**Supplemental Materials**

**Women’s Representation in Science Predicts National Gender-Science Stereotypes: Evidence From 66 Nations**

**By D. I. Miller et al., 2014, *Journal of Educational Psychology***

http://dx.doi.org/10.1037/edu0000005.supp

This supplemental material provides detailed information for the most interested readers wishing to replicate our analyses (our data, sources for our data, and analysis scripts have been uploaded), understand the full rationale for our chosen methods, or compare our analysis of stereotype–achievement relationships with Nosek et al.’s (2009).

**Meta-Regression Models**

Unless otherwise noted, all analyses used mixed-effects meta-regression models (Borenstein, Hedges, Higgins, & Rothstein, 2009). As a variant of hierarchical linear modeling, mixed-effects meta-regression models offer many advantages over ordinary least squares (OLS) regression. For instance, these models incorporate information about a nation’s sampling variance into the models’ inferential statistics and weighting of individual nations. Furthermore, these models can test for and quantify residual between-nation heterogeneity in stereotypes.

 Our approach contrasts with Nosek et al.’s (2009) method of weighted OLS regression. In Nosek et al., nations with larger samples carried more weight in OLS regressions. Weights were proportional to log-transformations of inverse sampling variance:

**Nosek et al. (2009):**

The *j* subscript refers to the *j*-th nation, *SD* is standard deviation, and *n* is sample size. Nosek et al. log-transformed weights to attenuate the leverage of the large U.S. sample, which was more than 70% of the data. Through these weights, OLS regressions incorporated information about sampling variance. This approach, however, only incorporates information about *relative* differences in sampling variance. For instance, inferential statistics would be unchanged if each nation’s sample size doubled and all sampling variance decreased uniformly. In contrast, inferential statistics in meta-regression models incorporate information about uniform changes in sampling variance.

 Mixed-effects meta-regression models also give more weight to nations with larger samples. Compared with OLS regression, however, the leverage of the large U.S. sample is less problematic in mixed-effects models, as shown below (see Raudenbush & Bryk, 2002). From a mixed-effects perspective, even a nation with no sampling variance is still only one data point for estimating properties of underlying between-nation variation.

**Mixed-effects:**

The main difference from Nosek et al.’s weighting was the inclusion of the term in mixed-effects models. This term is the estimated residual between-nation variance, after accounting for sampling variance and fixed effects of predictor variables. As approaches infinity, the above nonnormalized weight approaches . The term effectively places a limit on how much weight any one nation can contribute. Even if a nation has little to no sampling variance (e.g., the U.S. sample), the weight is determined by the overall residual between-nation heterogeneity. Mixed-effects weighting reduces to standard inverse variance weighting as approaches zero (i.e., as more between-nation variability is explained). In our analyses, this situation has not occurred. The percentage of residual variation due to between-nation heterogeneity has typically been >90% even in analyses with many covariates. Hence, even though women’s representation in science explains part of the variation in stereotypes, many other unobserved factors explain between-nation variation in stereotypes.

We tested all mixed-effects models using the *metafor* package in the statistical software R (Viechtbauer, 2010). All models used restricted maximum likelihood estimation using the Knapp-Hartung modification that helps account for uncertainty in between-nation heterogeneity estimates (Knapp & Hartung, 2003). The syntax given below shows an example command in which women’s enrollment in tertiary science education (*TertSciF*) predicts national-level implicit stereotypes (*iat\_mean*) while modeling sampling error (*iat\_se*). Nations with sample sizes (*iat\_n*) of *n* > 50 and Internet user populations (*IntUsers*) of >5% are included. Our uploaded data set contains the R code used for all analyses.

modeldata = subset(alldata, iat\_n>50&IntUsers>5)

rma(iat\_mean, sei=iat\_se, mods= ~TertSciF, data=modeldata, knha=TRUE)

The statistical package STATA can also easily perform meta-regression analyses (see below).

metareg iat\_mean TertSciF if (iat\_n>50)&(IntUsers>5), wsse(iat\_se)

