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Do values explain the low employment levels of Muslim women around the world? A within- and between-country analysis[1]

Eman Abdelhadi and Paula England

ABSTRACT

Using worldwide data from the World Values Survey (WVS) gathered in 2010–2014, we examine two distinct ways in which Islam may be associated with women's employment. We show that, within their countries, Muslim women are less likely to be employed than women of other religions. We also examine between-country differences and find that, net of education and family statuses, the employment levels of women living in countries that are 90–100 per cent Muslim are not significantly different than those living in countries that are only 0–20 per cent Muslim. Then we test a prevailing view: that Islam discourages gender egalitarian values, and that these values – held by women themselves or people around them – explain why Muslim women are less likely to be employed than women of other religions within their own countries. Despite the rich measures of values in the WVS and a large sample, we find no evidence that values explain any of the lower employment of Muslim women, mainly because values have little or no effect on women's employment. Thus, we conclude that most of the world's gap in employment between Muslim women and other women is within-country and is not explained by gender ideology. Future research should examine alternative hypotheses, including ethno-religious discrimination.

Keywords: Women's employment; Muslim women; gender ideology; gender; religion; Islam

Introduction

The question of whether and how Islam affects women's outcomes is a recurring theme in political debates and in social science inquiry, and multiple scholars have explored differences in women's employment by religion.[2] Studies in several countries find that Muslim women work for pay less than other women.

Abdelhadi and England (New York University) (Corresponding author email: pengland@nyu.edu)
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Other studies examine nation-level effects, producing mixed results on the question of whether Muslim-dominated societies deter the employment of women. Our study's contribution is to combine these two levels, using a world-wide sample and a hybrid fixed and random effects (or 'between-within') model. We will replicate others' findings that Muslim women have lower employment than other women *within* countries, but we will support the sceptics by showing no significant difference *between* the employment levels of women in nations that are Muslim-dominated and nations with few Muslims.

Our second contribution is to test a common assertion: that Muslims' gender values explain the relatively low employment of Muslim women within nations. The argument that gender ideology explains Muslim women's low employment rests on two claims. First, it is claimed that Muslims are more likely to believe in traditional values regarding gender; they may be more likely to espouse the idea that men should be breadwinners with their wives at home or that women should not be seen in public. The second claim is that women's employment is deterred when they or the people around them hold these gender-inegalitarian views. We will show that values do not explain Muslim women's relatively low employment levels because, although Muslims hold somewhat less egalitarian gender beliefs than other groups, perhaps surprisingly, such beliefs have no significant association with whether women are employed.

Past literature

Muslim women's relatively low employment within nations

Several authors examine single nations and find that Muslim women are less likely to work for pay than women of other religions, even after controls for education and family status. This is true in the United Kingdom (Connor and Koenig 2015; Khattab, Johnston and Manley 2017), Germany (Diehl, Koenig and Ruckdeschel 2009), the Netherlands (Khoudja and Fleischmann 2015), Canada (Dilmaghani, Dean and Tyler 2016; Reitz, Phan and Banerjee 2015), Australia (Vella 1994), India (Klasen and Pieters 2012), and Malaysia (Amin and Alam 2008).[3]

Other studies, like ours, explore within-country differences between the employment of Muslim and non-Muslim women using multinational datasets. Pastore and Tenaglia (2013) use the European Values Survey from 2008. In models with and without country fixed effects, they find that, in Europe, Muslim women are employed less than women of other religious groups, after adjustments for education and family characteristics. Another study using a model with country fixed effects employs an earlier wave of the same dataset we will use, the World Values Survey (WVS). H'madoun's unpublished paper (2010) shows that Muslim women have lower employment than women of most other faiths. Our analysis goes beyond that of Pastore and Tenaglia (2013) and

H'madoun (2010) in that we will examine both within- and between-country components of the employment gap. Consistent with past research, we will find that Muslim women are less likely to be employed than other women in their own countries.

Does living in a Muslim-majority nation impede women's employment?

Several studies take nations as units of analysis and examine the association between the per cent Muslim of the population and women's employment under various controls. Overall, the evidence is ambiguous. Fish (2011) regresses the average ratio of female to male earned income on nations' per cent Muslim. He finds a negative association of nations' per cent Muslim with this ratio, even with controls for GDP, life expectancy, level of democracy, and the dependence of the economy on oil. Since a nation's ratio of women's to men's earned income is a function of how many women compared to men are employed (because those who are not employed have zero income) and the gender gap in pay among the employed, his finding suggests that a higher per cent Muslim may lower women's employment or earnings, or both.

Other examinations of whether living in a Muslim-majority nation deters women's employment produce negative or ambiguous conclusions. Ross (2008) concludes that Muslim nations do not have lower women's employment after controlling for how much the nation's economy emphasizes oil production, which produces mostly male-typical jobs. Bayanpourtehrani and Sylwester (2013) also examine whether the per cent Muslim of nations affects their female labour force participation rates. Their findings can be interpreted as either refuting or supporting the notion that Muslim societies have lower women's labour force participation. When not controlling for region, they find a significant negative association between a nation's per cent Muslim and its labour force participation rate for women, but after controlling for region, most of the effect disappears; the Middle East and North Africa region (hereafter MENA) has lower women's employment which 'accounts for' Muslim women's lower employment. Since MENA is the most heavily Muslim region, this might imply that something about the culture or institutions in the region inhibits women's employment, with the fact that it is mostly Muslim being merely coincidental. Indeed, MENA only contains 20 per cent of the world's 1.6 billion Muslims (Pew Research Center 2015). But MENA is the historic centre of Islam; thus, it is possible that the lower employment of women in MENA is attributable to something about Islamic culture or institutions.

These three studies provide mixed evidence on whether Muslim-dominated societies have especially low women's employment. But, because they all use aggregate level data, they cannot separate individual from contextual effects. In other words, they cannot discern whether a given woman's probability of employment is lower if she lives in a Muslim-dominated society, compared to a

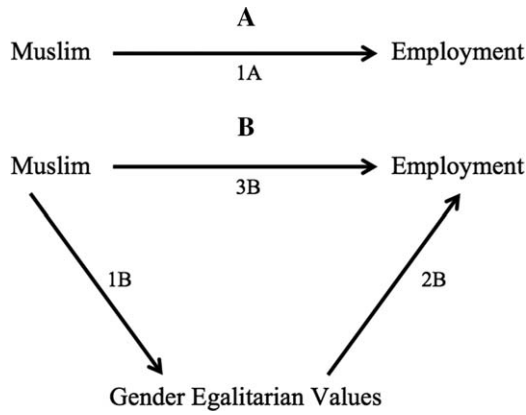
non-Muslim-dominated society. Our analysis will improve upon this work by examining the country-level effects of proportion Muslim in a model that controls for individual-level variables, including the woman's religion. To foreshadow, we will find that, controlling for a woman's own religion, there is no significant effect on a woman's probability of employment of whether she lives in a Muslim-dominated society or one with very few Muslims.

