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A COMPUTATIONAL ANALYSIS OF IDEOLOGICAL POSITIONS, EMOTIONAL STANCE, AND SUPPORT FOR PRESIDENTIAL CANDIDATES IN TURKEY

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Using artificial intelligence, this article explores the intricate dynamics between ideologies, emotions, and political preferences of the electorate in Turkey. Utilizing a dataset of one billion posts from X (formerly Twitter), the study maps out political opinions, focusing on support for presidential candidates, ideological stances, and collective emotions around the pivotal 2023 Turkish presidential elections. We discuss the limitations of conventional survey techniques and introduce an ERC-funded Politus project that processes digital trace data to offer timely insights into social and political trends. The study's findings, particularly around the "prayer rug (*seccade*) crisis," underscore the complexity of electoral politics and the potential of digital trace data in capturing the evolving sentiments and ideological orientations of voters. Through this computational approach, the research provides a granular depiction of Turkey's ideological map and electoral behavior, contributing significantly to the discourse on political analysis in the digital era.

Keywords: Artificial intelligence; Electoral politics; Emotion; Ideology; Turkey; Twitter
JEL classification: C00, C10, C83

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1. INTRODUCTION

How do we use artificial intelligence methods to understand political opinions on social media platforms? Specifically, what should be the method of measuring ideologies, political support, and emotional stance for presidential candidates? This study is based on a large research project funded by the European Research Council, which aims to (1) measure public opinion from online social platforms and (2) minimize measurement and representation errors. While survey polling has dominated public opinion research for decades, it faces decreasing confidence in the face of wide inaccuracies, highlighted recently by its notable failures to predict outcomes in high-profile elections such as the US elections in 2016 and 2020 and the Brexit referendum. Key issues that possibly mar survey results include cognitive biases affecting memory and opinion formation, social desirability bias leading to misrepresented views, and the relative rigidity of structured surveys in a rapidly changing political landscape. Additionally, the shift in polling activities to digital platforms complicates data accuracy due to the overwhelming volume of information processed by individuals in self-administered questionnaires. Validation studies show that self-reports often fail to accurately capture media use (Biemer 2010; Groves and Lyberg 2010; Kennedy et al. 2018; Jennings and Wlezien 2018; Weisberg 2005; Saris and Sniderman 2018; Saris and Gallhofer 2014). Leveraging digital data by means of computational social science methods offers novel techniques that address these biases and help develop new insights into contemporary democratic processes. In this article, we analyze social media data with advanced AI methods to elaborate on the 2023 presidential elections in Turkey, which was a critical juncture in the two-decade-long political turmoil that characterized Turkish politics.

2. POLITICAL BACKGROUND IN TURKEY

In 2002, the Justice and Development Party (AKP) won the elections by gaining two-thirds of the seats in parliament. It was able to form a single-party government in a country whose political party system has traditionally been fragmented, and where coalition governments had been the order of the day during the preceding decade. The victory of the newly formed party owed much to the widespread popular disillusionment with the established parties of the political center, all but one of which were left outside the parliament due to the high national election threshold of 10%. Despite benefiting from an electoral system that enabled it to win a legislative super majority by garnering 34% of the popular vote, AKP did manage to harness the economic and social grievances of significant sections of the population in the aftermath of the devastating economic crisis of 2001. Between 2002 and 2023, Erdoğan, AKP, and, since 2018, their

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partner Nationalistic Movement Party (MHP) won all general and local elections in the country. AKP's and Erdoğan's own platforms became election machines, managing to espouse and shift among a motley of political positions on key issues of Turkish politics, on some of which even reversing course entirely, depending on their perception of popular electoral priorities. Parallel to the emergence and growth of this electioneering machine, AKP's political discourse and mode of governing have gradually become from an ostensibly inclusive liberal democratic centrism, via a relentless plebiscitary majoritarianism, to finally an authoritarian populism that buttresses a conservative nationalist center that securitizes every form of political dissent to its own rule (Aytaç and Ziya 2014; Esen and Gümüşçü 2016; Yörük 2022).

AKP's political strategy in its formative years and early governments can be described as a skilled strategy of negotiating and coalescing with various elite groups and social movements under the guise of a post-ideological consensus formation, democratic governance, and technocratic economy management, anchoring its key political positions to the principles circumscribed by the European Union accession criteria and IMF-induced macroeconomic stability agenda (Somer 2004; Çağlıyan-İçener 2009; Özbudun 2006). Such a platform and the era it was thought to have ushered in was celebrated as leading to the long-anticipated normalization of Turkish politics, whereby the hitherto perennial center–periphery or state–society contradictions were to come to an end (İnsel 2003). AKP government's success was to be the key to unraveling the deadlock between the vision of modernizing Westernist military–bureaucratic elites and social forces of a Muslim society, which was said to have plagued Turkish politics as the party had the chance and, seemingly, the will to forge a historic compromise between these so-called forces of the center and the periphery (Mardin 1973; Göle 1997; Özbudun 2000). To both local and Western observers, the guidance of a governing political party that was Islamist—seen as genuinely representative of the supposedly uniform values of a Muslim society, yet also willing to pursue an inclusive political discourse that was adherent to the purportedly universal values of fiscal prudence and procedural democracy that respects universal human rights and political freedoms—could only lead to the consolidation of democracy in Turkey (İnsel 2003; Özbudun 2006; cf. Coşar and Özman 2004).

Notwithstanding these sanguine accounts of the new era of democratic consolidation and political normalization, some observers identified authoritarian and exclusionary tendencies inherent in AKP's program from the outset. There were those analyses that stressed the echoes of a "repressive tolerance" in its discourse of post-ideological politics (Özçoban Üstüner and Erdoğan 2005). Others underlined continuities between the compromise edifice of AKP and the entrenched

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tendencies of Turkey's political establishment that disregards social differences and represses dissent in a vision of society encapsulated in the motto "classless, non-preferential, cohesive society" (Buğra 2004). Indeed, from the outset, AKP government and its vision of democracy were tested and stretched thin in the face of major fault lines of political contention in the country, ranging from the state's relation to ethnic and religious minorities, such as Kurds and Alevis, to the curtailment and repression of labor rights and organizations (Yılmaz and Turner 2019; Bozkurt-Güngen 2018).

AKP and Erdoğan have reaped the benefits of the abovementioned restrictive characteristics of the electoral system, which kept minor political parties outside national political mainstream, and favored small provincial electoral constituencies where conservative-nationalist forces are traditionally strong. Authoritarian governing practices that intensified from the mid-2010s onward also helped the ruling coalition consolidate its grab on power, by crippling political campaign efforts of the opposition. Such practices especially came to the fore following the abortive military coup against the government in 2016, which ushered in a prolonged period of state of emergency. The constitutional reform of 2017 further consolidated and codified this approach that centralizes power in the hands of the ruling AKP and Erdoğan. The constitutional reform, promulgated following a referendum that was held while the country was under state of emergency rule, changed the regime of the country from a parliamentary democracy to a semi-presidential system. In the new regime, boundaries between the legislative, executive, and judiciary branches of the government were blurred, and legislative and judicial checks on executive power were diminished. Authoritarian practices of the government have further intensified and included mass media censorship, political persecution of dissidents, and violations of the rule of law such as government interference in judiciary and actions that breach the constitution. Despite the existence of popular elections whose legitimacy have been largely conceded by the main opposition and international observers alike (e.g., OSCE 2018), such practices that amount to serious curtailment of political rights and cast doubt on the existence of a level political playing field have led some observers to even characterize the regime under Erdoğan's rule as "competitive authoritarianism," a category whose illustrious members include Putin's regime in Russia and Victor Orban's rule in Hungary (Özbudun 2015; Esen and Gümüşçü 2016).

