

Public Gender Egalitarianism: A Dataset of Dynamic Comparative Public Opinion Toward Egalitarian Gender Roles in the Public Sphere*

Introduction

Multi-Dimensionality in Gender Egalitarianism

Gender egalitarianism does not have only one dimension but a multi-dimension. Generating a measure of egalitarian gender roles without the classification may cause multidimensionality problem since people might have different opinions about gender roles by the dimensions. For instance, some people have a more egalitarian view about the gender role in public sector rather than in private sector, while others do not. To be specific, some might think that men and women should be treated and promoted equally at work, but that women should be in charge of housework. Also, others may argue that both men and women can succeed as politicians, while saying that women are responsible for parenting. The multi-dimensionality problem is relatively not salient if people in a society have an egalitarian view of all dimensions. However, if we disregard this kind of multi-dimensionality given that there are some variations of gender egalitarian opinions by dimensions, we will not be able to measure gender egalitarianism properly in the various dimensions that people have.

We classified the available survey items on gender egalitarian attitudes into four categories. The first of these categories consists of questions asking respondents' views of gender equality in the traditionally masculine public sphere of education, paid work, and politics. The second category, in turn, encompasses questions focusing on gender equality in the traditionally feminine private sphere of housework and childcare. A third category we identified comprises questions asking respondents how women should balance opportunities in the public sphere with their traditional duties in the private sphere, such as whether mothers in the workforce can have similarly warm relationships with their children as mothers who are not; it is telling, though not surprising, that the

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complementary set of questions, on how *men* should balance responsibilities in the private sphere with their traditional roles in the public sphere, is only rarely included in surveys.¹ The fourth and final category includes respondents’ views on various forms of women’s domination by men, from whether wives should adopt their husbands’ surnames through the recognition that various forms of sexual harassment are not “flattering” to the justifiability of intimate partner violence committed by husbands.

To avoid any potential multidimensionality in the Public Gender Egalitarianism index, we include only survey items corresponding to the first category, gender egalitarianism in the public sphere.² Thus, the “Public” in the name of the index does double duty, referring both to the fact that it measures the *public’s* attitudes on gender equality and to specifically its attitudes on this *public* aspect of gender egalitarianism. In all, we identified 49 of these survey items that were asked in no fewer than five country-years in countries surveyed at least twice; these items were drawn from 85 different survey datasets. We describe these source data in detail in the next section.

The Source Data on Gender Egalitarian Attitudes

Together, these survey items were asked in 123 different countries in at least two time points over 48 years, from 1972 to 2020, yielding a total of 2,913 country-year-item observations. Considering that observations for every year in each country surveyed would number 5,904 and so a complete set of country-year-items would encompass 289,296 observations. Viewed from this perspective of complete data, the available data can be seen to be very, very sparse. From a more optimistic standpoint, we note there are 1,168 country-years in which we have at least *some* information about the public gender egalitarianism of the population, that is, some 46% of the 2,528 country-years spanned by the data we collected. But there can be no gainsaying that the many different survey items employed renders these data difficult to use together.

The left panel of Figure 1 displays in how many country-years each of the twelve most-commonly

¹One laudable example of this mostly unasked sort of question, apparently first included in Australia’s 1989 National Social Science Survey and slowly becoming more common, is the item querying respondents the extent to which they agree with the statement, “Family life often suffers when men concentrate too much on their work.”

²Items that fell into both the first category and another, such as “A man’s job is to earn money; a woman’s job is to look after the home and family,” which by explicitly counterposing the traditional gender roles suggests women unlike men should not earn money in the public sphere (while also suggesting that men unlike women should not look after home and family in the private sphere) were included in the PGE index. The complete list of gender egalitarianism items is included in the Appendix.

