The Role of Education, Religiosity and Development on Support for Violent Practices among Muslims in Thirty-Five Countries

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Despite widespread scholarly interest in values and attitudes among Muslim populations, relatively little work has focused on specific attitudes popularly thought to indicate anti-modern or anti-liberal tendencies within Islam. In this article, we use data from the Pew Research Center from 2008-2012 to examine support for violent practices among Muslims in thirty-five countries. Support for violent practices is defined by three questions on the acceptability of killing apostates, the stoning of adulterers, and severe corporal punishment for thieves. Using multilevel models that capture country-level variability, we analyze the relationship between support for violent practices and education, religiosity, and development. In general, we find that support for violent practices is less common among individuals with more education and less religiosity and who come from more developed countries. However, when we examine variation across countries, we see evidence of substantial heterogeneity in the association of education and religiosity with support for violent practices. We find that education and religiosity are less liberalizing in less liberal countries. Furthermore, there is no association between the effects of education and religiosity within a country. We discuss the implications of these findings more broadly based on prior work on liberal value systems in mostly Western countries. Overall, the variation we observe across countries calls into question a civilizational approach to studying values among Muslim populations and points to a more nuanced multiple modernities approach.

Introduction

In a viral appearance on the HBO Show "Real Time with Bill Maher" in 2014, actor Ben Affleck became embroiled in an unexpected debate with host Bill Maher and fellow guest, Sam Harris, over the allegedly authoritarian and violent tendencies of Islamic doctrine (Casey 2014). Harris, one of the leading figures in the New Atheist movement, argued that Islam "at this moment is the motherlode of bad ideas." To support this view, Maher offered data from a recent poll of Muslims worldwide conducted by the Pew Research Center which showed that "like 90%" of Egyptian Muslims supported death as a punishment for leaving the faith.

Although Maher's figure was factually correct, the statistic is nonetheless misleading. Egyptian Muslims were more supportive of this statement than Muslims in any other country in the Pew study. In contrast, only 0.8% of Muslims in Kazakhstan felt similarly. Among the more than thirty countries in the cited Pew survey as well as a similar one conducted in sub-Saharan Africa, the level of support among Muslims for killing apostates varies uniformly between these two extremes. Substantial variation rather than strict orthodoxy is the key to understanding Muslim responses to this question. For social scientists, this variation then begs a further question - why do Muslims vary so much in their support for such "bad" ideas?

In this article, we take up this question with a more formal analysis of the Pew data. The

data were collected between 2008-12 on Muslims in thirty-five countries representing roughly sixty-five percent of the global Muslim population. From this data, we develop a value construct measuring support for violent practices from three questions on the acceptability of killing apostates, the stoning of adulterers, and severe corporal punishment for thieves. Following prior work on the impact of modernization and development on liberal values in mostly Western contexts, our analysis focuses on the relationship between this value construct, education, religiosity, and development.

Our analysis builds on an extensive literature on values and attitude among Muslims, and complements prior research in two important ways. First, we address specific attitudes that have never been examined in scholarly work, despite their prominence in popular discussions of Islam in the West. Most prior research focuses either on attitudes regarding universalistic and abstract concepts such as support for democracy, political violence, and gender equality, or relies upon large aggregate indices that are driven by a multitude of specific attitudes ranging from acceptance of abortion to whether respondents would be willing to sign a petition (Inglehart 2007).

A focus on universalistic attitudes, however, provides little insight into the specific attitudes and values that differentiate cultural and religious groups. For example, whether a respondent is willing to sign a petition or is supportive of democracy in the abstract may tell us little to nothing about how that respondent feels toward the mandate that apostates should be killed. Yet, the justifiability of killing apostates is a topic that both divides Muslims internally and distinguishes Muslims from other religious groups. It is not simply that Muslims feel differently on this issue in comparison to other religious groups, but rather that the question itself is only intelligible among Muslims.

Second, the large sample of countries here allows us to more systematically examine country-level variation than has been possible in much of the prior work on value systems in Muslim populations. While classic modernization theory expected a fairly uniform pattern of modernization, contemporary scholars expect greater heterogeneity in this process (Eisenstadt 2001). Some have even suggested that change in cultural systems – including values and attitudes – may be largely unconnected to processes of modernization and development (Huntington 1996). To better understand this heterogeneity, we use multilevel models that provide information about country-level variation in support for violent practices and country-level variation in the association between support for violent practices and education and religiosity. We argue that the pattern of variation at the country level provides insight into the role of educational and religious institutions in the process of value change.

Specifically, the degree to which the effects of education and religiosity are associated with the average level of support in a country tells us the degree to which educational and religious institutions simply reflect larger societal norms, as expected by the socialization hypothesis (Selznick and Steinberg 1969). Furthermore, the degree to which the effects of education and religiosity on support for violent practices are positively or negatively correlated across countries tells us whether educational and religious institutions respond to social change in similar or opposing ways.

In summary, our analysis is guided by the following research questions:

1. What is the relationship between support for violent practices and education, religiosity, and level of development across all countries?
2. How does the level of development in a country affect the relationship between support for violent practices and education/religiosity?
3. How is the average level of support for violence in a country associated with the relationship to education/religiosity in that country?

4. How are the country-specific education and religiosity effects on support for violent practices associated with one another?

==THIS MAY NEED TO CHANGE TO BE CONSISTENT WITH HOW WE DESCRIBE RQ'S ABOVE== When we pool results across countries, our analysis largely supports the expectations of modernization theory. Support for violent practices is less common among individuals with more education and less religiosity and who come from more developed countries. However, when we examine variation across countries, we see evidence of substantial heterogeneity in the effects of education and religiosity on support for violent practices. In both cases, we find that the association between education/religiosity is less liberalizing in countries that are more supportive of violent practices overall, suggesting that the role of educational and religious institutions shifts with changes in the larger society. Furthermore, we find little association between the effects for education and religiosity themselves, suggesting that idiosyncratic county-level factors operate independently on religious and educational institutions.

Background

Prior work on values and attitudes in Muslim populations has focused on a variety of such attitudes including support for democracy (Jamal and Tessler 2008; Ciftci 2010, 2013), political violence(Mousseau 2011; Berger 2014), women's rights (Inglehart and Norris 2003), and fundamentalism (Moaddel and Karabenick 2018). While a summary of this work is beyond the scope of this article, such studies are often framed around modernization theory and its closely related cousin, secularization theory, as well as critiques of these theories (Jamal 2006; Moaddel 2007; Ciftci 2010).

Modernization theory treats cultural and value change as largely a by-product of structural development (Lerner 1958; Parsons 1964; Inkeles and Smith 1974). Industrialization and economic growth bring about greater differentiation in the occupational workforce, urbanization, and higher standards of living (Rostow 1960). All of these factors contribute to a shift from conservative and authoritarian values to liberal values that promote individual autonomy and self-determination (Parsons 1964). Concomitantly, rationalization, individualism, and cultural pluralism reduce the significance of religious institutions in favor of secular institutions, diminishing the role of religion in social life (Wilson 1966; Bruce 2011; Emerson and Hartman 2006).

For this article, we focus on two important themes within this framework. First, scholars often treat education and religiosity as key variables at the individual level connected to processes of modernization and value change (Scheepers et al. 2002). Second, contemporary critiques of modernization theory have often pointed to the heterogeneity and variation in the experience of development across countries rather than its uniformity and standardization (Smith 2008).

The Role of Education and Religiosity in Value Change

Education is often seen as a crucial fulcrum at the individual level for processes of modernization (Meyer 1977; Chabbott and Ramirez 2000; Depaepe and Smeyers 2008). In terms of value change, research has repeatedly shown that education is positively related to liberal values (Hyman and Wright 1979; Bobo and Licari 1989; Weakliem 2002; Kingston et al. 2003).