**Moderation Analyses**

As noted in the main text, two-level hierarchical linear models (Raudenbush & Bryk, 2002) used individual-level data to test whether the strength of our cross-national relationships depended on demographic variables (gender; college education).[[1]](#footnote-1) College education was modeled with three values (−1 = no college, 0 = some college, 1 = bachelor’s degree or higher) and gender with two values (−1 = male, 1 = female). Results were similar when modeling college education with two values (−1 = some or no college, 1 = bachelor’s degree or higher). For simplicity, Figure S1 shows results when analyzing education as a dichotomous variable for one choice of selection criteria. In these mixed-effects hierarchical linear models, individuals were modeled as nested within nations. The fixed effect of central interest was the interaction between the demographic variable and women’s representation in science; women’s representation in science was grand-mean centered before computing interaction terms. Other fixed effects were the demographic variable and women’s representation in science. Random effects were random intercepts for a nation’s average stereotypes and random slopes for the demographic variable. Random intercepts and random slopes were allowed to covary. We used the *xtmixed* command in the statistical package *STATA* to test all hierarchical linear models.

**Selection Criteria Analyses**

In contrast to other cross-national analyses of data collected online (e.g., Lippa, Collaer, & Peters, 2010; Nosek et al., 2009), we analyzed national samples that met both minimum sample size *and minimum Internet user population* requirements. In nations with a low percentage of Internet users, Internet samples will tend to draw only from a nation’s most elite, advantaged people. Setting minimum requirements for the percentage of Internet users can help overcome this limitation. However, requirements that are too stringent can limit diversity across nations, restricting analyses to nations that are exclusively Western, educated, and industrialized (Henrich, Heine, & Norenzayan, 2010). This situation was illustrated by the strong relation between nations’ percentage of Internet users and their Human Development Index (e.g., *r* ~ .8 in our sample of nations). Hence, moderate selection criteria may be ideal given this inherent trade-off between diversity across nations versus the representativeness within nations. To give context, the world average of Internet users during data collection (years 2000–2008) was 14% (see the uploaded data set)*.* Hence, requirements such as a >50% Internet user population would have greatly exceeded the world average at the time. Such stringent requirements may unduly limit diversity across nations but can help identify the robustness and boundary conditions of our results.

**Models for Stereotype–Achievement Analyses**

For reasons discussed in “Meta-Regression Models,” our analyses of cross-national relationships between gender-science stereotypes and achievement gender differences used mixed-effects meta-regression models, whereas Nosek et al. used weighted OLS regression models. In our meta-regression models, national stereotypes were the dependent variables and achievement differences were the predictor variables. One limitation of these models was that they modeled only sampling variance of the dependent variables (stereotypes) and assumed that predictor variables (achievement differences) were measured without error. Hence, these meta-regression models incorporated no sampling statistics about the achievement data. We choose to model the sampling variance of the stereotype data, rather than achievement data, because sampling variance was far more variable for the stereotype data (e.g., sample sizes ranged from one person to hundreds of thousands). We reanalyzed all achievement–stereotype relationships using Nosek et al.’s weighted OLS strategy (averaging log-transformed inverse variance weights for the stereotype sample and untransformed inverse variance weights for the TIMSS samples). Results were largely consistent with those using meta-regression models.

**Sample Size for Stereotype–Achievement Analyses**

We included nine nations with 2003 TIMSS data that Nosek et al. had excluded: Armenia, Bahrain, Botswana, Egypt, Estonia, Ghana, Lebanon, Morroco, and Saudi Arabia. These nations were previously excluded because they had no comparable TIMSS data point in 1995 or 1999. The data table that Nosek et al. used (Gonzales et al., 2004, Table C10) excluded any nations that did not have at least one other comparable TIMSS data point in 1995 or 1999. We did not consider lack of data in previous years to be a compelling reason for exclusion, unlike other criteria such as a minimum sample size or percentage of Internet users. If the research focus is on whether a relationship is significant in a given year (e.g., 2003), nations should not be excluded because they had no data in earlier years. These excluded nations had adequate TIMSS sampling statistics. Of the excluded nine nations, all nations except Morocco met TIMSS’s most stringent criteria for a representative sample (Gonzales et al., 2004, p. 30). Consistent with our arguments, other researchers (Else-Quest, Hyde, & Linn, 2010) included these nine nations in their analyses of TIMSS 2003 data.

