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Is there a relation between religiosity and gender stereotypes in the world?

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I. Introduction

In a 2020 report, the United Nations Development Programme (UNDP) points out that gender inequalities in the world have hardly decreased since 2010.[1] According to the report, this situation is partly due to the persistence of gender stereotypes, which "reinforce gendered identities and determine power relations that constrain women's and men's behaviour in ways that lead to inequality" (p. 6).

To measure the prevalence of gender stereotypes at country level, the UNDP uses an index called the *Gender Social Norms Index* (GSNI). The GSNI of a given country corresponds to the percentage of its population with at least one (GSNI) or two (GSNI2) gender stereotype(s) out of seven items tested. Overall, higher GSNI values indicate higher bias against gender equality.[2]

Commenting the UNDP report in the *Journal de Montréal*, the famous French-speaking journalist, novelist, and feminist Denise Bombardier argues that the UNDP seeks to overlook what she sees as an obvious correlation: the countries where gender stereotypes are most prevalent are Muslim countries.[3]

[1] Human Development Perspectives report (2020), *Tackling Social Norms: A game changer for gender inequalities*, United Nations Development Programme, http://hdr.undp.org/sites/default/files/hd_perspectives_gsni.pdf

[2] Human Development Perspectives report (2020), *Tackling Social Norms: A game changer for gender inequalities*, United Nations Development Programme, Frequently Asked Questions – Gender Social Norms Index (GSNI), http://hdr.undp.org/sites/default/files/frequently_asked_questions_gsni.pdf

[3] Denise Bombardier says that this report "… confirme […] une corrélation que se garde bien de mettre en évidence l'organisme des Nations unies, à savoir le lien entre le poids de la religion et les préjugés à l'égard des femmes. Les pays musulmans se situent au sommet de cette liste infâme. En Jordanie, 99,3% des gens nourrissent des préjugés. Au Qatar, 99,7%, au Nigeria, 99,7%, en Libye, 99,1%, en Malaisie, 98,5% et au Mali, 98,8%. La prime de la honte est détenue par le Pakistan, où seulement 0,2% de la population n'exprime pas de préjugés à l'endroit des femmes, selon les critères de l'étude."
Bombardier, D. (7 mars 2020). L'égalité des sexes: les faits bruts. *Le Journal de Montréal*, en ligne, https://www.journaldemontreal.com/2020/03/07/legalite-des-sexes-les-faits-bruts?fbclid=IwAR0EcsTpZI-UrKgAvEvkWUVaeqQQiYjurPTeQKU_lZzlJe1bABwfDR9QiaM

Islam would thus be a cause of the persistence of sexist stereotypes in the world and, therefore, a cause of the persistence of gender inequalities.

However, the apparent link between Islam and high levels of gender stereotypes can mask more important factors, starting with countries' level of development. Indeed, visual inspection of the UNDP data suggests that countries with the lowest levels of gender stereotypes (Andorra, Sweden, the Netherlands, Norway, etc.) are all highly developed and educated countries.

Moreover, as Denise Bombardier herself acknowledges, some non-Muslim countries, but where religious sentiment is strong, are also at the top of the list of the most sexist countries (e.g., Zimbabwe, Ghana, the Philippines, India). Therefore, it is possible that it is not Islam per se that is associated with strong gender stereotypes, but high levels of religiosity, regardless of the religion in question.

In this working paper, we explore whether and to what extent the following three variables explain the international variance of gender stereotypes: Islam, religiosity, and development. Our results, based on data from 75 countries accounting for 81 percent of the world population, suggest that religiosity and development are more important factors explaining the international variance of gender stereotypes than Islam.

II. Material and Method

2.1 Dependent variable

***Gender Social Norms Index* (GSNI and GSNI2)**

The GSNI of a given country corresponds to the percentage of its population with at least one (**GSNI**) or two (**GSNI2**) gender stereotype(s) out of seven items tested (e.g.: "Men make better political leaders than women do"; "University is more important for a man than for a woman"; "Men make better business executives than women do"). Overall, higher GSNI values indicate higher bias against gender equality.

The GSNI and GSNI2 are based on data from the *World Values Survey* wave 5 (2005–2009) and wave 6 (2010–2014). These data include 75 countries accounting for 81 percent of the world population.

