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MEDIA REPRESENTATIONS OF CLIMATE CHANGE IN TÜRKİYE: A MULTI-METHOD ANALYSIS OF CLIMATE CHANGE NEWS ON X

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Research Article

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ABSTRACT

This study investigates how climate change is represented in Turkish media by analyzing tweets from pro-government and anti-government news outlets. With the increasing role of social media in shaping public discourse, X (formerly Twitter) has become a significant platform where climate narratives are constructed and disseminated. The study applies a multi-method approach, combining sentiment analysis, text analysis, and quantitative content analysis, to examine 2,329 climate-related tweets from eight major Turkish news organizations. Findings reveal a strong negativity in climate change coverage, with 71.4% of tweets expressing negative sentiment. However, sentiment distribution varies significantly across political alignments: anti-government outlets predominantly frame climate change as a crisis, while pro-government media highlight government actions, resulting in a more positive sentiment. Text and content analysis indicate that pro-government media emphasize political figures and state institutions, whereas anti-government outlets focus on expert opinions, activism, and organizations. Both ideological camps primarily frame climate change in political and scientific terms, often neglecting its societal and justice-related dimensions. Additionally, the study finds that media coverage overwhelmingly focuses on the outcomes of climate change rather than its systemic causes, potentially contributing to a sensationalized and fragmented discourse. The results highlight the influence of press-party parallelism in shaping climate narratives in Türkiye, emphasizing the role of media ownership structures and political alignmenst in determining climate framing.

Keywords: Climate Change, Media Representation, News, Text Analysis, X.

TÜRKİYE'DE İKLİM DEĞİŞİKLİĞİNİN MEDYA TEMSİLLERİ: X'TEKİ İKLİM DEĞİŞİKLİĞİ HABERLERİNİN ÇOK YÖNTEMLİ ANALİZİ

ÖZ

Bu çalışma, Türkiye'deki medya kuruluşlarının iklim değişikliğini nasıl temsil ettiğini, hükümet yanlısı ve hükümet karşıtı haber kaynaklarının paylaştığı tweetler

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üzerinden analiz ederek incelemektedir. Sosyal medyanın kamusal söylemin şekillendirilmesinde artan rolüyle birlikte, X (eski adıyla Twitter), iklimle ilgili anlatıların oluşturulduğu ve yayıldığı önemli bir platform haline gelmiştir. Çalışma, duygu analizi, metin analizi ve nicel içerik analizini bir araya getiren çok yöntemli bir yaklaşım kullanarak, sekiz büyük Türk haber kuruluşuna ait 2.329 iklimle ilgili tweeti incelemektedir. Bulgular, iklim değişikliği haberlerinde belirgin bir olumsuzluk eğilimi olduğunu göstermektedir; analiz edilen tweetlerin %71,4'ü negatif duygu içermektedir. Ancak, duygu dağılımı siyasi yönelime göre önemli ölçüde farklılık göstermektedir: Hükümet karşıtı medya, iklim değişikliğini ağırlıklı olarak bir kriz olarak çerçevelerken, hükümet yanlısı medya hükümetin politikalarını ve eylemlerini vurgulayarak daha olumlu bir söylem benimsemektedir. Metin ve içerik analizi sonuçları, hükümet yanlısı medyanın siyasi figürler ve devlet kurumlarına daha fazla yer verdiğini, hükümet karşıtı medyanın ise uzman görüşlerine, aktivizme ve sivil toplum kuruluşlarına daha fazla odaklandığını göstermektedir. Her iki ideolojik kampın da iklim değişikliğini ağırlıklı olarak siyasi ve bilimsel bir mesele olarak ele aldığı, ancak toplumsal ve iklim adaleti boyutlarını büyük ölçüde ihmal ettiği görülmektedir. Buna ek olarak, çalışma, medya haberlerinin büyük ölçüde iklim değişikliğinin sonuçlarına odaklandığını, ancak sistemsel nedenlerine yeterince yer vermediğini ortaya koymaktadır. Bu durum, haber anlatılarının sansasyonelist ve parçalı bir yapıya bürünmesine katkıda bulunabilir. Sonuçlar, basın-parti paralelliğinin Türkiye'deki iklim anlatılarının şekillenmesindeki etkisini vurgulayarak, medya sahiplik yapılarının ve siyasi yönelimlerin iklim değişikliği çerçevelerinin belirlenmesindeki rolüne dikkat çekmektedir.

Anahtar Kelimeler: İklim Değişikliği, Medya Temsili, Haber, Metin Analizi, X.

INTRODUCTION

The climate crisis embodies the surge in global temperatures and disruptions in environmental equilibrium resultant from escalating greenhouse gas emissions. Anthropogenic activities, notably fossil fuel consumption, industrial processes, and deforestation, contribute substantially to heightened concentrations of carbon dioxide and methane in the atmosphere, thereby precipitating shifts in climate dynamics. These alterations manifest in phenomena such as escalating sea levels, intensified meteorological events, prolonged drought periods, and biodiversity depletion (Geçgel and Karaca, 2023, p. 28). Beyond environmental ramifications, the climate crisis reverberates across economic, health, social, and cultural dimensions. Notably, reduced agricultural productivity engenders economic disparities, leading to escalated

food prices and imperiling food security (Lee et al., 2024, p. 1). From a health perspective, escalating temperatures exacerbate respiratory complications, imposing added burdens on healthcare infrastructures (Zigmund, 2024, p. 257). Socially, dwindling water reservoirs exacerbate water crises, intensifying societal disparities (Kupfer, 2023, p. 45). Culturally, climatic variations jeopardize traditional lifestyles, adversely affecting local ecosystems and biodiversity, thereby constraining cultural diversity (Lazrus et al., 2022, p. 1-4). In this context, fostering awareness of the climate crisis and delving into its complexities becomes an imperative duty for both individual agents and societal entities.

