

Religion and Gender Equality Worldwide: A Country-Level Analysis

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Abstract Does religion help or hinder gender equality worldwide? Are some major world religions more conducive to equality than others? This study answers these questions using country-level data assembled from multiple sources. Much of the research on religion and gender has focused on the relationship between individual religious belief and practice and gender attitudes. This study, alternatively, compares the macro effects of the proportion of religious adherents in a country on two indicators of material gender equality: the United Nations Gender Inequality Index and the Social Watch Gender Equity Index. Comparing the world's four largest religious groups reveals that the largest distinction is not between any of the three largest faiths—Christianity, Islam, and Hinduism—but between the religious and the non-religious. The more non-religious people in a country, the more gender equal that country tends to be. This finding holds when accounting for human development and other country-level factors, as well as in instrumental variable analysis.

Keywords Gender equality · Religion · Non-religion · Atheism · Agnosticism · Christianity · Islam · Hinduism

Does religion help or hinder gender equality worldwide? Are some major world religions more conducive to equality than others? This study answers these questions using country-level data assembled from multiple sources. Much of the research on gender and religion has focused on gender attitudes and individual-level inequalities within one or a few countries (but see Inglehart and Norris 2003a; Norris and Inglehart 2011; Seguino 2011). This study, alternatively, compares the macro effects of the proportion of religious adherents in a country on two country-level indicators of material gender outcomes: the United Nations Gender Inequality Index and the Social Watch Gender Equity Index.

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1 Background

Religious leaders sometimes argue that religion has a liberating effect, but most of the research literature shows that the non-religious tend to be more egalitarian (Schnabel Forthcoming; Petersen and Donnenwerth 1998; Zuckerman 2008, 2009). Some recent research has been conducted on religious affiliation and material gender inequality (Reitz et al. 2015), but the previous literature has typically used individual-level religious beliefs and practices to predict individual attitudes. Religious affiliation is associated with gender attitudes (Schnabel Forthcoming; Bolzendahl and Myers 2004; Brooks and Bolzendahl 2004), and some religious beliefs are associated with sexism (Burn and Busso 2005; Peek et al. 1991). The relationships between affiliation and individual religiosity and gender attitudes are certainly important, but what about macro forces and material equality? Or, in other words, how does religion in the aggregate relate to country-level gender equality?

Macro forces influence religious beliefs and practices, gender beliefs and practices, and other attitudes and behaviors in important ways (Adamczyk and Hayes 2012; Adamczyk and Pitt 2009; Charles 2011; Gerhards et al. 2009; Rizzo et al. 2007; Stavrova et al. 2013). State-level research in the United States has shown that the more religious fundamentalism in a state, the more conservative the individual gender attitudes of people who live in that state, even apart from the individual's own religiosity (Moore and Vanneman 2003). Similarly, cross-national research on welfare attitudes has shown that the religious composition of a country can influence individual attitudes (VanHeuvelen 2014). This previous research suggests that macro forces can influence gender attitudes, but what about the processes involved in material equality?

Macro forces of overall material gender equality in a country influence micro gender relations and individual attitudes and practices: greater gender equality in a country is associated with more egalitarian divisions of household labor (Fuwa 2004), and “divorce culture” is related to greater marital equality (Yodanis 2005). One study connected individual religiosity and country-level gender outcomes, showing that religiosity affects gender attitudes, and that gender attitudes then affect macro-level gender inequality (Seguino 2011). That study, however, did not examine the direct relationship between macro-level religion within a country and that country's macro-level gender outcomes. Further highlighting the importance of macro level measures of material equality, Davis et al. (2012) showed that indicators of equality, such as the United Nations Human Development Index, are playing an increasingly important role in contemporary global governance. Previous research has shown that macro forces can have an important effect on both individual attitudes and global governance, and gender research—but typically not religion research—has highlighted how country-level material gender inequality can affect the daily lives of women and men.