Source of the data: Human Development Perspectives report (2020), *Tackling Social Norms: A game changer for gender inequalities*, United Nations Development Programme, Table A1, 20-21, http://hdr.undp.org/sites/default/files/hd_perspectives_gsni.pdf

2.2 Independent variables

Muslim-majority countries

The 75 countries for which we had a GSNI and a GSNI2 were classified as either predominantly Muslim countries (1) or not (0).

Muslim-majority countries (1): N = 23; other countries (0): N = 52.

Religiosity

To assess the level of religiosity of the 75 countries included in this study, we used the responses to item V9 of the *World Values Survey* wave 5 (2005-2009) and wave 6 (2010-2014). This item is as follows: "How religion is important in your live?" Responses range from 1 = "Very important" to 4 = "Not at all important". We recoded the responses to this item to reverse its directionality. Therefore, in our study, responses range from 1 = "Not at all important" to 4 = "Very important". Then, we averaged the responses by country. The average of each country corresponds to its level of religiosity.

Source of the data: *World Values Survey* wave 5 (2005–2009) and wave 6 (2010–2014), http://www.worldvaluessurvey.org/WVSDocumentationWV6.jsp

Human Development Index (HDI)

The UNDP describes the Human Development Index as follows: "The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions. The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita."

We used the HDI of 2010 for all countries, which corresponds to the midpoint of the GSNI and Religiosity data collection period (2005–2014).

Source of the data: United Nations Development Programme, http://hdr.undp.org/en/data#

All data used in this study are in the Appendix of this paper.

2.3 Analyses

We performed multiple linear regression analyses to assess the relation between *GSNI* and *GSNI2*, as dependent variables, and *Muslim majority*, *Religiosity*, and *HDI* as independent variables.

III. Results

3.1 Descriptive statistics

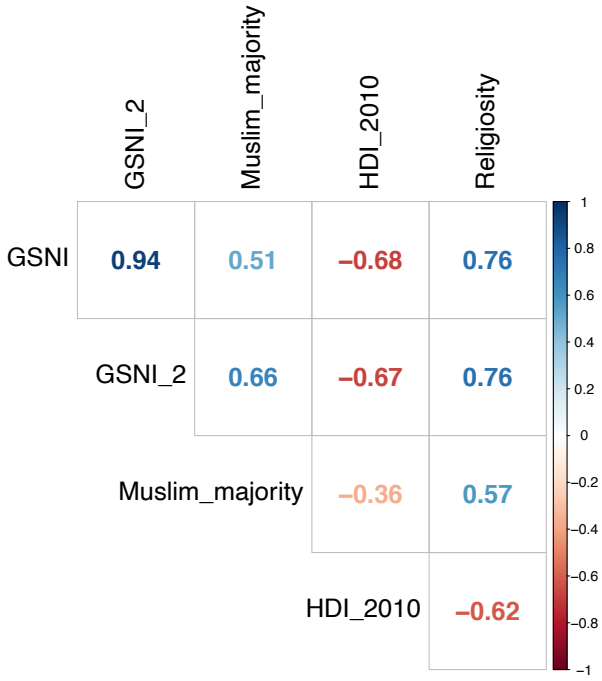

Figure 1 – Pearson correlations between all the variables. N = 75 countries. All $p < 0.01$.

