

NOVA School of Business and Economics

Master in Economics

Work project - Direct Research

**TikTok Content Characteristics and Political
Engagement: Evidence from German Party
Communications in the 2025 Federal Election**

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I Declaration on the Use of AI Assistance

This thesis acknowledges the use of "ChatGPT" (GPT-5 Thinking) and "Perplexity pro" as a writing and coding assistant. The tools were employed exclusively to (i) suggest alternative phrasings to improve the clarity, readability, and grammatical correctness; and (ii) offer code quality suggestions, refactoring, and debugging hints for \LaTeX , Python, and R, with the aim of improving the author's code writing skills.

All ideas, arguments, research designs, and conclusions presented in this work were completely conceived and developed by the author. The system was not used to generate research questions, theoretical claims, empirical results, or interpretations. All model outputs were critically reviewed, edited, and verified by the author prior to inclusion. Citations and references were selected, checked, and formatted by the author, and no source is cited without inspection.

The author remains solely responsible for the accuracy, originality, and academic integrity of the thesis and affirms full compliance with institutional policies on the responsible use of AI tools.

II Abstract

This study examines how topic selection and sentiment framing influence engagement with political content on TikTok during the 2025 German federal election campaign. Using two-way fixed effects models with party-member TikTok data and contemporaneous polling, the analysis finds that *negative* sentiment and topics spanning *civil rights and democracy*, *personal* narratives, and *memes* substantially increase engagement. Party-specific estimations reveal substantial heterogeneity in these effects. Despite strong associations between content characteristics and engagement, no statistically meaningful relationship emerges between party-level engagement rates and contemporaneous vote shares in public opinion polls. This null effect is robust across alternative engagement measures and lag structures. The results suggest that TikTok primarily facilitates expressive political behavior rather than shifts in vote intentions.

Keywords: TikTok and Politics, Political Communication, Social Media Engagement, Electoral Outcomes

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1 Introduction

TikTok has become the most downloaded and widely used social media platform, with a user base of 1.36 billion globally, of which approximately 65 percent are under 29 years of age (Curry 2025; Statista 2025; Liu 2022). This demographic concentration has placed TikTok at the center of political debates and communication, especially because the platform reshapes patterns of information consumption and public discourse. With 48 percent of users aged 18 to 29 actively following political content and news on TikTok, the design of the platform can effectively mobilize young people (McClain 2024), substantially exceeding other platforms (Cervi and Marín-Lladó 2021; Medina Serrano, Papakyriakopoulos, and Hegelich 2020). This can be attributed to TikTok's "For you Page" algorithm, which unlike Facebook and Twitter, where political information diffuses through friendship networks and retweets, can drive a single video to millions of viewers within hours (Schellewald 2023).

Despite ongoing policy controversies, including bans and access restrictions in several countries over privacy, security, and propaganda concerns, TikTok has been widely adopted by leading German politicians and parties to reach digital audiences (Wang 2020). Although platform guidelines prevent politicians and parties from placing paid advertisements, forcing them to rely solely on organic exposure to disseminate their political messages. Additionally, TikTok offers no content monetization opportunities for political accounts (TikTok 2025). As a result, political visibility on the platform depends entirely on organic reach, which is driven in part by user engagement, making it a central objective of digital campaign strategies (Widholm, Ekman, and Larsson 2024; Svegaard and Vilkins 2025; Cartes-Barroso, García-Estévez, and Méndez-Muros 2025).

During the 2025 German federal election campaign, an apparent correlation emerged between digital mobilization and electoral outcomes. The "Alternative für Deutschland" and "Die Linke" achieved disproportionately high TikTok engagement (Stobbe 2025; Katzy-Reinshagen et al. 2025), while 35 percent of German TikTok users are 18 to 29 years old (Bocksch 2024). This age group is the demographic that delivered strong electoral support to the two ideologically extreme parties "AfD" (right-wing party) and "Die Linke" (left-wing party). While Schmidt, Donner, and Sick (2025) do not find evidence that parties' videos were favored by the TikTok

algorithm, the mechanisms by which users reward party specific content characteristics and whether this engagement actually drives overall electoral support remain largely empirically unexplored in the German context.

The primary question examined in this paper is whether specific content characteristics, particularly topic selection and sentiment framing, drive variation in user engagement, measured in likes, on political TikTok posts authored by members of the German Bundestag during the 2025 federal election campaign period. The secondary question examines whether heightened party level engagement translates into measurable gains in electoral support. To isolate the effect of content characteristics on engagement, the analysis exploits within-party variation in topic and sentiment usage while controlling for time-invariant party differences and common temporal shocks. The relationship is first estimated for pooled parties, then conducted for party-specific analyses to detect heterogeneous effects. Recognizing that parties may employ systematically different topic strategies and sentiment profiles aligned with their ideological positioning and voter coalitions. Using observed engagement, the analysis tests whether weeks in which a greater proportion of viewers interact with content through likes, corresponds to periods of higher polling support for that party.

The empirical analysis combines official TikTok research API data compiled by Böhmer, Engler, and Schröder (2025) with polling data from two different German election research institutes, covering the 2025 federal election campaign period.

The analysis yields two principal findings. First, content characteristics significantly shape user engagement on TikTok during the German federal election in 2025. Overall *negative* sentiment usage exerts a strong independent effect, increasing engagement by more than 31 percent ($p < 0.001$) across all parties, while party specific heterogeneity emerges regarding topic effects. Second, higher party level TikTok engagement does not translate into measurable electoral gains. The coefficient of engagement rates that predicts contemporaneous vote share is statistically insignificant for all different engagement measures and model specifications.

2 Literature Review and Thesis Contribution

A growing literature documents that specific content characteristics systematically influence engagement on digital platforms. A common finding is that *negative* sentiment and emotionally charged messaging increase digital engagement across different platforms. Research on Twitter and Facebook demonstrates that posts expressing moral outrage and out-group animosity generate substantially higher engagement compared to *positive* or *neutral* framing (Rathje, Van Bavel, and Van Der Linden 2021; Heiss, Schmuck, and Matthes 2019). Recent studies on TikTok also confirm this pattern, with Cheng and Li (2024) finding that *negative* framing substantially increases engagement on videos of news services. Furthermore, Dolan et al. (2019) and Solovev et al. (2025) document that *negative* messaging and out-group criticism particularly drive audience responses among ideologically extreme parties, amplifying divisive messaging on algorithmically curated platforms. Knobloch-Westerwick, Mothes, and Polavin (2020) explain this with the theoretical negativity bias model, which indicates that individuals allocate more cognitive resources to *negative* information. Beyond psychological explanations, economic models of platform behavior also shed light on these engagement patterns. Athey and Gans (2010) argue that digital platforms operate within an "attention economy" in which algorithms allocate visibility to content that maximizes user engagement. In such environments, emotionally salient or provocative material systematically receives greater exposure because it generates stronger and more frequent user reactions.

Beyond *negative* sentiment usage, Cartes-Barroso, García-Estévez, and Méndez-Muros (2025) and Bösch and Geusen (2025) identify humanizing content as a second major driver of engagement. Personal narratives, humor, and relatable content that personify political figures and reduce perceived distance between parties and voters, generate notably higher engagement rates. This suggests that audiences respond not merely to divisive messaging, but also to content that creates parasocial connection and perceived authenticity, reflecting dual pathways through which platform dynamics amplify specific content characteristics.

Despite robust evidence that content characteristics drive platform engagement, Zhuravskaya, Petrova, and Enikolopov (2020) document in their comprehensive literature review that social media facilitate political engagement through multiple channels, yet whether engagement trans-

lates to electoral gains remains contested and context-dependent. While Levy (2021) finds no evidence of changes in political opinion forming, Enikolopov, Makarin, and Petrova (2020) show that social media can increase political participation, and Fujiwara, Müller, and Schwarz (2024) even report measurable electoral effects of social media in the United States. Yet recent studies focusing specifically on the social media platform TikTok, find no meaningful association between platform engagement and final electoral outcomes (Lima et al. 2023; Rodríguez Tienda and Flores Maya 2024).

Building on this literature, this paper provides a systematic examination of content-level drivers of TikTok engagement during the German federal election in 2025, isolating effects of topic selection and sentiment framing. By conducting party-specific analysis, the results show content strategies align heterogeneously with ideological positioning and voter coalitions, with engagement-increasing characteristics varying systematically across the political spectrum. Second, the analysis tests whether heightened platform engagement translates into electoral gains using contemporaneous weekly polling data. Additionally, robust evidence of the engagement-outcomes disconnect is provided, extending findings of prior research to the German context and demonstrating its persistence across multiple model specifications and engagement operationalizations. The finding that *negative* sentiment and specific topic categories effectively mobilize digital audiences, but this does not systematically increase electoral support, suggests that platform engagement may reflect audience preferences rather than shifting voting intentions. By integrating both sentiment and thematic content features, this thesis expands the analytical scope of existing TikTok political communication research, offering a more nuanced understanding of the informational strategies parties employ during the German federal election.