The transition of the democratic qualities of the AKP's rule toward authoritarianism has followed a continuum of political style that departs from its post-ideological and technocratic consensus formation to a post-democratic, highly centralized, and personalized rule. In the former, contentious political issues are diluted and depoliticized by framing them as legal and/or constitutional matters, which in turn leads to politicization of judicial procedures. In the latter, post-democratic state, erosion of the boundaries among the executive, legislative, and

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judiciary branches of government give way to a "rule by fait-accompli" (Bozkurt-Güngen 2018) whereby legalization follows the already enacted executive action. Throughout this process, the democratic nature of the regime has come to be identified almost entirely with popular elections, which are expected to perform the sole measurement of legitimacy, giving way to the characterization of the regime as a plebiscitary majoritarian democracy.

In such a context of evolution of the regime of the country, the intensification of political contention in the face of ethnic conflict and economic crisis conditions, which have worsened from 2018 and on, have led to a deeply entrenched and wide polarization among the society. Throughout their rule, AKP's and Erdoğan's political platforms have framed their confrontations with a variety of social actors and groups—including sections of the Kemalist elites, prominent employers' organizations, media companies, dissident social movements, intellectuals, political forces representing the Kurdish minority, and labor unions—as a life-or-death struggle between themselves, who claims to be the organic representatives of the national interest and anti-national forces opposing it. Such a strong emphasis on a friend or foe division further enhanced the polarization among different political camps and constituencies. In 2015, Turkey emerged as the most polarized country among the 38 nations surveyed in the comparative study of electoral systems (Erdoğan and Uyan-Semerci 2018). Recent findings indicate an escalation of polarization (Laebens and Öztürk 2021). The V-Dem dataset corroborates Turkey's position as among the most politically divided countries, highlighting a critical challenge for its democratic institutions and social cohesion (Coppedge et al. 2023; Pemstein et al. 2023).

In the 2023 elections that we analyze, having lost all elections in the last 20 years to the ruling party, the opposition managed to build an electoral alliance to support a candidate that would be able to beat Erdoğan. This alliance, named as the Table of Six, has nominated Kemal Kılıçdaroğlu, the leader of the main opposition party Republican People's Party (CHP)—a Kemalist social democratic party—and launched an ambitious elections campaign in the early 2023, five months before the election day. Our analysis of the electoral process in 2023 focuses on support for Erdoğan and Kılıçdaroğlu. We analyze a range of user characteristics and attitudes, including ideologies, emotions, and support for both candidates.

Recent concerns over the accuracy of survey polls, highlighted by failures to predict major political outcomes like the US elections and Brexit, have become especially relevant to the Turkish presidential elections of 2023. These challenges stem from various sources: biases in how people recall and report their past voting behavior, the impact of question design on responses, and the desire to appear favorable in others' eyes, which skews responses on controversial or extreme political views. Additionally, surveys often fail to adapt quickly to political shifts, struggle with capturing dynamic social influences, and may

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overemphasize current attitudes at the expense of historical context, complicating the assessment of democratic support among the public. Examining digital trace data in the Turkish context is especially crucial because the 2023 election results caught many polling companies by surprise. While most preelection polls indicated that the opposition candidate was leading, the election concluded in the exact opposite direction. We will illustrate that our stance analysis models have captured the actual results better than the polls.

This article will show the utility of digital trace data to comprehend Turkish political context and provide a map of the ideological landscape, affective politics, and support toward presidential candidates of individuals with different ideological orientations throughout the election process. Additionally, the study addresses the "prayer rug (*seccade*)" incident as a use case scenario. We define affective politics as the role emotions play in political processes and how these emotions affect individual and collective behaviors, decisions, and identities within the political realm. This concept acknowledges that emotions are not just private, individual experiences but are also public and collective, significantly influencing political action, discourse, and the shaping of public opinion. Affective politics is intertwined with the strategies political actors use to evoke emotional responses—such as fear, anger, hope, or pride—to mobilize support, frame issues, and influence public perception and policy outcomes (Thrift 2004; Marcus, Neuman, and Mackuen 2000).

3. COMPUTATIONAL APPROACHES TO PUBLIC OPINION IN ELECTORAL PROCESSES

The connection between social media texts and real-life behaviors has been extensively studied, particularly for its potential in election forecasting and its use as a proxy for public sentiment. As an initial approach, Tumasjan et al. (2011) utilized the sheer volume of tweets and made the optimistic assertion that "the mere number of messages reflects the election result" (p. 414), suggesting Twitter as a viable indicator of political behavior in the real world. However, Jungherr, Jürgens, and Schoen (2012) contested these findings, arguing that the prediction's success was influenced by the authors' arbitrary decisions and that the analysis was plagued by numerous issues, including unsystematic data collection processes. There have been numerous attempts, both successful and unsuccessful, to predict real election outcomes—specifically, the final results—by leveraging Twitter activity, especially sentiment analysis, across various elections, countries, and techniques (for a review, see Chauhan, Sharma, and Sikka 2021). Including the target of the sentiment in the text offers a more sophisticated prediction capability compared with sentiment analysis alone. Indeed, Gunhal et al. (2022) employed BERT-based stance detection on a

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specific policy presented as a ballot proposition and successfully predicted the outcome, while Grčar et al. (2017) explored the relationship between individuals' stance on Brexit and found that, after adjusting for demographics, "leave" supporters were predominant. Research on public opinion using social media can benefit from the detailed insights provided by analyzing ideology, emotion, and stance models as they offer information on variables that are likely related with the public opinion. This research provides the opportunity of discovering the potential of these models in terms of capturing public opinion. Below, the emotion, stance, and ideology detection studies that will be used to obtain public information in this study are briefly summarized.

3.1. Emotion Detection

The literature has moved beyond the traditional view that emotions are inferior to rational thought. Instead, it has started to recognize emotions as integral components of political reasoning and behavior (Freeden 2013). This shift in thought has opened the door to a large number of new studies on the role of emotions in political processes, and the relationship between individual emotions and ideologies has been the subject of research (e.g., Elad-Strenger, Proch, and Kessler 2020). Twitter (or X)—as a character-limited microblogging platform where users share their ideas and emotions within a "nonreactive" environment exhibiting their candid reactions without limiting themselves for reasons like desirability bias (Salganik 2017)—offers a convenient platform to analyze affect and emotion within a user base. On Twitter, the detection of emotions expressed in various forms within texts has been the subject of numerous research studies as a classification task (e.g., Kabir and Madria 2021). Various approaches, both rule based and machine-learning based, have been used in the detection of these emotions (Acheampong, Wenyu, and Nunoo-Mensah 2020). In studies that make more nuanced distinctions beyond positive–negative sentiment analysis, the number of emotions varies (Hung and Alias 2023). For example, while Roberts et al. (2012) classify tweets using the following seven emotions (Ekman's basic emotions plus love): anger, disgust, fear, joy, love, sadness, and surprise, Yang et al. (2020) consist of 10 categories. Due to its agglutinative structure, different methods have been tried in emotion classification of Turkish texts, which differ from English texts. Uçan, Dörterler, and Sezer (2022) have found that pretrained models are superior. In this study, a pretrained model has been used in the classification of Turkish tweets in terms of emotion. One of the differences in the studies in the literature is the number and structure of emotion classes.