Values as explanation for Muslim women's outcomes

The most prominent academic promoters of the idea that Islam and Muslims' gender ideologies are holding women back are political scientists Inglehart and Norris. Their well-cited[4] book, *Rising Tide: Gender Equality and Cultural Change around the World*, argues that 'an Islamic religious heritage is one of the most powerful barriers to the rising tide of gender equality' (Inglehart and Norris 2003: 49). Using WVS data from around the world, they classify individuals by the predominant religion in their country and show that those in Muslim nations have less gender egalitarian attitudes than those in nations dominated by any major religion except Buddhism. They include a generous array of controls (but not the individual's religion). They do not provide an analysis of effects of religion or gender ideology on women's employment, as we will do here. Their attempt to show that values have consequences is indirect; they select only agrarian (i.e., less developed) nations and show that, among these, Muslim nations feature less involvement by women in public life and worse ratios of female to male literacy and education. They suggest that Muslims' conservative gender ideology explains these objective gender inequalities. As they put it, 'culture matters; where there are more egalitarian attitudes, these are systematically related to the actual conditions of women's and men's lives' (Inglehart and Norris 2003: 9). Yet, despite the fact that the WVS, which Inglehart heads, contains rich measures of gender ideology, their claim that it is the conservative gender ideology associated with Islam that is causing the lower relative status of women in Muslim nations is never tested by examining whether women's disadvantageous outcomes in Muslim-dominated nations are statistically explained by the prevalence of gender inegalitarian values.

How can an analysis discern whether values mediate the relationship between religious affiliation and women's employment? Figure I illustrates the issue. Diagram A is a model that predicts employment from religious affiliation without controlling for gender egalitarian values. Diagram B is a model controlling for these values as an intervening variable between religion and employment. For values to mediate the relationship between being Muslim and employment, two things need to be true. First, we would need evidence that Muslims have less gender egalitarian values than others (Arrow 1B in Figure I). Second, egalitarian values would need to encourage women's employment (Arrow 2B in Figure I). Finally, the magnitude of each of these effects would

Figure I: *Models of the effect of a woman's religion on whether she is employed, with and without the mediation of values*



need to be large enough that the 'Muslim effect' estimated in the model controlling for values (Arrow 3B) is non-trivially smaller than the estimated effect in the model not controlling for values (Arrow 1A). If their own values entirely explained Muslim women's lower employment, the Muslim effect would disappear in the model containing a control for values; if values partially explained the gap, the Muslim effect would be reduced, but not zero.

To our knowledge, only one study has assessed whether values about gender explain an employment gap between Muslim women and other women. It is limited to Arab-American women, who are a mix of Muslims and Christians.[5] Read (2004) shows that being Muslim has a negative effect on women's labour force participation until gender ideology is controlled; in the mediation model gender traditionalism significantly deters employment, but being Muslim no longer does, implying that the more traditional gender ideology of Arab-American Muslim women entirely explains their lower employment relative to Arab-American Christian women.

Despite the lack of studies for large populations explicitly addressing whether values explain the relatively low employment of Muslim women, a gap our paper will fill, there has been research on the two pathways (1B and 2B in Figure I) that need to be present for values to mediate religious differences in employment. We organize the remainder of our review around these two pathways.

Islam and gender ideology

For values to 'explain' the relatively low employment of Muslim women, Muslim women or those around them must hold relatively inegalitarian gender ideologies. Past research finds that Muslims in Europe have less egalitarian gender attitudes than members of other religious groups, but that these differences decrease across generations. In Germany, Diehl et al. (2009) show that Turks,

who are 90 per cent Muslim, have more traditional gender ideology than Germans, who are mostly Christian. Maliepaard and Alba (2016) find that in the Netherlands, 58 per cent of second-generation Muslims are more gender egalitarian than their parents. Röder (2014), however, finds that among adult children of immigrants in Europe, Muslims retain less gender egalitarian attitudes than children of other immigrant groups. Norris and Inglehart (2012) find that Muslim immigrants' views lie about halfway in between those held by the Muslim nations they emigrated from and the Christian nations to which they immigrated in Europe. In sum, the evidence suggests that Muslims have more conservative gender ideologies than others in Europe, but that children of immigrants converge toward the societal average.

Three papers use the WVS, the data we will use, to examine how Muslims' gender ideology compares with that of other religious groups. Fish (2011) finds that Muslims express more traditional views than any other religious group in an individual-level analysis that adjusts for country-level indicators of GDP, age, and per cent Muslim. Norris and Inglehart (2012) report that Muslims are more conservative about gender, net of whether they live in a Muslim-plurality country. Algan and Cahuc (2006) control for country fixed effects, and find Muslims to be more likely than Catholics, who are more likely than Protestants, to believe that when jobs are scarce, men should have advantages. We, too, will find that Muslims have somewhat less egalitarian gender ideologies, although the differences are small.

Two studies focus on contextual effects – on whether, irrespective of one's own religion, those living in a country in which a higher proportion of people are Muslims have more conservative values. Norris and Inglehart (2012) use hierarchal linear models to analyse the WVS; they find that, net of a number of individual controls, including whether the individual is Muslim, those living in countries with a plurality of Muslims have less egalitarian gender ideology than those in European, mostly Christian societies. Fish (2011) shows that, on two of three measures of gender ideology, those in societies with a higher per cent Muslim are more conservative (net of the individual's religion).

In sum, there is substantial evidence that Muslims and those in countries containing a higher proportion of Muslims favour more conservative gender ideology than others. However, these findings do not, in themselves, show that ideology explains the lower employment of Muslim women. For this explanation to hold, inegalitarian values regarding gender must also be shown to lower women's employment (Arrow 2B in Figure I). We review next what past research says about this link.

Gender ideology and women's employment

Most of the evidence on this question is regionally specific, with substantial evidence of a relationship between gender ideology and women's

employment in the West. Fortin (2005) uses OECD countries from the WVS, and shows that the employment of women is predicted by their own views about gender, as well as by the views of the average man in their nation. Vella (1994) finds the same for Australia. Research on the United States shows that women's employment is related to her mother-in-law's employment, suggesting that women transmit their values to their sons, who are then open to employed wives (Fernández and Fogli 2009; Fernández, Fogli and Olivetti 2004; Kawaguchi and Miyazaki 2007). Farré and Vella (2013) use panel data and find that men with more conservative gender attitudes are less likely to have employed wives, while women with conservative attitudes get less education, which reduces their odds of employment. Fernández (2007, 2013) also finds that immigrants to the United States are less likely to be employed if they are from a country with conservative gender attitudes. All this suggests that, in the West, women's beliefs about gender affect their likelihood of employment.

