

Social Media in Crisis Communication: A Case Analysis of the 2023 Kahramanmaraş Earthquakes

Kriz İletişiminde Sosyal Medya: 2023 Kahramanmaraş Depremlerine Yönelik Bir Vaka Analizi

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Abstract

This study examines the role of Twitter/X, a news platform, in crisis communication. The aim of the study is to contribute to the literature on crisis communication by understanding the importance, effectiveness, and applicability of social media. For this purpose, a qualitative research was conducted to determine how X was used as a communication tool during crises, specifically focusing on a case analysis of the Kahramanmaraş earthquakes. Within the scope of the research, 182 tweets shared between February 6th and 13th, 2023, from the official X account of the Disaster and Emergency Management Presidency (AFAD), were examined. Content analysis method was employed to analyze the tweets, focusing on content, frequency of sharing, and interaction rate. The research findings indicate that AFAD's tweets were categorized into four main themes: "information on processes, support services, announcements, and disinformation and communication." The findings suggest that the posts were predominantly made during the initial period of the crisis characterized by high uncertainty, with the most shared content focusing on search and rescue operations. Another research objective was to determine the interaction rate of AFAD's crisis communication messages. Accordingly, it is noteworthy that the theme with the least frequency of sharing, "disinformation and communication," received the highest interaction from users. The findings of this study, which focuses on the transformative power of social media in crisis communication, confirm that the need for reliable communication channels and verified information/sources increases during crises, and it confirms the significant role of institutional social media accounts in combating disinformation.

Keywords: *Crisis Management, Crisis Communication, Disinformation, Social Media (Twitter/X), AFAD*

Öz

Bu çalışma, haber platformu olan Twitter/X'in kriz iletişimindeki rolünü incelemektedir. Çalışmanın amacı, sosyal medyanın önemini, etkinliğini ve uygulanabilirliğini anlayarak, kriz iletişimi literatürüne katkıda bulunmaktır. Bu kapsamda Kahramanmaraş depremlerine yönelik bir vaka analizi üzerinden X' in kriz anında bir iletişim aracı olarak nasıl kullanıldığını belirlemeye yönelik nitel bir araştırma yürütülmüştür. Araştırma kapsamında, Türkiye Afet ve Acil Durum Yönetimi Başkanlığı'nın (AFAD) resmi X hesabından 6-13 Şubat 2023 tarihleri arasında paylaşılan 182 tweet incelenmiştir. Tweetlerin analizinde içerik analizi yöntemi kullanılmış paylaşımlar; içerik, paylaşılma sıklığı ve etkileşim alma oranı üzerinden incelenmiştir. Araştırma bulguları, AFAD'ın tweetlerinin "işleyişe yönelik bilgiler, destek hizmetleri, duyurular ve dezenformasyon ve iletişim" olmak üzere dört ana tema altında sınıflandırıldığını göstermektedir. Bulgular, paylaşımların yoğun olarak yüksek belirsizlik içeren krizin başlangıç döneminde yapıldığını, en çok paylaşılan içeriğin ise arama-kurtarma operasyonlarına odaklandığını ortaya koymaktadır. Başka bir araştırma amacı, AFAD'ın kriz iletişimi mesajlarının kullanıcılar tarafından etkileşim oranını belirlemektir. Bu bağlamda, en az paylaşılan tema olan "dezenformasyon ve iletişim" temasının kullanıcılar tarafından en yüksek etkileşimi alması dikkat çekicidir. Bu çalışmanın bulguları, kriz iletişiminde sosyal medyanın dönüştürücü gücüne odaklanarak, krizler sırasında güvenilir iletişim kanallarına ve doğrulanmış bilgi/kaynaklara olan ihtiyacın arttığını ve kurumsal sosyal medya hesaplarının dezenformasyonla mücadelede önemli bir rol oynadığını doğrulamaktadır.

Anahtar Kelimeler: *Kriz Yönetimi, Kriz İletişimi, Dezenformasyon, Sosyal Medya (Twitter/X), AFAD*

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Introduction

Crisis originating from events is a situation characterized by high uncertainty and a significant spread of unverified information from the moment it emerges. The state of uncertainty caused by the crisis and the rapid dissemination of unverified information are among the most important reasons that necessitate the effective management of all types of crises. In this regard, crisis communication, which constitutes one of the most important tools of crisis management, allows organizations to provide instant and rapid responses to crises during this critical process. Especially with the development of social media, it offers new strategies for crisis management and options for utilizing new channels in crisis communication. On the other hand, the rapid spread of unverified information in social media environments and the necessity to conduct communication processes swiftly also bring some challenges to the use of social media for businesses during crisis periods. In this sense, it wouldn't be wrong to say that the use of social media in the crisis communication process for businesses encompasses both advantageous and challenging aspects.

Similarly, like in other disaster-induced crises, the Kahramanmaraş earthquakes have found their place in the literature as crises with high dissemination on social media. On February 6, 2023, Turkey experienced two major earthquakes with magnitudes of 7.7 and 7.6, both centered in Kahramanmaraş. Immediately following the first earthquake at 4:17 AM, the crisis communication arm of the Disaster and Emergency Management Authority (AFAD) through social media commenced with the first post on AFAD's official X account at 5:54 AM. Shortly after AFAD's official announcement, the Turkish Government declared a Level 4 high disaster status. With the spread of earthquake news nationally and internationally, the presence of accurate information that would inform the public correctly and benefit the region became crucial.

Upon analyzing Adba Analytics' social media report on the Kahramanmaraş earthquakes, which covers the period of February 6-7, it is evident that X was the most widely used social media platform with a usage rate of 98%. According to the same report, during these dates, there were 51.98 million posts made by 559.06 thousand users on X, resulting in 40.27 billion impressions and 296.99 billion potential views. Additionally, the report indicates that tweets were most frequently shared with the hashtag #deprem (including retweets, totaling 11.3 million tweets). These data illustrate that the Kahramanmaraş earthquake gained momentum through earthquake-related posts on X. In this context, it can be asserted that X has become a primary information hub for individuals seeking real-time information about the earthquake.

