An Exploration of the Influence of Misinformation and Deterring Technologies

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Abstract. Misinformation campaigns, facilitated by the Internet and social media, have led to global democratic erosion and electoral authoritarianism in many countries. The presidential and parliamentary elections of 2023 in Turkey have borne witness to an escalating misinformation campaign orchestrated by supporters of all political parties. This work-in-progress (WiP) paper on the one hand reports our study that provides valuable insights into the labyrinthine tactics used not only to manipulate public opinion and influence election outcomes but also to destabilize the bedrock of democracy itself; on the other hand, three technologies are suggested to deter misinformation at different stages of its life cycle.

Keywords: Misinformation Campaign · 2023 Election in Turkey · Environmental Fingerprint · Control and Mitigation · Propagation Patterns.

1 Introduction

The presidential and parliamentary elections of 2023 in Turkey have borne witness to an escalating misinformation campaign orchestrated by supporters of all political parties [2], [5]. These instigators span a broad spectrum of society, encompassing organizations, political parties, media influencers, and individuals. The examination of these different facets of misinformation in the Turkish elections extends beyond the scope of mere political intrigue [2]. This study aims to provide valuable insights into the labyrinthine tactics used not only to manipulate public opinion and influence election outcomes but also to destabilize the bedrock of democracy itself.

The role of misinformation in democratic decay is insidious and significant, often underestimated due to its subtle yet persistent effects [6] (Lees, 2018; Cooper 2021). Misinformation campaigns can contribute to the erosion of public trust in institutions, a cornerstone of functioning democracies [5], [6]. By circulating falsified narratives or exaggerated accusations about corruption, election irregularities, or unsavory alliances, these campaigns can instill doubt and cynicism in the minds of citizens toward their democratic institutions. This resultant

skepticism serves to widen societal divisions and inflame political polarization, further destabilizing the democratic landscape [3], [6], [8].

Moreover, the spread of misinformation can undermine the legitimacy of elected officials and the electoral process itself [8]. When citizens are repeatedly exposed to false narratives suggesting election fraud or manipulation, they may begin to question the authenticity of election results, even when presented with contradictory evidence [3], [8]. This erosion of faith in the electoral process can lead to political apathy, reduced voter turnout, and even civil unrest, each of which seriously threatens democratic stability. The manipulation of information related to divisive issues such as terrorism, religion, and education can also contribute to societal fragmentation. This manipulation can foster an environment of 'us versus them,' exacerbating social tensions and making cohesive democratic dialogue more difficult.

Such a fractured societal landscape is often more susceptible to authoritarian tendencies, further accelerating democratic decay [3], [6]. To halt this insidious process, understanding these tactics and the motivations behind them is crucial [6], [8]. This knowledge forms the bedrock of developing effective strategies to combat misinformation, foster media literacy, and bolster the resilience of democratic processes [10]. Through such efforts, we can work to restore public faith in democratic institutions, reaffirm the integrity of the electoral process, and foster an informed citizenry capable of discerning fact from fiction. By doing so, we not only protect our democracies from the pernicious effects of misinformation but also help them to thrive in an era of digital disruption.

The administration and public are aware of the potential damages of misinformation and the consequences can be very damaging in the absence of credible truth-revealing mechanisms. The sophisticated, well-designed fake videos/audios not only are capable of triggering political scandals but are even sparking violent conflicts. Unfortunately, the understanding of the causes, propagation, and consequences of this disruptive technological change is very limited, and the detection, countermeasures, or mitigating methodologies are in their infant stage. It is an urgent need to investigate the rationale, threats, and technological solutions in order to protect our nation's interests from the escalating, more harmful visual layer attacks.