In the MENA region, Chamlou, Muzi and Ahmed (2011, 2016) use individual-level data and find that conservative attitudes about gender deter women's employment in Cairo (Egypt), Amman (Jordan), and Sana'a (Yemen). In urban Turkey as well, Atasoy (2016) finds an association between conservative gender ideology and whether a woman is employed, net of education and whether she has children.

Thus, to summarize, there is evidence that gender ideology is associated with women's employment, at least in the West, and in several settings in MENA. But we lack studies that use worldwide data to examine the links between gender ideology and women's employment, something our study will provide. To foreshadow, we will find that, although Muslims have less egalitarian values, these values do not affect women's employment, and thus cannot explain Muslim women's lower employment.

Data and methods

Data

The World Values Survey (WVS) is a global project. A common questionnaire was administered to nationally representative samples in many nations, beginning in 1981. We use the sixth and latest wave of WVS, for which data was collected between 2010 and 2014. Wave 6 includes 60 nations with data on 45,083 female respondents, with the sample sizes of women within each nation ranging from 457 to 1,767. Unfortunately, in 13 countries, at least one of the questions we use for our analysis was omitted from the questionnaire (e.g., religion, our main independent variable, or whether one is an immigrant). We lost 9,755 respondents because we could not use these 13 nations, leaving 35,328 women

in 47 nations. Table AI in the Appendix lists the 47 nations with the proportion Muslim, computed from the sample, in each.

Because those who are students, retired, or over 65 are seldom expected to be employed, we removed these 17,609 respondents from our analytical sample. Approximately 6.3 per cent of the remaining 27,474 respondents were missing on one of the variables in our models and therefore were deleted, listwise. Thus, the sample used in our analyses consists of 25,741 women from 47 countries spread across every major region.

Weights

Our estimates are intended to approximate what is true for the population of the world as a whole. Thus, our means and regression models were calculated using a combination of two distinct types of weighting. The first, constructed by WVS staff, is within nation, and adjusts for differences between the sample and the population on variables such as age, race or urban/rural location. The second component of our weight accounts for each nation's population size. When data from all available nations are pooled in a single analysis, as in our analysis, there are three choices of how weights for population size can be used (or not used). The first option is not to weight, which means that nations are implicitly weighted by the sample size of their survey. A second option employs weights that force each nation to have the same *N* so that, for example, India and Yemen each count the same despite their vastly different populations. A third option is to employ weights to make each nation's proportion of the total sample commensurate with its actual population relative to other nations in the WVS, using information from the World Bank (2014) for the population of each country. We chose the third option, so larger nations 'count' more, much as they would if we had a probability sample of everyone in the world. In sum, the weight we use includes both the within-country and between-country weighting just described. It was computed so as not to inflate statistical significance levels (i.e., the average weight is 1). Thus, subject to the limitations of which nations are in the WVS and had usable data, our sample, when weighted, is as representative as is possible of the world's population of women who are not students, retired, or over 65.[6]

Dependent variable

We created a dichotomous indicator variable for employment status. Women who, at the time of the survey, report that they are currently working (as employees or self-employed) either full-time or part-time are coded as 1. Those who reported themselves to be unemployed (i.e., looking for work) or to be homemakers with no employment are coded as 0. (Recall that our sample excludes those who are retired or students.) We also report results from two

sensitivity tests. The first makes only full-time employment the outcome, while the second makes labour force participation the outcome – for this we code both the employed (full- or part-time) and those looking for work as 1, and only homemakers as 0.

Individual-level independent variables of major interest

Religion

Our primary individual-level independent variable is respondents' religion. The original data contain 60 denominations, many of them quite small (e.g., Seventh-Day Adventist, Zaidi). We recoded denominations into the broad categories Christian, Muslim, Hindu, None (the respondent reported having no religion), and a residual category, Other, for all other religions. In one sensitivity test, we divide Christians into Catholics, Protestants, and Orthodox.

Values

Our interest is in whether values about gender (of the individual or those in their country) mediate the effect of religion (either an individual's religion or the proportion of the country that is a particular religion). For reasons discussed below, models that include the woman's own values also include the average score among women in the respondent's country. Our measure of Gender Egalitarian Values is a scale we created from all eight items on gender ideology in the WVS. Respondents were asked how much they agreed with the following statements: (1) *when jobs are scarce, men should have more right to a job than women*; (2) *men make better political leaders than women do*; (3) *university is more important for a boy than a girl*; (4) *if a woman earns more money than her husband, it's almost certain to cause a problem*; (5) *when a woman works for pay, the children suffer*; (6) *on the whole, men make better business executives than women do*; (7) *being a housewife is just as fulfilling as working for pay* (this item is reverse-coded); and (8) *having a job is the best way for a woman to be an independent person*. For each item, the response options were either *strongly agree, agree, disagree* or *strongly disagree*, or *agree, neutral*, and *disagree*. Responses were scaled such that on items offering four responses, *strongly disagree* =1, *disagree* = 0.66, *agree* = 0.33, and *strongly agree* = 0, while on items offering three responses, *disagree* = 1, *neutral* = 0.5, and *agree* = 0. Thus, each item was scaled from 0 to 1 with higher numbers indicating more egalitarian views. We then created the Gender Egalitarian Values scale by adding each individual's score on the above items and dividing by 8, so the range of the scale is also 0 to 1. If the respondent is missing on only one item, she receives a score resulting from a regression-based prediction estimating her response to the missing question based on her answers to the other seven questions. If she is

missing more than one, her scale is treated as a missing value. The Cronbach's alpha of the scale is 0.65.[7]

Individual-level control variables

Age

Age is included in all models as a series of indicator variables using the following groupings: 25 or less (the reference), 26 to 35, 36 to 50, and 51 to 65. The youngest respondents in the survey were 16.

Education

A series of indicator variables represent how much education the woman had completed: no formal education (the reference), primary school or less, incomplete secondary school, complete secondary school, some university without degree, and university or more.

Family statuses

We include three indicator variables for whether a person is married, cohabiting (living with a partner but not married), previously married (i.e., widowed or divorced), or never-married (the reference). We also include indicators for whether respondents have 0 (the reference), 1, 2, 3, or 4 or more children.

Immigrant status

We create a three-tier immigration variable based on respondents' and parents' birthplaces. The reference category is third generation or more, for those who meet the two conditions that they are not immigrants and neither of their parents are immigrants. In the second-generation category are non-immigrant respondents whose parents are immigrants, and first-generation includes those who are immigrants themselves.

Country-level independent variables of interest

The country-level version of our indicator variables for broad religious groups are measures of what proportion of our sample in each country is in each religion, which is simply the country mean of the 0/1 individual-level indicator variable for each religion. For example, if 30 per cent of the women in one country's sample were Muslim, the mean of the individual-level Muslim indicator variable for that country would be 0.30 and we would assign this to each woman in the country as a contextual measure.[8] Thus, our models include the proportion Muslim in each woman's country, as well as the proportion of each of the other major religious groups.