This situation particularly arises during crisis periods caused by events like earthquakes, where the rapid flow of information opens the way for the spread of misinformation. Individuals, whether intentionally or unintentionally, can contribute to the dissemination of unverified information and news. Therefore, it becomes highly significant for official institutions responsible for crisis management to share crisis-related information and news instantly through their official accounts on social media platforms, just as they do through other news sources. Sharing content from official accounts that is well-sourced and accurate is essential in combating social media-driven disinformation during crisis periods characterized by high uncertainty and the public's heightened need for information. This approach is crucial for mitigating the growth and escalation of the crisis, reducing panic and anxiety, and coordinating the situation.

In this context, the present study addresses the use of social media as a crisis communication tool in the management of disaster-induced crises, and aims to present the opportunities and risks arising from the integration of social media into crisis communication through a case analysis of the Kahramanmaraş earthquakes.

The first section of the study discusses the concepts of disaster, types of disasters, disaster management, and crisis management within the context of integrated disaster management. It explains the conceptual foundation of disaster management and crisis management approaches.

The second section focuses on the role of crisis communication in the management of crisis-induced disasters. This section summarizes the theoretical foundations of crisis communication and efforts in crisis communication, providing an overview of crisis communication efforts in disaster-induced crises in Turkey.

In the third section, the approach of crisis communication through social media in the management of disaster-induced crises is discussed, addressing the opportunities and challenges brought about by the integration of social media into crisis communication. This section examines the advantages of social media platforms, such as real-time communication, stakeholder engagement, and information dissemination. It also highlights challenges such as the rapid spread of misinformation, loss of message control, and the potential of inadequate responses to provoke reactions. The impact of crisis management efforts on corporate reputation is extensively discussed as well.

In the final section, the focus shifts to the evaluation of crisis communication through the use of the @AFADBaskanlık X account by the Disaster and Emergency Management Authority (AFAD), a government agency responsible for disaster management under the Ministry of Interior Affairs in Turkey, following the Kahramanmaraş earthquakes. The study centers on content analysis of the 182 posts shared on the @AFADBaskanlık X account, assessing content, frequency of sharing, and interaction rates (comments, likes, and shares) using a content analysis approach.

The official name of the social media platform Twitter was changed to X on July 23, 2023. In order to ensure the currency of the literature within the scope of the study, the new official name of the social media platform, X, has been used.

1. Literature Review

1.1. Contemporary Approaches in Disaster and Disaster-Induced Crisis Management

Due to its specific conditions (seismic, tectonic, topographic, and climatic characteristics, as well as economic, political, social factors, etc.), Turkey is a country that is likely to face a wide range of disaster type (Karaman, 2016, p. 2). Disasters, regardless of their triggering causes, are events that negatively impact lives from the moment they occur, causing significant losses for the parties involved and resulting in substantial costs if ignored (Altay et al., 2016, p. 307). Another similar definition characterizes disasters as events that occur unexpectedly in time and place, threatening humanity from the moment they emerge, causing loss of life and property, and leaving countries, societies, and institutions vulnerable (Toker, 2016, p. 249). Additionally, looking at the damage caused by disasters, they can also be described as low-probability events with high impacts (Altay, 2016, p. 148). While disasters can be defined as hazardous events, the ability of the parties exposed to these events to cope with them and

their vulnerability state are also emphasized in society (Turan, 2021, p. 153). In this context, a key feature of disaster management is the undertaking of measures and necessary preparations by relevant parties to minimize the damages of unavoidable situations before they materialize. Otherwise, the management of disasters that leave the parties vulnerable in many ways becomes more challenging once they occur. However, considering the conditions and origins of occurrence, it can be stated that for some disasters, preparations can be made beforehand, while for others, actions need to be taken once they occur. Altay (2016, p. 149) attributes this distinction to the nature and sources of disasters, noting that some are natural in origin while others are human-induced (technological and human-caused). Natural disasters encompass events such as earthquakes, floods, landslides, avalanches, droughts, storms, hail, tornadoes, and meteorite falls, which result from unpredictable and uncontrollable natural phenomena (Benli, 2018, p. 61).

Disasters, whether natural or human-induced, are events that threaten the healthy and balanced living of society, requiring the planning and management of all stages. The process of managing disasters necessitates an integrated approach that combines societal strength and resources to create more resilient and resistant communities (Benli, 2018, p. 60). Due to this characteristic, Karaman (2016, p. 3) refers to disaster management as a separate field within public administration, requiring an interdisciplinary framework that calls for collaboration across various fields due to its multifaceted dimensions and characteristics. Another significant point highlighted by Karaman is that with its evolving dimensions, both disasters and the efforts to manage them have become important indicators of the sustainable development levels of societies. In other words, the ability to manage disasters is associated with the level of development of countries, emphasizing that disaster management is more effective in countries with higher levels of development. Özer (2016, p. 184) similarly notes that the impact of disasters varies according to the level of development, further emphasizing that disasters negatively affect the development processes of countries.

In this regard, there is an emphasis on the preparation of integrated risk-crisis management strategies for effective disaster management, making these strategies more comprehensive by learning from past experiences, and creating more resilient communities considering different types of disasters (Karaman, 2016, p. 1). It can be asserted that in cases where preventive/mitigating measures for managing uncertain situations brought about by disasters are not carried out, the result can lead to even larger and more difficult-to-manage crises than originally faced.

When examining the studies conducted from the past to the present on the subject, it is evident that today, an integrated disaster management approach is being primarily embraced in the field of disaster management. In this approach, disaster management is addressed in four stages: risk and damage reduction, preparedness, response, and recovery. The first two stages, risk and damage reduction, encompass risk management efforts related to the topic. The third and fourth stages, response and recovery, are based on crisis management efforts. In this context, risk management efforts encompass activities conducted before the occurrence of a disaster, while crisis management efforts refer to intervention activities carried out in the aftermath of a crisis (Özer, 2016, p. 184).

