# Supplemental material for the paper:

Beyond Constraint: Tightness and Consensus of Political Belief Systems

This file contains all additional materials for the paper. Data and code are made available at: <https://github.com/arturobertero/IPBS_ggm>

## 1. Descriptives

Table S1 shows the descriptives of each attitudinal variable. Table S2 below reports the number of respondents for each category of stratificational measures of H1 and H2 (political interest, education) and of the moderating variable of H3 (self-reported vote choice).

*Table S1: Descriptives*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | | | | |
| Variable | N | Mean | St. Dev. | Min | Max |
|  | | | | | |
| L\_R | 1,149 | 4.560 | 3.010 | 0 | 10 |
| PTV\_PD | 1,149 | 3.803 | 3.455 | 0 | 10 |
| PTV\_FI | 1,149 | 1.984 | 2.889 | 0 | 10 |
| PTV\_L | 1,149 | 2.208 | 3.162 | 0 | 10 |
| PTV\_M5S | 1,149 | 2.793 | 3.378 | 0 | 10 |
| PTV\_FDI | 1,149 | 3.036 | 3.753 | 0 | 10 |
| adopt | 1,149 | 2.777 | 1.127 | 1 | 4 |
| abort | 1,149 | 3.293 | 0.940 | 1 | 4 |
| eutha | 1,149 | 3.298 | 0.924 | 1 | 4 |
| marria | 1,149 | 3.061 | 1.042 | 1 | 4 |
| redis | 1,149 | 4.386 | 1.610 | 1 | 6 |
| flat\_t | 1,149 | 2.648 | 1.774 | 1 | 6 |
| m\_wage | 1,149 | 4.788 | 1.449 | 1 | 6 |
| cit\_in | 1,149 | 4.074 | 1.662 | 1 | 6 |
| globa | 1,149 | 3.213 | 1.552 | 1 | 6 |
| immig | 1,149 | 4.223 | 1.810 | 1 | 6 |
| big\_go | 1,149 | 4.681 | 1.598 | 1 | 7 |
| pub\_pri | 1,149 | 3.323 | 1.829 | 1 | 7 |
| ukrai | 1,149 | 2.613 | 1.089 | 1 | 4 |
| age | 1,149 | 53.326 | 15.528 | 19 | 91 |
| pol\_int | 1,149 | 2.923 | 0.756 | 1 | 4 |
|  |  |  |  |  |  |

*Table S2: Stratificational variables*

|  |  |
| --- | --- |
| Variable | N |
| **Political interest** |  |
| *Low* | 49 |
| *Medium Low* | 228 |
| *Medium High* | 634 |
| *High* | 238 |
| **Education** |  |
| *Less than university* | 706 |
| *Degree or more* | 443 |
| **Vote choice** |  |
| *Right-wing coalition* | 359 |
| *Left-wing coalition* | 450 |
| *5SM* | 193 |
| *Other* | 136 |
|  |  |

## 3. Robustness checks and descriptives on H1 and H2

Table S3 provides results of Shapiro-Wilk normality tests and Levene’s tests for homogeneity of variance across political interest and education partitions. These tests assess the suitability of parametric analyses by evaluating the distribution of mean constraint, average shortest path length (ASPL), and node-wise R². Significant results indicate deviations from normality or unequal variances.

*Table S3: Shapiro-Wilk and Levene’s tests for each bootstrapped frequency distribution*

