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Religiosity Buffers and has a Quadratic Moderation Effect on the Relationship between Gender Inequality and Life Satisfaction around the World

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Abstract

This paper reports two studies that sought to examine whether religiosity moderates the relationship between gender inequality and subjective well-being. Using a multi-level and a national-level analysis on 84 and 127 nations, respectively, we found evidence in support of this hypothesis. We also examined whether religiosity is a quadratic moderator of the relationship between gender inequality and subjective well-being. In the 127-nation study, we found evidence that national-level religiosity is indeed a quadratic moderator of the relationship.

Keywords: gender inequality, religiosity, subjective well-being, life satisfaction, culture, gender, religion, happiness

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Introduction

Researchers usually find that gender inequality is negatively correlated with life satisfaction (Chin Hon Foei, 2006; c.f. Veenhoven 2008, p. 56), even when income is controlled for (Napier, Thorisdottir, & Jost, 2010). Several researchers have argued that gender inequality negatively affects life satisfaction or subjective well-being because it is seen as an injustice that causes feelings of guilt and moral outrage (Napier & Jost, 2008; Napier et al., 2010; Wakslak, Jost, Tyler, & Chen, 2007), as well as limiting the ability of many women to achieve the important goals in their lives (Tesch-Römer, Motel-Klingebiel, & Tomasik, 2008). However, Schyns found that the relationship between gender inequality and happiness with life became insignificant after controlling for real GDP per capita (Schyns, 1998). Schyns stressed the importance of national differences in the relationships between cultural factors like gender inequality and subjective well-being (Schyns, 1998). Indeed, the prevalence of certain cultural beliefs regarding the appropriateness of gender inequality in some nations might counteract the negative effects of gender inequality mentioned above. Nevertheless, even in nations where gender inequality is considered appropriate by much of the population, it is still likely to have negative effects on the life satisfaction of at least those who do not believe that such inequality is appropriate. Therefore, the evidence suggests that gender inequality has some negative effects on life satisfaction, if not an overall negative effect.

Studies have also shown that beliefs that justify inequalities can buffer the negative effects of those inequalities on life satisfaction and subjective well-being (e.g., Jost & Hunyady, 2002; Kluegel & Smith, 1986; Napier & Jost, 2008; O'Brien & Major, 2005;

Wakslak et al., 2007). One particularly important kind of belief—religious belief—has been shown to buffer the negative effects of a variety of adverse circumstances on life satisfaction and other measures of subjective well-being (e.g., Diener, Tay, & Myers, 2011; Joshanloo & Weijers, 2013a; Lazarus, 1993; Smith, McCullough, & Poll, 2003), including discrimination (Bierman, 2006; Ellison, Musick, & Henderson, 2008) and income inequality (Joshanloo & Weijers, 2013b). Religious belief and belief in the importance of God are aspects of religiosity. Religiosity is a broad concept that has been described as referring to the “various dimensions associated with religious beliefs and involvement” (Bergan & McConatha, 2001, p. 24). We focus on belief in God or religion, rather than religious attendance or other aspects, because these beliefs fit best with the most common explanations for religiosity’s buffering effect. For example, the religiosity-as-buffer effect is often explained with reference to the Terror Management theory of religion (Hackney & Sanders, 2003) or the Life Stress paradigm (Ellison, 1994; Schnittker, 2001), but it fits equally well with System Justification Theory (Jost & Banaji, 1994; Jost & Kay, 2005). With all of these kinds of explanation, religious belief is thought to mitigate depression, stress or anxiety, often by instilling resilience via the belief that any negative circumstances are in some way appropriate or correct. For example, a strong belief in a beneficent God is thought to increase the chances of believing that any seeming injustice in the world is somehow necessary for enabling something better to occur. So, religiosity often buffers the negative effects of environmental stressors, such as injustice, on life satisfaction.

Summarising previous findings, gender inequality can have some negative effects on life satisfaction, and religious belief can buffer the negative effects of many stressors on life satisfaction. These findings led to our main hypothesis—the religiosity-as-buffer hypothesis—which states: religiosity buffers the negative effects of gender inequality on life

satisfaction. In other words, as religiosity increases, the relationship between gender inequality and life satisfaction becomes less negative.

In related research, the relationships between religiosity and various measures of mental health and subjective well-being have been demonstrated to be complex in regards to both the shape of the relationship (i.e. a non-linear relationship; e.g., Okulicz-Kozaryn, 2010; Galen & Kloet, 2011) and the cross- and multi-level effects involved (e.g., Eichhorn, 2012; Joshanloo & Weijers, 2013b; Diener et al., 2011). Most importantly, Joshanloo and Weijers (2013b) found that religiosity was a quadratic moderator of the relationship between income inequality and life satisfaction in a large multi-national sample. These results show that investigations of the relationships between religiosity, life satisfaction and other variables run the risk of oversimplifying or misdiagnosing the true relationships unless more complex methodologies are used. Specifically, investigations run this risk if they do not control for national-level effects and test the significance of quadratic relationships between the variables. As a consequence of these considerations, a robust analysis of the moderating role of religiosity on the relationship between gender inequality and life satisfaction should incorporate individual- and national-level variables, and check for quadratic moderation.

Furthermore, Joshanloo and Weijers (2013b) suggested that religiosity's quadratic moderator of the relationship between income inequality and life satisfaction in their study might be explained by a combination of the religiosity-as-buffer effect and a cultural factor that often occurs in the most religious nations. They suggest that the religiosity-as-buffer effect can explain why inequality seems to have a stronger negative effect on life satisfaction in nations with the lowest levels of religiosity compared to the nations with moderate levels of religiosity (Joshanloo & Weijers, 2013b). They also argued that inequality might have a stronger negative impact on life satisfaction in the most religious nations (compared to the moderately religious nations) because these nations are likely to be conservative in a way that

engenders little hope for future reductions in inequality (Joshani & Weijers, 2013b). Since both of these explanations seem likely to apply to gender inequality as well as income inequality, we created a subsidiary hypothesis—the religiosity-as-quadratic-moderator hypothesis—which states: religiosity is a quadratic moderator of the relationship between gender inequality and life satisfaction. In other words, the relationship between gender inequality and life satisfaction is similar at low and high levels of religiosity, but not at moderate levels.

Put in a broader context, the point of this investigation is to learn more about the relationships between gender inequality, life satisfaction, and religiosity. In particular, insight could be gained into the nature of the impact of aspects of religion on the way gender inequality affects people in different nations. Given the data available, our hypotheses could be tested in 84 nations with a multi-level analysis and in 127 nations with a national-level analysis. Conducting both studies enables us to test the hypotheses at different levels of analysis and with alternate measures, which can, in turn, allow for more detailed analysis and aid in drawing more robust conclusions. Furthermore, each study has particular advantages; a greater number of variables could be controlled for in the first (smaller) study, and more nations, including many understudies ones, are incorporated in the second study.