3 Data Gathering and Usage

This section describes the data sources employed in the descriptive and empirical analysis. The primary dataset comprises TikTok videos with automated speech-to-text transcriptions, collected via the official TikTok Research API and supplemented by weekly polling data on voting preferences.

3.1 TikTok Video Dataset

The TikTok video dataset, sourced from Böhmer, Engler, and Schröder (2025), contains 6,995 posts collected between November 1, 2024, and February 16, 2025, from 295 verified members of the German Bundestag. Each user's posts are assigned to the corresponding party affiliations, including the seven major political parties: "Sozialdemokratische Partei Deutschlands" (SPD), "Christlich Demokratische Union Deutschlands" and "Christlich-Soziale Union" (CDU/CSU), "Bündnis 90/Die Grünen" (Die Grünen or The Greens), "Die Linke" (The Left), "Bündnis Sahra Wagenknecht" (BSW), "Alternative für Deutschland" (AfD) and "Freie Demokratische Partei" (FDP). The dataset includes standard engagement metrics for each post, such as views, likes, comments, and shares, as well as content characteristics such as usernames, video descriptions, creation dates, hashtags, and automated speech-to-text transcriptions. Furthermore, each post is assigned to a calendar week based on its creation date, providing temporal structure for the analysis, because it balances temporal precision with sufficient variation within each period.

The analysis uses likes as the primary engagement measure. While views reflect algorithmic exposure, likes require an active user action and therefore provide a cleaner measure of audience responsiveness to content characteristics.

Topic classification was performed by Böhmer, Engler, and Schröder (2025) using a natural language processing model trained on 900 manually labeled observations. The model successfully assigned approximately 4,768 posts (68%) to one of $P = 22$ topics, spanning politically relevant themes such as *economy and finance*, as well as more entertaining content like *personal and memes*. The remaining 2,227 posts (32%) lacking reliable topic assignment are excluded from topic-based analysis.

Sentiment labels $s \in \{negative, neutral, positive\}$ are assigned to each post using a mul-

tilingual XLM-RoBERTa based model fine-tuned for sentiment classification on social media text (Barbieri, Espinosa Anke, and Camacho-Collados 2021).

3.2 Polling Data on Voting Preferences

Voting preference data are drawn from Forschungsgruppe Wahlen (2025) and Wahlrecht-Forsa (2025) for the period October 29, 2024, through February 14, 2025, temporally aligned with the TikTok dataset at calendar weekly frequency. Both institutes employ telephone surveys with minimum sample sizes of 1,000 respondents per survey and apply demographic weighting procedures to ensure that vote share projections reflect the composition of Germany’s eligible electorate. The combined data provide vote share forecasts for the $J = 7$ major German political parties (SPD, AfD, CDU/CSU, Grüne, Linke, BSW, FDP) across $T = 16$ calendar weeks, yielding $J \times T = 112$ observations. Calendar weeks are assigned according to the start date of each survey, which typically spans multiple days. When both institutes report surveys in the same calendar week with differing estimates, we calculate a sample-size weighted average.

4 Identification Strategy

This section presents the econometric framework for identifying how content characteristics of political party members drive TikTok user engagement and, in turn, how engagement influences electoral outcomes. Two complementary models, a two-way fixed effects specification isolating the effect of topic (1.1), sentiment (1.2), and interaction terms (1.3) on TikTok engagement, and a dynamic specification examining whether real engagement affects vote share in public opinion polls (2.2) are specified.

4.1 The Effect of Content Characteristics on Engagement

The estimation strategy is implemented in stages to isolate which topic-sentiment combinations drive engagement. This approach tests whether engagement responses to topics are sentiment-dependent, revealing which messaging strategies are most effective. The identification strategy relies on the key assumption that topic selection and sentiment expression are determined by campaign strategies rather than responses to real-time engagement shocks. We test this assumption in robustness checks.

In the first stage, the following baseline specification is estimated:

$$\log(\text{likes}_{itp} + 1) = \beta_p \text{topic}_{itp} + \boldsymbol{\theta}^\top \mathbf{X}_{it} + \delta_t + \alpha_i + u_{it}, \quad (1.1)$$

where $\log(\text{likes}_{itp} + 1)$ is the natural logarithm of likes for party member user account i at calendar week t , where one is added to accommodate posts with zero likes. The logarithmic transformation normalizes the engagement distribution and facilitates interpretation of coefficients as semi-elasticities. The indicator topic_{itp} equals one if user account i in calendar week t is classified as topic $p \in \{1, \dots, 22\}$, and zero otherwise. Critically, sentiment $s \in \{\text{positive}, \text{neutral}, \text{negative}\}$ is treated as three separate dummy variables alongside the 22 topic categories, allowing estimation of the marginal effect of each sentiment on engagement,

leading to a second baseline specification:

$$\log(\text{likes}_{its} + 1) = \beta_s \text{sentiment}_{its} + \boldsymbol{\theta}^\top \mathbf{X}_{it} + \delta_t + \alpha_i + u_{it}. \quad (1.2)$$

In the next stage, conditional on topics identified as significant, the interaction terms are estimated:

$$\begin{aligned} \log(\text{likes}_{itp} + 1) = & \lambda_{1p} (\text{positive}_{it} \cdot \text{topic}_{itp}) \\ & + \lambda_{2p} (\text{negative}_{it} \cdot \text{topic}_{itp}) \\ & + \lambda_{3p} (\text{neutral}_{it} \cdot \text{topic}_{itp}) \\ & + \boldsymbol{\theta}^\top \mathbf{X}_{it} + \delta_t + \alpha_i + v_{it}, \end{aligned} \quad (1.3)$$

where $\lambda_{1p}(\text{positive}_{it} \cdot \text{topic}_{itp})$, $\lambda_{2p}(\text{negative}_{it} \cdot \text{topic}_{itp})$ and $\lambda_{3p}(\text{neutral}_{it} \cdot \text{topic}_{itp})$ capture whether the effect of topic on engagement varies by sentiment. This specification allows the effect of each topic to differ across sentiment conditions. The vector \mathbf{X}_{it} includes the time varying control variables, such as *video_duration_{it}*, which measures video length in seconds and controls for how content length affects engagement. *hashtag_count_{it}* is the number of hashtags used in the post, which increases content discoverability through TikTok’s search function and may improve algorithmic distribution to relevant audiences. *post_hour_{it}* indicates the hour of day (0–23) when the post was published and controls for circadian patterns in platform usage and target audience availability. *is_weekend_{it}* is a binary indicator equal to one if the post was published on a weekend (Saturday or Sunday), and zero for weekday posts capturing weekend effects on user engagement stemming from differences in leisure time availability and campaign activity cycles. Member fixed effects α_i eliminate bias from time-invariant account characteristics (baseline popularity, communication style, follower demographics), while calendar week fixed effects δ_t absorb campaign-wide shocks (televised debates, policy announcements, platform algorithm changes, media attention shifts). Standard errors are clustered at the member level ($n = 295$ clusters) to account for serial correlation within members over time.

This sequential approach allows us to address a substantive research question: whether en-

agement responses to political communication are not uniform across sentiment expressions. Posts about migration and integration may generate engagement, only when expressed negatively, while posts about economic policy may resonate equally across sentiments or only when expressed positively.

To examine heterogeneity in content-engagement relationships across the political spectrum, the specifications is estimated in two stages. First, all parties are pooled to establish baseline effects of topics and sentiments on engagement. Second, all equations are re-estimated separately for each of the seven parties, to reveal whether certain topic-sentiment combinations resonate differently for opposition versus governing coalition parties or parties from different parts of the political spectrum, reflecting distinct electoral strategies.

To causally interpret the outcome of the models, strict exogeneity is needed:

$$\mathbb{E}[u_{it} | \text{topic}_{itp}, \text{sentiment}_{its}, \mathbf{X}_{it}, \alpha_i, \delta_t] = 0, \quad (1.4)$$

this requires that topic selection and sentiment expression be uncorrelated with idiosyncratic engagement shocks after conditioning on fixed effects. This assumption is likely to be violated because post creation is not random and is intended to create engagement. Accordingly, the results should be interpreted as descriptive associations rather than causal effects.

4.2 Engagement Rates and Electoral Support

Model 2 addresses whether higher engagement rates on TikTok posts translate into greater electoral support for parties. This extension moves from the micro level, individual post characteristics and their engagement, to the macro level, aggregate party performance and polling support, examining whether parties that generate higher engagement on the platform also secure larger vote shares in public opinion polls.

The key challenge in this aggregation is accounting for the substantial growth in TikTok posting volume over time. As parties may increase posting frequency, total views and likes naturally increase mechanically, regardless of content quality or audience receptiveness. To isolate engagement quality from posting volume, an engagement rate metric is constructed that

normalizes engagement by overall likes. This metric captures the proportion of viewers who interact with content compared to all parties, abstracting from the sheer scale of reach.

