

Turning the Tables - Investigating Political Stress of Election Candidates as an Explanatory Variable for Online Activity in Social Media

Thomas Milic^{1,4}, Adiya Abisheva³, Uwe Serdült^{1,2}

¹ Centre for Democracy Studies Aarau (ZDA) at the University of Zurich; ² College of Information Science and Engineering, Ritsumeikan University; ³ Chair of Systems Design, ETH Zurich; ⁴ Department of Political Science (IPZ), University of Zurich



1. Research Question

Usually, the focus of social media research in the realms of election studies is to relate candidate's and political parties' online activities to electoral success. We would like to turn the tables and look at this relationship from a different perspective: How do expectations about one's chances for electoral success affect one's social media activities? Do candidates whose electoral chances to be elected are close to 50% - whose "stress level" is therefore high - use social media during the campaign in a more emotional way?

2. Data & Methods

The dataset used for this study is a composite of candidate activities in social media (Facebook, Twitter, Wikipedia), official electoral success statistics as well as survey data. We are testing our hypothesis for the highly contested 2015 national elections in the Canton of Zurich where 837 candidates were competing for 35 seats in Parliament (Fig.1). It was the first time in Swiss electoral history social media played a more active role during the campaign (Fig.5).

- To estimate electoral success, detailed party list statistics including panachage votes, historical data as well as forecasts are taken into account. If one's party won 7 seats at the previous elections and the polls forecast 1 additional seat, candidates listed from 1 to 8 on this party list have a reasonable chance of succeeding at the upcoming elections.
- We have developed a python-based web crawler to extract articles about Swiss politicians from the daily online newspaper [20min.ch](#), checking for scandal mentions.
- To detect emotions, we performed sentiment analysis on candidates' social media messages using SentiStrength, a state-of-the-art lexicon-based classifier. We can distinguish between different classes of emotions: positive valence, negative valence and emotionality.

For data analysis we take a two-step approach. We first estimate chances of candidates to get elected (Fig. 2) . Because of the nature of our dependent variable (to be elected is actually a very rare event) we used penalized likelihood estimation. We then relate this estimate to the respective scores for emotionality in social media (Fig. 3 and 4).



Fig.1: Some candidates seem to be more stressed than others.

Acknowledgments

The present study benefitted from two independently funded research projects:

- The Role of Emotional Interactions in the Polarization of Opinions in Participatory Media, Frank Schweitzer and Uwe Serdült, Swiss National Science Foundation Grant No CR2111_146499 (05/2013-04/2016).
- E-Democracy, Uwe Serdült, Canton of Aargau Project No 201-000413 with financial support from Cantons Aargau (main contribution), Basel-City, Geneva, Grisons, Federal Chancellery and the Center for Democracy Studies Aarau at the University of Zurich, Switzerland (11/2012-12/2016).

In addition, we would like to thank participants of the e-democracy paper and project writing retreat, Castasegna, 16-21 April 2016, for valuable discussions and assistance, in particular D. Garcia, M. McArdle, F. Mendez, S. Schweighofer, T. Willi.

3. Candidate's Stress Level

We measure the individual election candidate's stress level by a composite score expressing uncertainty of electoral success. Whereas some factors operate on the party level [p] others are tied to the individual candidates [i] or a combination thereof:

- Individualized party list success expectation [p,i]
- Achievement of party in last elections [p]
- Forecast for a party in polls [p]
- Incumbency [i] (usually the most important predictor)
- Gender and age (sociodemographic control variables) [i]
- Running as candidate for the second chamber, the Council of States (maximizing public recognition) [i]
- Scandal mentions in press outlets (public damage) [i]
- Wikipedia search counts (name recognition) [i]

We assume stress level is highest for those candidates with electoral chances around 50% and lowest for those who have either a very low or a very high chance to get (re-)elected.

Dependent variable: elected		
Incumbency status	2.649***	(0.754)
gender	-0.818	(0.548)
age	-0.009	(0.020)
party expectation	0.189***	(0.061)
scandal mentions	-0.113*	(0.062)
council of state candidate	2.784**	(1.376)
party list rank	0.062	(0.047)
Wikipedia count (log)	0.108**	(0.043)
Constant	17.338	(39.870)
Observations	873	
Log Likelihood	-56.837	
Akaike Inf. Crit.	131.875	

Fig.2: Whereas incumbency, running for the Council of States, prominence on Wikipedia and a positive outlook for the party increase the chance of getting elected, scandal mentions in online media do somewhat diminish them.