In this context, risk management efforts encompass activities directed towards preparing for and mitigating potential crisis situations, involving the study of past crisis instances to understand how similar crises could be managed and how communication strategies could be developed. Crisis management, on the other hand, pertains to the rapid and effective

communication strategies and messages executed from the onset of a crisis to preserve and, if necessary, reconstruct organizations' reputations and credibility through post-crisis recovery efforts. Çağırtekin (2023, p. 4) emphasizes the significance of differentiating these two processes based on their scope and processes, as risk management involves addressing potential risks before a disaster and mitigating the effects of chaotic situations arising during/after a disaster. Furthermore, it underscores the necessity to recognize crisis management as a separate discipline that embraces distinct methods from disaster management and covers activities before, during, and after a crisis. Moreover, within the scope of crisis management, a restructuring path should be taken, and institutionalization should be highlighted as a central component of the determined policy. In other words, crisis management should be regarded as a separate science, a discipline that deals with possible damages before, during, and after a crisis, and a policy formulated considering its distinct nature should take these aspects into account.

Furthermore, alongside the integrated disaster management approach that necessitates a holistic perspective encompassing both risk management and crisis management processes, another crucial topic that receives significant attention in current academic research on the subject is the stakeholders of disasters. Azad et al. (2019) note that the perspective and studies focusing on the stakeholders of disaster management have gained prominence in disaster management literature after the 2000s, manifesting as a community-based approach. Yodmani (Yodmani 2001), explains this trend by the need for a perspective that requires the participation of the entire community for effective disaster management. Community-based disaster management is defined as an approach that involves the direct participation of individuals with the highest likelihood of exposure to hazards in planning and decision-making processes (Jahangiri et al., 2011). The success of this approach hinges on the acceptance of prescribed activities by communities, willingness to take responsibility in processes, and trust in coping mechanisms. Accordingly, educating individuals in communities about dangers and risks, soliciting their ideas and opinions in processes, and collaborating in a coordinated manner with experts and other stakeholders are emphasized (Turan, 2021, p. 161).

1.2. Disaster-Induced Crisis Management and Crisis Communication

The prevailing approach in modern disaster management, the integrated disaster management perspective, which focuses on the involvement of all stakeholders in the processes through a community-based approach, exhibits parallelism with the crisis management approach. This parallelism arises from the fact that the crisis management approach encompasses a two-phase process: proactive (preventing crises before they occur) and reactive (post-crisis response) stages, involving the participation of relevant parties in all phases of crisis management processes. This perspective entails a comprehensive outlook that must be executed in three distinct periods: before, during, and after a crisis. Among these, the most crucial concerns the actions that must be taken the moment a crisis emerges. This priority can be attributed to the relatively lower time pressure associated with actions before and after a crisis. The urgency stems from the need to swiftly address preventive and risk-reduction measures tailored to the current situation, such as uncertainty, information needs, coordinated efforts with the public and relevant institutions, etc., at the onset of a crisis. This exigency emphasizes the significance of rapid crisis response actions in crisis management.

Crises are defined as unforeseen events that occur unexpectedly and negatively impact organizations/societies at the moment they arise (Akdağ & Taşdemir, 2006, p. 143). Crisis management entails collaborative efforts involving all stakeholders, urgent implementation

of measures to restore normalcy, rebuilding of trust, and constant informing of stakeholders in accordance with evolving developments.

The most significant difference between crisis management and disaster management is that not all crises originate from disasters, but every disaster management process necessitates crisis management efforts. In other words, while not all crises are caused by disasters, every disaster can potentially lead to a crisis (Çağırtekin, 2023, p. 37). In alignment with this perspective, various studies in the literature have explored how disasters stemming from various causes can escalate into crises, necessitating crisis management efforts.

During a disaster, establishing and disseminating different communication mechanisms is crucial based on the scale and type of the disaster. If we conceptualize disaster communication, in addition to accurate and timely information dissemination during disasters, effectively articulating and conveying the dimensions and risks of the disaster are equally important. For instance, during the August 2005 Hurricane Katrina that struck the United States, despite scientists and relevant institutions warning the public in a timely and accurate manner, the catastrophe and loss of life were substantial. The fact that this devastation and loss of life could not be prevented despite timely information dissemination actually reveals deficiencies in the content of communication (Comfort, 2007, p. 190). In this regard, conveying the scope of the disaster effectively through communication is of paramount importance. Comfort emphasizes that in disasters, communication is as crucial as coordination and control, noting that bridging inconsistencies between information and action among responsible organizations in building resilience for a community exposed to serious risks can also be achieved through communication.

The first association regarding the role of crisis communication in disaster-induced crises was made after the Chernobyl disaster in 1986. Following the nuclear catastrophe, the government's concealment of information and inadequate information sharing turning the incident into a crisis marked the first example highlighting the significance of communication during crises (Genç, 2008, p. 163). Crisis communication refers to the communication focused on swiftly conveying crisis-related information to stakeholders, primarily described as part of crisis intervention efforts initiated at the onset of a crisis (Comfort, 2007, p. 192). Another definition states that crisis communication encompasses the entirety of communication methods planned in advance, regulatory, and control-enforcing activities that can be employed to reduce the potential damages that a crisis might cause (Akdağ & Taşdemir, 2006, p. 143).

Crisis communication plays several important roles in the crisis management process. These roles can be articulated as follows (Akdağ & Taşdemir, 2006, p. 143):

- Ensuring communication and coordination among collaborating institutions in disaster management.
- Facilitating transparent and open inter-organizational communication.
- Controlling the disseminated messages by the organization responsible for disaster management to prevent misinformation and deception.

In studies related to disaster management, crisis management and crisis communication efforts have been attributed a significant role in managing the chaos that emerges during disasters and responding calmly to the uncertainties of the crisis. This is attributed to the fact that crises are extraordinary situations that threaten the existence and objectives of

stakeholders (individuals/organizations/countries) and require rapid response. Another crucial aspect emphasized in crisis communication is its ability to manage incorrect and incomplete information that might arise due to the uncertainties following the occurrence of disaster-induced crises (Toker, 2016, p. 252).