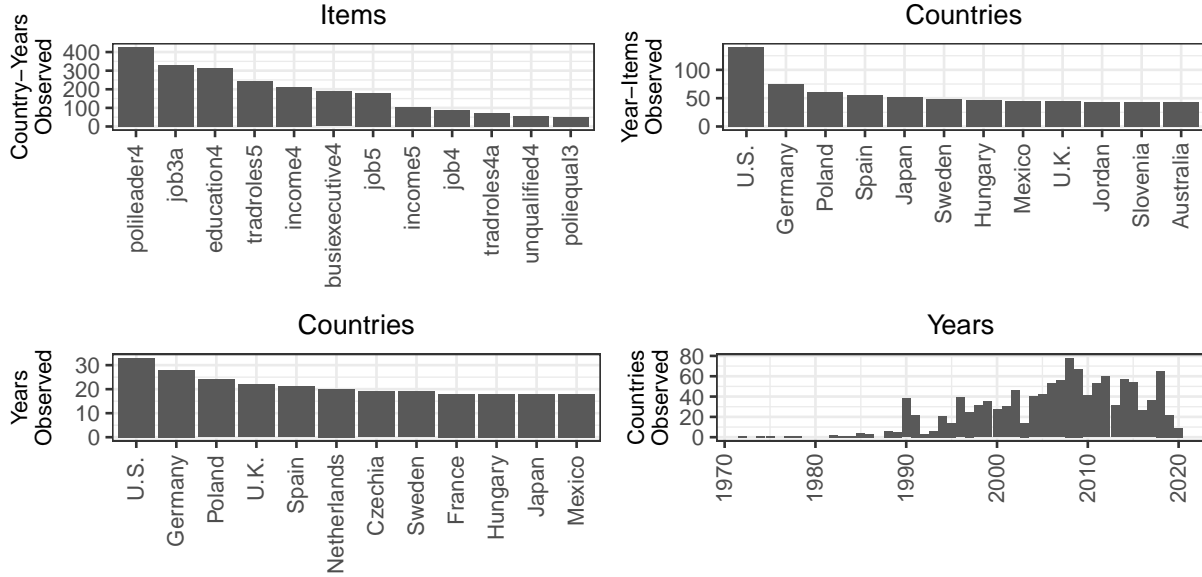


Figure 1: Items, Countries, and Years with the Most Observations in the PGE Source Data

asked survey items are available. The `polileader4` item, which asks respondents whether they strongly agree, agree, disagree, or strongly disagree with the statement “On the whole, men make better political leaders than women do,” was the most frequently asked question in the data we collected. Employed by the Americas Barometer, the Arab Barometer, the Eurobarometer, the Latinobarómetro, the Pew Research Center, and the World Values Survey, this question was asked in a total of 426 different country-years. That this constitutes only 17% of the country-years spanned by our data—and remember, `polileader4` is the *most common* survey item—again underscores just how sparse and incomparable the available public opinion data is on this topic.

Which countries are the most data-rich? The right panel of Figure 1 shows the dozen countries with the highest count of country-year-item observations. The United States, with 140 observations, is far and away the best represented country in the source data, followed by Germany, Poland, Spain, and Japan. At the other end of the spectrum, three countries—Cambodia, Sri Lanka, and Suriname—have only the minimum two observations required to be included in the source dataset at all.

Estimating Public Gender Egalitarianism

The DCPO model is estimated using the `DCPO` package for R (Solt 2020*a*), which is written in the Stan probabilistic programming language (Stan Development Team 2019*a,b*).

Validating Public Gender Egalitarianism

We turn now to the validity of the PGE Mean scores. Like Caughey, O’Grady and Warshaw (2019, 684-685), we provide evidence of our new measure’s validity through tests of both convergent validation and construct validation.