Given the above considerations, we used a different TIMSS report (Martin, Mullis, Gonzalez, & Chrostowski, 2004, Exhibit D.2) that contained data for the full set of nations. Compared with excluding these nine nations, including them generally weakened unstandardized regression coefficients for relationships in 2003. This weakening of beta coefficients raised *p* values, even though the greater sample size gave greater statistical power. For instance, with the requirement of *n* > 50 responses per nation, the stereotype–achievement relationship was 39% weaker when the nations were included versus excluded. That relationship was significant when the nations were excluded (*p* = .030) but not when included (*p* = .149). Even though relationships were systematically weaker when including those nations, most results were not substantively changed. For instance, when making no requirements on minimum sample size or Internet user population, the stereotype–achievement relationship was significant when the nine nations were included (*p* = .007) versus excluded (*p* = .0007), even though the unstandardized relationship was 36% smaller when they were included.

**Detailed Results for Stereotype–Achievement Analyses**

Tables S2–11 present detailed statistics (unstandardized beta coefficients, number of analyzed nations) for relationships between time-averaged achievement differences and implicit stereotypes. These tables focus on women’s average stereotypes, which yielded slightly more robust relationships than did overall average stereotypes (see Table S3). For time-averaged TIMSS data, stereotype–achievement relationships were significant in 58% of cases and always in the predicted direction (see Table S4). These relationships, however, could reflect confounds between TIMSS achievement differences and the percentage of women among science majors (*r* = .61). Therefore, Tables S6–S8 present results simultaneously controlling for these two predictors. In general, significant relationships in Table S4 were often not significant once controlling for percent women among science majors (*p* < .05 in 8% of cases, see Table S6). Although this finding might be expected due to high multicollinearity, the percentage of women among science majors continued to independently predict women’s stereotypes in two thirds of cases (see Table S7). Hence, relationships between stereotypes and gender diversity were far more robust than relationships between stereotypes and achievement differences. Nevertheless, even when controlling for percent women among science majors, there was still some evidence for women’s implicit stereotypes relating to TIMSS achievement differences. In these multiple regression models, stereotype–achievement relationships were in the predicted direction in 89% of cases (and *p* < .10 in 33% of cases). Finally, stereotype–achievement relationships were not found with PISA data (see Tables S9–S13).

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Participant’s age did not moderate cross-national relationships.



*Figure S1*.Moderation by participant’s gender. Statistics presented for “Diff” are the ratio in estimated slopes for females and males and the *p* value for the difference. Error bars represent standard errors.