1.3. Crisis Communication in Disaster-Induced Crises in Turkey

Policies concerning natural disasters in our country began to be developed after the 1939 Erzincan Earthquake. The legal framework and regulations related to disasters were established through the Regulation on Emergency Aid Organization and Planning Principles issued in 1988. An event considered a turning point in the field of disaster management and coordination in Turkey is the 17 August 1999 Marmara Earthquake. Following this earthquake, due to coordination problems, the Directorate General of Emergency Management of Turkey, which was responsible for disasters, was closed down. In 2009, with Law No. 5902, the Disaster and Emergency Management Presidency (AFAD) was established under the Prime Ministry, consolidating authority and responsibilities under a single umbrella (Anonim 2018).

After the 1999 Marmara Earthquake, various disasters including the 2011 Van Earthquake, 2020 Elazığ Avalanche Disaster, 2020 Elazığ Earthquake, 2020 İzmir Earthquake, 2021 Antalya Forest Fires, and the 2021 Western Black Sea Flood Disaster have accelerated efforts in Turkey concerning crisis management for disaster-induced crises. In this context, a common point in these efforts is the recognition of disasters as crises that need to be managed, emphasizing the importance of crisis communication in effectively managing these crises.

Following numerous negative examples, the understanding of the intermediary role of crisis communication in crisis management has diversified the efforts of the Ministry of Interior, responsible for disaster management in the country. The Directorate of Internal Security Strategies, operating under the Ministry of Interior, prepared a Crisis Communication Management Guide in 2020 within this framework. In the guide, concepts related to crisis communication management are explained, and a general model for communication management processes to be carried out during potential crisis situations such as terrorism, security issues, natural disasters, workplace accidents, public health concerns, and fires is established. The guide outlines the communication flow during crisis moments in six steps (İçişleri Bakanlığı İç Güvenlik Stratejileri Dairesi Başkanlığı 2020).

- Approaching the situation comprehensively with all its realities, consulting information sources, verifying the origin and reliability of consistent information to define the event.
- Informing relevant individuals, teams, and local/state-level institutions.
- Determining the level of the crisis, organizing the crisis team, and selecting the crisis spokesperson.
- Implementing the crisis communication plan and activating the crisis spokesperson.
- Approving periodic update plans and communication messages, identifying the target audience, organizing media content, and coordinating media personnel.
- Transmitting communication messages to the target audience and all stakeholders simultaneously and with a single voice through appropriate channels (email groups, social media, website, etc.), following the communication plans.

Furthermore, it is evident that disaster communication holds a significant place among the goals set out in the Turkey Disaster Response Plan published by AFAD. In the plan, disaster communication is defined as a key component for reducing fear and panic caused by disasters during the event, preventing disinformation, and ensuring a healthy flow of information with other institutions. It is emphasized that in case of communication interruption, the disaster could escalate to larger proportions than the disaster itself (Türkiye Afet Müdahale Planı, 2023, p. 57).

1.4. Crisis Communication through Social Media in Disaster-Induced Crises

The internet and online tools are continually gaining significance in our lives. The reflections of this trend can be observed in the changes occurring in various aspects of daily and professional life. According to the Turkey Digital 2023 Report, 72% of Turkey's population are internet users, spending an average of 7 hours and 24 minutes per day online. Furthermore, 73% of the population are social media users, dedicating around 2 hours and 54 minutes daily to social media usage. Analyzing the purposes of social media usage reveals that users primarily utilize these platforms for staying informed and maintaining communication with friends and family. Among social media platforms, X, often described as a news-sharing network, ranks as the third or fourth most visited and time-spent platform on a monthly basis (We Are Social Report 2023).

Based on this information, it wouldn't be incorrect to say that the shifts in our communication channels and news sources also influence crisis communication efforts and the communication channels used for such purposes. Yıldırım (2023, p. 558) underscores the importance of leveraging digital communication tools for coordinating efforts during crises, highlighting that these tools play a vital role in facilitating smoother and instant communication for both response teams and those affected by the disaster. Toker (2016, p. 270-271) emphasizes that social media is now the most significant medium in shaping societal perceptions, and it becomes an indispensable tool during crisis situations, particularly those characterized by the need for effective time management and increased demand for real-time information, such as disasters.

Social media has become an effective communication tool in disasters, particularly due to its ability to facilitate active participation of large audiences, promote interactive communication, and instantly disseminate messages. During disasters, social media plays a critical role in crisis communication by enabling rapid dissemination of information and aid calls, thus constituting a significant component of the disaster process (Argin, 2023, p. 146).

An established example of social media usage in disaster management globally is evident in the 5.8 magnitude earthquake that occurred in the United States in 2011. Responding to the disaster, emergency teams utilized X to communicate with the public, providing information about the damages in the region and announcing necessary precautions. Amidst the challenges of disrupted cellular communication during the earthquake, the public resorted to X and short message services (SMS) to establish communication and obtain information (Soydan & Alpaslan, 2014, p. 64).

In Turkey, there have been various examples of using social media during disaster situations. The first instance of using social media as a tool for disaster management in the country is attributed to Taşçı's (2011) study on the Van Earthquake (as cited in Toker, 2016, p. 270). Another example related to the 2011 Van Earthquake is the immediate use of the popular microblogging site X by TV host Okan Bayülgen to relay urgent information he received. When a follower sent Bayülgen an address where people were trapped under rubble, and Bayülgen

forwarded the message to AKUT search and rescue teams, two individuals were saved from the rubble within hours, highlighting a compelling perspective on the role of social media in such situations (Zincir & Yazıcı, 2013, p. 78).

Another example is the bombing attack that occurred in Ankara in 2016. After the bombing, individuals shared information about their safety widely through social media applications during the uncertainty and societal crisis that followed the attack. Consequently, considering the current usage rates of social media, it is accurate to state that people prefer social media over conventional emergency hotline numbers. Besides the immediate physical benefits provided by social media in such circumstances, its technological advantage over traditional media in terms of speed and reach during a crisis is crucial. While a power outage during a disaster could disable communication tools of traditional media, social media can continue to function as the sole communication channel. This allows for continued internet connectivity for a certain period, enabling seamless communication through social media, especially via mobile devices. Considering the significance of having at least one communication channel open during a disaster, this becomes vital for organizations and individuals.