Country-level control variables

Country means

Models M2 and M3, as explained below, include country-level averages of all the individual level variables in the model. These should reduce bias on our coefficients for proportion Muslim. For example, if the education level of women in a country affects women's employment and is correlated with proportion Muslim, the controls for country averages on the education indicator variables will ensure that we do not attribute low employment actually explained by low education in the country to the proportion Muslim.

Country controls from other data sources

Models M2 and M3 include two country-level control variables that do not come from the WVS itself, but are merged onto the dataset from 2014 United Nations data: gross domestic product per capita (in units of $10,000), and the unemployment rate, scaled from 0 to 1, for all members of the labour force (men or women) in the country (United Nations n.d.). These variables serve to reduce omitted-variable bias as we assess the effect of living in a country with high proportion Muslim.

Model specification

We chose logistic regression models because we have a dichotomous dependent variable and want to examine predicted probabilities; the logistic model assures that predicted probabilities are not below 0 or above 1. We chose a form of logistic regression that would allow us to isolate effects of religion at two levels – individual and country. First, being a member of a particular religious group may affect whether a woman is more or less likely to be employed than other women in her country. Second, women in a country (of any religion) may have their employment affected by the country-level religious context – the religious composition of the country in which they reside.

The first of these two effects – of an individual woman's religion – can be estimated by a country fixed effects model; by entering indicator variables for each country, estimates of the effect of being a Muslim are protected from omitted variable bias emanating from the failure to control for all the ways (e.g., cultural, economic, and institutional) that the countries in which Muslims disproportionately live differ from other countries. But the country fixed effects model has the disadvantage of not allowing us to achieve our other goal – to isolate the effect of the proportion Muslim in a woman's society, because along with all other country-level effects, any contextual effect of the per cent Muslim in the country is absorbed by the coefficients on the indicator variables for each country. Fortunately, we can achieve both of these goals – estimating the effects of being a Muslim and of living in a society whose population is a certain

proportion Muslim – with a model sometimes called a 'hybrid' model because it mixes elements of fixed and random effects, and also called the 'between-within' method because it allows us to isolate effects at two levels, in our case the levels of country and individual (Allison 2009: 23–5; 2014, 2017; Bell and Jones 2015: 141–4).[9]

To estimate the between-within model, we estimate a random effects (random intercepts) logistic regression model (using 'melogit' in Stata 15) predicting whether women are employed or not. The inclusion of random intercepts for countries is the 'random effects' aspect of the hybrid model.[10] We also include the individual-level variables discussed above, including religion. Most versions of the between-within model express individual variables as deviations from the mean of the second level (country). We chose to enter the individual variables in the original, rather than mean-deviated form, because entering the Muslim indicator as a deviation from its country mean forces it to be uncorrelated with the proportion Muslim; in such a model, the individual's religion is not controlled when the coefficient for the proportion Muslim is estimated. Fortunately, it has been shown that the coefficients for the individual variables are the same whether they are deviated from country means or not as long as the country means are in the model[11] (Allison 2017; Bell and Jones 2015: 141).

Thus, by estimating models that include individual variables in their original form and the country mean of each individual variable, we achieve two goals. First, the fact that proportion Muslim (the country mean for the Muslim indicator) is in the model means that the coefficient on the individual Muslim indicator is the same as it would be if we had estimated a country fixed effects model containing indicator variables for each country. This means that the coefficient for the Muslim indicator shows us the effect of being Muslim 'net' of any ways in which the countries in which Muslims live differ from those in which women of other religions live. More broadly, coefficients on all the individual variables are protected from omitted variable bias due to unmeasured country-level characteristics; this is the sense in which the hybrid model has country fixed effects properties.[12] Second, because the Muslim indicator enters the model without being deviated from the country mean, the coefficient on its country mean, proportion Muslim reveals the effect of living in a country that has a higher per cent Muslim, *net of one's own religion*; this is of substantive interest as a contextual effect.

Our estimation of the effect of proportion Muslim is subject to several caveats. First, the effect of the proportion of the society that is Muslim, or any other religion, could be non-linear; for example, perhaps effects are only present when a group is a majority or more. To capture this, and since preliminary analyses showed that some squared terms are significant, we include the square of each of the country means on religion – for example, the square of the proportion Muslim. Second, while our estimates of effects of individual variables are not vulnerable to bias due to omitted country level variables because of the

country fixed effects properties of the model, the estimates of effects of proportion Muslim *are* vulnerable to bias due to omitted country-level characteristics that may affect both proportion Muslim and women's employment. This is why we control for the nation's unemployment rate and GDP. For example, if Muslim-majority countries average relatively low GDP and development increases women's employment, we do not want to attribute effects of low GDP to the religious composition of the country. The country means on variables such as education and number of children provide some protection here as well. Still, estimated effects of the proportion Muslim may be driven by related characteristics of countries. Third, the effective *N* for the contextual effect is the 47 countries, not the thousands of individual respondents; thus, our statistical power for this test is limited, as is true in all research on country differences. Fourth, the coefficients associated with the country-level means on religion show us the contextual effect of living in a country in which a certain proportion of the population is Muslim, only on the assumption that the two levels of religion do not interact. We have ascertained that there is no significant interaction between whether a woman is Muslim and the proportion Muslim or its square (results not shown), so we interpret any effect we find of the proportion of a society that is Muslim as an effect on women of all religions. However, our statistical power is limited in testing this interaction because, as discussed above, we have only 47 nations.

Our main results consist of three between-within random effects logistic regression models (M1–M3) predicting employment. M1 contains the individual's religion (indicator variables with Christian as reference), the proportion of those in her country who are of each religious group, and the square of each of these proportions. M2 adds controls for age, education, and family statuses, and the country means for each. M3 adds individual and country-level Gender Egalitarian values. The purpose of M3, which adds values, is to see if values are mediators of the individual and/or societal level effects of religion on women's employment.

Because we use logistic regression, we cannot simply compare coefficients across models as we add controls to see if their addition changes the coefficients on religion. In logistic regression, unlike in linear models, the effect of one variable varies by the levels of the other variables, because levels of other variables affect the part of the non-linear curve in which the effect operates. Thus, adding a variable may change the coefficient on a previously included variable even if the new and old variables are uncorrelated and they do not interact (Mood 2010). Fortunately, we can meaningfully compare predicted probabilities computed from these models using average marginal effects (Mood 2010: 74–8). Thus, our discussion of whether values mediate the effect of religion on employment will be based on comparing predicted probabilities across models. We use the average marginal effects (AME) approach to calculating predicted probabilities; this adjusts for differences between the religious groups in the

control variables by assigning the whole-sample distribution on each control to those in each religion.

Results

Worldwide, what proportion of women of each religion are employed?

