**Supplementary materials for “Patterns of affective polarization in the democratic world: Comparing the polarized feelings towards parties and leaders”**

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Table A.1. List of countries, election years and Leader/Party API ratio scores

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Country** | **Election 1** | **Election 2** | **Election 3** | **Election 4** | **Election 5** | **Election 6** | **Ratio change** |
| **Year** | **Ratio** | **Year** | **Ratio** | **Year** | **Ratio** | **Year** | **Ratio** | **Year** | **Ratio** | **Year** | **Ratio** |
| Australia | 1996 | 0.94 | 2004 | 0.96 | 2007 | 0.90 | 2013 | 0.83 | 2019 | 0.89 |  |  | -0.05 ↓ |
| Austria | 2013 | 0.83 | 2017 | 0.93 |  |  |  |  |  |  |  |  |  0.10 ↑ |
| Bulgaria | 2014 | 0.91 |  |  |  |  |  |  |  |  |  |  |  |
| Canada | 1997 | 0.87 | 2008 | 0.91 |  |  |  |  |  |  |  |  | 0.04 ↑ |
| Croatia | 2007 | 0.91 |  |  |  |  |  |  |  |  |  |  |  |
| Czech Rep. | 1996 | 0.94 | 2006 | 0.90 | 2010 | 0.86 | 2013 | 0.92  |  |  |  |  | -0.02 ↓ |
| Denmark | 1998 | 0.84 | 2007 | 0.80 |  |  |  |  |  |  |  |  | -0.04 ↓ |
| Estonia | 2011 | 0.95  |  |  |  |  |  |  |  |  |  |  |  |
| Finland | 2007 | 0.71 | 2011 | 0.76 | 2015 | 0.73 |  |  |  |  |  |  |  0.02 ↑ |
| France | 2007 | 0.99  |  |  |  |  |  |  |  |  |  |  |  |
| Germany | 1998 | 0.93 | 2005 | 0.90 | 2009 | 0.86 | 2013 | 0.83 | 2017 | 0.85 |  |  | -0.07 ↓ |
| Great Britain | 1997 | 0.84 | 2015 | 0.76 |  |  |  |  |  |  |  |  | -0.07 ↓ |
| Greece | 2009 | 0.75 | 2012 | 0.91 | 2015 | 0.89 | 2015 | 0.92 |  |  |  |  |  0.17 ↑ |
| Hungary | 1998 | 0.92 | 2018 | 0.93 |  |  |  |  |  |  |  |  |  0.01 ↑ |
| Iceland | 1999 | 0.76 | 2007 | 0.78 | 2009 | 0.77 | 2013 | 0.76 | 2016 | 0.79 | 2017 | 0.86 |  0.10 ↑ |
| Ireland | 2007 | 0.85 | 2011 | 0.70 | 2016 | 0.81 |  |  |  |  |  |  | -0.04 ↓ |
| Israel | 1996 | 0.87 | 2013 | 0.90 |  |  |  |  |  |  |  |  |  0.03 ↑ |
| Italy | 2018 | 0.91 |  |  |  |  |  |  |  |  |  |  |  |
| Latvia | 2010 | 0.74 | 2011 | 0.77 | 2014 | 0.70 |  |  |  |  |  |  | -0.04 ↓ |
| Lithuania | 2016 | 0.92 |   |  |  |  |  |  |  |  |  |  |  |
| Mexico | 2012 | 1.02 |  |  |  |  |  |  |  |  |  |  |  |
| Montenegro | 2012 | 1.00 | 2016 | 0.96 |  |  |  |  |  |  |  |  | -0.04 ↓ |
| Netherlands | 1998 | 0.78 | 2006 | 0.75 | 2010 | 0.85 |  |  |  |  |  |  |  0.07 ↑ |
| New Zealand | 1996 | 0.94  | 2008 | 1.00 | 2011 | 0.91 | 2014 | 0.91 | 2017 | 0.91 |  |  | -0.03 ↓ |
| Norway | 1997 | 0.75 | 2005 | 0.83 | 2009 | 0.82 | 2013 | 0.82  | 2017 | 0.80 |  |  |  0.05 ↑ |
| Peru | 2011 | 1.01 | 2016 | 1.00  |  |  |  |  |  |  |  |  | -0.01 ↓ |
| Poland | 1997 | 0.88 | 2005 | 0.82 | 2007 | 0.96 | 2011 | 0.88  |  |  |  |  |  0.00 |
| Portugal | 2002 | 0.93 | 2009 | 0.91 | 2015 | 0.94  |  |  |  |  |  |  | 0.01 ↑ |
| Romania | 2012 | 0.87 |  |  |  |  |  |  |  |  |  |  |  |
| Serbia | 2012 | 0.94 |  |  |  |  |  |  |  |  |  |  |  |
| Slovakia | 2010 | 0.93 | 2016 | 1.00 |  |  |  |  |  |  |  |  | 0.08 ↑ |
| Slovenia | 1996 | 0.82  | 2008 | 0.84 | 2011 | 0.88 |  |  |  |  |  |  | 0.06 ↑ |
| South Africa | 2009 | 0.98 | 2014 | 0.91 |  |  |  |  |  |  |  |  |  -0.07 ↓ |
| Spain | 1996 | 0.92 | 2000 | 0.83 | 2008 | 0.96  |  |  |  |  |  |  | 0.04 ↑ |
| Sweden | 1998 | 0.73 | 2006 | 0.75  | 2014 | 0.85 |  |  |  |  |  |  | 0.12 ↑ |
| Switzerland | 1999 | 0.70  | 2007 | 0.68 | 2011 | 0.58 |  |  |  |  |  |  | -0.12 ↓ |
| Taiwan | 1996 | 0.96 |  |  |  |  |  |  |  |  |  |  |  |
| Turkey | 2011 | 1.01 | 2015 | 0.94 | 2018 | 0.91 |  |  |  |  |  |  | -0.09 ↓ |
| USA | 2008 | 0.93 | 2012 | 1.13 | 2016 | 1.13 |  |  |  |  |  |  |  0.20 ↑ |
| Uruguay | 2009 | 0.94 |  |  |  |  |  |  |  |  |  |  |  |