Presently, more than five billion individuals, constituting a majority of the global population of 8.1 billion, actively engage with social media platforms (Hootsuite & We Are Social, 2024, p. 10). These platforms serve as vital arenas for the rapid and extensive dissemination of information, alongside discussions on pertinent societal issues (Çakıcı, 2024, p. 2; Kırmızısakal, 2025, p. 292). X renowned for its capacity to facilitate substantial discourse through concise messaging, occupies a significant position in shaping the narrative surrounding the climate crisis (Fownes et al., 2018, p. 2). The manner in which media entities navigate discussions on the climate crisis on this platform holds paramount importance, given its potential to influence societal perceptions and awareness. Operating as a conduit for evoking sensitivities, eliciting reactions, and catalyzing actions (Çakıcı, 2020, p. 54), X assumes a prominent role in shaping perceptions of the climate crisis, fostering awareness, and potentially spurring societal mobilization (Omar Bali, 2023, p. 1). Representations on X not only serve to shape public awareness of the climate crisis but also wield significant influence in the realm of policy formulation, particularly through the activities of environmental activists on this platform (Ebrey et al., 2020, p. 2). Through a comprehensive review of existing literature, it has been noted that there is a conspicuous lack of systematic inquiries delineating how media establishments in Türkiye portray and present the phenomenon of the climate crisis. This study seeks to address this gap by analyzing how the climate crisis is depicted on X within the Turkish news ecosystem, employing a multi-method approach. This

endeavor aims to contribute to current scholarship by examining various ideological perspectives.

1.Climate Crisis: Media Narratives

The media plays a crucial role in shaping societal perceptions of the climate crisis, utilizing its vast reach and communicative effectiveness to disseminate information and catalyze public discourse (Siddiqui et al., 2023, p. 1). Proficient in employing visual storytelling, media platforms serve as potent tools for portraying the complexities of the climate crisis. In the contemporary digital landscape, characterized by the proliferation of influential users, digital campaigns, and hashtag movements, the media's role in sharing timely information and scholarly insights on climate issues is further emphasized (Mavrodieva et al., 2019; Haßler et al., 2023). Extensive scholarly investigations into global media representations of the climate crisis have scrutinized reporting methodologies and representational frameworks across diverse media ecosystems. Comparative assessments of traditional and digital media approaches across varied geopolitical contexts reveal both convergences and divergences in climate-related narratives. Nonetheless, instances of media misinformation exacerbate public misunderstandings. Scholarly discourse underscores the media's tendency to predominantly contextualize the climate crisis through economic lenses, often overlooking critical examinations of underlying political and economic structures (Anderson et al., 2018; Vikström et al., 2023). Critiques highlight tendencies towards sensationalism and dramatization, alongside inadequacies in providing nuanced and accurate representations of climate-related issues. Pervasive biases against environmental activists within media narratives perpetuate inaction. A discernible trend towards diminishing coverage of the climate crisis in news media, accompanied by a decline in political engagement, is noted in contemporary scholarly discourse (Boykoff and Roberts, 2007; Grundmann and Scott, 2012; Schmidt et al., 2013; Barkemeyer et al., 2017; Murray, 2020; Rabitz et al., 2021; Hase et al., 2021; Kenny and Souch, 2022; Vikström et al., 2023; Lopes and Azevedo, 2023).

Numerous studies advance critiques suggesting that the creation of news, including the interpretation and framing of all these findings, is determined within the triangle of media, power, and capital. This critique highlights the role of commentary

and frames in shaping news, asserting that they are influenced by the interplay of media, power, and capital (see Anderson, 2009, p. 178; MacDonald, 2020, p. 2023). Studies positioning the climate crisis as a crisis of capitalism shed light on the economic-political structures of countries through climate crisis discussions (see Adler, 2022, p. 5; Long, 2021, p. 53-59). These works presume that the issue of the climate crisis stems from the contradiction between the ongoing expansion need of capital and the increasing demands on the renewability of production conditions. Some findings from these studies reveal the strengthening of private capital companies' ownership in the media sector and news companies turning to digital media to reduce costs. These findings also indicate the interconnectedness between the representation of the climate crisis in the media and these phenomena.

Limited academic research on the media representation of the climate crisis in Türkiye indicates a predominant economic focus in both traditional and digital media, characterized by a tendency to explore the topic through narrow thematic lenses. Media outlets often refrain from providing in-depth information, seldom cite sources, and infrequently propose solutions. Additionally, there is a discernible negative discourse towards climate activists, accompanied by a reluctance to critique political and economic structures. The media tends to emphasize the consequences rather than the causes of the climate crisis, occasionally portraying it in apocalyptic scenarios (Aykaç, 2018; Şahin, 2020; Tekin Çelik and Hepkon, 2022; Çetin, 2023; Eşitti and Işık, 2023; Turan and Çalkın, 2023; Ergün and Aksoy, 2023). Limited studies on social media content by NGOs and activists reveal efforts to keep the climate crisis on the agenda, emphasizing key concepts and promoting awareness for sustainable living (Günay and Güçdemir, 2022; Kocabay Şener and Öymen, 2023). Further national research analyzing the representation of climate crisis-related social media news compared to traditional media news in Türkiye would significantly contribute to the academic discourse, offering insights into the societal, economic, political, and cultural dimensions of the climate crisis in the Turkish context.