| Test | W\_Statistic | F\_Statistic | P\_Value |
| --- | --- | --- | --- |
| **Shapiro-Wilk (Constraint - Political Interest Low)** | 0.993 |  | 0.000 |
| **Shapiro-Wilk (Constraint - Political Interest High)** | 0.996 |  | 0.000 |
| **Levene’s Test (Constraint - Education)** |  | 230.820 | 0.000 |
| **Shapiro-Wilk (Constraint - Education Low)** | 0.993 |  | 0.000 |
| **Shapiro-Wilk (Constraint - Education High)** | 0.996 |  | 0.000 |
| **Levene’s Test (ASPL - Political Interest)** |  | 1,322.100 | 0.000 |
| **Shapiro-Wilk (ASPL - Political Interest Low)** | 0.996 |  | 0.000 |
| **Shapiro-Wilk (ASPL - Political Interest High)** | 0.999 |  | 0.010 |
| **Levene’s Test (ASPL - Education)** |  | 36.851 | 0.000 |
| **Shapiro-Wilk (ASPL - Education Low)** | 0.995 |  | 0.000 |
| **Shapiro-Wilk (ASPL - Education High)** | 0.999 |  | 0.108 |
| **Levene’s Test (R² - Political Interest)** |  | 33.203 | 0.000 |
| **Shapiro-Wilk (R² - Political Interest Low)** | 0.888 |  | 0.000 |
| **Shapiro-Wilk (R² - Political Interest High)** | 0.944 |  | 0.000 |
| **Levene’s Test (R² - Education)** |  | 0.755 | 0.384 |
| **Shapiro-Wilk (R² - Education Low)** | 0.912 |  | 0.000 |
| **Shapiro-Wilk (R² - Education High)** | 0.880 |  | 0.000 |

Table S4 presents the results of the one tail Mann-Whitney U tests comparing network properties between low and high groups for political interest. These groups are obtained splitting between people with low and medium low political interest versus medium high and high interest. The table reports W-statistics, p-values, and effect sizes, including Cliff’s Delta (Δ), 95% confidence intervals (CI), rank-biserial correlations, and the Common Language Effect Size (CLES). The results of H1 holds with this alternative specification.

*Table S4: Tests of H1 on alternative subsamples*

| **Comparison** | **W** | **p** | **Δ** | **Lower CI** | **Upper CI** | **Rank** | **CLES** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Mean Constraint | 94,315 | 0.000 | 0.998 | 0.998 | 0.998 | 0.998 | 0.999 |
| ASPL | 19,608,272 | 0.000 | 0.608 | 0.596 | 0.620 | 0.608 | 0.804 |
| R² | 153,666,612 | 0.000 | 0.149 | 0.137 | 0.160 | 0.149 | 0.574 |

