

# Sentiment Analysis of German Parliamentary Candidates' Tweets: A Longitudinal Study on Electioneering Tone and Post-Election Shifts

Bachelor's Thesis submitted

to

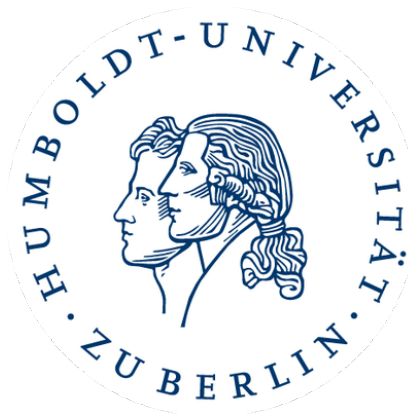
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by

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## **Abstract**

In this study, I examine the tone of German parliamentary candidates' tweets before and after an election by employing sentiment dictionaries to analyze a large corpus of tweets spanning a one-year period. The objective is to uncover potential patterns and shifts in political communication on social media platforms during electioneering and post-election engagement. By doing so, I aim to contribute to the growing body of literature on political communication and sentiment analysis. This investigation offers valuable insights for political actors, campaign strategists, and scholars interested in the impact of digital communication on political behavior and public opinion.

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## List of Abbreviations

API      Application Programming Interface

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# 1 Introduction



## **2 Theory**

### **2.1 Literature Review**

### **2.2 Hypotheses**

## **3 Methodology**

### **3.1 Identification Strategy**

#### **3.1.1 Unit of Analysis**

#### **3.1.2 Treatment and Outcome**

#### **3.1.3 Assumptions**

## 4 Data

In order to collect the data for analysis, I first obtained the Twitter handles for all relevant accounts using two hand curated datasets: (König 2022) and (“Twitter Accounts of Candidates in the German Federal Election 2021 (GLES)” 2021). These datasets not only provide the Twitter handles for candidates, politicians, and parties but also offer valuable metadata, including party affiliation, age, and other relevant information. Then I used the Twitter API to crawl all tweets and retweets posted by the accounts within a one year time frame before and after the election for the 20th German Bundestag (federal parliament) on the September 26, 2021.

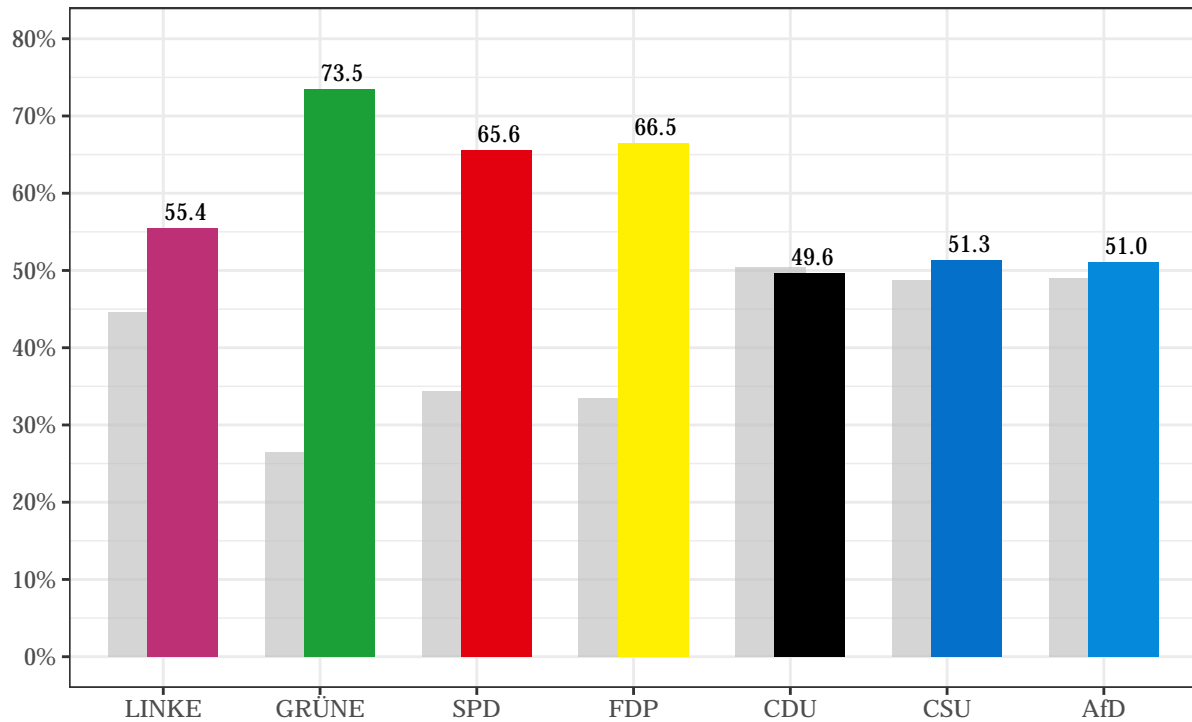
As a result the final dataset employed contains 994,575 tweets from from 1,536 candidates and 38 party accounts affiliated with the SPD, CDU, FDP, Linke, Grüne and AfD. A detailed descriptions of the variables is provided in Table 1.

### 4.1 Descriptives

Politicians use Twitter extremely unevenly, and systematic differences between the parties are apparent. Representatives from conservative parties with an older electorate tend to use more *traditional* campaign media strategies, whereas politicians affiliated with progressive parties that attract a younger demographic, tend to utilize *modern* campaign media platforms such as Twitter, Instagram, and TikTok (CITATION).

