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Day 7 of Kanjuruhan Tragedy: Twitter Data Analysis

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Abstract
The Kanjuruhan Stadium tragedy on 1 October 2022 became the second deadliest in the history of football. Leaders of many countries sent condolence letters to Joko Widodo, the President of Indonesia. The National Commission on Human Rights commissioner stated that the Kanjuruhan tragedy was a human rights case. The tragedy led to the rise of social movement and digital activism (DMO) through the hashtags #KanjuruhanDisaster #UsutTuntas #PrayforKanjuruhan and #Aremania. This study explains the social network formed by the aforementioned hashtags, the actors involved, and sentiment analysis. The data set crawled using Netlytic.org found 9,944 DMO tweets using the hashtags out of 10,000 tweets. The results of this study prove that DMO on the Kanjuruhan tragedy through the hashtag #KanjuruhanDisaster #UsutTuntas #PrayforKanjuruhan #Aremania has a high number of neutral sentiments indicating that the netizen is still in the phase of mourning and using neutral language to sarcast the authority. The network property data show that there is no feedback and explanation form the authority to reduce the tension of netizens. Low centralization rate between actors shows that digital activism occurs organically and is not controlled by a particular actor or organization.
Keywords: Digital Movement of Opinion (DMO), Kanjuruhan Tragedy, Sentiment Analysis, Social Network Analysis (SNA), #UsutTuntas.

Abstrak
Tragedi Stadion Kanjuruhan pada 1 Oktober 2022 menjadi tragedy paling mematikan kedua di sejarah sepakbola. Para pemimpin dunia mengirimkan ucapan belasungkawa kepada Joko Widodo, Presiden Republik Indonesia. Perwakilan komnas HAM menyatakan bahwa tragedi Kanjuruhan adalah sebuah pelanggaran HAM. Tragedi tersebut memicu gerakan social dan Digital Movement Opinion (DMO) melalui hashtags #KanjuruhanDisaster #UsutTuntas #PrayforKanjuruhan and #Aremania. Studi ini menjelaskan social network yang dibentuk oleh hashtags tersebut, actor yang terlibat, dan analisa sentiment. Data yang diambil menggunakan Netlytic.orh menemukan 9,944 tweets DMO Twitter dari 10,000 data total. Hasil studi membuktikan bahwa DMO tragedi Kanjuruhan pada hashtags #KanjuruhanDisaster #UsutTuntas #PrayforKanjuruhan #Aremania memiliki sentiment netral yang mengindikasikan bahwa netizen masih dalam kondisi berkabung sehingga menggunakan bahasa netral atau sarkas kepada pihak yang terlibat. Data network property menyatakan bahwa tidak ada feedback dan penjelasan dari otoritas terkait untuk mengurangi tensi netizen. Low centralization rate antar actors menunjukkan bahwa digital activism bersifat organic dan tidak dikontrol actor atau organisasi tertentu.
Kata Kunci: Analysis Sentiment, Digital Movement of Opinion (DMO), Social Network Analysis (SNA), Tragedi Kanjuruhan, #UsutTuntas.

INTRODUCTION

October 1, 2022 is supposed to be a memorable day for Aremania, supporters of Arema Football Club. Flock of people went to Kanjuruhan Stadium hoping that their favorite football club could win over Persebaya. However, the laughter turned to wail. What was supposed to be happiness turned to tragedy. A riot happened and it became the second deadliest in the history of association football worldwide. There are 756 victims in total, with 135 casualties (93 females and 42 males), 596 people got severe injuries, and 26 others got mild injuries. Several world leaders, such as the Chancellor of Germany sent condolence letters to President Joko Widodo. King Charles III also conveyed condolence to Indonesian citizens regarding the tragedy. The Union of European Football Associations (UEFA) held a moment of silence prior to the kick-off of the Champions League, the Europa League, the Europa Conference League, and the Women's World Cup play-offs.