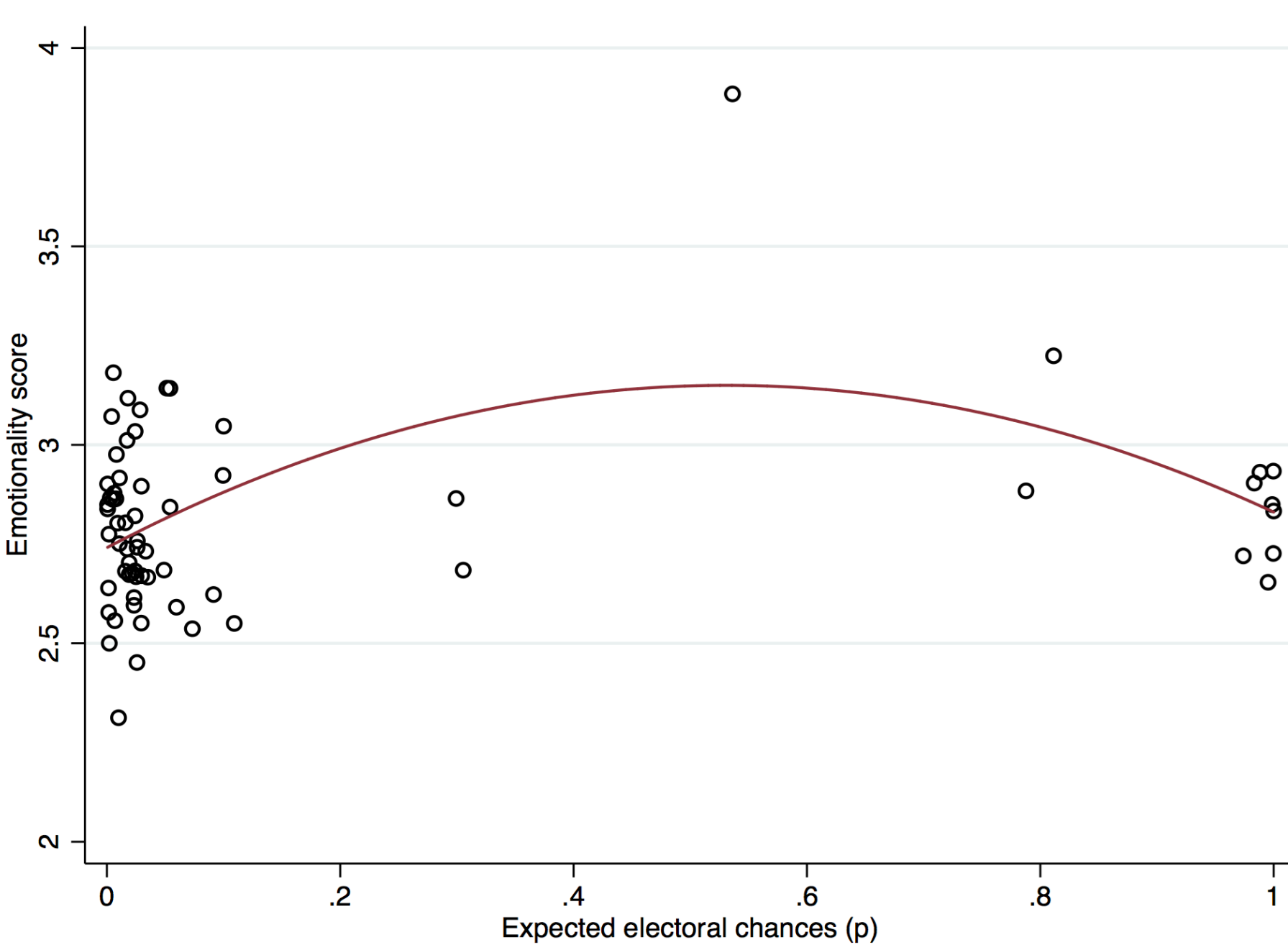


Fig.3: Relation between electoral stress level and emotionality score for candidates with social media activities 12 months before the election date, October 2015. The overall emotionality score (arousal) represents the level of activation of emotion and is computed as an absolute difference between positive and negative sentiment scores.