While these results are broadly consistent with modernization theory, significant debate has persisted on how to understand this finding. The development perspective holds that education is linked to fundamental cognitive changes in the way people view the world that leads to more tolerance and less authoritarianism (Adorno 1950; Mcclosky and Brill 1983). On the other hand,

the socialization perspective argues that educational institutions socialize individuals to the prevailing norms of a society (Selznick and Steinberg 1969; Jackman and Muha 1984; Phelan et al. 1995). Therefore, the liberalizing effects of education will only exist in countries where liberal values are commonplace. Consistent with the socialization perspective, cross-national results in Western countries show that the positive effect of education is greatest in countries with more liberal values overall (Weil 1985).

Social scientists have often treated religiosity as the anti-modern counterweight to education (Schwadel 2015). High levels of religiosity are seen to indicate commitments to conservative and authoritarian values (Rokeach 1969a,b; Wilcox and Jelen 1990, p. 27). Although there is significant heterogeneity across countries, research has shown that religious identification tends to be associated with support for right-wing parties and more conservative attitudes (Wilcox and Jelen 1990; Kelley and Evans 1995; Scheepers and Van Der Slik 1998; Karpov 2002; Norris and Inglehart 2011, pp. 201-212).

However, the relationship between religiosity and conservative values may be partially tautological depending on how religiosity is defined. Given that the core religious texts of the major Western religions are frequently conservative and authoritarian, it is not surprising that strong believers with a tendency for theological literalism would themselves be more conservative and authoritarian. Therefore, in analyzing the effect of religiosity on values and attitudes, it is imperative to distinguish the effects of theological conservatism and literalism from the effects of variables that measure how important religion and religious practices are in a person's life.

Although less widely acknowledged than for the case of education, the effect of religiosity may similarly be mediated by the role that religious institutions play as socialization agents (Scheepers et al. 2002). In particular, religious institutions may respond to the prevailing norms and beliefs in a society in one of two ways. Greater liberalism within a society may dampen the conservative effect of religiosity on liberal values or it may alternatively provoke a greater defense of religious values and increase the association between religiosity and conservative values (Kelley and De Graaf 1997).

Heterogeneity and Multiple Modernities

Modernization theorists have viewed modernization as a fundamental process that would evolve similarly across countries, ultimately producing a global cosmopolitan society through the broad convergence in social and cultural systems (Fukuyama 1992). Many scholars today criticize this view for privileging the historical experience of the West as a universal model. These "multiple modernities" scholars argue that while modernity will likely lead to changes in social and cultural systems, these changes will materialize in multiple dissimilar and non-convergent forms because countries develop within various historical and cultural contexts (Hefner 1998; Eisenstadt 2000; Kamali 2006; Casanova 2011).

In the present study, consideration of such heterogeneity is relevant to studying values in Muslim populations in two ways. First, the "civilizational" argument proposed by Huntington (1996) suggests that heterogeneity across countries will largely correspond to civilizational blocs defined primarily along religious lines. According to Huntington, Western liberal traditions such as individualism, support for pluralism, and secularism are not intrinsic to the process of modernity but rather a specific inheritance of Western civilization (Huntington 1996, pp. 69-72, 114). If this is the case, then we should not expect to see that development, education, and religiosity have the same effect on values and attitudes in Muslim societies as those observed elsewhere.

Specifically, Huntington argued that the primary agents for the contemporary rise of Islamic fundamentalism were an urban and educated middle class (Huntington 1996, pp. 112-113). Rapid

economic growth and urbanization dislocate individuals from traditional structures of social support and this dislocation is experienced most intensely by upwardly mobile, young, urban, and educated individuals. Therefore, contrary to research primarily in Western contexts showing a positive relationship between liberal values and education, Huntington expected a negative relationship in Muslim societies.

Second, and contrary to the expectation of both classic modernization theory and the civilizational argument, we may observe significant variation in how educational and religious institutions affect values across Muslim countries. These differences may reflect a wide variety of societal influences, some of which are historical and idiosyncratic. Nonetheless the patterning of such variation across countries may be informative. The expectations of socialization theory discussed above are one example of such patterning. We discuss further expectations below.

Analytical Approach and Theoretical Expectations

Using the Pew data detailed below, we build a model that can simultaneously measure the effects of education, religiosity, and development on support for violent practices and account for heterogeneity in these effects across countries. Specifically, we use a random intercept and random slope multilevel model, in which the intercepts and the slopes for the educational attainment and religiosity variables are allowed to vary across countries. Our general model specification is:

$$y_{ij} = \beta_{0j} + \beta_{1j}(\texttt{religiosity}_{ij}) + \beta_{2j}(\texttt{education}_{ij}) + \sum_{k=1}^{K} \lambda_k x_{ijk} + \epsilon_{ij}$$

where y_{ij} is the score on the measure of support for violent practices (detailed below) for the ith respondent in the jth country. The intercept β_{0j}, and the two slopes of β_{1j} and β_{2j} on religiosity and education, respectively, are allowed to vary by country. The model also includes K additional independent control variables x_{ijk} that are not allowed to vary by country. ϵ_{ij} is an individual-level error term.

To complete the multilevel model structure, the three country-varying parameters have their own linear equations:

$$\beta_{0j} = \gamma_{01} + \gamma_{02}\texttt{development}_j + \delta_j$$
$$\beta_{1j} = \gamma_{11} + \gamma_{12}\texttt{development}_j + \eta_j$$
$$\beta_{2j} = \gamma_{21} + \gamma_{22}\texttt{development}_j + \tau_j$$

The structure shown here is for the fullest model in which we include a country-level measure of development (detailed below) that predicts the intercept and the two slopes. The γ_{02} term measures the association between development and average support for violent practices in a country. The γ_{12} and γ_{22} terms measure how development in a country affects the individual-level relationship between support for violent practices and either education or religiosity, respectively.

The error terms δ_j, η_j and τ_j are country-level random effects that measure country-level heterogeneity in terms of the intercept and two slopes. Because the correlation of these random effects is important for our understanding of this heterogeneity across countries, we place no restrictions on the correlation between these error terms in the estimation of the model.

Given the model outlined above, we develop several expectations about the estimates it will produce. These expectations relate to several different parameters in the model. First, we lay out the expectations of the effects of development at the country level (γ_{02}) as well as the average effects of religiosity (γ_{11}) and educational attainment (γ_{21}) across countries. Modernization theory

expects that overall development at the country level and educational attainment at the individual level will be negatively associated with support for violent practices, while religiosity will be positively associated with support for violent practices.

Second, we also consider how development might affect the relationship between support for violent practices and religiosity (γ_{12}) or educational attainment (γ_{22}). We consider two possibilities for each variable. First, modernization may produce a "flattening" effect in which overall development reduces the association as individuals become more liberal regardless of education or religiosity. Alternatively, modernization may produce a "steepening" effect in which the association gets larger as development increases and differences in values grow in magnitude between individuals of different educational attainment or religiosity.

Finally, we explore the heterogeneity in the effects of education and religiosity across countries by an examination of the correlation between the random components of the model. These random components provide estimates of how specific countries deviate from the global averages. We analyze these correlations in two ways. First, we analyze how the country-level variation in the association between support for violent practices and religiosity (η_j) or educational attainment (τ_j) is correlated with the overall average level of support for violent practices within that country (δ_j). These correlations tell us the degree to which these associations increase or decrease with the overall sentiment of the country. They therefore offer a test of the socialization hypothesis which would expect a positive correlation. If this is the case, it suggests that educational and religious institutions move in step with popular attitudes.