For each party j in calendar week t , the aggregate engagement rate is calculated the following:

$$\text{EngagementRate}_{jt} = \frac{\sum_{\substack{i,t \\ \text{party}(i)=j}} \text{likes}_{it}}{\sum_{i,t} \text{likes}_{it}}, \quad (2.1)$$

where the numerator sums total likes across all posts from member account i from party j in calendar week t , the denominator sums total likes across all posts from all user accounts in the same calendar week. This rate based approach ensures that engagement reflects audience responsiveness rather than posting frequency, making it comparable across parties and weeks despite variation in content volume.

The relationship between this aggregate engagement rate and the electoral support is calculated as follows:

$$\text{VoteShare}_{jt} = \beta \cdot \text{EngagementRate}_{jt} + \mu_j + \nu_t + \epsilon_{jt}, \quad (2.2)$$

where VoteShare_{jt} is party j 's support in public opinion polls in calendar week t , measured in percentage points, ranging from 0 to 100. The specification includes party fixed effects μ_j to absorb time-invariant differences in baseline electoral support and stable party characteristics such as organizational capacity, incumbency status, and party size. Calendar-week fixed effects ν_t control for common temporal shocks that affect all parties simultaneously, including major campaign events, televised debates, policy announcements, or external crises. Standard errors are clustered at the party level to account for potential serial correlation within parties over time.

This two-way fixed effects specification allows for flexible party-specific trends and week-specific conditions, isolating the within-party, within-week relationship between TikTok engagement rates and vote share. The model tests whether weeks in which a party's TikTok engagement rate (proportion of aggregate likes) increases correspond to weeks of higher polling support.

5 Descriptive and Empirical Model Results

In this section the main descriptive and empirical findings are presented and are classified in the political context.

5.1 Party-Level Heterogeneity in Posting Volume and Strategy

German political parties exhibited distinct TikTok content production strategies during the 2025 federal election campaign reflecting organizational capacity and strategic priorities. The SPD, The Greens, and CDU/CSU adopted a distributed model that mobilized large numbers of members to collectively create high volumes of content. They produced 1,900, 1,297, and 875 posts respectively with moderate posting frequencies per member around 19 to 22. In contrast, the AfD, Die Linke, and FDP followed a concentrated approach where fewer members produced more posts per capita. Notably, the BSW party had the highest per-member output by posting approximately 150 videos from just three active members. These divergent strategies ranged from broad mobilization to concentrated intensity.

Despite significant variation in total TikTok output and posting patterns, visual analysis of Figure 1 reveals no relationship between total posts by each party and their share of votes in the 2021 federal election. This heterogeneity raises a key question: did parties maintain their distinct posting models consistently throughout the campaign, or did major political events trigger shifts in mobilization across parties.

Figure 2 displays daily posting activity across all parties throughout the campaign period and reveals distinct surges in posting frequency corresponding to major political events. The first notable surge occurred immediately following November 6, 2024, when Chancellor Olaf Scholz (SPD) announced a vote of confidence. Posting activity increased sharply during the three-day period of November 6-8, 2024, across all parties, with average post volume increasing from the pre-announcement average, reflecting intensified political communication and mobilization efforts. A second surge in posting activity emerged following December 16, 2024, when Chancellor Scholz's government lost the confidence vote. This triggered similar intensification across all parties. On December 27, 2024, when Federal President Frank-Walter Steinmeier officially dissolved the 20th Bundestag and called for new elections, this date marks the official

start of the election campaign period. At the beginning of 2025, TikTok activity resumed and continued to rise steadily throughout January and February. The party specific trendlines reveal that SPD and AfD members consistently maintained the highest posting frequencies throughout this period. Other parties exhibited lower but gradually increasing levels of posting, establishing divergent baseline activity levels.

These temporal dynamics reveal that party members treated TikTok not as a static communication infrastructure, but as a responsive channel dynamically calibrated to the election campaign. Posting surges aligned temporally with major political developments, suggesting event-driven mobilization rather than adherence to predetermined schedules. Yet this reactive capacity leaves unresolved a central question about what party members communicated through this mobilized production infrastructure.

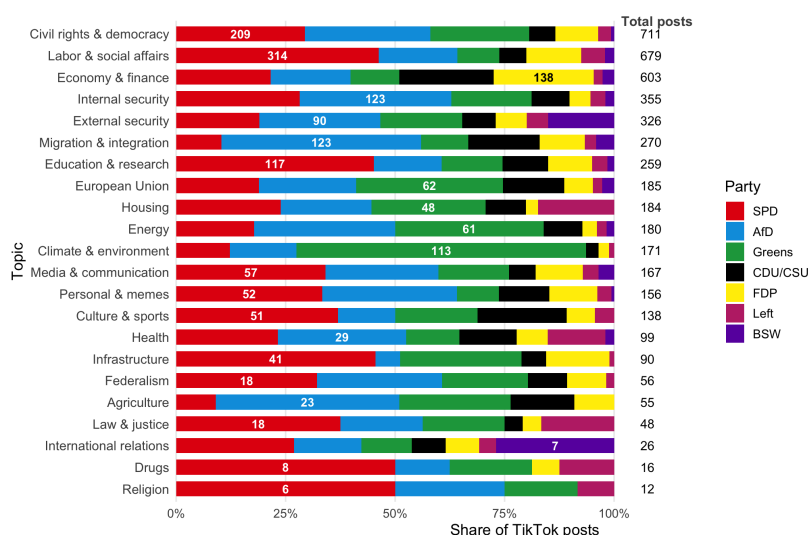


Figure 3: TikTok posts per topic and party share

Figure 3 illustrates the distribution of TikTok posts across 22 identified topic categories during the observation period. The 4,786 posts assigned to specific topic categories cluster heavily in three domains: *civil rights and democracy* (711 posts, 14.9%), *labor and social affairs* (679 posts, 14.2%), and *economy and finance* (603 posts, 12.6%). Together, these three policy domains account for 41.7% of all topic assigned posts in the dataset. This concentration and posting distribution suggests that all parties prioritized substantive policy communication over entertainment content, with governance and social issues dominating their messaging.

However, substantial heterogeneity in party members' topic preferences can be observed.

Certain parties emphasized particular issue domains, the SPD emphasized *labor and social affairs*, the Greens focused on *climate and environment*, the FDP posted the most TikToks about *economy and finance*, while the AfD highlights *internal security* and *migration and integration*. This differentiation indicates that party members used topic selection strategically to appeal to their party ideological bases and policy priorities. In addition it is important to understand how parties framed these topics, especially if parties employ uniform emotional tones across these policy domains.

Figure 4 reveals substantial heterogeneity in how parties deployed emotional framing. All parties used all types of sentiment, but in markedly different proportions, partially reflecting their political positions and roles in the government.

The AfD, Die Linke, and BSW emerged as outliers in their reliance on *negative* framing, deploying *negative* sentiment in at least 45% of their posts. This concentration of negativity aligns logically with their institutional position, as opposition parties, primarily criticizing government policies, decisions and governance failures. Yet the sentiment landscape reveals a more complex picture than a simple government-opposition dichotomy. The governing partners FDP and Die Grünen, despite their coalition status, also prominently deployed *negative* sentiment. This apparent contradiction reflects strategic coalition dynamics, because both parties sought to distance themselves from the government's perceived failures through intra-coalition criticism, employing negativity to blame coalition partners rather than defend collective governance. The SPD as the governing party anchoring the coalition and championing the Chancellor, the SPD favoured *neutral* framing and published the greatest proportion of *positive* contributions across all parties. Lastly, the *CDU/CSU*, occupying the position of the primary center right opposition party, adopted a strategically intermediate approach, combining *negative* sentiment with substantial *neutral* framing, balancing criticism and positioning for future coalition partnerships.

These different sentiment patterns thus show that TikTok's content strategy not only reflects the ideology of the parties, but rather the specific institutional calculations and competitive positioning of each party in the context of the election campaign. This raises the questions, if the parties pursue a consistent sentiment strategy across all major policy areas, or did their use of sentiment vary strategically depending on the thematic focus.

