An Analysis of Disinformation and Bot Accounts Under the Hashtag #Darbeyehayir (Nocoup)

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ABSTRACT

Existing research on fabricated content on social media demonstrates the use of Twitter as a means to disseminate manipulative content (through bots and other means). This article examines Twitter content under the hashtag #darbeyehayir (NoCoup) and provides information about the spread of online manipulated content, specifically related to disinformation and social bot accounts' features under the hashtag. This study looks at the content created and posted through Twitter during the failed coup attempt that occurred on 15th July 2016 in Turkey The aim of the study is to examine disinformation content within 10,953 tweets that were disseminated to influence online conversations around the 'coup' attempt. The study applies a quantitative approach by using the software programme of Discover Text. Examination of Twitter content at that time showed that the protests following the coup attempt were often reported in the form of disinformation, which includes manipulated and fabricated content. Tweet content that included disinformation demonstrated that Twitter users shared information related to events with no sources or explanation. In addition, the tweets containing disinformation were retweeted by others who probably accepted the disinformation as real. The analysis of Twitter content suggested that bot accounts were likely created to manipulate and deceive Twitter users by spreading false information or news under the hashtag.

Keywords: Social Media, Disinformation, Twitter, Bots Accounts, 15 July, Coup

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#Darbeyehayir (Nocoup) Hashtag Altındaki Yanlış Bilgi Yayılımı ve Bot Hesapları Üzerine Yapılan Bir Analiz

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ÖZ

Sosyal medyada yalan içerikle ilgili mevcut araştırmalar, Twitter'ın manipülatif içeriği (botlar ve diğer yollarla) yaymak için bir araç olarak kullanıldığını göstermektedir. Bu makale, #darbeyehayir (NoCoup) hashtag'i altındaki Twitter içeriğini incelemekte ve bu hashtag altında yayılmış olan manipüle edilmiş içeriğin ve sosyal bot hesaplarının özellikleri hakkında bilgi vermektedir. Çalışma, Türkiye'de 15 Temmuz 2016'da meydana gelen başarısız darbe girişimi sırasında Twitter aracılığıyla oluşturulan ve yayınlanan içeriği incelemektedir. Bu çalışmanın amacı, 'darbe' girişimi hakkında oluşturulan çevrimiçi sohbetleri etkilemek için atılan 10.953 tweet'teki yanlış bilgi içeriğini incelemektir. Çalışma toplanan verilerin analizi için, DiscoverText programını kullanarak nicel bir yaklaşım uygulamıştır. Twitter içeriği üzerine yapılan bu inceleme, darbe girişimini izleyen protestoların sıklıkla manipüle edilmiş ve yanlış içerik içeren bilgiler aracılığıyla rapor edildiğini göstermiştir. Çalışma, Twitter kullanıcılarının hiçbir kaynak veya açıklama olmaksızın olaylarla ilgili yanlış bilgi paylaştığını göstermiştir. Ayrıca yanlış bilgi içeren tweetler, diğer kullanıcılar tarafından gerçek olarak kabul edilip retweet edilmiştir. Twitter içerik üzerine yapılan bu analiz, bu hashtag altında Twitter kullanıcılarını manipüle etmek ve aldatmak için bot hesaplarının oluşturulduğu ve yanlış bilgi veya haberlerin yayıldığını ortaya koymuştur.

Anahtar Kelimeler: Sosyal Medya, Yanlış Bilgi, Twitter, Bot Hesaplar, 15 Temmuz, Darbe

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INTRODUCTION

Online media platforms are becoming an essential source for learning information and news about politics in both developing and developed countries (Bialik & Matsa, 2017). The ratio of people using online platforms such as social media as news sources have reached 94% in Greece, 85% in Spain, 78% in Italy, and 68% in France (Newman, Fletcher, Levy, & Nielsen, 2018). The number of active social media users is about 68.90 million, or 80.8% of the population in Turkey since January 2022 (Kemp, 2022). The percentage of individuals referring to such platforms as a primary source has increased in Turkey. Today, about 55.2% of social media users used the platform to read news stories (Kemp, 2022). Most people prefer to access news via online sources (including social media) on a weekly basis in Turkey, with a reach of 85% (Newman, Fletcher, Schultz, Andi, & Nielsen, 2020). According to Newman and colleagues (2020), although people get their news online, as a whole television remains the most important news source in Turkey; and whilst print newspapers also continue to be read, their use is decreasing. While there has been a decline in the proportion of those who access news via TV, there has been an increase in the percentage of those who watch and read the news via social media since 2019. Therefore, social media platforms such as Twitter are reshaping journalistic practices, affecting news production processes and online consumption by providing a space where news is produced, spread and shared online via short, frequent and fast messages (Hermida, Lewis, & Zamith, 2014; Murthy, 2018). Social media can be used for reporting and learning news but also for producing and spreading misinformation and disinformation (Vosoughi, Roy, & Aral, 2018). For instance, through the terrorist attacks in Mumbai in 2008, Twitter was used to communicate breaking news, but this use exposed the risks related to reporting rumours as fact (Papacharissi & de Fatima Oliveira, 2012).