Second, we analyze the correlation between the religiosity (η_j) or educational attainment (τ_j) random effects themselves. This correlation tells us the degree to which unmeasured factors producing heterogeneity in these effects across countries operate similarly or differently on educational and religious institutions. We consider three possibilities for this correlation. If the correlation is positive, then we observe a process of synchronicity in which educational and religious institutions are responding in the same way to other societal influences. Alternatively, if the correlation is negative, then we observe a process of polarization between education and religious institutions, in which other societal influences push educational and religious institutions in opposite directions. A third possibility is that the correlation is zero, suggesting that the societal changes affecting these institutions operate in independent and unconnected ways.

Data and Measures

Data for this analysis come primarily from two cross-national surveys conducted by the Pew Research Center's Religion and Public Life project. The first survey, *Tolerance and Tension: Islam and Christianity in Sub-Saharan Africa*, sampled more than 25,000 respondents in nineteen countries in sub-Saharan Africa in 2008-2009. The second survey, *The World's Muslims: Religion, Politics and Society*, sampled more than 30,000 Muslim respondents in twenty-six countries throughout the world in 2011-2012. The questionnaires for the surveys are very similar, although additional questions were added and some other questions were re-worded in the second survey. We focus our analysis only on questions that are consistent across both surveys.

We combine Muslim respondents from these surveys together to construct our full analytical dataset. Five sub-Saharan African countries (Democratic Republic of Congo, Botswana, Rwanda, South Africa, and Zambia) were excluded from analysis because of minuscule (2% or less) Muslim populations. Four other countries were excluded because key questions for the analysis were not asked in those countries (Iran, Morocco, Mozambique, and Uzbekistan). Finally, Thailand was excluded because the sample was not nationally representative. Figure 1 shows a map of
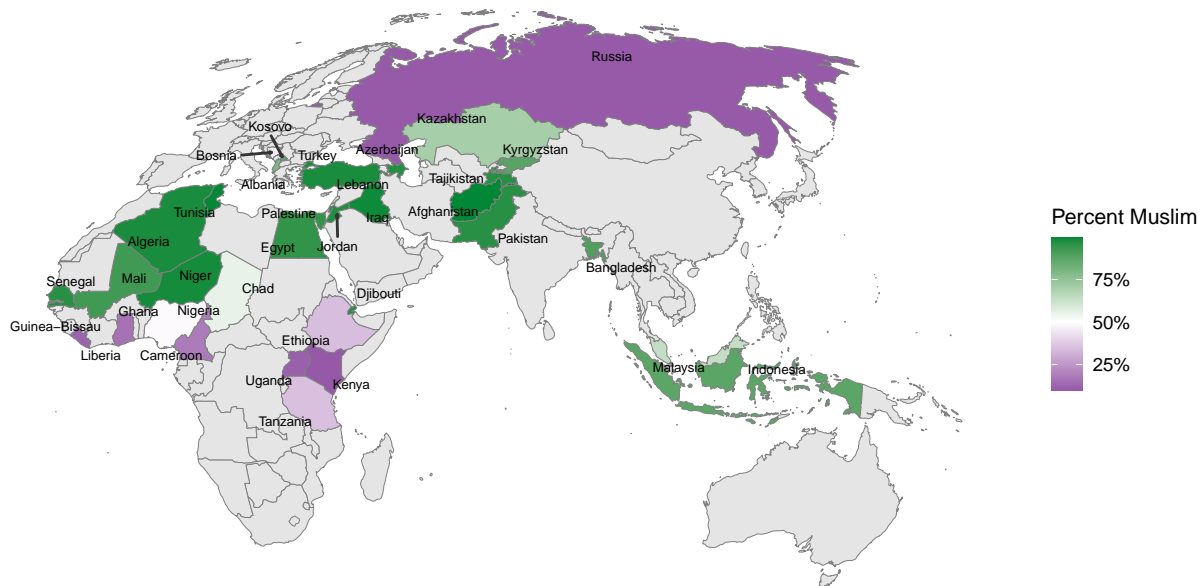
Figure 1. (#fig:figure_world_map)Map showing countries included in the analysis by percent Muslim. Mollweide projection used to preserve area proportions.

the countries included in our analysis with shading by the percent Muslim in each country. The countries in the sample cover all regions of the world with substantial Muslim populations. In total, we use data from 35 countries and 35,400 respondents. The average sample size per country was 1,011 respondents with a minimum size of 245 respondents in Cameroon and a maximum size of 1,918 respondents in Bangladesh.

Because the country-level surveys were designed to be nationally representative, the data should be representative of within-country populations, but not necessarily the global Muslim population. Collectively, the countries in the sample roughly account for sixty-five percent of the global Muslim population (Pew Forum on Religion and Public Life 2012), but some important countries both symbolically (e.g. Saudi Arabia, Iran) and by population weight (e.g. India) are absent.

For the dependent variable and several other variables in the analysis, we considered constructs made up of multiple individual items. We developed all constructs through an exploratory factor analysis. Furthermore, we tested both the reliability and measurement invariance of constructs across countries (Van De Vijver and Leung 2021). Because of the ordinal nature of all items involved in the construct, we use polychoric, rather than pearson, correlation to estimate the α measure of reliability and to conduct exploratory factor analysis (Gadermann et al. 2012). Similarly, we use item response theory (IRT) models rather than multigroup confirmatory factor analysis to test for measurement invariance because IRT is better suited to analyze categorical ordinal outcomes (Tay et al. 2015). Because frequentist test statistics are likely to identify even trivial deviations from invariance in a sample this large (Van De Vijver and Leung 2021, p. 106), we use the Bayesian Information Criterion to evaluate IRT models that test sequentially for metric and scalar invariance.

Measuring Support for Violent Practices

We develop our measures of support for violent practices based on multiple questions that were fielded in both surveys. Respondents were asked yes/no questions for whether they favored (a)
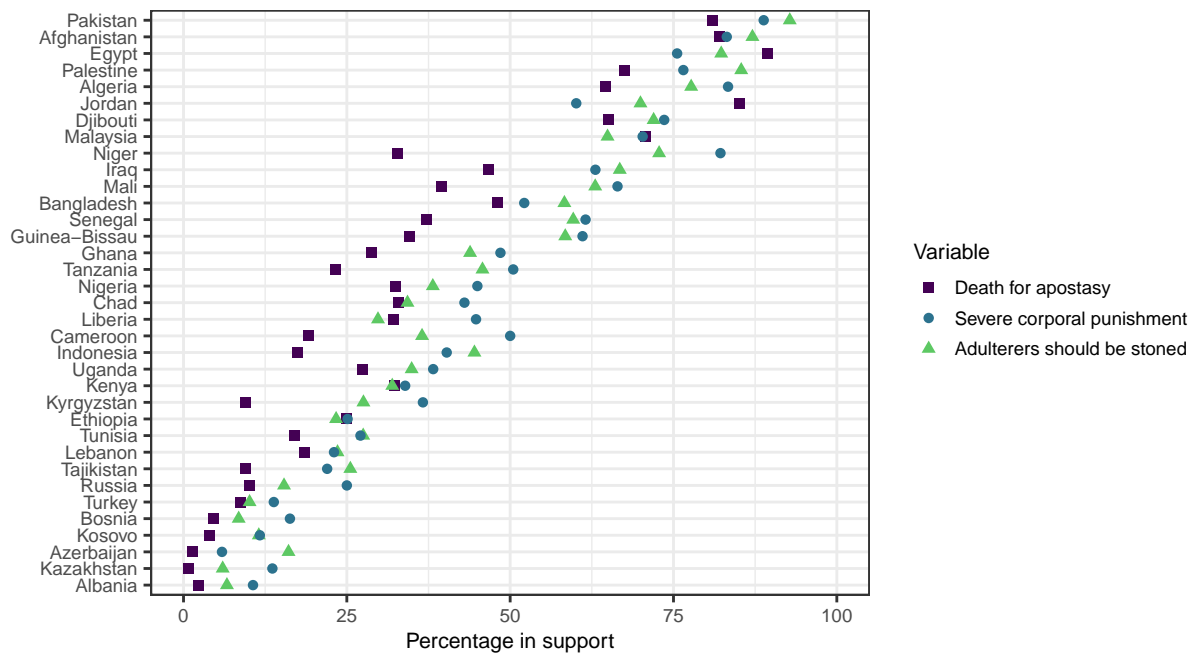
Figure 2. (#fig:country_averages)Dotplot of percentage of Muslim respondents who support three different questions measuring support for violent practices for the violation of norms. Countries are ordered from lowest to highest average level of support across all three questions.