3.2. Stance Detection

Sentiment analysis, which classifies texts into positive and negative, does not provide valid information about the target of the sentiment mentioned in the

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relevant text, weakening these methods in areas where the target is important, such as election prediction. At this point, including stance as three categories generally as favor, against, and none in the research design is closing a significant gap (Alturayeif, Luqman, and Ahmed 2023). There are researchers who add a fourth class as "neutral" stance to the stance analysis based on these three classes (despite criticisms). Stance can be likened to target-dependent sentiment analysis as it describes sentiment toward a specific target, but sentiment and stance represent different concepts: stance expresses the person's opinion regarding the target (ALDayel and Magdy 2021; Alturayeif, Luqman, and Ahmed 2023). In the literature for the detection of stance, different methods from supervised to unsupervised have been used (Samih and Darwish 2021). The importance of competitions organized in the development of stance analysis has been significant, as these competitions have led to advances in this field by providing datasets, etc. (Alturayeif, Luqman, and Ahmed 2023; Mohammad et al. 2016).

3.3. Ideology Detection

The utilization of Twitter for political discussions and expression has enabled the analysis of tweet texts to detect citizens' ideological views. Efforts to predict ideology on Twitter typically involve text-based methods and incorporate the social network (Xiao et al. 2020). These studies vary in the techniques and features they utilize. In their review, Doan and Gulla (2022) assessed ideology detection studies based on techniques, tasks, features, models, and datasets. According to this review, most studies have utilized "classical techniques" (employing text features like *n*-grams and word2web), but a significant number ($n = 6$) have applied deep learning. Although these studies generally detect different ideologies in text, an early study differentiated between ideological and nonideological texts through linguistic rules (Djemili et al. 2014). Ideology detection research often approaches ideology as a classification task, which can sometimes be binary. The classifications include, for example, progressive, conservative, no orientation; a Likert scale from very conservative to very liberal; binary party classification as Democratic and Republican; and positions such as left, right, or ambiguous (Conover et al. 2011; Doan and Gulla 2022). The classification system we employed in this study offers a nuanced and politically diverse approach, distinct from the general literature.

4. IDEOLOGIES IN TURKEY

The political history of Turkey is marked by a complex spectrum of ideologies that influence public opinion and political engagement. Ideologies such as Turkish nationalism, conservatism, Islamism, Kemalism, social democracy, socialism,

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feminism, environmentalism, and the Kurdish National Movement have played pivotal roles in shaping Turkey's political discourse. Understanding these ideologies' representation on social media platforms like Twitter offers valuable insights into the evolving political landscape and public sentiment.

While developing the annotation manual and defining various ideologies, we primarily referenced Tanıl Bora's (2016) seminal work *Cereyanlar: Türkiye'de siyasi ideolojiler* [Currents: Political ideologies in Turkey]. This book, written in Turkish, represents a pivotal study in this field within Turkey. It offers an in-depth historical analysis of ideologies that are uniquely relevant to Turkey, such as Kemalism, Turkish nationalism, and the Kurdish National Movement. Additionally, the study examines the local manifestations of globally recognized ideologies like socialism and feminism. In outlining the ideologies for our research, we used Bora's comprehensive analysis as a foundational reference. Summarizing definitions of each ideology included in this research are shared below.

4.1. Turkish Nationalism

Turkish nationalism is deeply integrated into the nation-state-building projects of Turkey, representing a significant facet of the dominant official ideology. It transcends a singular definition, embracing variations like Turkist, Islamist, conservative, and secularist nationalism, each reflecting different social group perspectives and historical contexts. This ideology's adaptability allows it to merge with other ideological stances, making it one of the most pervasive ideologies in Turkey, especially strong in central regions, yet inclusive enough to coexist with other ideological positions.

4.2. Conservatism

In Turkey, conservatism manifests as a skepticism toward rapid and comprehensive social changes, often reacting against modernist and revolutionary movements. Historically rooted in the Ottoman era's late political reforms and the early Republican period's secular modernization efforts, Turkish conservatism has evolved. Today, it primarily aligns with right-wing politics, embodying a protective stance toward traditional social norms against perceived secular state overreach. The ruling Justice and Development Party exemplifies contemporary conservatism, promoting societal identity preservation and gradual, internally driven social change.

4.3. Islamism

Islamism in Turkey frames state–society relations through Islamic principles, historically influenced by movements like the National View and various successor political parties. It reacts against the secularist foundations of Kemalism,

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positioning itself as a champion for Islamic community values against Turkish nationalist ideologies. Presently, Islamism remains influential in political discourse, particularly within the Justice and Development Party and the Felicity Party, focusing on issues like gender roles, religious education, and Turkey's international relationships from an Islamic perspective.

4.4. Kemalism

Kemalism is the foundational ideology of the Republic of Turkey, centered around nation–state building and secular modernization. This ideology has permeated Turkish political vocabulary, influencing various parties beyond its primary advocate, the Republican People's Party. Kemalism prioritizes state interests and sees itself as a guardian of a secular and progressive national identity, often at odds with ethnic nationalism and promoting a unified national community over individual ethnic identities. It remains influential, particularly along the coastal regions and in Ankara, although its intensity varies across the country.

4.5. Social Democracy

Social democracy in Turkey advocates for social justice within a capitalist framework, emphasizing interventions to reduce inequality and support a robust welfare state. This ideology promotes egalitarian policies, focusing on improving living standards, addressing economic disparities, and protecting social welfare rights. While similar to socialism in its advocacy for economic equality, social democracy does not explicitly frame its arguments around class struggle, making it distinct in its approach to social reform.

4.6. Socialism

Socialism advocates for the collective or governmental control over production and equitable distribution, aiming to dismantle the disparities inherent in capitalist systems. It is a call to action for the oppressed classes to challenge their socioeconomic conditions through collective efforts, envisioning a societal transformation that replaces capitalist structures with socialist governance. This ideology emphasizes a deep-rooted change in societal structures, promoting a class struggle to achieve a fair and equitable distribution of resources and opportunities.

4.7. Feminism

Feminism challenges patriarchal structures and advocates for gender equality across all aspects of life. It is a dynamic collection of movements aiming to rectify gender-based disparities and enhance societal understanding and inclusion. Feminism addresses a broad spectrum of issues including reproductive rights,

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economic inequality, and cultural representation, promoting a transformative approach to achieving equality and justice for all genders.

4.8. Environmentalism

Environmentalism is a response to ecological threats posed by human activities, advocating for sustainable interactions with the natural environment. It promotes a cultural shift toward recognizing and respecting nature's intrinsic value, supporting policies that foster sustainable practices such as renewable energy adoption, conservation of natural habitats, and responsible land use. This movement is crucial in driving global and local initiatives aimed at mitigating environmental degradation and championing ecological health.

4.9. Kurdish National Movement

The Kurdish movement in Turkey advocates for greater cultural and political recognition and rights for Kurds, including education in Kurdish, political representation, and cultural promotion. Inspired by libertarian socialism, the movement emphasizes decentralization, environmental sustainability, gender equality, and direct democracy. It seeks peaceful resolutions to conflicts and advocates for increased local governance and autonomy, striving for a society organized without centralized state control, where Kurdish rights are officially recognized and protected.

