

Replication files for “Information exchange in governance networks - Who brokers across political divides?”

Purpose

The folders contain all replication files for the paper:

Angst, Mario and Laurence Brandenberger. 2021. Information exchange in governance networks - Who brokers across political divides? Governance.

All R scripts are commented to facilitate replication. System requirements and package versions are documented in the following section.

Setup

Operating system

The analysis was performed on a macOS 10.15.6 using R-Version 4.0.3.

R-packages

The following R-packages (and versions) were used for the analysis:

- Bergm_5.0.2
- colourvalues_0.3.7
- cluster_2.1.0
- DiagrammeR_1.0.6.1
- dplyr_1.0.3
- factoextra_1.0.7
- forcats_0.5.1
- GGally_2.1.0
- ggplot2_3.3.3
- here_1.0.1
- mice_3.13.0
- proxy_0.4-24
- RColorBrewer_1.1-2
- reshape2_1.4.4
- rethinking_2.13
- rstan_2.21.2
- scales_1.1.1
- StanHeaders_2.21.0-7
- statnet_2019.6
- statnet.common_4.4.1
- stringr_1.4.0
- tergm_3.7.0
- tibble_3.0.6
- tsna_0.3.1

Additionally, we custom coded an ERGM term using the `ergm.userterms` package. The source package is included and needs to be installed manually before running the code.

Content

0_Data folder

The data folder contains anonymized data tables.

- `agg_atts` -> attributes of surveyed and non-surveyed organizations and actors

- `atts_surveyonly` -> attributes of surveyed organizations and actors
- `el.issues` -> edgelist of organizations/actors linking to issues
- `expertise_df` -> expertise of surveyed organizations and actors
- `info_el_directed` -> edgelist of information exchange (directed)
- `info_nw_directed` -> network of information exchange (directed)
- `info_nw_total_missing` -> network of information exchange, missing values
- `occ_allies` -> named allies
- `occ_opps` -> named opponents
- `policybeliefvars` -> policy beliefs
- `survey_only_mat` -> adjacency matrix of surveyed organizations only (subset)

1_Analysis folder

The analysis folder contains:

- `1_dataprep.R` -> data preparation file
- `2_analysis.R` -> R code to replicate analysis
- `custom_bergm_functions.R` -> custom function for BERGM estimation (auxiliary R-file)
- `ergm.userterms_3.9.0.tar.gz` -> custom ERGM userterm R-package
- `output` -> output folder
 - `Figure2_cluster_cluster_dot.dot` -> dot-File for cluster plot, Figure 2
 - `Figure3_brokering_distanceij_boxplot.pdf` -> Figure 3
 - `Figure4_pred_prob_plots_bergm5_new.pdf` -> Figure 4
 - `Figure5_pred_prob_plots_bergm5_forums.pdf` -> Figure 5
 - `FigureA2_bergm_m0b.pdf` -> Figure A2 in the Appendix
 - `FigureA3_bergm_final.pdf` -> Figure A3 in the Appendix
 - `FigureS1_summary_actortype.pdf` -> Figure S1 in the Supplementary Materials
 - `FigureS2a_silhouette.pdf` -> Figure S2a in the Supplementary Materials
 - `FigureS2b_wss.pdf` -> Figure S2b in the Supplementary Materials
 - `FigureS3_clustering_overview.pdf` -> Figure S3 in the Supplementary Materials
 - `FigureS4_bergm_m0b_gof.pdf` -> Figure S24 in the Supplementary Materials
 - `FigureS5_bergm_final_gof.pdf` -> Figure S25 in the Supplementary Materials

Contact

Analysis was performed by Mario Angst with earlier versions and code snippets by Laurence Brandenberger. Please direct any questions to Mario Angst (mario.angst@gmail.com).