

BETWEEN POLITICS AND SOCIAL MEDIA: EXAMINING  
DOMESTIC INFORMATION OPERATIONS THROUGH THE  
TWITTER CONTROVERSY IN TÜRKİYE

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UMUT DUYGU

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Approved by:

Asst. Prof. Onur Varol .....  
(Thesis Supervisor)

Assoc. Prof. Berk Esen .....

Assoc. Prof. Akın Ünver .....

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## ABSTRACT

### BETWEEN POLITICS AND SOCIAL MEDIA: EXAMINING DOMESTIC INFORMATION OPERATIONS THROUGH THE TWITTER CONTROVERSY IN TÜRKİYE

UMUT DUYGU

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Thesis Supervisor: Asst. Prof. Onur Varol

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Media

Although social media platforms are often hailed as spaces for free speech and fruitful discussions, they have also faced criticism for providing open spaces for information operations. In this study, we employ Herman and Chomsky's propaganda model to examine the neutrality of the social media landscape and use the case of Türkiye to illustrate the intricate concept of neutrality and credibility. On June 12, 2020, Twitter announced the disclosure of 7,340 accounts linked to the ruling AKP party, responsible for nearly 37 million tweets. The government denied these allegations, accusing Twitter of bias and political motivations, which led to a dispute between the Turkish government and Twitter. To gain insights, we conducted in-depth exploratory research on the disclosed accounts. Our findings uncovered compelling evidence of potential malpractices during Twitter's account removal process, along with indications of a larger network that remains active on the platform. This study sheds light on the complex relationship between social media, political entities, and the challenges involved in ensuring transparency and integrity within social media platforms.



## ÖZET

### SİYASET VE SOSYAL MEDYA ARASINDA: TÜRKİYE'DEKİ TWİTTER TARTIŞMASI ÜZERİNDEN ULUSAL ÖLÇEKLI ENFORMASYON OPERASYONLARININ İNCELENMESİ

UMUT DUYGU

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Tez Danışmanı: Dr. Öğr. Üyesi Onur Varol

Anahtar Kelimeler: Bilgi Operasyonları, Çevrimiçi Propaganda, Twitter, Türkiye,  
Sosyal Medya

Dijitalleşme ile birlikte birçok aktör, sosyal medya kontrolü için çeşitli operasyonlar düzenlemektedir. Sosyal medya platformları genellikle ifade özgürlüğü ve verimli tartışma alanları olarak görülse de, bilgi operasyonlarına olanak sağlamaları nedeniyle eleştirilere maruz kalmaktadır. Bu çalışma, sosyal medya platformlarının tarafsızlığını incelemek için Herman ve Chomsky'nin propaganda modelini kullanılmakta ve tarafsızlık kavramını Türkiye örneği üzerinden açıklamaktadır. 12 Haziran 2020 tarihinde Twitter, iktidardaki Adalet ve Kalkınma Partisi (AKP) ile bağlantılı olduğu belirtilen ve yaklaşık 37 milyon tweetten sorumlu olan 7.340 hesabın platformdan kaldırıldığını duyurmuştur. AKP hükümeti, bu iddiaları reddederek Twitter'ı önyargı ve siyasi motivasyonlarla suçlamış ve bu durum Türkiye hükümeti ile Twitter arasında bir anlaşmazlığa neden olmuştur. Bu tez, içgörü elde etmek amacıyla kaldırılan hesaplarla ilgili keşifsel bir araştırma yürütülerek gerçekleştirilmiştir. Bulgular, hesapların kaldırılması sürecinde olası yanlış uygulamalara dair ikna edici kanıtların yanı sıra platformda aktif olan daha geniş bir ağına dair göstergeleri ortaya çıkarmıştır. Bu çalışma, sosyal medya ile siyasi oluşumlar arasındaki karmaşık ilişkiyi ve sosyal medya platformlarında şeffaflık ve dürüstlüğün sağlanmasındaki zorlukları aydınlatmayı amaçlamaktadır.

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*To my family  
who have always supported me and believed in my dreams*

## GLOSSARY

<b>Term</b>	<b>Definition</b>
Astroturfing	The practice of creating the illusion of grassroots support for a product, service, or political campaign.
API	Application program interface - interfaces that enable communication and data exchange between different software systems, allowing platforms to share and access information.
Bots	Automated accounts that engage in automation activities driven by algorithms such as posting, networking, retweeting, etc.
Echo Chamber	An environment where people are only exposed to information and opinions that reinforce their existing beliefs.
Ideological Political Polarization	The extent to which different political parties offer different ideologically distant policy platforms.
Information Operation	Coordinated efforts, often by organized entities, to manipulate or influence public opinion by utilizing digital platforms as channels to spread deceptive, misleading, and often propaganda-driven misinformation and disinformation.
Social Media Platform	Internet-based service that facilitates user-generated content creation, sharing, and interaction, fostering virtual communities and enabling social connections (e.g., Twitter, Facebook, LinkedIn).
Social Media Post	Unit of information, such as text, graphics, or videos, created and shared by a user on a social media platform for others to view and engage with (e.g., a tweet, a comment, a media content).

<b>Term</b>	<b>Definition</b>
Trolls	(1) Accounts created by individuals who share politically motivated content, often in support of the government, sometimes in exchange for compensation, or (2) accounts operated by individuals who share provocative content, often challenging political correctness, including explicit language and misogynistic content, driven by their political beliefs or for the sake of excitement.
Twitter: Mentions	When the username of another Twitter user is included in a tweet to directly reference or bring their attention to the content being shared.
Twitter: Retweets	Act of sharing someone else's tweet on Twitter, allowing it to appear on your own timeline and be visible to your followers.
Twitter: Tweets	A concise and typically public message posted on Twitter, limited to a certain character count (originally 140 characters, now expanded to 280 characters), conveying thoughts, information, or opinions.

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## 1. INTRODUCTION

It is often stated that we currently live in an era of information referred to as the Information Age (Castells 1997). Information is more abundant and accessible than ever before and its control, accessibility, and strategic manipulation play a significant role in terms of determining the functioning of the society, institutions, and individuals. However, as the quantity, specialized characteristics, and significance of information continue to grow, we see a boost in the number of professionals and experts serving as intermediaries between individuals and the information being presented (Hughey 1996). These middlemen “interpret” the information for the individual from a higher position for our understanding. Every day, we run into advertisements and promotions that tell us what to purchase, analysts that “break down” the news, global affairs, and politics for us, podcasts and TV channels determining the content that the public is supposed to consume and others trying to make sure we get the “right” information. The notion of “right” information here pertains to the pre-processed knowledge mediated by intermediaries, which is presented in a manner that enables us to comprehend it with a comparable level of understanding as those mediators possess. Almost all of the information that is provided by the mainstream media has been prepared in advance by one of these middle-man responsible to clear up the information in line with their own objectives and agendas or that of the organizations who hired them. Therefore, a better title for the “Information Age” might be the “Age of Propaganda” instead. Here the term propaganda does not necessarily corresponds to the propaganda as in state propaganda that has a centralized agenda of manipulation, but it refers to the notion that either one way or another, these intermediaries are perceptibly fighting for our attention, time, and money.

Given the tendency of conventional media organizations to overlook public interests, the transition toward social media platforms has gained momentum. Nevertheless, those with vested interests in shaping public opinion are persistent and continuously devise innovative strategies to further their agendas. Consequently, social media has

become inundated with various entities: from companies utilizing advertising tactics to individuals disseminating misinformation based on personal beliefs and even governments striving to assert their dominance by justifying their stances on specific topics. Knowledge utilization as a crucial component in warfare has been present since the dawn of civilization in a process known as propaganda. Nevertheless, with the arrival of the information era, there has been a significant surge in the dissemination of strategies, advancements, and threats associated with the relatively recent concept known as Information Operations (IO). The political and utilization of bots, algorithms, and human curation, aimed at maintaining an organic tone, have been extensively discussed in academic literature under various names such as computational propaganda, online propaganda, influence operations, and astroturfing (Woolley 2020). Another approach from European Union External Action Services defines information operations as Foreign Information Manipulation and Interference, which is described as “a mostly non-illegal pattern of behavior that threatens or has the potential to impact values, procedures, and political processes negatively. Such activity is manipulative in character, conducted in an intentional and coordinated manner, by state or non-state actors, including their proxies inside and outside of their own territory. ”(Service 2023).

To various degrees, each of these terms focuses on the purposeful spread of false information on social media platforms. I found the term Information Operations (IOs) to be an overarching term for different mechanisms including propaganda itself, therefore I will be using information operations (IOs) when referring to the above-mentioned practices. Twitter also names labels the dataset that is used in this thesis as such. The literature regarding IOs is fragmented, it focuses on different actors and tools at a time and lacks a holistic understanding. To understand how an information operation is orchestrated, a more all-encompassing approach is needed (e. g. . Faris et al. (2017)). Due to the intricate nature of the media environment, investigating the actions of various participants, conducting cross-platform research, and incorporating data from both online and offline sources offer us the most detailed and significant insights into the agents responsible for generating disinformation. Particularly during pivotal political events like elections and mass protests, the significance of information operations becomes even more pronounced. This is due to the fact that elections yield tangible outcomes that have policy implications for society as a whole, serving as the fundamental basis upon which the entire system operates. It also amplifies ideological polarization and affective polarization, diminishing our capacity to coexist harmoniously in a democratic environment.

Digitalization and the rise of social media have significantly transformed how everyday individuals receive information about current events. Social media, in particular,

introduces many new ways in which people access information, revolutionizing the ways in which they stay informed. One notable distinction between social media and mainstream media lies in their reliance on different platforms for dissemination. While traditional media outlets such as newspapers, television, and radio heavily involve these intermediaries, social media circumvents these middlemen entirely. Unlike mainstream media, which adheres to a hierarchical structure with editors, curators, and journalists responsible for editing, curating, and gathering information, social media platforms might offer a more organic environment. Here, users (supposedly) have the freedom to create, share, and engage with content, fostering an inclusive and participatory space. Consequently, this autonomy grants social media a certain level of authenticity, as the content showcased is not solely dictated by authoritative figures, excluding any platform-specific terms and conditions that may restrict certain harmful or illegal content. Additionally, social media facilitates the rapid dissemination of breaking news, ensuring users are promptly informed about unfolding events. However, the seemingly natural essence of social media is undoubtedly susceptible to disruption. The authenticity of what we perceive as genuine interactions may not always align with reality and it is one of the reasons why social media platforms are often blamed for being cradles of fake news, disinformation, and misinformation. Even though the initial emergence of social media platforms bared hope for new forms of expression, the agents' fight for our attention, time, and money is here to stay similar to the conventional media. The significant influence wielded by major social media companies originating from the United States triggered apprehensions regarding their independence, objectivity, data-sharing practices, transparency reporting, and user removal. Their remarkable influence has granted them considerable control over these crucial aspects. This situation has sparked debates on the balance between their corporate autonomy and the broader impact on user rights and public discourse. Thus, the level of transparency concerning social media companies remains undefined. Thus, as social media platforms play a pivotal role in shaping modern democracies by allowing citizens to be informed about the news and enabling them to engage in conversations with one another, it is crucial to research their impact on society by thoroughly examining their neutrality and effectiveness.

In today's digital age, there's a mounting concern regarding the influence of internet platforms, such as Facebook and Twitter, which not only mediate our online interactions but are also perceived to be catalysts for hatred, the dissemination of misinformation, and potential distortions in political outcomes. The authority these social media giants wield over public communication signifies an unprecedented form of dominance. For a long time, concrete information about how these platforms

manage and remove content remained elusive. However, as the focus of researchers intensifies and platforms enhance their transparency initiatives, more insights are coming to light. The systems governed by algorithms algocracies (Danaher 2022). This concept has sparked a growing unease, especially concerning its implications on the moderation processes of social media platforms. While the digital revolution was once hailed as a beacon of emancipation, there's a burgeoning sentiment that the dominance of algorithmic governance might, in fact, erode our liberties. Yet, it's essential to recognize that the nature of algorithmic governance is dual-faceted: it has the potential to be both liberating and restrictive.

On 12 June 2020, Twitter announced the detection of a network of accounts allegedly engaged in a coordinated inauthentic activity primarily targeting domestic audiences in Türkiye. The platform's investigation revealed that these accounts were amplifying political narratives favorable to the AK Parti and demonstrated robust support for President Erdogan. As a result of their analysis of the network's technical indicators and account behaviors, Twitter disclosed 7,340 accounts, many of which were identified as fake or compromised. Twitter suggested a connection between this network and the youth wing of the AK Parti. A significant portion of these accounts were compromised versions of profiles associated with organizations critical of President Erdogan and the Turkish government. These particular accounts said to be recurrent targets of hacking and takeover attempts (*Information Operations - Twitter Transparency Center* 2022). In response to Twitter's allegations, Fahrettin Altun, the Director of the Directorate of Communications in Türkiye, refused the platform's claims. He contested the notion that these accounts were "fake" profiles designed to support the President or that they were overseen by a central authority. Altun criticized the evidence presented by Twitter, labeling it as unscientific, biased, and politically motivated. Social media platforms are owned by profit-driven companies; hence, it is crucial to research their data removal practices to understand the efficacy of their content moderation. In light of this dispute, it is crucial to examine potential inconsistencies in content moderation procedures.

In this thesis, I will thoroughly describe the tools, actors, and processes involved in Information Operations and go through content moderation processes. I will present a theoretical framework by drawing parallels between social media and the conventional through the propaganda model described by Herman and Chomsky (Herman and Chomsky 2010) and explain why the neutrality of social media companies is an important matter and how it is a subject open to debate through a comparative analysis to identify potential biases that social media platforms may exhibit when determining information operations. While also presenting my research questions I will explore why Türkiye's dispute with Twitter and the situation of the Turkish

media landscape make it a research-worthy case study. After explaining the research design and dataset, lastly, my investigation will focus on the takedown of accounts by Twitter, which has been attributed to the Turkish government. In this analysis, I will thoroughly scrutinize the various factors that contribute to these takedowns, such as the rationale behind them and the irrelevant users affected by conducting network analysis and careful evaluation of the content posted by the removed accounts. By doing so, I aim to shed light on the transparency and fairness of Twitter's practices, contributing to a broader understanding of the implications surrounding social media platforms' role in safeguarding free expression.

## 2. LITERATURE REVIEW

### 2.1 A Brief Introduction to Propaganda

To gain a deeper understanding of the purpose behind information operations, I will first present propaganda as a mechanism that explains the general goals of these operations best. As an introduction to what propaganda is, I offer a brief overview of propaganda's definitional history starting from Lasswell (1927). Most traditional definitions and some modern definitions have the characteristics of a supposition of control and manipulation through the information that aims to change the way people think or believe in certain situations (Black 2001). Propaganda can be defined as "the management of collective attitudes by the manipulation of significant symbols" (Lasswell 1927). It involves a consistent and enduring effort to shape events and influence the public's relationship with an enterprise, idea, or group (Bernays 1928). Furthermore, it encompasses the deliberate expression of opinions or actions by individuals or groups with the intent to influence the views or actions of others toward predetermined ends (Miller 1939). Propaganda can be understood as a deliberate process that employs persuasive techniques to elicit desired responses from the target audience, aiming to obtain those responses before they can freely engage in thoughtful deliberation (Henderson 1943). Leonard Doob further distinguished between propaganda and education: Regardless of the propagandist's aim to exert control, the process may be classified as propaganda if people are persuaded and controlled by suggestion. Contrarily, regardless of the aim of the educator, the process may be regarded as education if it has the same effect on people whether or not suggestion is used therefore propaganda in a real sense entails attempts to affect individuals' personalities and control their behavior towards ends that may be deemed unscientific or of questionable value in a given society (Doob 1948). Biased communication, often synonymous with propaganda, is regarded as shrouded in darkness and obscurity, avoided by objective individuals, yet ubiquitously used (Dovring and Lasswell 1959). The deliberate attempt to influence the attitudes of



other groups through communication tools, to elicit desired reactions, is another aspect of propaganda (Bernays 1928). It may be viewed as a collection of techniques used by organized organizations to psychologically unite people and control them through communication tools so they can be integrated into the organization to accomplish desired goals (Ellul 1965). In a contemporary understanding, propaganda includes a systematic and intentional effort to sway perceptions, influence cognition, and involves a systematic and deliberate effort to shape perceptions of the desired population (Jowett and O'Donnell 1986). It is characterized by conscious and open attempts to influence the beliefs of individuals or groups using predetermined ends, often employing irrational and unethical persuasion techniques (Smith 1989). Communication can be considered propaganda when it primarily serves the self-interests of the communicator, conveying messages, ideas, or ideologies (Taylor 1990). Another perspective highlights the use of symbols and the psychology of individuals to exert mass suggestion or influence (Pratkanis and Aronson 1992). Propaganda is associated with large organizations or groups orchestrating attractive conclusions packaged to conceal both their persuasive purpose and lack of sound supporting reasons, all to win over the public for special interests (Sproule 1994). Furthermore, it involves communications carefully crafted to guide a target audience towards predetermined attitudes and beliefs (Carey 1997). Propaganda can be understood as strategically devised messages disseminated by institutions to generate actions that benefit the source of the propaganda (Parry-Giles 2002). It is an organized attempt through communication to influence beliefs or actions in a large audience while circumventing or suppressing their adequately informed, rational, reflective judgment (Marlin 2013). Finally, propaganda can be seen as manipulating the rational will to stifle debate (Stanley 2015).

