

# Gender bias in digital communication

Wäckerle, J., Rozyjumayeva, A., Pradel, F. and Mertens, A.\*

November 14, 2018

## 1 Introduction

“Why does she even care for the #BER opening? Because she has to choose her clothes for the opening ceremony?” This short tweet was directed at Ramona Pop, a female Green politician, for criticizing the delayed opening of the new Berlin airport.<sup>1</sup> While this comment was condemned later on, it resembles an often observed and reported phenomenon in German politics – bias and discrimination towards female politicians. As the above cited tweet illustrates, discussions with female politicians are often reduced to gender stereotypes rather than led with regards to political content.<sup>2</sup>

In the theoretical literature discussing gender biases in politics, research on social identities (Tajfel 1970; Tajfel and Turner 1979) has found that people are approached and act according to specific roles they assign to themselves and that are assigned to them by others. Further research on gender roles, more specifically, revealed that gender stereotypes lead to different assessments of politicians and their eligibility for being in office (Aalberg and Jennsen 2007; Dolan 2010; McDermott 1998).

Little knowledge exists, however, on how gender roles and biases interact in social media communication. Hence, our research project analyses in how far politicians are approached differently based on their gender and how politicians present themselves in social networks.

## 2 Theory

We will build on social identity theory (Tajfel 1970; Tajfel and Turner 1979) and research on gender roles (Aalberg and Jennsen 2007; Bauer 2015) to explain why and how citizens engage differently with female and male political candidates in the digital age. One of the key elements of social identity theory is group membership and categorization: According to the theory, individuals have several identities (i.e. categorizations) assigned by themselves and by others. In terms of politics, a female political candidate has several identities such as politician, Green party member, mother or husband. These categorizations made by our own and by others sometimes differentiate and sometimes concur. Most importantly, based on our own identities and those we assign to others, we have different expectations, behave and engage correspondingly with others. Thus, individuals categorize others into groups. Linked to this cognitive process, stereotypes and prejudices emerge that are related to the group categorization.

Prior research has shown that the activation of stereotypes impacts the evaluation of candidates and voting decisions (Bauer 2015; Sanbonmatsu 2002). Similarly, a study by Aalberg and Jennsen (2007) revealed that gender stereotypes lead to changes in the assessment of politicians, their communication and party support. This bias might treat women either as less capable for politics compared to men, or not fit for political office altogether (Ditonto, Hamilton and Redlawsk 2014; Dolan 2010; Huddy and Tekildsen 1993; McDermott 1998). However, while candidate gender may be a convenient way to make a judgment in an experimental setting, this situation might not be transferable to real voting decisions (Dolan and Lynch, 2014). Additionally, men and women are attributed with different strengths in politics: Men are thought to be more competent in aspects of military and national security, while women are thought to be more compassionate (Koch 1999;

---

\*All authors are PhD researchers at the Cologne Center for Comparative Politics (CCCP), University of Cologne.

<sup>1</sup>For the original tweet in German see: [twitter.com/Kohlmeier](https://twitter.com/Kohlmeier)

<sup>2</sup>This kind of gender bias and use of sexist language towards female politicians Germany was also prominently presented by a DocuPy documentary which interviewed all 219 female politicians in the German Bundestag (see [ardmediathek.de/tv/WDR/219-Frauen-Eine-Frage](http://ardmediathek.de/tv/WDR/219-Frauen-Eine-Frage))

Dolan 2010). Gender stereotypes might therefore hurt women in some situations, but give them an advantage in others (Sanbonmatsu 2002).

Although the idea that citizens are influenced by the politicians’ gender is not new, so far empirical evidence for a gender bias in the digital engagement between those is rare. According to the theory, gender should impact how citizens engage digitally with political candidates. However, this is a serious gap in the literature. In applying this framework to political communication in social media, we investigate whether citizens categorize political candidates based on their gender and communicate with them in a gender stereotypical way. Digital communication enables citizens and politicians to communicate directly

## 2.1 Hypotheses

*H1: Voters approach female politicians differently than male politicians.*

While there is some amount of self-selection of female politicians into gender-typical committees and policy areas (Swers, 2005; Schwindt-Bayer, 2006), some amount of this selection is due to expectation put on politicians by party colleagues and voters. We expect that voters approach politicians differently according to their gender, even after controlling for the policy area they engage in.