1.5. Crisis Communication and Disinformation through X in Kahramanmaraş Earthquake

Emphasis is placed on the importance of internet-based applications in maintaining uninterrupted communication during earthquake disasters, highlighting the critical role they play in ensuring the public is accurately and comprehensively informed (Zincir & Yazıcı, 2013). The intermediary role of social media in earthquake crisis management can be listed as follows: its reliable structure that allows communication and information sharing in cases where traditional communication infrastructure is damaged, its facilitation of coordination for those in need of emergency services and assistance organizations to easily access them, and its rapid provision of information flow during crises, thereby aiding in understanding the dimensions of the crisis. Additionally, the use of social media in crisis management brings about certain advantages and challenges. Among the most significant advantages are social media's capacity to rapidly reach broad audiences, its provision of rapid access which enables real-time data collection and analysis. For instance, Şahin and Demirbilek emphasize in their study on the earthquakes centered in Kahramanmaraş that the research findings highlight social media as a prominent communication source for informing the public firsthand during earthquakes. They underline that the frequency of AFAD's posts on the first day of the earthquake supports this strategy (2023, p. 326). Furthermore, research indicates that, apart from official institutions, X is also the most shared platform for earthquake-related content among disaster victims. The results of Argin's (2023) study on the analysis of X platform hashtags during the Kahramanmaraş earthquake reveal that within the first 72 hours of the earthquake, X served as the platform where users shared solidarity and mutual aid, post-disaster information, news/information, announcements, ethical violations, and posts directed at relevant institutions.

On the other hand, the issue of using social media for crisis communication during earthquakes entails the potential spread of rapid and misleading information, the possibility of access problems due to internet or power outages, and concerns related to personal information privacy and ethical issues. As a reason for this situation, Koçyiğit (2023, p. 68) highlights the confusion caused by unverified information circulated without questioning the source, as well as directly and intentionally produced misinformation, particularly during emergencies or crisis moments. They emphasize that the risks posed by this confusion, especially during crisis periods, are significant.

In studies conducted on the subject, emphasis is placed on the circulation of false and manipulative news, termed as fake news/disinformation, reaching wide audiences through social media's influence (Çömlekçi, 2019, p. 1550). In addition, emphasis is placed on the fact that the intentional or accidental sharing of content with uncertain sources can induce fear and anxiety in individuals and lead them astray, highlighting the importance of correct and effective use of social media during crises for crisis management and combating misinformation (Koçyiğit, 2023, p. 72).

An example of manipulative and unethical news disseminated through X can be observed globally and in Turkey, where images depicting injured and/or deceased individuals during disaster moments are shared uncensored on social media platforms. An instance from Turkey includes the sharing of images related to a father who tragically passed away in the Elazığ earthquake while embracing his children to protect them, and being found under the rubble in this manner. It is emphasized that the uncensored and continuously accessible nature of these images on social media platforms may have adverse effects on disaster victims and the public (Demiröz, 2020, p. 301).

In research on the topic, the earthquakes in Kahramanmaraş are presented as the most recent crisis example regarding combating disinformation on social media. It is emphasized that following the earthquake, the dozens of disinformative contents generated and shared on X without a specified source have become a significant agenda, particularly during the crisis, necessitating response and intervention by official institutions (Koçyiğit, 2023, p. 70).

Aydın (2023, p. 2607) mentions that various efforts have been made at the official level in our country to combat disinformation. Examples of this include the Disinformation Combat Center established by the Presidency Communication Directorate in 2022 and the expansion of Law No. 5187 on the Press in 2022 to also encompass content on the internet and social media.

As an example of efforts to combat disinformation conducted by official institutions, Koçyiğit (2023, p. 75) demonstrates the official X accounts opened by the Disinformation Combat Center in February 2023 following the earthquakes centered in Kahramanmaraş, and the Teyit Line official X account launched by the Anadolu Agency in June 2022. The Disinformation Combat Center shares content instantly through its official X account. Additionally, the Anadolu Agency's account similarly produces content by detecting and correcting false news and information to share the correct information with the public. In this context, these practices implemented by institutions are crucial in combating disinformation during crisis moments.

2. Methodology

2.1. Research Model and Research Questions

This study is designed within the framework of a case study model using qualitative research methodology. In case study, which is considered as a detailed description of a situation or environment, the unit of analysis can be either multiple cases or a single case. Research data in the case study research design are obtained through observations, interviews, documents, reports, and audio-visual materials (Creswell 2013).

As the case to be examined within the scope of this study, the crisis communication activities carried out by the Disaster and Emergency Management Authority (AFAD), responsible for disaster management during the disaster, through the official social media account X, following the Kahramanmaraş earthquakes, have been selected.

The main research question addressed in this study is as follows: During the disaster aftermath of the earthquakes centered in Kahramanmaraş:

- What are the contents of the shares made through the AFAD official X account within the scope of crisis communication management during the crisis moment?
- What are the subtopics of the contents shared through the AFAD official X account within the scope of crisis communication management during the crisis moment?
- Which contents shared through the AFAD official X account within the scope of crisis communication management during the crisis moment have a high interaction rate?
- What is the frequency of shares made through the AFAD official X account within the scope of crisis communication management during the crisis moment, and how is the interaction status of these shares?