Table S1

*Multiple Regression Analyses*

|  |  |  |
| --- | --- | --- |
|  |  | Relationship in Fig. 2 |
|  | Panel *a* |  | Panel *b* |  | Panel *c* |
| Model | Variable | *N* | *b* | *p* |  | *N* | *b* | *p* |  | *N* | *b* | *p* |
| a. Base model | Women's repa,b | 60 | −6.58 | <.001 |  | 58 | −7.08 | <.001 |  | 54 | −7.65 | <.001 |
|  |  |   |  |   |  |  |  |   |  |  |  |   |
| b. Broad gender equity | Women's repa,b | 53 | −7.99 | <.001 |  | 55 | −7.91 | .001 |  | 50 | −7.91 | .001 |
|  | GEM |  | −0.05 | .845 |  |  | −0.27 | .385 |  |  | −0.07 | .778 |
|  | GGI |  | −0.46 | .521 |  |  | 0.49 | .556 |  |  | 0.40 | .568 |
|  | All covariatesc |  |  | .247 |  |  |  | .600 |  |  |  | .771 |
|  |  |  |  |   |  |  |  |   |  |  |  |   |
| c. Domain-specific gender equity | Women's repa,b | 50 | −5.50 | .012 |  | 49 | −7.84 | .010 |  | 47 | −8.67 | <.001 |
|  | GGI\_eco |  | 0.12 | .675 |  |  | 0.33 | .269 |  |  | −0.01 | .969 |
|  | GGI\_edu\_logb |  | −0.76 | .954 |  |  | −6.25 | .622 |  |  | −4.10 | .727 |
|  | TertArtsFb |  | −0.31 | .909 |  |  | −1.44 | .593 |  |  | 4.14 | .088 |
|  | TertTeachFb |  | −5.09 | .081 |  |  | −0.09 | .982 |  |  | 5.35 | .042 |
|   | All covariatesc |  |  | .510 |  |  |  | .819 |  |  |  | .094 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| d. TIMSS achievement differencesd | Women's repa,b | 36 | −7.36 | <.001 |  | 32 | −4.71 | .052 |  | 34 | −7.29 | .002 |
|  | TIMSS\_diffb |  | −1.81 | .374 |  |  | 0.34 | .884 |  |  | −1.30 | .564 |
|   |   |  |   |  |  |  |  |  |  |  |  |  |
| e. PISA achievement differencesd | Women's repa,b | 49 | −8.34 | .001 |  | 46 | −8.46 | <.001 |  | 46 | −9.62 | <.001 |
|  | PISA\_diffb |  | −1.73 | .536 |  |  | −1.54 | .568 |  |  | −2.88 | .295 |
|  |   |  |  |   |  |  |  |   |  |  |  |   |
| f. Achievement differencesd | Women's repa,b | 31 | −7.98 | .001 |  | 28 | −5.59 | .045 |  | 29 | −7.87 | .004 |
|  | TIMSS\_diffb |  | −2.90 | .318 |  |  | 0.49 | .895 |  |  | −0.71 | .814 |
|  | PISA\_diffb |  | 2.52 | .515 |  |  | 0.27 | .961 |  |  | −3.83 | .341 |
|  | All covariatesc |  |  | .608 |  |  |  | .967 |  |  |  | .356 |
|  |   |  |  |   |  |  |  |   |  |  |  |   |
| g. Cultural dimensions | Women's repa,b | 49 | −5.12 | .044 |  | 49 | −4.86 | .032 |  | 47 | −5.18 | .048 |
|  | PowerDistb |  | 0.48 | .665 |  |  | 1.36 | .261 |  |  | 1.05 | .361 |
|  | UncertAvoidb |  | −1.70 | .055 |  |  | −1.87 | .032 |  |  | 0.61 | .487 |
|  | MascFemb |  | 1.08 | .207 |  |  | 0.81 | .374 |  |  | −1.09 | .193 |
|  | IndivCollectb |  | −0.60 | .595 |  |  | 0.72 | .528 |  |  | 2.38 | .032 |
|  | Atheism\_logb |  | 37.5 | .096 |  |  | 24.9 | .202 |  |  | 17.3 | .445 |
|  | All covariatesc |  |  | .163 |  |  |  | .111 |  |  |  | .109 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| h. Human development | Women's repa,b | 53 | −5.00 | .035 |  | 54 | −7.62 | .001 |  | 50 | −6.52 | .006 |
|  | HDI\_logb |  | −5.49 | .927 |  |  | −40.0 | .488 |  |  | −49.1 | .399 |
|  | IQb |  | 3.74 | .402 |  |  | −0.22 | .956 |  |  | 6.52 | .135 |
|  | All covariatesc |  |  | .594 |  |  |  | .602 |  |  |  | .324 |
|  |   |  |  |   |  |  |  |   |  |  |  |   |
| i. Prevalence of scientists | Women's repa,b | 53 | −6.40 | .003 |  | 52 | −8.12 | <.001 |  | 49 | −5.94 | .008 |
|  | TertScib |  | 0.41 | .939 |  |  | −4.08 | .456 |  |  | −3.62 | .508 |
|  | Rsrcher\_logb |  | 2.94 | .878 |  |  | −4.15 | .821 |  |  | 33.9 | .075 |
|  | All covariatesc |  |  | .981 |  |  |  | .703 |  |  |  | .203 |
|  |   |  |  |   |  |  |  |   |  |  |  |   |
| j. World region | Women's repa,b | 60 | −6.59 | <.001 |  | 58 | −6.57 | .001 |   |   54 | −6.51 | <.001 |