the death penalty for people who leave Islam, (b) harsh punishments like whipping and cutting off hands for crimes like theft and robbery, and (c) stoning people who committed adultery. We also considered a likert-scale question on the justifiability of violence against civilians in defense of religion, but this variable had a much weaker correlation with the three other measures and so we dropped it from analysis. We constructed the dependent variable for our models by counting the number of favorable responses to each of the remaining questions and then re-scaling this tally to have a mean of zero and a standard deviation of one.

Figure 2 shows the average level of support by country for the three items that make up our measure of support for violent practices. Countries tend to have similar levels of support for all items within the construct, but the variation across countries is substantial. Support for these values ranges from virtually no support in countries such as Azerbaijan and Kazakhstan to nearly universal support in countries such as Afghanistan and Egypt.

Globally, these three measures were highly correlated with one another ($\alpha = 0.93$) and exploratory factor analysis indicated that a single scale worked well for all three variables. At the country level, α was above the standard cutoff for good reliability of 0.7 for all countries except for Jordan and Egypt, which still had a reasonable $alpha$ values of 0.68 and 0.62, respectively.

When testing for measurement invariance, we found some evidence of metric invariance. In analyzing the details, it was apparent that this metric invariance was caused by a different pattern of effects for the death for apostasy variable for Egypt and Jordan. Removing either of these countries led to a model fit that supported metric invariance. In short, the correlation between this item and the other two items is weaker in Egypt and Jordan than in the remaining countries. Additionally, Figure 2 shows that the ordering of overall support for each item is different in Egypt and Jordan than in the remaining countries, with the highest support for death for apostasy whereas in the remaining countries support is the lowest. These results suggests that as support for this item approaches universality in these countries, its correlation with remaining items declines. Welzel

et al. (2021) note that this issue is a common problem in analyzing measurement invariance when group-level item means vary across the entire range of the distribution. We have decided to retain Egypt and Jordan in the full analysis, but some caution should be taken in interpreting the effects within these countries.

Further tests indicated scalar invariance in this measure. Scalar invariance is an extremely common issue in cross-national research (Meitinger et al. 2020), but the literature currently offers little guidance in how to resolve such problems. While scalar invariance technically indicates that means across groups are not directly comparable, it may in some cases have a minimal impact on such comparisons. As a sensitivity test, we estimated identical multilevel logit models on each of the items of our construct and compared the fixed and random components of each model to one another and to the model using the construct itself. Overall, both the fixed and random components are highly consistent across all models and none of our substantial conclusions would be modified by use of the separate models. Importantly, the random intercepts across the separate logit models (which measure the mean value in a country) are correlated with the random intercepts of the construct model with an r greater than 0.95 in all three cases. Therefore, on the principles of data reduction and parsimony, we use the construct-based model for the remainder of the analysis here. The results of the sensitivity analysis are provided in the supplementary materials.

Measuring Development

At the country-level, we considered two different possibilities for a measure of overall development. Gross domestic product (GDP) per capita is often used as a purely economic measure of the level of development. On the other hand, the Human Development Index (HDI), produced by the United Nations Development Program, offers a more holistic measure of development. The HDI considers three separate components in its overall measure: life expectancy at birth, overall educational attainment, and gross national income per capita. These three components are combined into a single composite index.

These two measures are highly correlated among the countries used in the analysis ($r = 0.78$). All models reported here use the HDI. We chose the HDI as our primary measure of development because it allows us to parsimoniously capture mutiple dimensions of development. As a sensitivity analysis, we constructed identical models with a logged GDP per capita measure. The results were similar, although the logged GDP variable tended to produce slightly smaller overall effects than HDI. The models from this sensitivity analysis are available in the supplementary materials.

Independent Variables

Education is a key measure in our analysis, but the categories used for educational attainment are country-specific, making it challenging to include in a cross-national analysis. Educational attainment was reported as a three-category system for the sub-Saharan African countries and relative to country-specific educational systems for the remaining countries. These country-specific systems ranged from a high of twelve distinct categories to a low of five distinct categories. We harmonized these measures by creating a quantile score based on the distribution of the educational attainment variable within each country. Each respondent was assigned a midpoint value on the quantile score between their given level of education and the next lowest level (or zero when the respondent was in the lowest category). This quantile score measures a respondent's relative position on the distribution of education within a country. We also considered a three-category measure of absolute educational attainment consisting of no secondary education, at

least some secondary education, and post-secondary education that could be used for all countries. Sensitivity tests showed that these models produced similar results, but the BIC model fit statistics strongly preferred the educational quantile measure. Full results are available in the supplementary materials.

We measure each respondent's religiosity using a concept that combines the experiential and ritualistic dimensions of Glock and Stark's (1965) framework. Our goal is to isolate the importance of religion in a person's daily life as measured by their personal experience and practice of it from specific ideological beliefs and knowledge about the religion. We considered a three-item construct including a question on the importance of religion in a person's life, the frequency of mosque attendance, and the frequency of prayer. Across the entire sample, this three item construct had a reasonable α of 0.78. However, country-level α values for this religiosity construct varied considerably and fourteen countries had an α below 0.6. Therefore, we decided to include each of the three variables measuring religiosity separately into the models. As the results below will show, each variable had a similar average effect on the outcome variable, but the pattern of random country-level slopes was substantially different for each variable.

Prior research has shown that religiosity is positively associated with theological literalism, conservativism, and fundamentalism among Muslims (Moaddel and Karabenick 2018). Individuals with more literal and theologically conservative beliefs are likely to have more anti-liberal values simply because some of the measures used for the dependent variable can be argued to have scriptural justification. To control for this potential confounding influence in our analysis, we tested a separate construct that measured theological conservatism and literalism in a person's actual beliefs. We considered questions on whether a person must believe in god to be moral, whether Islam is the one true faith, and whether there was only one way to interpret religious teachings. However, these questions did not hold up well as a single construct ($\alpha = 0.56$). Therefore, to capture theologically conservative beliefs and practices, we included all three questions as separate independent variables in our models.

We include a variety of other individual-level variables in all models. We include variables for the age (five-year brackets), gender, income, and urbanicity of the respondent. Income was reported in loosely defined quartiles (i.e. four categories from "low" to "high") for the sub-Saharan African countries and brackets that were specific to each national currency for remaining countries and so we use a method identical to that for education to create income quantile scores. The country-specific income brackets ranged from a high of seventeen distinct categories to a low of five distinct brackets.