5. METHODOLOGY

We analyzed the political sphere in Turkey by employing automated text analysis methods on Twitter. Our pipeline encompasses the processes of data collection from Twitter, data cleaning, labeling of data based on the prepared annotation guidelines, and creation of machine learning models.

5.1. Data Collection

This study is based on a computational method of identifying political content of posts on Twitter. We have collected over 0.5 billion tweets using Twitter academic API and determined the ones related to political attitudes and positions.

5.2. Annotation

To guide the annotation process, detailed annotation manuals have been developed by field experts or annotation supervisors. The corpus comprises Turkish tweets annotated for emotional and affective content, ideology, topic, and stance toward certain politicians.

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A total of 12,000 tweets were annotated for the emotional and affective content, with each tweet requiring at least one label designation. This manual delineates a list of emotions accompanied by their definitions and examples. The categorized emotions are as follows: joy/amusement/excitement, love/admiration, optimism, gratitude, surprise, sadness/grief/disappointment, nervousness, fear, pessimism, shame, remorse, anger/annoyance, and disgust. A neutral label is applied if the annotator determines that none of the listed emotions are evident in the tweet. For affective labels, the categories are approval, disapproval, and desire. A "none" label is used for tweets that are especially challenging to classify or comprehend.

Political topic annotation manual provides detailed explanations, definitions, usage guidelines, and illustrative examples. Tweets were categorized based on their thematic content, and a single tweet could be associated with multiple labels. These labels are designed to categorize political subjects according to distinct policy-making areas, which encompass specific functions and responsibilities of central and/or local governments. Essentially, these labels highlight the various facets of governance wherein social media users evaluate and contrast policy proposals through their posted opinions. In this context, each label signifies a domain under the jurisdiction of a particular governmental body, often linked with one or more ministries. Labels include social policy, foreign/international affairs, economy, labor/employment issues, internal affairs, education, health/public health, disability, national defense, judicial system, regime and constitution, human rights, election/voting, immigration, religion, environment, Kurdish question, municipal services, corruption, housing, and animal welfare.

When it comes to ideology annotations, the process of classifying ideologies and values shares similarities with topic categorization, in that tweets are discerned based on their relevance to specific category labels. A total of 10,000 tweets were annotated in this category. As such, two labels are designated: 1 for tweets that are about the given ideology, and 0 for irrelevance to the given ideology/value. Fundamental tenets guide our approach: Our primary focus is to identify and label political ideologies based on their core principles, not every remark or belief espoused by political figures or their supporters. The objective is to discern political themes and sentiments in tweets, interpreting them as facets of specific ideological lexicons. It is vital to underscore that an ideology tag should be applied only when the content within a tweet directly reflects a specific ideological stance. Tags were not applied based on indirect linkages of thoughts or beliefs that are not explicitly mentioned in this manual, even if there is an assumption that supporters of said ideology might typically hold them. Each ideology is comprehensively defined, especially in light of the unique Turkish sociopolitical landscape. These ideologies encompass Turkish nationalism,

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conservatism, Islamism (excluding religious tweets without a political angle), Kemalism, social democracy, socialism, feminism, environmentalism, and the Kurdish National Movement.

The Stance Annotation Manual elucidates how a particular stance toward a figure can be identified in tweets, using examples for clarification. In this task, each tweet is assigned a single label. Tweets are categorized as positive (1), negative (2), neutral (3), or irrelevant (4). It is not essential for the main idea of the tweet to be about the concerned individual; what is crucial is that the tweet exhibits a discernible stance toward that person. Graduate students, trained by the annotation supervisor and provided with the annotation manuals, labeled randomly selected tweets that are self-contained (i.e., devoid of media or quotes). Unmatching labels are adjudicated by the annotation supervisor. A transformer-based pretrained language model (Reimers and Gurevych 2020), augmented with a final linear layer, was then fine-tuned using these annotations.

5.3. Model Building

For our study, a series of models were meticulously developed to examine distinct dimensions of the data: two models for "ideology," one for "emotion," three for "topic," and four for "stance." It is noteworthy that, in practical applications, the stance models are employed in pairs. Each task for the ideology, emotion, and topic domains embraces the principle of multilabel text classification; that is, they may receive multiple labels. The stance domain employed a dual-model mechanism: Initially, a relevant model undertakes binary text classification. Subsequently, the stance model steps in, operating on a multiclass text classification paradigm. It is pertinent to highlight that the stance model is exclusively activated when the preceding relevant model yields a positive prediction. This cascading mechanism essentially forms a pipeline. Moreover, the stance model restricts each relevant sample to align with only one out of the three available labels.

Consistent across all these models is a set of shared parameters to ensure uniformity. Each model incorporates a pretrained transformer, specifically the "dbmdz/bert-base-turkish-128k-cased," as the encoder. These models process data with a maximum sequence length of 64 and employ a minibatch size of 64. For constructing the development set, we adopted a strategy wherein 10% of the training data was randomly selected. The learning process was facilitated with a learning rate set at 2e-5 and spanned over 30 epochs. Finally, the classification layer comprised a singular layer, structured with a multilayer perceptron (MLP), and showcased a hidden size determined by quadrupling the encoder's hidden size.

To assign a stance toward Erdoğan at the user level, we developed a two-step process: assigning tweets to a user and then aggregating users. Using the

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notations p, a, and n to denote tweets that are supportive of, against, or neutral toward Erdoğan, respectively, for a given user during the observed period, we employed the following methodology: Users are categorized as either "supporter," "opponent," or "neutral" based on their tweets about Erdoğan. A user is deemed a supporter if their supportive tweets surpass a predetermined threshold k, without any opposing tweets. Conversely, they are categorized as an opponent if their tweets against Erdoğan exceed the k threshold and they have no supportive tweets. We explored the implications of two thresholds for k: a lower threshold of 1 (soft classification) and a more stringent threshold of 2 (hard classification). The criteria are as follows:

- A user is a supporter if $p \geq k$ and $a = 0$.
- A user is an opponent if $a \geq k$ and $p = 0$.

To ensure consistency across different timeframes, we computed three cumulative metrics: the sum of supporters, the sum of opponents, and the total users tweeting about the target person in the considered month (termed as "active"). We derived the rates of approval and disapproval by calculating the proportion of supporters and opponents relative to the active users. The formulas are as follows:

- Approval = supporter/active.
- Disapproval = opponent/active.

6. RESULTS

In this section, we present the results of our computational analysis of the political landscape in Turkey. We will start with a descriptive analysis of ideologies, focusing on the geographical distribution of ideological tendencies in Turkey. To our knowledge, this is the first study to deliver ideological data in Turkey at the province level. Then, we will portray the emotional landscape in electoral politics, and present emotional tendencies among Erdoğan and Kılıçdaroğlu supporters. Finally, we will focus on the case of prayer rug, an event which incorporates elements of ideology, stance, and emotion.