|  | Asia |  | 0.13 | .013 |  |  | 0.07 | .232 |  |  | 0.08 | .105 |
|  | Europe |  | 0.05 | .212 |  |  | 0.04 | .392 |  |  | 0.13 | .002 |
|  | Other |  | 0.06 | .461 |  |  | 0.18 | .040 |  |  | 0.08 | .273 |
|  | All covariatesc |  |  | .101 |  |  |  | .193 |  |  |  | .019 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| k. Sample characteristics | Women's repa,b | 60 | −6.45 | .002 |  | 58 | −8.95 | <.001 |  | 54 | −8.07 | <.001 |
|  | critlat\_meanb |   | 0.16 | .685 |  |  | 0.24 | .546 |  |  | 0.19 | .621 |
|  | prct\_maleb |   | −0.57 | .783 |  |  | −2.12 | .310 |  |  | −4.60 | .022 |
|  | prct\_collegeb |   | 1.70 | .187 |  |  | 3.38 | .010 |  |  | 1.08 | .383 |
|  | age\_meanb |   | −0.49 | .956 |  |  | 1.06 | .895 |  |  | 4.27 | .609 |
|  | corr\_iatexp |  | 0.22 | .428 |  |  | −0.15 | .586 |  |  | 0.23 | .399 |
|   | All covariatesc |  |  | .743 |  |  |  | .112 |  |  |  | .245 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| l. Composite model | Women's repa,b | 44 | −6.33 | .008 |  | 45 | −7.27 | .045 |  | 43 | −6.82 | .003 |
|  | TertTeachFb |  | −4.42 | .119 |  |  | 0.73 | .849 |  |  | 4.35 | .100 |
|  | UncertAvoidb |  | −0.83 | .385 |  |  | −0.52 | .571 |  |  | 0.36 | .682 |
|  | IndivCollectb |  | 1.28 | .251 |  |  | 1.28 | .307 |  |  | 1.25 | .227 |
|  | Asia |  | 0.12 | .078 |  |  | 0.08 | .249 |  |  | 0.12 | .049 |
|  | Europe |  | 0.01 | .925 |  |  | −0.02 | .765 |  |  | 0.13 | .011 |
|  | Other |  | 0.00 | .974 |  |  | −0.05 | .726 |  |  | 0.09 | .429 |
|  | prct\_maleb |  | −2.97 | .163 |  |  | −3.37 | .127 |  |  | −2.04 | .304 |
|  | prct\_collegeb |  | 2.62 | .053 |   |  | 3.53 | .013 |  |  | 0.32 | .796 |
|   | All covariatesc  |   |   | .061 |  |  |  | .122 |  |  |  | .014 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| m. Composite model (*n* > 25; >1%) | Women's repa,b | 48 | −5.51 | .047 |  | 49 | −9.19 | .029 |  | 45 | −6.83 | .030 |
|  | TertArtsF |  | 2.35 | .485 |  |  | 2.40 | .467 |  |  | 2.61 | .457 |
|  | TertTeachF |  | −7.05 | .014 |  |  | −0.87 | .847 |  |  | 2.60 | .382 |
|  | UncertAvoid |  | −0.86 | .391 |  |  | −0.93 | .341 |  |  | 0.73 | .490 |
|  | IndivCollect |  | 2.35 | .115 |  |  | 1.48 | .355 |  |  | 1.89 | .228 |
|  | IQ |  | 10.3 | .092 |  |  | 12.2 | .041 |  |  | 4.70 | .478 |
|  | Rsrcher\_log |  | −61.8 | .060 |  |  | −80.5 | .016 |  |  | −22.9 | .503 |
|  | Asia |  | −0.01 | .947 |  |  | −0.05 | .554 |  |  | 0.04 | .663 |
|  | Europe |  | −0.07 | .290 |  |  | −0.04 | .511 |  |  | 0.07 | .334 |
|  | Other |  | −0.04 | .698 |  |  | −0.01 | .944 |  |  | 0.01 | .959 |
|  | prct\_male |  | −1.85 | .407 |  |  | −2.77 | .238 |  |  | −1.41 | .561 |
|  | prct\_college |  | 3.82 | .020 |  |  | 4.28 | .010 |  |  | 1.46 | .400 |
|  | age\_mean |  | −7.76 | .574 |  |  | −2.83 | .843 |  |  | −6.39 | .653 |
|  | All covariatesc |   |   | .095 |  |  |   | .171 |  |  |   | .198 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| n. Composite model (*n* > 100; >10%) | Women's repa,b | 36 | −5.36 | .106 |  | 37 | −4.78 | .202 |  | 35 | −11.3 | <.001 |
|  | TertTeachFb |  | −4.74 | .216 |  |  | −0.57 | .895 |  |  | 8.68 | .011 |
|  | UncertAvoidb |  | −1.24 | .199 |  |  | −0.76 | .421 |  |  | 0.03 | .975 |
|  | Atheism\_logb |  | 10.3 | .704 |  |  | 36.8 | .153 |  |  | −2.55 | .914 |
|  | Asia |  | 0.10 | .203 |  |  | 0.05 | .525 |  |  | 0.10 | .129 |
|  | Europe |  | 0.01 | .861 |  |  | −0.04 | .579 |  |  | 0.14 | .010 |
|  | Other |  | 0.02 | .862 |   |  | −0.05 | .718 |  |  | 0.10 | .378 |
|  | prct\_collegeb |  | 2.67 | .088 |  |  | 2.89 | .073 |  |  | −0.34 | .806 |
|  | All covariatesc |  |  | .186 |  |  |  | .223 |  |  |  | .027 |

