



Politics, sentiments, and misinformation: An analysis of the Twitter discussion on the 2016 Austrian Presidential Elections

Ema Kušen^{a,*}, Mark Strembeck^{a,b,c}

^aVienna University of Economics and Business WU Vienna, Austria

^bSecure Business Austria Research Center (SBA), Austria

^cComplexity Science Hub Vienna (CSH), Austria

ARTICLE INFO

Article history:

Received 11 October 2017

Revised 15 December 2017

Accepted 26 December 2017

Keywords:

Case study

Network analysis

Political campaigning

Sentiment analysis

Twitter

ABSTRACT

In this paper, we provide a sentiment analysis of the Twitter discussion on the 2016 Austrian presidential elections. In particular, we extracted and analyzed a data-set consisting of 343645 Twitter messages related to the 2016 Austrian presidential elections. Our analysis combines methods from network science and sentiment analysis. Among other things, we found that: a) the winner of the election (Alexander Van der Bellen) predominantly sent tweets resulting in neutral sentiment scores, while his opponent (Norbert Hofer) preferred emotional messages (i.e. tweets resulting in positive or negative sentiment scores), b) negative information about both candidates continued spreading for a longer time compared to neutral and positive information, c) there was a clear polarization in terms of the sentiments spread by Twitter followers of the two presidential candidates, d) the winner of the election received considerably more likes and retweets, while his opponent received more replies, e) the Twitter followers of the winner substantially participated in the spread of misinformation about him.

© 2017 Elsevier B.V. All rights reserved.

1. Introduction

In recent years, social media have become an important channel for politicians to address the public, making them more accessible to their prospective voters [1–3]. Although social media are often used to disseminate informative content, such as event announcements on a candidate's public appearances, recent studies have shown that social media are also used for spreading misinformation as a part of political propaganda [4–6]. In this context, the emotional dimension of a social media discussion [7] is of particular importance as an emotional debate over a controversial topic often develops more dynamically and unpredictably than an objective discussion.

Sentiment analysis methods [8] help classify and understand the users' feelings about a topic of interest. However, the sheer complexity of socio-technical systems [9,10] and the big data characteristics of complex networks [11,12] make the analysis of social media events a difficult task [13,14]. In this context, case studies of real-world political campaigns are of particular interest because they help understand human behavior, detect patterns, and identify generic approaches for analyzing user behavior in online social networks (see, e.g., [2,15–19]).

In this paper, we provide a comprehensive sentiment analysis of the Twitter discussion related to the 2016 Austrian presidential elections and show that during political campaigns conveying emotional content is not always advantageous for the respective political candidate. In particular, we extracted and analyzed a data-set consisting of 343,645 Twitter messages. The resulting data-set is multi-dimensional, including temporal data, structural data (such as the corresponding topic/hashtag network), as well information on the user's emotions that are expressed in the content of the messages. In addition to sentiment polarities, our analysis also identifies specific emotions about each candidate that are conveyed in tweets posted by other Twitter users.

The remainder of this paper is structured as follows. First, we give an overview of the election event in Section 2. Next, Section 3 provides an approach synopsis and discusses the guiding research questions for our study. Subsequently, Section 4 presents our sentiment analysis of the Twitter discussion on the 2016 Austrian presidential elections. In Section 5, we further discuss our findings as well as the limitations of our study. Section 6 discusses related work and Section 7 concludes the paper.

2. Event of study

In the 2016 Austrian presidential elections, Austria has witnessed two polarizing opinions among its citizens. A candidate of

* Corresponding author.

E-mail address: ekusen@wu.ac.at (E. Kušen).

the Freedom Party of Austria, Norbert Hofer, and his opposing candidate, a former member of the Green Party, Alexander Van der Bellen were in a tight run for the presidential seat. The first round of the elections took place on April 24th, 2016, when Norbert Hofer received a majority of the votes (36.40%), followed by Alexander Van der Bellen (20.38%), while four other candidates (Irmgard Griss, Rudolf Hundstorfer, Andreas Khol, and Richard Lugner) dropped out of the elections. The second round, which took place on May 22nd, 2016, was a run-off ballot between Hofer and Van der Bellen. Alexander Van der Bellen won with 50.3% of the votes. However, the results of this election have been invalidated by the Austrian constitutional court in July 2016 due to procedural irregularities in vote counting.¹ After the re-elections were postponed due to faulty glue on the envelopes for postal voting, the repeat of the run-off ballot finally took place on December 4th, 2016, when Van der Bellen was elected president with 53.8% of the votes. The inauguration ceremony took place on January 26th, 2017.

3. Research questions and approach synopsis

In the subsequent sections, we outline the research questions for our study (Section 3.1) and the approach synopsis (Section 3.2).

3.1. Research questions

We defined the following guiding research questions for our analysis:

RQ1: What is the tweeting behavior of the presidential candidates?