Notes: The Ratio change column displays the difference in Leader/Party API ratio between the latest and the oldest time point in the sample.

Table A.2. Descriptive statistics for all the variables (N=102)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Mean** | **SD** | **Min** | **Max** |
| Leader Affective polarization (LAP) | 3.75 | .96 | 1.84 | 6.62 |
| Party Affective Polarization (PAP) | 4.28 | .83 | 2.34 | 7.02 |
| LAP/PAP ratio | .87 | .09 | .58 | 1.13 |
| Partisan identity (0-1) | .48 | .14 | .14 | .87 |
| Left-right polarization (0-10) | 3.66 | 1.13 | .7 | 6.2 |
| Government effectiveness (0-5) | 3.7 | .67 | 2.27 | 4.85 |
| Effective N of parties | 4.58 | 1.37 | 2.12 | 8.68 |
| Presidentialism (0/1) | .10 | .30 | 0 | 1 |

Table A.3. Bivariate correlations between variables (N=102)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | LAP | PAP | Ratio | PID | LRP | Gov.Eff. | ENP | Presidentialism |  |
| LAP | 1 |  |  |  |  |  |  |  |  |
| PAP | .92 | 1 |  |  |  |  |  |  |  |
| Ratio | .68 | .35 | 1 |  |  |  |  |  |  |
| PID | .28 | .25 | .19 | 1 |  |  |  |  |  |
| LRP | .19 | .28 | -.08 | .12 | 1 |  |  |  |  |
| Gov.Eff. | -.63 | -.58 | -.44 | .12 | .00 | 1 |  |  |
| ENP | -.34 | -.24 | -.39 | -.42 | .17 | .06 | 1 |  |
| Presidentialism | .12 | -.07 | .46 | .18 | -.10 | -.24 | -.26 |  1 |

Notes: LAP - Leader Affective Polarization; PAP – Party Affective Polarization; Ratio – LAP/PAP ratio; PID – Partisan Identification (percentage of partisans); LRP – Left-Right Polarization; Gov.Eff. – Government Effectiveness (World Bank); ENP – Effective number of parties.