*Note*. Models a–lused the moderate selection criteria of *n* > 50 responses and >5% Internet user populations. Models m and n show the composite model for slightly more liberal (*n* > 25; >1% Internet users) or stringent (*n* > 100; >10% Internet users) criteria, respectively. Red highlighting implies *p* < .05. *N* = number of nations; *b* = unstandardized beta coefficient.

aWomen’s rep is the percent women among science majors (rows a and c) or researchers (row b). bCoefficients were multiplied by 1,000 to facilitate presentation of results. c*p* values indicate the joint significance of all covariates except women’s representation in science.

|  |
| --- |
| Relationships with time-averaged TIMSS data and women’s average implicit stereotypes (outlier Colombia excluded) |
|  |  |  |  |  |  |  |  |
| Table S2 |  |  |  |  |  |  |
| *Beta Coefficients (Unstandardized)* |  |  |  |  |
|  |  | Internet Users |
|  |   | **>0%** | **>1%** | **>5%** | **>10%** | **>25%** | **>50%** |
| Sample Size | ***n* > 1** | 5.77\*\* | 5.77\*\* | 6.62\*\* | 6.30\*\* | 5.85† | 1.83 |
| ***n* > 10** | 5.47\*\* | 5.47\*\* | 6.32\*\* | 6.36\*\* | 5.85† | 1.83 |
| ***n* > 25**  | 6.15\*\* | 6.15\*\* | 6.77\*\* | 6.67\*\* | 4.79† | 1.83 |
| ***n* > 50** | 5.57\* | 5.57\* | 5.25\* | 4.39 | 4.51 | 1.83 |
| ***n* > 100** | 7.71\*\* | 7.71\*\* | 5.41\* | 4.67† | 6.18† | 4.85 |
| ***n* > 200** | 8.92\*\* | 8.92\*\* | 5.97† | 5.57 | 8.26\* | 4.85 |
|  |  |  |  |  |  |  |  |
| *Note*. Coefficients were multiplied by 1,000 to facilitate presentation of results.†*p* < .10. \**p*<.05.\*\**p*<.01.  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Table S3 |  |  |  |  |  |  |
| *Number of Nations Included in Analysis* |
|  |  | Internet Users |
|  |   | **>0%** | **>1%** | **>5%** | **>10%** | **>25%** | **>50%** |
| Sample Size | ***n* > 1** | 61 | 61 | 50 | 45 | 29 | 15 |
| ***n* > 10** | 59 | 59 | 48 | 44 | 29 | 15 |
| ***n* > 25**  | 50 | 50 | 42 | 38 | 28 | 15 |
| ***n* > 50** | 43 | 43 | 37 | 34 | 27 | 15 |
| ***n* > 100** | 33 | 33 | 30 | 28 | 23 | 14 |
| ***n* > 200** | 25 | 25 | 24 | 23 | 19 | 14 |