Despite its potential utilization to disseminate disinformation (Demirel et al., 2022; Kenny and Souch, 2022), X, emerges as a pivotal platform shaping the research landscape of this study, offering distinct advantages in addressing global issues such

as the climate crisis. Primarily, X users can swiftly articulate their thoughts through concise messages, yielding substantial potential for engagement. This platform effectively amalgamates diverse ideological perspectives, offering a reflection of various viewpoints on the climate crisis. Furthermore, X facilitates the ascendance of specific issues via trending hashtags, providing a means to spotlight critical topics such as the climate crisis. Given X's efficacy in molding public opinion and influencing policy agendas (Chen et al., 2023, pp. 385-388; Demirel et al., 2024), delving into the representation of the climate crisis in news tweets assumes paramount importance.

The literature review highlights a significant gap in scholarly research, particularly the lack of a systematic investigation into how the media in Türkiye represent the climate crisis on X. The active involvement of news media with different ideological viewpoints on this platform, especially in discussing global issues like the climate crisis, is an important area for understanding the social and cultural impact of social media. Therefore, this study aims to carefully analyze the contributions of Turkish press on X to discussions about the climate crisis. The goal is to address the current lack of understanding and explore how different ideological perspectives influence this representation.

This study seeks to advance scholarly comprehension regarding how news media, under diverse ideological frameworks, portray the climate crisis on X. The analysis aims to deepen our understanding of the multifaceted narratives surrounding the climate crisis disseminated via X. Identifying the attitudes of news media with varying ideological perspectives towards the climate crisis, discerning overarching trends, and comprehending the broader societal impact of social media are essential for informing effective strategies for societal transformation and guiding policy formulation.

2.Method

This study aims to analyze the representation of climate change in the Turkish media by examining tweets from media organizations with distinct and polarized ideological and political positions: pro-government and anti-government. A multi-method approach, incorporating text analysis, sentiment analysis, and content analysis,

has been adopted. With the increasing prevalence of big data and advancements in data analysis technologies, large-N studies have become feasible through computational techniques (Grimmer & Stewart, 2013). However, research in the social and communication sciences often necessitates hybrid approaches that integrate qualitative methods to provide deeper insights into the findings (Lewis et al., 2013; Zamith & Lewis, 2015).

In line with this hybrid approach, the study analyzes 2,329 tweets related to climate change and the climate crisis, published by eight major news outlets. These outlets were selected based on their prominence in print and digital journalism (Newman, 2023) and represent the two dominant political orientations in the Turkish media landscape at the time of data collection: pro-government and anti-government (Altındal, 2019; Çakıcı, 2020; Basmacı, 2021; Çakıcı & Meriç, 2022; Çakıcı, 2024). This classification of Turkish news media is further supported by the concept of press-party parallelism (Hallin & Mancini, 2004), which refers to the alignment between media outlets and political parties in terms of ideology, partisanship, and editorial policies. Additionally, the media ownership structure in Türkiye (Who Owns the Media in Turkey, 2016) further justifies this categorization, as ownership patterns significantly influence the political leanings of media organizations.

The research examines climate change news coverage on X through three key dimensions. Sentiment analysis assesses whether the expressed sentiment in tweets is positive, negative, or neutral, providing insights into the overall tone of media discourse. Text analysis identifies the most frequently used words and key terms. Finally, thematic and actor analysis explores the main themes and prominent actors featured in climate change-related discussions. Together, these analytical dimensions offer a deeper understanding of how climate change is represented in Turkish media and how political alignment influences coverage.

RQ1: What is the predominant sentiment in climate change-related news published by pro-government and anti-government media outlets in Türkiye?

RQ2: What are the most frequently used words in climate change-related news across pro-government and anti-government media outlets in Türkiye?

RQ3: What are the key themes and prominent actors in climate change-related news as represented by pro-government and anti-government media outlets in Türkiye?

2.1. Data Collection & Pre-processing

This study analyzed 2329 tweets (with 4016 sentences and 54,713 tokens) containing the keywords "climate change" or "climate crisis" belong to 8 news outlets. The time range for the data collection is between January 1st, 2018, and June 1st, 2023. We selected eight media outlets that can represent the political alignments in Turkish media landscape. Table 1 provides a detailed breakdown of the number and proportion of tweets belongs to each news agency, categorized by their respective political position.

Tweets were collected through the X API service. The selection of this five-year timeframe aimed to capture recent media representations of climate change; however, it was constrained by external factors, namely the acquisition of X by Elon Musk and the subsequent closure of its API service to academic researchers, precluding the inclusion of tweets posted after June 2023.

Table 1

Number (N) and Proportion of Tweets by News Outlets and Their Political Position

News Media	N	Percent	Position	N	Percent
BirGün	404	17.3	Anti-Gov.	1513	64.96
Cumhuriyet	292	12.5			
Evrensel	455	19.5			
Sözcü	362	15.5			
Hürriyet	263	11.2	Pro-Gov.	816	35.03
Sabah	165	7.0			
Yeni Akit	109	4.6			
Yeni Şafak	279	11.9			

Before conducting text analysis, and sentiment analysis utilizing the ChatGPT4 language model, a series of preprocessing steps were implemented to enhance data quality and facilitate subsequent analyses. Initially, URLs were removed from the

tweets to eliminate extraneous information before submission to OpenAI's API service for sentiment analysis. The text analysis process involved initial tokenization of the news tweets using the Quanteda package (Benoit et al., 2018). Subsequently, Turkish stop words (Benoit et al., 2021), punctuation marks were removed to refine the text for further analysis. These preprocessing procedures were executed using the R programming language (R Core Team, 2023).

2.2. Sentiment & Text Analysis

Sentiment analysis involves the computational classification of text into predefined sentiment categories (Zhang & Liu, 2017; Liu, 2020; Demirel et al., 2024). These categories typically range from binary classifications (positive, negative) to ternary classifications (positive, neutral, negative), depending on the specific methodology and research objectives (Thelwall, 2017; Zhang & Liu, 2017). In the literature there are already great number of studies that follow ternary text classifications (Demirel & Gündüz, 2022; Kahraman-Gokalp et al. 2023; Demirel, 2024).