Figure 3 displays our tests of convergent validation. Convergent validation refers to demonstrating that a measure is empirically associated with alternative indicators of the same concept (Adcock and Collier 2001, 540). Here, we compare PGE Mean scores to responses to individual survey items that were included in the source data, that is, we provide an “internal” validation test (see, e.g., Caughey, O’Grady and Warshaw 2019, 689; Solt 2020*b*, 10). In the left panel, we examine the `polileader4` question mentioned above, the most common item in the source data across all country-years, combining for this purpose all those who agreed or strongly agreed that “on the whole, men make better political leaders than women.” Then, in the center panel, we look at the question that provides most data-rich cross-section: the `poliequal3` item in Pew Global’s Spring 2007 survey that asked whether respondents felt “men generally make better political leaders than women,” vice versa, or whether “in general, women and men make equally good political leaders.” Finally, in the right panel, to evaluate how well the PGE Mean score captures change over time, we focus on the `emopoli2` survey item, the item with the largest number of observations for a single country. The U.S. General Social Survey asked this question 25 times from 1972 to 2016. It asks whether respondents agreed or disagreed that “most men are better suited emotionally for politics than are most women”; to facilitate visual comparison of the longitudinal relationship, we plot the estimated population proportion that disagreed with the statement. In every case, the correlations—estimated taking into account the uncertainty in the measures³—are in the expected

³The uncertainty in the PGE Mean score and in the percentage in the population who would agree with the item does not substantially affect the correlation with the `polileader4` question, but failing to account for this uncertainty would overstate the correlation with the Pew `poliequal3` item, at $R = -0.87$, and the U.S. GSS `emopoli2` item, at $R = 0.98$. We take up the issue of the importance of taking uncertainty into account when working with the PGE data in a subsequent section.