## **2.2 Disinformation, Misinformation Rumours**

The terms “misinformation”, “disinformation”, and “propaganda” are generally employed interchangeably, as their definitions can vary and overlap with one another. All of these terms revolve around deceptive or inaccurate messages that are disguised as informative content, regardless of whether they are conveyed through high-level communication, online messages, advertisements, or published articles. This particular definition emerges as the most commendable and compelling: misinformation refers to a statement that goes against or distorts widely accepted knowledge of provable facts. Conceptually, this distinction sets apart rumors or conspiracy theories, as their definitions are not contingent upon the veracity of the claims being put

forward. The very nature of misinformation makes it false by definition. Of course, determining what can be categorized as "false" poses intricate difficulties given the inherent subjectivity of our perceptions and the diverse influences that shape our comprehension of the world. It recognizes that a substantial portion of our understanding stems from sources such as the media and interpersonal interactions, which introduce potential biases and cast doubt on the feasibility of establishing an objectively verifiable truth beyond scientific domains. Empirical research primarily focuses on claims that can be verified directly or supported by a consensus among experts and authorities in the relevant fields. This underscores the importance of empirical research in objectively examining claims through direct verification or consensus-driven assessments made by experts within their respective domains.

Intent plays a critical role in differentiating disinformation from misinformation. Disinformation is intentionally spread to deceive, while misinformation is typically unintentional. Disinformation aims to cause harm, while misinformation can be shared without the intention to deceive. Disinformation spreads widely through social media and online platforms, while misinformation can be spread through various channels. Disinformation has a more severe impact, potentially inciting violence and political instability, while misinformation usually leads to confusion. In essence, intentional harm, online dissemination, and significant societal consequences set disinformation apart from unintentional misinformation (Fallis 2015).

However, not all unverified information can be considered misinformation or disinformation. For instance, a rumor may change between various subgroups inherently (misinformation, disinformation, and fact) and it can also change shape while circulating through a community.

An example of those three concepts can be best explained through a fictional story: The Prime Minister announced the appointment of a new minister. Later, rumors began to spread that the minister had undisclosed financial ties and was involved in corrupt activities (rumor). In an attempt to tarnish the government's reputation, political opponents deliberately circulated false documents and manipulated evidence to support these claims (disinformation). As the rumors gained momentum, inaccurate information about the minister's background and qualifications proliferated, leading to widespread confusion and mistrust (misinformation). Apart from rumors, conspiracy theories possess distinct attributes, including the belief that a concealed group of influential individuals wield control over certain facets of society.

Internet trolls, social bots, conspiracy theorists, politicians, highly partisan media outlets, the mainstream media, foreign governments, and many more can exacerbate and even create misinformation and disinformation (Tucker et al. 2018). Mis-

information and disinformation can potentially erode trust in public and political institutions, undermine faith in democratic processes and create extensive fear and uncertainty (Ognyanova et al. 2020).

### 2.3 Conspiracy Theories

Apart from rumors conspiracy theories possess distinct attributes, including the belief that a concealed group of influential individuals wields control over certain facets of society (Tucker et al. 2018). The Internet is seemingly the cradle of conspiracy theories and anybody with the right audience can start a conspiracy theory as established media gatekeepers are removed from social platforms (Marwick and Lewis 2017). In echo chambers, where people are solely exposed to information that supports their own opinions, conspiracy theories are more likely to propagate. Moreover, through emotional contagion people are more inclined to accept a conspiracy theory if they witness others feeling strongly about it (Del Vicario, Vivaldo, Bessi, Zollo, Scala, Caldarelli, and Quattrociochi 2016) Conspiracy theorists frequently voice concerns about losing control or status, driven by their conviction that a secretive and influential group manipulates the public while operating covertly (Sunstein and Vermeule 2009). Conspiracy theories often receive significant attention and promotion from the mass media, driven by the desire to attract more views and clicks, and ultimately generate profits because of the high demand by the public. Literature frequently cites the case of the Obama birth certificate as a notable instance of conspiracy theories (Pasek et al. 2015), both in terms of verifiability and vast mainstream media coverage. Media coverage serves as a platform for the dissemination of disinformation, highlighting its role in amplifying conspiracy theories. A notable instance that showcased the influence of such theories was the emergence of QAnon (Zhang et al. 2022). QAnon is a belief system centered around the notion that a covert collaboration exists between former American presidents spanning from John F. Kennedy to Donald Trump. This alliance allegedly involves a group of influential global elites known as “The Cabal”, working in concert to subvert American democracy and pursue their sinister objectives. While the theory often targets other notable figures often involved in conspiracy theories such as George Soros and the Rothschild family, it primarily expresses anti-elite sentiments rather than explicit anti-Semitism. Across various iterations, the overarching objective attributed to The Cabal is the dismantling of American freedoms, subjecting the nation to the whims of a global governing body. Some versions of this mythos also incorporate sensational elements like allegations of pedophilia, blood sacrifice,

and Satanism to captivate attention (Zuckerman 2019). Despite their potentially innocuous perception, conspiracy theories possess the capacity to inflict significant harm and a prime example of this is the storming of the U.S Capitol (Times 2023) The storming of the U.S Capitol was a deeply concerning event that highlighted the dangerous influence of conspiracy theorists on democracy. The increasing amount of false information and baseless conspiracy theories in recent years has had a detrimental impact on public trust, exacerbating the tensions that led to an attack on one of the world’s well-trusted democratic institutions. Therefore it is crucial for the notion of democracy that the issue of conspiracy theories be addressed head-on by promoting critical thinking, media literacy, and open dialogue for similar events that undermine democracy do not take place in the future.

## 2.4 Internet Trolls

Although the term “troll” gained prominence with the advent of the Internet and the subsequent rise of social media platforms, its origins can be traced back to earlier instances where it emerged as a phenomenon aimed at deceiving local television channels or other media outlets where less control there were less editorial precision or attention (Phillips 2015). In a modern sense troll is an individual who disrupts online communication and is commonly viewed as problematic or even engaging in criminal behavior possibly for its own amusement (Shin 2008). The word “trolls” has been used to describe those who actively agitate others in an effort to elicit emotional responses since the beginning of the internet even from the early stages of online communication (Tucker et al. 2018). There are several functions of trolls, 1-Through malicious and destructive disinformation, trolls provoke feelings of paranoia in a given community. 2-They impersonate the members of the community both as a living person or a fictional persona however not in the sense of identity theft necessarily (Phillips 2015). Trolls, in essence, intentionally act in a way that politically divides people and causes psychological discomfort. For instance, trolls may purposefully direct their actions towards those who are vulnerable or part of marginalized communities, exploiting their insecurities with the intention of eliciting strong emotional responses. They selectively target individuals based on characteristics such as gender, race, sexual orientation, or personal beliefs, aiming to exacerbate societal divisions (Bishop 2014). Research indicates that of all the personality traits examined, sadism exhibited the most pronounced correlations with trolling, and notably, this connection was specifically observed within the context of trolling behavior (Buckels, Trapnell, and Paulhus 2014). Trolls in this context are

unaffiliated with an organization or a group and as some researchers call it they are “independent” (Tucker et al. 2018). The utilization of data-driven methodologies in examining unaffiliated trolls is a relatively recent development (Machová, Porezaný, and Hreškova 2021; Monakhov 2020), with previous research primarily relying on qualitative methods (March and Marrington 2019; Marwick and Lewis 2017; Phillips 2015). In the United States a conservative group, Turning Point USA, allegedly coordinately used Facebook ads to promote a rally that never took place, indicating potential deceptive tactics in political advertising (Greenwood 2021).

Unlike individuals who engage in trolling to derive satisfaction from provoking emotional reactions, paid trolls are individuals who receive compensation from entities including companies, politicians, political parties, or other agents to generate partisan or factually incorrect posts, retweets, replies, and comments, on social media platforms (Mihaylov, Georgiev, and Nakov 2015). According to the media reports (Perlroth and Gelles 2018; Titcomb 2017) and, social media companies (Facebook 2022) and academic work (Bradshaw and Howard 2017; Ezzeddine et al. 2022), there are multiple indications of the existence of "troll farms." that reportedly employ individuals who are assigned specific targets and tasked with shaping discussions related to regional, national, and global matters. During the 2016 US presidential election (Shao et al. 2018), real activists in the US were paid by a Russian troll factory acting as Americans to support socially divisive protest movements (Guardian 2017), similarly, an investigative journalist from Finland managed to interview the workers of a Russian troll farm where the trolls used to manipulate public opinion in Finland and undermine support for Finland’s potential NATO membership (Aro 2016). (Labzina 2018) demonstrates the extensive reach of Russian online manipulation, extending even to platforms like Wikipedia. Notably, trolls associated with the notorious Russian “troll factory” known as the Internet Research Agency (GRU) made contributions to Wikipedia articles aligning with the political stances and historical narratives favored by the Russian government. Evidence suggests that several countries, such as Iran, Türkiye, Brazil, the Philippines, and China, have employed paid trolling as a means to manipulate online discourse and influence public opinion (Bradshaw and Howard 2017; Erdbrink 2020; Globo 2020; Mozur 2012; Rappler 2017). Additionally, Facebook made significant efforts to identify and designate networks of paid trolls through a mechanism that focused on identifying “inauthentic behavior” (Facebook 2021).

## 2.5 Bots

Public discourse surrounding the authenticity of social platforms, notably Twitter, has ignited considerable debate among the public. A noteworthy incident occurred when Elon Musk’s acquisition of Twitter was delayed due to the existence of undisclosed bot accounts on the platform (Varol 2022). Musk stated that Twitter had failed to provide Musk with the information he needed to assess the number of fake or spam accounts on the platform. The prevalence of these bots heightened concerns regarding the legitimacy of user interactions and the potential manipulation of public discussions as one study estimates between %9 to %15 of all active accounts on Twitter are automated bots (Varol et al. 2017). Consequently, a broader conversation ensued, emphasizing the imperative of upholding integrity and transparency within social media platforms and implementing robust strategies to counteract the influence of bots on public opinion and decision-making processes.

In order to study bot activity, it is crucial to start the difficult task of identifying and finding bots effectively. Researchers have devised several systems for detecting bots, primarily focusing on Twitter data due to its significance in political communication. One of the most prominent ones is known as the Botometer (formerly known as BotOrNot) (Davis et al. 2016) along with Hoaxy (Shao et al. 2016). This preference is partly attributed to the ease of accessing tweets, their metadata, and associated network data through Twitter’s user-friendly API (Application Program Interface). Some of these detectors utilize linguistic models, network data, or analyze account behavior to identify bots.

The classic automated bot is frequently used to gather data from somewhere on the internet. These computer programs, sometimes known as “spiders” and “scrapers”, are crucial to automated daily tasks on the web (Woolley 2016). They aid in the creation of targeted adverts and individualized online news choices. They also assist in maintaining online sites and keeping search engines organized. It is important to keep in mind that this particular category of automated technology does not engage in face-to-face conversations with individuals and instead eases both companies’ and individuals’ jobs for the better. A social bot, on the other hand, refers to a computer algorithm that generates the content and engages with humans on social media platforms like Facebook, Twitter, and Reddit, with the intention of imitating and potentially influencing their behavior (Ferrara et al. 2016). Empirical findings indicate the presence of social bots exerting a disproportionate influence in disseminating articles sourced from low-credibility sources. These bots notably amplify such content during the initial stages of dissemination, preceding its potential

virality. Additionally, they strategically target individuals with substantial follower counts through replies and mentions (Shao et al. 2018).

A growing body of research is being done on information operations, which is defined as the purposeful use of algorithms, automation, and human curation to spread incorrect or misleading information through social media networks (Woolley and Howard 2018). Bots are also notorious for engaging in harassment and spreading hate speech within online political conversations, frequently contributing to an atmosphere characterized by division and animosity. Researchers have discovered substantial evidence of bots and various types of information operations around the world on social media platforms (Cresci 2020) including Russia (Sanovich 2017), Ukraine (Zhdanova and Orlova 2017), Taiwan (Monaco 2017), Brazil (Arnaudo 2017), Poland (Gorwa 2017), Canada (McKelvey and Dubois 2017), Germany (Neudert 2017), the United States (Woolley and Guilbeault 2017) and China (Bolsover and Howard 2019). Research suggests that these operations involve artificially inflating politicians' follower and "like" counts, impacting political conversations, targeting dissenters, manipulating public sentiment, and potentially even manipulating news search rankings. All these studies indicate the involvement of automated accounts in producing a considerable volume of social media content, with the intention of either endorsing or criticizing candidates or positions.

In recent years, there has been an increasing focus on studying the utilization of bots in information operations targeting US Presidential Elections. To illustrate, Bessi and Ferrara (2016) employed research designed to identify bots and analyzed data obtained through Twitter's live streaming API. Their findings revealed that approximately 20% tweets related to the U.S. 2016 election in the last month of the campaign were generated by bots. Approximately 400,000 identified bots were responsible for generating 3.8 million tweets throughout the final month of the 2016 U.S. presidential elections. Also during the presidential debates, bots were quite active in creating information that was supportive of Trump and to a lesser extent, supportive of Clinton (Bradshaw et al. 2020). Another research by Ferrara (2017a) examined data from Twitter and Facebook to reveal social bot networks that were active during the 2016 United States presidential election and the 2017 French presidential election. Same bot networks were employed in the 2016 American elections to boost Donald Trump's campaign and discredited Hillary Clinton and in the 2017 French presidential election to disparage Emmanuel Macron's opponent and favor far-right contender Marine Le Pen. The study found that there is a possibility of a black market of bots that might be employed to sway public opinion by disseminating propaganda and false information regardless of the country or state of origin.

Beyond the 2016 U.S. presidential election, the literature heavily rests on information operations originated from Russia and China. Research conducted on Russian domestic politics, along with its disputes with neighboring countries, provides substantial proof of the deliberate utilization of bots and trolls for social media dominance. Between 2014 and 2015, a notable period in Russian politics marked by significant events like the annexation of Crimea and Russian involvement in the Eastern Ukraine conflict, there was a consistent occurrence. On the majority of days during this time frame, the proportion of tweets collected from various sources exceeded 50%, indicating a substantial presence of bot-generated content (Stukal et al. 2017). In a similar fashion, Russian operations in the aftermath of Russia's war against Ukraine, have amplified certain hashtags in support of President Putin (Smart et al. 2022).

Researchers actively investigate the online manipulation activities of China, a significant actor that encompasses the utilization of bots and trolls (Bolsover 2017). Research provides evidence that the Chinese government has been using social media to spread disinformation and propaganda, with the goal of distracting the public and preventing them from engaging in political debate (King, Pan, and Roberts 2017). Another research indicates that popular news websites in China are swarmed with state-backed astroturfers Miller et al. (2020).

However, information operations in the far east are not limited to China. In Japan, evidence suggests that bots were utilized in favor of the former prime minister Shinzo Abe during the 2014 general election to support his nationalist agenda (Schäfer, Evert, and Heinrich 2017). A similar pattern of retweet rings endorsing Abe's political agenda was also found in the 2017 general elections (Mintal and Vancel 2019). In South Korea, information operations in favor of the incumbent party, by allegedly the secret service (Keller et al. 2017) In Europe, research from Germany (Neudert 2017) shows that social media was far more frequently used to promote misinformation and propaganda during the 2017 federal election. The use of bots to magnify comments and provide the appearance of mass support for particular candidates or policies was primarily.

## 2.6 Content Moderation

For a very long-time authoritarian regimes relied on certain mechanisms including censorship, bans, and intimidation to suppress unwanted ideas in traditional media. Although these practices are far from gone, with the changing forms of communica-



tion, the world witnesses an evolution of a new form of government involvement in the channels of information in the digital media age. Even though there are many governments still censoring global social media platforms such as China, North Korea, and most recently Russia, many governments are also shifting away from censoring social media and instead employ a different tactic to influence public opinion: information operations. By putting propaganda material on the internet, governments penetrate the public sphere to alter public opinion by implementing favorable opinions about their regime, imposing their views, and while doing so, are not caught by the radar of their citizens as they perform these actions through various strategies that are hard to detect by a regular social media or internet user. These strategies include several schemes, firstly, political bots where unreal agents use accounts supported by algorithms and software to generate messages, share posts, and multimedia content masked as genuine users in order to display the created conversation as grass root. Secondly, coordinated efforts by third parties to collectively work to deceive others about who they are or what they are doing. Coordinated efforts are generally ideologically or financially motivated and they aim to make a specific content look more popular than it actually is. Online propaganda often entails misinformation and deliberate disinformation by state-linked actors (Woolley and Howard 2017). Therefore, the rapid spread of conspiracy theories and disinformation constitutes important problems by misleading individuals, polarizing the broader public, and inhibiting the ability of voters to make truly informed decisions. The amount of information on online platforms and its rapid dissemination threatens democracies by affecting free and fair elections, undermining democratic processes, and eroding trust in democratic institutions. As the use of the Internet rises thanks to the improving infrastructure around the world, accessibility through lower costs, and growing population, its size, and scope also grow exponentially. People's daily communications as well as their political engagements are regulated by the existence of online systems and social media in particular. The widespread online participation also has various connotations for democracies and citizens as social media become an intermediary between politicians and voters. People increasingly follow the news about politicians, candidates, news, debates, policy implementations, and issues via social networks. In the post-truth era, where misinformation, online political discourses, and manipulation prevail, understanding how citizens are informed about democratic processes to formulate unbiased opinions becomes essential.

Hence, it becomes crucial for social media companies to strive for maximum neutrality, facilitating open and unbiased discussions while safeguarding against information operations. Prioritizing neutrality is vital for social media companies to protect democratic processes, ensuring that individuals have access to reliable information

and remain well-informed. However, achieving complete neutrality often remains a subject of ongoing debate and challenge.

In the digital age, the role of online platforms in content moderation has become a focal point of discussion. These platforms often rely on their own set of private rules, commonly referred to as "Community Guidelines," to determine what content is permissible. These guidelines can be influenced by a myriad of factors, ranging from the personal moral beliefs of platform operators to prevailing social norms. In some instances, the primary motivation behind these guidelines is to curate a specific user experience that aligns with the platform's business objectives. Historically, there has been a noticeable reticence among platforms to disclose detailed information about their content removal processes. This reluctance can be attributed to the complexities involved in documenting ever-evolving content moderation mechanisms, which may employ varying tools, and standards, and even be overseen by different internal teams over time.