Study 1

This study examines our hypotheses using recent data from the World Values Survey and European Values Study. Multi-level modelling was used to simultaneously subject the data to individual and national levels of analysis (Hox, 2010). Both individual- and cultural-level predictors can be used in multi-level analysis, which enables the investigation of cross-level interactions between predictors, and makes this kind of analysis the most appropriate for this study. National economic prosperity was used as a control variable because evidence

suggests that it might independently affect our variables of interest; it correlates with life satisfaction (e.g., Di Tella, MacCulloch, & Oswald, 2003; Helliwell, 2003) religiosity (e.g., Pew Forum on Religion & Public Life, 2007; Barro & Mitchell, 2004), and gender inequality (e.g., Klasen, 1999; UNDP, 2013). Furthermore, when Berg and Veenhoven (2010) cross-nationally investigated the relationship between income inequality and subjective well-being, they found that controlling for wealth significantly impacted the relationship, including changing some negative relationships between income inequality and measures of subjective well-being to positive ones. Dummy variables for religious affiliation were also used to control for any impacts that specific religions might have on the moderation effect of religiosity. Our analysis also includes testing three-way interactions, in which gender interacts with religiosity and gender inequality in the prediction of life satisfaction, since this enables us to assess whether some of the two-way interactions are modified by gender.

Method

Participants

In the present study, we combined data from the World Values Survey and European Values Study (EVS, 2011; WVS, 2009). Data have been collected by means of interviews in each country. These surveys are large-scale surveys on human values and norms that have been conducted in developing and industrialized nations in several waves since 1981. These sources provide data from representative national samples of more than 80 societies that contain about 90% of the world's population. In the present study, all waves from 1999 to 2010 (i.e., 1999–2004, 2005–2007, & 2008–2010) were included. We included a total of 228,905 participants from 84 nations for whom we had individual-level data from the World Values Survey and European Values Study as well as national-level scores from other sources as described below. The included nations, sample sizes, and national-level means of the variables under study are reported in Table 1.

Measures

Life satisfaction. Personal-level life satisfaction scores were used as the outcome in the multi-level analysis. Participants answered the question “All things considered, how satisfied are you with your life as a whole these days?” on a 10-point scale ranging from 1 = *completely dissatisfied* to 10 = *completely satisfied*.

Religiosity. Personal-level religiosity was measured with participants' answers to the question “How important is God in your life?” on a 10-point scale ranging from 1 = *not at all important* to 10 = *very important*. For national religiosity, average personal religiosity was calculated for each nation. National religiosity was grand-mean centred to be used as a national-level predictor. The quadratic terms of personal and national religiosity were calculated by squaring centred variables.

National gender inequality. The Gender Inequality Index (GII) “captures the loss of achievement due to gender inequality in three dimensions: reproductive health, empowerment and labour market participation. The higher the GII value, the greater the discrimination” (UNDP, 2013, p. 31). The GII ranges from 0, which indicates absolute gender equality, to 1, which indicates absolute inequality. We used the GII values based on 2012 data (UNDP, 2013)¹.

National economic prosperity. To measure the economic prosperity of the nations in the study, the economy sub-index of the 2012 Legatum Prosperity Index was used. This index measures “countries' performance in four key areas: macroeconomic policies, economic satisfaction and expectations, foundations for growth, and financial sector efficiency” (Legatum Institute, 2012, p. 12). The economy index ranges from -6.78 to 3.33.

¹ Obtained from <http://hdr.undp.org/en/humandev/>

Religious affiliation. Religious affiliation was measured with dummy variables. All religious affiliations that accounted for more than one percent of the sample were recoded into dummy variables. These affiliations include Buddhist, Hindu, Muslim, Evangelical, Orthodox, Protestant, Roman Catholic, and Shia. The left-out category included all other religious affiliations and those not affiliated with any religion.

Demographic variables. Age (group-mean centred) and gender (male = 0, female = 1) were also included in the analysis as control variables because previous research has indicated that they are significant predictors of life satisfaction (e.g., Alesina, Di Tella, & MacCulloch, 2004; Greene & Yoon, 2004). Moreover, gender inequality may have differential effects on the life satisfaction of men and women (e.g., Napier et al., 2010).

Results

Given that in the present study, the data structure is hierarchical (i.e., individuals are nested within nations), we used multi-level modeling to analyse the data. Multi-level modeling simultaneously considers within-group variability and between-group variability and, thus, is the most efficient and realistic way of analysing hierarchically nested data (Snijders & Bosker, 2012). Multi-level analyses were conducted using SPSS 19, with restricted maximum likelihood estimation. Religiosity and age were group-mean centred, and national-level variables of economic prosperity and gender inequality were grand-mean centred (Bryk & Raudenbush, 1992; Heck & Thomas, 2009; Nezlek, 2011). *Interaction* 1.7.2211 was used to produce the interaction graphs (Soper, 2013).

We first tested an unconditional (or null) model excluding all the predictors. An unconditional means model is identical to a one-way ANOVA with random effects. The results of this analysis reveal the proportion of variability in life satisfaction that exists at the individual and cultural levels. The results showed that there was statistically significant

variability both at the individual ($b = 5.10$, Wald $Z = 336.494$, p (one-sided) $< .001$) and national ($b = .98$, Wald $Z = 6.424$, p (one-sided) $< .001$) levels. Therefore, it is justifiable to add predictors to the model to explain the existing unexplained variance at both levels.

In a second model, we added all the predictors (age, gender, gender inequality, personal and national religiosity, economic prosperity, and the dummy variables of religious affiliation) to the model. A random-intercept/random slope model was specified, in which both the intercepts and the slopes of individual-level predictors were allowed to vary across the groups (Luke, 2004). For the sake of model identification, however, the dummy variables of religious affiliation were specified as fixed effects. The results showed that the slopes of personal religiosity ($b = .014$, Wald $Z = 4.275$, p (one-sided) $< .001$), the quadratic term of personal religiosity ($b = .0002$, Wald $Z = 3.913$, p (one-sided) $< .001$), age ($b = .0001$, Wald $Z = 6.014$, p (one-sided) $< .001$), and gender ($b = .027$, Wald $Z = 4.625$, p (one-sided) $< .001$) were significantly variable across the nations, therefore these random slopes were retained in the model.