This study complements previous micro-level examinations—and less common macro-level examinations—of religion and gender by examining how macro forces influence macro forces, or, more specifically, how the religious composition of a country relates to its overall level of material gender equality. Not only does this study examine the direct relationship between the religious composition of a country and that country's material gender outcomes, but it uses larger samples (136 and 147)¹ of countries than some previous studies such as Seguino (2011), for which the country-level analyses ranged from samples of 33 to 76.

¹ The number of countries used are limited by data availability. Supplemental analyses of the bivariate relationships between religion and the gender indices including countries lost for missing data on control variables yield substantively equivalent results.

2 Expectations

It is possible that religious people in countries with larger non-religious populations could revert back to traditional gender norms and practices in reaction to perceived secularization to draw symbolic boundaries between themselves and the non-religious among them (Schnabel Forthcoming; Tranby and Zulkowski 2012). But because research has shown that religion is associated with traditional gender attitudes and practices (Reitz et al. 2015), and because beliefs can have important material effects (Inglehart and Norris 2003a; Seguino 2011), I expect that higher proportions of non-religious people in a country will be associated with more material gender equality. I also expect major world religions to differ in their effects from one another, but suspect that the largest differences will be between the religious and the non-religious, rather than between particular religious groups (Schnabel Forthcoming; Furseth 2010; Noland 2005; Zuckerman 2008, 2009). More specifically, I expect, based on previous research (Agadjanian et al. 2009; Bartkowski and Read 2003; Charrad 2011; Kucinkas 2010), that assumptions about Muslims oppressing women and Christians being particularly empowering may have limited validity (but see Fish 2002; Inglehart and Norris 2003b). I therefore suspect that Christian and Muslim effects will be more similar than Christian and secular effects (Noland 2005). There could, however, be no non-religion effects because even in nations with more non-religious people they are typically just a larger minority, religious people are still the majority, and religious people could practice gender traditionalism to distinguish themselves from the non-religious among them (Tranby and Zulkowski 2012). There could also be a larger distinction than I expect between Christian and Muslim populations based on the clash of civilizations and similar hypotheses (Inglehart and Norris 2003b).

3 Data and Measures

3.1 Data

Country-level data assembled from multiple sources, including the Association of Religion Data Archives (ARDA) and Social Watch, provide an opportunity to examine how the religious composition of a country relates to its level of material gender equality. The 2011 update of the ARDA National Profiles dataset assembles country-level data from the United Nations (the U.N. Human Development Report provides the Gender Inequality and Human Development indices, as well as the GDP measures), the World Christian Database (which provides the religious adherence measures), Freedom House, the Religion and State Project, the Polity IV Project, the Heritage Foundation, the Correlates of War Project, the CIRI Human Rights Data Project, and the CIA's World Factbook. To construct the final data, the ARDA data were supplemented with a measure comprised of the Gender Equity Index values from Social Watch and a measure for whether a nation is post-communist.

3.2 Dependent Variables

Because gender equality indices are not perfect and the measures used to construct them could lead to different results, this study uses two well-known country-level gender equality indices as separate outcome measures to examine the effects of proportion of religious adherents on material gender equality. The United Nations Gender Inequality

Table 1 Descriptive statistics

Measures	GII Mean	GEI Mean	GII SD	GEI SD	GII Range	GEI Range
<i>Dependent variables</i>						
UN Gender Inequality Index Reverse Coded (GII)	.455		.179		.147–.826	
Social Watch Gender Equity Index (GEI)		.617		.123		.290–.890
<i>Key independent variables</i>						
Proportion Agnostic or Atheist	.064	.063	.093	.092	.000–.438	.001–.438
Proportion Christian	.562	.560	.382	.373	.001–.985	.001–.985
Proportion Muslim	.242	.243	.362	.349	.000–.997	.000–.995
Proportion Hindu	.023	.023	.099	.097	.000–.730	.000–.730
<i>Controls</i>						
Logged Per Capita GDP (PPP)	8.887	8.881	1.325	1.284	5.170–11.283	5.170–11.283
Logged Per Capita GDP (PPP) Squared	80.716	80.524	22.892	22.391	26.734–127.297	26.734–127.297
Human Development Index	.653	.646	.183	.183	.140–.938	.140–.938
Post-Communist Nation	.199	.204				
Majority Christian Nation	.625	.626				
Majority Muslim Nation	.235	.238				

