Online Appendix for:

**Assessing (In)accuracy and Cognitive Biases in Self-reported Measure of Exposure to Disagreement: Evidence from Digital Trace Data**

Timeline of data collection and measurement details

***Table A1.*** *Predictors of inaccuracy in self-reported exposure to disagreement as a function of social desirability bias, cognitive burden, and public opinion perception (N = 341), Table 2 in the main manuscript.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **OLS W2** | **GLM W2** | **OLS W3** | **GLM W3** |
| **Social desirability** |  |  |  |  |
| Discussion norm W2/W3 | .016 [-.012; .044] | .379 [-.023; .835] | .017 [-.012; .047] | .234 [-.059; .582] |
| Need for social approval W2/W3 | -.003 [-.019; .014] | -.084 [-.370; .176] | -.017 [-.037; .005] | -.076 [-.320; .157] |
| **Cognitive burdens** |  |  |  |  |
| Interest W2/W3 | .019 [-.002; .040] | .066 [-.256; .417] | .007 [-.019; .034] | .017 [-.279; .317] |
| Knowledge | -.003 [-.013; .008] | .041 [-.103; .197] | .002 [-.009; .013] | .123 [-.005; .275] |
| **Opinion Climates** |  |  |  |  |
| Perceived Opinion Climate W2/W3 | **-.021** [-.042; -.001]\* | **-.304** [-.645; -.033]\* | **-.031** [-.052; -.009]\* | **-.284** [-.585; -.021]\* |
| **Controls** |  |  |  |  |
| Candidate preference W2/W3 | **.283** [.234; .331]\* | **2.108** [1.552; 2.991]\* | **.113** [.060; .165]\* | .642 [-.012; 1.330] |
| Ideology Strength W2/W3 | **-.059** [-.085; -.033]\* | -.347 [-.739; .001] | **-.045** [-.075; -.016]\* | -.214 [-.544; .106] |
| Total Exposure W1/W2 (log) | -.012 [-.029; .005] | -.005 [-.245; .235] | -.015 [-.035; .006] | .024 [-.175; .243] |
| Media Exposure | .002 [-.011; .014] | -.040 [-.201; .116] | -.000 [-.015; .014] | **-.158** [-.329; -.013]\* |
| **Demographics** |  |  |  |  |
| Age (in years) | .001 [-.001; .003] | .016 [-.013; .050] | .002 [-.001; .004] | .021 [-.008; .054] |
| Female | -.002 [-.046; .042] | .106 [-.531; .807] | -.013 [-.059; .035] | .105 [-.447; .693] |
| Education | -.009 [-.031; .015] | **.302** [.041; .621]\* | -.002 [-.022; .017] | -.052 [-.397; .242] |
| HH income | .006 [-.006; .018] | -.061 [-.234; .095] | -.006 [-.018; .006] | -.108 [-.271; .042] |
| R2 (Adj. R2) | 0.340 (0.313) |  | 0.127 (0.093) |  |
| RMSE | 0.196 |  | 0.207 |  |
| AIC |  | 339.957 |  | 387.246 |
| BIC |  | 393.604 |  | 440.892 |
| Log Likelihood |  | -155.979 |  | -179.623 |
| Deviance |  | 311.957 |  | 359.246 |
| ***Note***: \* = 0 outside the 95% percentile confidence interval based on 10000 bootstrapped replications. | | | | |

***Table A2.*** *Predictors of perceived exposure to disagreement (in self-reported measure) as a function of social desirability bias, cognitive burden, and public opinion perception, controlling for the actual exposure to disagreement (N = 341).*

|  |  |  |
| --- | --- | --- |
|  | **Perceived Exp to Dis**  **W2** | **Perceived Exp to Dis**  **W3** |
| **Actual Exposure** |  |  |
| Actual Exp to Dis (in %) W1/W2 | .059 [-.157; .283] | -.096 [-.257; .051] |
| **Social desirability** |  |  |
| Discussion norm W2/W3 | .014 [-.012; .039] | **.025** [.001; .048]\* |
| Need for socl approval W2/W3 | -.007 [-.022; .008] | -.013 [-.029; .004] |
| **Cognitive burden** |  |  |
| Interest W2/W3 | .015 [-.005; .034] | .005 [-.014; .024] |
| Knowledge | -.002 [-.011; .007] | .004 [-.005; .013] |
| **Opinion Climate** |  |  |
| Prcvd Op Climate W2/W3 | **-.023** [-.041; -.005]\* | **-.027** [-.045; -.008]\* |
| **Controls** |  |  |
| Candidate pref W2/W3 | **-.164** [-.278; -.050]\* | **-.251** [-.324; -.187]\* |
| Ideo Strength W2/W3 | **-.044** [-.068; -.021]\* | **-.033** [-.056; -.010]\* |
| Total Exp W1/W2 (log) | -.013 [-.028; .003] | -.003 [-.015; .010] |
| Media Exposure | -.001 [-.012; .009] | -.000 [-.012; .011] |
| **Demographics** |  |  |
| Age (in years) | .001 [-.001; .003] | .001 [-.001; .003] |
| Female | .003 [-.037; .042] | -.023 [-.062; .017] |
| Education | -.005 [-.025; .017] | -.008 [-.027; .009] |
| HH income | .004 [-.006; .015] | -.004 [-.014; .005] |
| R2 | 0.302 | 0.405 |
| Adj. R2 | 0.272 | 0.379 |
| Num. obs. | 341 | 341 |
| RMSE | 0.177 | 0.167 |
| ***Note***: \* = 0 outside the 95% percentile confidence interval based on 10000 bootstrapped replications outside the confidence interval. | | |

In Table A2, we directly predict the perceived exposure to disagreement controlling the actual exposure. Results show that a favorable opinion climate perception (i.e., perceiving one’s opinion to be more in line with the overall opinion) makes an individual to less likely to report the perceived disagreement independent of actual exposure, therefore being more “accurate” in terms of discrepancy between actual exposure and perceived exposure to disagreement.