The investigation regarding the tragedy keeps going. People have their own opinion and hypothesis, yet several people suspect human rights violations during the riot. Choirul Anam, the commissioner of The National Commission on Human Rights, stated that there are human rights violations in the tragedy. That could happen because of many factors, including bad management. The rules were not applied well and people's safety was neglected (Ramadhan, 2022).

As a matter of fact, human rights violations that resulted in deaths have happened several times in Indonesia, such as the Semanggi shootings, May 1998 riots, Tanjung Priok massacre, and Talangsari 1989 incident. However, some of the cases remain cold. Therefore, those who are concerned about the cases created social movements such as Aksi Kamisan, a rally held in front of Istana Negara every Thursday since January 18, 2007. The movement itself urges and reminds the Indonesian government to resolve past human rights violations (Adiwilaga, 2018; Zakaria, 2019).

In relation to the attempt of urging the Indonesian government to resolve the Kanjuruhan Stadium tragedy, a digital movement of opinion (DMO) through hashtags #KanjuruhanDisaster #UsutTuntas #PrayforKanjuruhan and #Aremania appeared on Twitter, a microblog social media that enables users to share and read messages called "tweets" (Sultanatta & Maryam, 2019). In fact, until January 2023, the movement kept going. Moreover, there was an increased activity of Twitter users prior to the 40th-day commemoration of the Kanjuruhan Stadium tragedy with the same hashtags. Another movement also appeared in change.org entitled "Usut Tuntas Tragedi Kanjuruhan!" in which 98.000 users signed the petition. In the petition, users are suggested to use the hashtag #UsutTuntasKanjuruhan in their social media accounts.

The Digital Movement of Opinion (DMO) is indeed part of a social movement. It was born as part of technological development, particularly in social media, which enables people to create virtual networks between a user and other users (Eriyanto, 2019; Prihantoro et al., 2021). Unlike campaigns that are led by legal organizations or leaders, the digital movement of opinion is spontaneous (Barisione et al., 2019). The users participate in it through self-motivation and contribute through personalized actions about an issue without any involvement of brick-and-mortar organizations (Bennett & Segerberg, 2012; Wang & Zhou, 2021).

Digital movement of opinion (DMO) has four characteristics: first, it is spontaneous and irregular. It means that social media users' opinions are organic. It comes directly from them without any intervention from other parties. Second, it lasts for a brief period of time as no one organizes it. Therefore, social media users' attention can be easily distracted by other events. Third, most users give homogeneous responses, such as expressing empathy or sympathy as support. Also, they may express anger as a form of protest, disagreement, or disappointment. Fourth, the digital movement of opinion is cross-sectoral as it

includes lots of related actors or groups in public discussions (Barisione & Ceron, 2017; Barisione & Michailidou, 2017).

Digital movement of opinion using a hashtag (#) has appeared quite a lot in social media. Generally, a hashtag consists of keywords related to particular issues or events. The hashtag is then centralized, so users can find information about the issues or events as soon as they click or tap them (Styawati & Mustofa, 2019). In the case of digital movement of opinion (DMO), a hashtag encourages people to express their opinion (Barisione & Ceron, 2017). They may express their stance toward an issue (either agree or disagree) as they include certain hashtags in their posts or comments. By attaching the hashtag, whatever they are posting or commenting on will be grouped with the other posts with the same hashtag.

As part of the digital movement of opinion, a hashtag is by far the most prominent way to communicate through the Internet (Fedushko & Benova, 2019). A hashtag allows users to index topics of their own content and to follow topics they are interested in (Rauschnabel et al., 2019). Furthermore, a hashtag may help to gain awareness (Vie, 2014; Wang & Zhou, 2021). In other words, it contributes to reaching wider audiences. As the hashtag reaches bigger audiences, people will recognize the movement more easily and even become part of it too.