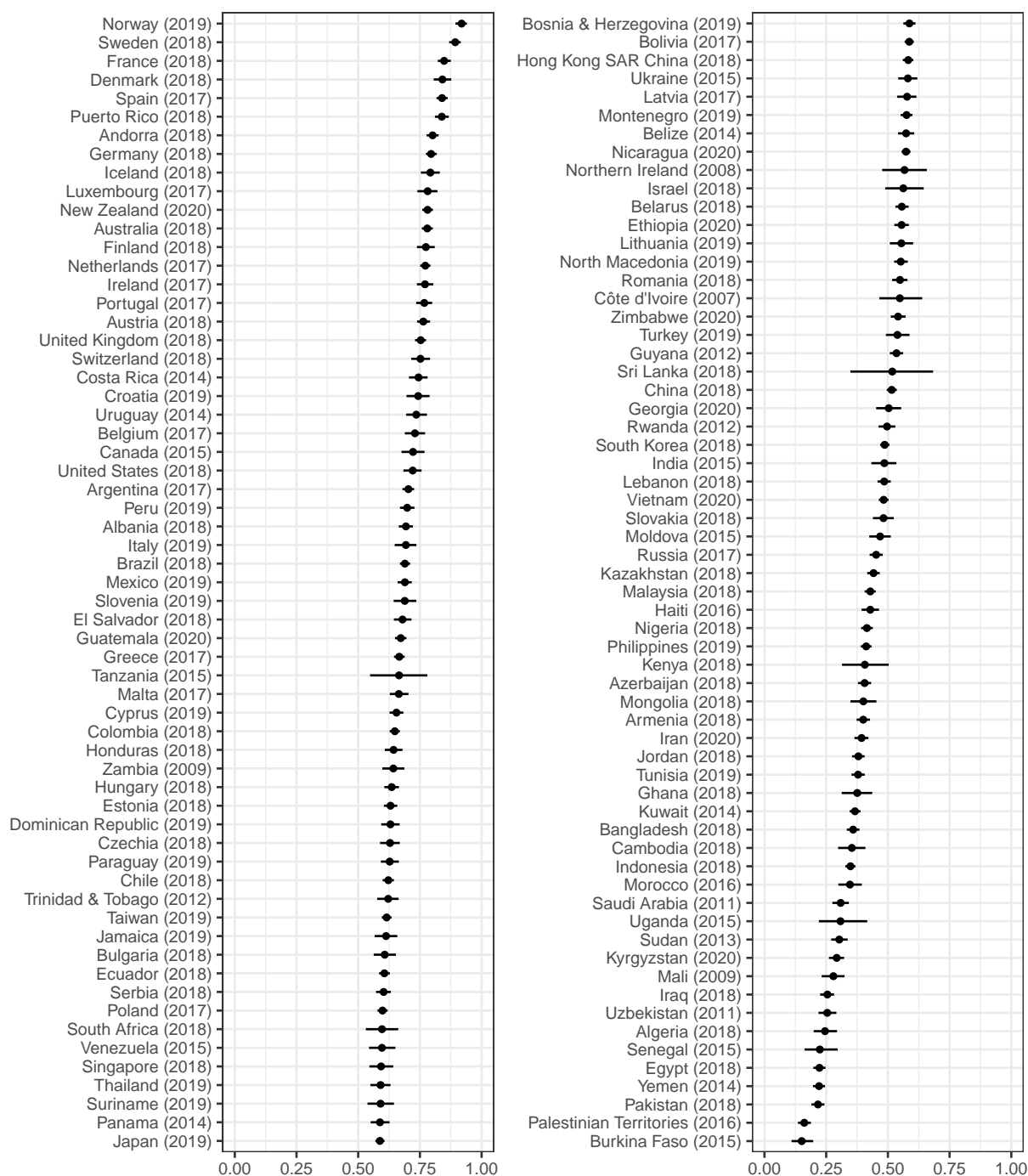


Figure 2: PGE Mean and Polarization Scores, Most Recent