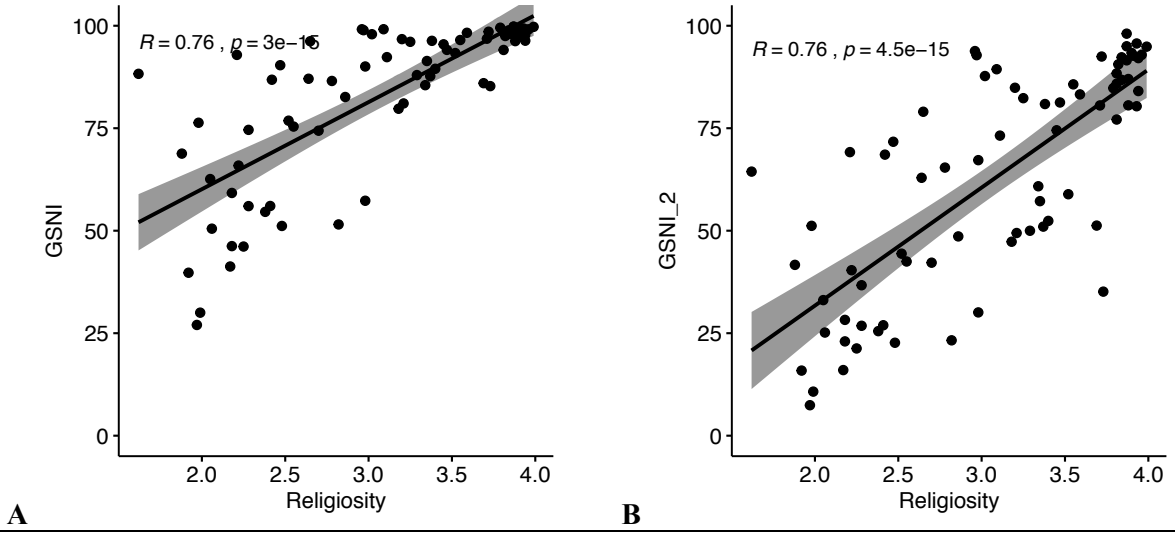

Figure 2 – Pearson correlations between *Religiosity* and (**A**) *GSNI* (N = 75 countries, $R = 0.76$, $p < 0.001$), (**B**) *GSNI2* (N = 75 countries, $R = 0.76$, $p < 0.001$). Grey surfaces: confidence intervals (95%).

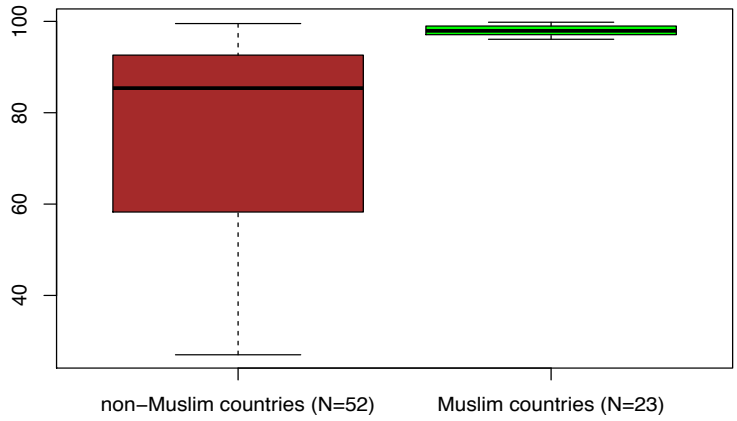

Figure 3 – *GSNI* of the non-Muslim countries (on the left, in brown; N = 52) and of the Muslim countries (on the right, in green; N = 23). The difference between the two groups of countries is significant (bilateral t-test: t(73)=5.09, $p < 0.001$).

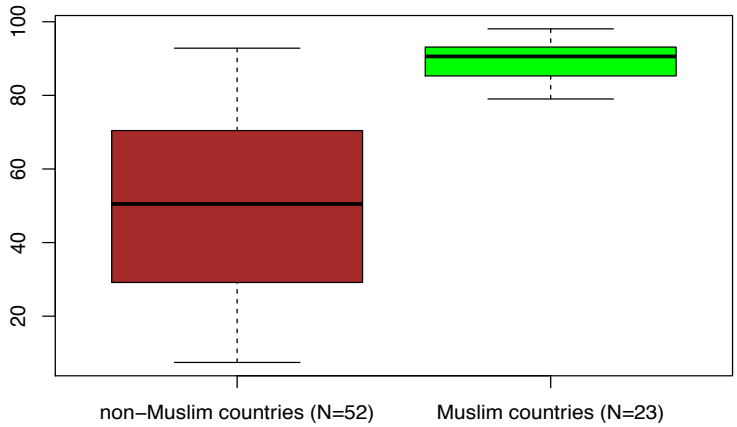

Figure 4 – *GSNI2* of the non-Muslim countries (on the left, in brown; N = 52) and of the Muslim countries (on the right, in green; N = 23). The difference between the two groups of countries is significant (bilateral t-test: t(73)=7.53, $p < 0.001$).

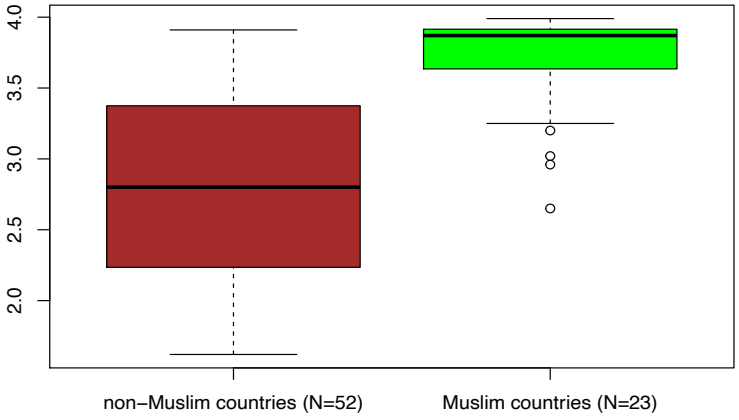

Figure 5 – *Religiosity* of the non-Muslim countries (on the left, in brown; N = 52) and of the Muslim countries (on the right, in green; N = 23). The difference between the two groups of countries is significant (bilateral t-test: t(73)=5.99, $p < 0.001$).