Adding all the predictors to the model reduced the unexplained within-nation residual by ($5.10 - 4.98 =$) 0.11 . This means that adding all the predictors to the model reduced the unexplained variance in life satisfaction scores at the individual level by about 2%, when compared with the null model. The remaining amount of unexplained variance is still significantly different from zero ($b = 4.98$, Wald $Z = 331.255$, p (one-sided) $< .001$). Adding the predictors to the model also reduced the unexplained between-nation variability by ($.98 - .47 =$) 0.51 . This means that adding the predictors to the model reduced the unexplained variance in life satisfaction scores at the national level by about 52%, when compared with the null model. A significant amount of variance remains to be explained by additional covariates ($b = .47$, Wald $Z = 5.495$, p (one-sided) $< .001$).

All the individual-level variables: age (negative), being a female (negative), personal religiosity (positive), and the quadratic term of personal religiosity (positive) were significant predictors of life satisfaction. Of the religious affiliations, Muslim (negative), Evangelical (positive), Protestant (positive), Roman Catholic (positive), and Shia (positive) were significant predictors. Among the national-level predictors, national gender inequality (negative), national religiosity (positive), and national economic prosperity (positive) were significant predictors of life satisfaction. The quadratic term of national religiosity, however, was not a significant predictor. The relationship between gender inequality and life satisfaction is depicted in Figure 1.

The interaction between personal religiosity and national gender inequality was significant, indicating that the relationship between gender inequality and life satisfaction is linearly moderated by personal religiosity. The moderating effect of national religiosity is schematically shown in Figure 2. As shown in the figure, the relationship between national gender inequality and life satisfaction grows less negative as personal religiosity increases. That personal religiosity is a linear moderator of this relationship is consistent with our main hypothesis that religiosity buffers the negative effect of gender inequality on life satisfaction.

The significant main effect of the quadratic term of personal religiosity indicates that the relationship between personal religiosity and life satisfaction is not entirely linear. However, we found that the interaction between national gender inequality and the quadratic term of personal religiosity was not significant. The interaction between national gender inequality and the quadratic term of national religiosity was also not significant. These results indicate that religiosity is not a quadratic moderator of the relationship between gender inequality and life satisfaction in the nations included in this study.

The two-way interaction between national religiosity and national gender inequality was not a significant predictor of life satisfaction. However, we found that there was a

significant three-way interaction (female \times national religiosity \times national gender inequality). This interaction is depicted in Figure 3. Inspection of the 'Females' graph reveals that the relationship between national gender inequality and life satisfaction becomes less negative as national religiosity increases. Similarly, the 'Males' graph also reveals that the relationship between national gender inequality and life satisfaction becomes less negative as national religiosity increases. However, as shown in the figure, the negative relationship between national gender inequality and life satisfaction is stronger in females than in males (particularly for nations with moderate and low levels of religiosity). The results displayed in Figure 3 are consistent with the religiosity-as-a-buffer hypothesis for both genders.

Finally, there was a significant interaction between personal and national religiosity, such that the relationship between personal religiosity and life satisfaction was more positive in more (vs. less) religious nations. It is important to note that we have controlled for covariates of age, gender, religious affiliation, and economic prosperity in our model and, thus, the significant interactions found in this study cannot be explained by the effects of these variables.

Discussion

The results for the control variables are generally consistent with previous research. Age negatively predicted life satisfaction, which is to be expected when a linear relationship is assumed (Blanchflower & Oswald 2004). In contrast to older studies that focussed mainly on Western Europe and North America (e.g., Alesina et al., 2004), but in line with studies of other populations, such as Eastern and Central Europe (e.g., Schnepf, 2010), and recent suggestions that the subjective well-being of women is falling (e.g., Stevenson & Wolfers, 2009), being female was a weak negative predictor of life satisfaction. National economic prosperity was a significant positive predictor of life satisfaction, which, given the links between economic prosperity, national religiosity, and gender inequality mentioned earlier,

vindicates its inclusion as a control variable. Replicating previous findings, Protestant affiliation was the largest positive predictor of life satisfaction (Clark & Lelkes, 2009; Ellison, Gay, & Glass, 1989) and Roman Catholic affiliation was also a positive predictor (Clark & Lelkes, 2009).

The results for the religiosity variables are instructive. The “positive association between religiosity and life satisfaction is well documented” (Lim & Putnam, 2010, p. 914; e.g., Barro & Mitchell, 2004; Helliwell, 2008; Pew Forum on Religion & Public Life, 2007), and is replicated by the significant result for personal religiosity in the present study. Furthermore, when this result is interpreted alongside the significant result for the quadratic term of personal religiosity, it provides evidence that the relationship between religiosity and subjective well-being is often complex and, in this case, partly curvilinear. Previous research has found the relationship between national religiosity and life satisfaction to be not significant (e.g., Helliwell, 2008), but national religiosity was a significant positive predictor of life satisfaction in the present study.

The multi-level model used in this analysis included national religiosity and the quadratic term of national religiosity in several two- and three-way interactions as well as using them as direct predictors of life satisfaction. Some of the interactions involving national religiosity were significant predictors of life satisfaction, suggesting that national religiosity only significantly affects life satisfaction for certain groups. For example, the significant two-way interaction between personal religiosity and national religiosity shows, in line with previous research (e.g., Eichhorn, 2012), that national religiosity is linked to life satisfaction for people whose personal religiosity matches their national religiosity. Furthermore, the significant three-way interaction between national religiosity, gender inequality, and gender shows that correlations between national religiosity and gender inequality predict life satisfaction slightly differently for men and women.

The main purpose of this paper was to investigate the moderating role of religiosity in the relationship between gender inequality and life satisfaction. The religiosity-as-buffer hypothesis, predicts that the negative effects of gender inequality on life satisfaction will be mitigated by religiosity. That the interaction between personal religiosity and gender inequality was a significant predictor of life satisfaction shows that personal religiosity is a moderator of the relationship between gender inequality and subjective well-being. This is consistent with the religiosity-as-buffer hypothesis. This buffering effect of personal religiosity can be seen in Figure 2; the least religious group has the steepest (most negative) slope and the highly religious group has the flattest (least negative) slope. When combined with the discussion in the introduction, these results indicate that life satisfaction becomes less affected by the negative impacts of gender inequality as personal religiosity increases. It seems, then, that a personal belief in the importance of God in one's life helps individuals to justify gender inequality to themselves in such a way that they are less likely to see it as a dissatisfying injustice.

Furthermore, the significant result for the three-way interaction between national religiosity, gender inequality, and gender shows that national religiosity also plays a role in moderating the relationship between gender inequality and life satisfaction. The graphs in Figure 3 show how the least religious group has the steepest (most negative) slope and the most religious group has the flattest (least negative) slope. When combined with the discussion in the introduction, these results suggest that people living in the least religious nations are most affected by the negative impact of gender inequality. Furthermore, national religiosity buffers the negative effects of gender inequality on life satisfaction for both genders.

