents would prefer to buy a nationally branded/produced car. We put a similar question related to food consumption. 55% of individuals in our sample would prefer to buy locally produced over imported food. However, attitudes towards food consumption may relate to other factors such as preferences for fresher locally grown food or environmental concerns. In order to identify preferences over consumption of health care, we ask respondents whether they would prefer to be treated by a local rather than a foreign doctor. The majority of individuals in our sample appears to distrust foreign doctors. This may be a partial confirmation at individual level of what has been observed before at macro level, suggesting that countries are more open to trade goods than services (Nordas, 2010).

¹¹ A 20% wage gap with respect to a home-based job may seem a low compensation for leaving the country; however, our sample is composed by young students, well-raised in a time of increasing globalization and cultural exchanges. This could partly explain the high percentage of individuals willing to accept this type of offer.

Home bias, foreign culture, media culture and international socialization

Aggregate "home bias" appears to decrease when considering cultural issues. 25% of individuals in our sample prefer national writers, 48% watch news from foreign broadcasters and only 7% declare no interest in foreign cultures. On the contrary, 76% of respondents travelled scantily abroad during the last 2 years, while a good portion has foreign friends (42% have between 1 and 5 foreign friends while 43% has more than 5).

Previous surveys on aspects of religion and home bias

The World Value Survey (2005) is a primary source of data and a reference point for the study of many aspects of culture and well-being, including religion.¹² The last wave of the survey contains two questions that are comparable to ours (Importance of religion in private life; Religion as guidance to welfare state). Another question (Belief in hell) was included in the Economist-YouGovPolymetrix (2008) survey on Anglo-Saxon attitudes. On top of that, our survey covers aspects of the religious sphere (religious openness, affiliation importance in life, intensity of belief) and home bias (home bias in the labour market, in the goods, services markets and in the cultural choices) providing information that could not be otherwise accessed. A comparison of the frequencies registered in the comparable questions is reported in Appendix B; given the nature of our sample, however, no conclusions should be drawn from these.

3. Empirical analysis

We analyze data drawn from our survey to provide evidence on the relationship between religious attitudes and home bias. More specifically, in this section we test whether the embeddedness into a religious network (defined through a series of attitudes towards religion as well as religious affiliation) is correlated with home bias. Home bias is identified through individuals' labour market choices and preferences towards consumption of health care, and home-produced versus foreign goods and services. As suggested by our theoretical framework we expect religious openness to be negatively correlated with home bias: a higher degree of religious openness should decrease home bias. However, the intensity of religious feelings might have either a positive or negative effect on home bias. It should be noted that the empirical analysis proposed here is only concerned with the correlation between religious attitudes and home bias and that at this time we do not attempt to identify causal effects. However, the analysis presented here is perhaps the first empirical exploration of the hypothesis that religious attitudes might influence home bias.

We employ a series of standard probit models to analyse the correlation between four different dimensions of home bias (labour market choices; consumption of home-produced goods; choices over health care services provided by national versus foreign doctors and choices concerning consumption of cultural media) and religious attitudes. Religious attitudes are defined in terms of the extent of religious openness/tolerance; the importance of religion in an individual's life; and religious affiliation (Buddhism, Christianity, Hinduism, Hebraism, Islamism, using the category no religion as a baseline). We also include a series of variables about the intensity of religious beliefs (if an individual defines himself as a believer attending services; a believer not attending services; a believer with no specific religious affiliation; a syncretist; an agnostic and use atheist as base category). We control for demographic characteristics (age and gender) and a series of geographical variables (whether the individuals is a foreign student and the macro geographical area of the

¹² A number of studies (e.g. Chuah et al., 2009; Guiso et al., 2009) use the World Value Survey as a direct or indirect benchmark.

sample of origin: North, Central, Southern and Eastern Europe; North America; South America; and Asia). Finally, we also include in our regressions a set of country-specific macroeconomic variables imputed using publicly available data from the World Bank and the International Monetary Fund (IMF).¹³ For each country in our survey, these variables contain GDP, the size of trade in the economy as a percentage of GDP, unemployment rates, female labour participation rates and an index of research power.¹⁴ We impute these variables because we believe that individuals' home bias may be smaller the richer is a country, the more open is a country to trade, the higher its research power. Also, individuals' home bias in labour market choices may be negatively related to unemployment and the extent of female labour participation. A full description of the variables used in this analysis and their summary statistics are reported in Appendix C.