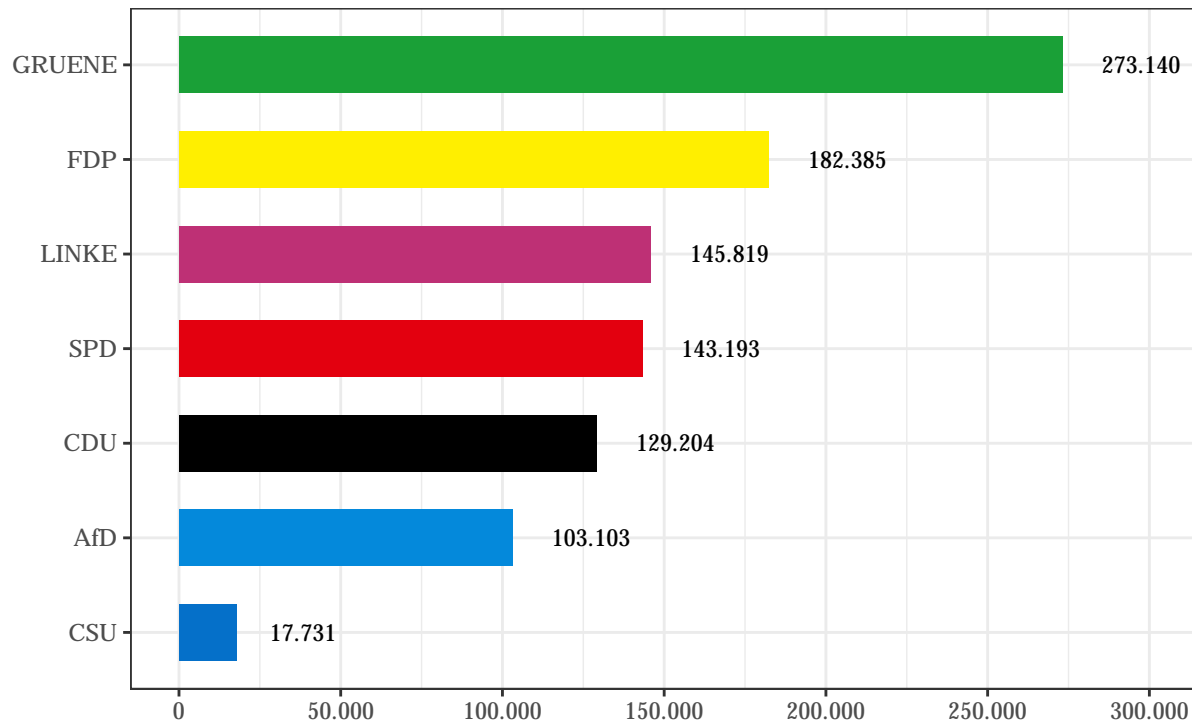
This trend holds true for German politicians as well. As shown in Figure 1, 73.5% Grüne candidates have an account on Twitter, compared to a substantially lower 49.6% of CDU candidates.

**Figure 1:** Percentage of Candidates with an Account on Twitter



Note: The party-colored bars represent the percentage of candidates with a Twitter account, while the grey bars indicate the percentage without one.

**Figure 2:** Number of Tweets posted by Party



## 5 Results

## 6 Conclusion

## References

König, Tim. 2022. “EPINetz Twitter Politicians 2021.” GESIS Data Archive. <https://doi.org/10.7802/2415>.

“Twitter Accounts of Candidates in the German Federal Election 2021 (GLES).” 2021. GESIS Data Archive. <https://doi.org/10.4232/1.13790>.

## A Appendix

### A.1 Figures



## A.2 Tables

**Table 1:** A Detailed Description of the Variables included in the Tweets-Dataset

Variable Name	Type	Source
tweet_id	Categorical	Twitter API
twitter_handle	Categorical	Twitter API
text	Text Data	Twitter API
text_clean	Text Data	Twitter API
language	Categorical	Twitter API
tweet_date	Date	Twitter API
retweet_count	Continuous	Twitter API
like_count	Continuous	Twitter API
quote_count	Continuous	Twitter API
name	Categorical	GLES / EPIN
gender	Categorical	GLES / EPIN
party	Categorical	GLES / EPIN
district_name	Categorical	GLES / EPIN
district_number	Categorical	GLES / EPIN
region	Categorical	GLES / EPIN
incumbent	Binary	GLES
listed_candidate	Binary	GLES
direct_candidate	Binary	GLES
binary_federal_parliamentarian	Binary	EPIN
binary_state_parliamentarian	Binary	EPIN
binary_european_parliamentarian	Binary	EPIN
binary_federal_state_secretary	Binary	EPIN
binary_state_state_secretary	Binary	EPIN
binary_federal_minister	Binary	EPIN
binary_state_minister	Binary	EPIN
user_verified	Binary	Twitter API
user_location	Categorical	Twitter API
user_created_at	Date	Twitter API
user_url	Categorical	Twitter API
user_tweet_count	Continuous	Twitter API
user_list_count	Continuous	Twitter API
user_followers_count	Continuous	Twitter API
user_following_count	Continuous	Twitter API

## Declaration of Authorship

I hereby confirm that I have authored this Bachelor's Thesis independently and without use of others than the indicated sources. All passages which are literally or in general matter taken out of publications or other sources are marked as such.

Berlin, May 05, 2023

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