**Table A3.** *Predictors of inaccuracy in self-reported exposure to disagreement, when the three most recent days are used as a benchmark against the self-reported measures (N = 341).*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **OLS W2** | **OLS W2 RECENT** | **OLS W3** | **OLS W3 RECENT** |
| **Social desirability** |  |  |  |  |
| Discussion norm W2/W3 | .016 [-.012; .044] | .025 [-.006; .056] | .017 [-.013; .047] | .020 [-.013; .052] |
| Need for social approval W2/W3 | -.003 [-.019; .014] | .005 [-.012; .023] | -.017 [-.037; .005] | -.011 [-.031; .011] |
| **Cognitive burdens** |  |  |  |  |
| Interest W2/W3 | .019 [-.002; .040] | .018 [-.004; .041] | .007 [-.019; .034] | -.004 [-.030; .023] |
| Knowledge | -.003 [-.013; .008] | -.003 [-.015; .008] | .002 [-.009; .013] | .002 [-.010; .014] |
| **Opinion Climates** |  |  |  |  |
| Perceived Opinion Climate W2/W3 | **-.021** [-.042; -.001]\* | **-.023** [-.046; -.001]\* | **-.031** [-.052; -.008]\* | **-.033** [-.055; -.010]\* |
| **Controls** |  |  |  |  |
| Candidate preference W2/W3 | **.283** [.234; .331]\* | **.251** [.196; .306]\* | **.113** [.060; .167]\* | **.161** [.107; .214]\* |
| Ideology Strength W2/W3 | **-.059** [-.085; -.033]\* | **-.064** [-.092; -.036]\* | **-.045** [-.074; -.016]\* | **-.044** [-.074; -.015]\* |
| Total Exposure W1/W2 (log) | -.012 [-.029; .005] | -.016 [-.039; .006] | -.015 [-.035; .006] | .005 [-.016; .025] |
| Media Exposure | .002 [-.011; .014] | -.001 [-.017; .012] | -.000 [-.015; .014] | -.002 [-.016; .009] |
| **Demographics** |  |  |  |  |
| Age (in years) | .001 [-.001; .003] | .002 [-.001; .004] | .002 [-.001; .004] | .001 [-.002; .003] |
| Female | -.002 [-.046; .042] | -.003 [-.051; .044] | -.013 [-.059; .035] | -.011 [-.061; .039] |
| Education | -.009 [-.031; .015] | -.002 [-.026; .023] | -.002 [-.023; .017] | -.006 [-.028; .016] |
| HH income | .006 [-.006; .018] | .002 [-.011; .015] | -.006 [-.018; .006] | -.007 [-.020; .006] |
| R2 | 0.340 (0.313) | 0.263 (0.234) | 0.127 (0.093) | 0.154 (0.120) |
| RMSE | 0.196 | 0.218 | 0.207 | 0.216 |
| ***Note***: \* = 0 outside the 95% percentile confidence interval based on 10000 bootstrapped replications outside the confidence interval. | | | | |

\*\* For RECENT columns, DV is the actual exposure during three most recent days *minus* reported exposure to disagreement.

**Table A4.** Lagged DV regression models predicting attitude certainty as a function of exposure to disagreement, *N* = 320 (Table 4 in the main manuscript).

|  |  |  |
| --- | --- | --- |
|  | **Preference Certainty W3** | |
| **Lagged DV** |  |  |
| Preference Certainty W2 | .517 (.046)\*\*\* | .523 (.046)\*\*\* |
| **Focal predictor** |  |  |
| Exposure to Disagreement (Self-report) | -.520 (.266) |  |
| Exposure to Disagreement (Behavioral) |  | -.769 (.340)\* |
| **Correlates** |  |  |
| Total Exposure W2 (log) | .009 (.035) | .015 (.035) |
| Candidate preference W2 | -.198 (.118) | -.301 (.140)\* |
| Interest W2 | -.007 (.052) | .006 (.052) |
| Knowledge | .059 (.025)\* | .056 (.025)\* |
| Ideological Strength | .074 (.060) | .077 (.060) |
| Efficacy | .091 (.044)\* | .083 (.044) |
| Media Exposure | -.011 (.029) | -.009 (.029) |
| **Demographics** |  |  |
| Age (in years) | -.007 (.005) | -.008 (.005) |
| Female | .175 (.099) | .185 (.098) |
| Education | .066 (.053) | .063 (.053) |
| HH income | -.015 (.028) | -.013 (.028) |
| **Intercept** | 2.193 (.575)\*\*\* | 2.273 (.575)\*\*\* |
| R2 | 0.412 | 0.414 |
| Adj. R2 | 0.387 | 0.389 |
| Num. obs. | 320 | 320 |
| RMSE | 0.858 | 0.856 |
| \*\*\*p < 0.001, \*\*p < 0.01, \*p < 0.05 | | |