The lack of transparency in these processes has often led to public debates that are rife with speculation regarding platform accountability. Recognizing this issue, or perhaps due to mounting pressures from civil society, academia, and other sectors, there has been a discernible shift towards greater transparency in recent years. A testament to this is the increasing number of platforms that now release periodic transparency reports, shedding light on aggregate data related to content removal requests (Now 2014).

However, the idea of a completely neutral platform remains elusive. The immense power wielded by social media companies in regulating communication within the public domain signifies an unprecedented form of influence (Aytac 0). These companies have the ability to shape the parameters of political discourse and participation, potentially infringing upon individual choices. This quasi-public authority not only impacts democratic debates but also influences the manner in which individuals engage in discourse with their peers. The algorithms that govern these platforms can inadvertently elevate the barriers to deliberative engagement, thereby limiting the range of choices available to users.

### 3. THEORETICAL FRAMEWORK

#### 3.1 Propaganda Model in the Age of Social Media

Although written prior to the era of social media, *Manufacturing Consent: The Political Economy of the Mass Media* written by Edward Herman and Noam Chomsky still provides us with a framework for how the media operates in Western democracies (Herman and Chomsky 2010). According to Herman and Chomsky (2010), the propaganda model has five filters:

**Ownership:** The first filter relates to the concentration of media ownership in the hands of a few large corporations or wealthy individuals. The dominant media outlets are often owned by entities with their own interests and biases, which can influence the content presented to the public.

**Advertising Revenue:** The second filter involves the reliance of media organizations on advertising revenue. In order to attract advertisers, media outlets may cater their content to suit the interests of advertisers or avoid controversial topics that could jeopardize advertising deals.

**Sourcing:** The third filter refers to the limited range of sources used by media organizations. Journalists often rely on official government sources, corporate press releases, or other authoritative figures, leading to a narrow spectrum of perspectives being presented while alternative viewpoints may be ignored or marginalized.

**Flak:** The fourth filter encompasses the potential negative consequences faced by media outlets if they deviate from the dominant narratives or challenge powerful institutions. Criticism, backlash, or legal actions from governments, corporations, or interest groups can exert pressure on media organizations, discouraging them from publishing dissenting viewpoints.

**Anti-Communist Ideology or Fear:** The fifth filter, which was initially devel-

oped amidst the Cold War era, underscores the historical backdrop that informs Chomsky’s analysis. It posits that media establishments within Western societies have a tendency to mirror an anti-communist ideology, thereby exerting an influence on their coverage of both domestic and international matters, frequently resulting in the presentation of a biased standpoint. However after the end of the Cold War, Herman and Chomsky updated the fifth pillar and they make reference to the “War on Terror” and the concept of “counter-terrorism”, asserting that these two operate in a comparable fashion, creating fear among the public.

The propaganda model remains highly relevant in the social media era. Social media outlets present questionable aspects regarding ownership, control, and data collection similar to conventional media. In terms of ownership and control, there is a significant power dynamic at play within the social media landscape. The issue of data collection arises as platforms accumulate vast amounts of user data, which is then utilized for targeted advertising. By tailoring advertisements based on this data, platforms have the ability to subtly influence users’ opinions and behaviors. In theory, social media promotes media pluralism by offering alternative sources that people can choose freely, however in reality social media fosters the formation of echo chambers through selective exposure, where users segregate themselves into communities that align solely with their existing beliefs (Frey 1986). This limited exposure to contrasting viewpoints contributes to the spread of misinformation and intensifies societal polarization (Del Vicario, Bessi, Zollo, Petroni, Scala, Caldarelli, Stanley, and Quattrociocchi 2016). Hence, social media platforms fall short of being spaces that encourage free speech and cherish new ideas. Social media companies are not solely driven by their users’ interests; they also operate under the influence of powerful owners who prioritize profitability. For instance, Jeff Bezos, known as one of the wealthiest individuals globally, acquired The Washington Post following the success of his enterprise, Amazon. Similarly, Elon Musk, a renowned entrepreneur who initially amassed his wealth in a distinct industry, took ownership of Twitter. In order to maximize profitability they strive to build and expand their user base, aiming for the largest possible audience size. This focus on audience growth is a key strategy employed by these companies to enhance their financial performance which is the same reason why social media platforms are highly vulnerable to disinformation campaigns. They employ sophisticated optimization algorithms to ensure that highly engaging content receives increased visibility and amplification. These algorithms prioritize user engagement metrics such as comments, shares, and likes, often amplifying disinformation packaged as emotionally charged news stories with sensational headlines (Bakir and McStay 2018). In contrast, reputable news outlets struggle to garner the same level of engagement (Vosoughi, Roy, and Aral 2018).

Fake images also play a role in disinformation campaigns, with catchy and misleading visuals being widely shared on social media. While recognizing the problem, platforms have yet to agree on an optimization criterion other than engagement, and proposed solutions such as flagging or filtering fake news face significant challenges. Manual verification can lead to censorship concerns, while automated approaches and crowd-sourcing might remove legitimate accounts. Moreover, platforms that integrate with third-party social media management dashboards inadvertently facilitate coordinated disinformation campaigns by reducing costs and increasing the efficiency of botnets and troll factories. Once more, all these endeavors are employed with the intention of forging fear among the general population, compelling them towards particular news, policies, and perspectives, or discouraging them from engaging in certain others.

Another factor contributing to this vulnerability can be attributed to the second filter described by Herman and Chomsky: the importance of ad revenues. Business models of social media companies focused on ad revenue which creates susceptibility to manipulation. Companies prioritize revenue generation and often fail to adequately screen advertisers, allowing disinformation to be spread (Fraser and Hern 2017). For instance, Twitter reportedly offered a significant portion of its advertising space to the Russian state-supported media network RT during the 2016 U.S presidential elections, while Facebook demonstrated little interest in scrutinizing advertisers, even accepting payments in Russian rubles (Facebook 2017; Sanger and Isaac 2017). In contrast, registration requirements vary depending on the platform's business and content model, making it a non-inherent vulnerability. Different platforms have different levels of user information and verification processes, leading to the availability of fake accounts and followers for purchase on online black markets. Bot creators use technical and non-technical means to bypass registration barriers, including renting or buying real people's accounts to enhance trustworthiness and reach a wider audience. The situation surrounding social media companies bears similarities to how traditional media is managed by powerful establishments. One notable parallel can be drawn between the exertion of control and influence over the information presented to the public. For instance, social media companies are subject to local laws and regulations that impact their operations. The new Disinformation Law came into practice in Türkiye. The law mandates that representatives of international social media platforms are required to be Turkish citizens, and reside in Türkiye. The representative will be obliged to provide the courts with personal information related to the internet content and therefore the identity information of the users upon request by the courts. Furthermore, the head of the Information and Communication Technologies Authority will be able to impose an advertising ban on

the social media platform for up to six months without a judicial decision (Coşkun 2022). Similarly, there have been cases in which social media features, such as Instagram’s recent enterprise Threads, have become unavailable in The European Union countries due to violations of the EU Digital Markets Act. These legal frameworks serve as a mechanism to ensure responsible content moderation and consequently, social media companies must comply with these laws and regulations determined by governing bodies to avoid potential consequences. If a social media company decides to challenge the power, the 4th filter “flak” comes into power, where authority leads the marginalization of these companies through a series of escalating penalties, such as fines, advertising bans, bandwidth restrictions, and overall shut-downs. The fifth pillar corresponds to the fear utilized with the help of social media platforms. Despite being home to many users, social media users consistently pump fear by promoting polarization, conspiracy theories, and disinformation. Amidst the Covid-19 pandemic, one form of propaganda shared by anti-vaccine supporters includes content featuring individuals with distorted forms such as horns and other inhuman attributes, all allegedly caused by the vaccine (Seçkin et al. Unpublished Manuscript).

Social media has the power to profoundly alter how millions of people see politics and change their voting behavior by feeding misinformation to voters. Therefore, manipulating public opinion by spreading disinformation through social media platforms is a useful method of manipulating popular perception. Information operations, thus, have the power to disrupt democratic elections. Literature shows that in many democratic countries, electoral campaigns had exposed to information operations. From general elections in the European democracies (Applebaum et al. 2017; Ferrara 2017b) to elections in Latin America (Suárez-Serrato et al. 2016), from UK’s Brexit referendum (Gorodnichenko, Pham, and Talavera 2021; Howard and Kollanyi 2016) to Catalan independence referendum (Stella, Ferrara, and De Domenico 2018) information operations played non-negligible roles to alter the public opinion. The objective of this thesis does not involve examining whether these operations can change the outcomes or not. However, it is a question worth investigating.

In conducting the literature review, my objective was to present a comprehensive overview of the actors involved in information operations, their objectives, and the strategies employed to accomplish them. I endeavored to include a wide range of examples from various regions worldwide to illustrate that state-linked information operations extend beyond authoritarian or anti-democratic regimes, locations, or languages. Highlighting the prevalence of information warfare is safe to say, similar botnets are used by social media operations in the developing world as well as a variety of online propagandist techniques, such as the utilization of massive

voter datasets and algorithmic manipulation (Arnaudo 2017). Researchers provide methodologically sophisticated and prominent examples of how information operations operate in different contexts in today’s online environment and for what purposes this new form of the phenomenon is being used. Realism in international relations refers to the theory that states act in their own self-interest and seek to maximize power and security (Morgenthau, Thompson, and Clinton 1985). From a realist perspective, the internet and social media platforms emerge as dynamic battlegrounds where the pursuit of power persists, driven by states aiming to achieve their foreign policy goals as well as domestic policy goals by manipulating public opinion and advancing their strategic interests in the name of national security.

### **3.2 Platform Resilience and Neutrality**

A deliberative democracy relies on a broadly informed public and a healthy ecosystem of competing ideas. Transparency can help to build trust with users and create a more level playing field for competing ideas (Brown 2020). Social media platforms can play a vital role in promoting deliberative democracy by being more transparent about how they operate and building countermeasures to resist platform manipulations. A more transparent social media landscape can help to foster a more informed and engaged public which paves the way for a functioning democracy. Consequently, transparency has emerged as one of the most important accountability mechanisms in recent years due to public concerns about data protection and privacy. The social media platforms, collectively, have attempted to regain the trust of the public, institutions, and political authorities by publishing transparency reports over the years as a sign of public accountability.

Today, transparency reporting on issues such as government requests for user data is considered an industry-wide best practice for technology and telecommunications companies. Accordingly, over the past few years, internet platforms such as Facebook (now Meta), Instagram, Reddit, TikTok, Twitter, and YouTube have also begun publishing transparency reports that outline how they are enforcing their own content policies and rules (Singh 2020). A variety of metrics and content categories particular to these kinds of platforms have been included in these reports. Nevertheless, even if social media companies have made some progress toward being more accountable and transparent about their content filtering procedures, there is still much space for improvement. Big tech companies build capabilities to fight against platform manipulations. Jigsaw by Google, Twitter, and Facebook Trans-

parency Centers are prime examples of it however, an exercise by the NATO Stratcom (Nardelli 2020) shows that these capabilities fall short of the desired strength. Nevertheless, social media continues to serve as a valuable resource from which researchers can get valuable insights. In terms of active monthly user counts, the five big companies collectively amass an estimated total of 5 billion. Specifically, Reddit claims 48 million active users, Twitter stands at 330 million, Facebook records an impressive 2.9 billion, TikTok engages with 1 billion, while YouTube dominates with a staggering 1.7 billion active users (DataReportal 2022). This research has been conducted on Twitter because although Twitter as well not a perfect platform to work as it provides several advantages. In terms of data collection, the existing academic studies have heavily rested on Twitter data (Chen, Duan, and Yang 2022). Twitter’s API services yield precise and complete data for public conversation. Researchers gain a notable advantage in conducting research on Twitter due to the public’s free access to Twitter. It might potentially create a more representative sample of users from different age groups, socioeconomic backgrounds, ideologies, etc.. Constant increases in its monthly tweet cap and enhanced features designed to support research (such as its developer policy) enable researchers to easily replicate and validate other research. This easier-to-work environment puts Twitter at the center of social media research.

However, after Elon Musk’s purchase of Twitter, he announced that he would be making changes to the platform’s API. One of the changes that Musk made to the API was to end free access for academic research. Previously, researchers could access Twitter data for free, but now they will need to pay a subscription fee of 100\$ for Adademic API and 5000\$ for the Pro API (TechCrunch 2021). This has made it more difficult for researchers to conduct academic research on Twitter. Another change that Musk made to the API was to restrict the amount of data that researchers can access. Previously, researchers could access up to 100,000 tweets per day, but now they are limited to 10,000 tweets per day through Academic API and 1 million through Pro API. The changes that Musk has made to the API have made it more difficult for academic research on Twitter. This is a concern for many researchers, as Twitter data is a valuable resource for studying social media behavior and trends. It is unclear how the changes to the API will impact the future of academic research on Twitter. There are also other works relied on data from Reddit, YouTube, Facebook, Tumblr, Myspace, the comment sections of websites, and blogs (Attu and Terras 2017; Cheng and Jin 2019; Çiğdem, Çürük, and Eşsiz 2019; Fortuna and Nunes 2018; Mathew et al. 2019; Tufekci 2018), however, the research in these platforms are relatively rare, thus, other social media platforms remain largely untapped compared to Twitter both because of their popularity and



hard to use data access.

In order for researchers to draw their own conclusions about social media platforms' content removal practices, they need access to data about what content was actually removed. While there are some platforms that provide this data, such as the Lumen database hosted at Harvard's Berkman Klein Center (Database 2023), social media companies that do not disclose this data make their take-down procedures questionable. In the interest of fairness to social media companies, detecting information operations and putting an end to them is relatively difficult. Millions of tweets, comments, and related content must be manually examined and annotated by expert analysts in order to find biases in newly developing topics in order to identify, eliminate, and prevent online information operations. Of course, there is some research to automatize the process to have better, less biased, and more efficient processes (Toney et al. 2021).

According to Twitter's Platform manipulation and spam policy, "one may not use Twitter's services in a manner intended to artificially amplify or suppress information or engage in behavior that manipulates or disrupts people's experience or platform manipulation defenses on Twitter (Twitter 2023), It also defines platform manipulation as: "using Twitter to engage in bulk, aggressive, or deceptive activity that misleads others and/or disrupts their experience." (Twitter 2023).

According to Twitter, platform manipulation may take many different forms, and our policies are designed to ban a variety of unacceptable activities, Twitter's statement regarding these unacceptable activities are as follows:

**Commercially-motivated spam** which typically aims to drive traffic or attention from a conversation on Twitter to accounts, websites, products, services, or initiatives;

**Inauthentic engagements** that attempt to make accounts or content appear more popular or active than they are;

**Coordinated activity** that attempts to artificially influence conversations through the use of multiple accounts, fake accounts, automation, and/or scripting;

**Coordinated harmful activity** that encourages or promotes behavior which violates the Twitter Rules; and leveraging Twitter's open-source code to circumvent remediation or platform defenses." (Twitter 2023).

Although Twitter argues that they are the only company to offer this level of "granularity and transparency." (*Information Operations - Twitter Transparency Center* 2022), between 2018 and 2021, Twitter publicly disclosed 23 campaigns involving

state-backed operations, which were allegedly linked to information manipulation. Notably, only two out of the 21 countries associated with these campaigns were categorized as "free" according to the Freedom House Index. The remaining 19 countries are labeled to be "not free" or "partly free" as indicated in Table 3.1. Every year, Freedom House releases an international report with a political rights and civil liberties focus. The 10 political rights indicators and 15 civil liberties indicators in the study are given ratings ranging from 0 to 4. The indicators for civil rights include Personal Autonomy and Individual Rights, Associational and Organizational Rights, Rule of Law, and Freedom of Expression and Belief. The electoral process, political plurality and participation, and governmental operation are all examples of political rights indicators. The country or territory is then rated as Free, Partly Free, or Not Free based on the total scores, which are then added and equally weighted. This might suggest that Twitter's state-sponsored information operations are captured more in countries with weak democratic institutions.