As the hashtag becomes a part of DMO, it creates communities of users who do not know each other to discuss certain topics together, even to take the same actions. As it happens naturally and spontaneously, the hashtag becomes a bridge that connects a user to others with the same point of view (Barisione & Ceron, 2017). It indeed plays the role of a chamber where the public builds a homogeneous opinion climate and facilitates participation to support the particular event (Shen et al., 2020; Wang & Zhou, 2021).

In the Kanjuruhan Stadium tragedy case, the researcher studies the DMO that appeared on Twitter as Twitter is known to be a prominent digital platform where digital movements emerged (Wang & Zhou, 2021). Furthermore, Twitter becomes the third social media with the most activity usage in Indonesia (Muqsith & Mulyasari, 2019). Additionally, Twitter becomes one of the 'social references' (Puspita & Suciati, 2020). It is indeed a great platform to mobilize supporters, build support, and create counter-narratives (Wang et al., 2016; Wang & Zhou, 2021).

LITERATURE REVIEW

Studies on the digital movement of opinion through hashtags have been conducted several times. "Hashtags and Digital Movement of Opinion Mobilization: A Social Network Analysis/SNA Study on #BubarkanKPAI vs #KamiBersamaKPAI Hashtags" examined the differences in mobilization created by the two hashtags. The result of the study showed that hashtag #BubarkanKPAI created more mobilization as it was more emotional, able to create narrative imagination, and has clearer frames (Eriyanto, 2019; Prihantoro et al., 2021).

Another study on Digital Movement of Opinion was "*Gerakan Opini Digital #TrueBeauty Pada Twitter untuk Pemeran Film Adaptasi Komik Webtoon*". It studied fans' opinion on the actors who they think are suitable for True Beauty film adaptation. The study found that the fans as DMO actors are scattered across the network and not centralized. Furthermore, the actors were divided into different clusters, and each cluster had it unique characteristics (Tjahyana, 2020).

The other study on hashtag activism was "Hashtag Activism and Connective Action: A Case Study of #HongkongPoliceBrutality". It aims at analyzing the strategies used by Twitter activists to share information about social movements on social media related to the 2019 Hong Kong protest. The study found that during the 2019 Hong Kong protest, activists used different strategies to engage in information

sharing and emerge in connective actions (Wang & Zhou, 2021). In the current study, the researcher tries to obtain the DMO of the day six and seven after the Kanjuruhan Stadium tragedy through sentiment analysis.

RESEARCH METHOD

This study uses Social Network Analysis (SNA) to describe the effect of DMO on social media users' mobilization. Social Network Analysis is a method used to analyze and portray the structure of a social web. In other words, it aims at revealing information that is related from one to another in social networks (Can & Alatas, 2019). SNA has become an interesting field of study since many areas are related to social networks, such as education, business, communication, etc. Although it was frequently used for examining individual and social group structures, SNA is used in many areas i.e. commerce, health, banking, economy, and so on (Can & Alatas, 2019).

SNA uses Graph theory, part of discrete mathematics, as the basis (Vega-Muñoz & Arjona-Fuentes, 2020). The graph visualization will depict the logical structure of the graph. As a result, the researcher can obtain meaningful conclusions by observing the visualization results of the graph (Abdelsadek et al., 2018; Yao et al., 2021). Moreover, such analysis can be used to observe networks from different platforms and categories, including websites (Watts, 1999), journals (H. D. White et al., 2004), countries (Lombaerde, 2019), as well as divisions within an organization (Otrel-cass, 2019) and their positions (Brusco, 2019; H. C. White et al., 1976).

Social Network analysis is basically made up of structures between actors and their relationships with each other. Basically, the two structures are the main structures that are commonly used in social network definitions. One example is that social structures can be shown as a network made up of a cluster of social system members and a set of links showing the links between them (Can & Alatas, 2019). The social system members, also known as actors, are usually called nodes whereas the set of links showing the relations are called edges (Eriyanto, 2014). The example of nodes in social media are social media accounts, while the edges in social media include mention, reply, tag, retweet, and repost. Through such way, the researcher can depict the structures of Twitter users in relation to the hashtag #KanjuruhanDisaster #UsutTuntas #PrayforKanjuruhan and #Aremania.