In Turkey, the dissemination of manipulated content such as fake news, disinformation and misinformation is also becoming a big problem related to the media system (Yanatma, 2018). Since 2017, when the country held a referendum, and with the first election carried out using this new system in 2018, the issue of misinformation and disinformation has become the main topic of political debates (Yanatma, 2018). In the context of a survey carried out by Reuters Institute in 2018, about 49% of respondents highlighted that they had noticed stories that were completely made up for commercial or political reasons. Turkey sat in first place on the list when compared to the average of 26% across all

countries (Yanatma, 2018). Based on data obtained from the Computational Propaganda Project in 2017, that Turkey is among the countries in which social media is used by political parties and other political actors for disinformation campaigns to affect public opinion (Bradshaw & Howard, 2018). In addition, social media platforms have been used as tools for manipulation and disinformation campaigns by governments and political campaigns through bots to artificially shape public life (Woolley & Howard, 2018). The use of automated bots and political trolling are further problematic issues relating to the media in Turkey (Saka, 2018).

This study explores the presence of disinformation content within the dataset by analysing Twitter content posted through the hashtag during the 15th July coup attempt between 15th and 19th July 2016 in Turkey. In addition, the study analyses social media bots' accounts and their features, which were detected based on various criteria (explained in the methodology). Examination of Twitter content created and spread during the 15th July case is important for understanding manipulated content and bot accounts for two reasons. First, following the coup protests, many media outlets including Hurriyet (2017), Teyit (Foca, 2016) and Mynet (2016) reported the spread of disinformation content through online media platforms such as Facebook and Twitter. Twitter was one of the most used online media platforms during the coup attempt, with an estimated 51 million tweets about the coup (Mis, Gülener, Coşkun, Duran, & Ayvaz, 2016; Esen & Gumuscu, 2017; Yanardagoglu, 2017). Therefore, the analysis of disinformation content through the hashtag advances our knowledge of manipulated content on Twitter, as a means of manipulating public opinion during social and political actions. Second, social bot accounts had a significant role in the dissemination of false information. Accounts that actively disseminated disinformation are more probable to be bots (Shao, Ciampaglia, Varol, Flammini, & Menczer, 2017). The analysis of bot accounts under the hashtag helps to understand Twitter accounts that are designed to spread disinformation rather than trustworthy information related to the coup attempt and following the anti-coup protests.

MANIPULATED CONTENT ON SOCIAL MEDIA: FAKE NEWS AND DISINFORMATION

The expression of fake news has a long history – early examples date back to pre-printed media. False stories and rumours have probably existed since people lived in groups where power was important (Burkhardt, 2017). While the idea of fake news is not a new concept, it has become popularized

and politicized since the 2016 US presidential election (Quandt, Frischlich, Boberg, & Schatto-Eckrodt, 2019). Prior to this election, it was primarily used for false news parts (frequently deliberately fabricated) or as an exact expression for political irony in performed news shows. However, the 2016 US election changed its meaning, and the term has blurred and become multifaceted (Quandt, Frischlich, Boberg, & Schatto-Eckrodt, 2019). With the rise of the term 'fake news', many researchers have attempted to describe it for scientific use. Scholars mostly consider fake news as a specific type of intentionally fabricated information. For instance, Lazer and colleagues (2018) describe fake news as "fabricated information that mimics news media content in form but not in organizational process or intent". Alcott and Gentzkow (2017, p. 213) also define it as "news articles that are intentionally and verifiably false and could mislead readers". They eliminate further types of misleading content, for example, mistakes by politicians or journalists, conspiracies or rumours about specific news articles. Other scholars have broadly perceived fake news as a key element in the dissemination of online misinformation or as a new type of political misinformation (Guess, Nyhan, & Reifler, 2018).

Although research into fake news is relatively new, there have been some attempts at defining its typology. For example, Wardle (2017) offers a typology for mis- and disinformation, noting that there are different forms of mis- and disinformation, rather than just one certain form for fake news. She introduces seven distinct forms for mis- and disinformation that range between satire or parody with potential content to fool, misleading content, imposter content with a fake information source, fabricated content, false connection, false context and manipulated content. Nielsen and Graves (2017) also present different views on fake news obtained from focus groups. They highlighted that fake news could include poor journalism, advertising, satire, propaganda, or false news. In summary, there is no certain definition and form for 'fake news'. However, it can be separated among countless types of fabricated, wrong, or misguided news along with numerous aspects and dimensions of transmitted info (Quandt, Frischlich, Boberg, & Schatto-Eckrodt, 2019).