In specific, we examined three aspects: temporal characteristics of each candidate's tweeting behavior (RQ1.1), each candidate's engagement style (RQ1.2), as well as each candidate's campaigning style (RQ1.3).

RQ1.1: What are the temporal characteristics of each candidate's tweeting behavior?

Research question RQ1.1 provides a quantitative analysis of the tweeting behavior and examines how many daily tweets have been posted by each candidate during the presidential elections. For example, we identify associations between important events (such as a TV discussion) and the corresponding tweet count.

RQ1.2: What is the engagement style of each candidate?

In research question RQ1.2, we focus on the way each candidate uses Twitter as a tool for communication with their supporters. In particular, we investigated each candidate's interaction with their followers, including the ratio between the candidates' broadcasting behavior and bilateral (one-to-one) communication. In addition to the quantitative analysis of the engagement styles, we also examine the content of the candidates' tweets and report on the emotions they spread during their presidential campaign. Furthermore, we examine the reactions of Twitter users on the candidates' tweets in terms of retweets, replies, and likes.

RQ1.3: Is there evidence of different types of campaigning?

Political campaigns are generally described as "positive" or "negative", depending on how the candidates address their opponents. In our study, we follow the definition from [20], which describes *negative campaigning* as a type of campaigning which may involve misinformation, "dirty tricks", attacks

on the opponent's persona (also called *political character assassination*), or stressing the opponent's weaknesses or failures from the past. In contrast, *positive campaigning* disseminates information about a candidate's positive future plans or his/her past success. For example, the use of negative campaigning has been well-documented by reputable media during the 2016 US presidential elections (see, e.g., [6,21]). Even though this campaigning strategy prospectively contributed to the success of the Republican candidate (Donald Trump), there is evidence that negative campaigning is risky and might backfire, leading to undesired effects (e.g., by making a candidate less likeable, see [20]). As part of our study, we examined cases of negative campaigning found in our data-set (including the spread of misinformation and rumors) and the effects on the candidates' followers. We do this by (1) searching for known false accusations in our data-set and (2) analyzing the sentiment polarities a candidate uses to address the opposing candidate (i.e. does the candidate mention his rival in a positive or a negative context).

RQ2: In which context do other Twitter users mention the candidates?

Here we examine the context in which ("ordinary") Twitter users addressed both candidates. In particular, we used network analysis techniques (see, e.g., [22]) to derive and analyze ego-networks of hashtags for each candidate and the open coding procedure to classify the respective hashtags.

3.2. Approach synopsis

Our analysis involved four phases (see Fig. 1). In particular, we examined the tweeting behavior of the two presidential candidates (Alexander Van der Bellen and Norbert Hofer)² and analyzed how their tweeting strategy influenced the tweeting behavior of other Twitter users. In this context, we define *tweeting behavior* as sending a new tweet, replying to a tweet, liking another user's tweet, and retweeting an existing message.

Phase 1 - data extraction: In the data extraction phase, we used Twitter's Search API³ to collect tweets about the 2016 Austrian Presidential Election. In particular, we collected German language and English language tweets for the run-off election that took place on December 4th, 2016. We started the data extraction procedure on November 14th, 2016 (three weeks before the election) and continued the extraction procedure until December 14th 2016 (10 days after the election). Even though the official language in Austria is German, we were also interested in English language tweets to capture the opinion of foreigners living in Austria as well as people interested in the elections who live outside of the country. The data extraction procedure resulted in a data-set consisting of 343766 tweets, 206372 of which are English language tweets and 136,372 are German language tweets. Moreover, from March 1st, 2016 till December 14th, 2016 we also extracted all tweets directly issued by the two presidential candidates, giving us 602 tweets posted by Alexander Van der Bellen (@vanderbellen) and 420 tweets posted by Norbert Hofer (@norbertghofer). The 343,766 tweets included 121 double entries (see below), giving us a total of 343,645 unique tweets.⁴

² In particular, we analyzed messages sent from the @vanderbellen and @norbertghofer Twitter accounts. It is not possible, however, to determine if a certain message was actually sent by one of the candidates or by some member of their respective social media teams.

³ <https://developer.twitter.com/en/docs>.

⁴ In order to extract relevant tweets from the Twitter message stream, we thoroughly examined the hashtags used by each candidate and then applied the following list of hashtags for filtering: #vdb, #vdb16, #VanDerBellen, #MehrDennJe, #Nor-

¹ Note that on July 1st, 2016, Austria's constitutional court ruled that the presidential election must be repeated due to irregularities and formal errors in the counting procedures for postal votes in 14 voting districts. As a result of those errors, there was an abstract chance of voter fraud. Evidence of actual voter fraud has not been found.

Download English Version:

<https://daneshyari.com/en/article/8917961>

Download Persian Version:

<https://daneshyari.com/article/8917961>

[Daneshyari.com](https://daneshyari.com)