In this study, tweets from Turkish news outlets were categorized into ternary sentiment groups using the ChatGPT-4 language model (OpenAI et al., 2023). We simply interact with Open AI’s ChatGPT-4-preview chat completions API and programmatically instruct model to classify tweets into ternary sentiment categories. Using an LLM for the sentiment analysis was motivated by the limitations of existing natural language processing (NLP) solutions for text classification in Turkish text. Recent research has demonstrated the efficacy of ChatGPT models in multilingual sentiment analysis and text classification tasks, often surpassing the performance of traditional NLP techniques (Rathje et al., 2023; Gilardi et al., 2022; Törnberg, 2023; Demirel et al., 2024). To further evaluate the reliability of sentiment classification using ChatGPT-4, we conducted an intercoder reliability test. Two PhD students independently classified a sample of news tweets into sentiment categories. Both Cohen's kappa coefficient and Krippendorff's alpha exceeded 0.70, indicating substantial agreement between human coders (Viera & Garrett, 2005) and meeting established standards for reliability in text classification (McHugh, 2012).

Following the principles of the "text as data" approach, this study treats each textual element within the collected tweets as a data point for computational analysis (Grimmer & Stewart, 2013; Benoit, 2020). This approach enables the examination of various textual components, including words, punctuation, and emojis, to discern underlying patterns and characteristics. The calculations such as keyness analysis and frequency analysis are applied to the tokenized text data, facilitating the identification of frequently used words and significant linguistic features (Bondi, 2010; Welbers et al., 2017).

2.3. Quantitative Content Analysis

Content analysis involves systematically quantifying document and text data within predefined categories (Bryman, 2012; Riffe et al., 2014; Krippendorff, 2019). Through this process, researchers gain insights into documents or texts (in our case, tweets) based on predefined categories (Çakıcı & Meriç, 2024; Meriç & Çakıcı, 2024). In this study, focusing on tweets containing climate change and climate crisis, tweets from news agencies were coded by human coders into two categories. The categories were decided after the examination of tweets and relevant literature by the researchers.

Table 2

Category 1 Coding Guide

Category1	Scope
Politicians	politicians or political party statements, policies
Experts	research findings, expert statements
Organizations	international, national, and local organizations, associations
Activists	protests, activists, advocates, advocacy events
Celebrities	celebrities from culture, arts, sports, and entertainment
Other	news that does not fit into any categories above

The two separate categories in Table 2 and Table 3 aim to reveal both the key actors at the center of climate news and the prominent themes in the news. Additionally, the distribution of these two parameters was examined based on the political spectrum to which the eight news media outlets belong. For reliability of

coding procedure, two PhD students coded 10 percent of news tweets into category 1 and category 2 until desirable agreement is reached. Inter-rater agreement is exceeded 80 percent, meaning near-perfect agreement (Viera and Garrett, 2005; McHugh, 2012).

Table 3

Category 2 Coding Guide

Category 2	Scope
Outcomes	reporting on climate change with outcome-based coverage
Solutions	reporting on climate change with solution-based coverage
Causes	reporting on the causes of climate change
Other	news that does not fit into any categories above

3. Findings and Discussion

This section presents the findings derived from computational text and sentiment analysis, as well as quantitative content analysis of news media tweets concerning climate change. The analysis reveals the prevailing sentiment, frequently employed terms, prominent actors, and dominant themes within the coverage. Alongside the empirical results, interpretations and reflections on the findings are provided.

3.1. ChatGPT-Assisted Sentiment Analysis

Sentiment analysis, performed using the ChatGPT4 language model, reveals a prevalence of negative sentiment within the climate change tweet corpus. Specifically, 71.4 percent of the 2329 analyzed tweets express negativity concerning climate change, while 18.8 percent maintain a neutral stance and only 9.7 percent convey positive sentiment. This distribution indicates a clear negativity bias of the news media on climate change coverage in X, suggesting a tendency to emphasize the challenges and threats associated with this global issue. Tweets below belong to these categories can exemplify the negativity and sentiment variations in the coverage of climate change.

BULUR, Neslihan, DEMİREL, Sadettin ve ÇAKICI, Zindan. (2025) Medıa Representatıons Of Clımate Change In Türkiye: A Multı-Method Analysıs Of Clımate Change News On X. Gümüşhane Üniversitesi İletişim Fakültesi Elektronik Dergisi (egifder), 13 (1), 327-357

News tweets with negative sentiment:

‘The climate change will cause 80 million job losses by 2030.’

‘Research: If climate change is not prevented, warming rates will increase fourfold by the year 2090.’

News tweets with positive sentiment:

‘Message from Erdogan on the climate crisis: Türkiye is fulfilling its responsibilities in contributing to this global struggle.’

‘Kadıköy lent its voice to global climate action.’

Examination of sentiment distribution across the political spectrum of news agencies, as presented in Table 4, reveals notable variations. Over 75.3 percent of tweets from anti-government news media express negative sentiment, whereas the negative sentiment constitutes approximately 64.3 percent of tweets from pro-government media.

Table 4

Proportion of Tweets Political Position and Sentiment Categories

Political Alignments	Negative (percent)	Neutral (percent)	Positive (percent)
Anti-Gov	75.3	18.4	6.2
Pro-Gov	64.3	19.2	16.4

While the prevalence of neutral sentiment remains relatively consistent across two groups, pro-government news outlets have a significantly higher proportion of tweets with positive sentiment. This deviation is particularly evident in Table 5, which provides a detailed breakdown of sentiment distribution within each news media. Pro-government outlets, such as Sabah and Yeni Şafak, demonstrate a considerably higher proportion of positive tweets and a lower proportion of negative tweets compared to the overall average and their counterparts with different political alignments.