The discourse of fake news overlaps with two notions: disinformation and misinformation (Wardle & Derakhshan, 2018). As highlighted by Lazer and colleagues (2018), fake news examples overlap with other types of information disorders such as disinformation (purposely disseminated to deceive individuals) and misinformation (misleading or false information) (Lazer, et al., 2018). The term disinformation can be defined as "inaccurate or manipulated information content that is spread

intentionally. This can include false news, or it can involve more subtle methods such as false flag operations, feeding inaccurate quotes or stories to innocent intermediaries, or knowingly amplifying biased or misleading information" (Weedon, Nuland, & Stamos, 2017, p. 5). Disinformation is based on false information, and the persons who spread it know it is false. This is an intentional lie and indicates that people are disinformed actively by malicious actors (Wardle & Derakhshan, 2018).

The existing body of literature regarding disinformation flow has recently turned its attention primarily to political contexts, but online disinformation dissemination has also been examined by scholars from different disciplines, such as psychology and communication (Humprecht, Esser, & Van Aelst, 2020). The term disinformation attracted scholarly attention and substantial media after the 2016 US presidential election (Wiesenberg & Tench, 2020) as the generation and propagation of disinformation via online platforms reached high levels following the event (Brummette, DiStaso, Vafeiadis, & Messner, 2018). Examples of false information are circulating not only in the US, but also in other countries (Law, 2017). For instance, following the failed coup attempt, one of Turkey's leading oppositions newspapers, Sozcu, reported images showing people cutting a pro-coup soldier's throat. However, it was revealed that the image had been fabricated and could not be attributed to a source. In this case, both conservative and progressive media outlets used the false images in advancing their political causes (Law, 2017). Another example of disinformation was observed during the French election campaign in 2017 with a false article published by Belgian newspaper Le Soir claiming that French President Emmanuel Macron was financed by Saudi Arabia (Jeangène Vilmer, Escorcia, Guillaume, & Herrera, 2018). In addition, documents circulated online falsely claiming that Macron had an offshore account in the Bahamas. The disinformation circulated via loosely connected networks of users with identical messages and hashtags to disseminate rumours about Macron's personal life (Wardle & Derakhshan, 2018). In summary, disinformation content is created and spread to mislead or deceive publics maliciously in order to pursue political goals and generate profits (Humprecht, Esser, & Van Aelst, 2020). Therefore, it needs to be accepted as a major problem in modern democracies.

THE SPREAD OF ONLINE MANIPULATED CONTENT VIA SOCIAL BOTS

The number of people trusting information shared via social media is increasing. Most individuals are forming opinions and making choices on policy, lifestyle, product purchasing and health issues by

using online information (Olteanu, Varol, & Kiciman, 2017). This type of trust provides the motivation for entities ranging from single users to companies, governments and interest groups to influence individuals' views through active involvement in online discussions (Varol, Ferrara, Menczer, & Flammini, 2017). There are also different covert methods to enhance actual and perceived popularity of promoted online information. Some of the examples are dissemination of fake news via social bots, spreading conspiracy theories and unsubstantiated rumours, stock market manipulation, making propaganda for political goals, and other actions performed through social media (Varol, Ferrara, Menczer, & Flammini, 2017). Social media platforms can be easily used to manipulate public belief via fake websites and software-controlled pages, or profiles known as social bots (Ferrara, Varol, Davis, Menczer, & Flammini, 2016; Subrahmanian, et al., 2016; Varol, Ferrara, Menczer, & Flammini, 2017). Fake accounts can easily perform different actions such as posting content, interacting with others and legitimating users through social networks, like real people (Shao, Ciampaglia, Varol, Flammini, & Menczer, 2017). People tend to rely on social relationships, and they can believe and spread content created in this way (Bessi & Ferrara, 2016). In addition, the amplification of content via social bots can overload an individual's capacity for fact-checking due to people's limited attention and their tendency to pay attention to trending topics or issues and to trust online content in a social setting (Jun, Meng, & Johar, 2017).

Bots (software robots) have existed since the widespread use of computers (Ferrara, Varol, Davis, Menczer, & Flammini, 2016). A social bot can be well-defined as a computer algorithm producing content automatically and interacting with individuals via social media, attempting to match and change their behaviours (Ferrara, Varol, Davis, Menczer, & Flammini, 2016). Chatbots are algorithms designed to talk interactively with a human, as described by Alan Turing (Ferrara, Varol, Davis, Menczer, & Flammini, 2016). Bots are undertaking tasks online and acting like humans by performing rote informational tasks (Howard, Woolley, & Calo, 2018). Although early bots were produced to perform regulatory tasks by computer scientists, they were quickly expanded beyond platform and network connections (Howard, Woolley, & Calo, 2018). The social media environment offers incentives, from political to economic, to design algorithms exhibiting human-like behaviour (Ferrara, Varol, Davis, Menczer, & Flammini, 2016). Therefore, the use of social bots is increasing and does not need a sophisticated investment (Saka, 2018). Bot accounts and their interactions on social media have been observed in recent years (Davis, Varol, Ferrara, Flammini, & Menczer, 2016). According to a Freedom

House report (2017), the government in Russia have tried to use bots and fake news to effect votes in the US and Western Europe. This use has pointed to the subject of content manipulation. However, these tactics are employed mainly by governments and political parties to maintain their rules in several countries (House, 2017).