Available Year

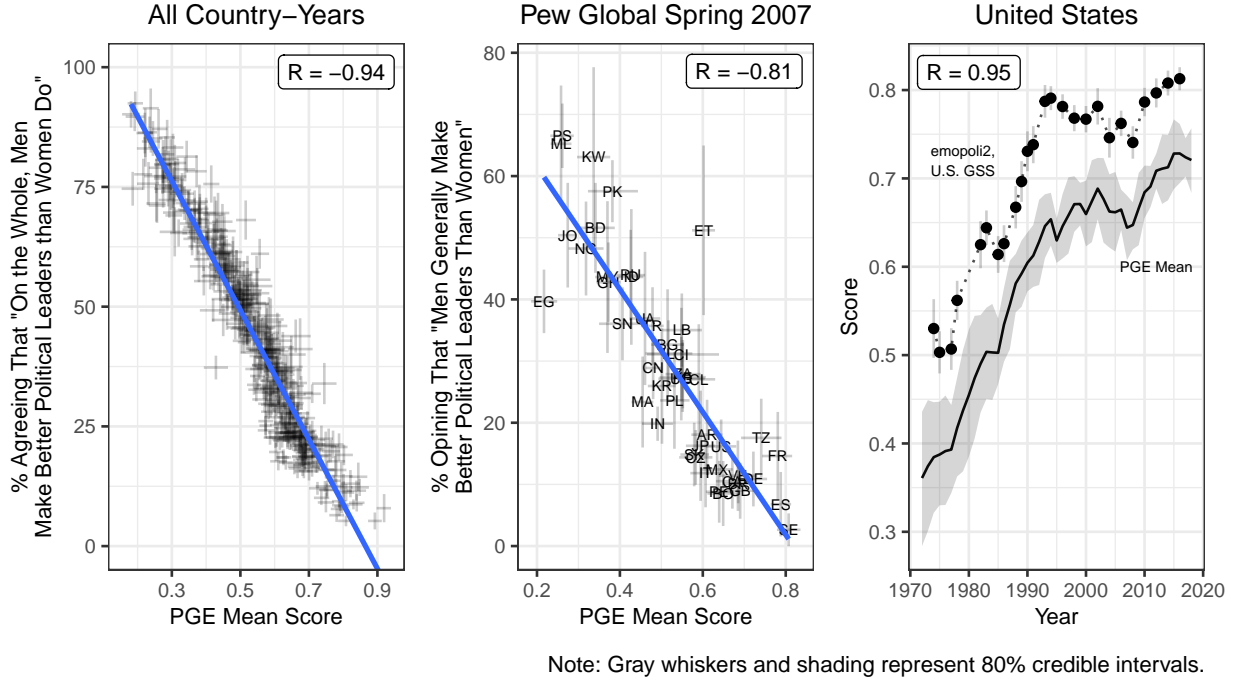
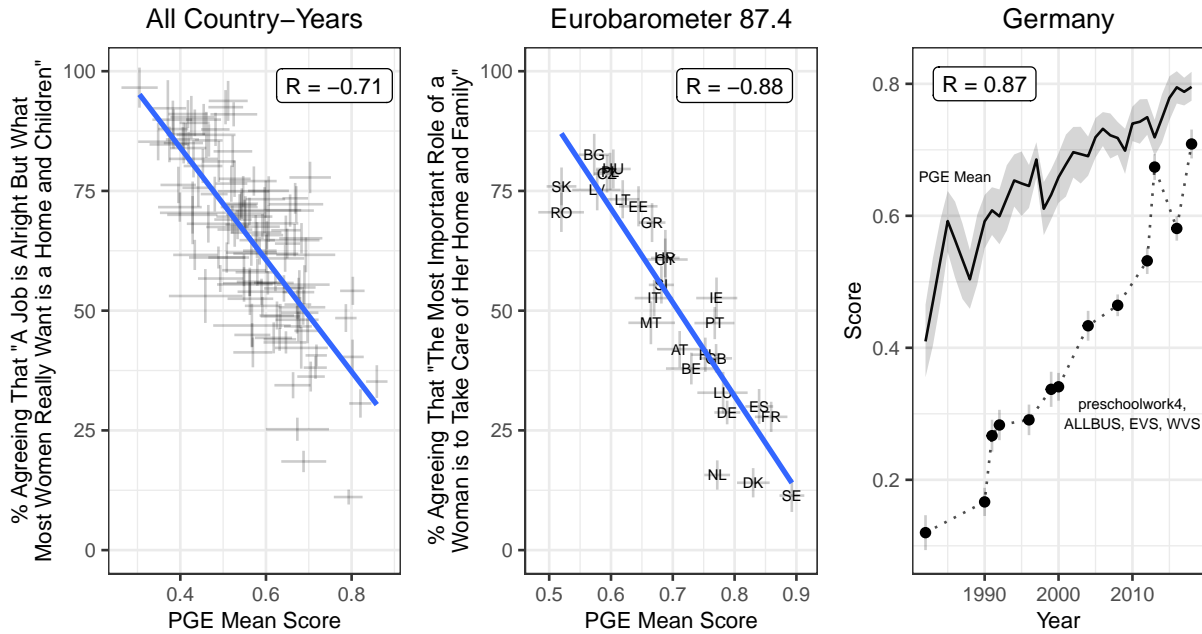