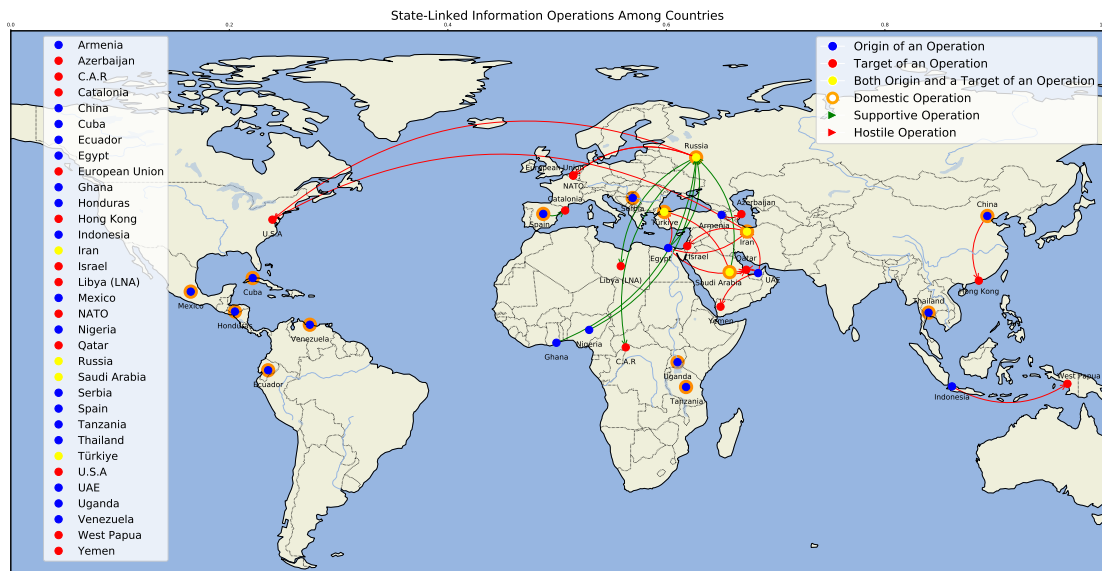
Table 3.1 Freedom house score and status of the countries from Twitter transparency center releases

Country	Freedom House Score	Political Rights	Civil Liberties
Armenia	55 (Partly Free)	22	33
Bangladesh	39 (Partly Free)	15	24
China	9 (Not Free)	-2	11
Cuba	13 (Not Free)	1	12
Ecuador	67 (Partly Free)	27	40
Egypt	18 (Not Free)	6	12
Ghana	82 (Free)	35	47
Honduras	44 (Partly Free)	19	25
Indonesia	59 (Partly Free)	30	29
Iran	16 (Not Free)	6	10
Mexico	61 (Partly Free)	27	34
Nigeria	45 (Partly Free)	21	24
Russia	20 (Not Free)	5	15
Saudi Arabia	7 (Not Free)	1	6
Serbia	64 (Partly Free)	22	42
Spain	90 (Free)	37	53
Tanzania	34 (Partly Free)	12	22
Thailand	30 (Not Free)	5	25
Türkiye	32 (Not Free)	16	16
Uganda	34 (Not Free)	11	23
United Arab Emirates	17 (Not Free)	5	12
Venezuela	14 (Not Free)	1	13

Figure 3.1 illustrates the state-linked information operations based on the disclosed datasets from Twitter's Transparency Center. The accompanying legend provides

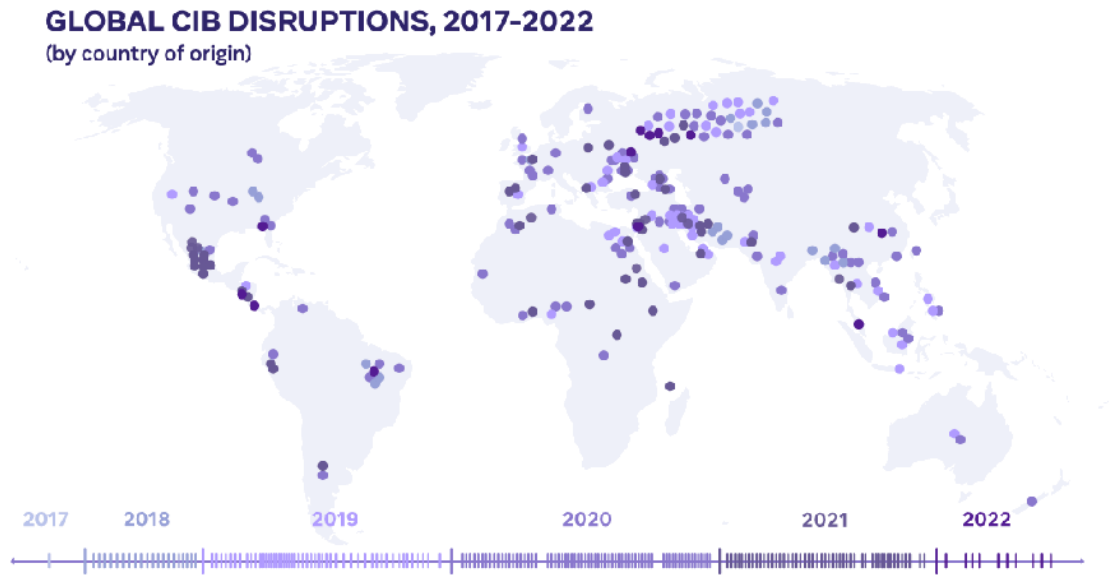
insights into the actors and countries mentioned within these datasets. In the figure, blue nodes represent countries/actors with at least one piece of information originating from them, while red nodes indicate countries/actors that were targeted by information operations. Yellow nodes signify countries/actors that were both targets of information operations and had at least one information operation originating from them. The arrows in the figure indicate the flow of these operations, with the bottom of each arrow indicating the country or actor from which the operation originated, and the arrowhead showing the country/actor that was targeted. The color of the arrows provides additional context: red arrows represent hostile information operations, while green arrows indicate supportive information operations towards the targeted country. Furthermore, nodes encompassed by an orange circle denote instances of domestic information operations. It is important to acknowledge that when referring to countries/actors, we take into account that some operations specifically targeted certain groups within countries. For instance, in December 2021, a Russian information operation criticized the European Union and NATO while praising the Libyan National Army (LNA). Additionally, it is worth noting that the Twitter datasets released between 2018 and 2021 covered certain countries or actors multiple times concerning various operations. For a comprehensive source of detailed information on the datasets released by Twitter’s Transparency Center, please consult the appendix tables A.1 & A.2.

Figure 3.1 Map of state-linked information operations from Twitter Transparency Center



Analysis of general trends in regions reveals several points. The involvement of Russian forces, specifically the Internet Research Agency (IRA) and the Main Directorate of the General Staff of the Armed Forces of the Russian Federation (GRU),

Figure 3.2 Global CIB disruptions by Meta (2023)



in several information operations in Africa. These operations include the creation of accounts in African countries that praise the Russian government's stance on conflicts in Libya and Syria. Twitter has raised suspicions that these accounts are being operated by Russian forces, as they frequently change IP addresses to conceal their origins. Another notable pattern observed on the map is the opposition to independence movements. Spain opposes Catalonia's bid for independence, Indonesia is against West Papua's independence, and China opposes the pro-democracy movement in Hong Kong. In the Americas, information operations are predominantly linked to incumbent parties or presidents, serving as domestic propaganda. These operations either praise the government or criticize opposition actors. In the Middle East, information warfare is prevalent, reflecting the complex dynamics of realpolitik in the region. Accounts originating from Saudi Arabia, the United Arab Emirates, and Egypt are critical of Qatar, Iran, and Türkiye.

To compare briefly, Facebook reported inauthentic behavior in nations with relatively higher Freedom House Index scores as well, according to Threat Report The State of Influence Operations 2017-2022 (Meta 2023). Facebook has identified 150 influence operations that were conducted by commercial entities, unidentified groups, or nation-states. These networks ran in several languages and had origins in more than 50 different nations (Facebook 2022). Figure 3.2 shows the geographical locations of these operations (Meta 2023).

The disparity between companies' determinations of different sets of countries is partly caused by the differences in terms and conditions of the two companies or

their definition of information operations and content moderation transparency reports lack standardization because of the different dynamics and types of services the companies offer. Facebook reports information operations from more countries, but the number of accounts and pages removed is very small compared to Twitter takedowns. Facebook’s policy regarding Coordinated Inauthentic Behavior (CIB) focuses on detecting and removing fake accounts that are used to manipulate public discourse and deceive others about the intentions and identities of the individuals behind them. When investigating and taking action against CIB operations, Facebook prioritizes addressing the behavior rather than the specific content being shared. This approach applies to both domestic and foreign actors. Additionally, Facebook maintains continuous vigilance by employing a combination of automated and manual detection methods to identify and remove accounts and Pages associated with previously dismantled networks by actively monitoring any attempts by previously removed networks to reemerge. Although, Facebook’s ability to proactively detect violations in certain content categories is often high, thanks to the utilization of machine learning technology. However, the reliability of automated tools in different content categories may vary. Generally, automated tools are more effective at removing content that falls into well-defined categories and requires a minimal contextual analysis regarding the specifics of the countries, especially when dealing with vaguely defined categories like misinformation or propaganda, the detection process can be fallible.

### 3.3 Information Operations in Türkiye

On June 12, 2020, Twitter announced the takedown of 7,340 accounts that were tweeted about 37 million times. Twitter attributes the network to the youth wing of the AKP, Türkiye’s ruling party (Grossman, Akis, Alemdaroğlu, Goldstein, Jons-son, Garcia-Camargo, Thiel, and Zaheer 2020). AKP government heavily criticized Twitter’s take-down and accused the social media company of trying to redesign Turkish politics. In a statement over Twitter Türkiye’s Communications Director, Fahrettin Altun stated: <sup>1</sup>

*‘Twitter has announced the overnight suspension of over 7000 accounts from Türkiye. The company’s allegations that those accounts were “fake” profiles designed to support the President and that a central authority single-handedly managed them are untrue. The various documents which Twitter cited to support its decision to*

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<sup>1</sup><https://twitter.com/fahrettinaltun/status/1271415358709211136>

*suspend said accounts are clearly unscientific, utterly biased, and politically motivated. That a US-based company would seek to legitimize its decision with reference to a report which was authored by certain individuals peddling their ideological views as scientific data, is a scandal of historic proportions. The company's decision to take this measure, which was intended to compile a number of unrelated social media accounts under a single category, and its attempt to smear the government of Türkiye and a popular political movement are unacceptable. The government of Türkiye will under no circumstances tolerate any form of forgery, manipulation, or disinformation and it will continue to work to promote the truth, free-thinking, and digital awareness at home and all around the World.”*

In light of this dispute between the Turkish government and Twitter, we analyzed the disclosed accounts provided by Twitter, using these accounts as a starting point, we explore the following research questions in this work:

- 1) Is the Twitter takedown of accounts originating from Türkiye biased against groups other than the ruling party?
- 2) What were the elements of the takedown and what type of content has been reflected in the accounts that Twitter has blocked?

This chapter takes Türkiye as a case study. The importance of social media will be thoroughly examined in the context of Türkiye, followed by a deeper look into its broad acceptance and common usage in the region. Türkiye will be assessed as a useful case study to highlight the significance of social media research findings will be presented.

### **3.3.1 Mass Media in Türkiye**

A free press is a vital constituent in all democracies as it helps to provide accountability and reassures a healthy public debate, however, Türkiye's commitment to democratic principles is facing challenges as the country ranked as “not free” in Freedom House's Global Freedom in the World index since 2013 (House 2023). Significantly, the repercussions following the failed coup attempt have been instrumental in the decline of media freedom. According to Reporters Without Borders, since 2017, much of the Turkish public has turned to independent outlets that are critical of the government or international independent media outlets in order to be informed about political and economic news, as %90 of the national media is under the control of the government (Borders 2023b) Türkiye's democratic downfall has been acknowledged in the literature by many (Esen and Gumuscu 2016; Tansel 2018;

Taş 2015; Yılmaz and Turner 2019). The democratic regression witnessed during the AKP government's tenure can be characterized as exhibiting features of a competitive authoritarian system (Esen and Gumuscu 2016). Türkiye no longer meets the minimum criteria for democracy outlined by Dahl as one of these normative criteria for a functioning democracy is enlightened understanding, where all members of the society must have equal rights and opportunities to be informed about the consequences and alternatives of a proposition regarding a policy (Dahl 2020). This duty has been carried out by the media as the main source of information as mass media play an indispensable role in the formation of public knowledge. However, media, whether managed through state apparatus or through private companies, is prone to biases, manipulations, and viral marketing by third parties. Therefore, media control stands out as an important apparatus for authoritarian regimes to bolster the legitimacy and sustain the stability of the regime in an authoritarian context where the surveillance of the subjects is a fundamental objective for the regime. The situation of media in Türkiye is no different. Throughout the years, the incumbent Adalet ve Kalkınma Partisi (AKP) used various methods to capture and reshape the media environment by creating its own private media, forcing media organizations through financial sanctions, intimidating and criminalizing journalists (Coşkun 2020). As a reflection of these dynamics, AKP spent considerable effort until 2015 to streamline the mainstream media while building a pro-government media bloc (Barrie and Siegel 2021*b*), the government and acquiescent media conglomerates, have been increasingly controlling media via political and financial pressure (Tufekci 2014). The state-owned Turkish Radio and Television (TRT) station became a hub of domestic government propaganda and has been tightly regulated by the ruling party. TRT allocated significantly less screening time for the opposition parties during the 2015 elections and served predominantly negative news about the opposition prior to the 2019 elections, violating its principle of neutrality (for Security and operation in Europe 2011; Reporters Without Borders Year Retrieved). In parallel TRT World, which has been founded in 2015, to provide impartial coverage of global news and serve as a public diplomacy tool for Türkiye, shifted its fashion to become the AKP's voice to the world (Elswah and Howard 2021; O'Sullivan and Benitez 2014). Many authoritarian regimes have acknowledged the crucial role of media in the formation of public knowledge, however, instead of creating their own TV channels or newspapers to establish direct control over the media, they also tolerate and support private media by preventing them to publish critical news and content restrictions. Radio and Television Supreme Council (RTUK) is the responsible authority for inspecting Radio and Television broadcasts which fines any deemed violations. Over the years, through RTUK, private media channels have been fined and penalized for government-critical content (Corke et al. 2014). AKP government

has also consolidated its control over private media companies through intimidation, buy-offs, and mass firings. The media landscape in Türkiye is heavily influenced by media moguls who possess diverse financial and political interests across various sectors. This intertwining of interests facilitates the transition process, allowing media channels supportive of the AKP to secure the majority of advertising funds from public banks Gazete Duvar (2023). Several media companies have been pressured to be sold to businessmen who have close ties with the AKP government (Monitor 2021). These companies include very well-circulated and established companies with various TV channels, radio stations, and newspapers. Journalists are also faced with financial and political pressures. AKP government has applied legal measures against journalists including lawsuits (Esen and Gumuscu 2016). “It is indicated that between 2003 and 2015 63 journalists have been sentenced to a total of 32 years in prison, with collective fines of 128,000 USD, excluding the fines charged to newspapers and journalists (BBC 2015). After the coup attempt in 2016, individual legal cases under the Turkish penal code Article 301 (which criminalized denigrating “Turkishness” and Turkish government institutions) and Anti-terror laws have been put in use against, critics of the AKP which includes journalists. AKP leader Erdoğan also publicly criticized journalists, which were later sacked by their companies (Esen and Gumuscu 2016). According to the Committee to Protect Journalists Türkiye has the second-highest jailer of journalists in the world after China (Journalists 2019). Several interviews with reporters showed that reporters who still hold their jobs admit to self-censorship to ensure they remain at their jobs (Corke et al. 2014; Coşkun 2020). One of the most important inferences made from these scenarios is the widespread dismissal of journalists and reporters from mainstream media leave the platforms with a very limited number of moderate voices which paves the way for a polarized media environment with fewer alternatives and two blocs consisting of the pro-regime supporters and the “others”. In short, press freedom and the public’s right to be informed are dangerously harmed by the Turkish media ecosystem as it has been seized (Coşkun 2020). Correspondingly, citizens that want to be informed about the news turned to social media platforms, especially Twitter and Facebook.

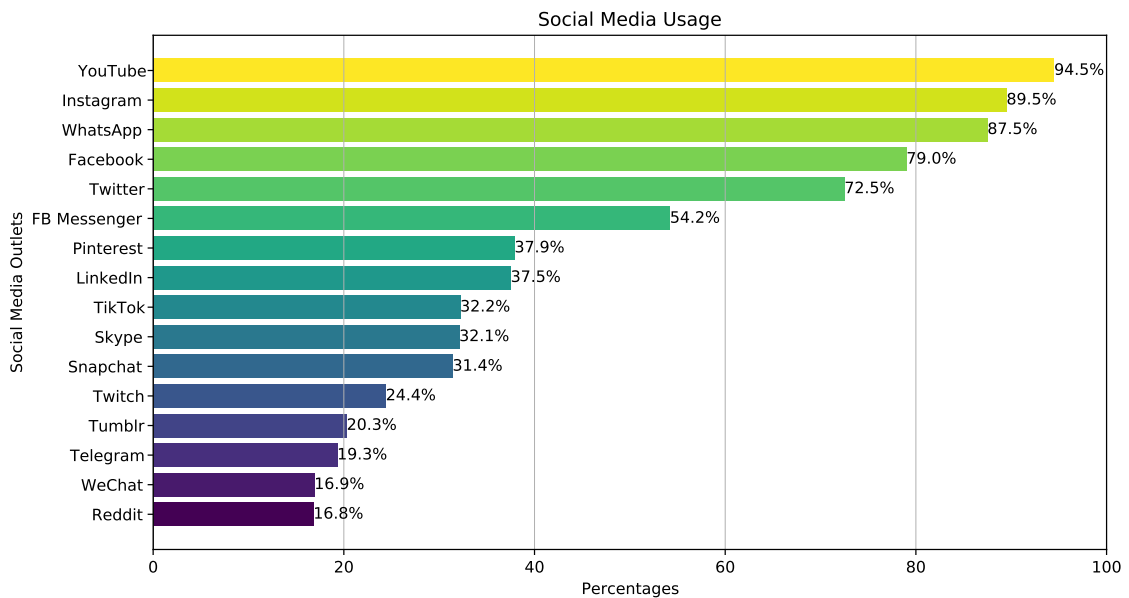
### **3.3.2 Internet and Social Media in Türkiye**

In Türkiye, there are 69.80 million active internet users, indicating an internet penetration rate of 82.0 percent as of the beginning of 2022, considering the total population. Moreover, it is noteworthy that the number of internet users in Türkiye has risen by 3.9 million, representing a significant 6.0-point increase between 2021 and



2022 (DataReportal 2022). Türkiye, in online social media networks, ranks as the 4th largest in global usage of Facebook and 8th largest for Twitter for per capita use. These rankings have made social media a powerful rival to Türkiye’s mainstream media. 60 million people in Türkiye are social media users (about 70.8% of the total population). Figure 3.3 shows the allocation of social media use for each platform. The Top 5 most used social media platforms in Türkiye are YouTube (94.5%), Instagram (89.5%), Whatsapp (87.5 %), Facebook (79 %), and Twitter (72.5%). Scholarly research on Facebook and Twitter is more common, as these platforms provide researchers with well-documented transparency reports, easy-to-use APIs, and other developmental tools that ease data collection processes (Allcott and Gentzkow 2017).