Political bots are also among the newest technological developments at the intersection of digital strategy and politics (Woolley, 2016). Numerous news sources around the world have covered military and government bot deployments, highlighting the rapid increase in the use of such software. According to these sources, political bots have been used in several countries: Italy (Vogt, 2012), Australia (Peel, 2013), South Korea (Sang-Hun, 2013) and the US (Coldewey, 2012) among them. In Turkey, journalists claim that political actors have applied political bots against each other to fight criticism and spread propaganda (Woolley, 2016). Recent studies also suggest that social media accelerates the spread of fake news, disinformation, and rumours, which all undermine democratic ideals (Kollanyi, Howard, & Woolley, 2016; Vargo, Guo, & Amazeen, 2018). For example, the 2016 US presidential election demonstrated how artificial intelligence, bots and foreign actors could disrupt and influence a democratic election (Sinpeng, 2021). Moreover, scholars have identified Twitter accounts that coordinated troll activity about political events during the Brexit referendum in the UK (Bastos & Mercea, 2018). Trolls accounts are human users who spread speculation, rumours and false information to manipulate other's opinion (Mihaylov, Georgiev, & Nakov, 2015). Twitter identified 2,752 "troll" accounts that created by a Russian company to spread propaganda about the 2016 US presidential election (Luceri, Giordano, & Ferrara, 2020). Llewellyn and colleagues (2019) also found troll activity from 419 troll accounts who tweeted (3,485 tweets) about the Brexit-related content. In sum, social media is neither good nor bad; sometimes it is used for repression, censorship and manipulation of publics, while it is also used to spread information and mobilisation.

DATA AND METHODS

To analyse the use of Twitter as a tool to spread manipulated content, this study focuses on two main areas: exploring disinformation content and, bot accounts and their features under the hashtag during the failed coup attempt. Since #darbeyehayir was one of the most used hashtags during the coup (Mis, Gülener, Coşkun, Duran, & Ayvaz, 2016), the study focuses on only this hashtag to examine the

Twitter content shared during the coup. The Twitter dataset was collected for five days from 15th to 19th July 2016 via Sifter. All the tweets that contained #darbeyehayir were saved, along with information such as username, number of following, followers and retweets. In total, the study collected 277,964 tweets created and posted under the hashtag. The study analysed 10,953 tweets that has been retweeted at least once by users under the hashtag. To identify the tweets containing disinformation, first the false news spread during the coup was determined by analysing online newspapers, blogs, and other online sources that provided evidence of this disinformation. For instance, an online article by Foca (2016) provided information about the false claims spread online during the 15th July coup. Secondly, the tweets sharing disinformation as highlighted by Foca (2016) were located using the 'media-URL' function in DiscoverText. For instance, the URLs were checked as to whether they directed people to online news websites to share disinformation. In addition, the images were checked to decide whether they were related to disinformation. During the analysis, metadata was analysed and findings about the disinformation were noted. As well as this, social media bots' accounts were detected based on various criteria- this process was derived from the Ferrara's (2017) criteria for bot detection. An accessible programme for detecting social media bots is Botometer (Davis, Varol, Ferrara, Flammini, & Menczer, 2016) and its' framework based on the Twitter API to gather recent data (Ferrara, 2017). However, the study has been examined the historical Twitter data.

Therefore, bots' accounts were detected using other criteria; for example, the 'user-Twitter' function in DiscoverText makes it possible to find accounts which were opened on the day of the coup attempt and were then not active after the end of the protests. Once this process was accomplished, the functions of 'followers count' (number of followers that follow a Twitter user), 'following count' (number of followings that a Twitter user follow) and 'listed count' (number of times a Twitter user has been added to a public list) were assessed to determine whether the detected accounts showed characteristics typical of bots' accounts (Ferrara, 2017). In addition, the number of tweets posted to those accounts was examined to determine whether these accounts were active at the time of the coup. For ethical reasons, the study did not share the personal data of Twitter users such as screennames, location data, identification numbers and other online identifiers. Instead, the study used pseudonyms and paraphrased quotations for confidentiality in the findings section.

FINDINGS

This section presents the findings for the two areas of exploration as described in the methods section above. The section discusses the results regarding disinformation and social bot accounts to understand the sources and accounts which might have made deliberate efforts to deceive, mislead or confuse the audience during the coup.