Figure 3: Convergent Validation: Correlations Between PGE Mean Scores and Individual PGE Source Data Survey Items

direction and very strong.

In Figure 4, we move on to construct validation, which refers to demonstrating, for some *other* concept believed causally related to the concept a measure seeks to represent, that the measure is empirically associated with measures of that other concept (Adcock and Collier 2001, 542). For purposes of construct validation, we look first to individual survey items from our third category of gender egalitarianism, that is, questions that ask how women should balance opportunities in the public sphere with their traditional duties in the private sphere. Although many of the items in this category are on their face at best only very tangentially related to public gender egalitarianism, others are plausibly causally related. Consider *wantch4*, an item depicted in the left pane asked by the World Values Survey and the European Values Survey, which asked respondents the extent to which they agree with the statement, “a job is alright but what most women really want is a home and children.” As agreement suggests that women do not truly care about opportunities in the workplace, those who do should be expected to be less likely to believe women should enjoy equal access to such opportunities which men implicitly value more. Or, similarly, *familywoman4*, an item plotted in the center pane from Eurobarometer 87.4, which asked respondents the extent



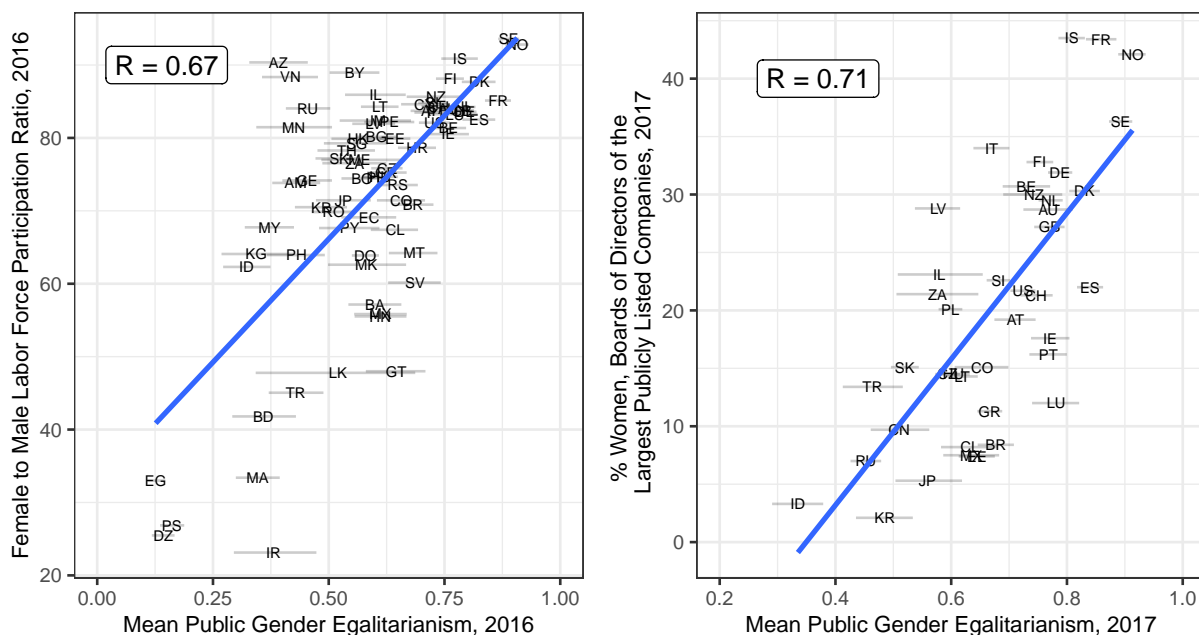
Note: Gray whiskers and shading represent 80% credible intervals.

Figure 4: Construct Validation: Correlations Between PGE Mean Scores and Individual ‘Balancing’ Gender Egalitarianism Survey Items

of their agreement with the statement, “the most important role of a woman is to take care of her home and family.” Though not directly implying that women should not enjoy equal opportunities in education, politics, and the workplace, it may still be fairly surmised that those holding this position would consequently consider that, since opportunities beyond the home are of secondary importance for women, men should have priority.⁴ In a slightly different vein, **preschoolwork4**, included in the German ALLBUS, the World Values Survey, and the European Values Survey, asked respondents the extent to which they agreed that “a pre-school child is likely to suffer if his or her mother works;” we plot the time series of the proportion of the population of Germany estimated to disagree or disagree strongly with this statement in the right pane. The belief that mothers working cause harm to their children should be expected to lead to disfavoring gender equality in

⁴One might argue that these two questions, particularly the latter, rather than tapping a distinct concept causally related to public gender egalitarianism are in fact tapping aspects of public gender egalitarianism itself. (Indeed, the **tradroles** series of questions, which couple the **familywoman4** stem with the idea that the most important role of a man is to earn money—and so more explicitly indicates that the public sphere is appropriately segregated by gender—is included among the items used to estimate the PGE data.) If these two questions are thought of as indicators of public gender egalitarianism, then, because they are not included in the PGE source data, these plots constitute not construct validation but rather “external” convergent validation (see, e.g., Caughey, O’Grady and Warshaw 2019, 689; Solt 2020b, 10). In either case, though, they provide evidence of the validity of the PGE Mean scores.

workforce to avoid this purported negative consequence. With regard to all of these items, too, the correlations with the PGE Mean scores are strong.



Note: Gray whiskers represent 80% credible intervals.