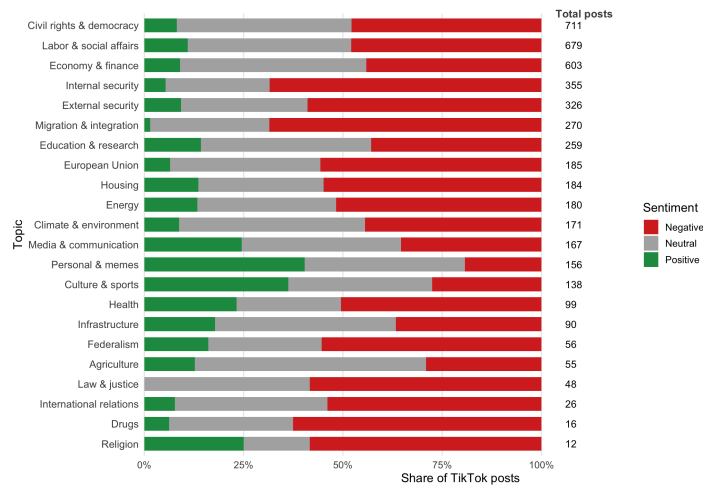


Figure 5: Sentiment share per topic category

Figure 5 demonstrates that *neutral* and *negative* sentiment dominate the posting behavior across most topic categories. A notable exception is *personal and memes* and *culture and sports*, where *positive* posts balance with both *negative* and *neutral* posts, reflecting the lighter, more entertaining character of these categories. Additionally, opposition oriented topics from the AfD attract predominantly *negative* framing, while governance focused topics, such as *civil rights and democracy* and *labor and social affairs* show more balanced sentiment distribution between *neutral* and *negative* framing. This pattern indicates that parties calibrate their emotional framing to their political role and also to the inherent character of topics.

Together, these observations about topic and sentiment reveal a coherent content strategy, parties concentrated on substantive policy communication but differentiated their approach through topic selection, reflecting issue priorities and sentiment framing, reflecting political roles. This strategic differentiation raises the central question, did these distinct content strategies generate differential audience engagement, or do audiences respond equally to volume regardless of content characteristics?

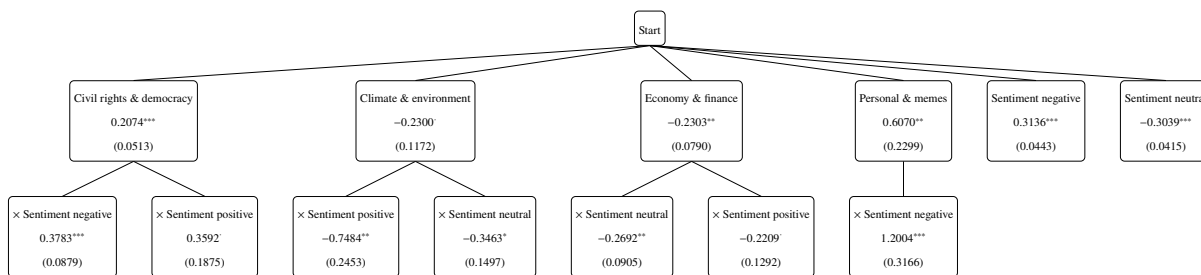
5.2 Main Results

This section provides a comprehensive analysis and interpretation of the estimated results from model 1.1, 1.2, 1.3 and 2.2. The first part focuses on quantifying the effects of content characteristics, specifically topic and sentiment, on user engagement, examining both overall

patterns across all parties and variations at the individual party level. The second part explores whether higher TikTok engagement translates into increased vote share as reflected in public opinion polls.

5.2.1 The Effect of Content Characteristics on User Engagement

Coefficients represent log differences in likes relative to the baseline. Topic effects $p \in P = 22$ are measured against the average of all other topics and sentiment effects against the average of other sentiment $s \in S = 3$ categories. This also applies for the interpretation of the interaction terms.



Notes: Regression Results—Significant Topics and Sentiments Across All Parties

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, $p < 0.1$.

Figure 6: Significant topics and sentiments for overall party estimation

Aggregating across all parties, topics demonstrate substantial heterogeneity in engagement effects. Figure 6 displays only statistically significant effects for topic categories with sufficient post volume (minimum $n = 150$ posts per topic), ensuring results reflect systematic patterns rather than individual outliers.

Topics demonstrating *positive* engagement effects include *civil rights and democracy* (+21%, $p < 0.001$) and most notably *personal and memes* content (+61%, $p < 0.01$). In contrast, topics such as *climate and environment* (-23%, $p < 0.1$) and *economy and finance* (-23%, $p < 0.01$) both lead to significant engagement reduction.

Furthermore, sentiment usage exerts a strong, independent effect on engagement. *Negative* sentiment significantly raises user interaction by 31% ($p < 0.001$) across all parties, showing a general preference for critical, emotionally intensified, controversial, or adversarial content

drives engagement. Conversely, *neutral* sentiment significantly decreases engagement by about 30% ($p < 0.001$).

The analysis of topic and sentiment interactions reveals how framing amplifies or dampens baseline topic effects. *Civil rights and democracy* exhibits amplified engagement when paired with *negative* sentiment (+38%, $p < 0.001$). In contrast, the *positive* sentiment combination (+36%, $p < 0.1$) shows weaker statistical support, limiting robust interpretation. For *climate and environment*, both *positive* (-0.75%, $p < 0.01$) and *neutral* (-35%, $p < 0.05$) sentiment interactions further reduce engagement beyond the baseline topic effect. Similarly, *economy and finance* with *neutral* sentiment (-27%, $p < 0.01$) intensifies the *negative* baseline effect, while the *positive* sentiment interaction (-0.22%, $p < 0.1$) shows diminished significance. The *personal and memes* category demonstrates the strongest interaction effect, because *negative* sentiment pairing increases engagement by 120% ($p < 0.001$), substantially exceeding the main effect. Party specific analysis further illuminates how the interaction between content and party identity shapes engagement.

The AfD (see Figure: 7) exhibits increased engagement with posts on *migration and integration* (+19%, $p < 0.1$), which is a central pillar of the party's election campaign. *Neutral* sentiment interaction with migration substantially reduces engagement (-42%, $p < 0.05$), while *negative* framing increases it (+43%, $p < 0.01$).

Die Linke (see Figure: 8), a party from the left and opposite side of the political spectrum than the AfD, exhibits dramatically divergent engagement patterns for *migration and integration* content, with posts generating approximately -90% ($p < 0.05$) engagement relative to the baseline. This effect intensifies when the topic pairs with *neutral* sentiment (-139%, $p < 0.001$), which substantially decreases engagement and being highly significant.

For the SPD (see Figure: 9), *negative* sentiment substantially increases (+42%, $p < 0.001$), while *neutral* sentiment significantly decreases engagement (-30%, $p < 0.001$). Topic specific analysis reveals that posts addressing *civil rights and democracy* (+25%, $p < 0.01$) increase engagement and get even further intensified when paired with a *negative* sentiment (+47%, $p < 0.001$). In contrast, posts on *labor and social affairs*, a traditional cornerstone of SPD policy (-11%, $p < 0.1$), consistently lead to lower engagement, but when combined with a

neutral sentiment (-32%, $p < 0.001$) the effect is highly significant and gets intensified.

The Greens (see Figure: 10) user engagement patterns also reveal contrasting responses to key topics central to the party's agenda. Posts concerning *climate and environment* (-30%, $p < 0.1$) consistently result in reduced engagement, an effect that is exacerbated when these posts are framed with *positive* (-77%, $p < 0.05$) sentiment. Conversely, *energy* (+43%, $p < 0.05$) posts elicit increased engagement, particularly when articulated with *negative* (+54%, $p < 0.05$) sentiment.

Building on these insights, particularly the strong role of *negative* sentiment in boosting engagement at the aggregate party level, the next section evaluates whether this increased digital interaction translates into measurable electoral gains. Specifically, it is investigated whether the widespread use of *negative* framing on TikTok remains largely political rhetoric without substantive payoff at the ballot box.

5.2.2 The Effect of User Engagement Rates on Vote Share

This section examines the relationship between TikTok engagement rates and parties' contemporaneous vote shares in public opinion polls during the 2025 German federal election campaign. Specifically, it tests whether fluctuations in digital audience engagement reflect or predict shifts in electoral support.

Table 1 (column 1) presents the estimate from the baseline model examining the relationship between TikTok engagement rates and party vote share in contemporaneous opinion polls. The coefficient on engagement is negative but not statistically significant (-0.979, $p > 10\%$), indicating no evidence that weekly changes in TikTok engagement correspond to shifts in polling support once party and week fixed effects are controlled for.