6.1. Mapping Ideologies in Turkey

This study outlines the methodology for identifying and classifying tweets according to these ideological categories, leveraging a comprehensive annotation manual developed for this purpose. Under ideologies, we enlisted the major ideological discourses that have had major influence throughout the political history

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of Turkey on political actors, movements, and parties. Ideologies are wide spectra of beliefs and opinions on many aspects of state–society relations and politicized aspects of the lives of citizens. Ideologies are associated with a number of themes or modes of thinking, despite its proponents' need to develop political positions on aspects of political life, which are sometimes distant to those core beliefs. One might argue that ideological positions blur and become eclectic as they move further away from such core principles. We focused on the core principles when distinguishing and labeling political ideologies, rather than on every utterance or opinion of political figures or supporters associated with it. The statements of the leader of a political party that is the vanguard of a particular ideological position were not labeled with the corresponding ideology label when they are irrelevant and/or contrary to the principles that will be identified and described below.

This task at times looks like reading into the content of the tweet opinions that are not expressed in them. This is far from the case; rather than reading into, guessing the users' ideological position, or revealing a hidden meaning, the aim here was to identify common themes, tropes, and mannerisms that are associated with, and thereby indicative of ideological positions. We think of ideologies as languages—that is, having their grammar and lexicons, which distinguish them from other contending ideologies. As such, they exist more or less independently of the reader's (i.e., the annotator's) interpretation and maintain a recognizable consistency. Thus, in ideology annotation, the aim was to recognize the political themes and opinions expressed in tweets as elements of particular ideological languages.

In the classification, the tweets that are relevant to the category labels were distinguished from the irrelevant ones. However, the categories under ideologies and values are not neutral categories; that is, they invoke attitudes of support or opposition. Therefore, we have three labels to use for these categories: 1 for tweets that support the ideology/value, 2 for tweets that oppose the ideology/value, and 0 for tweets that are not relevant to the ideology/value. For example, a simple allusion to a protest event that does not refer to its political nature (goals etc.) is not tagged with related ideology labels.

It should be emphasized that ideology labels are attached only when the linguistic material contained within the tweet is a direct manifestation of a particular ideological position. An ideology label is not attached by indirect association of ideas or attitudes that are not listed under it in the annotation manual with an assumption that said ideology's proponents tend or are prone to share them.

Figure 1 provides provincial density of ideologies in Turkey. The density for each ideology in each province is calculated by dividing the number of

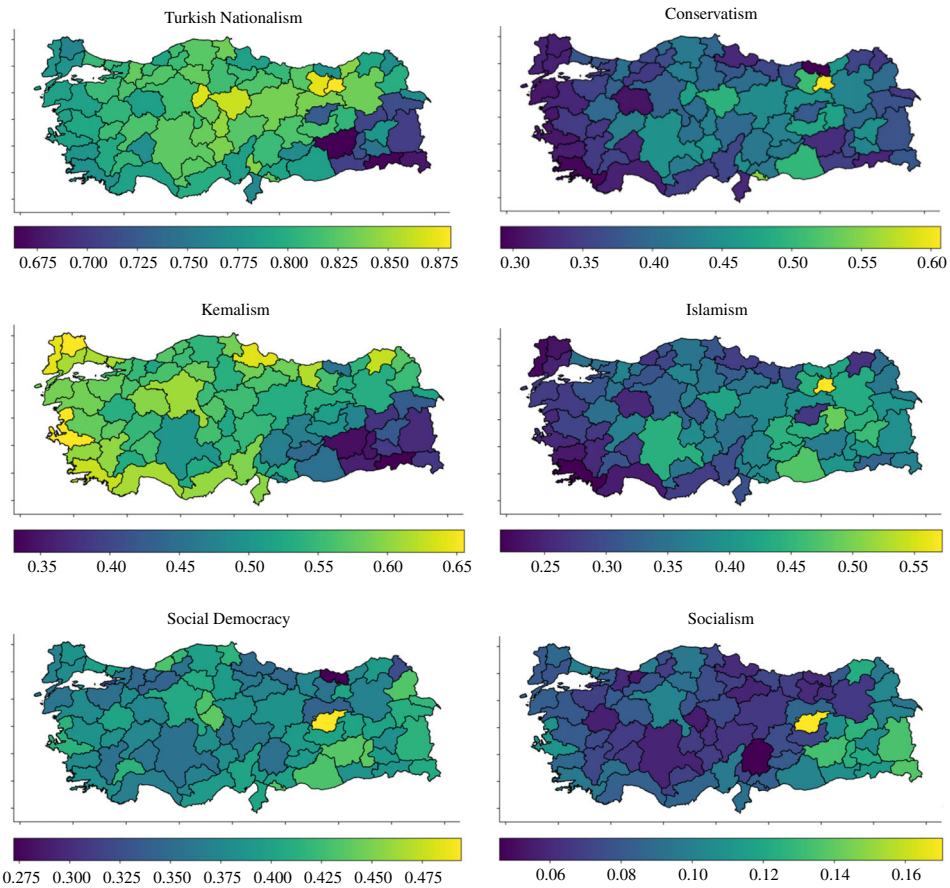
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users that have tweeted at least once about the given ideology in that province by the total number of users who have tweeted about any ideology in the same province.

The findings reveal that right-wing ideologies, including conservatism and Turkish nationalism, are more prevalent in Central Anatolia, whereas left-wing ideologies, such as socialism and feminism, are predominantly found in Kurdish regions and urban centers. Along the coastal strip, Kemalism is notably prominent, especially in Izmir. The Kurdish National Movement is particularly strong in Kurdish areas, most prominently in Diyarbakır. Additionally, Kına's (2024) study that analyzes the same dataset at a city level and identified two primary ideological dimensions—political (left–right) and cultural (religious-secular)—

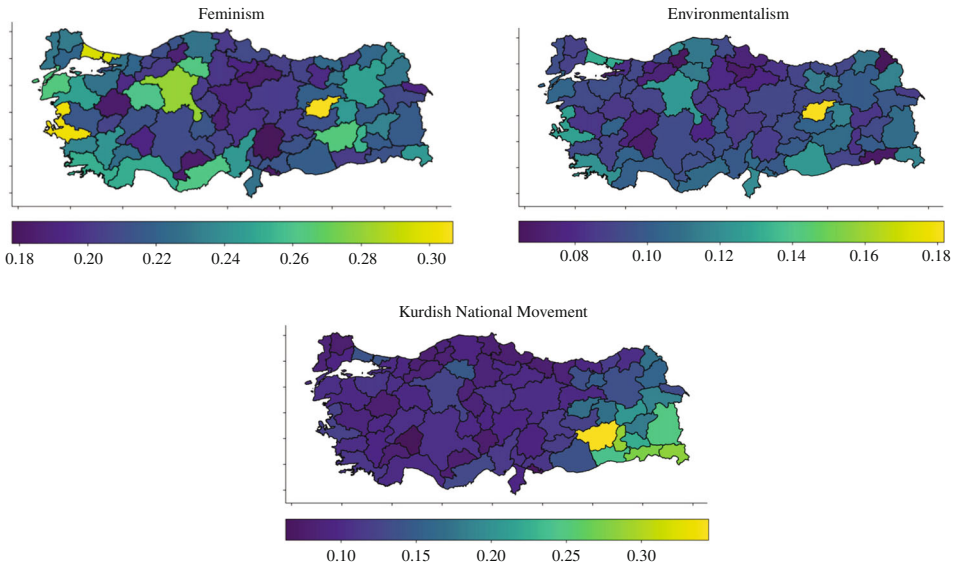
Figure 1. Provincial Density of Ideologies in Turkey



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Figure 1. (Continued)



Source: POLITUS database.
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indicates that the Kurdish region forms a distinct ideological cluster. In terms of left-wing ideologies, Tunceli (Dersim) Province is especially notable, while Bayburt shows a similar prominence for right-wing ideologies.