Table 5

Proportion of Tweets by News Outlets and Sentiment Categories

News Media	Negative (percent)	Neutral (percent)	Positive (percent)	Ideological Position
BirGün	79.4	15.3	5.1	Anti-Gov.
Cumhuriyet	75.8	20.2	4.1	
Evrensel	70.5	22.1	7.2	
Sözcü	76.5	15.7	7.7	
Hürriyet	74.1	19.0	6.8	Pro-Gov.
Sabah	61.2	17.5	21.2	
Yeni Akit	73.3	18.3	8.2	
Yeni Şafak	53.4	20.7	25.8	

Sentiment analysis of climate change-related tweets reveals a significant predominance of negative polarity. This negativity may be attributed to several factors. First, the inherent nature of the topic, encompassing issues such as climate change and the climate crisis, carries an intrinsically negative connotation. Second, news reporting often exhibits negativity bias, particularly when emphasizing the adverse consequences of climate change, potentially as a strategy to capture audience attention.

More importantly, an analysis of tweet sentiment by news outlet indicates that government-aligned media in Türkiye exhibit a higher proportion of tweets with positive sentiment compared to anti-government news outlets. A possible explanation for the more positive stance of pro-government media on climate change lies in their media ownership structure, as many of these outlets are owned by corporations with business interests and close ties to the government in Türkiye. As Hallin and Mancini (2004) describe, this phenomenon aligns with the concept of press-party parallelism, which refers to the ideological, partisan, and editorial alignment between media organizations and political parties. Climate change cannot be considered an isolated environmental phenomenon; rather, its systemic causes are deeply embedded within the social, political, and economic policies pursued by private corporations and governments. Consequently, pro-government media outlets often lack independence, autonomy, and critical perspectives, whereas anti-government outlets are more likely to adopt a critical stance on climate change.

This pattern is further supported by the volume of posts published by these media outlets on X (Table 1), as anti-government media outlets posted twice as many climate change-related news tweets as their pro-government counterparts between

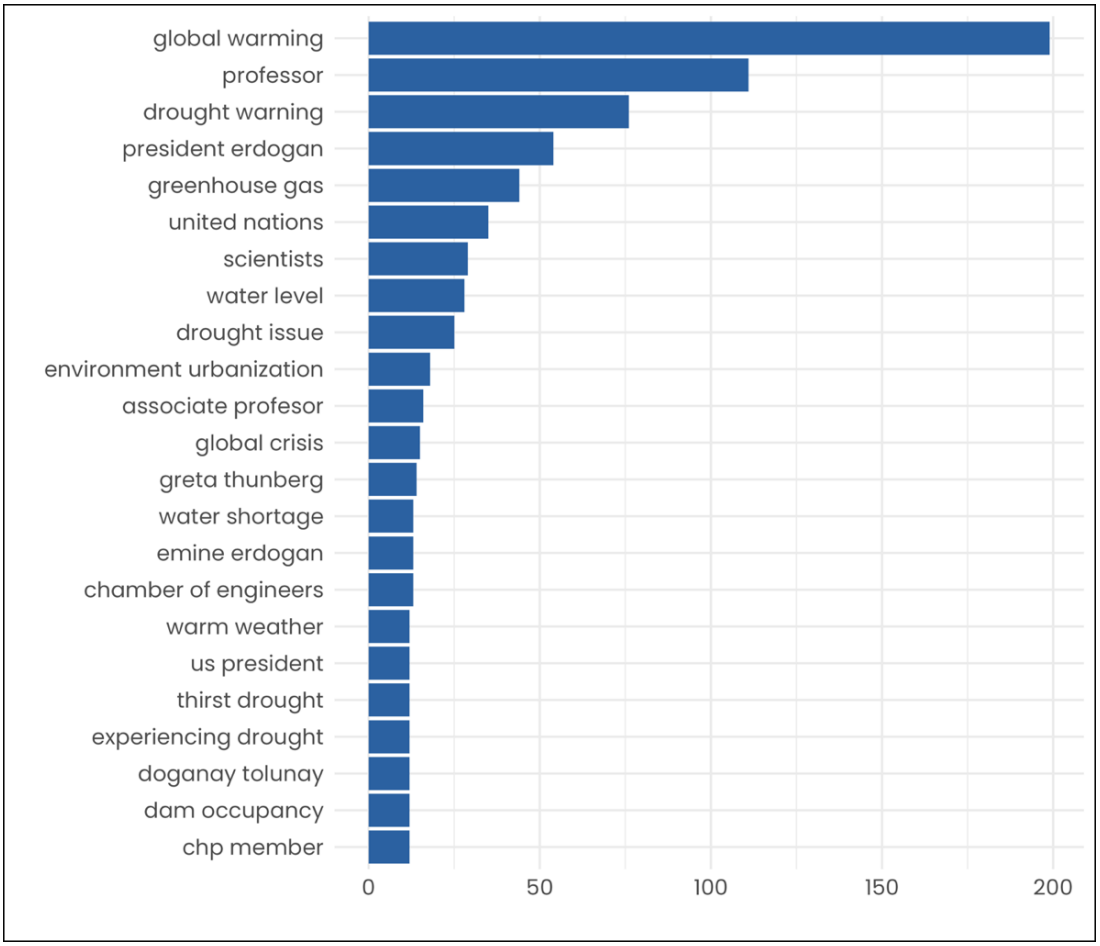
January 1, 2018, and June 1, 2023. For these reasons, the political leanings of news organizations are likely to influence how digital media cover climate change.