Table I provides means for each individual-level variable.[13] The table also provides separate means for Muslim and non-Muslim women. As Table I shows,

Table I: *Sample means for all variables*

	All women	Muslims	Non-Muslims
Employed	0.45	0.24	0.51
Religion			
Christian	0.34	0.00	0.45
Muslim	0.24	1.00	0.00
Hindu	0.26	0.00	0.34
Other	0.07	0.00	0.09
None	0.09	0.00	0.11
Values			
Gender Egalitarian	0.51	0.44	0.53
Age			
25 or less	0.30	0.28	0.31
26–35	0.24	0.30	0.22
36–50	0.29	0.30	0.29
51–65	0.17	0.12	0.18
Education			
No formal education	0.16	0.26	0.13
Primary school or less	0.24	0.27	0.23
Incomplete secondary school	0.16	0.16	0.16
Complete secondary school	0.27	0.23	0.28
Some university, no degree	0.06	0.02	0.07
University or more	0.11	0.06	0.13
Children			
0 children	0.28	0.22	0.30
1 child	0.18	0.12	0.19
2 children	0.24	0.22	0.24
3 children	0.15	0.15	0.15
4 or more children	0.15	0.28	0.11
Marital status			
Single	0.18	0.16	0.19
Married	0.61	0.75	0.57
Cohabiting	0.11	0.02	0.13
Previously married	0.10	0.07	0.11
Immigration			
Third+ Generation	0.83	0.86	0.82
First generation	0.03	0.02	0.03
Second generation	0.14	0.13	0.14
Observations	25,741	8,043	17,698

Note: Excludes students, retirees and those over 65.

Table II: *Coefficients from between-within logistic regression models predicting women's employment*

	M1	M2	M3
Individual characteristics			
Religion (Ref: Christian)			
Muslim	−1.63***	−1.32***	−1.29***
Hindu	−0.97***	−1.00***	−0.99***
Other	0.10	−0.01	−0.05
None	−0.13	−0.18*	−0.20*
Values			
Gender Egalitarian			0.85
Education (Ref: None)			
Primary		0.08	0.07
Incomplete secondary		0.39***	0.36**
Complete secondary		0.76***	0.74***
Some university		1.46***	1.43***
University		1.78***	1.71***
Country characteristics			
Religious composition			
Proportion Muslim	5.28***	2.94**	3.75**
Proportion Muslim^2	−4.77***	−3.79***	−4.02***
Proportion Hindu	5.67	20.88***	20.35***
Proportion Hindu^2	−8.20	−22.15**	−20.20**
Proportion Other	−3.18	−10.91***	−9.38***
Proportion Other^2	5.07**	11.85***	10.98***
Proportion None	3.49	0.11	1.13
Proportion None^2	−2.23	3.20	1.27
Mean values			
Gender Egalitarian			3.83
Constant	0.04	6.31**	2.10
Observations	25,741	25,741	25,741

Notes: All models exclude students, retirees, and those over 65. Models 2 and 3 include age, immigration status, number of children, and marital status both as individual variables and as country means. Models 2 and 3 also include GDP per capita and the unemployment rate for the respondent's country. All coefficients not shown are available upon request.

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

across the world, 24 per cent of Muslim women are employed, compared to 51 per cent of non-Muslims. Although results for other specific religious groups are not shown in the table, Hindu women also have a relatively low per cent employed, 32 per cent, Christian women have the next highest level, with 59 per cent employed, and among those with no religion, 61 per cent are employed.

Within-country effects of religion

Our analyses in Table II assess how a woman's own religion as well as the religious composition of her country affects her employment. M1 estimates that,

Table III: *Predicted probabilities from between-within logistic regression models predicting women's employment*

	M1	M2	M3
Christian	0.61	0.56	0.55
	[0.57, 0.65]	[0.53, 0.59]	[0.52, 0.58]
Muslim	0.28	0.31	0.31
	[0.22, 0.34]	[0.27, 0.35]	[0.27, 0.35]
Hindu	0.41	0.37	0.37
	[0.37, 0.44]	[0.35, 0.38]	[0.35, 0.39]
Other	0.63	0.56	0.54
	[0.56, 0.71]	[0.53, 0.58]	[0.52, 0.57]
None	0.58	0.52	0.52
	[0.54, 0.63]	[0.49, 0.55]	[0.48, 0.55]
Observations	25741	25741	25741

Notes: 95 per cent confidence intervals in brackets.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

within countries, Muslim women are the least likely to be employed (the coefficient comparing them to Christians is −1.63). Hindus also have relatively low employment (coefficient of −0.97). Christian women are not significantly different than women in other religions or women with no religion. Recall that these religion coefficients can be interpreted as average differences in the log odds of employment by religion *within countries*, before adjustments for women's individual characteristics such as education or number of children. Table III shows the predicted probabilities of employment for women in each religion from all models. If women in each religion had a distribution across countries' religious compositions that matched that of the total sample, the probability that a Muslim woman would be employed, according to estimates from M1, is 0.28, compared to 0.41 for Hindus, 0.63 for those in Other religions, 0.58 for those with no religion, and 0.61 for Christians.

M2 in Table II adds individual controls for age, education, number of children, marital status, immigrant status of the woman and her parents, as well as the country-level control variables corresponding with them, and two additional country controls. Since these controls, individual or country level, are not of substantive interest here, most of their coefficients are omitted from Table II, and we do not discuss their effects.

How does our estimate of the effect of being a Muslim woman change when we add the controls in M2? As mentioned above, given the non-linear nature of a logistic regression, this needs to be answered by comparing probabilities across models in Table III rather than by comparing coefficients in Table II. Comparing probabilities across M1 and M2 in Table III makes clear that some, but not most, of the relatively low employment of Muslim women is explained by the controls; whereas M1 showed a difference of 0.33 between the

probability that a Muslim and a Christian woman are employed within countries (0.61 versus 0.28), after controls for education, family status, age, and immigration status, M2 shows this difference to be only 0.25 (0.56 versus 0.31), a reduction of 0.08, or 24 percent of the original marginal effect (0.08/0.33 = 0.24). Thus, 76 percent of the original difference persists after controls. Table I showed that Muslim women have less education and are more likely to be married and have children, all factors that M2 showed to lower employment; these factors explain some of the lower employment of Muslim women.