¹³ All these variables refer to the year 2008 (the first year the survey was issued) and are available at the World Bank website (<http://data.worldbank.org/>) and the IMF website: (<http://www.imf.org/external/data.htm>).

¹⁴ The index used is R\&D expenditure as a percentage of GDP of the country.

| | (1) Job Abroad | (2) Job Abroad 20 | (3) Car | (4) Food | (5) Doctor | (6) Media | (7) Culture | (8) Novel |
|---------------------------|----------------------|----------------------|----------------------|------------------------|-----------------------|------------------------|-------------------------|---------------------|
| <i>Religious openness</i> | | | | | | | | |
| Service | 0.0620** (0.0276) | 0.0315** (0.0160) | -0.0393 (0.0313) | -0.0175 (0.0318) | -0.000206 (0.0307) | 0.0283*** (0.00926) | 0.0260*** (0.00887) | 0.0310 (0.0252) |
| Holy Text | 0.0496 (0.0344) | 0.0273 (0.0225) | -0.0225 (0.0361) | -0.00155 (0.0351) | -0.0472 (0.0364) | 0.0671*** (0.0203) | 0.0671*** (0.0215) | 0.0495 (0.0314) |
| Believer | 0.0280 (0.0319) | -0.00513 (0.0184) | -0.0579* (0.0338) | -0.0305 (0.0369) | -0.0169 (0.0343) | -0.0128 (0.00964) | -0.00103 (0.0103) | -0.0197 (0.0280) |
| <i>Importance</i> | | | | | | | | |
| Abortion | -0.0227 (0.0398) | 0.0144 (0.0261) | -0.0103 (0.0445) | -0.00959 (0.0478) | -0.0483 (0.0442) | 0.0124 (0.0190) | 0.0177 (0.0183) | 0.00514 (0.0371) |
| Welfare | -0.0593 (0.0365) | -0.00384 (0.0226) | -0.100** (0.0408) | 0.141*** (0.0405) | -0.00711 (0.0430) | -0.0143 (0.0126) | 0.00379 (0.0148) | 0.0404 (0.0367) |
| Support | -0.0279 (0.0342) | -0.0293 (0.0188) | -0.0521 (0.0381) | -0.00590 (0.0391) | -0.0325 (0.0388) | -0.00769 (0.0120) | 0.0114 (0.0144) | -0.0171 (0.0304) |
| Politics | 0.0973** (0.0492) | 0.0102 (0.0286) | 0.0415 (0.0509) | -0.0157 (0.0517) | 0.0105 (0.0492) | -0.00780 (0.0152) | 0.000371 (0.0151) | 0.0229 (0.0406) |
| Trade freedom | 0.0403 (0.0264) | 0.00573 (0.0163) | 0.0315 (0.0286) | -0.0803*** (0.0292) | 0.000466 (0.0285) | 0.00963 (0.00942) | -0.00492 (0.00924) | 0.0297 (0.0241) |
| State | 0.0181 (0.0520) | -0.0291 (0.0267) | 0.0744 (0.0590) | 0.0475 (0.0570) | 0.0764 (0.0552) | 0.0190 (0.0275) | -0.00572 (0.0167) | 0.0336 (0.0495) |
| School | 0.0495* (0.0295) | 0.0370* (0.0190) | 0.00681 (0.0314) | 0.0363 (0.0329) | -0.0181 (0.0312) | 0.0123 (0.0111) | -0.0164 (0.0101) | 0.0288 (0.0268) |
| Private | -0.0199 (0.0384) | -0.0144 (0.0216) | 0.0480 (0.0442) | -0.0150 (0.0462) | 0.0773* (0.0418) | -0.0180 (0.0126) | -0.0109 (0.0124) | 0.0552 (0.0386) |
| <i>Affiliation</i> | | | | | | | | |
| Christian | 0.00839 (0.0388) | -0.0154 (0.0236) | -0.00604 (0.0398) | -0.0552 (0.0433) | 0.1000*** (0.0385) | 0.0426** (0.0189) | -0.0246** (0.0121) | 0.0299 (0.0358) |
| Hindu | 0.163* (0.0856) | 0.165** (0.0800) | -0.0394 (0.0818) | 0.172*** (0.0621) | 0.0289 (0.0798) | 0.0619 (0.0981) | -0.00441 (0.0210) | 0.0115 (0.0663) |
| Jewish | 0.0863 (0.0787) | -0.0297 (0.0396) | 0.125 (0.0887) | -0.0565 (0.0797) | 0.00629 (0.0823) | 0.00812 (0.0296) | -0.00443 (0.0204) | -0.0263 (0.0612) |
| Buddhist | -0.0458 (0.0784) | -0.0154 (0.0409) | 0.0308 (0.0908) | -0.0546 (0.0977) | -0.0402 (0.0923) | 0.00535 (0.0257) | -0.0288*** (0.00869) | 0.124 (0.0891) |
| Muslim | 0.139 (0.0915) | 0.0816 (0.0787) | -0.0598 (0.0827) | -0.166* (0.0969) | 0.00659 (0.0837) | 0.0494 (0.0795) | -0.0321*** (0.00787) | 0.0988 (0.0836) |