Exploring disinformation content under #darbeyehayir

The analysis of Twitter as a manipulation tool during the protests demonstrates that some tweets were revealed to be spreading disinformation after the coup attempt period. Some of this disinformation was then reported by mainstream and online media (Foca, 2016; Hurriyet, 2017; Mynet, 2016). The tweets in the corpus were reviewed to determine if they contained disinformation reported by these media outlets, as discussed in the methods section. This section presents the results of the analysis of the disinformation examples and social bot accounts which appeared in the dataset during the analyses process.

Table 1 Disinformation Examples in #darbeyehayir

NEWS	RETWEET COUNTS
"The photo of beheaded soldier was actually taken during a military car accident in 2006" (along with a photo of a headless soldier)	445
"We do not want coups, we do not want sharia, we do not want people who cut off soldiers' heads and are similar to ISIS members" (along with a photo of a beaten soldier who was taken to hospital)	338
"Is there anybody who feels so sad for this photo except me" (along with a photo of a soldier whose head was tried to be cut off)	259
"The disinformation about Ugur Dundar (a journalist)"	104

Table 1 shows four examples of tweets reporting disinformation, along with the retweet counts. It was found that the most shared instance of disinformation in the corpus was an image showing violence against a soldier (thought to be pro-coup). The general content of the disinformation in the tweets is similar, concerning the use of violence against the pro-coup soldiers. Users posted tweets which contained disinformation by sharing images of a headless soldier on 16th July 2016 using the hashtag. This shows that examples of disinformation were spread in the immediate period following the coup attempt. It was observed that examples of disinformation were frequently shared following the

spread of information about the pro-coup soldiers who were believed to have played a role in the coup attempt. This suggests that these tweets might have been disseminated to manipulate or alter public opinion. Moreover, it was found that there were tweeters who also referred to such disinformation in their tweets. For example:

> *The picture of beheaded soldiers is not true. Do not believe these pictures!! #darbeyehayir (User1, 4.24pm, July 16, 2016).*
>
> *It is dishonourable to tell the lie that 'they tortured the soldiers' for those who prevented the coup with dignity and risking their lives #darbeyehayir (User2, 2.57am, July 16, 2016).*

The first example of disinformation came in a tweet which contained a photo showing the pro-coup soldier who was beheaded by the public at the Bosphorus Bridge during the coup. In the text, the tweeter claimed that this image was actually taken during a car accident in 2006 and the image of the headless soldier was false. However, there was no image in the original news story as claimed. In addition, many videos and Periscope recordings circulating on social media verified the lynching attempt and that these photos were taken after the coup (Foca, 2016). This shows how some forces tried to misinform the public and cover up events by spreading disinformation on Twitter. This tweet was shared as news, and other tweeters appeared to accept this news as real and retweeted it (445 retweets). The second example of disinformation which was spread was a photo showing a beaten pro-coup soldier being carried by a group of people with beards and wearing headscarves. This photo was framed as if soldiers were being attacked when they were actually being helped (Hurriyet, 2017). Tweeters discussed and commented on this news:

> *We do not want coups, we do not want sharia, we do not want people who cut off soldiers' heads and are similar to ISIS members #darbeyehayir (User3, 10.14am, July 16, 2016).*

As can be seen from the example, this user likens the people in the image to members of ISIS, based on their appearance. It was later understood that this photo did not reflect reality. In fact, these people were trying to save the soldier from a lynching and carrying him to a hospital (Hurriyet, 2017). It is clear that tweeters reported and discussed different events during the protests, but after they ended, it appeared that some of the news that had been tweeted did not reflect reality. The spread of disinformation thus reduced the reliability of the news spread on Twitter after the protests. The third

example of disinformation disseminated along with a photo showing the protesters who attempted to cut off the throat of a pro-coup soldier. It was understood that this photo was not taken during the protests, but during clashes in Syria in 2013 (Foca, 2016). After the end of the protests, several media outlets including Teyit, Hurriyet and Mynet reported that this was disinformation and that the picture was circulated without attribution or any explanation from eyewitnesses. In addition, it was found that this photograph, taken by Emin Özmen, was among the top 10 photographs selected by Time Magazine in 2013 (Pollack, 2013). However, tweeters responded to those images by referring to their ideas and feelings in tweets:

Someone wearing a Turkish flag soldier uniform should not be beheaded. This is a massacre, the traitors deserve death, not the soldiers #darbeyehayir (User4, 5.29pm, July 16, 2016). The final example of disinformation was about Ugur Dundar (he is a journalist in Turkey), the disinformation which was claimed that Ugur Dundar said that he was working on a new project and that the AK Party (ruling party) would be razed to the ground. During the sample period, this disinformation was disseminated by tweeters, with comments and ideas about it throughout the hashtag #darbeyehayir(nocoup). Later, Dundar, who objected to those words on Twitter that did not belong to him. Those who write this are low. They are all lies, slander, phony. I always said, "*Let democracy live, I will continue to say*". In summary, many tweeters appeared to believe news about the violence against the pro-coup soldiers and Ugur Dundar. They retweeted these allegations, as well as voicing their opinions about it using the #darbeyehayir hashtag. Other users read this news, saw the photos, and discussed this issue by tweeting about it themselves, thus perpetuating the disinformation.