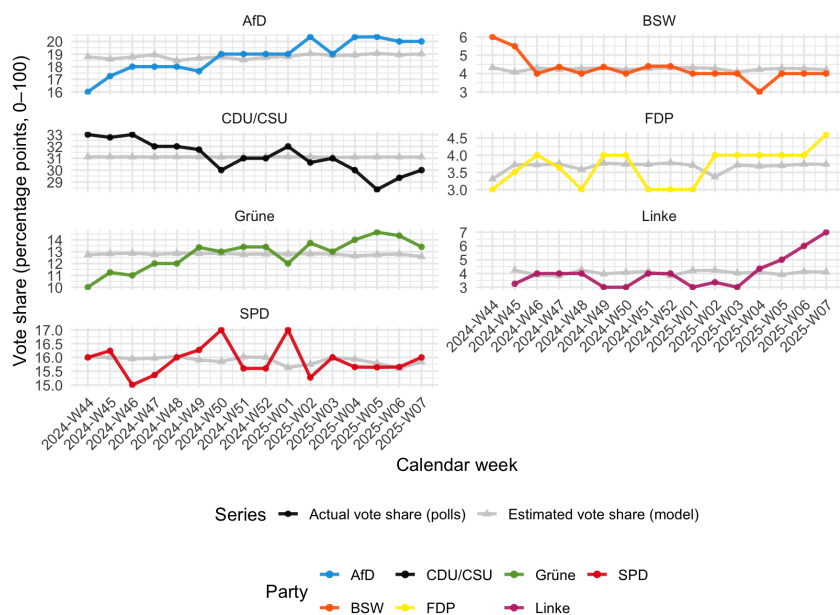


Figure 11: Poll vote share vs. estimated vote share

Figure 11 gives visual evidence by plotting the actual weekly poll shares against the fitted values of the baseline regression. This confirms the regression results, reinforcing the absence of a measurable predictive relationship.

Overall, these findings suggest that TikTok engagement metrics provide little insight into concurrent changes in public support for political parties during the 2025 German federal election campaign. Platform engagement appears driven primarily by enthusiasm for content characteristics and algorithmic dynamics, with no measurable relationship to shifts in polling support. This finding contributes to ongoing debates questioning the short term political influence of social media engagement metrics at the aggregate party level.

5.3 Robustness Checks

To validate baseline findings and address potential confounding factors, different complementary robustness checks are conducted, by also using specification tests with alternative hypotheses about the engagement-vote share relationship.

First, potential reverse causality is assessed, to understand whether parties adjust their content in response to prior engagement levels. For each sentiment variable and topic indicator, we regress current content characteristics on lagged engagement (see Table 2). Across all speci-

fications, the estimated coefficients on lagged engagement are mostly statistically insignificant ($p > 0.10$). Only two topic categories, *economy and finance* and *international relations*, display weak associations at the 10% level, and in both cases, the effect sizes are economically negligible. Overall, the results provide no systematic evidence that parties strategically adjust their messaging or topic emphasis in response to engagement spikes from the previous week. This mitigates concerns about reverse causality and supports the interpretation that content characteristics drive engagement rather than engagement driving content choices.

The baseline model for electoral estimation (2.2) is also augmented with lagged vote share, to account for strong electoral momentum during the campaign (see Table 1, (4)). The lagged vote share coefficient is large and significant (+62%, $p < 0.001$), capturing the effect of omitted variables. Critically, the contemporaneous engagement coefficient becomes smaller, but remains statistically insignificant ($p > 0.1$), confirming that engagement does not predict vote share changes even when accounting for electoral persistence. Furthermore, to ensure the null result does not reflect measurement artifacts, we estimate the original model, without lagged vote share, using alternative engagement definitions, such as likes per post, measuring average engagement per post, and broad engagement by combining the values of likes and comments divided by views. Both yield statistically insignificant coefficients ($p > 0.10$) with negligible effect sizes, demonstrating that the null finding is robust across engagement measurement approaches (see Table 1, (2, 3)).

Lastly, it is tested whether the effects of engagement operate with temporal delays by estimating specifications with engagement lagged by one (1) and two weeks (2), as well as combined contemporaneous and lagged specifications (3, 4, 5) (see Table 3). All lagged engagement coefficients remain statistically insignificant ($p > 0.10$), indicating that neither same or prior-week engagement predicts subsequent vote share changes.

Across all robustness specifications, temporal dynamics, measurement sensitivity, and lagged effects, the engagement-vote share relationship remains null and statistically insignificant. This comprehensive validation confirms that TikTok engagement variations, driven by content characteristics, do not translate into measurable changes in parties' polling performance.

6 Discussion and Limitations

The findings show that specific content characteristics can meaningfully influence TikTok engagement, while extreme parties post the highest share of TikToks with *negative* sentiment and achieve the highest total engagement. Across parties, *negative* sentiment, selected substantive topics, as *personal and memes* and *civil rights and democracy* content systematically attract more interaction, whereas content in areas such as *climate and environment* or *economy and finance* depresses engagement. At the same time, party-level polling data reveal no systematic relationship between heightened TikTok engagement and increased vote share, indicating a disconnect between digital mobilization and electoral outcomes.

The analysis shows that *negative* sentiment substantially increases user engagement, a result that is consistent with theoretical work on the negativity bias (Knobloch-Westerwick, Mothes, and Polavin 2020). It also aligns with the findings of Cheng and Li (2025), Solovev et al. (2025), and Rathje, Van Bavel, and Van Der Linden (2021). These prior studies demonstrate that audiences react more strongly to emotionally charged and critical messages, particularly those involving out-group criticism, which heighten engagement by triggering stronger affective responses. This mechanism plausibly explains why *negative* posts in the overall estimation generate substantially higher engagement, because content that emphasizes conflict, threat, or criticism is more likely to capture attention and prompt interaction in TikTok's highly competitive and attention-driven environment. In this sense, the platform appears particularly well suited to amplifying affectively charged and adversarial political communication.

This amplification effect is especially pronounced for the topic *civil rights and democracy*. While this topic on its own increases engagement, the combination with *negative* sentiment further strengthens the effect. This pattern is consistent with evidence from the German federal election that critical and emotionally charged messaging increases user responsiveness (Solovev et al. 2025). A plausible explanation is that democratic rights and institutional performance constitute highly salient political issues, so *negative* cues within this domain are especially attention-grabbing and may heighten users' receptivity to critical democratic discourse. As a result, *negative* framing not only reinforces the general appeal of content addressing civil rights and democratic institutions but also magnifies its reach by leveraging heightened audience

sensitivity to perceived threats or institutional shortcomings.

Personal and meme-based content also generates substantially larger engagement effects. In addition, the interaction between this category and *negative* sentiment yields one of the strongest observed increases in engagement, indicating that posts combining meme-style or personal formats with sharper or more affectively charged wording tend to perform particularly well on the platform. This result aligns with Bösch and Geusen (2025), who show that audiences respond strongly to humanizing, relatable messaging and content that makes politicians appear approachable. Similarly, Heiss, Schmuck, and Matthes (2019) demonstrate that humorous posts are more likely to receive engagement. Such content formats may appear more authentic and emotionally accessible, thereby amplifying user responses. Taken together, the results suggest that engagement is driven not only by divisive or critical content but also by personalized and humorous formats that help users connect with political actors on a more relatable level. In this sense, TikTok functions as a space where emotional proximity and entertainment value can compensate for complex or abstract policy communication. These patterns suggest audiences prioritize civil rights discourse and entertainment-oriented content over technical policy areas.

Party-level analysis reveals that engagement effectiveness depends critically on party–audience ideological alignment. The AfD’s *migration and integration* content generates heightened engagement, substantially amplified when paired with *negative* sentiment, reflecting strong alignment between this content strategy and AfD’s core voter base. This is consistent with findings that identity-based content and *negative* emotions, especially for right-wing parties, increase virality (Klein 2020; Cartes-Barroso, García-Estévez, and Méndez-Muros 2025). Kahan (2015) explains this pattern through the concept of motivated cognition, because individuals evaluate political information in ways that protect or reinforce their group identity and prior beliefs. In this context, *negative* messaging on migration by the AfD is likely perceived as credible and identity-congruent, which strengthens engagement.

The results for Die Linke, the SPD, and the Greens illustrate that topic–sentiment combinations can also backfire when they are misaligned with audience expectations or broader political performance evaluations. Die Linke’s *migration and integration* content, particularly when framed neutrally, is associated with large decreases in engagement relative to the baseline. *Neu-*

tral or less oppositional framing on migration may signal insufficient distance from the AfD's or CDU/CSU's positions, thereby failing to meet the expectations of a left-wing audience that anticipates clearer counter-narratives. Similarly, for the SPD, posts on *labor and social affairs*, a traditional core issue for the party, tend to attract lower engagement, especially when framed neutrally. This suggests audience skepticism about the SPD's policy record on this dimension, audience preference for distinct ideological differentiation during elections, or lesser salience of labor issues among the predominantly young TikTok audience. For the Greens, *climate and environment* content generally reduces engagement, a pattern that becomes more pronounced when framed positively, whereas *energy* content framed negatively increases engagement. This may be attributable to the fact that the audience is more responsive to concrete, critical discussions around energy prices and security than to broader or more celebratory climate narratives. Distinguishing these mechanisms could require additional sentiment analysis of user comments. Although these findings cannot be causally established in this setting, they are consistent with the view that content effectiveness is not determined solely by the tone of the sentiment, but also by the credibility of the party, ideological orientation and the perceived congruence between message and political performance.