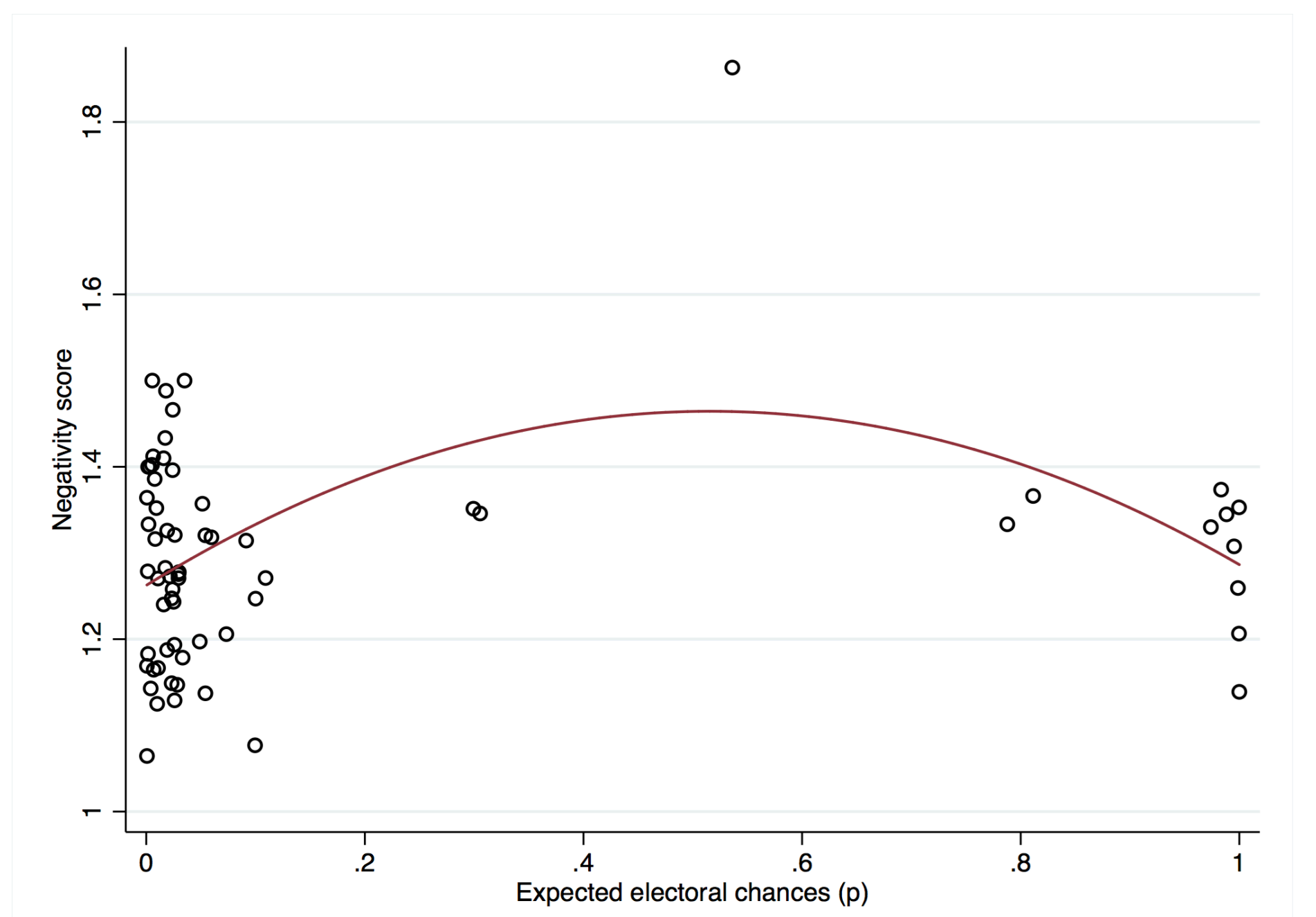


Fig.4: Relation between electoral stress level and negative emotional valence of candidates with social media activities.

4. Conclusions

- We are investigating into the driving forces of online community activities of politicians - an aspect which has previously received little attention in the literature.
- We introduce innovative empirical measures for expected chances of electoral success and social media activities.
- Results point to the hypothesised direction: candidates with electoral chances around 0.5 show higher emotionality scores in online social media.
- Due to the relatively low number of cases and the narrow geographical scope results have to be interpreted with a grain of salt and should not be generalised.
- However, our study represents a promising starting point for further research on the relationship between social media activities, political polarization and electoral success.