2   Misinformation in the 2023 Election of Turkey: Empirical Findings

During our comprehensive analysis of the 2023 Turkish general and presidential elections, we focused on misinformation news and utilized data provided by Teyit.org [11], a reputable Turkish website known for its meticulous analysis of news accuracy. The analysis period encompassed the timeframe from February 1st to May 20th, aligning with the elections held on May 14th and 28th. Our approach involved categorizing and coding a total of 184 news pieces based on various criteria. These criteria encompassed the news topic (political, social, foreign, economic), target audience (anti-government, anti-opposition, intra-party),
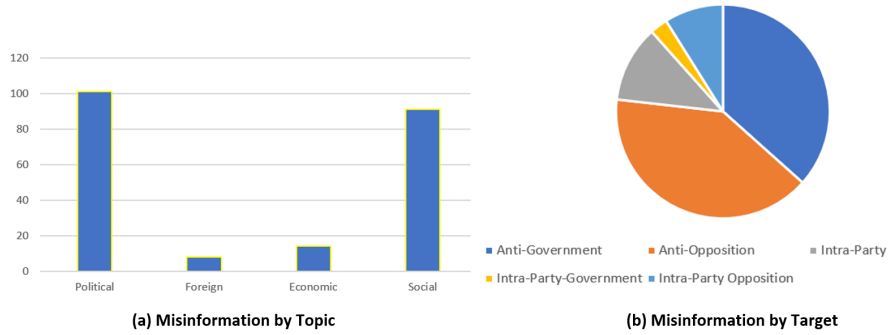
(a) Misinformation by Topic

(b) Misinformation by Target

Fig. 1. Distribution of Misinformation by Topic and Target.

style of presentation (use of videos versus photos), and the extent of social media shares. We also conducted coding based on specific issues within each category. In the political category, we examined factors such as terrorism, corruption, resignation/switching sides, election irregularities, polls, rallies, and personal matters [2], [5]. This allowed us to gain insights into the misinformation surrounding these particular political issues. Similarly, within the social category, we delved into issues related to social cleavage, religion, earthquakes, and immigration.

As illustrated in Figure 1(a), misinformation campaigns predominantly focus on either political or social issues, with political issues slightly outweighing social ones. This focus indicates that these two categories represent vital arenas in the struggle for public opinion and electoral sway. Economic issues also feature prominently, accounting for 16 percent of misinformation campaigns. This prominence underscores the role of economic concerns in political discourse and public sentiment, with misinformation attempting to manipulate perceptions of economic performance, policies, and prospects. Conversely, foreign-related issues, while present, constitute a relatively smaller fraction of the misinformation landscape, making up about 6 percent of the total campaigns. This lower frequency suggests that, although foreign affairs can be a significant factor in electoral politics, they are less often the primary focus of misinformation in the context of these elections.

While misinformation campaigns appear to target pro-government and anti-government political leaders or parties at comparable rates, our analysis also reveals a significant prevalence of intra-party misinformation campaigns, shown by Figure 1(b). These campaigns, ranking as the third most common form of misinformation, largely revolve around internal disputes and controversies within the political parties. For instance, the case of Muharrem Ince, the presidential candidate in the 2018 election, provides an illustration of this phenomenon. Inci parted ways with the Republican People's Party (CHP) to establish a new political entity. This incident served as a fertile ground for the dissemination of intra-party misinformation.

Likewise, Mansur Yavas' nonexistent departure from the CHP was manufactured in similar misinformation campaigns. Further, intra-party misinformation was not confined to the opposition. The ruling Justice and Development Party
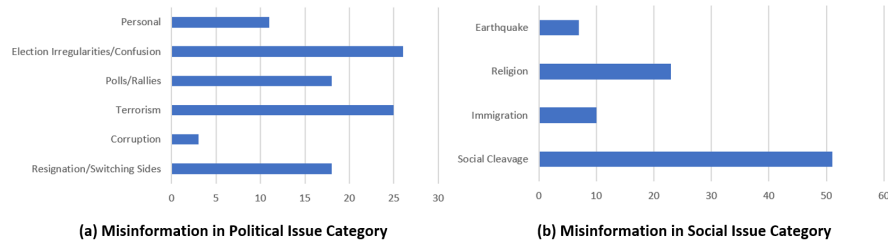
(a) Misinformation in Political Issue Category

(b) Misinformation in Social Issue Category

Fig. 2. Distribution of Misinformation in Categories.

(AKP) also became a target. Fabricated narratives revolved around statements made by former AKP minister and leader of a new political party, Ali Babacan, regarding the AKP. Additional misinformation campaigns focused on claims surrounding Sinan Ogan, the presidential candidate. This included alleged reports of his resignation and a plethora of other unfounded assertions about him. These examples underscore the complexity of misinformation strategies, revealing how they can exploit not only inter-party rivalries but also internal divisions and power struggles within political parties.