|  |
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| Relationships with time-averaged TIMSS data and women’s average implicit stereotypes, controlling for percent women among science majors(outliers Columbia and Romania excluded)Table S4 |
| *Beta Coefficients for Time-Averaged TIMSS Achievement Differences (Unstandardized)* |
|  |  | Internet Users |
|  |   | **>0%** | **>1%** | **>5%** | **>10%** | **>25%** | **>50%** |
| Sample Size | ***n* > 1** | 4.60† | 4.60† | 5.03\* | 5.25† | 4.01 | −0.90 |
| ***n* > 10** | 4.18 | 4.18 | 4.66† | 5.34† | 4.01 | −0.90 |
| ***n* > 25**  | 3.44 | 3.44 | 4.28† | 4.72† | 2.09 | −0.90 |
| ***n* > 50** | 2.16 | 2.16 | 2.71 | 2.71 | 2.09 | −0.90 |
| ***n* > 100** | 4.71† | 4.71† | 3.33 | 3.49 | 3.73 | 1.41 |
| ***n* > 200** | 6.68\* | 6.68\* | 4.95 | 4.95 | 5.48 | 1.41 |
|  |  |  |  |  |  |  |  |
| *Note*. Coefficients were multiplied by 1,000 to facilitate presentation of results.  |
| †*p*<.10. \**p*<.05. |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Table S5*Beta Coefficients for Percent Women Among Science Majors (Unstandardized)* |
|  |  | Internet Users |
|  |   | **>0%** | **>1%** | **>5%** | **>10%** | **>25%** | **>50%** |
| Sample Size | ***n* > 1** | −3.71 | −3.71 | −4.90† | −3.88 | −5.67 | −8.90\* |
| ***n* > 10** | −3.93 | −3.93 | −5.08† | −3.91 | −5.67 | −8.90\* |
| ***n* > 25**  | −7.03\*\* | −7.03\*\* | −7.05\*\* | −6.51\* | −7.09\* | −8.90\* |
| ***n* > 50** | −8.14\*\* | −8.14\*\* | −7.20\*\* | −6.72\* | −7.09\* | −8.90\* |
| ***n* > 100** | −6.83\*\* | −6.83\*\* | −6.45\*\* | −5.78\* | −6.68\* | −8.71\* |
| ***n* > 200** | −6.45\* | −6.45\* | −5.66† | −5.66† | −6.39\* | −8.71\* |
|  |  |  |  |  |  |  |  |
| *Note*. Coefficients were multiplied by 1,000 to facilitate presentation of results. All coefficients with *p* < .05 were highlighted in red. |
| †*p*<.10. \**p*<.05. \*\**p*<.01. |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Table S6 |  |  |  |  |  |  |
| *Number of Nations Included in Analysis* |
|  |  | Internet Users |
|  |   | **>0%** | **>1%** | **>5%** | **>10%** | **>25%** | **>50%** |
| Sample Size | ***n* > 1** | 51 | 51 | 43 | 39 | 27 | 15 |
| ***n* > 10** | 49 | 49 | 41 | 38 | 27 | 15 |
| ***n* > 25**  | 44 | 44 | 37 | 34 | 26 | 15 |
| ***n* > 50** | 38 | 38 | 33 | 31 | 26 | 15 |
| ***n* > 100** | 28 | 28 | 26 | 25 | 22 | 14 |
| ***n* > 200** | 21 | 21 | 20 | 20 | 18 | 14 |

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| Relationships with time-averaged PISA data and women’s average implicit stereotypes (outlier Malta excluded) |
|  |  |  |  |  |  |  |  |
| Table S7 |  |  |  |  |  |  |
| *Beta Coefficients (Unstandardized)* |  |  |  |  |
|  |  | Internet Users |
|  |   | **>0%** | **>1%** | **>5%** | **>10%** | **>25%** | **>50%** |
| Sample Size | ***n* > 1** | 3.52 | 3.52 | 4.44† | 4.67† | 5.33 | 4.46 |
| ***n* > 10** | 3.56 | 3.56 | 4.49† | 4.73† | 5.48 | 4.64 |
| ***n* > 25**  | 3.43 | 3.43 | 4.20† | 4.19 | 5.48 | 4.64 |
| ***n* > 50** | 2.83 | 2.83 | 3.02 | 2.64 | 5.38 | 4.76 |
| ***n* > 100** | 3.46 | 3.46 | 3.63 | 3.43 | 7.75† | 6.04 |
| ***n* > 200** | 0.33 | 0.33 | 0.33 | 0.33 | 8.72 | 4.28 |
|  |  |  |  |  |  |  |  |
| *Note*. Coefficients were multiplied by 1,000 to facilitate presentation of results.†*p* < .10. |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Table S8 |  |  |  |  |  |  |
| *Number of Nations Included in Analysis* |
|  |  | Internet Users |
|  |   | **>0%** | **>1%** | **>5%** | **>10%** | **>25%** | **>50%** |
| Sample Size | ***n* > 1** | 68 | 68 | 65 | 62 | 41 | 22 |
| ***n* > 10** | 65 | 65 | 62 | 59 | 39 | 21 |
| ***n* > 25**  | 59 | 59 | 57 | 56 | 39 | 21 |
| ***n* > 50** | 51 | 51 | 50 | 49 | 37 | 20 |
| ***n* > 100** | 47 | 47 | 46 | 45 | 33 | 19 |
| ***n* > 200** | 38 | 38 | 38 | 38 | 29 | 18 |