We turn now to the question of whether the low employment level of Muslim women compared to other women in their countries, net of the factors added in M2, is explained by Muslim women holding ideologies less conducive to gender equality. Muslim women do hold less Gender Egalitarian Values, net of controls; when we regress Gender Egalitarian Values on religion and the same controls in M2, being Muslim predicts values that are 0.04 lower than being Christian on a scale that ranges from 0 to 1 and has a standard deviation of 0.19 (results not shown). This net difference in values is quite small, 21 per cent of the standard deviation (0.04/0.19 = 0.21). When M3 of Table II adds the Egalitarian Gender Values scale, its coefficient is not significant, indicating that, on average, women who hold more egalitarian gender beliefs are no more likely to be employed than other women in their country, net of other factors. Since this relationship is a condition of gender ideology mediating the effect of religion on employment (recall Figure I), we infer that the slightly less egalitarian beliefs of Muslim women do not explain their lower employment compared to other women in their country, because such values do not affect employment.[14] Lack of mediation can also be inferred from the lack of change in probabilities between M2 and M3 in Table III.[15]

Between-country effects of religious composition

We turn now to effects of religion at an aggregate level – how the religious composition of a society affects the employment of women in the society. As Table II shows, the effect of proportion Muslim is significantly non-linear; this is revealed by the fact that, in all models, the square of proportion Muslim has a significant effect. When we compare predicted probabilities from M2 (with controls, but no values), across the range of proportion Muslim, there is a rise in women's employment as proportion Muslim in the society moves from 0 to 0.4, and then a decline as it moves toward 1.0 (results not shown). However, predicted probabilities are not significantly different (using $p < 0.05$) between societies that are 0 per cent and 100 per cent Muslim, or between those that are 10 per cent versus 90 per cent Muslim.

To further explore the non-linear relationship between proportion Muslim and employment, we re-estimated M2, replacing proportion Muslim and its square with indicator variables for whether a respondent's nation was 20.01–80

per cent or 80.01–100 per cent Muslim, both relative to a reference category of 0–20 per cent Muslim. Nations with a 0–20 per cent Muslim population (as estimated by our sample) make up 78 per cent of the sample, and include the West, Latin America, and East Asia. We made the middle category wide-ranging because, as Table AI shows, there are only five nations with a per cent Muslim of 20.01 to 80 per cent: Nigeria (40 per cent), Cypress (50 per cent), Kazakhstan (52 per cent), Lebanon (53 per cent), and Malaysia (64 per cent). They make up 7 per cent of the sample. Interestingly, these nations are not spread out between 20 per cent and 80 per cent Muslim, but all cluster between 40 per cent and 65 per cent. Also note (Table AI) that there are no WVS nations in our sample whose per cent Muslim is between 80 per cent and 90 per cent, so the nations in the 80.01–100 per cent category are all over 90 per cent in their per cent Muslim. This group makes up 15 per cent of the sample, and includes Pakistan, several nations in MENA, and former parts of the Soviet Union. The results from this model with indicator variables for proportion Muslim (not shown) reaffirms the curvilinear relationship in M2; the five nations with middle levels of per cent Muslim have significantly higher women's employment than those with no more than 20 per cent Muslims or those at least 90 per cent Muslim.[16] We do not know why more Muslims in a woman's society increase her odds of employment if she moves from a country that is 0–20 per cent Muslim to 40–65 per cent Muslim. But, for our purposes, the important finding is that the large group of nations with very few Muslims (the West, Latin America, and East Asia) has a predicted employment that is not significantly different than that for nations that are over 90 per cent Muslim. Thus, both specifications reveal that, once the individual-level effect of religion and other controls are removed, women living in a Muslim-dominated country have no significantly different employment level than those living in a country with very few Muslims. Accordingly, we do not need to investigate whether values explain any distinctive contextual effect of being in a Muslim-dominated society, since there is no significant effect of very high versus very low proportions Muslim to be explained.[17]

Sensitivity tests

We performed several sensitivity tests to assess the robustness of our conclusions that (a) Muslim women have lower employment than those in other religious groups in their own country, (b) virtually none of the individual-level effect of religion is explained by values, and (c) living in a Muslim-dominated society does not deter employment relative to living where there are few Muslims. While exact numbers changed somewhat, these tests convinced us that our substantive conclusions hold across alternate procedures. Results of the tests described below are available upon request (as are any results not shown mentioned elsewhere in the paper).

First, we asked whether our conclusion that gender egalitarian values do not explain why Muslim women have lower employment would be changed if, instead of using the scale, we entered all eight measures in the model. As when we added the scale, when we added these eight variables, the estimated effect of being Muslim did not change non-trivially, indicating that values do not explain the employment gap. We also tried using only the two items that speak most directly to women's employment – whether it harms children, and whether being a housewife is just as fulfilling. Neither of these variables shows a significant effect on employment, so the Muslim effect stays the same when they are added.

We then considered the possibility that our scale measuring Gender Egalitarian Values fails to affect employment and mediate the effect of religion because it is too narrow; maybe more general values associated with modernity and affluence explain Muslim women's lower employment. WVS researchers have found that values about gender cluster together with valuing individual choice in familial and sexual matters (Inglehart, Ponarin and Inglehart 2017). Thus, they created the Emancipative Values scale, which includes gender egalitarian values, whether children should be independent, whether homosexuality, divorce, or abortion are acceptable, and whether people should have a say in decisions. WVS researchers also created a measure of Secular Values, calling respondents more secular if they are less religious, more relativistic, less respectful of authority, and more distrustful of major institutions. Both kinds of values have been argued to enhance women's emancipation (Inglehart and Norris 2003). In two alternative models, we replaced Gender Egalitarian Values with Emancipative or Secular Values. The first, including all the controls in M2 in Table II, shows that holding more Emancipative Values has a positive effect on a woman's employment, so one condition for mediation is met. But the other condition – that, after controls, Muslim women score lower on Emancipative Values – is not met. We ascertained this by regressing Emancipative Values on religion and the controls in M2; probabilities computed from this model show that Muslim women's predicted score is about the same as that of Christians (0.42 for Muslims and 0.40 for Christians on a scale from 0 to 1 with a standard deviation of 0.16). Thus, Emancipative Values does not explain the Muslim-employment relationships. To test whether holding less Secular Values explains Muslim women's lower employment, we add Secular Values to M2 (Table II). This hypothesis is doubly doomed: First, we regressed Secular Values on the variables in M2 and found that Muslims are no less secular than Christians, and, second, Secular Values show no effect on women's employment. Finally, we took just the Disbelief sub-scale (the inverse of importance of religion, identifying as religious, and attending services) of the Secular Values scale and added it to M2. Here, too, there was no evidence of mediation; the effect of being Muslim did not change

non-trivially after controlling for Disbelief, because Muslims show no less Disbelief than any other group and Disbelief has no effect on employment. Thus, differences in these values – Emancipative, Secular, or Disbelief – do not explain Muslim women's low employment.