Figure 3.3 Allocation of social media use in Türkiye



The political conversation in Türkiye is mostly built upon Facebook and Twitter, as these platforms allow users to engage with other users more frequently, with the option of sharing only textual content, which is not offered on media content-focused platforms such as YouTube, TikTok, and Instagram. Currently, there are 57 million Facebook users in Türkiye (Group 2023), with a penetration equal to 79% of the population. Facebook’s ad reach in Türkiye was equivalent to 49.2% of the local internet users (DataReportal 2022). Facebook is a widely used platform in Türkiye where the political conversation about the country’s agenda is vivid, especially among the “groups”, which is a feature where Facebook allows its users to create a page for an organization or business and promote activities. As a result of its extensive usage, in recent years for political and social expression in Türkiye, Twitter is a contentious but hugely popular social media platform. Although it is

hard to detect how many unique users are on the platform, Twitter remains a widely used significant social media platform. As it serves as a medium where government officials, institutions, and voters can interact with one another, learn about the latest policy announcements, and engage in political conversation it attracts the attention of the users who wish to be informed. Although highly popular in Türkiye, the AKP government holds no brief for an uncontrolled social media environment. AKP received much domestic and international criticism for tight control of the internet caused by blocking, censorship, and closures.

The rise in the number of internet users and traffic has raised concerns about on-line crimes. The Turkish Internet law is in force by Law No. 5651, “Regulation of Publications on the Internet and Suppression of Crimes Committed by Means of Such Publication” which was enacted in 2007 with the goal of preventing Internet-related crimes. The scope of Law no.5651 includes crimes including, “pornography, child abuse, gambling, obscenity, promoting, and providing illegal drugs and also, crimes against Mustafa Kemal Atatürk, the founder, and the first president of the Republic of Turkish Republic on the internet (Yunus 2013). The websites covering above mentioned or related content is prevented from access or completely shut down by the authorities. Orders to block websites that are violating the terms can be issued by courts and public prosecutors. The Telecommunications Communication Presidency (TIB) is in charge of carrying blocking orders and surveillance of internet-related content. Law No.5651 was used as a basis for shutdowns and restricting access to many websites. Authorities in Türkiye blocked access to YouTube and Google Groups for a period, citing this law as the reason for blockings therefore Law No.5651 presents a foundation for Türkiye’s headway to countries with internet censorship. In March 2010, Reporters without Borders added Türkiye to the list of under-surveillance countries (Borders 2023a). The exact number of websites that have been closed or blocked by the government has not been declared by the Turkish authorities, however, it is assumed that more than 400.000 websites are blocked in Türkiye between 2016 and 2020, due to covering contents mentioned in the Law no. 5651 (for Freedom 2023). However, numerous contentious and arbitrary closures were carried out with the legislation cited as the justification. Numerous international social media platforms that host significant amounts of user-generated content including YouTube, Twitter, Blogspot, WordPress, Vimeo, and Google Groups occasionally blocked, even though a very limited volume of the material was violating the regulations (Watch 2014). These actions have repeatedly drawn criticism from throughout the world. Organization for Security and Co-operation in Europe, the Council of Europe’s human rights commissioner, and the UN special rapporteur on freedom of opinion expressed their concerns about the freedom of expression in

Türkiye. The European Commission stated that “Frequent website bans are a cause for serious concern and there is a need to revise the law on the Internet (European 2013). Additionally, independent individuals have filed private applications to the European Court of Human Rights to trial the government ban on YouTube, Google Sites, and other websites (Gurkaynak, Yılmaz, and Durlu Gürzumar 2014). The European Court of Human Rights ruled that Internet Law 5651 is vague and does not sufficiently prevent arbitrary bans and blocks (Commission 2016). As of late 2016, Turkish authorities blocked more than a hundred thousand sites (Saka 2019). Temporary blocking included major sites like Twitter, Facebook, YouTube, and Wikipedia as of 2018, which re-opened to access in late 2020. An amendment made to Internet Law in 2014 set the ground for more government control over the Internet by reasoned blockings without a court order (Akgül and Kırıldıođ 2015). After the amendment, Freedom House classified Türkiye as “not free” in Internet communications in its Freedom of the Net Report (Corke et al. 2014). The use of social media during the Gezi Parkı protest between 2013 and 2014 was also a big turning point in terms of restrictions both in social media and in mass media. The intensive use of social media and alleged efforts of mobilization via online platforms became excuses for extensive censorship (Ogan and Varol 2017). Internet trolls, along with judicial processes and a hostile online environment, often prove intimidating factors for many users, resulting in self-censorship.

The new social media laws in Türkiye become effective in October 2020. The law indicated that platforms must design themselves as local legal entities that are susceptible to judicial penalties for failing to abide by court orders to delete content and further administrative sanctions. Furthermore, social media companies must appoint a Turkish citizen as the firm’s in-country representative. The law made it harder for social media companies to refuse demands from the Turkish government that aim to further suppress independent journalism, contrasting voices, and freedom of expression. While the majority of businesses have subsequently become legal entities for tax purposes, several companies have pledged that their content control procedures won’t be changed. In 2022, the new “Disinformation Law” which set forth new amendments to the existing Press Law is brought up to the Turkish Grand National Assembly. The new law aims to regulate digital platforms and limit the spread of disinformation. However, the wording of the articles is vaguely structured and yet again, presents the justification for arbitrary imprisonment of up to 3 years.

The restrictions, bans, and the controlled ecosystem of mass media channels encouraged Turkish citizens to alternative information sources. The easily accessible spaces on the internet and especially social media platforms became hubs for Turkish peo-

ple who require reliable information. Additionally, citizen journalism has emerged as a significant trend, empowering ordinary citizens to actively participate in the gathering, evaluation, and dissemination of information supported by compelling evidence such as street-level videos or photos (Bowman and Willis 2003). Citizen journalism is exciting because it enables social media users to easily and rapidly access recent events and provide a different point of view as the person disseminating the information, footage or video is not well known and it often helps raise public awareness. One of the milestones in this context is the Gezi Park protests. Due to heavy censorship in the mainstream media, the Gezi Park protests in 2013 drove Turkish residents to Twitter as their main news source and platform for political conversation and organization (Karatas and Saka 2017; Yilmaz and Turner 2019). Feeling the need to control the public conversation, allegedly an army of 6,000 young AKP members was funded, enlisted, and trained in response to produce and spread pro-government content on social media (Albayrak and Parkinson 2013; Saka 2018). These groups, often regarded as “Ak Trolls”, are known to use social media platforms to spread pro-government ideals through content creation, deliberate sharing, re-posting, and disseminating messages in large volumes (Albayrak and Parkinson 2013; Saka 2018). Apart from their untiring efforts of advocating for Erdoğan, the opposition political parties, particularly the People’s Republican Party (CHP) and the People’s Democratic Party (HDP), are consistently criticized and demonized by them, and journalists who criticize the government are systematically attacked (Grossman, Akis, Alemdaroğlu, Goldstein, Jonsson, Garcia-Camargo, Thiel, and Zaheer 2020; Karatas and Saka 2017; Saka 2018).

As a result, Turkey presents an intriguing case for examining information operations, misinformation, and disinformation. The complex political landscape, the state of democracy and civil rights, as well as the media landscape, all play significant roles in shaping the information ecosystem. Factors such as democratic backsliding, extensive control over mainstream media, and the shrinking public sphere have contributed to the widespread usage of social media and the heavy reliance of the Turkish public on digital platforms for information during periods of protests. Turkish governments dispute with Twitter also enable us to have a test on whether the government of türkiye tries to manipulate public opinion in the social media realm and if so how successful is twitter, a us based company, while trying to detect this. The ongoing dispute between the Turkish government and Twitter provides a unique opportunity to explore the potential manipulation of public opinion in the social media sphere. This situation allows us to examine whether the government of Turkey engages in such practices and, if so, how successful Twitter, being a US-based company, is in detecting and addressing such efforts. This situation offers a valu-

able opportunity to gain insights into both social media neutrality and information operations simultaneously.

## 4. METHODOLOGY

### 4.1 Research Design

As quantifying the amount, rate, and volume of misinformation on social media platforms is not feasible, the research is focused on Twitter, which is a widely used source of information as Türkiye ranks number six in the world overall in active Twitter users (DataReportal 2022). While Facebook, Instagram, YouTube, and Reddit are also popular social media platforms where the public can be informed about the news in Türkiye, Twitter stands out by design as a platform that emphasizes the rapid sharing of real-time information. In terms of researching information and consequently online propaganda, Twitter offers several advantages:

**User Verification:** Twitter’s use by public figures and organizations, combined with its verification program called “Twitter Blue” provides users with a sense of trust in the information they are receiving. Verified accounts on Twitter are assigned a blue check mark, indicating that the account belongs to a public figure, organization, or notable individual. Verified accounts often include journalists who are by profession more likely to cross-reference and fact-check the news before their announcements, experts that have exclusive opinions on the topics, government institutions where they share official announcements with the broader public, and other authoritative figures who can provide reliable insights and data. Therefore the verification system helps researchers assess the credibility of sources and information, which includes verifying the identity and authenticity of the account holder. **Data validation:** cross-reference information from verified accounts with other sources to verify the accuracy of data and claims enhances the quality and depth of research. This process of verification helps researchers in locating and ranking reliable information sources. Also, Twitter has become a preferred platform for policymakers, government institutions, and private companies to engage with the public via their verified accounts, supplementing traditional modes of communication such as TV

and websites for announcements. This interactive engagement allows authorities to disseminate real-time information to the public and allows the public to respond and engage with the authorities in return.

**Public content and amplification dynamics:** The majority of Twitter’s content is accessible to the general public. This makes it possible for researchers to compile and examine a sizable amount of information about propaganda. Tracking the propagation of information over time is made simpler by the ability to search and retrieve tweets through Twitter’s Application Programming Interfaces (APIs). These APIs give researchers the chance to gather big data sets, carry out longitudinal studies, and use computational techniques to efficiently discover and evaluate trends. Before Elon Musk’s takeover of Twitter, APIs were granted for public use through public APIs and academy staff with academic APIs. However, after the takeover, it is allegedly stated that API access might come with a cost (Porter 2023). Despite Elon Musk’s statements of making Twitter’s API more open and accessible (Stringer and Alyssa 2023). Therefore, Twitter still presents a practical and cost-effective approach for researchers.

Moreover, Twitter’s retweet and quote tweet features facilitate the rapid spread of information, including misinformation and online propaganda which is particularly true when the propaganda is presented in a way that is designed to be emotionally resonant (Ferrara and Yang 2015). Researchers can analyze patterns of amplification and identify influential users to understand whether the topic is over-amplified through artificial means, or it grew up to be organic. This helps in understanding the mechanisms through which misinformation and propaganda gain traction and reaches a wider audience. Through network science, by examining user interactions, analyzing retweet networks, or identifying clusters of accounts, researchers are able to identify patterns and structures inside the network that encourage the spread of information. Researchers may also learn how people respond to erroneous information, whether they reject it or support it, and the elements that influence this interaction by looking at comments, likes, and retweets. All these publicly available features are designed in an easy and quick fashion for people to use them.

**Real-time monitoring:** Researchers can keep an eye on the process of dissemination of information as it happens thanks to Twitter’s real-time functionality. Researchers may learn how disinformation spreads, identify prominent individuals, and comprehend the strategies employed by analyzing pertinent hashtags, phrases, or user accounts. Retweets, quote tweets, and hashtags are useful tools that let academics focus their analysis on a particular subject.

**Collaboration and community:** Twitter is a platform where researchers, jour-

nalists, and experts actively engage in discussions. Researchers can connect with other scholars, share insights, and collaborate on projects, which helps in advancing research on social media platforms. According to a 2020 Pew Research Center research, 69% of journalists claim they use Twitter for work, making it the most popular social media network for journalists followed by Facebook 52%, Instagram 19%, LinkedIn 17%, and YouTube 14% (Center 2021). Twitter is used in academics to interact with people, communicate real-time information, and gather information (Ferrara and Yang 2015). By considering these platform differences researchers can leverage Twitter’s unique features to gain valuable insights into the phenomenon of online propaganda.

To uncover the information operations associated with Twitter accounts linked to the Turkish government, a comprehensive analysis of descriptive statistics will be conducted. This analysis will provide insights into the overall content shared by these accounts, including top hashtags, mentions, and applications. By examining networks formed through hashtags and mentions through their co-occurrences in a given tweet by using networkx package available in Python coding language. I have also conducted sentiment analysis through Zemberek Turkish NLP package, again available in Python coding language to understand the sentiments towards actors and individuals. In this context, I will identify the networks and perform community detection and illustrate them by using Gephi, an open-source network analysis and visualization software. Moreover, potential astroturfing operations will be examined to identify any coordinated attempts to manipulate public opinion. This will involve scrutinizing the authenticity and patterns of post-sharing among these accounts and the applications that have been utilized, and the content they have shared regarding a specific policy demand. Lastly, the key findings of this research will be presented, shedding light on the extent and impact of the information operations.

## 4.2 Dataset Description

Our data comes from Twitter Transparency Center’s information operations archive. Twitter launched its first archive in October 2018 on potential information operations that are detected on the platform (*Information Operations - Twitter Transparency Center* 2022). In line with Twitter’s principles of transparency, these archives are made available for the research community to investigate and build media literacy capacities for the future. The archives consisted of Tweets, media content, and other metadata information on users supposedly involved in, as referred

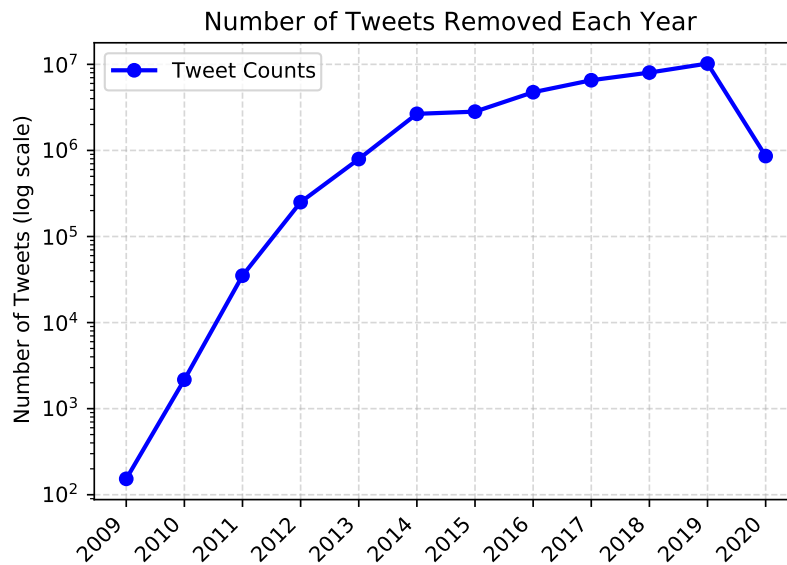


to by Twitter, “inauthentic influence campaigns” (Gadde and Roth 2018; *Information Operations - Twitter Transparency Center* 2022). These inauthentic influence campaigns also include attempts to manipulate the public conversation and elections on Twitter by “foreign or domestic state-linked entities” (*Information Operations - Twitter Transparency Center* 2022). Starting from 2018, Twitter expanded and updated these datasets over the years and at the time of writing this thesis, the last dataset that Twitter has released is dated December 2021 (Gadde and Roth 2018; Twitter 2022).

There are several important research that conducted through these datasets, after the disclosure of the datasets taken down by Twitter, Stanford Internet Observatory has published reports on Türkiye (Grossman, Akis, Alemdaroğlu, Goldstein, Jonsson, Garcia-Camargo, Thiel, and Zaheer 2020), China (Miller et al. 2020), and Russia (Observatory 2020). In China, inauthentic accounts on Twitter were used to spread pro-China narratives about COVID-19 while criticizing Hong Kong. In Russia, the propagation of pro-Kremlin, anti-opposition, and anti-Western propaganda took place. The tweets were mostly aimed at boosting pro-government activities, supporting President Vladimir Putin and his party, United Russia, and demonizing the opposition (Observatory 2020). Another study by Merhi, Rajtmajer, and Lee (2023), investigated AKP-linked operations on Twitter after a takedown in June 2020 and collected live accounts that appeared to be part of the same network and found that only 30% of them had been suspended by Twitter since their collection. The research emphasized the fundamental characteristic of the Operations in Türkiye that the networks easily create free accounts for the continuation of the network and signal the new accounts to the existing network(s), which separates the information operations in Türkiye from the ones of China and Russia. Finally, extensive research by Wang et al. (2023) demonstrates through two case studies between Cuba and Venezuela and Russia and Iran, that different state-sponsored information operations coordinate with each other. Research also states that thirteen different countries in the dataset intentionally and strategically interacted with each other, separate from their own internal operations. In Saudi Arabia, major activities taking place on Twitter were linked to a very small number of individuals which were later disclosed (Barrie and Siegel 2021a). The dataset still contains numerous unexplored aspects, and we firmly believe that through collaborative efforts between independent researchers and Twitter, it will continue to unveil valuable insights about information operations in the future. Lastly, this dataset lends itself well to further analysis and exploration.