First, the researcher used Netlytic software to crawl 10.000 Twitter posts related to the hashtag #KanjuruhanDisaster #UsutTuntas #PrayforKanjuruhan and #Aremania. The amount of data obtained is also a limitation in this study. After gaining the data, the cleansing process was conducted resulting in 9.944 tweets. Second, the researcher analyzed the data in three stages. The first stage is the web structure analysis to depict the shape and the structure of the web. Furthermore, this level did not talk about nodes, but a web structure as a whole. The next stage of analysis was categorizing groups within the web. This was done to find out how actors (nodes) created a certain group that was different from the others. The last stage of analysis was identifying the actor's position on the web and describing the dominant actors. Lastly, sentiment analysis was conducted on the tweet conversations texts. The sentiment analysis is known as opinion mining (Alsaeedi & Khan, 2019). It means that it aims at discovering how users express their feelings, points of view, as well as emotions through the text they post on social media, and in this case, Twitter. Furthermore, the research method used in this study is depicted in Figure 1.

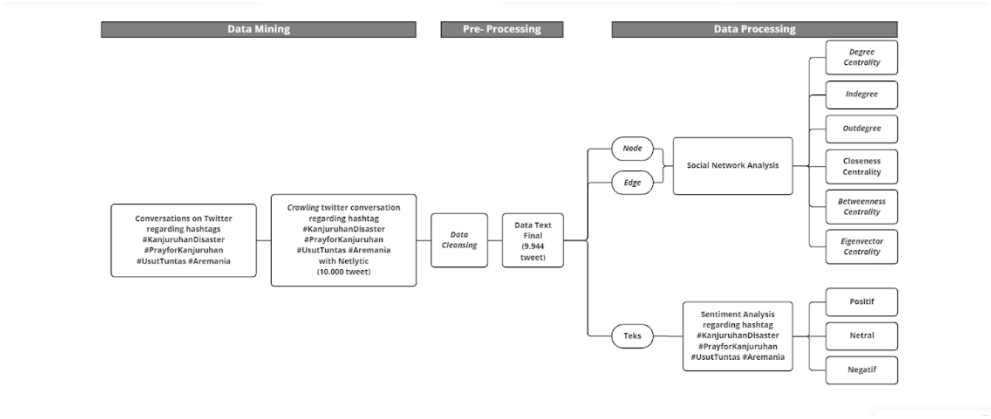

Figure 1. Research Method Mapping (Researcher, 2023)

RESULT AND DISCUSSION

RESULT

The data presented in this study is based on a dataset of 9,944 tweets and 6,497 unique posters, collected over a period of October 6 and 7, 2022. The tweets were analyzed using a social network analysis, which revealed the presence of five distinct clusters within the network. All of these clusters consistently show that netizens post, repost, and reply to tweets of sarcasm towards the authorities and question their plan to resolve the issue of the Kanjuruhan tragedy.