|  |
| --- |
| Relationships with time-averaged PISA data and women’s average implicit stereotypes, controlling for percent women among science majors(outliers Malta and Romania excluded)Table S9 |
| *Beta Coefficients for Time-Averaged PISA Achievement Differences (Unstandardized)* |
|  |  | Internet Users |
|  |   | **>0%** | **>1%** | **>5%** | **>10%** | **>25%** | **>50%** |
| Sample Size | ***n* > 1** | 0.19 | 0.19 | 0.15 | 0.89 | 1.52 | 0.12 |
| ***n* > 10** | 0.08 | 0.08 | 0.03 | 0.82 | 1.50 | 0.22 |
| ***n* > 25**  | −0.88 | −0.88 | −0.54 | 0.12 | 1.50 | 0.22 |
| ***n* > 50** | −1.63 | −1.63 | −1.63 | −0.95 | 1.60 | 0.31 |
| ***n* > 100** | −1.31 | −1.31 | −1.31 | −0.51 | 3.15 | 1.20 |
| ***n* > 200** | −3.06 | −3.06 | −3.06 | −3.06 | 2.62 | −0.08 |
|  |  |  |  |  |  |  |  |
| *Note*. Coefficients were multiplied by 1,000 to facilitate presentation of results. All *p*s > .43. |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Table S10*Beta Coefficients for Percent Women Among Science Majors (Unstandardized)* |
|  |  | Internet Users |
|  |   | **>0%** | **>1%** | **>5%** | **>10%** | **>25%** | **>50%** |
| Sample Size | ***n* > 1** | −6.86\* | −6.86\* | −8.83\*\* | −9.65\*\* | −7.69\* | −9.26\*\* |
| ***n* > 10** | −7.25\* | −7.25\* | −9.31\*\* | −10.2\*\* | −8.31\* | −9.41\*\* |
| ***n* > 25**  | −9.22\*\* | −9.22\*\* | −10.2\*\* | −11.0\*\* | −8.31\* | −9.41\*\* |
| ***n* > 50** | −10.0\*\* | −10.0\*\* | −10.0\*\* | −10.6\*\* | −8.39\* | −9.43\*\* |
| ***n* > 100** | −9.78\*\* | −9.78\*\* | −9.78\*\* | −10.4\*\* | −7.98\* | −9.66\*\* |
| ***n* > 200** | −10.1\*\* | −10.1\*\* | −10.1\*\* | −10.1\*\* | −8.26\* | −9.64\*\* |
|  |  |  |  |  |  |  |  |
| *Note*. Coefficients were multiplied by 1,000 to facilitate presentation of results. All coefficients with *p* < .05 were highlighted in red.  |
| †*p*<.10. \**p*<.05. \*\**p*<.01. |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Table S11 |  |  |  |  |  |  |
| *Number of Nations Included in Analysis* |
|  |  | Internet Users |
|  |   | **>0%** | **>1%** | **>5%** | **>10%** | **>25%** | **>50%** |
| Sample Size | ***n* > 1** | 61 | 61 | 59 | 56 | 39 | 22 |
| ***n* > 10** | 58 | 58 | 56 | 53 | 37 | 21 |
| ***n* > 25**  | 53 | 53 | 52 | 51 | 37 | 21 |
| ***n* > 50** | 46 | 46 | 46 | 45 | 36 | 20 |
| ***n* > 100** | 42 | 42 | 42 | 41 | 32 | 19 |
| ***n* > 200** | 35 | 35 | 35 | 35 | 28 | 18 |

1. [↑](#footnote-ref-1)