6.2. *Support for Presidential Candidates*

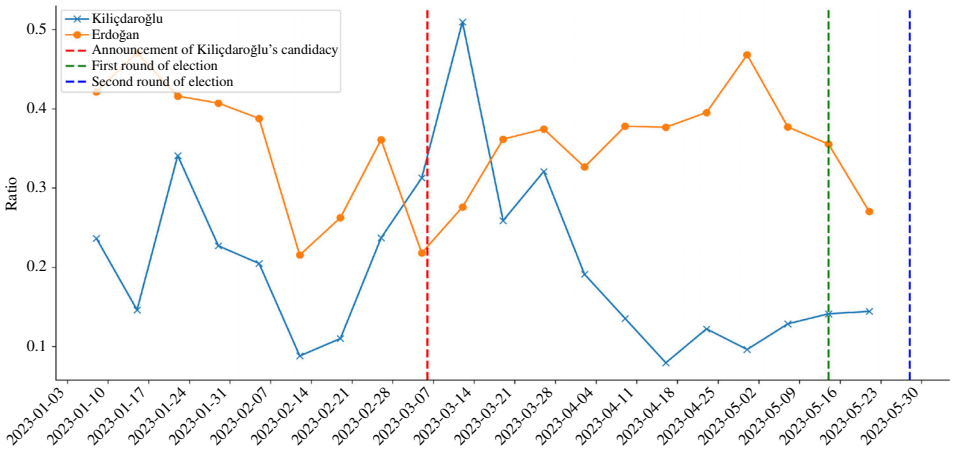
We conducted a computational analysis of the electoral process leading up to the 2023 presidential elections. According to the stance analysis, support for opposition candidate Kemal Kılıçdaroğlu peaked during the week his candidacy was announced. However, shortly thereafter, a declining trend was observed in his support. In contrast, Erdoğan began to lose his upward momentum in the last week of April, experiencing a subsequent decline. Nonetheless, the preelection scenario depicted Erdoğan entering the race with a lead (see Figure 2). This finding is particularly noteworthy. Most polling companies during that period indicated a clear lead for Kılıçdaroğlu (see Figure 3).[1]

[1] https://www.duvarenglish.com/poll-of-polls-shows-kilicdaroglu-ahead-of-erdogan-as-election-goes-to-second-round-news-62277.

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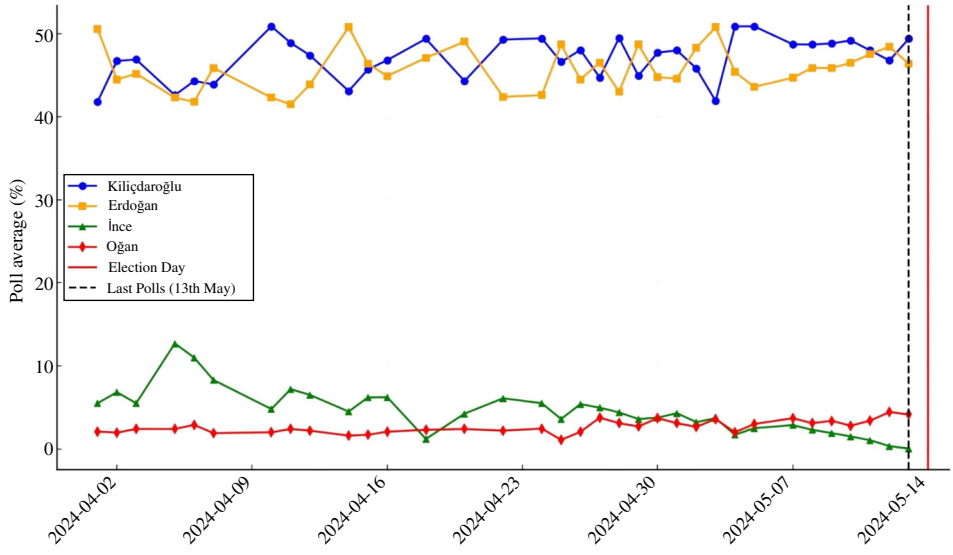
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Figure 2. Support toward Candidates (Twitter)



Source: POLITUS database.
[Colour figure can be viewed at wileyonlinelibrary.com]

Figure 3. Poll Averages from the Last 45 Days Preceding the Presidential Elections in Turkey



Source: Authors' calculations based on the publicly available poll results (Wikipedia 2023).
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The data derived from Twitter suggest a narrative in alignment with the actual election outcome, demonstrating Erdoğan's lead going into the election. Based on our findings, following the first electoral round, there is a discernible upward trend among conservative voters in their support for Kılıçdaroğlu. Similarly, the Kemalist electorate, traditionally seen as the bedrock of the CHP, has significantly bolstered its support for Kılıçdaroğlu. On the contrary, support for Kılıçdaroğlu among voters with an Islamist ideology seems to have waned after the first round. Contrary to expectations set by Kılıçdaroğlu's second-round campaign, there has not been any notable change in support from nationalist voters. While no increase is observed among Turkish nationalists, there appears to be a slight decline in support for Kılıçdaroğlu among voters aligned with Kurdish political ideologies (see Figure 4 for support rates for different ideological groups).

However, examining voters perceived as the base of the ATA alliance—those identifying both as Kemalist and Turkish nationalists—we observe a slight uptick in support for Kılıçdaroğlu. Post the first round, support for Erdoğan from Islamist and conservative voters does not display any significant change. Yet, it is noteworthy that Turkish nationalist voters, Kemalist voters, and those adopting the Kurdish political ideology have markedly reduced their support for Erdoğan. More specifically, those who identify as both Turkish nationalist and Kemalist—the likely supporters of the ATA alliance—show a substantial decline in their backing for Erdoğan.

6.3. Emotions

The sociological analysis of the emotional landscape surrounding the Turkish presidential elections, focusing on the supporters of Erdoğan and Kılıçdaroğlu, offers an in-depth exploration of the intricate relationship between political events and collective emotions. This analysis reveals the nuanced ways emotions shape and are shaped by the political discourse in Turkey, highlighting the profound interconnectedness of emotions, politics, and society. We will do this by analyzing emotions separately (see Figure 5 for changes in level of different emotions).