Another sensitivity test changes the definition of the dependent variable. We considered whether our finding that Gender Egalitarian Values do not explain the effect of being Muslim on employment would change if we changed the outcome of interest to full-time employment (compared to everyone else, whether part-time or not employed). Second, we substituted labour force participation for employment, counting both the employed and those unemployed looking for work as in the labour force and homemakers as out. The main conclusions hold; being Muslim has a negative effect on either outcome, and the Muslim effect does not change non-trivially when values are controlled, revealing that the difference is not explained by values.[18]

Another sensitivity test pertains to our choice to weight countries by their population. We re-estimated models using (a) no weights, or (b) weights such that each country counts equally (retaining the within country weights). The results for no weight and equal weights are very similar. In each case, there is little evidence that Muslim-dominated societies deter women's employment more than societies with few Muslims. The within-country effects of whether a woman is herself a Muslim, while retaining the same sign and significance, are substantially smaller, and the negative effect of being Hindu is now slightly larger than being Muslim. (In M2, Muslims have a probability of employment of 0.31 while for Christians it is 0.56 in our main results, compared to 0.48 versus 0.58 with no weights, for a marginal difference of 0.25 with weights and only 0.10 with no weights.) This implies that the within-country employment gap between Muslims and Christians is larger in larger countries. Thus, weighting affects our conclusions regarding the magnitude of the effect of being Muslim, but not its significance or the direction of difference from any group but Hindus. Our conclusion that values mediate none of the individual effect of being a Muslim is unaltered by whether we weight.

As another sensitivity test, we imputed missing values on all independent variables separately for each nation, using both the dependent and all other independent variables in the imputation equation. Using 'mi' in Stata (15), we did 15 iterations of chained regression equations.[19] Predicted probabilities were virtually unchanged. Results of the analyses analogous to those in Table II changed little; less than 5 per cent of coefficients changed significance levels, and approximate magnitude always remained the same.

As another sensitivity test, we estimated between-within models as linear probability rather than logistic regression models with substantive

conclusions unchanged, and predicted probabilities quite close. Finally, we broke 'Christian' into Catholics, Protestants, and Orthodox. Re-estimation of models showed no significant differences between the groups of Christians; Muslim/Christian comparisons are insensitive to which Christian group is the comparator.

Conclusion

A distinctive contribution of our analysis is to isolate individual (within country) and country-level effects of religion on whether women are employed. We first demonstrated that, around the world, Muslim women are less likely to be employed than women of other religions within their countries; after adjusting for demographic and family characteristics, the probability that a Muslim woman is employed is 0.31, compared to 0.56 for a Christian and 0.52 for those with no religion. Because of the between-within model we have used, which gives us the same estimates on individual-level variables that we would get in a country-fixed-effect model, we can be confident that this conclusion is not biased by failure to explicitly control for effects of characteristics of women's countries in our estimate of the effect of their religion.

Our second unique contribution is to assess how much of the effect of being Muslim on a woman's employment is explained by distinctive values held by Muslims. Prominent scholars, including Inglehart, the head of the World Values Survey project, suggest that Islam encourages conservative gender ideology, and that such values impede Muslim women's empowerment along many dimensions. Inglehart and Norris (2003) argue this but do not actually test whether values mediate the effect of Islam on any objective outcomes, and do not consider women's employment at all. We directly tested whether values mediate the effect of a woman's religion on her employment by estimating models that did and did not control for values. We found no evidence that gender ideology at either the individual or country level explains the relationship between a woman's religious affiliation and whether she is employed. Values do not mediate the effect of being Muslim on women's employment because, even though Muslim women hold somewhat less egalitarian values, perhaps surprisingly, gender egalitarian values have no significant effect on women's employment.

Of course, one cannot prove the null hypothesis that values do not explain the low employment of Muslim women. Moreover, a critic sceptical of our conclusion might argue that values are key to employment but are not well enough measured for our analyses to show their effects, or that a larger sample might show mediation. But precisely because of strengths of the WVS, we believe that if values did explain the low employment of Muslim women, our analysis should have had a good chance of revealing this; it has substantial statistical

power with a sample size of over 25,000 women, and an extensive and rich array of measures of values. Moreover, we have shown in numerous sensitivity tests using different combinations of WVS measures of values that they fail to explain any non-trivial share of the employment gap between Muslim women and other women.

Thus, our analysis suggests that a focus by scholars and members of the public on the conservatism of Islam regarding gender has led to a misplaced emphasis on gender ideologies as candidate explanations for what is holding back Muslim women's employment around the world. There is no doubt that the sacred texts of Islam include conservative beliefs about gender (Ahmed 1992). But this is also true of most of the world's religions, including Christianity; yet, around the world, Christian women have relatively high employment levels.

We also investigated whether there is a contextual effect of a country's per cent Muslim on women's employment. We found that living in a country that is less than 20 per cent Muslim (including the West, Latin American, and East Asia) has no different effect on a woman's employment than living in a country that is 90 per cent or more Muslim (including Pakistan, Iraq, and several countries in the Middle East and North Africa). We recognize that, with data on only 47 nations, an effect of per cent Muslim might exist that we did not have enough statistical power to confirm. Nonetheless, we believe that our conclusion should be provisionally accepted over that of past studies, given that none of them assessed between-country effects on women's employment in a way that properly isolates them from the within-country effects of a woman's own religion. Our conclusion is that, for a given woman of any religion, living in a Muslim-dominated nation does not reduce her chance of employment compared to living in a nation with few Muslims.

We conclude that most of the world's gap in employment between Muslim women and women of other religions comes from within-country differences, not differences between countries. We have further shown that differences between religious groups in their gender ideologies do not explain these gaps within countries. Thus, future analyses should focus on other social processes. It is possible that the explanation varies by region or country. Past research suggests that, in the West, Muslim women and men experience ethnoreligious discrimination and segregation that makes it hard to find jobs (Connor and Koenig 2015; Khattab and Hussein 2017; Khattab and Modood 2015). In Muslim-dominated countries, the small group of non-Muslim women may have high employment because they came to the country to work. These and other hypotheses should be explored in future research.

(Date accepted: April 2018)

Appendix

Table AI: *List of countries in analytic sample, with the proportion Muslim of the sample in each country*

Country	Proportion Muslim of sample
Armenia	0.000
Chile	0.000
Brazil	0.000
Ecuador	0.000
South Korea	0.000
Mexico	0.000
Poland	0.000
Uruguay	0.000
Belarus	0.002
Colombia	0.002
Peru	0.002
Romania	0.002
Sweden	0.003
United States	0.003
Estonia	0.004
New Zealand	0.004
Ukraine	0.007
Zimbabwe	0.010
Thailand	0.016
South Africa	0.018
Slovenia	0.020
Netherlands	0.027
Georgia	0.030
Rwanda	0.044
Philippines	0.057
Trinidad and Tobago	0.075
Russia	0.090
Ghana	0.099
India	0.119
Singapore	0.182
Nigeria	0.400
Cyprus	0.497
Kazakhstan	0.520
Lebanon	0.532
Malaysia	0.642
Krygzstan	0.910
Azerbaijan	0.958
Jordan	0.970
Uzbekistan	0.970
Iraq	0.988
Libya	0.991
Algeria	0.992
Turkey	0.997
Morocco	1.000
Pakistan	1.000
Tunisia	1.000
Yemen	1.000

Notes

1. We are grateful to Malte Reichelt, Paul Allison, two anonymous reviewers, the writing group at NYU Abu Dhabi's Social Research and Public Policy Program, and the Inequality Workshop at NYU New York's Sociology Department for helpful comments.