2.2. Research Data Set and Data Analysis

In the research, the foundation of data collection was based on secondary data, particularly social media data. Therefore, the study's dataset consists of social media platforms. Among these platforms, the X social media platform, which was the subject of the research, was determined through purposive sampling. The purposive sampling method is based on selecting a sample that includes situations suitable for the purpose of the study and is rich in information to conduct in-depth research on any topic (Baltacı, 2018). The selected social media platform, X, was identified as a news platform and the most used platform for news consumption, aligning with the purpose of this research. Additionally, the criterion sampling method was used to determine the number of tweets to be examined in the study. As stated in the research aim, the criterion for determining the number of tweets to be examined is to encompass the communication activities carried out by the Disaster and Emergency Management Authority (AFAD) during a one-week period identified as the crisis communication period. Accordingly, the official X account of the Disaster and Emergency Management Authority (AFAD), responsible for managing disaster crisis situations in Turkey, (@AFADBaskanlik), shared a total of 182 X posts related to the Kahramanmaraş earthquakes between February 6, 2023, and February 13, 2023, was examined.

Content analysis method was utilized in the analysis of social media posts, categorizing the posts thematically based on their content. Additionally, the shared content was evaluated based on the frequency of sharing and interaction rates (comments, likes, and shares). Another important aspect evaluated within the scope of the research is the frequency of sharing of the shared content and the rate of interaction received from the participants.

2.3. Scope and Limitations

It is noted that the social media platform X was the most shared and frequently consulted platform for disaster-related content during and after the earthquakes in Kahramanmaraş (Yıldırım, 2023, p. 256). Additionally, in his study, Koçyiğit (2023, p. 84) found that both the Presidency's Directorate of Communications Disinformation Combat Center and the Anadolu Agency Verification Line made their announcements via X following the Kahramanmaraş earthquakes. Therefore, the author emphasized that X has become the most important platform for crisis moment communication. Therefore, the study focuses on examining the content shared on the X social media platform. Given the considerable number of X content shared in terms of time and content quantity during this period, the study specifically examines 182 tweets shared from the official AFAD account between February 6, 2023, and

February 13, 2023, which were designated as the crisis moment of the earthquake. Hence, the findings of the study should be interpreted solely as an evaluation of the shares made by AFAD on the X social media platform in the context of crisis moment communication.

3. Research Findings and Discussion

The first tweet related to the Kahramanmaraş earthquake was posted from the AFAD account approximately 1.5 hours after the earthquake at 05:43, following the occurrence of the earthquake at 04:17. During the span of one week, a total of 182 tweets were shared. On the day of the earthquake, it can be observed that the use of social media aligned with its synchronous and instantaneous communication nature, with posts being shared at various time intervals and in response to emerging needs. It can be said that this research finding supports the claims that X platform, which is considered an important source of communication for users in terms of making announcements, sharing news, and information with its features of providing advantages in speed and time during/after disasters (Argın, 2023, p. 155), was also an important communication channel for the Kahramanmaraş earthquakes in the literature. However, in the subsequent days, the posts were primarily distributed during specific times of the day, and a decline in the number of shared tweets was detected (Table 1).

Table 1. Frequency of Tweet Sharing by Days

| Date | Posting Time | Number of Shared Tweets | Daily Shared Tweet Count |
|-------------------------------------|--------------|-------------------------|--------------------------|
| 1st Day 06.02.2023 | 05.43 | 4 | 42 |
| | 05.51 | 6 | |
| | 07.56 | 4 | |
| | 08.42 | 8 | |
| | 15.41 | 5 | |
| | 16.05 | 2 | |
| | 17.15 | 2 | |
| | 18.13 | 4 | |
| | 21.56 | 7 | |
| 2nd Day 07.02.2023 | 07:56 | 12 | 18 |
| | 9:00 | 6 | |
| 3rd Day 08.02.2023 | 10:47 | 13 | 23 |
| | 15.17 | 10 | |
| 4th Day 09.02.2023 | 09:08 | 16 | 25 |
| | 21:34 | 9 | |
| 5th Day 10.02.2023 | 09:23 | 11 | 35 |
| | 13:01 | 10 | |
| | 16:34 | 3 | |
| | 21:17 | 11 | |
| 6th Day 11.02.2023 | 02:18 | 9 | 27 |
| | 11:37 | 10 | |
| | 21:18 | 8 | |
| 7th Day 12.02.2023 | 09:33 | 3 | 12 |
| | 16:51 | 9 | |
| Total Number of Tweets | | | 182 |

3.1. Main Themes and Sub-themes with Frequency

According to the content analysis of the posts made by AFAD, the research findings have categorized AFAD's crisis moment communication postings into four main themes:

"processes/operations-related information", "support services", "announcements," and "disinformation and communication" (Table 2). Additionally, the order of themes was based on the numerical frequency within the total number of shared tweets. Similar themes have been identified in relevant qualitative studies conducted on the subject, supporting these research findings (Aşan 2024; Aydın 2023; Coşkun 2023).

The ordering of themes was determined based on the numerical frequency within the total number of shared tweets. Accordingly, the most frequently shared contents were in the themes of support services (75), information related to processes and operations (74), announcements (17), and *disinformation and communication* (16).

Theme 1: Processes/Operations-related information

In the first theme, *"processes/operations-related information,"* encompasses information about search and rescue operations in the region (23), guidance on aftershocks (13), real-time death and injury counts (16), evacuation operations from the region (10), support from international aid organizations (9), helpline numbers (1), and information about aid campaigns conducted for the region (3) (Table 2).

When the shares are examined in detail, it can be said that these contents exhibit parallels with the themes identified by Arğın (2023, p. 154) in his study on the use of X during the Kahramanmaraş earthquakes; such as location and address information for those trapped under the rubble, guidance calls for search and rescue teams, and requests for assistance, which users shared. According to the findings of Demir's study (2023, pp. 256-257), earthquake victims express that the announcements made on social media for search and rescue efforts serve as an important tool for reaching them more quickly and being extracted from under the rubble more promptly. In this context, it can be stated that AFAD's shares cover the topics demanded and emphasized by the public during the crisis.

Theme 2: Support services

The second theme, *"support services,"* pertains to information about food (13), psycho-social support (10), shelter support (13), healthcare services provided to the region by AFAD and authorized government institutions (1), transportation and logistics (11), and details about personnel (16) and vehicle support (10) (Table 2).