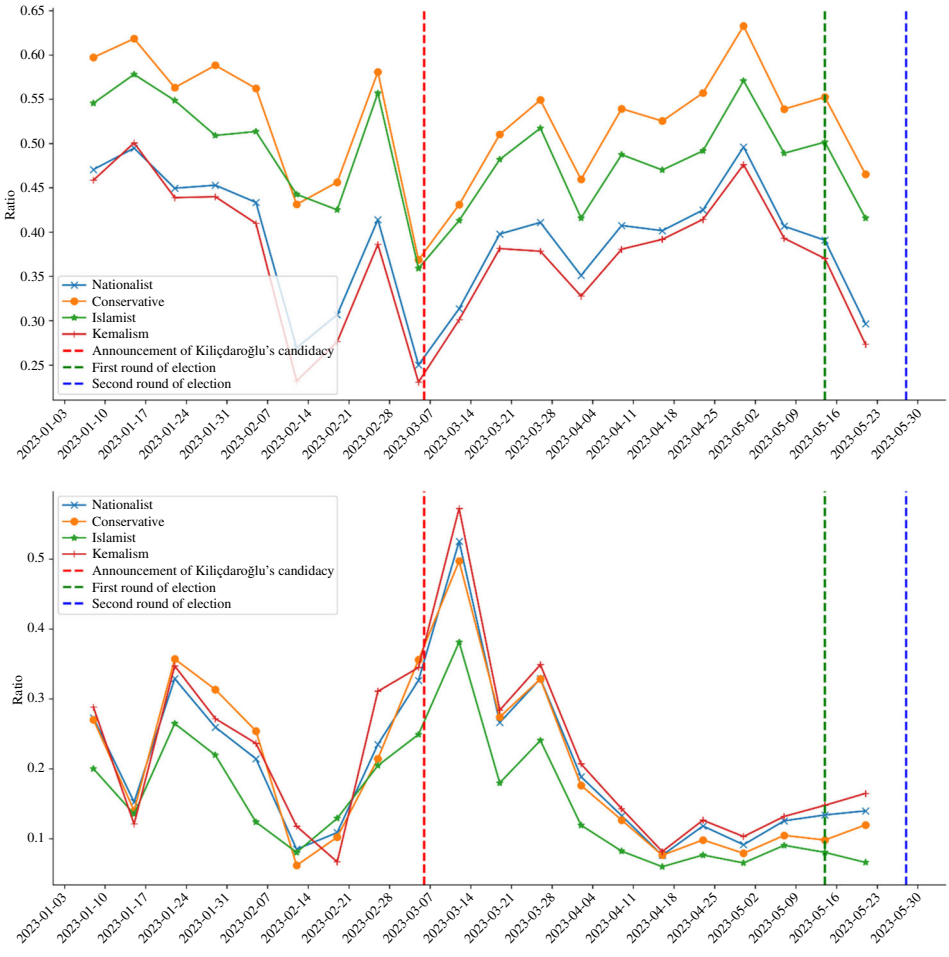
Supporters of Erdoğan consistently exhibited a steady trend of hope, while those backing Kılıçdaroğlu showed an upward trajectory in hope, most notably spiking in the week Kılıçdaroğlu's candidacy was announced. The surge in hope among Kılıçdaroğlu's supporters following his candidacy announcement encapsulates a collective desire for political and societal change. This phenomenon reflects broader aspirations for democratic renewal and societal justice, indicating widespread frustrations with the existing political conditions.

The aftermath of the first round of the presidential election witnessed an increase in the feelings of hopelessness among supporters of both Kemal

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Figure 4. Changes in Support for Erdoğan (above) and Kılıçdaroğlu (below) among Different Ideological Groups



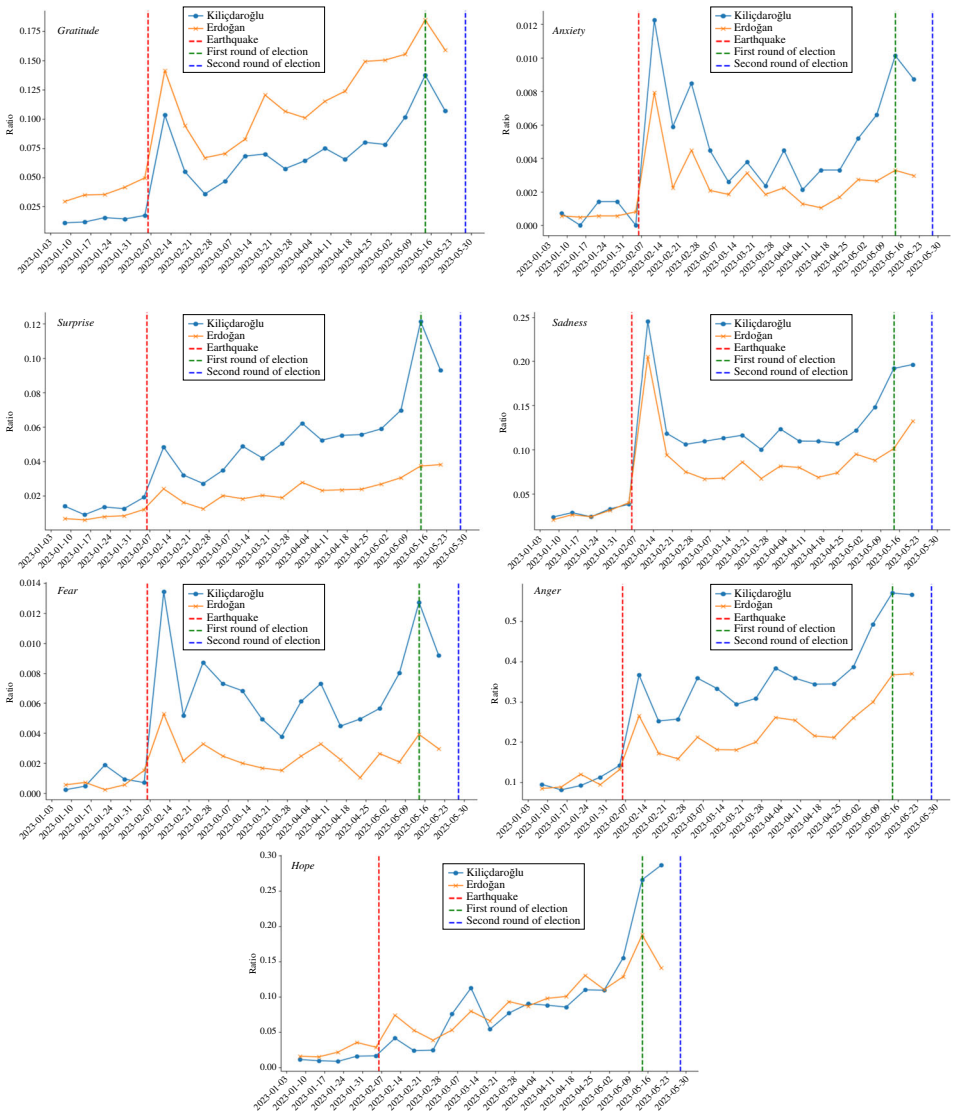
Source: POLITUS database.
[Colour figure can be viewed at wileyonlinelibrary.com]

Kılıçdaroğlu and Recep Tayyip Erdoğan. This increase, however, was significantly more pronounced among Kılıçdaroğlu's supporters. A parallel sentiment of anxiety mirrors this trend, exacerbated by the election not concluding in the first round. Notably, this increase in anxiety was higher for Kılıçdaroğlu's supporters, while the sadness level escalated similarly for both groups of supporters. These findings suggest that supporters of both candidates had heightened hopes of winning in the first round, which seemed to have been

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Figure 5. Changes in Levels of Different Emotions



Source: POLITUS database.
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dashed. However, contrary to expectations, the fact that Kılıçdaroğlu finished the first round behind might have intensified feelings of despair and anxiety among his supporters.

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Moreover, anger surged for both groups post the first round, which could indicate a slight rise in political polarization. Interestingly, our analysis also delves into the emotion of hope, as opposing sentiments can coexist in the same societal context. Thus, Kılıçdaroğlu's supporters appear to approach the second round with a complex mix of despair and hope. The intensified feelings of despair and hope following the inconclusive first round of the elections highlight the emotional investment in the political process. This emotional turbulence showcases the significance of hope as a motivator for political action and the impact of despair on societal morale, reflecting the emotional complexities of political engagement.