Sources: ARDA National Profiles 2011 Update and Social Watch

GII N = 136; GEI N = 147

Index (GII) is a composite measure reflecting inequality between women and men on three dimensions: (1) reproductive health, (2) empowerment, and (3) labor force participation. It ranges from a score of zero (women and men fare equally) to a score of one (women or men fare poorly compared to the other in all dimensions). Health is measured by two indicators: maternal mortality ratio and adolescent fertility rate. Empowerment is also measured by two indicators: share of parliamentary seats held by each gender and secondary and higher education attainment levels. The labor dimension is measured by women's participation in the workforce.

The second measure is the same used by Seguino (2011) when she showed that gender attitudes, which were influenced by religion, influence country-level gender equality. This second composite measure, the Social Watch's Gender Equity Index (GEI), assesses the degree of gender equity in three areas: (1) empowerment (percentage of women in technical positions, percentage of women in management and government positions, percentage of women in parliaments, and percentage of women in ministerial posts); (2) economic activity (income and labor force participation gaps); and (3) education (gaps in literacy, primary and secondary school enrollment rates, and tertiary education) (Table 1).

3.3 Key Independent Variables

This study compares the population-proportion effects of the world's four largest religious groups, each of which has at least one billion adherents: (1) Christianity, (2) Islam, (3)

Hinduism, and (4) the non-religious (agnostics and atheists).² Population proportion is calculated by the total number of adherents in a country divided by the country's total population.³ The estimated number of agnostics and atheists is consistently conservative across countries in the data from the World Christian Database.

3.4 Controls

Because religious adherence proportions may vary by societal characteristics, this study controls for “development” first with per capita GDP (PPP) and then the United Nations Human Development Index (HDI).⁴ The HDI measures development by combining indicators of life expectancy, educational attainment, and income into a composite index. The index ranges from zero to one, with one representing the highest level of human development. Life expectancy is calculated using a minimum value for life expectancy of 25 years and maximum value of 85. Educational attainment is derived from the adult literacy rate and the combined gross enrollment ratio for primary, secondary, and tertiary schooling, weighted to give adult literacy more significance. Income is calculated using a logarithm of the per capita gross domestic product ranging from \$100 (PPP) to \$40,000 (PPP) and a squared term because the relationship between income and gender equality may not be linear: as the Kuznet's curve suggests in regard to economic inequality, gender equality could first decline with economic development and then increase at higher levels of development (Kuznets 1955).

Because of the association between having formerly been a communist country and proportion of the population that is non-religious, a binary measure was created to control for a nation being post-communist. The post-communist measure is used as an instrument in two-stage least squares regression analyses following the OLS results.

In additional analyses focused on the effects of non-religious populations, binary controls for whether a country is majority Christian (more than 50 % of the population is Christian) and whether a country is majority Muslim are used. Countries in which another religion is the majority or in which there is no majority comprise the excluded reference category.

Though they were not included in the final models because of missing data—an important part of this study's contribution is that it uses more countries with more complete data than previous studies of country-level gender equality—or worse BIC fit statistics, sensitivity analyses demonstrated that the findings are robust to the inclusion of many other social and developmental measures such as globalization, fertility, infant mortality, life

² Though smaller than the four groups included in the models (all of which have at least one billion adherents), Buddhism and Judaism are often discussed as “major world religions” (Adamczyk and Hayes 2012). Fit statistics using the Bayesian Information Criterion (Raftery 1995) suggest their exclusion. Sensitivity analyses including them in the full model led to non-significant Jewish and Buddhist effects and substantively equivalent findings for the four larger groups. Further sensitivity analyses with Jews combined with the non-religious (in some settings, such as the U.S., Jews are as, or more, gender egalitarian than the non-religious) yielded consistent results toward greater equality for this non-religious and Jewish group, but the effects toward equality were not as large as the effects for the proportion non-religious without Jews.