| | | | | | | | | |
|------------------|-----------------------|------------------------|--------------------|---------------------|---------------------|----------------------|----------------------|-----------------------|
| <i>Intensity</i> | | | | | | | | |
| Agnostic | 0.0589 (0.0472) | 0.00243 (0.0281) | 0.0716 (0.0483) | 0.0105 (0.0466) | -0.0662 (0.0475) | 0.00508 (0.0152) | 0.0101 (0.0180) | -0.0362 (0.0375) |
| Syncretist | -0.120*** (0.0458) | -0.0594*** (0.0206) | 0.0152 (0.0650) | 0.0448 (0.0606) | -0.0922 (0.0632) | -0.00451 (0.0177) | -0.00501 (0.0192) | -0.0202 (0.0482) |
| No Affiliation | -0.0395 (0.0414) | -0.0288 (0.0227) | 0.0738 (0.0468) | 0.0340 (0.0482) | -0.0407 (0.0466) | -0.0205* (0.0106) | 0.0211 (0.0194) | -0.0439 (0.0354) |
| No Attendance | 0.0237 (0.0444) | 0.0115 (0.0279) | 0.0264 (0.0473) | 0.0788* (0.0464) | 0.0195 (0.0469) | -0.0118 (0.0129) | 0.0200 (0.0186) | -0.0732** (0.0362) |
| Attendant | 0.133** (0.0663) | 0.0406 (0.0429) | 0.0612 (0.0658) | 0.0112 (0.0654) | 0.0144 (0.0635) | -0.0172 (0.0151) | 0.0585 (0.0392) | -0.0431 (0.0477) |
| Observations | 1,515 | 1,517 | 1,527 | 1,438 | 1,523 | 1,357 | 1,452 | 1,520 |
| Log Likelihood | -790.3 | -505.5 | -910.3 | -309.0 | -969.9 | -801.9 | -291.1 | -692.5 |

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 4. The effects of religious attitudes on home bias

Table 4 reports the marginal effects of the probit models.¹⁵ Models 1 and 2 analyse the effect of religious attitudes on labour market choices. Individuals are asked whether they would accept a temporary job abroad with the same working conditions and salary (Model 1) and whether they would accept a temporary job abroad with the same working conditions but a higher salary (Model 2). Models 3 and 4 present choices between home-produced and foreign goods (car and food, respectively) while Models 6, 7, 8 reveal preferences over foreign media, cultures and novels. Finally, Model 5 identifies individuals' preferences towards the use of health care (national versus foreign medical doctors). The dependent variables of these models are all dummy variables that proxy home bias, taking value 1 when an individual is not willing to accept a job abroad, prefers home produced cars and food, has been attended by native medical doctors and has never been interested in the fruition of foreign media. In the specifications presented in this table, we concentrate on the effects of religious openness and the importance of religion in an individual's life on home bias. The set of variables about religious openness (Service, Holy Text and Believer) are dummy variables coded as increasing in closeness. Accordingly, a positive effect of these variables would imply that closed views on religion are associated with home bias. The group of variables on the relevance of religion (Abortion, Support, Welfare, Politics, Trade Freedom, State, School and Private) are dummy variables coded as increasing in the importance of religion. In this case, a positive effect of these variables would entail that the higher is the importance of religion the greater is home bias.

In four out of eight specifications, the variable Service displays positive and statistically significant marginal effects. Accordingly, having never attended a service of another religion is associated with home bias in choices concerning the labour market (Models 1 and 2) and consumption of cultural media (Models 6 and 7). Also, refusing to read a holy text from a different religion (Holy text) appears to display positive and statistically significant marginal effects in the models concerning the fruition of cultural media (6 and 7). The third dummy identifying religious closeness (Believer, individuals that do not think positively nor respect individuals who define themselves as strong believers) seems to show a weaker effect on our home-bias revealing choices. Overall, this appears to provide some evidence that closed views on religion are positively associated with home bias. The effects of the importance of religion appear to be more mixed.