We also include a measure of the respondent's self-reported denomination. The primary division here is between Sunni and Shia, but many respondents also identified in a non-denominational way (e.g. "just a Muslim") which we retain as a separate category. We combine all other denominations into a single "other" category. A separate item asked respondents whether they identified with any Sufi orders. We code this as a binary variable that is distinct from the denominational categories.

We also control for non-religious ideological views. We constructed two indices of socially conservative views based on the respondent's answers regarding the acceptability of several stigmatized behaviors. Exploratory factor analysis suggested a two factor solution that divided the items into those associated with death (euthanasia, suicide, abortion; $\alpha = 0.82$) and those associated with sex (prostitution, homosexuality, and premarital sex; $\alpha = 0.88$) provided the best fit. This two factor solution also was metrically invariant across countries, although not scalar invariant. We also include two questions that gauge respondents' attitudes toward Western movies, music, and television. Finally, we include questions on whether religion is in conflict with modernity, and whether the country would be better off with a strong leader rather than a democratic

government.

Multiple Imputation

We use multiple imputation to address missing values in the dataset. We imputed five complete datasets using multivariate imputation by chained equations (van Buuren and Groothuis-Oudshoorn 2011). We generally did not impute values when a question was missing because it was not asked in a particular country, but we made two exceptions to this rule. Questions regarding the moral acceptability of prostitution, premarital sex, and homosexuality were not asked in Afghanistan and the two questions about the morality of western movies, music, and television were not asked in Lebanon. In both of these cases, we imputed values in order to maximize country sample size. The percentage of values imputed ranged from a high of 11.4% for the question on whether religion was in conflict with modernity to 0.7% for the respondent's age. We included dependent variables in the imputation procedure, but drop cases that were missing on the dependent variable. After this exclusion, the sample size of our anlalytical dataset is 31,528 respondents.

Scaling Variables

To facilitate comparisons between variables in the models, all quantitative variables have been re-centered on the mean and re-scaled. The dependent variable has been divided by its standard deviation. Independent variables have been divided by twice their standard deviation. The estimated effects of quantitative variables shown throughout this article can be interpreted as the expected change in standard deviations of the dependent variable for an increase of two standard deviations in the independent variable. Dividing by twice the standard deviation makes the slopes of quantitative variables in linear models roughly comparable to the effects of categorical dummy variables (Gelman 2008).

Results

Table 1 shows the results of three multilevel models predicting support for violent practices. Model 1 includes all independent variables, but no interaction term. Model 2 interacts the country-level HDI measure with the individual-level education and religiosity measures. Based on the results of Model 2, Model 3 removes the interaction between HDI and religiosity.

All of the independent variables are highly consistent across models. Although we focus primarily on the effects of education, religiosity, and development, we first briefly summarize the effects of other variables on support for violent practices. Income has little effect on support for violent practices. Similarly, we observe no difference between men and women in support for violent practices. Age differences are relatively small and do not demonstrate a consistent trend when comparing younger to older respondents. Rather, the results suggest specific cohort effects where the cohorts between ages 35-44 and 50-59 are less supportive of violent practices than adjacent cohorts. Urban residents are less likely to support violent practices than those in rural areas. In terms of denomination, Sunnis are the most supportive of violent practices and Shias the least supportive, with other denominations and "just a Muslim" respondents falling in between. Self-identifying as a member of a Sufi order is associated with greater support for violent practices. Theological conservatism is generally associated with more support for violent practices, but the strongest effect among these items is the belief that Islam is the one true faith. Respondents with more anti-Western views were also more supportive of violent practices. Preferences for democ-

Table 1. Results from multilevel models predicting support for violent practices for violating norms among Muslims.

	Model 1	Model 2	Model 3
Intercept	$-0.205\ (0.084)^{*}$	$-0.196\ (0.085)^{*}$	$-0.200\ (0.084)^{*}$
Mosque attendance	$0.111\ (0.022)^{***}$	$0.107\ (0.023)^{***}$	$0.107\ (0.022)^{***}$
Importance of religion	$0.089\ (0.032)^{**}$	$0.084\ (0.033)^{*}$	$0.084\ (0.032)^{**}$
Frequency of prayer	$0.155\ (0.034)^{***}$	$0.164\ (0.034)^{***}$	$0.164\ (0.034)^{***}$
Education quantile	$-0.060\ (0.022)^{**}$	$-0.057\ (0.021)^{**}$	$-0.057\ (0.021)^{**}$
Income quantile	$-0.009\ (0.010)$	$-0.009\ (0.010)$	$-0.009\ (0.010)$
Age (ref. 18-24)			
Age 25-29	$0.006\ (0.014)$	$0.006\ (0.014)$	$0.006\ (0.014)$
Age 30-34	$-0.008\ (0.015)$	$-0.008\ (0.015)$	$-0.008\ (0.015)$
Age 35-39	$-0.043\ (0.016)^{**}$	$-0.043\ (0.016)^{**}$	$-0.043\ (0.016)^{**}$
Age 40-44	$-0.054\ (0.016)^{***}$	$-0.054\ (0.016)^{**}$	$-0.054\ (0.016)^{**}$
Age 45-49	$-0.033\ (0.018)$	$-0.033\ (0.018)$	$-0.033\ (0.018)$
Age 50-54	$-0.047\ (0.019)^{*}$	$-0.047\ (0.019)^{*}$	$-0.047\ (0.019)^{*}$
Age 55-59	$-0.061\ (0.021)^{**}$	$-0.060\ (0.021)^{**}$	$-0.060\ (0.021)^{**}$
Age 60 and over	$-0.025\ (0.019)$	$-0.024\ (0.019)$	$-0.024\ (0.019)$
Female	$-0.011\ (0.010)$	$-0.011\ (0.010)$	$-0.011\ (0.010)$
Urban	$-0.048\ (0.009)^{***}$	$-0.048\ (0.009)^{***}$	$-0.048\ (0.009)^{***}$
Denomination (ref. Sunni)			
Shia	$-0.130\ (0.020)^{***}$	$-0.129\ (0.020)^{***}$	$-0.129\ (0.020)^{***}$
Other denomination	$-0.050\ (0.030)$	$-0.049\ (0.030)$	$-0.049\ (0.030)$
Just a Muslim	$-0.087\ (0.012)^{***}$	$-0.087\ (0.012)^{***}$	$-0.087\ (0.012)^{***}$
Sufi (ref. non-Sufi)	$0.064\ (0.014)^{***}$	$0.065\ (0.014)^{***}$	$0.065\ (0.014)^{***}$
Believe in god to be moral	$0.035\ (0.012)^{**}$	$0.036\ (0.012)^{**}$	$0.036\ (0.012)^{**}$
Islam is the one true faith	$0.150\ (0.013)^{***}$	$0.150\ (0.013)^{***}$	$0.150\ (0.013)^{***}$
One way to interpret relig. teachings	$0.015\ (0.010)$	$0.015\ (0.010)$	$0.015\ (0.010)$
Religion in conflict with modernity	$0.077\ (0.010)^{***}$	$0.076\ (0.010)^{***}$	$0.076\ (0.010)^{***}$
Dislikes western culture	$0.119\ (0.010)^{***}$	$0.119\ (0.010)^{***}$	$0.119\ (0.010)^{***}$
Western culture is immoral	$0.034\ (0.010)^{***}$	$0.034\ (0.010)^{***}$	$0.034\ (0.010)^{***}$
Prefers strong leader to democracy	$0.018\ (0.010)$	$0.018\ (0.010)$	$0.018\ (0.010)$
Socially conservative scale, death	$-0.034\ (0.011)^{**}$	$-0.034\ (0.011)^{**}$	$-0.034\ (0.011)^{**}$
Socially conservative scale, sex	$-0.011\ (0.011)$	$-0.010\ (0.011)$	$-0.011\ (0.011)$
Human development index (HDI)	$-0.330\ (0.130)^{*}$	$-0.238\ (0.169)$	$-0.279\ (0.134)^{*}$
HDI x Mosque attendance		$0.002\ (0.046)$	
HDI x Importance of relig		$0.031\ (0.066)$	
HDI x Frequency of prayer		$0.014\ (0.070)$	
HDI x Education quantile		$0.077\ (0.042)$	$0.079\ (0.029)^{**}$
N (individual)	31528	31528	31528
N (country)	35	35	35
BIC	72173	72224	72182

$^{***}p < 0.001;\ ^{**}p < 0.01;\ ^{*}p < 0.05$

Notes: All models include random country-level intercepts and random slopes for education and religiosity variables. All quantitative variables are divided by twice their standard deviation for comparability. Results are based on five complete datasets with imputation for missing values.

racy has little to no association with support for violent practices. Social conservatism is not positively associated with support for violent practices, and may in fact be negatively associated.