The variance in fear and anxiety between the supporters of the two candidates exposes the deep psychological impact of long-term political narratives. The emotion of fear and anxiety among Kılıçdaroğlu's supporters followed a more volatile trend and appeared to be relatively higher. For Kılıçdaroğlu's supporters, heightened fear and anxiety may stem from concerns over the feasibility of overcoming entrenched political structures. In contrast, Erdoğan's supporters exhibit more stable emotional responses, possibly due to confidence in sustained political dominance, illustrating how political identities are forged through emotional engagement with societal narratives. In a similar vein, Erdoğan's supporters showed a relatively stable level of surprise, while Kılıçdaroğlu's supporters exhibited considerable fluctuations in their expressions of astonishment.

The earthquake in Kahramanmaraş marked a significant emotional turning point. As expected, emotions of anger and sadness peaked following the disaster. The shared sorrow following the Kahramanmaraş earthquake exemplifies how national tragedies can foster a sense of emotional solidarity across political divides. This collective mourning underscores the human capacity for empathy and unity in adversity, challenging the polarization of political discourse. However, the nuanced emotional reactions after a disaster reveal the complexities of balancing national identity and political allegiance during crises. The earthquake resonated deeply with all voters, leading to profound sadness. There was not a substantial difference in sadness levels between the supporters of Erdoğan and Kılıçdaroğlu.

Alongside the earthquake, there was a noticeable surge in anger among all voters. Yet, throughout this period, the anger levels of Kılıçdaroğlu's supporters were observed to be higher than those of Erdoğan's supporters, even though there was a general trend of slight decrease.

The feeling of gratitude among Erdoğan's supporters appeared to be higher compared with that of Kılıçdaroğlu's supporters. The higher expression of gratitude among Erdoğan's supporters may be indicative of a complex relationship between political loyalty and the social welfare benefits perceived from his

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governance, yet it also raises questions about the role of media and state narratives in shaping public sentiment, potentially overshadowing dissenting voices and the multifaceted impacts of his policies across different segments of society.

6.4. The Prayer Rug Crisis as a Use Case

In the process leading to the 2023 elections, an incident referred to as the prayer rug event transpired on April 1, prompting significant discussion on social media.[2] After a photo of Kılıçdaroğlu with his few fans circulated on social media, there was an outcry over Kılıçdaroğlu stepping on the prayer rug, a sacred item that Muslims typically tread on barefoot. Media outlets aligned with the government swiftly highlighted the issue, criticizing Kılıçdaroğlu for what they perceived as a lack of respect for Muslim religious values. This was also attributed to Kılıçdaroğlu's having an Alevi religious–cultural background, unlike the Sunnis, the mainstream Muslim sect in Turkey. In response to the controversy, Kılıçdaroğlu issued an apology via his official Twitter account, expressing deep regret for the incident, and criticizing the exploitation of voters' religious feelings by the government.[3]

Subsequent to this incident, we conducted an analysis of the response from religious users to shed light on the crisis. Our method of analyzing the social media responses to this event encompassed the following steps: We undertook a comparative analysis of the emotion scores of 141,000 users identified as "religious" for crisis-related tweets posted by these users on March 31 and April 1. We identified that the first tweet related to the topic was sent on the night of March 31 at 10:29 p.m. By selecting the night of March 31 as a breakpoint and examining just a day before and after, we aimed to isolate and identify the impact of the prayer rug event exclusively on the emotional landscape of religious users.

We observed an approximately 12% increase in the number of religious users sharing content with the emotion of anger. In addition to anger, between March 31 and April 1, there were rises in the following emotions among religious voters: surprise by 51%, sadness by 12%, and disapproval by 26%. Note that a portion of this rise was attributed to a Saturday effect. An uptick in the number of active users from Friday to Saturday was expected. While this rate fluctuated on a weekly basis, the average closely paralleled the increase in feelings of anger and sadness. Apart from the discovery that religious users exhibited a reaction to the incident much lower than what was portrayed in the mainstream media, which has been largely governed by the pro-Erdoğan elites, approximately one

[2] https://www.trthaber.com/haber/gundem/kilicdaroglu-salon-kalabalikti-seccadeyi-gormedim-757714.html accessed on 27.12.2023.

[3] https://x.com/kilicdarogluk/status/1642085214431203328 (accessed August 19, 2024).

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third of tweets from religious users mentioning the term *seccade* criticized the ruling party, while the remainder directed their criticism toward the opposition. The issue of prayer rug became a focal point among religious supporters of the government and was also incorporated into the opposition's critique of the government by other religious groups.

Therefore, our analysis mainly indicates that the incident did not elicit a significant negative response among religious voters. However, in addition to this overall inference that we make, from a demographic standpoint, we noted that the increase in expressions of anger was somewhat higher (28%) among religious voters aged 19–29, suggesting that if the opposition contemplated a campaign of appeasement, this age group should be targeted. We did not observe any significant difference between male and female religious users.

7. CONCLUSION

AKP's political strategy in its formative years and early governments involved negotiating and coalescing with various elite groups and social movements under the guise of post-ideological consensus, democratic governance, and technocratic economy management, aligning its positions with the EU accession criteria and IMF macroeconomic stability agenda. This approach was seen as a normalization of Turkish politics, aiming to resolve longstanding center–periphery and state–society contradictions by forging a historic compromise between modernizing Westernist elites and Muslim society. Despite initial optimism about democratic consolidation, some observers noted authoritarian and exclusionary tendencies from the outset. Over time, the AKP's governance style shifted toward authoritarianism, marked by centralized power, mass media censorship, political persecution, and violations of the rule of law, leading to a "competitive authoritarianism" regime. This evolution, coupled with intense political polarization, ethnic conflicts, and economic crises, culminated in the highly polarized 2023 elections, where the opposition's alliance aimed to challenge Erdoğan's dominance, highlighting the challenges in predicting election outcomes and the utility of digital trace data in understanding Turkish political dynamics and affective politics.

This study employed automated text analysis on Twitter to explore Turkey's political landscape, particularly focusing on emotional and ideological dynamics around the presidential elections. Analysis included classifying tweets from Turkey into categories of emotions, ideologies, topics, and stances toward political figures, using machine learning. The research highlighted a spectrum of ideologies influencing Turkey's political discourse, such as Turkish nationalism, conservatism, and Islamism, offering a novel distribution at the province level.

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Our analysis revealed fluctuating support for Erdoğan and Kılıçdaroğlu, with Kılıçdaroğlu initially receiving strong backing that later diminished. Twitter data suggested Erdoğan entered the election with a lead, contradicting many poll predictions but aligning with actual results. The emotional reactions of voters were analyzed, showing a steady hope among Erdoğan's supporters and a spike in hope, followed by despair and anxiety among Kılıçdaroğlu's followers, especially after the first election round. The Kahramanmaraş earthquake notably influenced emotions like anger and sadness. A focused case study on the reaction to Kılıçdaroğlu stepping on a prayer rug revealed a less significant negative response among religious voters than portrayed by mainstream media. An increase in expressions of anger and other negative emotions was observed following the incident, but about one-third of religious users' tweets criticized the government, indicating a nuanced reaction among this demographic. Overall, the analysis offers a detailed view of Turkey's political discourse, providing insights into ideological preferences, shifts in electoral support, and the complex emotional landscape shaping Turkish voters' political behavior.

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