Although this is somewhat consistent with our prior, it makes difficult to draw firm conclusions. For example, the importance of religion appears to be negatively associated with home bias for choices related to home branded/produced cars (Welfare in Model 3) whereas it seems to be positive correlated with home bias for choices concerning food (Welfare in Model 4). This might also imply that the importance of religion on an individual's life may lead individuals to have different preferences depending on the various domains of home bias. The effects of religious affiliation on home bias also appear to present some mixed results. For example, Christians appear to present some tendencies for home bias only in specific domains. According to our models, they seem to prefer home doctors and to be less interested in the use of foreign media (Models 5 and 7). However, Christians also seem to be interested in foreign cultures in general (Model 7). Individuals defining themselves as Hindu appear to display the most consistent tendency towards home bias, although this is true for a limited number of models/home bias domains (labour market choices and food; Models 1, 2 and 4). Further, Buddhist and Muslim appear to display a

¹⁵ Complete tables featuring all explanatory variables are available upon request.

generally negative correlation with home bias (food and cultural media; Models 4 and 7). It is worth noting that these results appear to differ slightly from the effects of religious denominations on trade identified previously in the literature. These differences, however, may be partly explained by the fact that we consider multiple domains of home bias rather than aggregate measures of trade; moreover, we account for a wider set of religious attitudes. Finally, a lower religious intensity appears to be negatively correlated with home bias (see models 1, 2, 6 and 8).

Concluding Remarks

This paper provides a first investigation of the relationship between religion and home bias using both a theoretical framework and evidence from a survey that we designed and collected. Whereas the previous literature has focused primarily on the effects of religious denominations on bilateral trade flows, we analyse the influence of a series of religious attitudes on different domains of home bias. In particular, this paper attempts to establish whether and how attitudes towards religion, through altruism and trust, influence individual preferences for home-produced versus foreign goods and services.

We employ a simple two-country theoretical framework and show that religious driven international altruism should increase trade openness and reduce home bias. We explore this empirically using new data from a pilot survey handed out to students of 16 universities throughout 15 different countries. According to our empirical analysis, religious openness and home bias appear to be negatively associated within most home bias domains. This finding seems to support the hypothesis that religious-rooted altruism may have a pro-trade effect and, hence, decrease home bias. We also find that the importance of religion in an individual's life may drive individuals to have different preferences towards home bias depending on the different domains of home bias considered. Moreover, religious affiliations appear to have less clear-cut effects on individuals' economic choices than previously identified in the literature on religion and trade. Overall, our results appear to corroborate the hypothesis that religion can play an important role in defining home bias. Our empirical findings also highlight the importance of accounting for different religious attitudes beyond simple religious affiliation when analysing the relationship between religion and home bias. As individuals appear to display different preferences towards home bias, they also suggest the need of accounting for different domains of home bias.

More definite conclusions can be only achieved by collecting more data on these issues. In particular, our study could be extended and improved by using representative samples of the population of the different countries analysed. Also, longitudinal data could allow studying the dynamics of the religious openness-home bias relationship.

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- Should there be a state religion in your country? YES NO NO
- OPINION
- Do you think that religious principles should be taught at school? YES NO NO
- OPINION
- If you wish, please name your religious affiliation.....

Appendix B

Comparison with other surveys

Table B.1. Comparison with the World Values Survey (2005)

| Importance of religion | | Country | Guidance to welfare | |
|------------------------|------|-------------|---------------------|------|
| Our study | WVS | | Our study | WVS |
| 32.5 | 33.4 | Argentina | 30.2 | 39.6 |
| 20.4 | 6.7 | China | 23.1 | - |
| 10.5 | 17.6 | Finland | 7.9 | 38.5 |
| 22.3 | 13.0 | France | 3.7 | - |
| 20.5 | 11.2 | Germany | 28.5 | 29.6 |
| 30.9 | 62.3 | India | 28.4 | 38.5 |
| 7.0 | - | Israel | 7.1 | - |
| 21.6 | 34.4 | Italy | 10.8 | 49.5 |
| 5.1 | 6.5 | Japan | 4.0 | 7.6 |
| 18.4 | 14.9 | Spain | 14.3 | 24.4 |
| 13.7 | 17.1 | Switzerland | 3.6 | 41.9 |
| 35.6 | 74.7 | Turkey | 23.8 | 42.8 |
| 15.9 | 21.0 | UK | 16.0 | - |
| 33.6 | 18.3 | Ukraine | 23.1 | 36.5 |
| 19.2 | 47.4 | USA | 14.3 | 43.9 |