A central finding of the analysis is the pronounced disconnect between heightened TikTok engagement and electoral support. Despite robust content-level engagement effects, the relationship between party-level engagement and vote share is statistically insignificant ($p > 0.10$) across all specifications. While research on other platforms, such as Twitter, documents measurable electoral effects of platform activity (Fujiwara, Müller, and Schwarz 2024) or increases in political participation associated with social media usage (Sharar and Abd-El-Barr 2018), recent TikTok-focused studies report null engagement–vote effects in multiple democratic contexts (Rodríguez Tienda and Flores Maya 2024; Lima et al. 2023). This distinction aligns with the persuasion models of Gentzkow and Shapiro (2006), who show that media messages primarily reinforce prior beliefs rather than shift political preferences, implying that high levels of online engagement do not translate into electoral persuasion. Also Bernhardt, Krasa, and Polborn (2008) political participation model shows that individuals engage with political content to express identity or emotions rather than to influence electoral outcomes. Consequently, TikTok

engagement may be informative about audience preferences and affective polarization, but much less so about aggregate overall electoral outcomes.

Still, several limitations constrain the interpretation of the findings. First, the analysis captures only textual sentiment and does not account for affective tone expressed in images, videos, music, or editing techniques within a post. Such multimodal components may provide additive or competing signals that are important for shaping public perception. Second, automated topic classification by Böhmer, Engler, and Schröder (2025) may introduce measurement error, particularly for lower-frequency categories, potentially attenuating effect estimates. However, the 100 most viewed posts were double-checked and correctly assigned to topic categories, which reinforces confidence in the approach for the most influential content. Third, the results are specific to official party accounts in the 2025 German context, which are not equally represented in the dataset, limiting the scope for comparing some parties. Fourth, privacy constraints prevent individual-level analysis of demographic and geographic engagement variation. Future research should address these constraints by gathering such individual user data. In particular, this would illuminate the demographic and geographic distribution of engagement, revealing whether interactions concentrate among particular voter segments or regions. This consideration is especially interesting given that the ideologically extreme parties, AfD and Linke, recorded both the highest TikTok engagement rates and the strongest electoral support among 18–25-year-olds in the 2025 German federal election, while the platform’s user base remains disproportionately young.

Despite these limitations, the analysis contributes to understanding digital campaigning dynamics by documenting engagement patterns across major political actors throughout the 2025 German federal campaign period. While short-form video platforms like TikTok generate substantial political visibility and engagement, this does not automatically translate into electoral support. More broadly, the discrepancy between engagement and vote share suggests that algorithmic platforms may distort perceptions of voter preferences. If algorithms systematically amplify *negative* and divisive voices without reflecting electoral reality, they can distort political discourse and mislead political actors about the actual mood of voters. This raises concerns for democratic governance and underscores the importance of distinguishing between expressive engagement online and the underlying distribution of electoral preferences.

7 Conclusion

This paper examines how content characteristics on TikTok shape political engagement and whether such engagement translates into electoral support during the 2025 German federal election. Using two-way fixed effects models that account for party-specific heterogeneity and common temporal shocks, the analysis identifies a pronounced disconnect between digital mobilization and electoral outcomes. While *negative* sentiment and specific topic categories markedly increase platform engagement, these dynamics do not correspond to contemporaneous changes in vote share. Across alternative specifications, operationalizations of engagement, and lag structures, the relationship between TikTok activity and polling support remains consistently null. These findings suggest that TikTok primarily facilitates the expression of political affect rather than persuasion or vote choice. Engagement reflects audience preferences for emotional or identity-reinforcing content, rather than shifts in underlying electoral intentions. The results contribute to a growing body of research documenting an engagement-outcomes divergence in short-form video environments and provides systematic evidence for this pattern in the German context using content-level political communication data.

More broadly, the analysis highlights that platform dynamics may amplify affective and emotionally charged content without producing measurable electoral returns. This gap between platform engagement and electoral outcomes suggests that parties relying on *negative* or divisive content may overestimate the digital campaign effectiveness. As digital platforms continue to amplify emotionally charged content, distinguishing between engagement metrics and genuine electoral mobilization becomes critical for democratic accountability. Future research should investigate whether this decoupling persists outside campaign periods, varies across demographic segments, or reflects temporal mismatches between online activity and the voting cycle.

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IV Figure Gallery

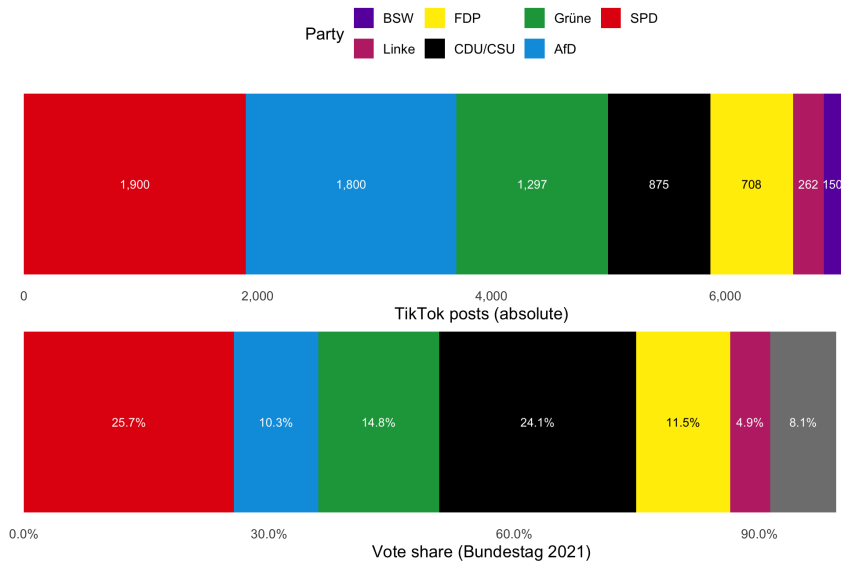


Figure 1: Absolute number of TikToks per party and vote share from the election in 2021.

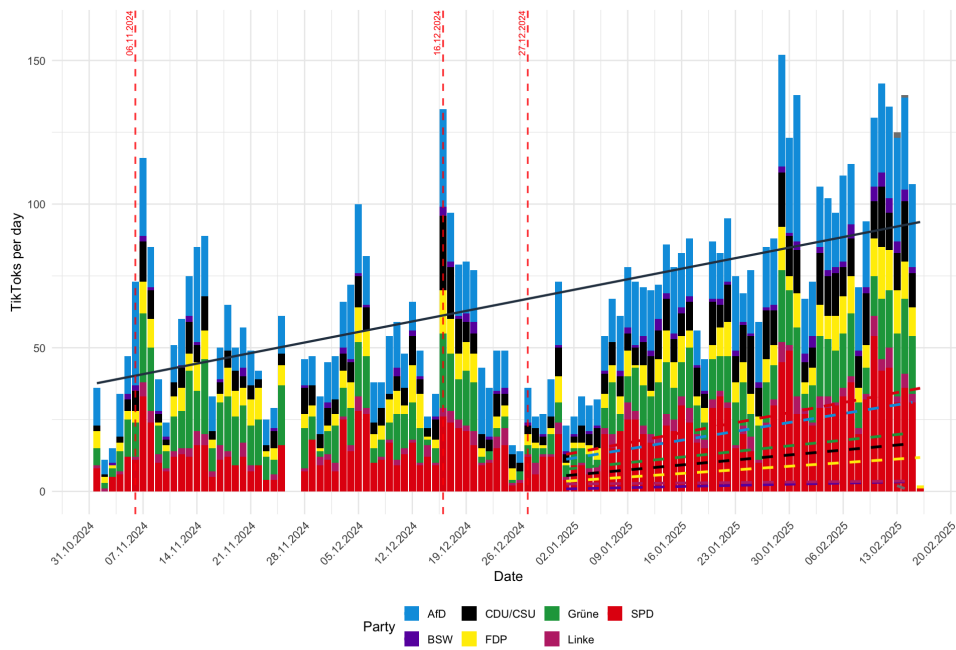


Figure 2: Daily number of TikToks posted by each political party.