³ Though adherence does not encompass all aspects of religiousness (e.g., it does not address behavior), and some nations have high levels of stated affiliation with low levels of religiousness, identity is the best available country-level measure.

⁴ GDP and the human development index are not included in the same models because the index includes income.

expectancy, total population, urban population, rate of migration, military expenditures, religious freedom, GINI coefficients, and education.⁵

4 Results

Table 2 shows the effects of the proportion of the world's four largest religious groups on the reverse-coded UN Gender Inequality Index. Model 1 shows that the proportion of non-religious people in a country is clearly and strongly associated with greater gender equality ($b = 1.058$; $p < 0.001$). When Christians, Muslims, and Hindus are included in the model (Model 2), the proportion of the non-religious in a country continues to have a strong effect toward equality in comparison to the now narrower reference group ($b = 1.025$; $p < 0.001$) whereas no other religious groups have a significant effect against the reference category. The proportion Christian does, however, have more of an effect toward equality when treating proportion Muslim as the reference ($b = .127$; $p < 0.05$). When GDP or the Human Development Index are added (Models 3 and 4), the non-religious effect is smaller and a negative Muslim effect against the reference category emerges.⁶ Model 5 shows that being a post-communist nation does not affect the gender index. Finally, Model 6 shows that the positive non-religion effect persists ($b = .306$; $p < 0.01$) with both human development and post-communist nation status included, as does a much smaller negative Islam effect ($b = -.093$; $p < 0.05$). GDP is not included in this final model because it is used in the construction of the Human Development Index.⁷

The proportion of non-religious people in a country has a substantial and persistent empowering effect for women. The Human Development Index had the largest effects on the Gender Inequality Index, as might be expected: human development and advances in gender equality tend to be closely related. That the power of non-religion is still almost half that of development suggests that non-religion is a crucial factor for gender equality, even apart from the human development with which secular humanism is often associated. But does this finding using the UN Gender Inequality Index extend to the use of Social Watch's Gender Equity Index?

Table 3 shows the same models used in Table 2, but with the Social Watch Gender Equity Index as the outcome. The findings are similar to those in Table 2, except for a few notable differences. Model 3 shows that GDP does not affect this gender index, and Models 2 and 5, neither of which control for development, suggest a small positive correlation between the proportion of Christians in a country and that country's level of gender equality in comparison to the reference category of smaller religions (those that are not one

⁵ Other measures thought to be associated with gender equality cross-culturally—such as rules of residence (matrilocal, patrilocal, or neolocal), systems of descent (unilineal vs. cognatic systems), principle kinship grouping (nuclear family, extended family, or corporate descent group), typical household structure (extended family vs. nuclear family), and principle form of marriage (monogamy, polygyny, or polyandry)—would be only weakly exogenous to religion and many would be highly collinear with proportion Muslim.

⁶ Directly comparing the Christian and Muslim categories to one another yields significant differences in Models 3 and 5, but not 4 and 6. The non-religious effect is significantly different from each religious group in all models.

⁷ Following a helpful reviewer's suggestion, I included a globalization index as an additional covariate in sensitivity analyses. The 2011 KOF globalization index, which is highly correlated (.82) with the Human Development Index, has a significant and substantial effect on the Gender Inequality Index, but not the Gender Equity Index, in the full models that include the human development index. When including the globalization index in the models, the religion effects are similar, but the human development index coefficients are smaller.