2. Whether women are employed is important, because employment generally empowers women. It gives single women money to provide for themselves and their children. Married women who earn money are better able to leave unsuitable relationships, and to bargain for what they want in their relationship (Bittman et al. 2003; England and Kilbourne 1990; Sayer, England, Alllison and Kangas 2011; Schoen et al. 2002). Moreover, employment has a positive effect on women's health (Frech and Damaske 2012; Mirowsky and Ross 2003) and on participation in politics (Schlozman, Burns and Verba 1999).

3. Because many Muslims in the West are immigrants, studies done in Western countries control for immigrant status to avoid conflating effects of Islam on women's employment with difficulties of language, lack of assimilation to a host country, or discrimination against immigrants. We do the same.

4. As of 6 April 2018, this book had been cited 2,401 times, according to Google Scholar.

5. Koopmans (2016) used data on Europe to assess whether gender values, along with other 'sociocultural assimilation' measures such as language proficiency and intermarriage with natives, explains differences between non-immigrant Europeans and first- or higher-generation Pakistani, Turkish, Yugoslavic and Moroccan immigrant women. When gender values and all assimilation measures are simultaneously added to his models, the Muslim–non-Muslim difference disappears. But it is not clear how much of the mediation is explained by gender values as opposed to the other measures of assimilation included in the same model.

6. Most papers relevant to our topic that use the WVS say nothing about whether they used weights (Alesina and Giuliano 2010; Algan and Cahuc 2006; Esping-Andersen and Billari 2015; Fortin 2005; Hayo and Caris 2013; Roth and Kroll 2007). One paper (Fernández 2007) uses the within-country weight plus the between-country weight that gives each country the same weight, and Guiso, Sapienza and Zingales (2003) mention weights but do not say what type was used.

7. For sensitivity tests, we consider whether broader values affect women's employment and explain some of the gap between Muslim women and other women. We used the Emancipative Values and Secular Values scales, two measures ranging from 0 to 1. The Emancipative Values scale includes a sub-scale on gender egalitarian values including the first three items in our Gender Egalitarian values scale, an 'autonomy' subscale regarding whether children should be obedient or independent, a 'choice' subscale on whether homosexuality, divorce or abortion are acceptable, and a 'voice' subscale on whether people should have more say about how things are done. Secular Values contains sub-scales for 'defiance' (the inverse of respect for authority, national pride and devoutness), 'disbelief' (the inverse of importance of religion, identifying as religious, and attending services often), 'relativism' (how justifiable it is to fail to pay on public transport, cheat on taxes, and accept a bribe), and 'scepticism' (distrust in the army, the police and the courts). One is considered more secular if one is more defiant, less religious, more relativistic, and more distrustful of major institutions. To foreshadow, we do not find that any of these broader value measures mediates the relationship between religion and women's employment.

8. Treating the proportion of our female sample that is Muslim as the proportion Muslim of all persons in the country entails

the assumption that the proportion is the same for women and men. This is close to true; the correlation between the proportion Muslim of the *women* in a respondent's country and of the *men and women* in her country is 0.99. This is fortunate, since the between-within random effects model requires that the country level proportion Muslim variable be computed from our analytic sample.

9. Allison (2009) and Bell and Jones (2015) both use this model for panel data, where years are nested within individuals. However, it is equally applicable to our case where individuals are nested within countries (Allison 2017).

10. Like all random effects models where nation is the second level, our model adjusts standard errors to reflect the clustering of women within nations.

11. We also test this for our models and find it to be true. When country-means are included, the individual-level coefficients are identical in the original and mean-deviated form.

12. There are two caveats about coefficients on individual variables. First, Allison (2014) points out that the equivalence of coefficients in such a between-within model to those in a country fixed effects model is absolute for linear models, but, while close, not always identical for non-linear models such as logistic regression. We have, however, confirmed for our data that the coefficients on individual variables are almost identical to those obtained if we estimate a model with country fixed effects rather than country means (results not shown). Second, while the fixed effect properties of our models protect coefficients on individual variables from bias due to any omitted country characteristics, this does not protect the coefficients from bias due to omitted individual level variables. This is why we control for family and demographic variables in assessing the effect of being Muslim.

13. We do not report the means for the variables that are country means, because, given our weighting scheme, these means are the same (less rounding error) as the individual level means.

14. Given that a number of past studies (albeit with different specifications) had found significant effects of gender egalitarian values on women's employment in some countries, we initially thought it was odd that our models show no such effect. To investigate this further, we estimated models just like M2 and M3 in Table II but specific to regions – the 'West' (US, Western Europe, Australia), East Asia, South and Southeast Asia, Latin America, MENA, Eastern Europe and Central Asia, sub-Saharan Africa. We found that Gender Egalitarian Values had a significant positive effect in five of the seven regions (all but East Asia and South and Southeast Asia). However, despite this, comparing the predicted probabilities of Muslims and other women from these region-specific models still never showed any non-trivial amount of mediation. The reason for lack of mediation varied by region and included cases where the effect of being Muslim was not significant in M2 and/or the effect of Gender Egalitarian Values was not significant or very small in M3.

15. By starting from Model 2, which controls for education, to assess whether values mediate the effect of a woman's religion, we implicitly assume that education affects values, not vice versa. However, it is possible that being Muslim affects Gender Egalitarian Values, which affects education, which affects employment. In that case, values could mediate the Muslim effect through their effect on how much education a woman gets. To assess this possibility, we examined how the effect of being Muslim in Model 1 of Table II, which excludes education, changes when Gender Egalitarian Values are added. Neither the coefficient describing the effect of being Muslim nor predicted probability differences between Muslims and those in other religions change non-trivially (results not shown). This implies values are not mediating the effect of religion via education. This is true

for Emancipative and Secular Values as well.

16. In M1 we also find the employment of women in nations with 80.01–100 per cent or 0–20 per cent Muslim not significantly different from each other, but both significantly lower than found for those in the intermediate category.

17. Another reason we can be sure that country-level values are not mediators for proportion Muslim is that country-level Gender Egalitarian Values show no significant effect on women's employment.

18. A data limitation of the WVS is that women could report that they were full-time employed, part-time employed, or self-employed. If they chose the latter, they were not asked if they worked full- or part-time. Thus, to do the sensitivity test predicting full-time employment, we tried two different models; one assumed all the self-employed were full-time, and the other assumed they were all part-time. In either case, the two conclusions hold – that Muslim women are less likely to be employed full-time than Christians, and that gender egalitarian values do not explain any of this association.

19. The imputation program would not converge using weights, so we did the analysis with imputed data without weights, and compare it to results without imputation exactly like those in Table II, but without weights.

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