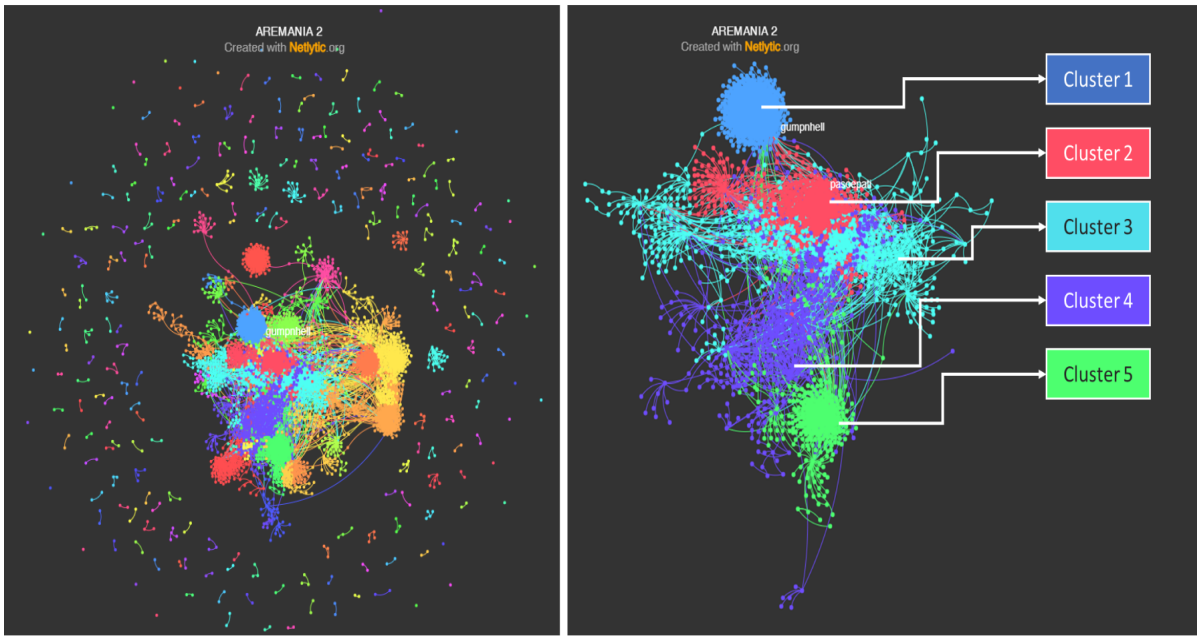

Figure 2. Full data (left) and Clusters data in this research (right) of Social Network Map Netlytic (Researcher, 2023)

The first and biggest cluster came from @gumpnhell which was tweeted on October 6, 2022. The post was a meme commenting on the Kanjuruhan tragedy. Below is the detailed information of the first cluster.

Figure 3. Tweet from @gumpnhell on October 6 2022 (Researcher, 2023)

The second cluster came from @Pasoepati Twitter account which was tweeted on October 7, 2022. The tweet was an opinion on the progress of the Kanjuruhan tragedy in Javanese. It talked about the doubt that @Pasoepati felt on the peace endeavors on Kanjuruhan tragedy. Furthermore, the detailed tweet can be seen as follows.

Figure 4. The Tweet from @Pasoepati

The third cluster was from @bimasinung which was posted on October 7, 2022. The tweet contained the account user's comment on the Kanjuruhan tragedy which has become one of the deadliest tragedies in Indonesia's football history. It talked about the fact that Indonesia's football will not be the same anymore and how the world will watch over Indonesia's football after the tragedy. The tweet, furthermore, can be seen as follows.

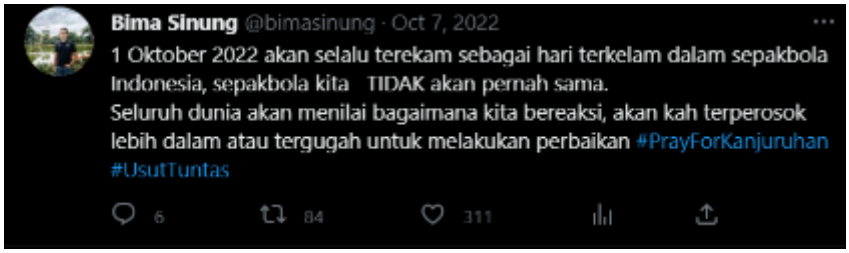

Figure 5. Tweet from @bimasinung on October 7, 2022

The next cluster came from @crazylionzine which was posted on October 7, 2022. The tweet contained the user's opinion on people who have power and were thought to be related to the Kanjuruhan tragedy. Furthermore, @crazylionzine asked everyone to put the focus on the investigation process of the Kanjuruhan tragedy.