Exploring social bot accounts using #darbeyehayir

This section focuses on social bot accounts detected during the analyses process. Although some social bots are benign and sometimes even useful, others are created to spread harm, by deceiving and manipulating social media users (Ferrara, Varol, Davis, Menczer, & Flammini, 2016). The detected bot accounts were likely created to manipulate and deceive tweeters by spreading false information or news under the hashtag. Table 2 shows the top five Twitter accounts detected as possible social bots under the study criteria, with information about the number of tweets, followers, following, listed, and joining dates as discussed in the methods section.

Table 2 Top Five Accounts Identified as Bots

USERNAME	TWEETS	FOLLOWERS	FOLLOWING	LISTED	JOINING DATE
E. B	460	338	1,647	0	July, 2016
D. O	78	19	81	0	July, 2016
A. D	50	5	2	0	July, 2016
E. T	47	55	250	0	July, 2016
K. B	28	4	50	0	July, 2016

It was found that some Twitter accounts were opened on the day of the coup attempt (15th July 2016), and that these accounts were also inactive after the end of the protests. Therefore, it can be understood that these accounts may have been created to alter or manipulate public opinion about the protests by disseminating false information and news related to the protests. The top five Twitter accounts detected as probable social bots were arranged by the quantity of tweets they posted about the events during the protests. In terms of follower and following counts, the number following is higher than the number of followers for four out of five of the accounts (all except @A. D), suggesting that they had not had time to attract any followers. This dimension has previously been uncovered to be a central element of the success and impact of bot actions (Ferrara, 2017). Furthermore, the findings showed that none of these tweeters had been added to a list on Twitter, suggesting that these accounts were not influential. In general, human users' accounts are considered to be more effective (Mønsted, Sapieżyński, Ferrara, & Lehmann, 2017) than automated accounts (bots). It appeared that bot accounts mostly posted tweets by using the retweet function, rather than creating original tweets. The proportion of retweets is also used in the analysis of an account in terms of whether it is a bot or not, as bot accounts retweet content more frequently than they create new tweets (Ferrara, 2017). The results suggest that while tweeters shared information and news related to the protests, the news and information flow was disseminated not only by human interactions but was also spread by social bots. In addition, through the analysis process it was detected that Twitter bots were deployed during the coup attempt to disseminate information about the coup by using the hashtag. It appeared that the bots found in this study were also linked to disinformation being shared using the hashtag. These bots' actors spread disinformation via Twitter during the coup attempt. It indicates the link between coordinated campaigns

and bots accounts to manipulate public opinion through social media platforms during major political events, via 'trolls' or dedicated accounts (Zannettou, et al., 2019).

CONCLUSION

This detailed analysis of the online content under the hashtag provides insight into the use of Twitter to spread manipulative content (through bots and other means) to shape public opinion and endorse different versions of events during the coup attempt. The protests following the coup attempt were often reported in the form of disinformation, which includes manipulated and fabricated content. In recent years, many democratic countries have experienced an increase in the levels of false information spreading through political websites and social media that mimic journalism formats (Bennett & Livingston, 2018). It revealed that stories containing false information with no sources or explanations were shared by tweeters who accepted such information as true. The findings related to the spread of disinformation without any explanations and sources reflect those of Humprecht and colleagues (2020), who examined resilience to the spread of disinformation online. They highlighted the lack of context in the diffusion of online disinformation, which causes false interpretations to be shared on social media. In addition, the findings showed that people accepted news which contained disinformation as real, and frequently shared it by reposting it on Twitter. This suggests that individuals are likely to share such information without questioning and verifying it (Shin & Thorson, 2017). Tweeters also often shared news containing disinformation with exaggerated and misleading information, possibly to manipulate other tweeters' opinions about the protests. It appeared that the tweets containing disinformation were often retweeted by others who probably accepted the disinformation as real. Bot accounts also might have attempted to shape social media content through Twitter in order to confuse public opinion about the coup and the subsequent protests. The findings showed that the bots accounts prefer to follow others rather than being following. This finding is agreed with Ferrara's (2017) findings, who examined the spread of disinformation and social bot operations during the 2017 French presidential election. Ferrara (2017) found bot accounts were explicitly designed to propagate tweets related to the Macron Leaks. Ferrara (2017) demonstrated that bots mostly have only a few followers, and that they follow a high number of Twitter accounts. The finding for social bots is important in terms of understanding the use of social media by different actors to sustain political