The three measures of religiosity are all strongly correlated with support for violent practices. In fact, frequency of prayer had the strongest association with support for violent practices among the individual-level variables and the other two measures of religiosity also exhibited some of the strongest associations. This strong association holds even when holding constant a variety of demographic and ideational variables. On average, across countries, Muslims who are more religiously observant and devout are more likely to support violent practices and this result is not simply a function of demography, theological conservatism, social conservatism, or anti-Western sentiment.

The education quantile measure has a substantial negative association with support for violent practices, but the magnitude here is much smaller than for the religiosity variables. A two standard deviation increase in the education quantile is associated with roughly a 0.06 standard deviation reduction in the support for violent practices scale.

The results for the HDI measure in Model 1 also shows that the level of development in a country is strongly negatively associated with support for violent practices in that country. A two standard deviation increase in the HDI is associated with a 0.330 standard deviation decrease in a country's average on the support for violent practices scale. Individuals from more developed countries are much less supportive of violent practices, on average.

In Model 2, we allow for an interaction between HDI and our measures of religiosity and education. Effectively, we are allowing the association between religiosity/education and support for violent practices to vary by the level of HDI. There is little evidence of variation in the effect of any of the religiosity variables by HDI. However, the effect of education on support for violent practices varies substantially by HDI. This results is not statistically significant in Model 2, but as Model 3 shows this is largely a result of multicollinearity problems with the other interaction terms in Model 2. When these terms are removed in Model 3, the standard error on the education x HDI interaction is reduced substantially and the result is statistically significant.

In general, the results of Model 2 and Model 3 suggest a "flattening" effect in which the negative association between education and support for violent practices gets weaker as HDI increases. However, the effect is so large that "flattening" does not adequately account for the strength of this interaction term. In countries that have HDI one standard deviation higher than the mean, the model expects the association to reverse direction and become positive. Thus, education is expected to be positively associated with support for violent practices in the most developed countries.

We now turn to the random country effects estimated by the models. The variance and correlation of the random intercepts and slopes country effects is shown in Table 2. All of the slopes varied substantially across countries, but the largest variation was for the questions on whether religion is important and the frequency of prayer.

Before turning in more detail to the correlation between the random components, we first plot the random slopes for all countries in Figure 3. The substantial variation in the effects of these variables across countries is easy to see on the figure. As expected for most countries the religiosity slopes are positive and the education slopes are negative. However, we do see a small number of countries with estimated slopes in the opposite direction for all four variables. The number of countries with negative slopes for mosque attendance and frequency of prayer is small and the magnitude of these negative slopes is small. For the question on whether religion is important, we see more negative effects and a few (Kenya, Niger, Guinea-Bissau, and Kosovo) that are more substantial in magnitude. In these countries, individuals for whom religion is more important have are less supportive of violent practices.
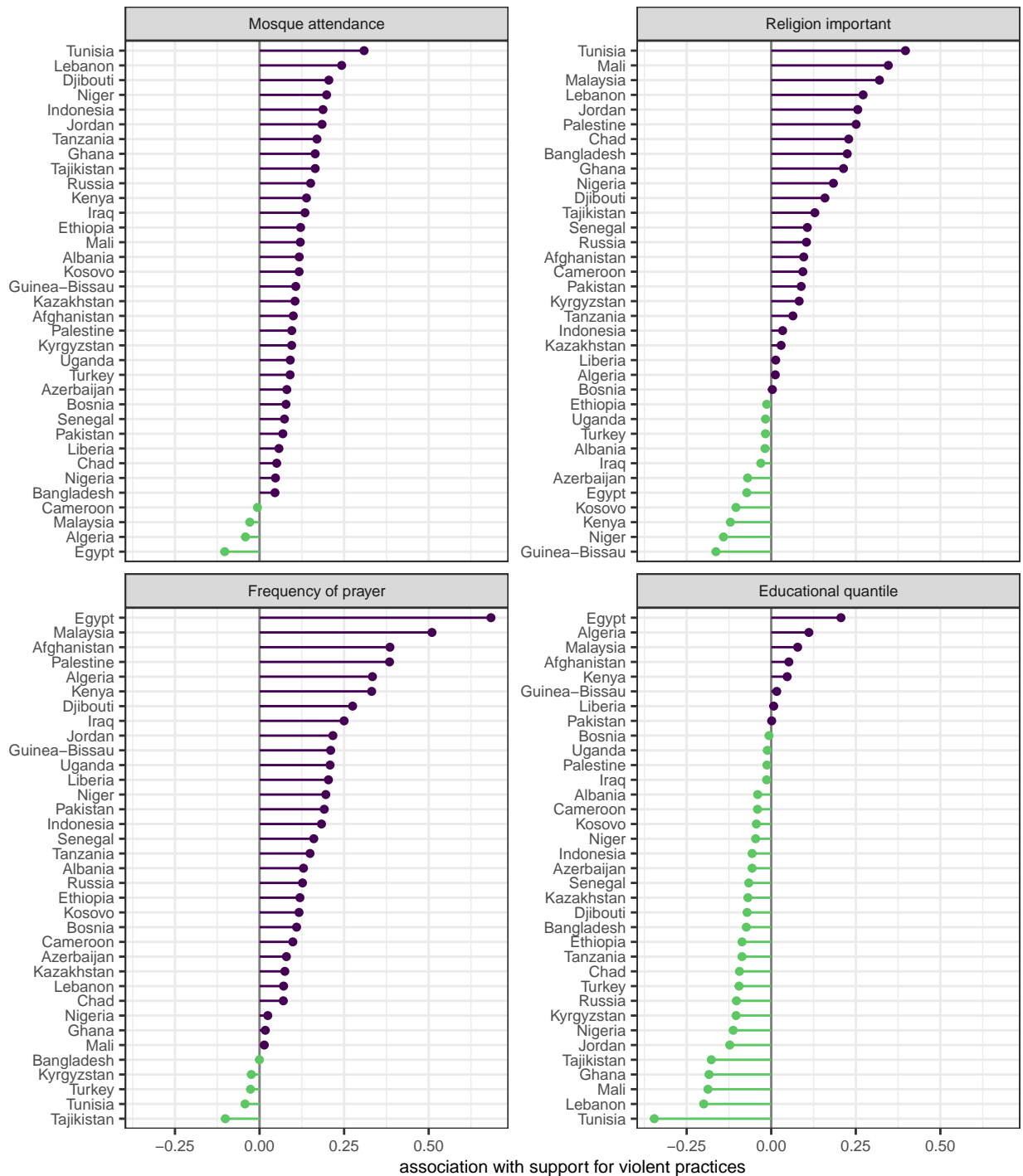
Figure 3. Lollipop plots of the association between religiosity/education and support for violent practices in each country. Values are based on random slopes from Model 3 of Table 1. Each panel is ordered from largest to smallest association. Values are color-coded by direction.