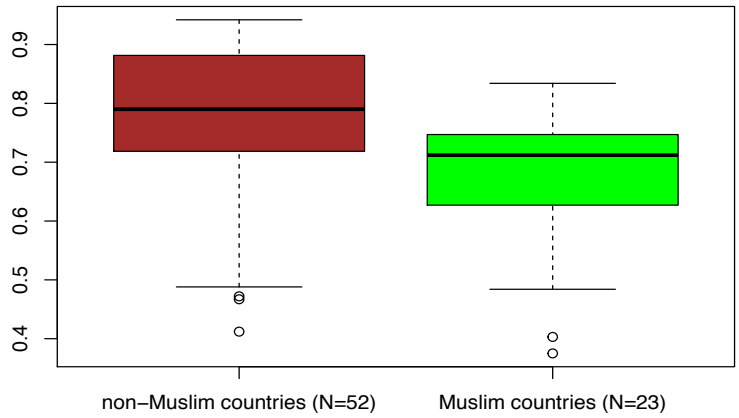

Figure 6 – *HDI* (2010) of the non-Muslim countries (on the left, in brown; N = 52) and of the Muslim countries (on the right, in green; N = 23). The difference between the two groups of countries is significant (bilateral t-test: t(73)=3.32, $p < 0.01$).

3.2 Analytical statistics

Table 1 – Multiple linear regression analysis, dependent variable: *GSNI*; independent variables: *Muslim majority*, *Religiosity*, and *HDI*. N = 75 countries.

```
Call:
lm(formula = GSNI ~ Muslim_majority + Religiosity + HDI_2010,
    data = Data_Gender)

Residuals:
    Min      1Q  Median      3Q     Max
-35.164  -6.802   2.288   5.797  24.767

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)     75.375     15.409   4.892 6.02e-06 ***
Muslim_majority  4.619      3.563   1.296 0.199046
Religiosity     13.537      2.814   4.811 8.17e-06 ***
HDI_2010       -48.152     12.395  -3.885 0.000227 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 11.65 on 71 degrees of freedom
Multiple R-squared:  0.6577,    Adjusted R-squared:  0.6432
F-statistic: 45.47 on 3 and 71 DF,  p-value: < 2.2e-16
```

Table 2 – Multiple linear regression analysis, dependent variable: *GSNI2*; independent variables: *Muslim majority*, *Religiosity*, and *HDI*. N = 75 countries.

```
Call:
lm(formula = GSNI_2 ~ Muslim_majority + Religiosity + HDI_2010,
    data = Data_Gender)

Residuals:
    Min      1Q  Median      3Q     Max
-51.107 -10.129  -0.444  10.259  26.803

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)       61.25      19.11   3.205 0.002025 **
Muslim_majority   19.22       4.42   4.349  4.5e-05 ***
Religiosity       13.67       3.49   3.918 0.000203 ***
HDI_2010         -63.12      15.37  -4.106 0.000106 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 14.45 on 71 degrees of freedom
Multiple R-squared:  0.716,     Adjusted R-squared:  0.704
F-statistic: 59.66 on 3 and 71 DF,  p-value: < 2.2e-16
```

IV. Discussion

Results of this study show that Islam per se is not the main cause of the persistence of gender stereotypes in the world. Among the 75 countries included in this study, the prevalence of gender stereotypes is more strongly correlated with levels of religiosity and development than with Muslim-majority countries versus other countries. Moreover, regression analyses show that religiosity and development are factors explaining the international variance of both GSNI and GSNI2, while Muslim majority is a significant additional factor in the explanation of the international variance of GSNI2 only (i.e., the percentage of the population with at least two gender stereotypes out of seven).

There are undoubtedly many other factors associated with the persistence of gender stereotypes around the world. But low levels of development – hence, low levels of education – and strong religiosity seem to play an important role in this regard.