The dataset used in the research only encapsulates the information operation attributed to the government of Türkiye on June 12, 2020, (Twitter 2020) and all the

Figure 4.1 Number of tweets by year 2009-2020



data used in this research is available at the Twitter Transparency Center <sup>1</sup>. The data comprises 16 datasets, each corresponding to a specific date range of posts. These datasets span from the year 2009 to 2015, with new datasets issued annually. From 2016 to 2020, datasets were released over a 6-month period, where the last dataset covers tweets from the first half of 2020. The take-down dataset contains 7,340 users, 6,270 of whom tweeted at least once. These accounts tweeted a total of 36,948,536 times, with the first tweet occurring on June 4, 2009 and the last on April 21, 2020. The dataset covers 27,522,156 retweets and 9,426,380 original tweets, for a retweet percentage of around 75%. Each tweet is identified by a unique tweet ID, and users are identified by user IDs (which are anonymized for users with fewer than 5,000 followers at the time of suspension). The user display name and user screen name are provided, which are the same as the user ID for anonymized users. Additionally, there is a user-reported location, profile description, profile URL, follower count, and following count for each user. The account creation date and account language (chosen by the user) are also recorded. The tweet language, tweet text, and tweet time (in UTC) are provided. The client app name used to publish the tweet is specified, and for replies and quotes, the original tweet's user ID and tweet ID are included. For retweets, the original tweet's user ID and tweet ID are provided as well. If available, the latitude and longitude of a geo-located tweet are given. The tweet's interaction metrics, such as quote count, reply count, like count, and retweet count, are recorded. The tweet may also contain hashtags, URLs, and user mentions (including anonymized user IDs). Figure 4.1 shows the

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<sup>1</sup><https://transparency.twitter.com/en/reports/moderation-research.html>

number of tweets that have been removed from the platform due to their attribution to the information operation. Due to significant fluctuations in the annual removal of tweets, it is crucial to acknowledge that the overall findings are likely to be more indicative of events occurring during the years with the highest volume of tweets<sup>2</sup>.

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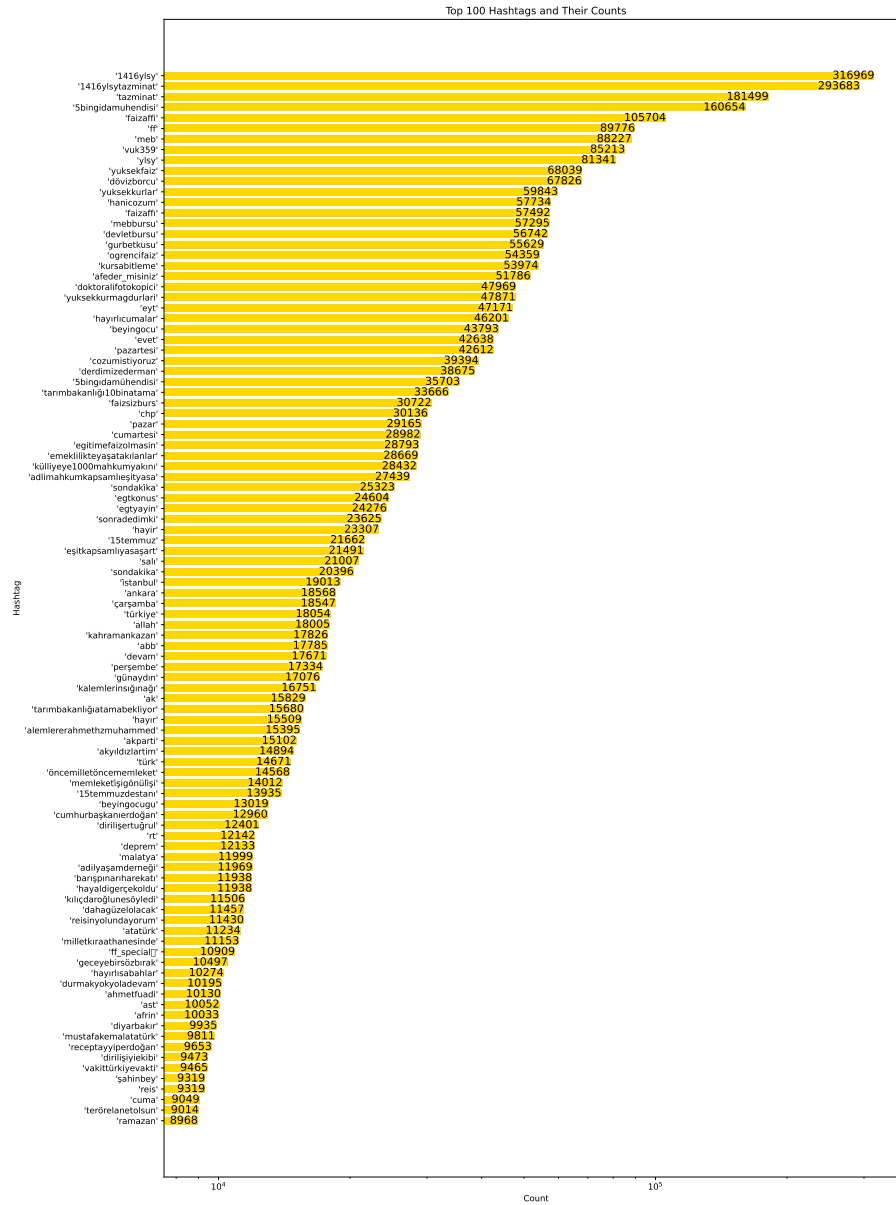
<sup>2</sup>All the supplementary material for this thesis can be found at: <https://github.com/UmutDuygu/Thesis-M.A>

## 5. ANALYSIS AND KEY FINDINGS

Figure 5.1 presents the most frequently used hashtags in the dataset along with the corresponding tweet counts. In the initial third of the dataset, there is a predominant focus on government policies, with individuals expressing their opinions and concerns. The top hashtag, “#1416ylsy”, pertains to Law 1416, which allows personnel to study abroad. YLSY (Selection and Placement of Candidates to be Sent Abroad for Graduate Studies) students are sent abroad with official scholarships granted by the Ministry of National Education in order to meet the specialized personnel needs of state institutions. The announcement, which was first posted on the Ministry’s website (and then removed) stated that the Ministry of Finance cannot cover the debt incurred by students who cannot complete their doctoral education abroad with compulsory service and that the doctoral expenses must be repaid with interest. Therefore the hashtag serves as a means to raise awareness about the significant debt incurred through loans in foreign currencies, coupled with the depreciation of the Turkish lira. At first glance, it appears to be an organized campaign because its frequency is highest among many general topics. Related hashtags include “#yuksefaiz” (high interest), “#faizaffi” (interest amnesty), and “#faizsizburs” (interest-free scholarships) which are also aimed at influencing policy making. Additionally, the hashtags “#emeklilikteyaşatakılanlar”, “#eyt” represents individuals affected by the delayed pension age. As per the 2019 report compiled by the Social Security Board, there is an estimated population of around 6.3 million individuals in the country who are unable to retire due to age limitations. In simpler terms, the group referred to as “EYT” comprises individuals who fail to meet the age criteria despite fulfilling other retirement requirements. This has been known to be an essential topic by many, which were often found a voice by the public and unions. Prior to the 2023 General Elections, a bill has been approved by the Turkish Parliament, fulfilling one of the primary election promises of the AKP allowing millions of people to retire. It is important to note that certain hashtags and policy demands have had repercussions on the government, regardless of whether Twitter played a role in the policy-making process. These hashtags and demands serve as

expressions of public calls for specific laws and policies.

Figure 5.1 Top 100 hashtags from disclosed accounts 2009-2020



Another hashtag with a high count is “#ff” which is the abbreviation for “follow for follow”. The hashtag “#ff” is often employed by users aiming to boost their follower count by following other accounts, creating a false perception of popularity. Additionally, when combined with other hashtags, the “#ff” hashtag can be utilized to make a topic or tweet stand out more prominently in hashtag feeds. Among the rest of the top 50 hashtags, there are a few political references such as “#chp” (an abbreviation for the main opposition party, Cumhuriyet Halk Partisi), “#akp” (referring to the incumbent party led by Recep Tayyip Erdoğan), as well as variations like “#ak”, “#akparti” or “#akp”. Other political hashtags include “#15temmuz” and “#15temmuzdestani”, which commemorate the coup attempt in Türkiye on

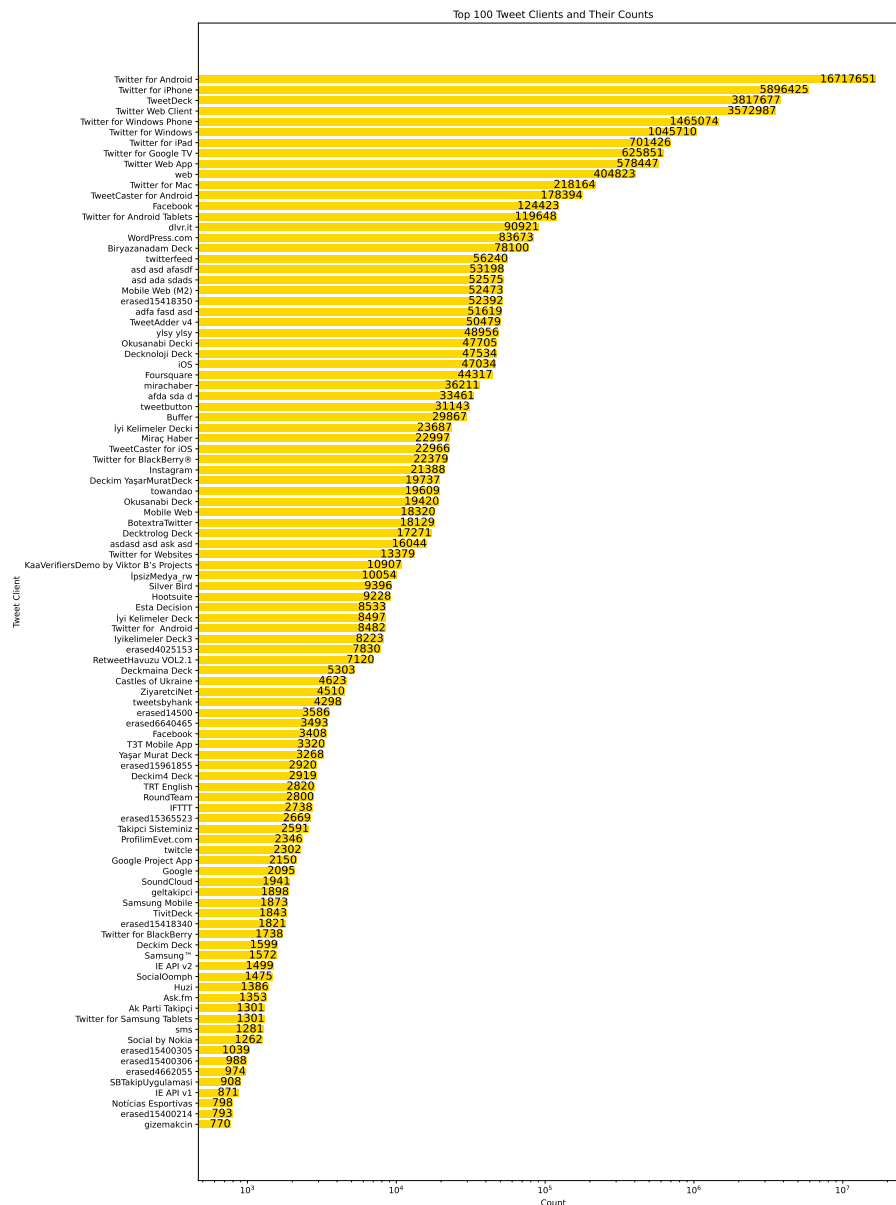
July 15, 2016. The final portion of the third group contains additional political content, including “#atatürk” and “#mustafakemalatatürk”, which mentions the founder of the Turkish Republic, Mustafa Kemal Atatürk. References to the current President of Türkiye, Recep Tayyip Erdoğan, can be found through hashtags such as “#cumhurbaşkanıerdoğan”, “#reis” and “#receptayyiperdoğan”. Slogans associated with the AKP party include “#memleketişigönülüşi” (the nation’s matter is a matter of the heart) and “#öncemilletöncememleket” (the people first, the country first). It is also the name of the music album published by AKP, featuring songs that were prominently used by AKP during election campaigns, and played on propaganda kiosks, buses, TVs, and radios. Other important hashtags are related to cross-border operations conducted by the Turkish Armed Forces in Syria, such as “#afirin” a town in Aleppo, Syria, and one of the targets of the cross-border military operations conducted by Turkish Armed Forces, and “#barışpınariharekatı” operation peace spring, which is another cross border operation conducted in 2019, the tweets from these operations mainly indicate the support and good wishes for the soldiers who are on the battlefield. Lastly, there are many hashtags indicating the days of the week, “#salı”(Tuesday) and “#cuma”(Friday), the name of cities in Türkiye “#malatya”, and “#diyarbakır”.

I conducted a thorough analysis of the sources of tweets depicted in Figure 5.2, revealing the various apps, platforms, or websites through which the tweets were shared. To provide a comprehensive overview, the application usage metric employs a logarithmic scale, indicating the number of tweets posted through each relevant app, as displayed at the top of the respective boxes. Among the prominent sources of tweet, sharing are widely used mainstream apps like “Twitter for Android” and “Twitter for iPhone”, as well as other devices capable of accessing Twitter.

However, our investigation also uncovered the presence of apps with obscure names, such as “#adfa fasd asd”. Additionally, I encountered instances of apps that had been removed by Twitter for reasons unknown, like “erased15418350”. Moreover, certain apps seemed to be designed with the intention of amassing new followers, as exemplified by “Ak Parti Takipçi” and “Gardaş Gardaş Takipleşiyoruz”. Given the arbitrary nature of these apps, our preliminary inference suggests that they may be employed by third parties to disseminate content via tweets without the account owners’ awareness or consent.

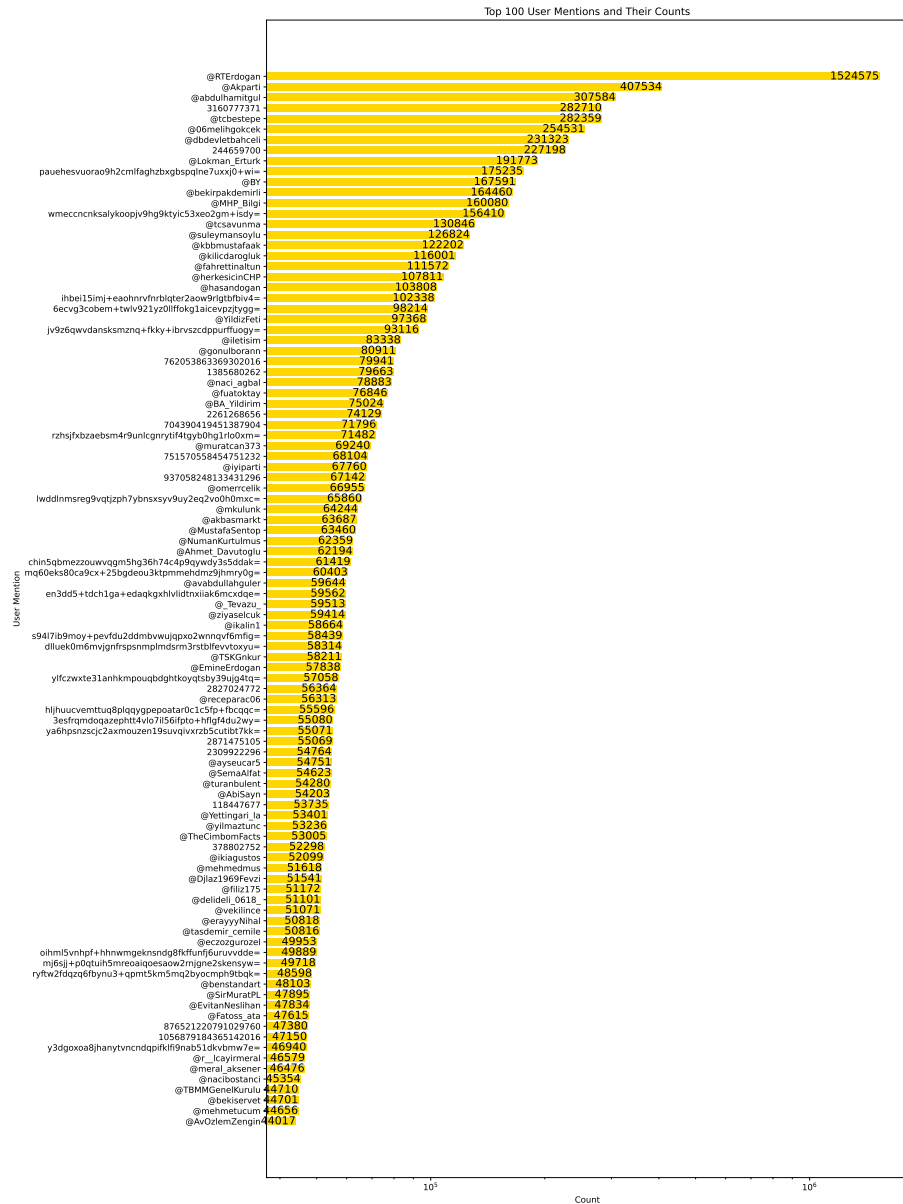
Table 5.3 shows the top users that have been mentioned by removed users, excluding the hashed accounts. Twitter employs an automatic hashing process for accounts with less than 5000 followers, which means we don’t have specific information about those hashed accounts. The table consists of three elements: 1- Twitter handles of