Table 2 OLS regression of the reverse coded Gender Inequality Index on the proportion of religious adherents in a country

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Proportion Agnostic or Atheist	1.058*** (0.138)	1.025*** (0.148)	0.457*** (0.094)	0.324** (0.099)	1.064*** (0.156)	0.306** (0.104)
Proportion Christian		0.106 (0.061)	-0.014 (0.036)	-0.030 (0.037)	0.109 (0.061)	-0.031 (0.037)
Proportion Muslim		-0.021 (0.065)	-0.098* (0.038)	-0.092* (0.039)	-0.018 (0.065)	-0.093* (0.039)
Proportion Hindu		0.008 (0.141)	-0.067 (0.082)	-0.085 (0.083)	0.003 (0.141)	-0.083 (0.084)
Logged Per Capita GDP (PPP)			-0.183** (0.063)			
Logged Per Capited GDP (PPP) Squared			0.016*** (0.004)			
Human Development Index				0.726*** (0.047)		0.729*** (0.047)
Post-Communist Nation					-0.027 (0.033)	0.010 (0.020)
Constant	0.387	0.335	0.789	0.001	0.336	-0.001
<i>N</i>	136	136	136	136	136	136
<i>R</i> ²	0.304	0.372	0.789	0.782	0.375	0.782
<i>BIC</i>	-122.807	-122.095	-260.859	-260.806	-117.877	-256.167

Standard errors in parentheses

Source: ARDA National Profiles 2011 Update

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

of the world's four largest). Finally, whereas the Human Development Index had the largest effects in Table 2, Models 4 and 6 reveal that the proportion of non-religious people in a country has a larger impact on this gender index than does the human development measure. Again, there is a substantial and persistent non-religion effect across models, and there is a small Muslim effect toward inequality.⁸

Table 4 presents alternate analyses examining the relationship between the proportion of the population that is non-religious and gender equality with controls for whether nations are majority Christian or majority Muslim.⁹ The findings are similar to those in Tables 2 and 3. There is a consistent non-religious effect, and Christian nations are more equal than Muslim nations across all models. Interactions between the proportion of the population that is non-religious and whether a nation is majority Christian or majority Muslim are not significant and yield worse BIC fit statistics, and are thus not shown.

⁸ The reference category, the non-religious category, and the Christian category are significantly different from the Muslim category in all five models that present these categories separately, but the Muslim and Hindu effects are not significantly different in any of the five models. The non-religious effect toward equality is significantly larger than that of all groups, including Christians, in all five models.

⁹ I would like to thank a helpful reviewer for encouraging me to present these confirmatory results in addition to the earlier results.

Table 3 OLS regression of the Gender Equity Index on the proportion of religious adherents in a country

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Proportion Agnostic or Atheist	0.674*** (0.096)	0.578*** (0.087)	0.403*** (0.088)	0.317*** (0.086)	0.581*** (0.092)	0.289** (0.092)
Proportion Christian		0.095* (0.037)	0.061 (0.035)	0.051 (0.033)	0.096* (0.037)	0.047 (0.033)
Proportion Muslim		-0.086* (0.040)	-0.099** (0.037)	-0.098** (0.035)	-0.085* (0.040)	-0.100** (0.035)
Proportion Hindu		-0.104 (0.084)	-0.126 (0.078)	-0.136 (0.073)	-0.105 (0.084)	-0.134 (0.073)
Logged Per Capita GDP (PPP)			0.017 (0.066)			
Logged Per Capited GDP (PPP) Squared			0.001 (0.004)			
Human Development Index				0.270*** (0.040)		0.275*** (0.041)
Post-Communist Nation					-0.002 (0.019)	0.015 (0.017)
Constant	0.575	0.551	0.374	0.422	0.550	0.419
<i>N</i>	147	147	147	147	147	147
<i>R</i> ²	0.255	0.519	0.597	0.635	0.519	0.637
<i>BIC</i>	-233.558	-282.868	-298.946	-318.344	-277.886	-314.156