Table A.4. Intraclass correlation analysis

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | LAP | PAP | LAP/PAP ratio | PID (0-1) | LRP (0-10) | Gov. effectiveness | Eff. N of parties |
| Within country variance | 0.17 | 0.13 | 0.003 | 0.007 | 0.35 | 0.03 | 0.74 |
| Between country variance | 0.77 | 0.62 | 0.006 | 0.014 | 1.04 | 0.47 | 1.23 |
| Intraclass correlation | 0.82 | 0.83 | 0.71 | 0.67 | 0.75 | 0.94 | 0.63 |

Table A.5. The predictors of Party affective polarization (PAP), Leader affective polarization (LAP), and LAP/PAP ratio with country average values (OLS regression)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **PAP** | **LAP** | **PAP/LAP ratio** |
|  |  |  |  |
| PID (0-1) | 1.80\*\* | 1.99\*\* | 0.08 |
|  | (0.75) | (0.83) | (0.10) |
|  |  |  |  |
| Left-right polarization (0-10) | 0.19\*\* | 0.15\* | -0.01 |
|  | (0.08) | (0.08) | (0.01) |
|  |  |  |  |
| Government effectiveness (0-5) | -0.73\*\*\* | -0.85\*\*\* | -0.05\*\* |
|  | (0.14) | (0.15) | (0.02) |
|  |  |  |  |
| Effective N of parties | -0.16\*\* | -0.18\*\* | -0.01 |
|  | (0.07) | (0.08) | (0.01) |
|  |  |  |  |
| Presidential system (1=yes) | -1.00\*\*\* | -0.56\* | 0.09\*\*\* |
|  | (0.25) | (0.28) | (0.03) |
|  |  |  |  |
| Year (1996=0) | 0.05\*\* | 0.05\*\* | 0.00 |
|  | (0.02) | (0.02) | (0.00) |
|  |  |  |  |
| Constant | 5.66\*\*\* | 5.59\*\*\* | 1.04\*\*\* |
|  | (0.70) | (0.76) | (0.09) |
|  |  |  |  |
|  |  |  |  |
| N of countries | 40 | 40 | 40 |
| R-squared | 0.71 | 0.71 | 0.53 |

Notes: Unstandardized regression coefficients. Standard errors in parentheses. 1 country=1 case. API - Affective Polarization Index.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table A.6. The predictors of Party affective polarization (PAP), Leader affective polarization (LAP), and LAP/PAP ratio with a sample restricted to two latest elections per country

|  |  |  |  |
| --- | --- | --- | --- |
|  | **PAP** | **LAP** | **LAP/PAP ratio** |
|  |  |  |  |
| PID (0-1) | 1.38\* | 1.43\*\* | 0.05 |
|  | (0.67) | (0.69) | (0.08) |
|  |  |  |  |
| Left-right polarization (0-10) | 0.16 | 0.13 | -0.00 |
|  | (0.12) | (0.13) | (0.01) |
|  |  |  |  |
| Government effectiveness (0-5) | -0.76\*\*\* | -0.91\*\*\* | -0.05\*\* |
|  | (0.17) | (0.19) | (0.02) |
|  |  |  |  |
| Effective N of parties | -0.17\*\*\* | -0.23\*\*\* | -0.02 |
|  | (0.05) | (0.07) | (0.01) |
|  |  |  |  |
| Presidential system (1=yes) | -0.95\*\*\* | -0.41 | 0.12\* |
|  | (0.30) | (0.48) | (0.06) |
|  |  |  |  |
| Year (1996=0) | 0.01 | 0.02 | 0.00 |
|  | (0.01) | (0.01) | (0.00) |
|  |  |  |  |
| Constant | 6.63\*\*\* | 6.93\*\*\* | 1.11\*\*\* |
|  | (0.92) | (1.03) | (0.08) |
|  |  |  |  |
| N of countries | 29 | 29 | 29 |
| N of elections | 58 | 58 | 58 |
| R-squared | 0.59 | 0.65 | 0.47 |