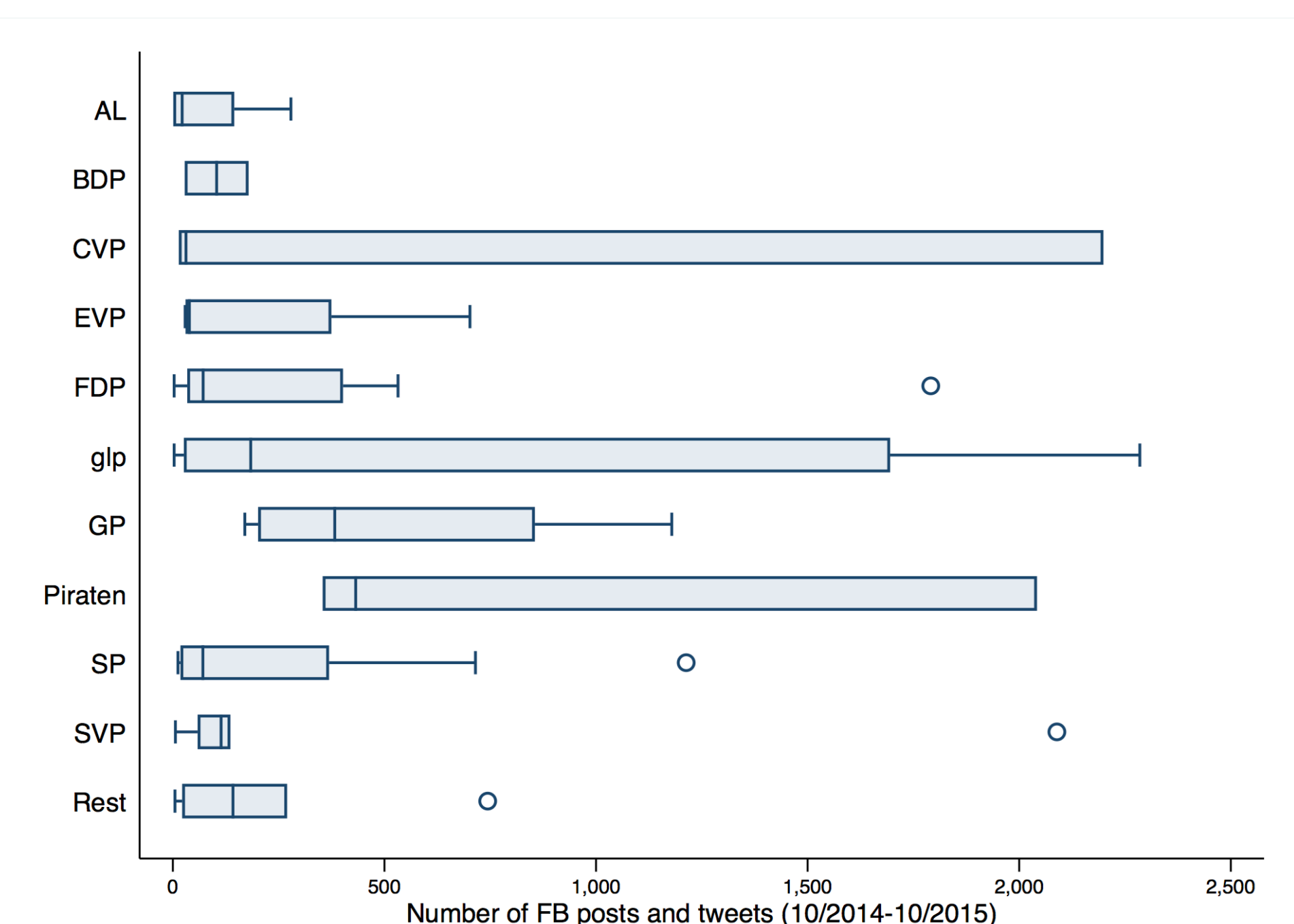


Fig.5: Social media activities of Canton of Zurich candidates by party on Facebook and Twitter combined for the 12 months preceding the 2015 National Council elections

Contact

Thomas Milic, thomas.milic@zda.uzh.ch

References

1.

Abisheva, A. (2016) Opinion Polarization in Online Communities. Diss. ETH Zürich. Link: <https://doi.org/10.3929/ethz-a-010806694>

2.

King, G. and L. Zeng (2001) Logistic regression i Rare Events Data, Political Analysis, 9 (2), pp. 137-163.

3.

Garcia, D.; Abisheva, A.; Schweighofer, S.; Serdült, U; Schweitzer, F. (2015) Ideological and Temporal Components of Network Polarization in Online Political Participatory Media, *Policy & Internet* 7 (1), 46-79.

4.

Rauchfleisch, A. and J. Metag (2016) The special case of Switzerland: Swiss politicians on Twitter, *New Media and Society*, 18 (10), 2412-2431.