Figure 5: Construct Validation: Correlations Between PGE Mean Scores and Indicators of Workplace Gender Equality

Figure 5 shows our tests of construct validation. Construct validation refers to demonstrating, for some *other* concept believed causally related to the concept a measure seeks to represent, that the measure is empirically associated with measures of that other concept (Adcock and Collier 2001, 542). Assuming that attitudes toward gender egalitarianism in the public sphere both cause and are caused by women’s gains in the workplace, assessing the relationships between the mean PGE and measures of workplace gender equality provides construct validation of our measure. In the left panel of Figure 5, we compare the mean PGE index to the ratio of women’s to men’s labor force participation rates in 76 countries in 2016, drawing on data compiled by the Statistics Division of the UN Department of Economic and Social Affairs (2020). In the right panel, we plot the mean PGE index against the percentage of women on the boards of directors of the largest publicly listed companies in 41 countries in 2017 (see OECD 2020). Both correlations are strong. As with our tests of convergent validation, these tests of construct validation provide reassuring evidence of the validity of the mean PGE.

Using the Public Gender Egalitarianism Index

One aspect of latent-variable estimates of public opinion like the PGE that is easy for researchers to overlook is the uncertainty in the estimates. But neglecting to incorporate this uncertainty by using only the mean estimate for each country-year—that is, for example, the mean of the mean PGE index—in an analysis can lead one to mistakenly conclude that the analysis supports the hypothesis (see ?) as well as to mistakenly conclude that it does *not* support the hypothesis (see Crabtree and Fariss 2015). Therefore, taking the uncertainty in the mean and polarization PGE indexes into account is crucial to reaching well-grounded conclusions.

The PGE download includes pre-formatted data to facilitate incorporating the uncertainty in the indexes. In R, the functions of the `purrr` package (Henry and Wickham 2019, also included in the widely-used `tidyverse` package (Wickham 2017)) make it entirely straightforward to incorporate the uncertainty of the PGE estimates. In Stata, the `mi estimate:` command prefix originally developed for analyzing multiply imputed data can be used to automate the process of building uncertainty into nearly any analysis. Step-by-step instructions on how to use these tools, complete with examples, are included in the data download.

Conclusion

References

- Adcock, Rober and David Collier. 2001. “Measurement Validity: A Shared Standard for Qualitative and Quantitative Research.” *American Political Science Review* 95(3):529–546.
- Caughey, Devin, Tom O’Grady and Christopher Warshaw. 2019. “Policy Ideology in European Mass Publics, 1981–2016.” *American Political Science Review* pp. 1–20.
- Crabtree, Charles D. and Christopher J. Fariss. 2015. “Uncovering Patterns Among Latent Variables: Human Rights and De Facto Judicial Independence.” *Research & Politics* 2(3):1–9.
- Henry, Lionel and Hadley Wickham. 2019. “purrr: Functional Programming Tools.” Available at the Comprehensive R Archive Network (CRAN). <https://CRAN.R-project.org/package=purrr>.
- OECD. 2020. “Female Share of Seats on Boards of the Largest Publicly Traded Companies.” <https://stats.oecd.org/index.aspx?queryid=54753>. Accessed 3 December 2020.
- Solt, Frederick. 2020a. “DCPO: Dynamic Comparative Public Opinion.” Available at the Comprehensive R Archive Network (CRAN). <https://CRAN.R-project.org/package=DCPO>.
- Solt, Frederick. 2020b. “Modeling Dynamic Comparative Public Opinion.”
URL: osf.io/preprints/socarxiv/d5n9p
- Stan Development Team. 2019a. “RStan: the R interface to Stan.” R package version 2.19.2. <https://CRAN.R-project.org/package=rstan>.
- Stan Development Team. 2019b. “Stan User’s Guide, Version 2.21.” https://mc-stan.org/docs/2_21/stan-users-guide-2_21.pdf.
- United Nations Department of Economic and Social Affairs, Statistics Division. 2020. “Minimum Set of Gender Indicators.” <https://genderstats.un.org/#/downloads>. Accessed 3 December 2020.
- Wickham, Hadley. 2017. “tidyverse: Easily Install and Load the ’Tidyverse’” R package version 1.2.1. <https://CRAN.R-project.org/package=tidyverse>.