A subsidiary aim of this paper was to assess whether religiosity was a non-linear moderator of the relationship between gender inequality and life satisfaction. The two- and

three-way interactions involving gender inequality and the quadratic terms of the religiosity variables were not significant. This indicates that religiosity was not a quadratic moderator.

Although, in this study, we tested our hypothesis in a relatively large number of nations, representative of most of the world's population, many nations were excluded because they are not included in the World Values Survey or the European Values Study. A further limitation of this study is that the measure of religiosity used (importance of God) is less appropriate for religions that do not postulate a God, such as Buddhism (Joshanloo & Weijers, 2013c). In Study 2, we sought to reduce these limitations by testing our hypotheses in an even larger number of nations, and by using slightly different scales and data sources.

Study 2

This study examines our hypotheses using national-level data from three different multi-national datasets. We used these data to test our two hypotheses: the religiosity-as-buffer hypothesis, which states that religiosity buffers the negative effects of gender inequality on life satisfaction, and the religiosity-as-quadratic-moderator hypothesis states that religiosity is a quadratic moderator of the relationship between gender inequality and life satisfaction. The present study includes data from a larger number of nations than Study 1, allowing for a more complete cross-national analysis. The data were subject to a moderated regression analysis with centred variables (Aiken & West, 1991; Jose, 2013a).

Method

The national gender inequality and economic prosperity indexes that were used in Study 1 were also used to measure gender inequality in Study 2. The national religiosity scores provided by Diener and colleagues (2011) were used to assess religiosity. These scores capture the proportion of people who reported that religion was important in their daily lives

for each nation (participants could answer “yes” or “no” to the question: “Is religion an important part of your daily life”²). The life satisfaction index from the World Database of Happiness was used as the outcome variable in the analyses (Veenhoven, 2013). The life satisfaction scores for each nation indicate the average extent to which people are satisfied with their life as a whole on a scale ranging from 0–10. The life satisfaction data are from 2000–2009. The included nations and national-level means of the variables under study are reported in Table 3.

Results

We conducted a moderated regression analysis to test the hypotheses of the study. The gender inequality, economic prosperity, and religiosity scores were centred. The M&M (moderation & mediation) statistical program was used to graph the interaction (Jose, 2013b). The predictor (gender inequality) and moderator (religiosity) were entered together with the interaction term of the predictor and moderator, the quadratic term of the moderator, the interaction term of the predictor and quadratic term of the moderator. We also included economic prosperity in the analysis to control for its effects. There is a significant linear moderation if the interaction between the predictor and the moderator is significantly different from zero. There is a significant quadratic moderation if the interaction between the predictor and the quadratic term of the moderator is significantly different from zero (Jose, 2013b). The relationship between national gender inequality and national life satisfaction is depicted in Figure 4 for the nations included in this study.

This analysis was conducted on the 127 nations for which data was available for gender inequality, religiosity, economic prosperity, and life satisfaction. The results of the regression analysis showed that approximately 65% of the variance in life satisfaction was

² Calculated using data provided by the Gallup World Poll from 2005 to 2009.

explained by the predictors ($R^2 = .65$, adjusted $R^2 = .63$, $F(6, 120) = 37.443$, $p < .001$). The results are presented in Table 4. Neither gender inequality, nor religiosity, was a significant predictor of national life satisfaction. However, the quadratic term of religiosity was a significant predictor, showing the relationship between religiosity and life satisfaction is not linear. The interaction of gender inequality and the linear term of religiosity was also not a significant predictor, indicating that religiosity was not a linear moderator of the relationship between gender inequality and life satisfaction. The interaction of gender inequality and the quadratic term of religiosity was a significant predictor of life satisfaction, showing that the influence of gender inequality on life satisfaction is not linearly moderated, but quadratically moderated, by religiosity. The quadratic moderation is graphically depicted in Figure 5. The graph indicates that for highly religious nations, the relationship between gender inequality and life satisfaction is negative. Then, as religiosity lowers to moderate levels, this relationship becomes less negative. Finally, as religiosity decreases from moderate to very low levels, the relationship becomes more negative again, resembling the relationship at very high levels of religiosity. Finally, economic prosperity was a strong positive predictor of life satisfaction.

Discussion

The results of Study 2 indicate that national religiosity is a quadratic moderator of the relationship between gender inequality and life satisfaction. The schematic representation of this smooth moderating effect in Figure 5 supports our subsidiary hypothesis that religiosity is a quadratic moderator of the relationship between gender inequality and life satisfaction. The figure shows that the relationship is negative for the least religious group of nations and then becomes less negative (flatter) heading toward the moderately religious nations and then becomes more negative again heading toward the most religious group of nations. The

religiosity-as-buffer hypothesis can explain the flattening of the slopes from the least religious nations to the moderately religious nations. However, it cannot explain the steepening of the slopes from the moderately religious nations to the most religious nations.

Here, we propose an explanation for this interesting result (why the relationship between gender inequality and subjective well-being might become more negative as nations go from being moderately religious to highly religious). We propose that women in highly religious nations are less satisfied with life if they live in a nation with high gender inequality because they believe they will never experience gender equality and the associated freedoms.

But why might women in highly religious nations believe they will never experience gender equality and the associated freedoms? Highly religious nations tend to be very culturally homogenous and conservative (i.e. very slow to change social and economic policies). Indeed, prior research has shown that highly religious individuals and institutions are likely to value and endorse conformity, hierarchy, tradition, and preserving the social order (e.g., Roccas & Schwartz, 1997; Saroglou, Delpierre, & Dernelle, 2004; Schwartz & Huisman, 1995). So, in highly religious nations, the strong presence of religion is likely to be a driver of the homogeneity and conservatism. Therefore, women in highly religious nations are unlikely to believe that they, or their daughters, will ever experience gender equality or have the capabilities to pursue all of their important goals because the strong presence of religion in their nations makes it less likely that the extant gender inequality will change in the near future.