3.2. Computational Text Analysis of Tweets

The frequency analysis of bigram words within the climate change tweets reveals the prominent multi-word phrases encompassing various facets of the issue. As illustrated in Figure 1, frequently occurring bigrams include terms related to the causes of climate change, such as “global warming” and “greenhouse gas”, as well as its outcomes, including “drought warning”, “water level”, and “water shortage”. Additionally, bigram words frequently reference important political actors within the climate change coverage, encompassing politicians (e.g., President Erdogan, Emine Erdoğan, US President), experts (e.g., professor, scientists), activists (e.g., Greta Thunberg), and institutions (e.g., Chamber of Engineers, United Nations). Notably, a significant proportion of frequently used multi-word terms pertain to the outcomes of climate change, particularly extreme weather events and water scarcity, suggesting a potential emphasis on the impacts of climate change within the Turkish media coverage on X.

Figure 1

Top 20 Bigram Words (Original Words Which are Consist of Two Terms Were Translated to English)



Bigrams usage across news agencies with different political alignments reveals distinct patterns in language use. While certain bigrams, such as global warming, professor, drought warning, and United Nations exhibit consistent prevalence across the political spectrum, others demonstrate interesting variations. Figure 2 highlights the tendency of pro-government news media to more frequently mention political figures and state offices (e.g., President Erdogan, Emine Erdoğan, Murat Kurum, Urbanization Ministry) compared to anti-government media outlets. The latter media outlets distinguish themselves by emphasizing the causes and solutions of climate change (e.g., greenhouse gas, fossil fuels, global crisis), experts' claims (e.g., professor, associate professor, Chamber of Engineers, Doğanay Tolunay, experts, scientists), and climate activism (e.g., global resistance, resistance hope, gave hope) to a greater extent than pro-government counterparts.

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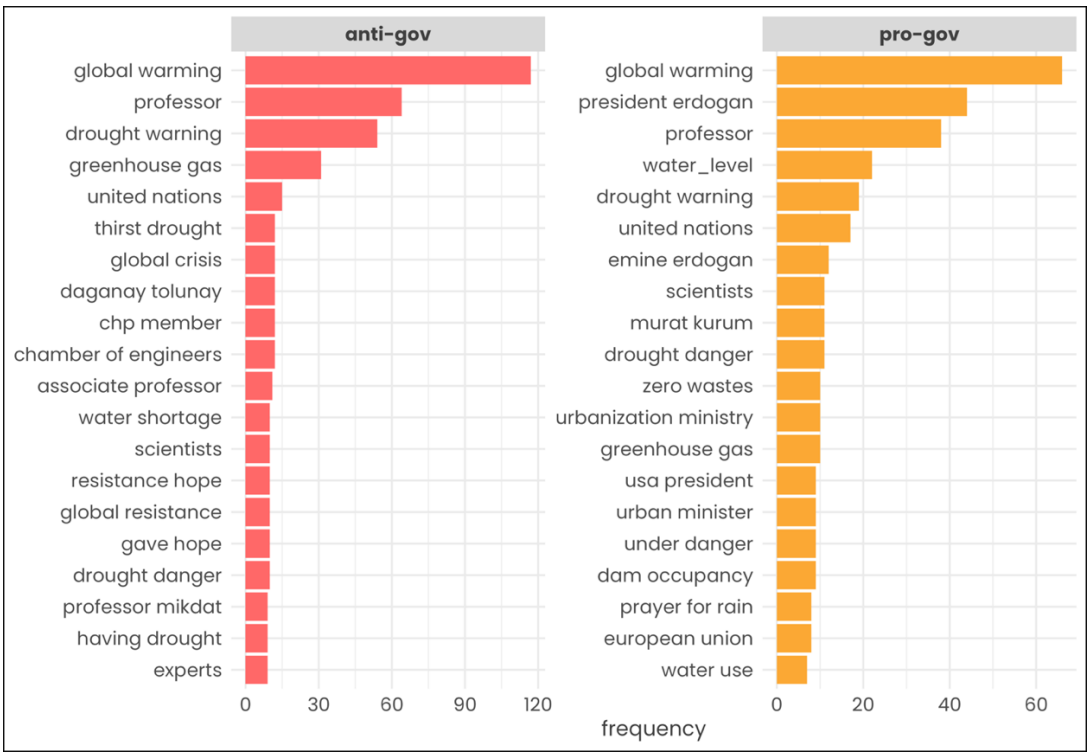
Figure 2

Top 15 Bigram Words by News Media's Ideological Position



Keyness analysis, as shown in Figure 3, reveals both convergence and divergence in the use of bigram words by anti-government and pro-government news outlets within the climate change coverage. While certain bigram terms demonstrate shared usage across the political spectrum, aligning with the broader trends observed in Figure 2, the keyness analysis highlights interesting patterns in language that reflect underlying political alignments. The government-aligned outlets show a greater propensity for referencing politicians and state officials, including President Erdoğan, Emine Erdoğan (First Lady), Murat Kurum (Minister), Ministry of Forestry, and Urban Minister. Conversely, anti-government media outlets demonstrate a higher inclination towards mentioning scientists and experts (e.g., Dr. Doğanay, Dr. Murat, Dr. Mikdat, professor, environmental engineers, Chamber of Engineers) and activism-related terms (e.g., global resistance, gave hope).