Table B.2. Comparison with the Economist poll, belief in hell

| Economist | | | Our study | |
|-----------|------|----------|-----------|------|
| US | UK | | US | UK |
| 54.0 | 16.0 | Yes | 30.0 | 15.0 |
| 27.0 | 57.0 | No | 43.0 | 44.0 |
| 19.0 | 27.0 | Not sure | 23.0 | 38.0 |

Appendix C

List of variables used in the empirical analysis

Home bias proxies

Job Abroad: dummy identifying individuals with no willingness to accept a temporary job abroad for the same salary as at home.

Job Abroad 20: dummy identifying individuals with no willingness to accept a temporary job abroad for a salary 20% higher than at home.

Car: dummy identifying individuals with preference for the home made (brand) car.

Media: dummy identifying individuals that never watch foreign TV news / read foreign newspapers/ use other foreign media.

Doctor: dummy identifying individuals with preference for the home doctor.

Food: dummy identifying individuals with preference for locally produced food.

Culture: dummy identifying individuals with no interest for foreign cultures.

Novel: dummy identifying individuals with preference for novels written by writers of same nationality.

Religious openness/closeness proxies

Service: dummy identifying individuals that never attended a service of another religion.

Holy Text: dummy identifying individuals with no willingness to read a holy text of a different religion.

Believer: dummy identifying individuals that neither think positive nor respect a person that describes himself as a strong believer.

Importance of religion proxies

Abortion: dummy to signal an individual who thinks religion should give guidance on questions like abortion.

Welfare: dummy to signal an individual who thinks religion should give guidance on questions like welfare.

Private: dummy to signal an individual who thinks religion is very important for their private life.

State: dummy to signal an individual who thinks that one religion should be actively supported by the state.

Support: dummy to signal an individual who thinks the most common religions should be actively supported by the state.

Politics: dummy to signal an individual who thinks religion should have some influence on politics.

School: dummy to signal an individual who thinks that religious principles should be taught in school.

Trade Freedom: dummy to signal an individual who thinks that his country should trade freely with a state without religious freedom.

Religious affiliation

Christian: dummy identifying individuals describing themselves of Christian religion.

Hindu: dummy identifying individuals describing themselves of Hindu religion.

Jewish: dummy identifying individuals describing themselves of Jewish religion.

Buddhist: dummy identifying individuals describing themselves of Buddhist religion.

Muslim: dummy identifying individuals describing themselves of Muslim religion.

Religious intensity

Atheist: dummy identifying individuals describing themselves as atheists.

Agnostic: dummy identifying individuals describing themselves as agnostic.

Syncretistic: dummy identifying individuals describing themselves as syncretistic.

No affiliation: dummy identifying individuals describing themselves as believers with no affiliation.

No attendance: dummy identifying individuals describing themselves as believers not attending services of their religion.

Attendant: dummy identifying individuals describing themselves as believers attending services of their religion.

Demographic characteristics

Sex: dummy identifying a female individual when taking value 1.

Age: declared age of the individual in years.

Geographic characteristics

North Europe: dummy to identify the Finland and UK samples.

Centre Europe: dummy to identify the France, Germany and Switzerland samples.

South Europe: dummy to identify the Italy and Spain samples.

East Europe: dummy to identify the Ukraine sample.

Middle East: dummy to identify the Israel and Turkey samples.

Asia: dummy to identify the China, Japan and India samples.

South America: dummy to identify the Argentina sample.

North America: dummy to identify USA sample.

Country: dummy identifying a home student when taking value 1.

Small Size: dummy variable identifying a student coming from a country with a population of less than 15 millions.

Medium Size: dummy variable identifying a student coming from a country with a population between 15 and 50 millions.

Large Size: dummy variable identifying a student coming from a country with a population of more than 50 millions.

Aggregate economic indicators

GDPpc: GDP per capita, World Bank data, 2009.

Labour Female: female participation rate to the labour market, World Bank data, 2009.

Unemployment: unemployment rate, World Bank data, 2009.

R&D: expenditure in research and development as a percentage of GDP, World Bank data, 2009.