And how might the belief that gender inequality will not change in their lifetime make some women less satisfied with their lives? It has been argued that achieving important goals increases life satisfaction and other measures of subjective well-being (Diener & Biswas-Diener, 2002; Diener & Fujita, 1995; Srivastava, Locke, & Bartol, 2001; Tesch-Römer et al., 2008). Therefore, it seems reasonable to assume that women will be less satisfied with their

lives if they strongly believe that they, or their daughters, will never achieve many of their important goals. Indeed, women who genuinely believe that their prospects will not change are likely to be disappointed that they happen to be female, or with their society or their God for creating and perpetuating this inequality. They might also find the inequality unjust (Napier & Jost, 2008; Napier et al., 2010; Wakslak, Jost, Tyler, & Chen, 2007), causing them to be angry at God and possibly to experience other spiritual struggles (Exline & Martin 2005; Exline, Park, Smyth, & Carey, 2011; Pargament, Murray-Swank, Magyar, & Ano, 2005). Therefore, the belief that gender inequality will not change in their lifetime is something that could exacerbate the dissatisfaction some women already feel because of the injustice of gender inequality as well as the limits it places on their ability to achieve the important goals in their lives.

To summarise the argument: We are proposing that high religiosity at the national level is much more likely than moderate levels of national religiosity to occur in nations with highly homogenous and conservative cultures. Furthermore, residents in nations with highly homogenous and conservative cultures are unlikely to believe that the gender inequality in their nation will change in their lifetime. Therefore, residents in nations with high national-level religiosity are more likely than residents of nations with moderate levels of national religiosity to believe that the gender inequality in their nation will change in their lifetime. Moreover, belief that the gender inequality in their nation will change in their lifetime is likely to exacerbate the negative relationship between gender inequality and life satisfaction for some women. Therefore, it is likely that there will be a more negative relationship between gender inequality and life satisfaction in nations with high national-level religiosity than in nations with moderate levels of national religiosity.

The schematic representation of national religiosity's moderating effect in Figure 5 can also be interpreted as being consistent with our main hypothesis—the religiosity-as-

buffer hypothesis. All of the groups of nations that were more religious than the least religious group of nations display a flatter (less negative) slope. This indicates that the negative effects of gender inequality on life satisfaction are reduced in all of the groups of nations that are more religious than the least religious group of nations.

General Discussion

The main purpose of this paper was to test whether religiosity buffers the negative effects of gender inequality on life satisfaction. The results provide evidence in support of religiosity buffering the negative effects of gender inequality on life satisfaction.

Furthermore, our findings suggest that the buffering effect of religiosity holds when we control for nations' levels of wealth, and individuals' gender, age, and religious affiliation.

The analyses above suggest that several different mechanisms govern the effects of religiosity on the relationship between gender inequality and life satisfaction, including individual-level, national-level, and cross-level mechanisms.

The subsidiary aim of this paper was to examine whether religiosity was a quadratic moderator of the relationship between gender inequality and subjective well-being.

Conducting two studies, one on a larger sample of nations, was highly instructive in this regard. In study 1, our analysis of multi-level data from 84 nations revealed strong evidence for personal religiosity being a linear moderator of the relationship between gender inequality and life satisfaction. However, our analysis of national-level data from 127 nations in Study 2 produced a different result. Study 2 showed support for national religiosity being a quadratic moderator of the relationship between gender inequality and life satisfaction. The support for a quadratic moderation was strong in this case because the coefficient for quadratic moderation was significant and the coefficient for linear moderation was not significant.

There are some differences between the results of the two studies. In Study 1, gender inequality (negative) was a significant predictor of life satisfaction, but in Study 2, it was not. Another difference in the results is that, in Study 2, the quadratic term of national religiosity was a significant predictor of life satisfaction, whereas it was not a significant predictor in Study 1. The final difference between the studies is that the interaction between gender inequality and the quadratic term of national religiosity was a significant predictor of life satisfaction in Study 2, whereas it did not reach significance in Study 1.

The differences between the results of Study 1 and Study 2 might be explained by the inclusion of several understudied nations in Study 2, which generally consist of traditional, religious, and undeveloped or developing nations. These nations are necessarily excluded in research using data from the World Values Survey and European Values Study, as these projects have not been collecting data from these nations. However, our findings suggest that inclusion of these groups of nations may change the patterns of findings. Therefore, it is advisable to try to replicate findings using data from the World Values Survey and European Values Study in datasets based on a larger number of nations to see if the results hold. However, one cannot rule out other potential sources of difference between the results of Study 1 and 2. For example, in Study 2, we only analysed national-level variables, whereas the analyses in Study 1 were conducted at two levels. It is also possible that different measures of religiosity and life satisfaction used in Study 2 account for the differences.

Despite the differences between the findings of the two studies, which cannot be fully explained at this stage, conducting these two studies enabled us to better gauge the complex effects of religiosity on the relationship between gender inequality and life satisfaction. Notably, religious belief appears to mitigate the negative effects of national-level gender inequality. Religious belief probably does this by enabling the understanding of inequalities in such a way that they do not seem unjust. And most importantly, this religiosity-based

mitigation begins to reduce in highly religious (and very conservative) nations. This result could be caused by women in highly religious nations realising that their lack of ability to pursue some of their important goals is not going to change in the relevantly near future.

This paper has shown evidence for several important implications for cross-cultural research on equality, religion, and subjective well-being. First, given the significance of several multi- and cross-level interactions involving religiosity variables reported in this paper, multi-level modelling should be incorporated into any cross-national investigation using religiosity as a variable. Second, many cross-national analyses of equality and subjective well-being (e.g., Alesina et al., 2004; Napier et al., 2010; Tesch-Römer et al., 2008) investigate a relatively small number of nations. Since the inclusion of understudied nations might weaken or strengthen the results, future research in this area should attempt to incorporate data from as many nations as possible. Third, this is now the second recent investigation to find evidence in support of national religiosity being a quadratic moderator of the relationship between a measure of inequality and subjective well-being (see also Joshanloo & Weijers 2013b). This suggests that the relationship between all forms of inequality and subjective well-being might be moderated by religiosity in a similar manner and for similar reasons.

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Table 1

Sample sizes and mean scores (Study 1)