Appendix: Data used in this study

Country	GSNI	GSNI_2	Muslim_majority	HDI_2010	Religiosity
Algeria	97.83	87.00	1	0.730	3.88
Andorra	27.01	7.43	0	0.828	1.97

Argentina	75.41	42.49	0	0.818	2.55
Armenia	94.11	81.28	0	0.729	3.47
Australia	46.24	23.00	0	0.866	2.18
Azerbaijan	99.14	93.82	1	0.732	2.96
Belarus	90.37	71.70	0	0.792	2.47
Brazil	89.50	52.39	0	0.726	3.40
Bulgaria	76.84	44.40	0	0.779	2.52
Burkina Faso	98.38	85.86	1	0.375	3.81
Canada	51.53	23.26	0	0.895	2.82
Chile	74.40	42.20	0	0.800	2.70
China	88.27	64.42	0	0.702	1.62
Colombia	91.40	57.21	0	0.729	3.35
Cyprus	81.05	49.44	0	0.850	3.21
Ecuador	93.34	58.90	0	0.716	3.52
Estonia	76.34	51.19	0	0.844	1.98
Ethiopia	85.27	35.14	0	0.412	3.73
Finland	51.16	22.67	0	0.903	2.48
France	56.00	26.81	0	0.872	2.28
Georgia	94.09	77.12	0	0.732	3.81
Germany	62.60	33.07	0	0.920	2.05
Ghana	99.16	92.69	0	0.554	3.91
Haiti	98.91	92.82	0	0.467	2.97
Hungary	65.89	40.36	0	0.826	2.22
India	98.28	83.25	0	0.581	3.59
Indonesia	97.44	80.36	1	0.666	3.93
Iran	98.54	92.49	1	0.756	3.72
Iraq	97.50	90.58	1	0.652	3.82
Japan	68.81	41.67	0	0.885	1.88
Jordan	99.33	95.67	1	0.728	3.93
Kazakhstan	96.22	79.02	1	0.764	2.65
Korea (Republic of)	87.07	62.91	0	0.882	2.64
Kuwait	97.77	91.56	1	0.712	3.87
Kyrgyzstan	96.73	84.87	1	0.636	3.20

Lebanon	96.08	82.33	1	0.751	3.25
Libya	99.13	92.89	1	0.757	3.96
Malaysia	98.54	88.38	1	0.773	3.81
Mali	98.82	93.36	1	0.403	3.90
Mexico	87.70	51.00	0	0.739	3.37
Moldova	90.06	67.21	0	0.681	2.98
Morocco	96.25	80.58	1	0.618	3.88
Netherlands	39.75	15.88	0	0.911	1.92
New Zealand	46.14	21.28	0	0.899	2.25
Nigeria	99.73	94.99	1	0.484	3.87
Norway	41.27	16.00	0	0.942	2.17
Pakistan	99.81	98.07	1	0.524	3.87
Palestine	98.00	92.30	1	0.671	3.84
Peru	87.96	49.99	0	0.721	3.29
Philippines	98.87	86.80	0	0.672	3.84
Poland	79.75	47.31	0	0.835	3.18
Qatar	99.73	94.90	1	0.834	3.99
Romania	85.50	60.84	0	0.797	3.34
Russian Federation	86.83	68.56	0	0.780	2.42
Rwanda	99.15	89.39	0	0.488	3.09
Serbia	82.62	48.61	0	0.762	2.86
Singapore	92.34	73.20	0	0.909	3.11
Slovenia	59.21	28.25	0	0.881	2.18
South Africa	96.32	80.90	0	0.662	3.38
Spain	50.50	25.16	0	0.865	2.06
Sweden	30.01	10.75	0	0.906	1.99
Switzerland	56.03	26.94	0	0.932	2.41
Thailand	95.47	74.50	0	0.721	3.45
Trinidad and Tobago	85.99	51.25	0	0.788	3.69
Tunisia	96.35	84.07	1	0.717	3.94
Turkey	96.52	85.70	1	0.743	3.55
Ukraine	86.53	65.40	0	0.732	2.78
UK	54.60	25.50	0	0.905	2.38

United States	57.31	30.07	0	0.911	2.98
Uruguay	74.60	36.70	0	0.774	2.28
Uzbekistan	97.93	87.73	1	0.665	3.02
Viet Nam	92.89	69.17	0	0.653	2.21
Yemen	97.80	92.10	1	0.499	3.94
Zambia	96.84	80.56	0	0.531	3.71
Zimbabwe	99.52	84.78	0	0.472	3.79