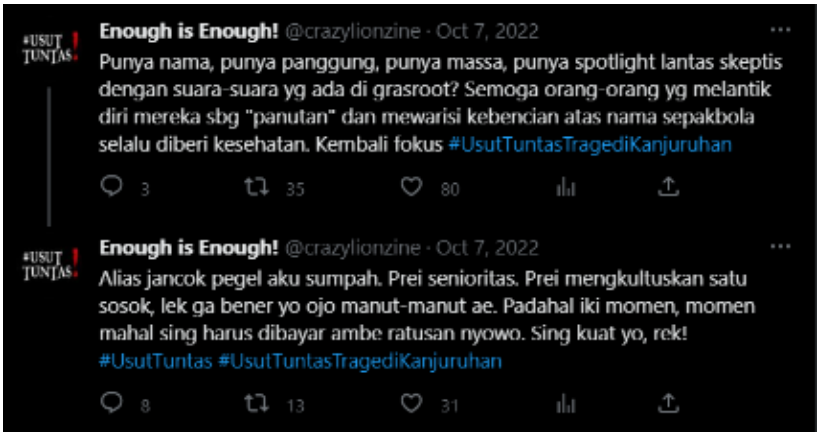

Figure 6. Tweet from @crazylionzine on the Kanjuruhan tragedy

The last cluster came from @GOAL_ID which was posted on October 6, 2022. The last cluster in this study does not mean that this is the smallest cluster. Furthermore, this last cluster is the limit of the researcher focus on this study. The tweet was a list of the Kanjuruhan tragedy suspects published by the police.

Figure 7. The Tweet by @GOAL_ID on the Kanjuruhan tragedy

The network properties, such as diameter, density, reciprocity, centralization, and modularity, were also calculated to provide a comprehensive understanding of the network structure. Based on the data above, it can be seen that the farthest distance between the actors involved in this case is 12 nodes with a

low-density level between actors. The reciprocity of only 0.005175 shows interactions between Twitter user actors on the hashtags #KanjuruhanDisaster #UsutTuntas #PrayforKanjuruhan and #Aremania, only limited to activities such as mentions, retweets, and replies in one direction to certain actors, not going both ways. Centrality and Modularity data show that this issue runs without a dominant actor.

Table.1 Network Properties

Analysis	Data
Diameter	12
Density	0.000198
Reciprocity	0.005175
Centralization	0.121200
Modularity	0.767400

Source: Researcher (2023)

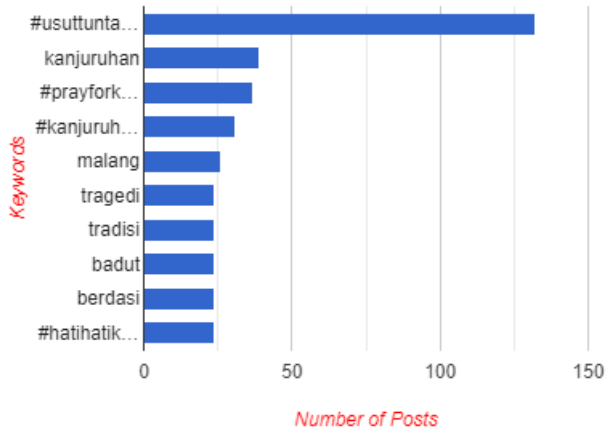

Figure 8. Keyword #KanjuruhanDisaster #UsutTuntas #PrayforKanjuruhan #Aremania (Researcher, 2023)

The results of the sentiment analysis revealed that 2,137 tweets were classified as positive, 3,198 tweets were classified as negative and 4,609 tweets were classified as neutral. This indicates that the majority of the tweets were neutral in sentiment, with a smaller proportion expressing negative sentiment and an even smaller proportion expressing positive sentiment. The sentiment that appears is mostly neutral because the tweets posted are about expressions of condolences and sarcasm towards the authority in diplomatic language.