	Sample size	GII	Religiosity	Life satisfaction	Economic prosperity
Netherlands	3607	.04	4.90	7.87	2.48
Sweden	3205	.06	4.00	7.69	2.79
Denmark	2530	.06	4.07	8.31	2.13
Switzerland	2513	.06	6.13	7.96	3.33
Norway	2115	.06	4.20	8.03	3.26
Germany	6175	.07	4.32	7.04	2.78
Finland	3186	.07	5.65	7.79	2.40
Slovenia	3409	.08	5.22	7.35	1.17
France	4117	.08	4.43	6.99	2.03
Iceland	1776	.09	6.07	8.05	.38
Italy	4531	.09	7.44	7.10	1.39
Belgium	3421	.10	5.03	7.51	2.08
Singapore	1512	.10	8.23	7.24	3.22
Austria	3032	.10	6.20	7.79	2.56
Spain	5109	.10	5.74	7.18	1.23
Portugal	2553	.11	7.34	6.69	.86
Australia	1421	.12	6.09	7.30	2.65
Canada	4095	.12	7.43	7.79	2.76
Ireland	2025	.12	7.48	8.01	1.91
Czech Republic	3729	.12	3.82	7.11	1.68
Japan	2458	.13	5.01	6.71	2.59
Cyprus	2050	.13	8.57	7.31	1.30
Greece	2642	.14	7.62	6.77	-.39
Poland	3605	.14	8.28	6.85	.84
Israel	1199	.14	7.78	7.03	1.71
Luxembourg	2821	.15	5.07	7.85	2.97
South Korea	2400	.15	5.56	6.30	2.00
Lithuania	2518	.16	6.46	5.91	-.35
Estonia	2523	.16	4.38	6.35	.38
Macedonia	2555	.16	7.65	6.13	-1.04
New Zealand	954	.16	5.35	7.89	1.81
Slovakia	2840	.17	6.81	6.58	.67
Croatia	2528	.18	7.22	6.93	.39
Great Britain	3602	.21	5.10	7.51	1.86
China	3015	.21	3.58	6.68	2.59
Latvia	2519	.22	5.69	5.92	-.25
Bulgaria	3501	.22	5.61	5.52	-.56
Malta	2502	.24	9.16	7.99	1.62
Albania	2534	.25	7.12	5.88	-.66
Hungary	2513	.26	5.38	6.11	.00
United States	2449	.26	8.39	7.46	2.12
Malaysia	1201	.26	8.07	6.84	2.45
Viet Nam	2495	.30	4.99	6.86	1.25
Moldova	3605	.30	8.15	5.67	-1.67

Trinidad and Tobago	1002	.31	9.67	7.26	-.25
Russian Federation	6037	.31	5.86	5.62	.37
Azerbaijan	1505	.32	6.98	5.91	-.47
Romania	4411	.33	8.88	5.96	-.56
Ukraine	3702	.34	6.95	5.49	-1.12
Armenia	1500	.34	8.43	5.67	-1.93
Kyrgyzstan	1043	.36	7.80	6.48	-1.66
Thailand	1534	.36	7.98	7.21	2.24
Chile	2200	.36	8.71	7.18	1.79
Turkey	8337	.37	9.26	6.17	-.07
Uruguay	1000	.37	7.32	7.46	.87
Argentina	2282	.38	8.41	7.48	.92
Mexico	3095	.38	9.41	8.19	1.43
Peru	3001	.39	9.08	6.73	1.26
Algeria	1282	.39	9.81	5.67	.86
Rwanda	1507	.41	9.45	4.97	-1.34
Philippines	1200	.42	9.56	6.65	.99
Georgia	3000	.44	9.10	5.21	-2.11
Morocco	3464	.44	9.83	5.78	1.43
Brazil	1500	.45	9.63	7.64	1.59
Colombia	3025	.46	9.67	8.31	1.00
South Africa	5988	.46	9.14	6.76	-.42
Venezuela	1200	.47	9.53	7.52	.23
Jordan	2423	.48	9.93	6.40	-.71
Indonesia	3019	.49	9.70	6.93	1.09
Iran	5199	.50	9.49	6.40	-.03
Uganda	1002	.52	9.26	5.65	-.61
Bangladesh	1500	.52	9.66	5.78	-.07
Guatemala	1000	.54	9.72	7.95	.24
Zimbabwe	1002	.54	9.61	3.95	-6.78
Tanzania	1171	.56	9.61	3.87	-.34
Iraq	5026	.56	9.84	4.82	-.55
Ghana	1534	.57	9.78	6.12	-1.19
Pakistan	2000	.57	10.00	4.85	-1.26
Egypt	6051	.59	9.77	5.57	-.84
Burkina Faso	1534	.61	9.11	5.57	-.72
India	4003	.61	8.01	5.47	.50
Zambia	1500	.62	9.18	6.06	-1.31
Mali	1534	.65	9.17	6.09	-.45
Saudi Arabia	1502	.68	9.78	7.28	1.64

Note. GII = Gender inequality index

Table 2
Hierarchical Linear Modelling Predicting Life Satisfaction (Study 1)

	<i>b</i>	St. Error	<i>t</i>	Sig.
<i>Main effects</i>				
Intercept	6.561	.123	53.380	.000
Age	-.008	.001	-6.368	.000
Female	-.063	.028	-2.207	.030
Personal religiosity	.077	.014	5.266	.000
Quad personal religiosity	.008	.002	3.869	.000
Buddhist	.086	.051	1.685	.092
Hindu	.062	.057	1.086	.277
Muslim	-.133	.026	-5.042	.000
Evangelical	.136	.042	3.180	.001
Orthodox	-.033	.029	-1.150	.250
Protestant	.208	.021	9.751	.000
Roman Catholic	.102	.017	5.837	.000
Shia	.121	.050	2.392	.017
National religiosity	.149	.067	2.216	.030
Quad national religiosity	-.015	.032	-.481	.632
National gender inequality	-2.737	.827	-3.308	.001
National economic prosperity	.212	.046	4.534	.000
<i>Two-way interactions</i>				
Personal religiosity × gender inequality	-.206	.101	-2.034	.045
National religiosity × gender inequality	-.019	.012	-1.484	.142
Quad personal religiosity × gender inequality	.501	.380	1.316	.192
Quad national religiosity × gender inequality	-.095	.162	-.587	.559
Personal religiosity × national religiosity	.029	.006	4.333	.000
<i>Three-way interactions</i>				
Female × personal religiosity × gender inequality	.044	.025	1.728	.084
Female × quad personal religiosity × gender inequality	.005	.006	.782	.434
Female × national religiosity × gender inequality	.210	.073	2.876	.005
Female × quad national religiosity × gender inequality	.023	.021	1.097	.276

Note. 'Quad' indicates the quadratic term of the moderator

Table 3
Mean scores for the national-level variables used (Study 2)

	GII	Religiosity	Life satisfaction
Netherlands	.045	.33	7.6
Sweden	.055	.16	7.8
Denmark	.057	.19	8.3
Switzerland	.057	.43	8.0
Norway	.065	.22	7.9
Finland	.075	.28	7.9
Germany	.075	.41	7.1
Slovenia	.080	.43	6.9
France	.083	.27	6.6
Iceland	.089	.39	8.2
Italy	.094	.73	6.7
Belgium	.098	.39	7.3
Singapore	.101	.60	6.9
Austria	.102	.53	7.6
Spain	.103	.43	7.2
Portugal	.114	.73	5.7
Australia	.115	.32	7.7
Canada	.119	.45	7.8
Ireland	.121	.57	7.6
Czech Republic	.122	.26	6.5
Japan	.131	.26	6.5
Cyprus	.134	.76	7.1
Greece	.136	.71	6.4
Poland	.140	.75	6.4
Israel	.144	.48	7.0
Luxembourg	.149	.40	7.7
Korea, South	.153	.42	6.0
Lithuania	.157	.41	5.5
Estonia	.158	.17	6.0
Macedonia	.162	.80	4.7
New Zealand	.164	.35	7.5
Slovakia	.171	.48	5.9
Croatia	.179	.69	6.0
United Kingdom	.205	.30	7.2
Latvia	.216	.36	5.4
Bulgaria	.219	.35	4.4
Malta	.236	.90	7.1
United Arab Emirates	.241	.96	7.3
Albania	.251	.35	4.6