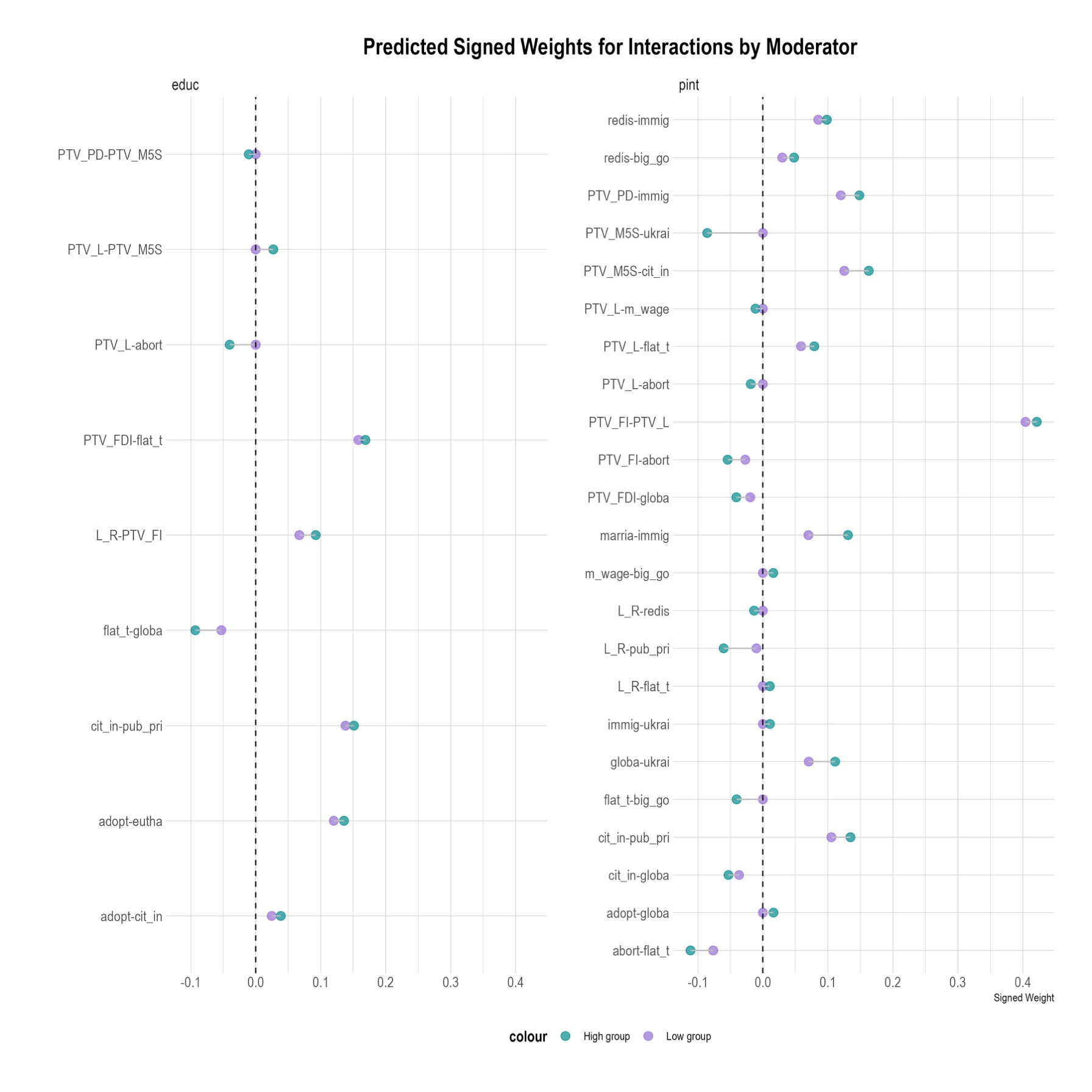
Table S5 provides precise node-wise R2 values behind the lollipop plot of the Article (Figure 4). The R2 values of the nodes in the belief system of people with high political interest are systematically higher than those in the belief system of people with low interest. This pattern does not occur for the belief system of people with low versus high education.

*Table S5: Node-wise R2 values of the central panel of Figure 4 of the Article*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Variable* | *pol\_int\_low* | *pol\_int\_high* | *educ\_low* | *educ\_high* |
| L\_R | 0.52 | 0.62 | 0.60 | 0.55 |
| PTV\_PD | 0.26 | 0.33 | 0.32 | 0.25 |
| PTV\_FI | 0.53 | 0.56 | 0.51 | 0.56 |
| PTV\_L | 0.58 | 0.67 | 0.68 | 0.61 |
| PTV\_M5S | 0.00 | 0.20 | 0.19 | 0.09 |
| PTV\_FDI | 0.61 | 0.70 | 0.65 | 0.70 |
| adopt | 0.55 | 0.63 | 0.60 | 0.64 |
| abort | 0.14 | 0.30 | 0.25 | 0.33 |
| eutha | 0.42 | 0.31 | 0.31 | 0.33 |
| marria | 0.53 | 0.64 | 0.62 | 0.62 |
| redis | 0.26 | 0.43 | 0.39 | 0.37 |
| flat\_t | 0.17 | 0.40 | 0.30 | 0.40 |
| m\_wage | 0.29 | 0.39 | 0.35 | 0.40 |
| cit\_in | 0.39 | 0.44 | 0.40 | 0.42 |
| globa | 0.15 | 0.23 | 0.19 | 0.25 |
| immig | 0.29 | 0.55 | 0.53 | 0.49 |
| big\_go | 0.13 | 0.22 | 0.23 | 0.18 |
| pub\_pri | 0.00 | 0.20 | 0.17 | 0.09 |
| ukrai | 0.08 | 0.14 | 0.15 | 0.13 |

Figure S1 shows the significant moderation coefficients obtained when fitting two moderated network models with political interest and education specified as the moderators. The MNM found 9 edges are significantly moderated by education, 23 by political interest.

*Figure S1: significant moderation coefficients for education and political interest*

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