power by shaping social media content and manipulating individuals' opinions in Turkey, as highlighted by Bradshaw and Howard (2017). They have also noted that in Turkey bots are often deployed by political actors to flood social media content with fake news and spam. By inflating the number of retweets, likes and shares they can amplify marginal opinions and voices through artificial popularity and momentum (Bradshaw & Howard, 2017). Based on the findings related to the social bots, this study has shown how different actors are using social media as a strategy to disrupt political conversations. Although the study examined a small number of bot accounts by focusing on the top five Twitter accounts detected as possible social bots, even small numbers of bots might have a significant influence (Gilani, Farahbakhsh, & Crowcroft, 2017), such as enhancing the popularity of topics around the coup attempt. As Ferrara and colleagues (2016) highlighted, social bots are often benign, but some are designed to create harm, by deceiving and manipulating social media users.

It is important to recognise the limitations and biases of this study, including the methods and tools. For example, the study only presented the findings for the disinformation content and, bot accounts and their features under the hashtag #darbeyehayir. However, during the coup attempt, Turkish citizens created and posted tweets through different hashtags. Therefore, this analysis did not representative for all Twitter activity during the coup period. Future research should examine different hashtags used during this period to provide more detailed information about disinformation and bots accounts. In addition, the study applied a quantitative approach to examine disinformation content and bots accounts under the hashtag. In future research, the inclusion of different methods, such as interviews, would provide more in-depth results to help understand what people thought about the spread of disinformation and bots accounts on Twitter at this time.

GENİŞLETİLMİŞ ÖZET

Sosyal medya, haber yapmak ve haber öğrenmek için kullanılabileceği gibi, aynı zamanda yanlış bilgi üretmek ve yaymak için de de kullanılabilir. Hızlı haber ve bilgi paylaşımını, özellikle kriz dönemlerinde kolaylaştıran sosyal medya platformları, söylentilerin gerçek olarak rapor edilmesiyle ilgili riskleri de ortaya çıkarmıştır. Türkiye'de bu durum, yalan haber ve yanlış bilgilendirme gibi manipüle edilmiş içeriklerin sosyal medya aracılığıyla yayılmasıyla birlikte büyük bir sorun haline gelmiştir. Örneğin, Bradshaw ve Howard (2018) Propaganda Projesinden elde edilen verilere dayanarak, Türkiye'nin siyasi

partiler ve siyasi aktörler tarafından kamuoyunu etkilemek ve yönlendirmek için sosyal medyayı kullanarak yalan bilgi kampanyaları gerçekleştiren ülkeler arasında yer aldığını tespit etmiştir. Ayrıca sosyal medya platformları, hükümetler tarafından manipülasyon ve yanlış bilgi yayma aracı olarak kullanılırken, bu işlem sırasında hükümetler bot hesaplarından yararlanma yoluna gitmişlerdir (Woolley & Howard, 2018). Otomatik bot hesapların kullanımı ve siyasi trolleme, Türkiye'deki medyayla ilgili diğer sorunlu konular arasındadır (Saka, 2018).

Bu çalışma, Türkiye'deki 15-19 Temmuz 2016 tarihleri arasında gerçekleşen 15 Temmuz darbe girişimine odaklanmaktadır. Çalışma, bu süreçteki vatandaşlar tarafından en çok kullanılan #darbeyehayır hashtag 'ine odaklanırken, bu hashtag altında paylaşılan Twitter içeriğini analiz etmektedir. Bu analiz ile birlikte çalışmanın amacı, bu veri kümesindeki yanlış bilgi içeriğinin varlığının ve özelliklerinin tespit edilmesidir. Ayrıca çalışma, çeşitli kriterlere göre tespit edilen sosyal medya botlarının hesaplarını ve özelliklerini analiz etmektedir. 15 Temmuz olayı sırasında oluşturulan ve yayılan Twitter içeriğinin incelenmesi, manipüle edilmiş içerik ve bot hesaplarının keşfedilmesi iki nedenden dolayı önemlidir. Birincisi, darbe protestolarının ardından Hürriyet (2017), Teyit (Foca, 2016) ve Mynet (2016) gibi birçok medya kuruluşu, Facebook ve Twitter gibi çevrimiçi medya platformları aracılığıyla yanlış bilgi içeriğinin yayıldığını rapor etmiştir. Twitter, darbeye ilişkin yaklaşık 51 milyon tweet ile darbe girişimi sırasında en çok kullanılan çevrimiçi medya platformlarından biri olmuştur (Mis, Gülener, Coşkun, Duran, & Ayvaz, 2016; Esen & Gumuscu, 2017; Yanardagoglu, 2017). Bu nedenle, bu hashtag altındaki yanlış bilgi içeriğinin analizi, sosyal ve politik eylemler sırasında kamuoyunu manipüle etmek için Twitter'ın bir araç olarak nasıl kullanıldığına dair bilgi sağlamaktadır. İkincisi, sosyal bot hesapları, yanlış bilgilerin yayılmasında önemli bir rol oynamaktadır. Aktif olarak yanlış bilgi yayan hesapların bot olma olasılığı daha yüksektir (Shao, Ciampaglia, Varol, Flammini, & Menczer, 2017). Bu sayede, bu hashtag altındaki bot hesapların analizi, darbe girişimi ve darbe karşıtı protestoların ardından güvenilir bilgilerden ziyade yanlış bilgi yaymak için tasarlanmış Twitter hesaplarının anlaşılmasında yardımcı olmaktadır.