IV Figure Gallery

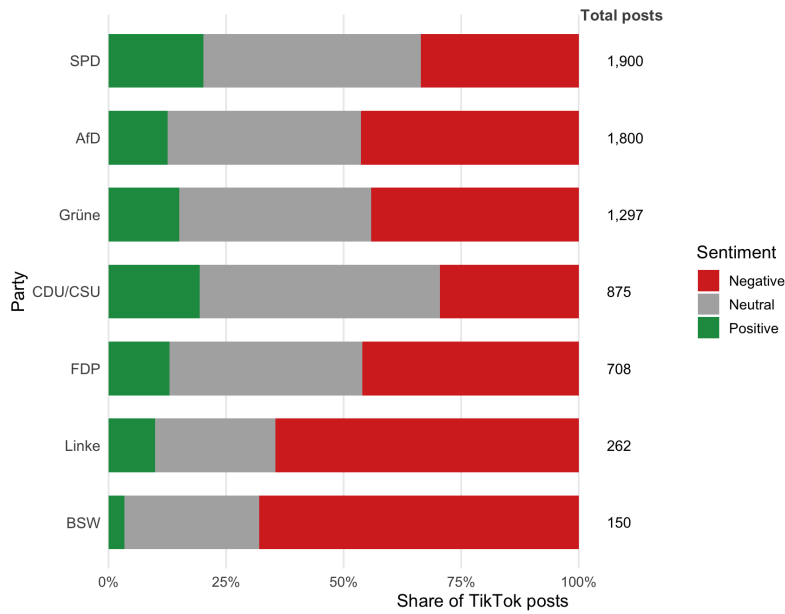
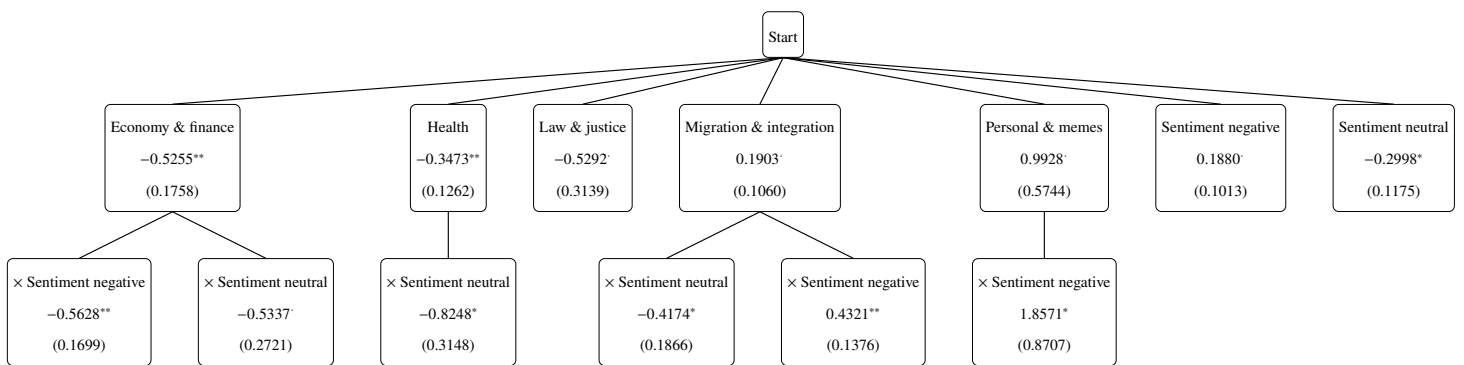


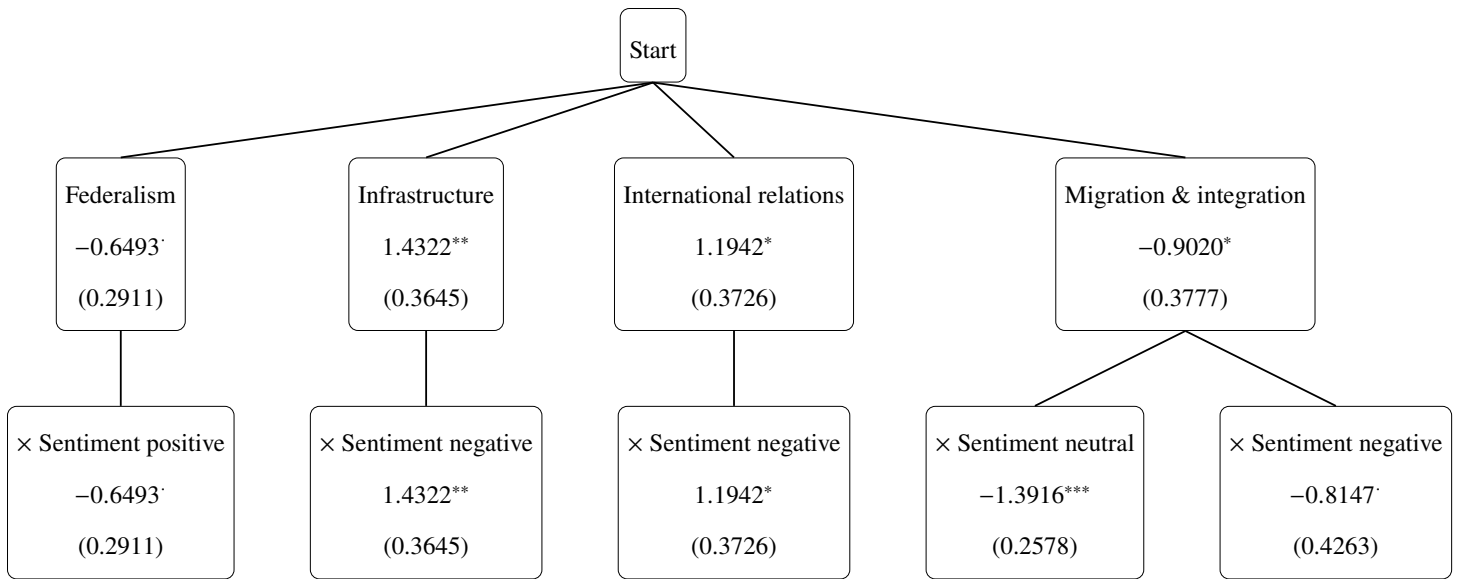
Figure 4: Total number of posts per sentiment category per party



Notes: Regression Results—Significant Topics and Sentiments Across for "AfD".

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, $\cdot p < 0.1$.

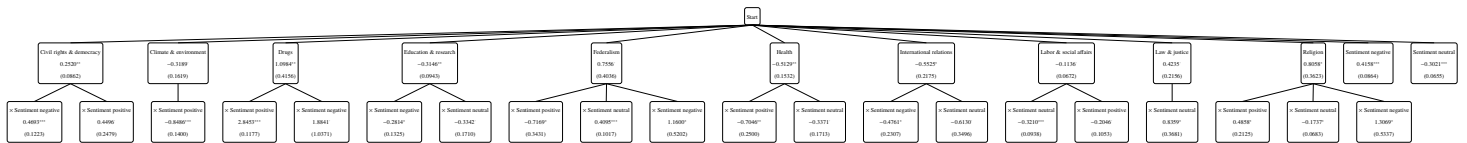
Figure 7: Significant topic and sentiments for AfD



Notes: Regression Results—Significant Topics and Sentiments Across for "Die Linke".

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, $\cdot p < 0.1$.

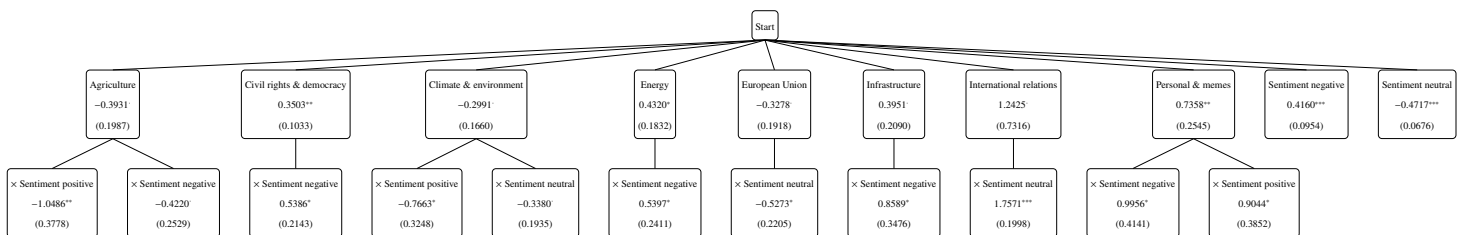
Figure 8: Significant topic and sentiments for Linke



Notes: Regression Results—Significant Topics and Sentiments Across for "SPD".

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, $\cdot p < 0.1$.

Figure 9: Significant topic and sentiments for SPD

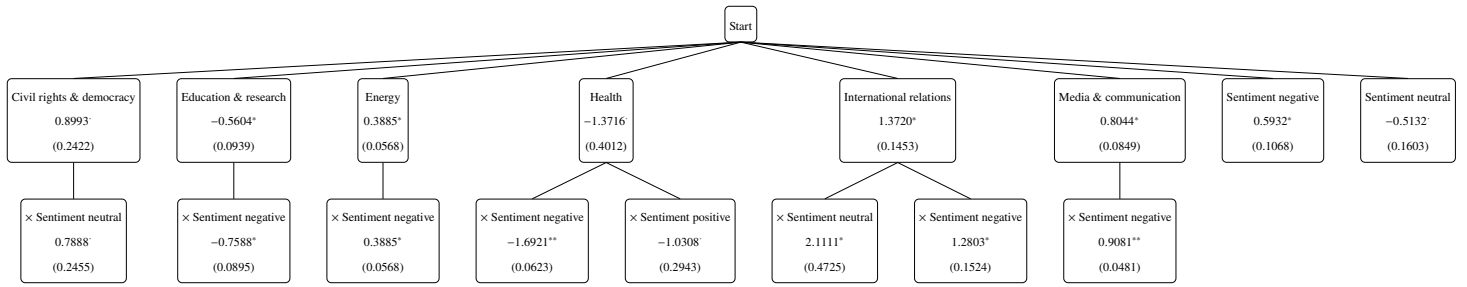


Notes: Regression Results—Significant Topics and Sentiments Across for "Bündnis 90/Die Grünen".

