KOALA: Estimating coalition probabilities in multi-party electoral systems

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Data and Research Question

Election poll-based reporting

What's the status quo?

Election poll reporting is mostly based on observed mean voter shares.

So what's wrong?

The current style has several shortcomings:

1. Sample uncertainty is insufficiently addressed
2. The main interest is beyond the simple percentages

What do we propose?

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We want to **shift the focus** from

Incomprehensive
observed party shares

to

Uncertainty-based
event probabilities

Based on the last opinion poll before the German federal election 2013

Union	SPD	Greens	**FDP**	The Left	AfD	Others
40%	26%	10%	**5%**	9%	4%	6%

the parties CDU/CSU (or "Union") and FDP – which planned to jointly form the government – obtained 50% (after redistributing party votes <5%).

Resulting media headline:

"Union-FDP loses its majority"

Source: FAZ.net (2017). Umfrage zur Bundestagswahl: Schwarz-Gelb verliert die Mehrheit.http://archive.is/SuXVt. Accessed 26 April 2018.

Example

Example

① Main block 1

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② Main block 2

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③ Technical implementation

Results for selected elections are presented on koala.stat.uni-muenchen.de

The implementation is based on several points:

- Our approach is implemented in the R package `coalitions`
- The website is shiny-based
- The website update approach is automated
- Automatic tweets are sent in the case of new results
- For sharing our results we automatically export them to Google Sheets

④ Communicating our results

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References

Bauer, A. (2016). *Auswirkungen der Erdbebenquelldynamik auf den zeitlichen Verlauf der Bodenbewegung*. MA thesis. Ludwig-Maximilians-Universität, Munich, Germany. Available: https://epub.ub.uni-muenchen .de/31976/

Scheipl, F., Gertheiss, J., Greven, S. (2016). Generalized functional additive mixed models. *Electronic Journal of Statistics*, **10.1**, 1455 – 1492.

Weiss, A. (2001). Topographic position and landforms analysis. *Poster presentation, ESRI user conference*, San Diego, CA, **200**.

Wood, S.N. et al. (2016). Generalized additive models for gigadata: modelling the UK black smoke network daily data. *Journal of the American Statistical Association*. DOI: 10.1080/01621459.2016.1195744.