Table 2. Standard deviation and correlation between random intercepts and slopes for religiosity and education.

	SD	Correlation			
		Intercept	Mosque attendance	Religion important	Frequency of prayer
Intercept	0.488				
Mosque attendance	0.099	-0.253			
Religion important	0.163	0.188	0.116		
Frequency of prayer	0.177	0.629	-0.380	-0.218	
Educational quantile	0.108	0.429	-0.656	-0.515	0.758

Note:

Correlation coefficients based on Model 3 of Table 1

Six countries (Egypt, Algeria, Malaysia, Afghanistan, Kenya, Guinea-Bissau, Pakistan, and Liberia) have estimated slopes that indicate a positive association between educational quantile and support for violent practices. The positive effects are negligible for Guinea-Bissau, Pakistan, and Liberia, but substantial for the remaining countries. In these countries, individuals with more education tend to be more supportive of violent practices.

Tunisia stands out as an outlier in several places in Figure 3. The negative effect of education on support for violent practices is the largest in Tunisia and almost double that of its nearest neighbor, Lebanon. Similarly, mosque attendance and the importance of religion had the most positive effects on support for violent practices among all countries.

Figure 3 displays the random slopes themselves, but we also want to better understand how these random slopes are correlated with each other and with the random intercept. Table 2 shows the correlations between the random components. Both slopes are positively related to the intercept. We begin by looking at the correlation of each of the random slopes with the random intercepts. This correlation tells us how the average level of support for violent practices in each country is related to the effects of education/religiosity on that support. To explore these correlations in more detail, Figure 4 plots these relationships using a scatterplot.

As Table 2 indicated, there is a substantial positive correlation ($r = 0.429$) between education slopes and the average support for violent practices in a country. In countries with less support for violent practices overall, the association between education and support for violent practices tends to be more negative. The correlation here suggests a substantial socialization effect of educational institutions. In more liberal countries (those with less support for violent practices overall), education has more of a liberalizing influence and in more conservative countries, education has less of a liberalizing effect, and may even have a conservatizing effect.

The correlation between each of the religiosity slopes and the average support in a country do not tell as consistent a story. For frequency of prayer, we observe a similar, and even stronger, positive relationship ($r = 0.629$). In this case, however, frequency of prayer almost always has a positive effect. So we find that in more liberal countries, frequency of prayer has a less conservatizing effect on support for violent practices. These results suggest a similar socialization effect as for education. We observe a similar positive association for the importance of religion variable, but the correlation here is much weaker ($r = 0.188$), indicating that the socialization effect here is weaker.
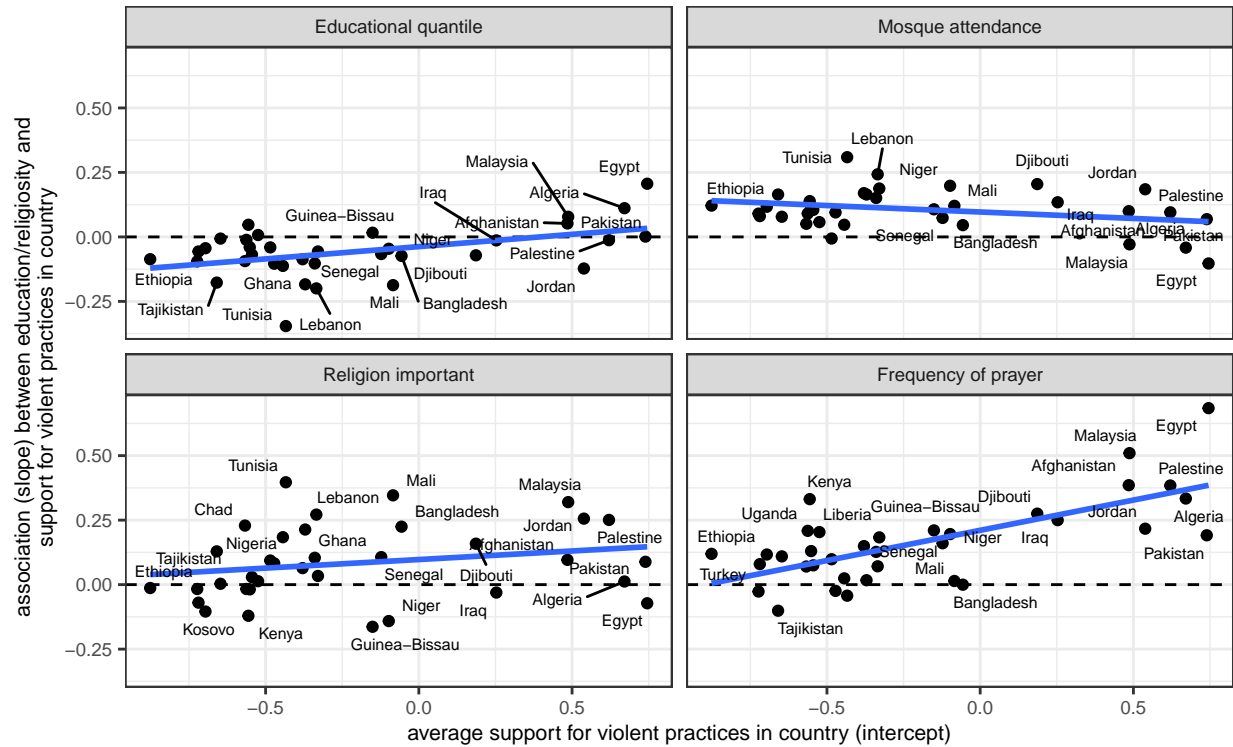
Figure 4. Scatterplot showing the relationship between a country's average level of support for violent practices and the association between education/religiosity and support for violent practices in a country. Values are based on random intercepts and slopes from Model 3 of Table 1. Best fitting OLS line is shown for both panels.

Mosque attendance operates differently than these other two religiosity variables. We observe a small negative correlation here ($r = -0.253$) indicating that the effects of mosque attendance become somewhat more positive in more liberal countries. Interestingly, this variable is most closely tied to the actual religious institution and suggests that this institution is somewhat resistant to the socialization effects that more strongly effect education and the other two measures of religiosity.

We finally turn to the correlation between the religiosity and education slopes themselves. Do the effects of religiosity and education within a country tend to work in synchronicity or are they polarized? As Table 2 shows, all three of these correlations are quite strong but do not operate in the same direction. Figure 5 further explores these relationships by drawing pairwise scatterplots between each of the religiosity random slopes and the educational quantile slopes. For both mosque attendance and the question on whether religion is important, we observe strong positive correlations ($r = -0.656$ and $r = -0.515$, respectively). These results indicate polarization between educational and religious institutions. In countries with the most negative effects of education on support for violent practices, we also tend to find the most positive effects of these religiosity measures on support for violent practices.

The frequency of prayer results tell a different story however. The random slopes here are strongly positive correlated ($r = 0.0758$), indicating synchronization. The countries where education has the most negative effect on support for violent practices also tend to be the countries where frequency of prayer has the smallest positive effects, or even occasionally negative effects on support for violent practices.