When the content of AFAD's crisis moment X shares is examined, it can be said that these shares are predominantly aimed at expressing the psycho-social needs of those affected by the earthquake, highlighting the support provided by public institutions and organizations to meet these needs, and facilitating the connection of volunteers willing to help earthquake victims with the remaining needs. In the study by Demir (2023, p. 260), the shares made by users during the earthquake regarding needs are listed as food, water, blankets, tents, machinery, rescue teams, transportation, medical supplies, and generators, respectively.

Theme 3: Announcements

The third theme, *"announcements,"* includes notifications about earthquakes and aftershocks (4), official press releases (8), announcements of urgent needs in the region (3), communication content about evacuation points (1) and aid distribution centers (1) (Table 2).

Theme 4: Disinformation and communication

The fourth theme, *"disinformation and communication,"* there are warnings related to misleading information about the earthquake (8), guidance on using reliable news sources (3),

and communication messages prepared for the communication tools (5) to be used (Table 2). When the shared content is examined in detail, it is observed that AFAD includes misleading location information for those trapped under debris, dissemination of misleading information about the number of dead and injured, manipulations related to ongoing operations, calls for the use of aid hotlines and news sources in its shares under this theme.

There are many studies (Aydin 2023; Koçyiğit 2023; Çömlekçi, 2019) in the literature that draw attention to the risks and warnings regarding disinformation on social media during crisis periods, which support this theme of the study. Similarly, in studies conducted on the use of X platform during the Kahramanmaraş earthquakes, it is striking that misleading information and communication-related contents are frequently shared. According to the results of the study, which primarily examines the suspicious content shared on the X platform between February 6 and March 28, 2023, through the teyit.org website during the Kahramanmaraş earthquakes and their aftermath, it is seen that 98 of the shared news were false. When the false news was descriptively examined, it was found that 47 were related to association, 14 were fabricated, 3 were imitated, 14 were distorted, 1 was manipulation/fabrication, 4 were erroneous association/fabrication, 3 were taken out of context, 3 were erroneous association/distortion, 1 was erroneous association/out of context, 1 was manipulation/parody, and 4 were categorized as manipulation (Aydin 2023b:2616). Similarly, Coşkun (2023, p. 1166) examined earthquake-related social media posts on the Teyit.org verification website. In the analyzed 104 earthquake-related posts, it was found that social media users consciously or unconsciously shared particularly false and fabricated news.

Table 2. Theme and Sub-theme Overview with Frequency

| MAIN THEMAS | | | | | | | | |
|--|---------------------------|---------------|---------------------------|-----------------------|---------------------------|--------------------------|----------------|-----|
| TEMA 1: Disinformation and Communication | | | | | | | | |
| Sub Themaz | Disinfo. | Secure com. | News sources | | | Proper Use of Com. Tools | N | |
| | 5 | 3 | 3 | | | 5 | 16 | |
| TEMA2 : Announcements | | | | | | | | |
| Sub Themaz | Earthquake announcement | Press-release | List of needs | Evacuat. Points | Dist. on of aid | | N | |
| | 4 | 8 | 3 | 1 | 1 | | 17 | |
| TEMA 3: Support Services | | | | | | | | |
| Sub Themaz | Food and bev. supp. | Psy. Supp. | Shelt. supp. | Hcare serv. supp. | Trans. and log. supp. | Pers. and veh. supp. | Evacuat. supp. | N |
| | 13 | 10 | 13 | 1 | 11 | 16 | 10 | 74 |
| TEMA 4: Information Regarding Operations and Processes | | | | | | | | |
| Sub Themaz | Search and rescue operat. | After shocks | N. of deaths and injuries | Evac. from the region | Internat. volunteer supp. | Emerg. Hotlines | Aid camp. | N |
| | 23 | 13 | 16 | 10 | 9 | 1 | 3 | 75 |
| Total Number of Tweets | | | | | | | | 182 |

3.2. Interaction Status of Shared Contents

Another significant aspect investigated within the scope of the study is the interaction rate received by AFAD's posts. In this context, user comments, likes, shares, and reach rates for the posts were examined. Notably, the research findings highlight that the posts related to the theme of *disinformation and communication* (16), which had the least posting frequency among AFAD's 182 posts, received the highest interaction rate from users. Additionally, the post with the highest interaction rate garnered 19,740 comments, 21,400 likes, 61,600 shares, and 6.7 million reach, focusing on disinformation-related calls. Following this theme are the sub-themes of *proper use of communication tools, reliable sources of information, and safe communication* (Table 3).

Table 3. Interaction Status of Shared Contents

| Theme and Sub-themes | Comments | Likes | Share | Reach |
|---|----------|--------|--------|---------|
| Disinformation and Communication | | | | |
| Disinformation (5) | 1974 | 21400 | 61600 | 6.7M |
| Secure Communication (3) | 203 | 3859 | 6867 | 1.2M |
| News Sources (2) | 864 | 14.800 | 34.400 | 4.7M |
| Proper Use of Communication Tools (5) | 651 | 24600 | 35100 | 6 M |
| Announcements | | | | |
| Earthquake announcement (4) | 760 | 4518 | 19000 | 3.4 M |
| Press release (8) | 51 | 647 | 1995 | 815.100 |
| List of needs (3) | 1063 | 14.100 | 20.600 | 3.6 M |
| Evacuation points (1) | 74 | 2960 | 8008 | 1.1 M |
| Distribution of aid (1) | 85 | 1221 | 2748 | 501.500 |
| Support Services | | | | |
| Food and beverage support (13) | 381 | 1064 | 3561 | 849.400 |
| Psychosocial support (10) | 27 | 274 | 1210 | 313500 |
| Shelter support (13) | 153 | 2470 | 10300 | 768.700 |
| Healthcare services support (1) | 48 | 833 | 3117 | 285.400 |
| Transportation and logistics support(11) | 103 | 575 | 2180 | 287.400 |
| Personnel and vehicle support (16) | 1.877 | 4.061 | 14.800 | 3.1 M |
| Evacuation Support (10) | 98 | 1278 | 4179 | 457.200 |
| Information Regarding Operations and Processes | | | | |
| Search and rescue operations (23) | 381 | 1064 | 3561 | 849.400 |
| Aftershocks (13) | 767 | 4.418 | 18500 | 5.2M |
| Number of deaths and injuries (16) | 20 | 233 | 799 | 183.500 |
| Evacuations from the region (10) | 98 | 1278 | 4179 | 457.200 |
| International volunteer support (9) | 1 | 116 | 407 | 74.400 |
| Emergency hotlines (1) | 1598 | 11200 | 21800 | 4.2M |