Standard errors in parentheses

Source: ARDA National Profiles 2011 Update and Social Watch

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Sensitivity analyses (not shown) demonstrated that the patterns are robust to the inclusion of many other social and developmental measures, such as fertility, infant mortality, life expectancy, total population, urban population, rate of migration, military expenditures, religious freedom, GINI coefficients, and education. Additional analyses using clustered errors by continent yielded substantively equivalent results, except that the Christian effect toward equality in the full model (Model 6) presented on Table 3 became significant ($b = .47$, $p < 0.01$). Clustering the errors by the 21 United Nations regions again yielded substantively equivalent results for proportion non-religious, but the negative effect for Muslims on Table 3 was no longer significant and the positive Christian coefficient continued to be non-significant. Subsample analyses showed that the proportion non-religious is associated with more equality within majority Christian and within minority Christian nations, within majority Muslim and within minority Muslim nations, and within individual continents. Finally, nonlinear specifications of the proportion of religious groups¹⁰ and interaction terms for religion and human development also yield substantively equivalent results.

¹⁰ On the Gender Inequality Index there is an S-shaped relationship between proportion non-religious and gender equality, with positive main effects, negative second-level (or squared) interaction effects showing that the effects are smaller at mid-level proportions of non-religious populations, and positive third-level or (or cubed) interaction effects showing that the effects are higher at the highest proportions of non-religious people.

Table 4 OLS regression of gender indices on proportion non-religious with controls for majority religion

	Gender Inequality Index (reversed)		Gender Equity Index	
	GII Model 1	GII Model 2	GEI Model 1	GEI Model 2
Proportion Agnostic or Atheist	0.980*** (0.136)	0.369*** (0.088)	0.581*** (0.080)	0.340*** (0.078)
Majority Christian Nation	0.065 (0.037)	-0.007 (0.022)	0.107*** (0.022)	0.085*** (0.019)
Majority Muslim Nation	-0.037 (0.042)	-0.066** (0.025)	-0.029 (0.025)	-0.029 (0.022)
Human Development Index		0.726*** (0.045)		0.278*** (0.040)
Constant	0.361	-0.023	0.521	0.370
<i>N</i>	136	136	147	147
<i>R</i> ²	0.363	0.784	0.499	0.626
<i>BIC</i>	-125.070	-267.280	-281.971	-319.940

Standard errors in parentheses

Source: ARDA National Profiles 2011 Update and Social Watch

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The findings are clear, but still rather abstract. Table 5 shows the percent of non-religious people in the world's 20 most equal and 20 least equal countries (using the GII). Although it does not appear that having a high percentage of agnostics and atheists in a country is necessary for equality—5 % or less of the population is agnostic or atheist in four of the world's 20 most equal countries—the non-religious are rare in the most unequal countries. Iceland, the country estimated to have the fewest agnostics or atheists of the most equal countries (3 % of the population), has as many the Republic of the Congo, which has more non-religious people than all the other least equal countries. Furthermore, some of the most equal countries that were estimated to have relatively small numbers of agnostics and atheists, such as Norway, have a historic official church but a typically secular mindset. If the nominal religiosity of many “adherents” were taken into account, the association between non-religion and gender equality might be even stronger.

Although this paper focuses on empirical description, instrumental variable analysis offers a step beyond simple association. The OLS results demonstrated consistent effects for the proportion of a country that is non-religious, so post-communist nation, a strong predictor of the proportion non-religious, is used as an instrument to test the association found in the OLS regressions. Table 6 presents two-stage least squares (2SLS) results for the proportion of non-religious people in a country on both gender indices. The post-communist nation instrument is strong for all but GII Model 2,¹¹ which is also the only model in which the proportion non-religious does not have a significant effect at the 0.05 level ($p = 0.55$). Across the other models, non-religious population has a large effect on the gender equality indices, and Model 2 of the GEI presents a non-religion effect toward

¹¹ Using Stata 13, I conducted Durbin and Wu-Hausman endogeneity tests (all models were within acceptable levels). I conducted Wald tests for instrument strength, and the instrument was strong in all models except GII Model 2, as noted in the text. The instrument was almost strong, with an eigenvalue of 16.03 and the Wald test size of nominal 5 % being 16.38.