Hungary	.256	.41	5.5
Malaysia	.256	.89	6.5
United States	.256	.66	7.4
Tunisia	.261	.92	5.9
Kuwait	.274	.89	6.6
Vietnam	.299	.35	6.1
Moldova	.303	.75	4.9
Trinidad and Tobago	.311	.86	7.0
Kazakhstan	.312	.50	6.1
Russia	.312	.32	5.5
Azerbaijan	.323	.59	5.3
Romania	.327	.84	5.7
Tajikistan	.338	.80	5.1
Ukraine	.338	.43	5.0
Armenia	.340	.68	5.0
Costa Rica	.346	.84	8.5
Kyrgyzstan	.357	.68	5.5
Chile	.360	.69	6.7
Thailand	.360	.95	6.6
Turkey	.366	.82	5.6
Uruguay	.367	.42	6.7
Argentina	.380	.64	7.3
Mexico	.382	.68	7.9
Peru	.387	.83	6.2
Algeria	.391	.90	5.4
Sri Lanka	.402	.99	5.1
Rwanda	.414	.90	4.3
Philippines	.418	.96	5.9
Lebanon	.433	.89	4.7
Belize	.435	.65	6.6
Georgia	.438	.78	4.3
El Salvador	.441	.88	6.7
Ecuador	.442	.82	6.4
Morocco	.444	.94	5.4
Brazil	.447	.88	7.5
Namibia	.455	.92	5.2
Jamaica	.458	.71	6.7
Colombia	.459	.85	7.7
Nicaragua	.461	.86	7.1
South Africa	.462	.85	5.8
Venezuela	.466	.77	7.5
Paraguay	.472	.92	6.8
Cambodia	.473	.92	4.9

Bolivia	.474	.88	6.3
Burundi	.476	.87	2.9
Jordan	.482	.95	5.9
Honduras	.483	.88	7.0
Laos	.483	.98	6.2
Botswana	.485	.74	4.7
Nepal	.485	.93	5.3
Indonesia	.494	.98	6.3
Iran	.496	.81	5.9
Panama	.503	.87	7.8
Dominican Republic	.508	.86	7.5
Uganda	.517	.93	4.8
Bangladesh	.518	.99	5.3
Guatemala	.539	.86	7.2
Senegal	.540	.98	4.5
Zimbabwe	.544	.85	3.0
Syria	.551	.87	5.9
Tanzania	.556	.97	2.8
Iraq	.557	.87	4.7
Ghana	.565	.93	5.2
Togo	.566	.88	2.6
Pakistan	.567	.97	5.0
Malawi	.573	.98	6.2
Mozambique	.582	.88	3.8
Egypt	.590	.99	5.7
Haiti	.592	.78	3.9
Sudan	.604	.96	5.0
Kenya	.608	.95	3.7
Burkina Faso	.609	.91	4.4
Congo, Republic of the	.610	.94	3.7
India	.610	.85	5.5
Benin	.618	.91	3.0
Zambia	.623	.94	5.0
Cameroon	.628	.95	3.9
Cote d'Ivoire	.632	.88	4.4
Mauritania	.643	.98	4.9
Sierra Leone	.643	.97	3.5
Mali	.649	.93	4.7
Central African Republic	.654	.94	4.6
Liberia	.658	.96	4.3
Congo, Democratic Republic of the	.681	.98	4.4
Saudi Arabia	.682	.98	6.5

Niger	.707	.98	3.8
Afghanistan	.712	.98	4.1
Yemen	.747	.95	4.8

Note. GII = Gender inequality index

Table 4

Summary of Moderated Regression Analyses with National-Level Centred Variables Predicting Life Satisfaction Moderated by National Religiosity (Study 2)

Predictors	<i>b</i>	β	<i>t</i>	<i>p</i>
Gender inequality	.324	.046	.352	.726
Religiosity	-.441	-.079	-.642	.522
Gender inequality × religiosity	-.528	-.016	-.160	.873
Quad religiosity	-8.132	-.393	-2.847	.005
Gender inequality × quad religiosity	-27.874	-.444	-2.799	.006
Economic prosperity	.543	.672	9.052	.000

Note. ‘Quad’ indicates the quadratic term of the moderator

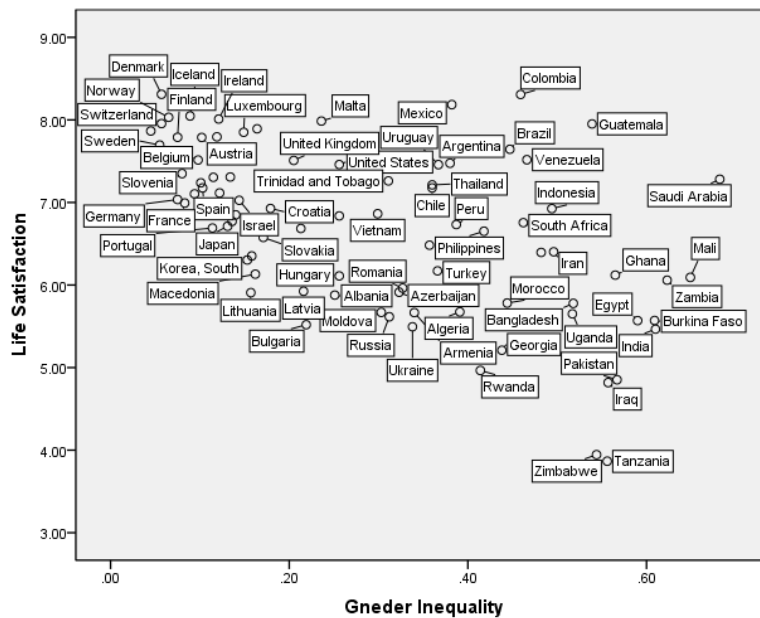


Figure 1

The relationship between gender inequality and life satisfaction across nations (Study 1)