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, $\cdot p < 0.1$.

Figure 10: Significant topic and sentiments for Grüne

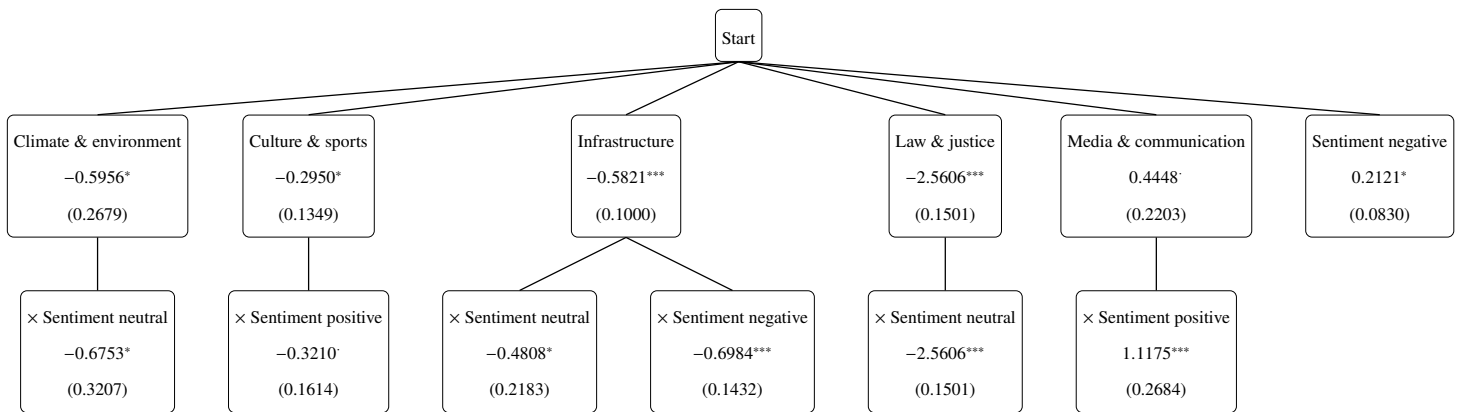
IV Figure Gallery



Notes: Regression Results—Significant Topics and Sentiments Across for "BSW".

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, $\cdot p < 0.1$.

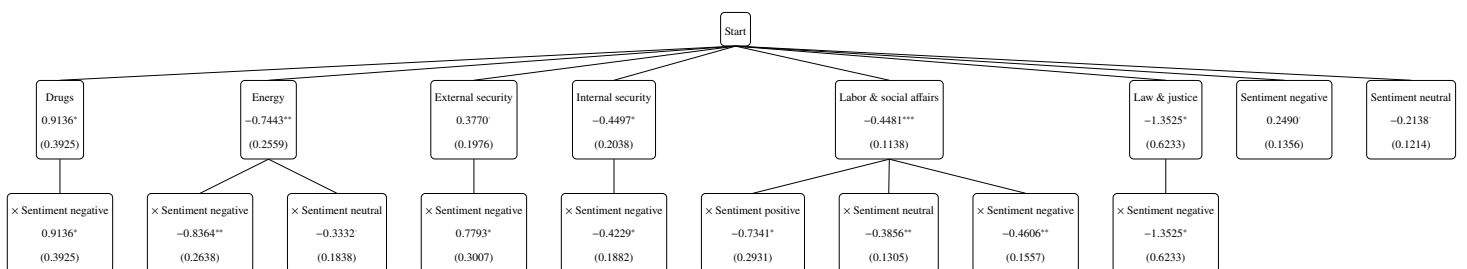
Figure 11: Significant topic and sentiments for BSW



Notes: Regression Results—Significant Topics and Sentiments Across for the "CDU/CSU".

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, $\cdot p < 0.1$.

Figure 12: Significant topic and sentiments for CDU/CSU



Notes: Regression Results—Significant Topics and Sentiments Across for "FDP".

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, $\cdot p < 0.1$.

Figure 13: Significant topic and sentiments for FDP

V Table Gallery

Table 1: Baseline and Robustness Checks for different engagement measures

Dependent variable:	vote_share			
	(1) Baseline	(2) Likes per Post	(3) Broad Engagement	(4) LDV Model
engagement_rate	-0.979 (1.063)			-0.276 (0.492)
likes_per_post		6.54×10^{-6} (7.77×10^{-6})		
likes_plus_comments			-1.868 (4.910)	
vote_share_lag1				0.619*** (0.080)
Observations	111	111	111	104
Party fixed effects	Yes(7)	Yes(7)	Yes(7)	Yes(7)
Week fixed effects	Yes(16)	Yes(16)	Yes(16)	Yes(15)
Clusters (party)	7	7	7	7
Within R^2	0.0125	0.00471	0.00126	0.4510
Adjusted R^2	0.9870	0.98688	0.98683	0.9939
RMSE	0.9613	0.96512	0.96680	0.6507

Notes: Each column reports an OLS regression of weekly party vote share on a different engagement metric. All specifications include party and week fixed effects. Standard errors are clustered at the party level. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table 2: Lagged Engagement and Current Content Characteristics

	Coef. (Engagement $t-1$)	SE (clustered)	p -value
Sentiment variables			
Negative sentiment	0.132	(0.479)	0.792
Neutral sentiment	-0.434	(0.384)	0.302
Positive sentiment	0.302	(0.374)	0.451
Topic variables			
Agriculture	-0.059	(0.073)	0.453
Civil rights & democracy	0.471	(0.291)	0.157
Climate & environment	0.169	(0.146)	0.289
Culture & sports	-0.023	(0.170)	0.897
Drugs	-0.054	(0.039)	0.220
Economy & finance	-0.680*	(0.282)	0.053
Education & research	0.135	(0.190)	0.504
Energy	0.097	(0.078)	0.259
European union	-0.169	(0.199)	0.427
External security	-0.044	(0.240)	0.862
Federalism	0.008	(0.103)	0.943
Health	0.025	(0.164)	0.882
Housing	-0.059	(0.122)	0.646
Infrastructure	0.015	(0.122)	0.903
International relations	-0.376**	(0.086)	0.005
Internal security	0.064	(0.093)	0.517
Labor & social affairs	0.256	(0.165)	0.172
Law & justice	-0.120	(0.068)	0.125
Media & communication	0.005	(0.458)	0.991
Migration & integration	0.180	(0.096)	0.108
Personal & memes	0.192	(0.183)	0.336
Religion	-0.036	(0.030)	0.285
Party fixed effects		Yes	
Week fixed effects		Yes	
Clusters (party)		7	
Within R^2	between 0.000 and 0.0011 across specifications		

Notes: Each row reports the coefficient from a separate two-way fixed effects regression of a content characteristic (sentiment or topic dummy) on lagged party-week TikTok engagement. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table 3: TikTok Engagement Effects on Vote Share

Dependent variable:		vote_share				
		(1) Lag-1 Only	(2) Lag-2 Only	(3) Lag-1 Comb.	(4) Lag-2 Comb.	(5) Lag-1 & Lag-2 Comb.
engagement_rate				-0.754 (1.158)	-0.836 (1.063)	-0.748 (0.932)
				0.539	0.462	0.453
engagement_rate_lag1	-0.935 (0.848)			-0.881 (0.711)		-0.649 (0.809)
	0.312			0.262		0.453
engagement_rate_lag2		-0.071 (0.674)			-0.114 (0.647)	-0.086 (0.544)
		0.920			0.865	0.880
Observations	104	97	104	97	97	97
Party fixed effects	Yes(7)	Yes(7)	Yes(7)	Yes(7)	Yes(7)	Yes(7)
Week fixed effects	Yes(15)	Yes(14)	Yes(15)	Yes(14)	Yes(14)	Yes(14)
Clusters (party)	7	7	7	7	7	7
Within R^2	0.0138	0.000084	0.0221	0.0110	0.0176	0.0176
Adjusted R^2	0.9892	0.9899	0.9891	0.9899	0.9898	0.9898
RMSE	0.8722	0.8388	0.8685	0.8342	0.8314	0.8314

Notes: Each column reports an OLS regression with party and week fixed effects.

Standard errors are clustered at the party level.

Coefficients represent engagement effects at time t , $t - 1$ and $t - 2$ depending on the model.

Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.