These patterns suggest that the covering climate change news is not solely determined by the objective reporting of events but is also influenced by the political

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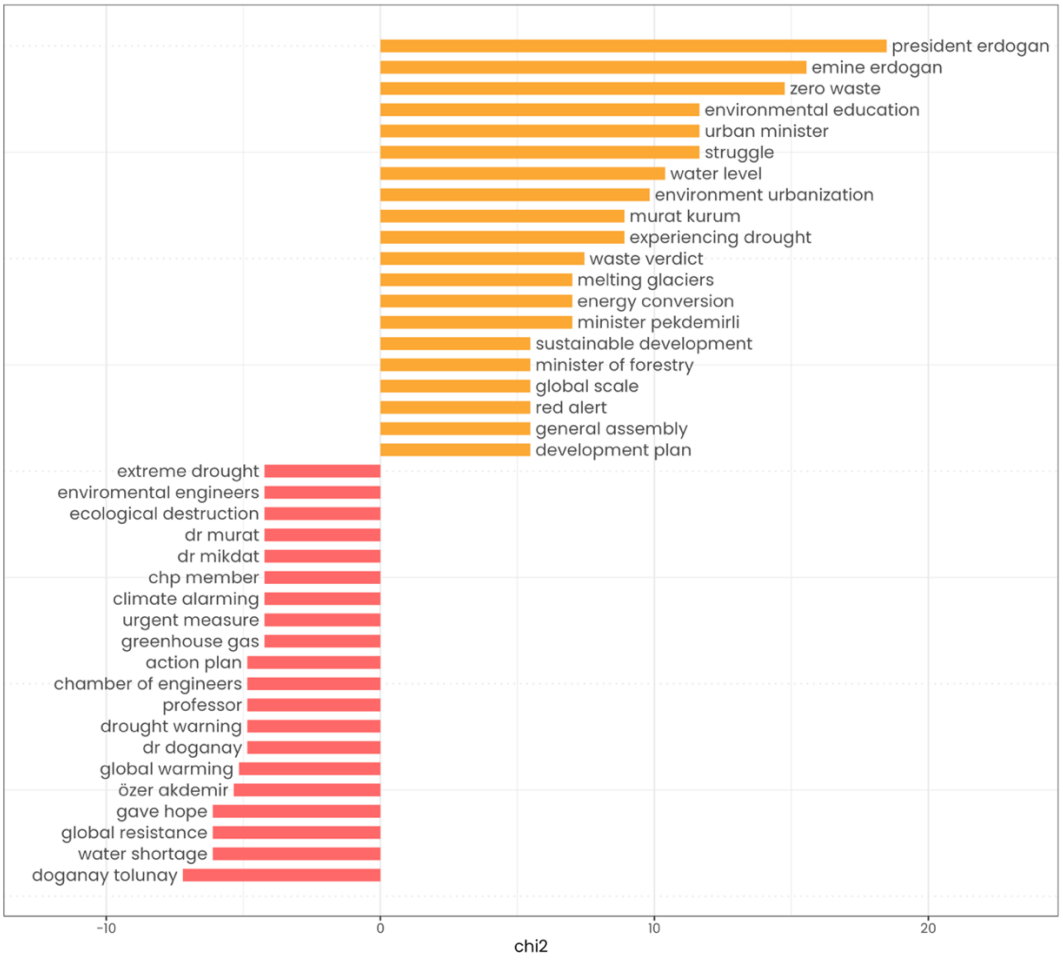
leanings of the media outlets in Türkiye. Pro-government media, through their emphasis on government figures and institutions, may reflect a perspective aligned with state policies and actions on climate change. Similarly, the focus of anti-government leaning outlets on expert opinions and activism aligns with their attitude to critique government policies and advocate for alternative approaches.

Figure 3

Relative Frequency Analysis on the Tweets of Anti-Government Media (Red) and Pro-Government Media (Orange)



3.3. Quantitative Content Analysis

Quantitative content analysis of climate change-related tweets reveals a diverse range of actors involved in climate change coverage. Excluding the "other" category, which predominantly features tweets where climate change itself is presented as the

primary actor, the most frequently referenced actors include politicians (16.4 percent), experts (15.2 percent), organizations (7.1 percent), and activists (5.9 percent) (Table 6). These findings indicate an imbalance in actor framing in climate change coverage. The predominance of politicians and expert opinions may be attributed to news values that prioritize these figures when covering significant issues such as climate change. However, this explanation remains incomplete, as civil society organizations and activists also possess newsworthy qualities, particularly in discussions of multi-layered issues like climate change.

Additionally, this imbalance is closely tied to media outlets' political leanings and editorial policies, as pro-government media often underreport the perspectives and actions of activists and civil society organizations. Another factor contributing to the dominance of politicians and experts in climate change coverage is media bias, which tends to frame climate change primarily as a scientific and political debate. This narrow perspective overlooks the societal dimensions of climate change, failing to recognize its broader social, economic, and humanitarian implications.

As depicted in Table 6, a significant majority of news articles (53.8 percent) focus on the outcomes of the climate crisis, followed by coverage discussing potential solutions. Notably, there is a stark underrepresentation of content addressing the causes of climate change, which account for only 5.6 percent of the analyzed tweets. This distribution suggests a predominant focus on the impacts and responses to climate change within the Turkish media landscape on X, while comparatively less attention is given to understanding and communicating the underlying causes of this global challenge. The emphasis on outcomes may also indicate a sensationalist approach to climate change coverage, as disasters such as floods, wildfires, and droughts are extensively reported as consequences of climate change, whereas the root causes receive limited attention, as shown in Table 6.

BULUR, Neslihan, DEMİREL, Sadettin ve ÇAKICI, Zindan. (2025) Medıa Representatıons Of Clımate Change In Türkiye: A Multı-Method Analysıs Of Clımate Change News On X. Gümüşhane Üniversitesi İletişim Fakültesi Elektronik Dergisi (egifder), 13 (1), 327-357

Table 6

Distribution of News Tweets in Category 1 and Category 2

Actors (C1)	N	Percent	Theme (C2)	N	Percent
Politicians	384	16.49	Outcomes	1255	53.89
Experts	356	15.29	Solutions	509	21.85
Organizations	166	7.13	Causes	132	5.67
Activists	139	5.97	Other	433	18.59
Celebrities	23	1.0			
Other	1261	54.14			

Table 6 presents the distribution of key actors (Category 1) and themes (Category 2), providing a nuanced examination of climate change reporting across the political spectrum in Türkiye. Further analysis, detailed in Table 7, reveals distinct patterns in actor representation across news media with different political leanings.