Figure 5.2 Top 100 web clients (applications) 2009-2020



the users still active on Twitter, 2- user IDs of accounts that have been removed by Twitter, either due to their involvement in information operations or other reasons, and 3-hashed accounts Hashed accounts whose activity cannot be determined. Many of the accounts with the highest number of mentions on Twitter are still active, although around %10 of them have been removed from the platform. The Twitter account of President Recep Tayyip Erdoğan holds the top position mentioning graph. Additionally, the top 10 accounts are primarily related to the AKP and its Peoples' Alliance partner MHP (Milliyetçi Hareket Partisi). These accounts include official party accounts, AKP affiliated accounts, ministers, ministries, MPs, government departments, and prominent figures such as Süleyman Soylu (former Minister of Internal Affairs), Ziya Selçuk (former Minister of Education) and Numan Kurtulmuş

Figure 5.3 Top 100 user mentions 2009-2020

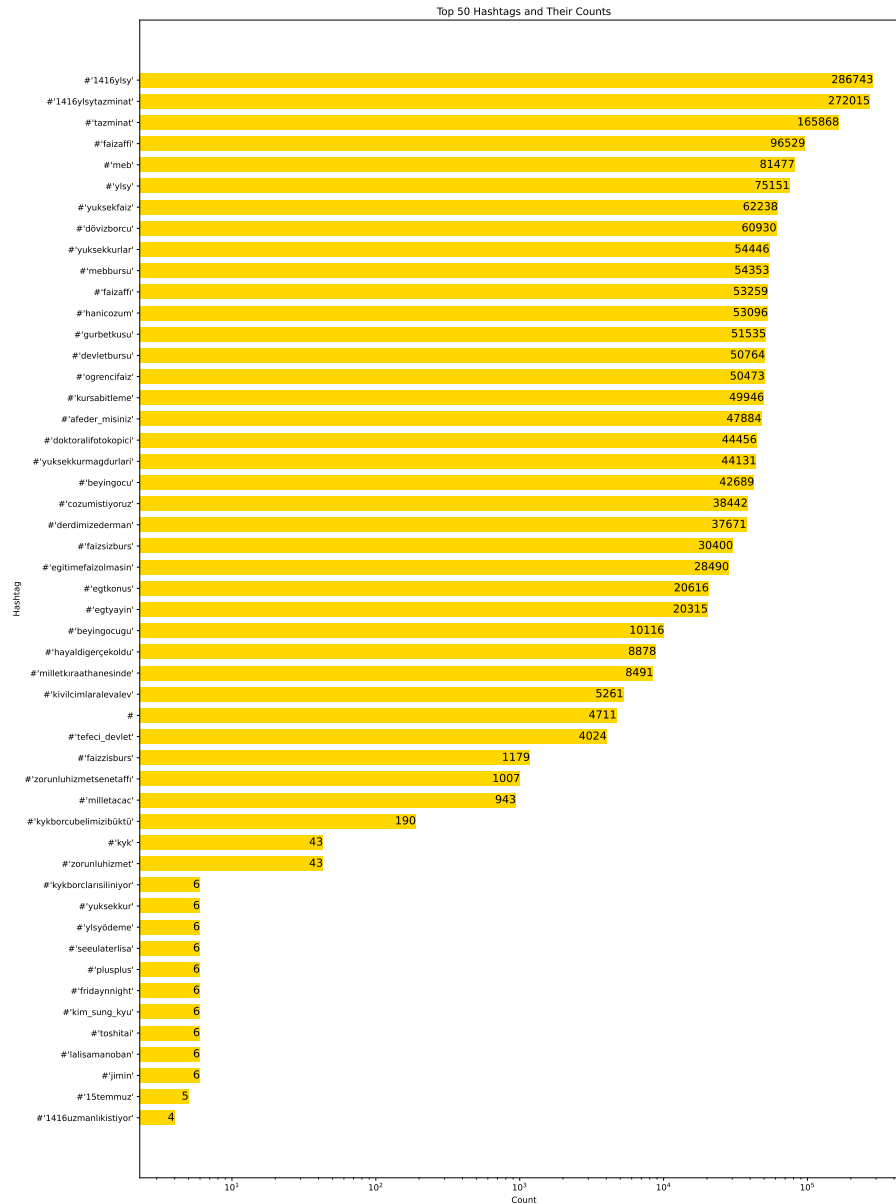


(President of the Turkish Grand National Assembly).

Other notable accounts mentioned Muharrem İnce, the presidential candidate of the main opposition in 2018 and former parliamentarian; Kemal Kılıçdaroğlu, the head of the main opposition party, İYİ Party, and Meral Akşener, the leader of another opposition party. Alongside these accounts, there are also numerous “micro-influencers” on Twitter, characterized by follower counts ranging from 1000 to 100.000 and “macro-influencers”. with a follow count of 100.000 to 1 million. These influencers exhibit diverse aims and content, as reflected in their profile descriptions and tweet content. While some influencers are producing and/or disseminating pro-government content (Figure B.2, Figure B.1), some others are opposition supporters (Figure B.5, Figure B.6). There are also non-political accounts that produce non-



Figure 5.4 Hashtag names and counts from 7 suspicious accounts



political content (Figure B.7).

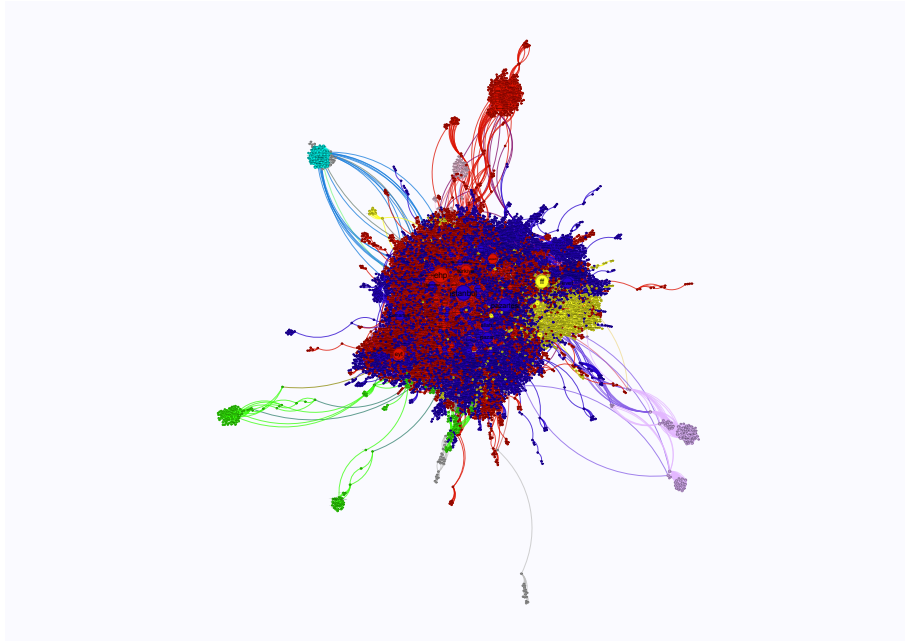
The analysis of the top 100 hashtags indicates a substantial presence of tweets advocating for policy change from the government. Hashtags reveal that around one-third of the hashtags include a policy demand, these include individuals affected by the delayed pension age, Article 359 which mandates prison terms for discrepancies in bookkeeping, students indicating problems about their scholarship, and demanding acquitted debt, relatives of convicted felons, food engineers demanding the occupational assignment from the Ministry of Agriculture, and other several other requests from Ministry of education primarily about the Law.1416 which allows personnel to study abroad with a state scholarship. These hashtags seem to be organized campaigns because of a few reasons: The top hashtag from the data set #1416ylsy has

been posted 316.969 times. However, %95,25 (301.937) (Fig.B.8) of the tweets came from 7 distinct apps, which are also in the Top 100 web clients (applications). These 7 apps were created through rather arbitrary names (erased15418350, ylsy ylsy, asd asd afasdf, asd ada sdads, adfa fasd asd, afda sda d, asdasd asd ask asd) and exclusively focused on posting about subjects related to YLSY scholarship, without mentioning any other topics in a significant quantity. The total count of tweets by these accounts is around 300.000 (around %3 of the original tweets in the dataset) which can be considered a prime example of astroturfing. Twitter has shared relevant data from this disclosure with Stanford Internet Observatory (SIO), which prepared a report regarding the take-downs. In the report, it is indicated that there is a potential for these hashtags to serve as a strategy aimed at establishing credibility for forthcoming reforms by respectfully engaging with the government and calling for a change in regulations. As per the latest information provided by the Turkish Ministry of Education, a total of 3,904 students are currently studying abroad under official scholarship programs (MEB 2023), hence, it is improbable to engage in a big online manipulation campaign regarding a subject that holds significance only for a small portion of society. An illustrative instance within the dataset involves a social media campaign ascribed to the issue of EYT (delayed pension age), impacting an estimated populace of approximately six million individuals which is not as popular. Another point from the report is these policy demands are mistakenly attributed to KYK scholarship and said that the government wing made a statement on the issue (Grossman, Akis, Alemdaroğlu, Goldstein, Jonsson, Garcia-Camargo, Thiel, and Zaheer 2020). Figure5.4 shows that seven suspicious accounts also created a considerable amount of tweets with hashtags regarding policy demands. There are also similar operations in the dataset including sports betting, crypto-scams and other public demand that are seemingly astroturfing operations.

Figure 5.5 showcases a network comprised of co-occurring hashtags, each representing distinct categories. Turquoise represents YLSY operations, with a significant presence of the Top 100 hashtags originating from this category. Green nodes denote governmental electronic systems that abstain from sharing political content. Purple nodes indicate pornographic content, which, is permitted on Twitter. The largest nodes in the network are Istanbul, EYT, CHP, Pazartesi, Pazar, Ak Parti, Evet, HDP, Allah, and FF. Additionally, there is a prominent blue cluster representing blockchain and cryptocurrency discussions that refrain from sharing political content or engaging in public deception. It is noteworthy that approximately 10 to 15 percent of the hashtags community is unrelated to AKP or Erdoğan although it does not directly translates into the same percentage of shared tweets.

Figure 5.6 displays a network of co-occurring mentions, representing the connec-

Figure 5.5 Hashtag co-occurrence network

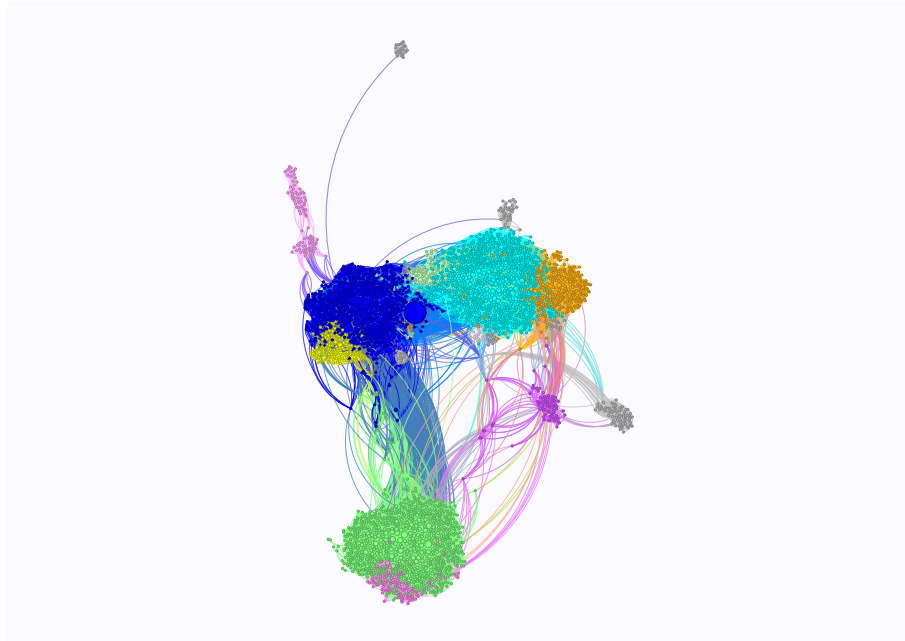


tions among various actors. The color-coded nodes indicate distinct communities that interact more with one another. The network captures the similarities between specific mentions based on their frequent occurrence alongside other mentions. By revealing these patterns of co-occurrence, the visualization allows us to identify relationships and connections within the mentioned user networks. The blue community primarily comprises government agents associated with the AKP. These individuals include former ministers, MPs, mayors, and other policymakers. They have been mentioned in a variety of contexts, ranging from receiving praise to advocating for specific policy changes.

In this dataset, the central node with the highest degree represents the official Twitter account of Recep Tayyip Erdoğan, indicating his prominence and influence in the network. Surrounding Erdoğan, I observe the Turquoise and Orange communities, which predominantly consist of supporters of the AKP. Interestingly, these communities engage in mention rings, wherein they mention each other rather than directly mentioning government officials. Another noteworthy finding is the presence of a distinct group represented by the mint-colored nodes. These accounts appear to include and praise the former mayor of Ankara, Melih Gökçek, more frequently compared to other AKP actors mentioning nodes. Moving on, the pink community positioned above the blue community primarily comprises economics experts and media personalities. Notable members include Özgür Demirtaş and Mahfi Eğilmez, both renowned economics professors with a substantial Twitter following. Within this community, the main focus of discussion revolves around former ministers of

Finance such as Berat Albayrak, Mehmet Şimşek, and the former Governor of the Central Bank of the Republic of Türkiye, Naci Ağbal. The conversations primarily revolve around changing USD/Turkish Lira indexes, economic developments, and related news. Lastly, the purple community consists of individuals who form part of retweets or following networks. A distinctive characteristic of this group is the close proximity of their follower and following counts. Their primary activity revolves around requesting mutual follows in exchange for follows and does not involve significant sharing of political messages.

Figure 5.6 Mention co-occurrence network



A significant finding within the dataset, specifically related to the community represented by the color green. These accounts exhibit clear support for Atatürk (Fig.B.3 & B.4), which can be inferred from their profile pictures, user descriptions, and the content of their tweets. Moreover, they actively express their opposition to the current government while mostly advocating for the opposition. One argument regarding the authenticity of these accounts would be that they might have actually been manipulated to create a false sense of opposition with intentions to discredit certain opposition figures. However, since our current analysis does not allow us to definitively reach that conclusion, more in-depth content analysis and stance detection is needed. It is important to acknowledge that it is speculative to attribute an ulterior motive to these accounts as determining the presence of such secret agendas from the shared content is not an easy task. To better understand the properties of this community, I conducted an analysis focused on the Top 10 nodes<sup>1</sup> with the high-

<sup>1</sup>Top 10 mentioned User IDs from the cluster are: "1847174592", "1482806160", "3555190636", "466757008", "442252059", "1132163245", "4409222427", "876745005561466880", "3291835017", "1631039467".

est weight classes. I conducted a sentiment analysis through the Zemberek library which is a Natural Language Processing library for Turkish (Akın and Akın 2007). During the pre-processing stage, the tweets were initially tokenized and emojis and URLs were removed. Sentiment analysis is conducted in a subset of the dataset consisting of 21,320 tweets containing the word “Atatürk” or its variations with the Top 10 nodes mentioned, including lowercase letters and variations without Turkish characters. Each tweet was assigned a sentiment score ranging from 0 to 1, where 0 represents the most negative sentiment and 1 represents the most positive sentiment. Out of the total tweets analyzed, 17,091 exhibited a positive sentiment, while 4,229 exhibited a negative sentiment. It’s important to note that negative sentiment in some cases could be associated with positive references to Atatürk, as seen in examples like “*Başımızda Atatürk olsaydı ülke böyle olmazdı*” (ENG: “*If Atatürk was in charge, the country would not be like this*”), where negative sentiment is expressed despite mentioning Atatürk in a positive context. Despite the presence of biases, it is noteworthy that the sentiment analysis produced a high average score of 0.91 for tweets related to Atatürk from these accounts. This finding underscores the strong positive sentiment expressed towards Atatürk among these accounts and provides valuable insights into the sentiments associated with mentions of Atatürk within this particular network as the network is attributed to the AKP-related agents. Another sentiment analysis conducted on the same groups of tweets including the words “akp”, “ak parti”, “erdogan” including the variations with characters revealed a total of 15006 tweets, with 5054 of them being positive and 9952 of them being negative. The average sentiment score was calculated to be 0.28. Notably, this analysis uncovered that the same cluster expressed dissatisfaction with the government in their tweets, which has since been removed from the dataset regardless. Based on our estimations, approximately 5% of the active users removed from the platform are associated with this network. This conclusion is drawn from the fact that out of the 6,270 active users, at least 271 of them engaged in tweeting with a combination (more than 1) of user mentions within this community. The number of users mentioning these 10 users is 528 which is approximately 5% of the active users removed.

Another significant discovery pertains to the dataset’s 7340 accounts, where it was observed that there were no occurrences of accounts mentioning one another, despite the existence of 683,188 unique user mentions within the dataset. This finding raises an intriguing point regarding the arguable precision of Twitter’s functionality when determining and removing state-linked information operations. Given the absence of interactions among these accounts through mentions, comprehending the underlying correlation and potential coordinated behavior becomes challenging.

In summary, our findings reveal several noteworthy aspects related to user interaction, community segmentation, and network dynamics within the dataset. Firstly, I observed a lack of significant interaction between users in terms of mentions and user replies, indicating limited engagement and discussion. Additionally, the dataset exhibited the presence of diverse communities, each focusing on specific topics that seemed unrelated to the attribution of propaganda by Twitter. Moreover, we discovered the utilization of various tweeting applications from third-party services, suggesting potential account stealing or takeover activities. Lastly, the substantial percentage of retweets within the datasets hints at the possibility of a removal practice that primarily relies on the frequency of retweets as a decisive factor when determining whether an account has been involved in an information operation or not.