Table 5 Percent Agnostic or Atheist in the 20 most and 20 least equal countries according to the United Nations Gender Inequality Index

20 Most gender equal		20 Least gender equal	
Country	Agnostic or Atheist (%)	Country	Agnostic or Atheist (%)
Sweden	31	Republic of the Congo	3
Netherlands	27	Haiti	2
Germany	24	Liberia	2
France	21	Cameroon	1
Australia	19	Central African Republic	1
Italy	16	The Gambia	1
Austria	15	India	1
Canada	15	Papua New Guinea	1
Belgium	14	Saudi Arabia	1
Japan	13	Sierra Leone	1
Switzerland	12	Afghanistan	0
Denmark	10	Benin	0
Finland	9	Democratic Republic of the Congo	0
Portugal	9	Cote d'Ivoire	0
Slovenia	8	Kenya	0
Spain	8	Malawi	0
Norway	5	Mali	0
Singapore	5	Niger	0
Cyprus	4	Yemen	0
Iceland	3	Zambia	0

Source: ARDA National Profiles 2011 Update

equality ($b = .641$; $p < 0.05$) more than twice as large as the human development index effect ($b = .283$; $p < 0.001$).

Though some of the religious adherents effect can be explained by human development, a strong effect toward equality persists when there are more non-religious people in a country, and there is also a small effect toward inequality when there are more Muslims. These findings are consistent across gender indices, complementing previous research on religion and gender attitudes, showing that there is a strong relationship between the number of non-religious people in a country and that country's level of material gender equality. The non-religion effects toward equality persist when using instrumental variable analysis, which confirms the descriptive OLS results.

5 Discussion

The purpose of this study was to explore the relationship between religion and country-level gender outcomes. This purpose was accomplished by examining the association between the proportions of religious adherents in a country and that country's level of

Table 6 2SLS regression of gender indices on the proportion non-religious in a country

	Gender Inequality Index (reversed)		Gender Equity Index	
	GII Model 1	GII Model 2	GEI Model 1	GEI Model 2
Proportion Agnostic or Atheist	1.075*** (0.268)	0.525 (0.274)	0.781** (0.256)	0.641* (0.272)
Logged Per Capita GDP (PPP)	-0.209** (0.074)		-0.002 (0.081)	
Logged Per Capited GDP (PPP) Squared	0.017*** (0.004)		0.002 (0.005)	
Human Development Index		0.713*** (0.074)		0.283*** (0.076)
Constant	0.886	-0.044	0.435	0.394
<i>N</i>	136	136	147	147
<i>R</i> ²	0.697	0.761	0.353	0.432

Standard errors in parentheses

Source: ARDA National Profiles 2011 Update and Social Watch

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

gender equality. Comparing the world's four largest religious groups demonstrates that the largest distinction is not between any of the three largest faiths—Christianity, Islam, and Hinduism—but between the religious and the non-religious. The more non-religious people in a country, the more gender-equal that country tends to be. One might assume that this is because countries with more non-religious people are generally more “developed,” but this finding holds when accounting for development and other country-level factors, as well as in instrumental variable analysis.

Before human development is taken into account, having more Christians in a country seems to be associated with equality for one of the two gender indices. When taking development into account, however, Christians do not increase equality (though Christian populations do tend to be associated with more equality when compared to Muslim populations). Consistent with Inglehart and Norris (2003b) argument that the division between Islam and the West is more about gender than democracy, having more Muslims in a country becomes associated with gender inequality for both indices when controlling for development.