Pro-government news outlets predominantly focus on politicians, who appear as actors in approximately 30 percent of climate-related news, followed by experts and organizations. In contrast, anti-government media allocate less attention to politicians, instead prioritizing the perspectives of experts in the field. Additionally, activists and organizations receive greater visibility in anti-government media coverage, although not to the same extent as politicians.

These findings indicate that media outlets from both ideological camps primarily frame climate change as a political and scientific debate, while largely neglecting the climate justice aspect of the issue. Moreover, the prominence of politicians in pro-government media coverage can be explained through the lens of press-party parallelism (Hallin & Mancini, 2004), as pro-government media organizations often cover climate-related topics in a manner that reinforces a specific political agenda. Notably, this distribution of actor focus aligns with findings from the frequency analysis (Figure 2) and keyness analysis (Figure 3), further suggesting that the political alignments and orientations of news agencies in Türkiye influence both the framing of climate change and which actors and themes receive emphasis.

BULUR, Neslihan, DEMİREL, Sadettin ve ÇAKICI, Zindan. (2025) Medıa Representatıons Of Clımate Change In Türkiye: A Multı-Method Analysıs Of Clımate Change News On X. Gümüşhane Üniversitesi İletişim Fakültesi Elektronik Dergisi (egifder), 13 (1), 327-357

Nonetheless, it appears that media outlets across the political spectrum fail to adequately explore the climate justice frame in their coverage of climate change.

Tablo 7

Column-wise Actor (Category 1) Proportion in Political Alignment of News Media

Actors (C1)	Anti-Gov (percent)	Pro-Gov (percent)
Politicians	12.82	28.28
Experts	14.94	10.93
Organizations	7.27	6.86
Activists	7.93	2.33
Celebrities	1.26	0.50
Other	55.78	51.10

An analysis of themes within climate change-related news, as presented in Table 8, reveals a consistent emphasis on the outcomes of the climate crisis across political orientations. Pro-government news media dedicate the largest proportion of their coverage to outcomes (53.4 percent), followed by solutions (29 percent) and causes (3.92 percent). This pattern is mirrored in the thematic distribution of tweets from anti-government news agencies. While anti-government outlets allocate the highest proportion of their coverage to themes concerning the causes of the climate crisis, their overall emphasis remains on outcomes rather than causes. This shared focus on outcomes across the political spectrum may reflect a broader tendency within the Turkish media landscape to prioritize the immediate impacts and threats of climate change, potentially overshadowing the importance of understanding and addressing its underlying causes. As discussed above, outcome-oriented media coverage of climate change is also indicative of sensationalist news reporting. The findings in Table 8 suggest that media outlets, regardless of political or ideological alignment, fail to sufficiently explore the causes of climate change.

This indicates that despite their differing political orientations (pro-government vs. anti-government), these media organizations exhibit similar patterns of coverage. Notably, having an anti-government stance appears to have little effect on how anti-government newspapers frame climate change-related news, suggesting that structural and industry-wide factors may play a role in shaping climate journalism in Türkiye.

Tablo 8

Column-wise Theme (Category 2) Proportion in Ideological Spectrums of News Media

Theme (C2)	Anti-Gov (percent)	Pro-Gov (percent)
Outcomes	54.13	53.43
Solutions	17.98	29.04
Causes	6.61	3.92
Other	21.28	13.60

CONCLUSION

This study examined how climate change is represented in the Turkish media by analyzing tweets from pro-government and anti-government news outlets. Through sentiment analysis, text analysis, and content analysis, the research revealed significant patterns in media coverage, highlighting the impact of political alignment on climate discourse. The findings indicate a predominant negativity in climate-related news, with anti-government media demonstrating a stronger negative stance compared to pro-government outlets. Additionally, the analysis of language usage and actor representation suggests that pro-government media prioritize political figures and government institutions, whereas anti-government outlets emphasize expert opinions and activism.

The results underscore the influence of press-party parallelism in shaping climate change narratives in Türkiye. Media ownership structures and political allignments appear to play a key role in determining whether climate change is framed as a policy success (e.g. highlighting government policies, initiatives, and commitments to addressing the issue) or a crisis. While anti-government media outlets pay more attention to activists and organizations, newspapers from either political allignments failed to cover the issue from the climate justice perspective. Instead, they focused on issue as a political and scintific debate. Moreover, the study finds that both political camps tend to focus more on the outcomes of climate change rather than its causes, which may contribute to a sensationalized discourse rather than a comprehensive understanding of the issue. This highlights a gap in media coverage,

where the systemic causes of climate change receive significantly less attention compared to its consequences.

Despite these contributions, the study has certain limitations. First, the analysis focuses exclusively on tweets, which, while important, may not fully capture the broader discourse within Turkish news media. Future research could expand the dataset to include news articles, opinion pieces, and other forms of media content. Additionally, while computational methods provide valuable insights into large-scale patterns, qualitative analysis of discourse strategies could further enhance our understanding of how climate change narratives are constructed.

Future studies could also explore audience reception and engagement with climate change news on social media. Examining how users interact with and respond to different media narratives could shed light on the effectiveness of climate communication strategies. Furthermore, cross-national comparisons could help contextualize the findings by exploring whether similar political influences shape climate change reporting in other media environments.

Ultimately, this study highlights the need for more balanced and independent climate reporting in Türkiye. Given the growing urgency of the climate crisis, fostering media coverage that not only reports on climate outcomes but also critically examines its causes and solutions is essential. Encouraging diverse perspectives—including those from scientists, activists, and civil society organizations—could help bridge the current gaps in media representation and promote a more informed public discourse on climate change.

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Yazarların çalışmaya katkı oranları eşittir.

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