## 6. CONCLUSION

The term propaganda is often associated with authoritarian regimes, however not only the governments are to be blamed for it. There is a wide range of actors including states, organizations, and related entities that involve in such activities to promote their own agendas (Cresci 2020). As a phenomenon as old as history itself, propaganda has also undergone a transformation in the digital age. The advent of digitalization has allowed citizens to engage in online social spaces and make social media their preferred source of entertainment, news, and socialization. Social media platforms portray themselves as spaces free from censorship, where information flows directly from many different sources. However, as these spaces continue to evolve and attract an increasing number of people, debates surrounding their independence have emerged. Social media is not exactly free, despite the notion of freedom attributed to it. The way we get and consume news is changing. Before social media arrived, we were in need of media companies to 'show ' the selected news to us. They were the ones who were in charge of selecting what is important for us to see and hear. However they had owners, their styles of delivering the news, and certain biases toward different groups ideologies, and individuals, thus, everybody had a different taste in newspapers. The social media platforms are no different. Although there are several advantages including fast-paced news dissemination and a wide range of users that can report beyond the reach and capabilities of media companies, they are still owned by private companies that are seeking benefits. The owners also have their own biases towards the variations of the above-mentioned entities. They can restrict access of users or they can make a user see what they want them to see through amplification algorithms employed in their operations. Social media companies are also subject to the jurisdictional regulations and mandates imposed by local authorities, thereby necessitating their compliance and consideration of local interests in order to safeguard their own gains. Herman and Chomsky (2010) created a comprehensive outline of how propaganda works in Western societies. That outline is still shedding light on the social media age in terms of trusting the presumed neutrality of social media platforms.

Transparency reporting serves as a valuable approach to gaining insights into how a platform manages content on its services. However, it is crucial to acknowledge that transparency reports are not currently generated at the companies' better nature, therefore, they cannot be considered mere tools for answering or accounting; instead, they serve as mechanisms for justification for their operations. As social media companies possess complete autonomy in determining the metrics they disclose, the methodology used to calculate the data they reveal to the public, and the metrics they choose not to disclose. That's why it is important to exert pressure through academic research. Research could urge companies to provide more insightful analytics that helps us understand their content control procedures. Academic researchers, in a way, draw parallels to the journalists in Herman and Chomsky's Propaganda Model as they are potentially checking on power through the tools and skillset they possess. It is crucial for legislators and corporations to work together in creating strong frameworks for data sharing that facilitate the access of company data by reputable researchers, thus enabling independent analysis and supervision. However, there has been a concerning lack of progress in terms of data sharing. Since Elon Musk's acquisition, the API system on Twitter has undergone significant changes, resulting in a severely restricted data supply even for researchers who are willing to pay. This limited access to data has several negative consequences. Firstly, it hampers the progress of research, thereby reducing the potential for valuable insights that could have been derived from freely available data. Additionally, Twitter itself becomes less accountable since traditional methods like web scraping and similar practices are slower and more grueling compared to utilizing the research through API. Secondly, access to the Twitter API is limited to researchers and research facilities that have the financial resources to afford it. Chapter 3 provides detailed information on pricing and tweet limits regarding new Twitter APIs. This means that the research conducted on Twitter will be primarily dominated by wealthy institutions and individuals, creating a bias. Moreover, due to the reduced tweet caps imposed by the API, their research may be less comprehensive than the previous research.

The disparities in terms and policies among various social media companies demand careful consideration, given the distinct characteristics of each platform. While it may be challenging to apply uniform measures to address every aspect, it is essential to establish standardized guidelines, particularly regarding the fundamental principles in which they carry out operations. Companies should make a comprehensive publication of their policies online, offering a detailed description that includes illustrative examples of how these policies are implemented and the metrics that would provide the most valuable insights that must be sought after. Additionally, they



should ensure public notification in case of any policy modifications and maintain an accessible archive of previous policies. In addition, there could be steps taken to hinder the profit-oriented business model of social media companies. They should make available a comprehensive overview of their advertising content and targeting guidelines on the internet, which should include practical illustrations of how these guidelines are implemented. Providing detailed explanations regarding the mechanisms utilized by the company to ensure compliance with their advertising content and targeting guidelines, and explicitly addressing the extent to which this process depends on automated tools versus human review is a crucial step too.

In this study, I aimed to examine the concept of neutrality within social media companies, specifically focusing on the case of Twitter's handling of an information operation allegedly connected to the government of Türkiye. Our objective was to analyze and understand the dynamics surrounding this incident while considering the implications for neutrality in the realm of social media.

Türkiye has a history of utilizing social media to spread pro-government content and utilizing an army of troll accounts commonly known as the AK Trolls to attack those critical of the government (Albayrak and Parkinson 2013; Bulut and Yörük 2017; Saka 2018). As social media is inherently an ecosystem where lies and truth co-exist, and it is not easy to separate one from another. The dispute between Twitter and the Turkish government in that sense as important as free speech is fundamental to any democratic system. Türkiye has been undergoing a hostile political transformation into an authoritarian regime for the past decade, which became even more severe following a failed coup attempt in 2016 (Yılmaz and Turner 2019). The heavy pressure on mass media outlets and journalists played an important role in government control over the information flow. To break the chain, the Turkish public is increasingly turning to social media as a means to gather information on daily news, and policy developments, and engage in social interactions. Despite the widening regulations on social media, it remains an environment preferred by many individuals over mainstream media.

The report from Stanford Internet Observatory in collaboration with Twitter states that the accounts were engaging in public conversations about politics in favor of Erdoğan, the AKP government, and people ideologically closer to the government (Grossman, Akis, Alemdaroğlu, Goldstein, Jonsson, Garcia-Camargo, Thiel, and Zaheer 2020). However, our findings are hinting at a larger crowd which have used the platform not only to spread online propaganda in favor of AKP but also includes people who desire to engage in non-political public conversation including sports, news, and overall socialization with other users. There is also a network of AKP

and President Erdoğan Critics Also, it can be derived from the data that the take-down by Twitter only points to the “tip of the iceberg” as most of the accounts that the closed accounts previously mentioned and replied to are still accessible. Further analysis of content analysis through Natural Language Processing and content analysis are needed to drive more meaningful conclusions on the datasets. From our analysis, the data suggests that both Twitter and the Turkish government are partially correct as the content taken down by Twitter covers content in support of AKP and President Erdoğan. However, it cannot be determined whether it is shepherded through a single authority and deliberately aim at specific entities. As this study sheds light on the wrongdoings in the removal process, Twitter must ensure that users who have had their content removed or experienced restraints are given sufficient notification. In light of the growing dependence of many companies on automated tools for content detection and removal, it is crucial to facilitate the ability of users to contest moderation decisions that have led to the removal or suspension of their content and accounts. Therefore Twitter must allow users the chance to challenge moderation decisions.

My research faces several challenges, the first one being the accurate detection of replied and mentioned accounts that are appearing to be still alive. To identify these accounts, the utilization of the Twitter API is needed. Secondly, the data I obtained is sourced from the Twitter Transparency Center, which has removed accounts with tweets dating back to 2009. However, it is important to note that the dataset contains a higher number of tweets from the years 2016 to 2019. This disparity in the distribution of tweets across different years may introduce a contextual bias, potentially influencing the content and capturing the zeitgeist of the tweets during that period.

This thesis begins by establishing a clear definition of information operations and proceeds to conduct a comprehensive literature review on the various agents and tools involved in such operations. Furthermore, it presents a theoretical framework for analyzing the notion of neutrality within social media companies. The study delves into the examination of reporting practices and potential biases associated with these platforms by facilitating the dispute between the Turkish government and Twitter. Finally, a compelling case study is provided to demonstrate evidence of biases and wrongdoing by one of the major social companies. Preserving democracy is of utmost importance, as an informed citizenry lies at its very foundation. In this regard, the aim of this thesis is to contribute to the preservation of democracy by shedding light on these critical issues and to advocate for further research.

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## APPENDIX A

Table A.1 Twitter’s state-linked information operations archive descriptive table

Originated Country	Date	No. of Accounts	Account Info.	Tweet Info.	Media Info.
Russia	Oct.18	33	—	1.2 GB	274 GB
Iran	Oct.18	770	—	168 MB	65.7 GB
Bangladesh	Jan.19	15	—	2.6 MB	77 MB
Iran	Jan.19	2320	—	717 MB	202 GB
Russia	Jan.19	416	—	120 MB	63.7 GB
Venezuela	Jan.19	1196+764	—/—	1 GB / 136 MB	359GB/81GB
Iran	Jun.19	1666+248	—	316 MB	183GB/55GB
Iran	Jun.19	2865	318MB/ 46MB	258 GB	
Russia	Jun.19	4	—	260 KB	72 MB
Spain	Jun.19	130	—	1.5 MB	2.74 GB
Venezuela	Jun.19	33	—	64 MB	24 GB
China	Aug.19	196	14 KB	158 MB	40 GB
China	Aug.19	744	41 KB	169 MB	85 GB
UAE&Egypt	Sep.19	271	20 KB	30 MB	45 GB
UAE	Sep.19	4248	355 KB	227 MB	680 GB
Saudi Arab.	Sep.19	6	1 KB	38 KB	357 MB
Spain	Sep.19	259	20 KB	7 MB	16 GB
Ecuador	Sep.19	1019	57 KB	85 MB	173 GB
China	Sep.19	4301	258 KB	913 MB	604 GB
Saudi Arab.	Dec.19	5929	512 KB	4.3 GB	1.3 TB
Gha/Nig	Mar.20	71	18 KB	27 MB	17 GB
Egypt	Apr.20	2541	191 KB	1 GB	575 GB
Honduras	Apr.20	3104	178 KB	137 MB	75 GB
Indonesia	Apr.20	795	57 KB	207 MB	58 GB
SAU&Egypt &UAE	Apr.20	5350	388 KB	4.2 GB	977 GB
Serbia	Apr.20	8558	470 KB	5.7 GB	2.3 TB
China	Jun.20	23750	1 MB	73.2 MB	31 GB
Russia	Jun.20	1152	85 KB	353 MB	108 GB
Türkiye	Jun.20	7340	535 KB	5 GB	821 GB
Iran	Oct.20	104	7.1 KB	292 KB	16.7 GB
Saudi Arab.	Oct.20	33	2.9 KB	24 KB	—
Cuba	Oct.20	526	45.7 KB	666 MB	49.2 GB
Thailand	Oct.20	926	45 KB	2.3 MB	2.9 GB
Russia	Oct.20	5	2 KB	180 KB	10 MB
Iran	Feb.21	238	38 KB	285.2 MB	32.4 GB
Armenia	Feb.21	35	8.3 KB	46.7 KB	1.2 GB
Russia	Feb.21	69	8.9 KB	36.6 GB	2.6 GB
Russia	Feb.21	31	8.3 KB	14.3 MB	1.8GB
Mexico	Dec.21	276	63.9 KB	2.49 MB	2.84 GB
China	Dec.21	112	19.09 KB	2.57 MB	4.61 GB
China	Dec.21	2048	350.04KB	3.46 MB	2.3 GB
Russia	Dec.21	50	3.86 KB	1.11 MB	1.65 GB
Russia	Dec.21	16	11.66 KB	2.48 MB	3.31 GB
Tanzania	Dec.21	268	48.77 KB	1.58 MB	1.81 GB
Uganda	Dec.21	418	93.19 KB	62.14 MB	19.92 GB
Venezuela	Dec.21	277	60.42 KB	82.07 MB	20.18 GB

Table A.2 Summary of all information-operations from Twitter transparency center

Originated Country	Date	Specifics
Russia	Oct.18	Internet Research Agency
Iran	Oct.18	N/A
Bangladesh	Jan.19	In Bengali, about regional political themes
Iran	Jan.19	IRA's counter efforts and evolving practices
Russia	Jan.19	-
Venezuela	Jan.19	1st dataset: global news content, often with an angle that benefited the diplomatic and geostrategic views of the Iranian state. 2nd dataset: About Israel only. 3rd dataset: False personas targeting social and political conversations in Iran.
Iran	Jun.19	Catalan Independence Movement:Esquerra Republicana de Catalunya. Setting up fake accounts to spread content about Catalan Referendum
Russia	Jun.19	Information operations directed at Hong Kong
Spain	Jun.19	Interconnected tactics. Operations targeting Iran and Qatar. Supportive of the Saudi government. These accounts were found to be created by DotDev(a private technology company operating in the UAE and Egypt.)
Venezuela	Jun.19	Directed at Qatar and Yemen. Tweets via fake accounts, criticism of regional politics including Yemeni Civil War and Houthis Movement
China	Aug.19	Fake journalistic outlets in support of Saudi government. + Saud al-Qahani for platform manipulations but not in the archives.
UAE & Egypt	Sep.19	Fake account creation by Partido Popular in order to boost engagement etc.
UAE	Sep.19	Tied to PAIS Alliance party, spreading content on Moreno's administration focusing on laws on freedom of speech, censorship, etc. Hashtag manipulation and retweet spam
Saudi Arabia	Sep.19	Protest movement in Hong Kong- disclosed 4301 of 200.000 accounts
Spain	Sep.19	Larger network of 88,000 accounts, mostly in Arabic. Retweeting, replying, and aggressive liking. Source of the coordinated activity to Smaat, a social media marketing and management company based in Saudi Arabia. Our in-house technical indicators show that Smaat appears to have created, purchased, and/or managed these accounts on behalf of N but not necessarily with the knowledge of their clients. Smaat managed a range of Twitter accounts for high-profile individuals, as well as many government departments in Saudi Arabia. Many automated accounts.
Ecuador	Sep.19	Russian accounts attempted to sow discord by engaging in conversations about social issues, like race and civil rights.
China	Sep.19	Egypti-based network el-Fagr, inauthentic accounts that amplify messaging critical of Iran, Türkiye and Qatar. Twitter believes that is ordered by the Egyptian government.
Saudi Arabia	Dec.19	Retweeting President Hernandez, created fake accounts on the government's behalf.
Ghana/Nigeria	Mar.20	Fake accounts that promoting government content on West Papua Independence movement
Egypt	Apr.20	Praising Saudi leadership and criticizing Qatar and Turkish activity in Yemen.
Honduras	Apr.20	Promoting Serbia's ruling party and leader
Indonesia	Apr.20	A larger network of 150,000 accounts favoring the Communist Party of China (CCP), and spread deceptive narratives about the political dynamics in Hong Kong.
Saudi Arabia(Egypt+UAE)	Apr.20	Associated with Current Policy, a media website engaging in state-backed political propaganda within Russia.
Saudi Arabia	Jun.20	Employing coordinated inauthentic activity, which was primarily targeted at domestic audiences within Türkiye. AKP,Erdogan related content + youth wing
China	Jun.20	Black Lives Matter, racial and social injustice and George Floyd death.
Russia	Jun.20	Accounts were created to impersonate key Qatari political figures and to advance narratives about Qatari politics which are geostrategically favorable to the Saudi authorities.
Türkiye	Oct.20	Accounts run by youth organizations with ties to the Cuban government, including Union de Jovenes Comunistas (UJC) and Federacion Estudiantil Universitaria (FEU).
Iran	Oct.20	These accounts were engaging in amplifying pro-RTA (Royal Thai Army) and pro-government content, as well as engaging in behavior targeting prominent political opposition figures.
Saudi Arabia	Oct.20	Attempting to disrupt the public conversation during the first 2020 US Presidential Debate.
Cuba	Oct.20	Accounts were created in order to advance narratives that were targeting Azerbaijan and were geostrategically favorable to the Armenian government, had ties with the Armenian government.
Thailand	Oct.20	1st network: Pro-Russian and anti-NATO narrative 2nd network: IRA and other Russian influence efforts targeting the United States and European Union
Russia	Oct.20	In support of government initiatives related to public health and political parties
Iran	Feb.21	Amplified Chinese Communist Party narratives related to the treatment of the Uyghur population in Xinjiang
Armenia	Feb.21	Changyu Culture, a private company backed by the Xinjiang regional government has been removed
Russia	Feb.21	IRA that attempted an information operation in the Central African Republic,pro-Russia viewpoint into Central African political discourse
Mexico	Dec.21	Libyan government and actors that support it, while voicing significant support for Russia's geopolitical position in Libya and Syria.
China	Dec.21	Utilized to file bad faith reports on Twitter, targeting members and supporters of FichuaTanzania and its founder
Russia	Dec.21	A network of 418 accounts engaged in coordinated inauthentic activity in support of Ugandan presidential incumbent Museveni and his party, National Resistance Movement (NRM) has been removed
Russia	Dec.21	Venezuelan accounts that amplified accounts, hashtags, and topics in support of the government and its official narratives through "Twitter Patria" App
Tanzania	Dec.21	
Uganda	Dec.21	
Venezuela	Dec.21	

## APPENDIX B

Figure B.1 Pro-Government micro-influencer example



Figure B.2 Pro-government macro-influencer example





Figure B.3 Ataturk supporter user example 2

*Dünyanın bizi kıskandığı tek bir konu var. O da Mustafa Kemal Atatürk.*

**Fikri Hür Vıcdanı Hür**  
@bir\_nefer19

🇹🇷 Kuvayı Milliye Mustafa Kemal'in Askeri FıYRı Egeıenlik kayıtsız şartsız Milletindir

📅 Ocak 2013 tarihinde katıldı

2.905 Takip edilen 25,4 B Takipçi

Takip ettiğin kimse takip etmiyor

**Tweetler** Yanıtlar Medya Beğeni

Sabitlenmiş Tweet

**Fikri Hür Vıcdanı Hür** @bir\_nefer19 · 26 Kas 2018

Türkiye Cumhuriyeti vatandaşı kimliği her önüne gelene verilen bir kağıt değildir, bugün yada yarın elbet bir gün o verilen vatandaşlık geri alınıp iptal edilecektir.

21 113 353

Figure B.4 Ataturk supporter user example



Figure B.5 Pro-opposition micro-influencer example



Figure B.6 Pro-opposition macro-influencer example



Figure B.7 Non-political micro-influencer



Figure B.8 Tweet client names and their counts for hashtag:1416ylsy