Twitter veri seti 15-19 Temmuz 2016 tarihleri arasında #darbeyahır hashtagi altında atılan tweetlerden oluşmaktadır. #Darbeyehayır altında gönderilen tüm tweetler, kullanıcı adı, takip sayısı, takipçi ve retweet gibi bilgilerle birlikte kaydedilmiştir. Toplamda, bu hashtag altında oluşturulan ve yayınlanan 277.964 tweet DiscoverText aracılığıyla elde edilmiştir. Çalışma, bu hashtag altında kullanıcılar tarafından en az bir kez retweet edilen toplamda 10.953 tweet'i analiz etmiştir. Yanlış bilgi

içeren tweetleri tespit etmek için önce çevrimiçi gazeteler, bloglar ve yanlış bilgi yayılımına kanıt sağlayan diğer çevrimiçi kaynaklar analiz edilerek darbe sırasında yayılan yanlış haberler belirlenmiştir. Daha sonra, yanlış bilgi içeren tweetler DiscoverText sistemindeki 'media-URL' işlevi kullanılarak konumlandırılmıştır. Bunun yanı sıra, sosyal medya bot hesapları çeşitli kriterlere göre tespit edilmiştir. Bu süreç için Ferrara'nın (2017) bot tespiti kriterlerinden yararlanılmıştır.

Hashtag altındaki çevrimiçi içeriğin bu ayrıntılı analizi, darbe girişimi sırasında kamuoyunu yönlendirmek ve olayların farklı versiyonlarını onaylamak için manipülatif içeriği (botlar ve diğer yollarla) yaymak için Twitter'ın kullanımına ilişkin bilgi sağlamaktadır. Çalışma, darbe girişimini izleyen protestolar hakkındaki bilgi ve haberlerin, manipüle edilmiş ve yanlış bilgiler içeren tweetler aracılığıyla birlikte rapor edildiğini bulmuştur. Bulgular, hiçbir kaynağı veya açıklaması olmayan yanlış bilgiler içeren hikayelerin, bu bilgileri doğru kabul eden kullanıcılar tarafından paylaşıldığını göstermiştir. Kullanıcılar, diğerlerinin protestolar hakkındaki görüşlerini manipüle etmek için, genellikle abartılı ve yanıltıcı bilgiler içeren haberleri paylaşmışlardır. Ayrıca yanlış bilgi içeren tweetler, diğer kullanıcılar tarafından gerçek olarak kabul edilip sıklıkla retweet edilmiştir. Twitter içeriği üzerine yapılan bu analiz, bu hashtag altında Twitter kullanıcılarını manipüle etmek ve aldatmak için bot hesaplarının oluşturulduğu ve yanlış bilgi veya haberlerin yayıldığını ortaya koymuştur. Bot hesapların darbe ve sonrasındaki protestolar hakkında kamuoyunun kafasını karıştırmak için sosyal medya içeriğini Twitter aracılığıyla şekillendirmeye çalıştıklarını göstermiştir. Sosyal bot hesaplarıyla ilgili bulgulara dayanan bu çalışma, farklı aktörlerin sosyal medyayı bir strateji aracı olarak kullanarak siyasal konuşmaların hedeflendiğini göstermiştir. Sosyal botlara yönelik bulgular, farklı aktörlerin siyasal güçlerini korumak için sosyal medya kullanımının anlaşılması açısından önemlidir. Ayrıca bulgular, bu aktörlerin bireylerin fikirlerini manipüle etmek için sosyal medya içeriğini nasıl şekillendirdiklerinin anlaşılması açısından da bilgi sağlamaktadır. Çalışma, olası sosyal botlar olarak tespit edilen ilk beş Twitter hesabına odaklanarak az sayıda bot hesabını incelemiş olsa da az sayıda botların bile önemli bir etkiye sahip olduğunun altı çizilmesi gereklidir (Gilani, Farahbakhsh, & Crowcroft, 2017). Ferrara ve meslektaşlarının (2016) vurguladığı gibi, sosyal botlar genellikle zararsızdırlar, ancak bazıları sosyal medya kullanıcılarını aldatmak ve manipüle ederek zarar yaratmak için tasarlanmıştır.

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