The Muslim effect toward inequality, however, is small when compared to the non-religion effect toward equality. Countries with more non-religious people score as more equal on both the United Nations Gender Inequality Index and the Social Watch Gender Equity Index even when accounting for human development, although the size of the effect is smaller than before these controls are included. Overall, having a higher proportion of Christians in a country is more similar to having a higher proportion of Muslims or Hindus than of having a higher proportion of the non-religious.

Though non-religion is not necessary for equality, the least equal countries have the fewest non-religious people—religion does not necessarily preclude equality, but equality is less common in the absence of agnostics and atheists. This study primarily demonstrates a descriptive phenomenon and does not fully address causal mechanisms, but I will proffer

a few speculative possibilities. Religion could drive gender inequality by promoting restrictive norms, and countries with more non-religious people would be less tied to these norms. Relatedly, it is also possible that people who are gender egalitarian view religion as in tension with equality and are thus less likely to identify as religious (Hout and Fischer 2002, 2014). Third, it is possible that less religious people are simply less traditional in general, and have more progressive views and act in ways that promote equality. Fourth, cultures that foster secular values and identities may also foster gender equality.

Although the instrumental variable analysis provides evidence in support of influence from the religious composition of a country to material gender equality, the cross-sectional data used in this study cannot rule out the possibility of reverse causality, or the more likely two-way influence between religion and equality. It is quite possible that as countries become more developed (and have more equality), more people become non-religious because they feel less need for religion. Moreover, it is also possible that as globalization increases access to information and religious people are exposed to different cultures and ideas, some of them will become non-religious. Regardless of issues of directionality and causality, this study's main descriptive finding is clear: countries with higher proportions of non-religious people are more equal.

Previous research has convincingly demonstrated a strong individual-level link between religion and gender attitudes, but this study examined the relationship between religion and gender outcomes in the aggregate. Attitudes matter, but scholars are typically interested in attitudes primarily because they can influence real world outcomes. Rather than show yet again that non-religious people have more liberal gender attitudes, which *may* have real-world implications, this study demonstrated that having more non-religious people in a country is directly related to material outcomes.

Future research should further explore the relationship between religion and material equality, rather than just egalitarian attitudes. Macro-level relationships could be explored in more detail with a narrower focus on country groupings, regions within countries, or a broader array of country-level characteristics than were included in this study. Alternatively, scholars could consider micro- and macro-level relationships in tandem to tease apart why countries with more non-religious people are more gender equal.¹² Finally, historical patterns and processes could be considered to examine whether the relationship between religious populations and equality has changed over time. Although more research is still needed on the relationship between religion and material gender equality, this study clearly demonstrates that having more non-religious people in a country is associated with greater material gender equality, which is consistent with previous research on the individual-level relationship between religion and gender.

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Appendix

See Table 7.

¹² I would like to thank a particularly helpful reviewer for many of the suggestions for future research.

Table 7 Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Gender Inequality Index (reversed)	1									
(2) Gender Equity Index	0.701***	1								
(3) Proportion Atheist or Agnostic	0.551***	0.505***	1							
(4) Proportion Christian	0.276**	0.504***	0.272	1						
(5) Proportion Muslim	-0.356***	-0.573***	-0.230***	-0.787***	1					
(6) Proportion Hindu	-0.104	-0.179*	0.109	-0.181*	-0.049	1				
(7) Logged Per Capita GDP (PPP)	0.806***	0.548***	0.384***	0.209**	-0.187*	-0.047	1			
(8) Human Development Index	0.853***	0.644***	0.461***	0.253***	-0.258***	0.044	0.949***	1		
(9) Post-Communist Nation	0.126	0.178*	0.334***	0.022	-0.009	-0.121	-0.005	0.062	1	
(10) Majority Christian Nation	0.311**	0.548***	0.135	0.937***	-0.744***	-0.135	0.230*	0.270**	0.044	1
(11) Majority Muslim Nation	-0.308**	-0.480***	-0.165*	-0.734***	0.948***	-0.074	-0.114	-0.182*	0.017	-0.716***

Source: ARDA National Profiles, 2011 Update
 * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed)

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