Conclusion

Natural disasters like earthquakes can unexpectedly and intricately cause loss of life and property anywhere in the world. Such crisis situations arise abruptly, bringing with them efforts to minimize damage during crisis periods and to return to normalcy. Communication is a crucial component in managing crisis situations arising from natural disasters. Effective communication strategies planned in advance can expedite the recovery and rebuilding process. With technological advancements, social media platforms have gained significant

prominence in our lives and have demonstrated their capacity to play important roles in earthquake crises, including communication, emergency calls for assistance, and information sharing, as evidenced by numerous crisis examples both globally and within our country. This article aimed to present the role of social media in earthquake crises through a case analysis of the Kahramanmaraş earthquakes. In this context, a qualitative study was conducted to determine how social media was utilized as a crisis communication tool following the Kahramanmaraş earthquakes. AFAD's social media posts were analyzed, with a focus on X, revealing its critical role as a communication tool for crisis management authorities and the public.

According to the findings, AFAD constantly informed the public by sending a total of 182 tweets during a one-week period, starting from the moment the Kahramanmaraş Earthquake crisis emerged. In this context, it can be said that a communication approach was adopted that acknowledges social media platforms as a communication tool that is rapid, widespread, and high in accessibility, regardless of time and spatial factors, during moments of crisis such as earthquakes. However, when evaluating the posts based on criteria such as posting time and frequency, it can be noted that the real-time characteristic, which is another significant advantage of social media, was overlooked. This could be attributed to the relatively bureaucratic and hierarchical nature of communication processes due to AFAD's status as a public institution, despite claims of adopting a situational approach in crisis management and a proactive approach in crisis communication.

Analyzing the content of the X posts by AFAD, it can be observed that they encompass four main themes: "information related to processes/operations", "support services", "announcements" and "disinformation and communication". In other words, through its X posts during the Kahramanmaraş earthquake, AFAD aimed to provide benefits to individual users and assisting organizations by making urgent and informative announcements, meeting the societal need for information related to processes and operations, facilitating support and collaboration for those in need of assistance and those willing to help, and delivering verified information. Moreover, despite having the lowest posting frequency, the theme with the highest user engagement was "disinformation and communication," which is a noteworthy research finding.

This finding supports the emphasis of this study on the role of communication in managing crisis situations caused by natural disasters. It highlights users' needs for reliable communication channels, verified information/news sources, and combatting disinformation that may contain false or misleading information during crisis situations like earthquakes. Similarly, studies in the literature confirm that social media, by virtue of its characteristics during disasters, serves as an effective communication tool for both receiving and disseminating information. Especially, X is indicated as the most shared and frequently consulted social media platform for disaster-related content during and after disasters (Yıldırım, 2023, p. 256). Additionally, it is highlighted as the most important platform in crisis moment communication for sharing announcements following the Kahramanmaraş earthquake (Koçyiğit, 2023, p. 84).

However, alongside this, it draws attention to the fact that the necessity for swift action in crisis situations caused by disasters eliminates the distinction between false and misleading information, leading to the dissemination of information containing disinformation, whether knowingly or unknowingly (Anar, 2021, p. 1145). Additionally, Demiröz (2020, p. 301) emphasizes that the spread of unverified manipulative information exacerbates the existing

crisis environment. Koçyiğit (2023, p. 83) highlights the necessity for cautious use of communication channels facilitated by social media and internet technologies, especially during moments of extraordinary sensitivity in crises, and underscores the risks posed by the sharing of information without questioning its source or verifying its accuracy. Furthermore, it indicates that the negative experiences arising from this reality prompt institutions to take new measures in this regard. There are numerous studies (Aşan 2024; Aydın 2023; Coşkun 2023; Demir 2023) in the literature focusing on the use of X during disasters, which confirm both the risks and opportunities in this regard.

In summary, it would not be inaccurate to state that the integration of crisis communication efforts with social media, driven by the evolution of digital communication tools, offers exciting possibilities for the future of crisis management for organizations. The convergence of crisis communication and social media represents a transformative shift that fundamentally alters how organizations manage crises and communicate with stakeholders. This study serves as a comprehensive exploration of this intersection, aiming to provide insights to academics investigating the potential of X social media platform in crisis situations and to practitioner organizations striving to harness this potential. The combination of crisis communication and X presents a transformation that promises to reshape how organizations handle crises and engage with the public in these critical moments. On the other hand, it is a fact that this positive transformation necessitates awareness among both corporate and individual users regarding the benefits and drawbacks of social media, particularly in moments of crisis like those experienced by X, and requires possessing the level of digital literacy required by digital tools.

Declarations

* *Ethical Approval*: Since the study relies on secondary data analysis and does not involve human subjects, ethical approval is not required.

* *Publication Ethics*: This study has been prepared in accordance with the rules outlined in the "Guidelines for Scientific Research and Publication Ethics of Higher Education Institutions." Additionally, the article has been scanned using the Turnitin plagiarism detection software, and no instances of plagiarism have been detected.

* *Author Contribution Statement*: The study is single-authored and does not adhere to the guidelines regarding "author contribution statement."

* *Conflict of Interest*: There is no direct or indirect financial, commercial, legal, or professional relationship or conflict of interest involved in the study.

* *Author Disclosure*: This study was presented as an abstract at the 7th International Aegean Conferences on Social Sciences and Humanities held on April 26-27, 2023 in İzmir, Turkey. The present work constitutes an expanded version of the abstract that was presented.

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