Notes: The 11 countries that were represented in the original sample with just 1 election are excluded from these models. Unstandardized regression coefficients. Cluster-corrected robust standard errors in parentheses (Cluster=Country). 1 country=1 case. API - Affective Polarization Index. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table A.7. The predictors of Party affective polarization (PAP), Leader affective polarization (LAP), and LAP/PAP ratio with age of democracy variable as a control.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **PAP** | **LAP** | **LAP/PAP ratio** |
|  |  |  |  |
| PID (0-1) | 1.51\*\*\* | 1.60\*\*\* | 0.06 |
|  | (0.42) | (0.47) | (0.07) |
|  |  |  |  |
| Left-right polarization (0-10) | 0.19\*\* | 0.16 | -0.00 |
|  | (0.08) | (0.10) | (0.01) |
|  |  |  |  |
| Government effectiveness (0-5) | -0.82\*\*\* | -0.88\*\*\* | -0.03\*\* |
|  | (0.17) | (0.18) | (0.01) |
|  |  |  |  |
| Effective N of parties | -0.14\*\*\* | -0.21\*\*\* | -0.02\*\* |
|  | (0.04) | (0.05) | (0.01) |
|  |  |  |  |
| Presidential system (1=yes) | -0.90\*\*\* | -0.48 | 0.09\*\* |
|  | (0.20) | (0.29) | (0.03) |
|  |  |  |  |
| Year (1996=0) | 0.02\*\*\* | 0.03\*\* | 0.00 |
|  | (0.01) | (0.01) | (0.00) |
|  |  |  |  |
| **Age of democracy (0-4)** | 0.04 | -0.01 | -0.01 |
|  | (0.07) | (0.07) | (0.01) |
|  |  |  |  |
| Constant | 6.25\*\*\* | 6.35\*\*\* | 1.07\*\*\* |
|  | (0.69) | (0.78) | (0.06) |
|  |  |  |  |
| N of countries | 40 | 40 | 40 |
| N of elections | 102 | 102 | 102 |
| R-squared | 0.64 | 0.63 | 0.42 |

Notes: The age of democracy was determined by the democracy rating and regime durability variables in Polity V dataset. Due to highly uneven distribution of values, we coded the variable into five categories: 0 – does not qualify as a full democracy; 1 – age of democracy between 0 and 25 years; 2 – between 25 and 50 years; 3 – between 50 and 75 years; 4 – 75+ years. Unstandardized regression coefficients. Cluster-corrected robust standard errors in parentheses (Cluster=Country). \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table A.8. The predictors of Party affective polarization (PAP), Leader affective polarization (LAP), and LAP/PAP ratio with partisan groups determined by party identification instead of vote choice.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **PAP** | **LAP** | **LAP/PAP ratio** |
|  |  |  |  |
| PID strength | 0.61\*\* | 0.64 | 0.00 |
|  | (0.30) | (0.38) | (0.03) |
|  |  |  |  |
| Left-right polarization (0-10) | 0.23\*\*\* | 0.21\*\* | -0.00 |
|  | (0.06) | (0.08) | (0.01) |
|  |  |  |  |
| Government effectiveness (0-5) | -0.74\*\*\* | -0.92\*\*\* | -0.06\*\*\* |
|  | (0.12) | (0.14) | (0.01) |
|  |  |  |  |
| Effective N of parties | -0.21\*\*\* | -0.27\*\*\* | -0.02\*\* |
|  | (0.06) | (0.07) | (0.01) |
|  |  |  |  |
| Presidential system (1=yes) | -0.71\*\*\* | -0.33 | 0.08\* |
|  | (0.23) | (0.38) | (0.04) |
|  |  |  |  |
| Year (1996=0) | 0.02\*\* | 0.03\*\* | 0.00 |
|  | (0.01) | (0.01) | (0.00) |
|  |  |  |  |
| Constant | 6.06\*\*\* | 6.34\*\*\* | 1.16\*\*\* |
|  | (0.84) | (0.99) | (0.08) |
|  |  |  |  |
| N of countries | 35 | 35 | 35 |
| N of elections | 81 | 81 | 81 |
| R-squared | 0.68 | 0.65 | 0.43 |

Notes: The number of cases is smaller compared to models presented in Table 2, because we have excluded elections where party identity was determined without the follow-up question to also include „leaners“, resulting in smaller partisan groups that are not directly comparable with other cases. As partisan identification is now used as the basis of AP calculations, we have modified the independent variable regarding PID to avoid endogeneity problems: instead of the percentage of partisans we use partisanship strength, measured by a question that asks respondents whether they feel very close, somewhat close or not very close to their party. The variable in the models represents the average value across all respondents with partisan identity, ranging from 1 (very weak partisanship) to 3 (very strong partisanship). Unstandardized regression coefficients, cluster-corrected robust standard errors in parentheses (Cluster=Country). \*\*\* p<0.01, \*\* p<0.05, \* p<0.1