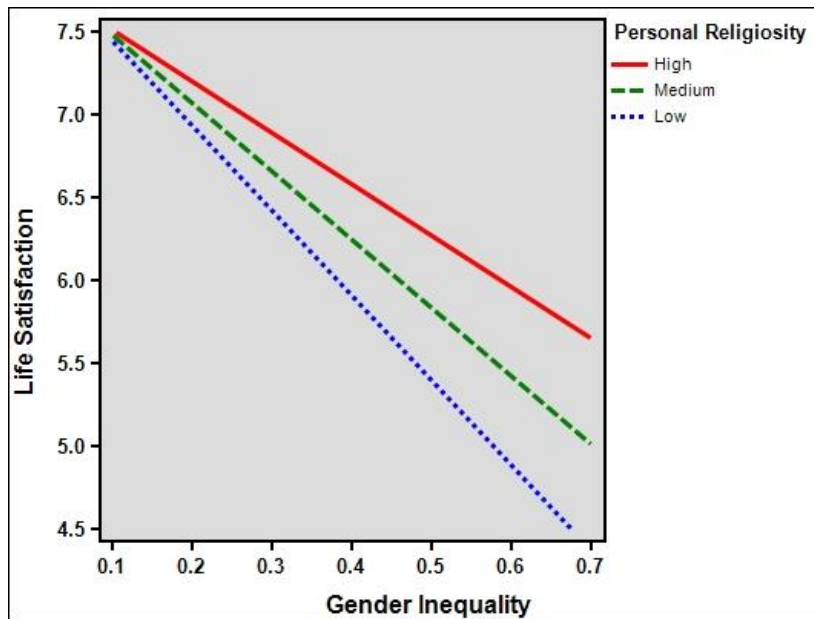


Figure 2

The relationship between gender inequality and life satisfaction as moderated by personal religiosity (Study 1)

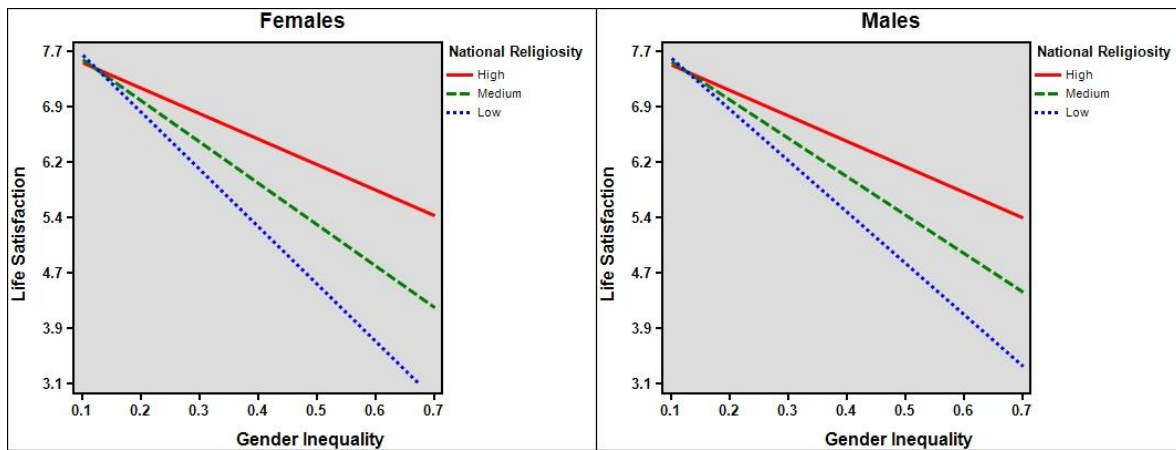


Figure 3

The relationship between gender inequality and life satisfaction as moderated by national religiosity for both genders (Study 1)

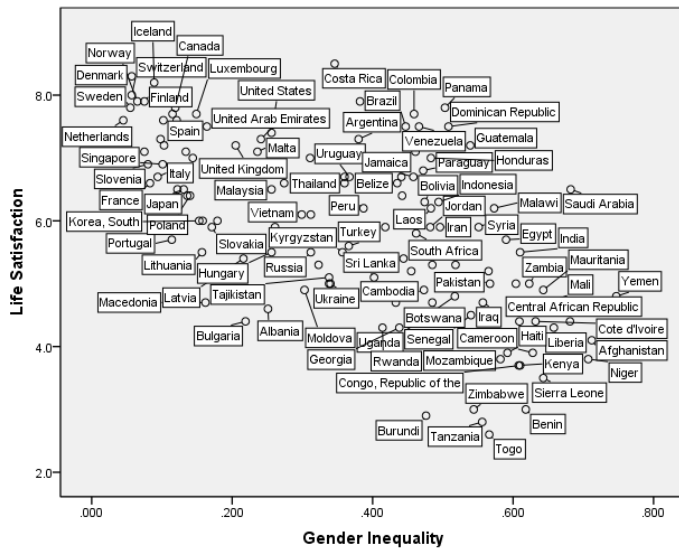


Figure 4

The relationship between national gender inequality and national life satisfaction (Study 2)

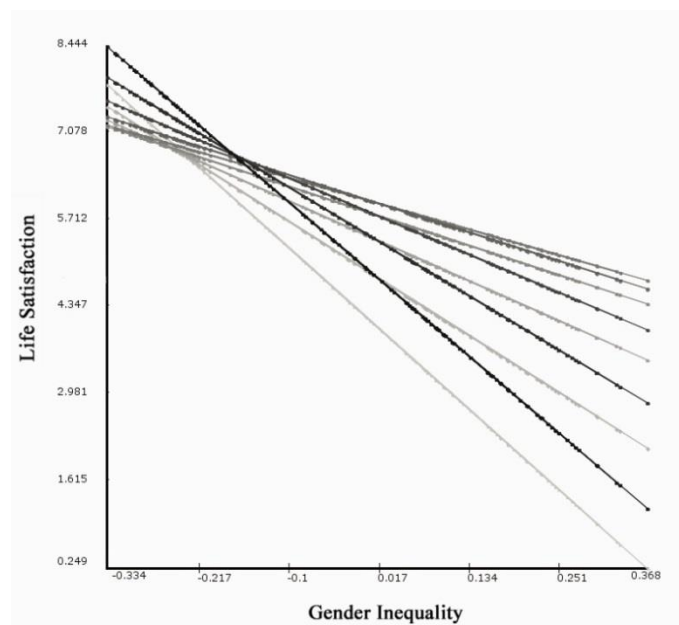


Figure 5

Graphical depiction of the quadratic moderation results (Study 2)

Note. Dark lines represent high levels of religiosity, and light lines represent low levels of religiosity.