Table C.1 Summary statistics of variables used in the empirical analysis

| | Obs | Mean | SD | Min | Max |
|----------------|------|-----------|-----------|------|-------|
| Age | 1820 | 22.763 | 4.945 | 17 | 64 |
| Sex | 1829 | 0.465 | 0.499 | 0 | 1 |
| Country | 1697 | 0.854 | 0.353 | 0 | 1 |
| Size | 1698 | 2.389 | 0.800 | 1 | 3 |
| GDPpc | 1845 | 27014.680 | 13799.144 | 2868 | 47155 |
| Trade | 1845 | 63.188 | 21.073 | 29 | 101 |
| Unemployment | 1845 | 7002.844 | 2274.329 | 3500 | 11325 |
| Female Labour | 1845 | 50.29106 | 10.7632 | 25 | 68 |
| R&D | 1845 | 2.031 | 1.137 | 1 | 5 |
| Job Abroad | 1817 | 0.303 | 0.460 | 0 | 1 |
| Job Abroad 20 | 1813 | 0.140 | 0.347 | 0 | 1 |
| Car | 1832 | 0.402 | 0.490 | 0 | 1 |
| Food | 1627 | 0.628 | 0.483 | 0 | 1 |
| Doctor | 1825 | 0.570 | 0.495 | 0 | 1 |
| Novel | 1825 | 0.252 | 0.434 | 0 | 1 |
| Media | 1845 | 0.085 | 0.278 | 0 | 1 |
| Culture | 1827 | 0.063 | 0.244 | 0 | 1 |
| Travel | 1812 | 0.774 | 0.419 | 0 | 1 |
| Friends | 1823 | 0.144 | 0.351 | 0 | 1 |
| Service | 1845 | 0.721 | 0.448 | 0 | 1 |
| Holy Text | 1782 | 0.264 | 0.441 | 0 | 1 |
| Believer | 1802 | 0.244 | 0.430 | 0 | 1 |
| Abortion | 1799 | 0.182 | 0.386 | 0 | 1 |
| Welfare | 1798 | 0.175 | 0.380 | 0 | 1 |
| Support | 1802 | 0.169 | 0.375 | 0 | 1 |
| Politics | 1814 | 0.103 | 0.303 | 0 | 1 |
| State | 1813 | 0.076 | 0.264 | 0 | 1 |
| School | 1814 | 0.388 | 0.487 | 0 | 1 |
| Private | 1795 | 0.214 | 0.410 | 0 | 1 |
| Trade Freedom | 1801 | 0.459 | 0.498 | 0 | 1 |
| Hindu | 1845 | 0.060 | 0.238 | 0 | 1 |
| Buddhist | 1845 | 0.025 | 0.158 | 0 | 1 |
| Orthodox | 1845 | 0.029 | 0.169 | 0 | 1 |
| Agnostic | 1845 | 0.014 | 0.116 | 0 | 1 |
| Muslim | 1845 | 0.049 | 0.215 | 0 | 1 |
| Atheist | 1845 | 0.027 | 0.162 | 0 | 1 |
| Jewish | 1845 | 0.051 | 0.220 | 0 | 1 |
| Christian | 1845 | 0.328 | 0.470 | 0 | 1 |
| No Religion | 1845 | 0.092 | 0.289 | 0 | 1 |
| North America | 1845 | 0.073 | 0.260 | 0 | 1 |
| South America | 1845 | 0.047 | 0.211 | 0 | 1 |
| North Europe | 1845 | 0.116 | 0.320 | 0 | 1 |
| South Europe | 1845 | 0.142 | 0.349 | 0 | 1 |
| Centre Europe | 1845 | 0.240 | 0.427 | 0 | 1 |
| East Europe | 1845 | 0.052 | 0.222 | 0 | 1 |
| Mid East | 1845 | 0.117 | 0.321 | 0 | 1 |
| Asia | 1845 | 0.215 | 0.411 | 0 | 1 |
| Attendant | 1784 | 0.141 | 0.348 | 0 | 1 |
| No Attendance | 1784 | 0.276 | 0.447 | 0 | 1 |
| No Affiliation | 1784 | 0.147 | 0.355 | 0 | 1 |
| Syncretistic | 1784 | 0.061 | 0.240 | 0 | 1 |
| Atheist | 1784 | 0.212 | 0.409 | 0 | 1 |
| Agnostic | 1784 | 0.136 | 0.343 | 0 | 1 |
| Small Size | 1845 | 0.185 | 0.388 | 0 | 1 |
| Medium Size | 1845 | 0.193 | 0.395 | 0 | 1 |
| Large Size | 1845 | 0.543 | 0.498 | 0 | 1 |
| N | 1845 | | | | |