*H2: Voters change their approach more according to a candidates’ gender than their qualifications or responsibilities in parliament.*

One important aspect of social identity theory is that it works both by influencing how others see an individual and how that individual sees herself. In the case of politicians, this means that they might be approached differently by voters, but they also behave differently in their communication. These two dynamics then sustain the social identity and reinforce each other.

*H3: Politicians behave conforming to their gender identity when communicating online.*

## 3 Method

One of the main problems of understanding text as data consisted in the difficulties with managing the amount of textual data as well as diminishing the human coding misjudgement. Developments in computational social sciences, however, allow researchers to circumvent some of the above-mentioned issues. We aim to apply some of those methods in the present project. The starting point of our analysis deals with extraction of opinions expressed in textual data to be later included in a regression framework. In line with our theoretical considerations, we first seek to extract clusters of opinions from textual data – both on the voter and political actor levels. Our main goal here is to gauge the topics necessary for understanding the relationships between gender and the topics.

This will be done by applying structural topic modelling to the data at hand. Among the variety of probabilistic topic modelling software, we plan to use the stm package available in R environment (Roberts, Stewart and Tingley 2018). The stm package was chosen particularly for the fact that it allows to control for a wide diversity of metadata. More technically, the stm as a probabilistic model of word counts, identifies the data generating process for individual documents and then uses obtained information to find the appropriate values for the parameters in each model. By moving from document – text – word level, the stm defines a topic as composed of words with a particular probability of belonging to that topic. Consequently, every document is processed as a composition of multiple topics. Thus, the sum of the topics across all topics for a document is one and the sum of word probabilities also equals to one. As a second step, we are planning to extract the sentiments expressed in the data. Among the wide variety of sentiment approaches, we are inclined to employ the dictionary-based and supervised learning approaches.

## References

- Aalberg, T. and A.T. Jennsen. 2007. "Gender stereotyping of political candidates." *Nordicom Review* 28(1):17–32.
- Bauer, N.M. 2015. "Emotional, Sensitive, and Unfit for Office? Gender Stereotype Activation and Support Female Candidates: Emotional, Sensitive, and Unfit for Office?" *Political Psychology* 36(6):691–708.
- Ditonto, T.M., A.J. Hamilton and D.P. Redlawsk. 2014. "Gender Stereo-types, Information Search, and Voting Behavior in Political Campaigns." *Political Behaviour* 36:335–358.
- Dolan, K. 2010. "The Impact of Gender Stereotyped Evaluations on Support for Women Candidates." *Political Behaviour* 32(1):69–88.
- Dolan, Kathleen and Timothy Lynch. 2014. "It Takes a Survey: Understanding Gender Stereotypes, Abstract Attitudes, and Voting for Women Candidates." *American Politics Research* 42(4):656–676.
- Huddy, L. and N. Tekildsen. 1993. "Gender Stereotypes and the Perception of Male and Female Candidates." *American Journal of Political Science* 37(1):119–147.
- Koch, J.W. 1999. "Candidate Gender and Assessments of Senate Candidates." *Social Science Quarterly* 80(1):84–96.
- McDermott, M.L. 1998. "Race and Gender Cues in Low-Information Elections." *Political Research Quarterly* 51(4):895–918.
- Roberts, Margaret E., Brandon M. Stewart and Dustin Tingley. 2018. *stm: R Package for Structural Topic Models*. R package version 1.3.3.  
**URL:** <http://www.structuraltopicmodel.com>
- Sanbonmatsu, K. 2002. "Gender Stereotypes and Vote Choice." *American Journal of Political Science* 46(1):20–34.
- Schwindt-Bayer, Leslie A. 2006. "Still Supermadres? Gender and the Policy Priorities of Latin American Legislators." *American Journal of Political Science* 50(3):570–585.
- Swers, Michele L. 2005. "Connecting Descriptive and Substantive Representation: An Analysis of Sex Differences in Cosponsorship Activity." *Legislative Studies Quarterly* 30(3):407–433.
- Tajfel, H. 1970. "Experiments in intergroup discrimination." *Scientific American* 223(5):96–103.
- Tajfel, H. and J.C. Turner. 1979. *The social psychology of intergroup relations*. Number 4 Monterey, CA: Brooks/Cole chapter An integrative theory of intergroup conflict. The Social Psychology of Intergroup Relations, pp. 33–37.