Overall, the results here reveal that the way in which religiosity effects support for violent practices is complex and depends on which aspect of religiosity we focus on. Overall, frequency of
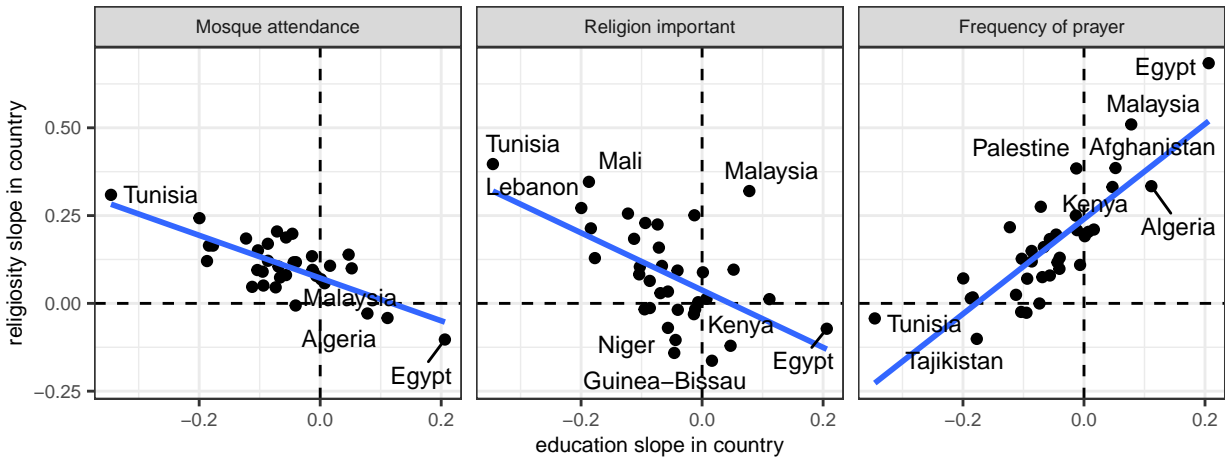
Figure 5. Scatterplot showing the relationship between country-level associations of education and religiosity with support for violent practices. Values based on random slopes from Model 3 of Table 1. Best-fitting OLS line is shown.

prayer seems the most "responsive" to aspects of modernization. The positive effect of frequency of prayer is substantially reduced and may even reverse direction in the most liberal countries and in countries where education has the strongest negative effects. In contrast, mosque attendance and the importance of religion seem quite stubbornly resistant to modernization. Neither case showed a strong correlation with overall support and both cases evidenced a strong polarization with regard to the effect of education.

Conclusions

==NEED TO REWORK BASED ON NEW RESULTS AND OTHER REVIEWER COMMENTS== In this article, we have analyzed variation in support for violent practices among Muslims in thirty-five countries, paying particular attention to the effects of education, religiosity, and development on these attitudes, as well as the heterogeneity in effects across countries.

At first glance, the results are largely consistent with prior research and the expectations of modernization theory. Greater development in a country, as measured by the Human Development Index, strongly predicted less support for violent practices. Similarly, the effects of education and religiosity are as expected from prior research in predominantly non-Muslim contexts, when averaged across countries. More educated individuals are moderately less likely to support violent practices while individuals with greater religiosity are much more likely to support violent practices.

The association between religiosity and support for violent practices was stronger than any other individual-level variable used in the analysis. Importantly, this religiosity effect is not simply a surrogate for theological conservatism or literalism. We found that while measures of theological conservatism also predicted greater support for violent practices, the religiosity association remains strong even after controlling for these variables, as well as a variety of other ideational variables.

Looking beyond the average effects across countries toward country-level heterogeneity, the results suggest a more complex and nuanced assessment. The effects of education and religiosity were highly variable across countries. In a minority of countries, education predicts more, rather than less, support for violent practices. Similarly, in some countries there was virtually no correlation between religiosity and support for violent practices. While we may observe tendencies

in terms of the effects of educational and religious institutions on support for violent practices, these effects are far from uniform and may be strongly affected by country-level heterogeneity. In the context of the strong effect of religiosity on support for violent practices, the heterogeneity observed here demonstrates that there is no necessary connection between religiosity and support for violent practices.

How can we make sense of this variation in the effects of education and religiosity across countries? Some of this variation may reflect idiosyncratic, historical, and path-dependent processes that are not easily amenable to a quantitative analysis. However, we did explore two possibilities with regard to this variation. First, we find that the within-country association for both education and religiosity is positively correlated with the average level of support for violent practices in a country. In the case of education, Education exerts the strongest negative effect on support for violent practices in countries with the lowest average level of support overall while education has little effect or even a positive association in countries with the most support for violent practices overall. Religiosity has the strongest positive effect on support for violent practices in countries with the most support overall, and religiosity has the weakest positive effect in countries where support for violent practices is the lowest overall. Both findings are consistent with the socialization hypothesis, which argues that social institutions often reflect rather than drive changes in attitudes and values.

Second, we include the level of development as a predictor of the association between education/religiosity and support for violent practices. We find some evidence that the negative relationship between education and support for violent practices is weaker in more developed countries. This may reflect a "flattening" process whereby greater development universalizes liberal values and leads to less cleavage between educational groups. We find little evidence of an effect of development on the association with religiosity.

As a further check on what is driving country-level heterogeneity, we examined the correlation between the effects of religiosity and education across countries. Somewhat surprisingly, there is very little correlation in the effects of these two variables across countries. This implies that there is not necessarily a greater singular force (e.g. "modernization") driving change in both religious and educational institutions, but rather that these two institutions are affected disparately by factors unique to each country.

The heterogeneity we observe across countries places our results somewhere between classic modernization theory and multiple modernities. If classic modernization theory is seen as a tendency rather than a rule, our results could be considered as an accurate reflection of its expectations. Similarly, our results could also be seen as empirical evidence in support of a multiple modernities approach by showing just how different the process of modernization can be for some countries. Nonetheless, the strong aggregate tendency toward the expectations of classic modernization theory calls into question an unconstrained version of the multiple modernities approach.

This heterogeneity also casts doubt on the utility of the civilizational argument to understand value change. We find no evidence of a singular civilizational pattern of Islamic societies. Rather, we find that the general patterns of Islamic "civilization" are consistent with those observed in non-Islamic societies but with substantial variation at the country level. This variation cannot be explained by what is held constant, namely Islam. We draw attention to the results for Algeria and Tunisia to highlight this issue. Algeria and Tunisia are arguably two of the most similar countries in our dataset by geography, language, and culture. Yet, the observed relationships between education and support for violent practices are not only opposite in these two countries, but represent two of the most extreme values in the data. In Tunisia, educational attainment strongly predicts less support for violent practices, while in Algeria, educational attainment strongly predicts greater support for violent practices. The implication is that we must delve deeper into the

particular historical development of each country in order to understand this variation.

We focus in this article on whether the observed patterns in the data are consistent with the expectations of prior theory and have attempted to avoid the use of strong causal language throughout. Strong causal claims are limited by the cross-sectional nature of the data. For example, while we find that Muslims in countries with greater development tend to have less support for violent practices, we cannot show that a change in development is associated with a weakening of those attitudes. Future longitudinal data would be valuable at strengthening our understanding of causal mechanisms, albeit difficult and costly to obtain on a sample of this size and scale.

The goal of this article has been to use statistical analysis to leverage a large dataset and provide a birds-eye view of the relationship between support for violent practices and individual and country-level predictors. By necessity, this approach ignores the specificity and nuance of country-specific historical development. Our intent is not to discount or replace work that focuses on particular historical cases or small N comparative/historical analyses, but rather to complement this work with a broader comparative approach. Indeed one of the central findings of our analysis is the substantial variation in key relationships between countries. This suggests the possibility of fruitful explorations at the country-level using multiple methodological approaches to understand the substantial heterogeneity documented here.

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