Figure 2(a) presents a breakdown of the political issue category, highlighting that misinformation on electoral irregularities and terrorism dominates this segment. It becomes evident that both sides of the political divide strategically employ narratives pertaining to Kurdish political movements to undermine the credibility of the other. This tactic underscores the politicization of the Kurdish issue and its perceived potential to sway electoral sentiments. The third significant category comprises misinformation campaigns related to resignations or party defections. These campaigns aim to cast doubt on the party's electoral strength and stability by spreading narratives about political elites abandoning a certain party. Such strategies are designed to portray an image of internal discord and loss of confidence, thereby potentially influencing public opinion about the party's ability to govern effectively. Following these categories, we find misinformation concerning the size of political rallies. These campaigns seek to manipulate perceptions of a party's popularity by misrepresenting the number of attendees at their rallies. By inflating or deflating crowd sizes, these misinformation efforts attempt to create narratives about growing or waning public support, shaping perceptions of the political landscape accordingly.

As depicted in Figure 2(b), a substantial proportion of misinformation within the category of social issues is designed to intensify societal divisions along ethnic and religious lines. This form of misinformation often employs the contentious issue of the Kurdish conflict for political gain. On one side, supporters of the Justice and Development Party (AKP) promulgate fabricated information purporting that the Kurdistan Workers' Party (PKK), a Kurdish separatist group, offers its backing to the main opposition party, the Republican People's Party (CHP). Conversely, the opposition camp, which includes the CHP and its allies such as the Nationalist Good Party (IYI Party), emphasizes the alliance of a religiously oriented Kurdish party, HUDA-PAR with the AKP.

An analysis of the data reveals that misinformation associated with societal cleavages comprises nearly half, approximately 50 percent, of the overall misinformation content in the social issue category. Further, about 22 percent of misinformation campaigns leverage religious themes to discredit potential rivals or confuse their likely voter base. Another key strategy employed by the opposition includes capitalizing on the growing anti-Syrian sentiment among Turkish citizens. Misinformation campaigns, in this case, tend to exaggerate the number of Syrian refugees acquiring Turkish citizenship, increasing the electoral chance of the AKP in the election, or depict them as hostile entities posing a threat to Turkish citizens. Lastly, approximately 8 percent of misinformation campaigns within this category exploit the issue of earthquake preparedness and response. It is critical to understand that each of these categories, while individually significant, collectively contribute to a nuanced, multi-faceted approach to spreading misinformation for political ends.

3   Detecting and Deterring Misinformation

New technologies bring forth novel challenges but also ways of dealing with such threats. Besides aiming at a more insightful understanding of the influences of misinformation, this work also investigates technical approaches to detect and deter the propagation of misinformation. Corresponding to the life cycle of misinformation, we suggest technologies to fight misinformation from three aspects: (1) authenticating multimedia content, (2) examining the roots and spreading pattern, and (3) controlling and mitigating misinformation flows. Because of the limited space, the technical approaches are described concisely here, interested readers may find more details from the references.

1. Authentication. AI-powered digital signal processing technology is promising to identify fake multimedia content, including videos, audio, and images posted on social media and news websites. For instance, one of the recently developed approaches, which is called DeFakePro, leverages the embedded environmental fingerprints to detect deepfaked multimedia content [7].

2. Recognition. It is also suggested by researchers to identify the origins and evolution patterns of misinformation. The recent development in the field of computational network science (i.e., evolution tree analysis) revealed significant differences between real and fake news stories in terms of evolution patterns [4]. This observation laid a solid foundation to distinguish the data flows corresponding to misinformation.

3. Mitigation. By examining causality and extracting further insights for misinformation handling based on the diffusion patterns of misinformation and the characteristics of the perceived harms from victims, it is possible to control and mitigate misinformation flows based on the joint efforts of machine-based and human-based components [9]. The goal is to outline optimized strategic action plans that help misinformation mitigators better control opposite flows of information to minimize possible harm.

4   Conclusions and Future Work

Our analysis reveals significant insights into the factors influencing the targeting and dissemination of anti-government misinformation. However, it is important to acknowledge that our study represents a snapshot of a specific context and time period. Future studies should aim to collect and analyze more comprehensive data to enhance the generalizability of findings. Further research should delve deeper into understanding the intricate mechanisms and tactics used to manipulate public opinion through misinformation during these strategic time slots [3]. By expanding the scope of data collection, considering different contexts, and conducting longitudinal studies, future research can provide a more nuanced understanding of the role and impact of misinformation in shaping public discourse and influencing political processes [1]. Overall, this study serves as a foundation for further investigation, emphasizing the need for continuous research efforts to uncover the complexities surrounding the use of misinformation during critical events like elections.

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