Table 2. Sentiment Analysis

Sentiment	**Number of Tweets**	**Persentage**
Positive	2137	21.49%
Negative	3198	32.16%
Neutral	4609	46.35%

Source: Researcher (2023)

DISCUSSION

The hashtags #KanjuruhanDisaster, #UsutTuntas, #PrayforKanjuruhan, and #Aremania were used by lots of Twitter users to express their opinions toward the Kanjuruhan Stadium tragedy. As the hashtags went viral, they became not only as a means to raise awareness but also trigger conversations among people. This is in line with a notion that virality makes people simultaneously forward specific information items over a short period of time to different networks resulting in an acceleration in the number of people who are exposed to the message (Nahon & Hemsley, 2013; Wang & Zhou, 2021). When people, in this case Twitter users, are exposed to the message, they will form a shared identity and solidarity (Benford, Robert D. and Snow, 2000; Kuo, 2018; Wang & Zhou, 2021; XU, 2020). Indeed, the virality of the Kanjuruhan Stadium tragedy is then proven by 10,000 tweets within two days (6-7 October, 2021) as shown in Figure 1.

As the Kanjuruhan Stadium tragedy is relatively new, previous studies taking the same case are inadequate. However, the notion that virality triggers conversations among users is proven in a study examining the hashtags #DiRumahAja (Prihantoro et al., 2021). The hashtag #DiRumahAja became trending with 33,600 tweets within only a day, 16 March 2022.

The hashtags #KanjuruhanDisaster, #UsutTuntas, #PrayforKanjuruhan, and #Aremania have drawn Twitter users' attention. This is evidenced by the great number of messages about the tragedy on Twitter. Through the network structure, the success rate of a message in digital opinion can be seen in table 1.

From table 3, it can be seen that there are five main actors. The most popular actor in this network structure is an account named @gumpnhell with 1522 tweets in total with the hashtag #KanjuruhanDisaster. Along with the hashtag, the actor tweets a meme comparing football high officials' reactions as they face two different moments, the first is when a football team wins a championship while the latter is when a football tragedy happens. The network structure of the account @gumpnhell can be seen in the figure 5.

The fact that @gumpnhell uses a meme to express an opinion regarding the Kanjuruhan Stadium tragedy might be the reason for its high popularity. Such a tweet becomes more eye-catching and triggers other Twitter users to share. This is in line with the notion from Patrick Davison that a meme is a piece of culture that gains influence through online transmission (Kostadinovska-Stojchevska & Shalevska, 2018). It is indeed a cultural information that passes from person to person, yet gradually becomes a shared social phenomenon (Shifman, 2013).

Beside being an easy piece to share, the meme by @gumpnhell regarding the hashtag #KanjuruhanDisaster might be chosen because it is polysemic. Apart from the #hashtag, the meme does not show any specific event; in this case Kanjuruhan Stadium tragedy. The meme merely shows a picture of a trophy surrounded by hands with bubble chats containing self-claimed statements and a coffin surrounded by hands with bubble chats containing denial statements. Though the coffin was covered by Arema color and logo, yet the logo is partially cut. This action is in line with the concept that a meme can be interpreted differently. Different users might come across the same meme, but what the content means for each of them can vary wildly (Pettis, 2022; Phillips & Milner, 2021).

The high popularity of the meme posted by @gumpnhell can also be interpreted as a way for Twitter users to minimize possible disputes since the tragedy is quite sensitive. It is their way to comment on the current issue, Kanjuruhan Stadium tragedy in this case. Also, people can address sensitive topics and might express criticism on it without any ironic undertone (Pauliks, 2020).

Interestingly, the five main actors in this network structure are unauthorized accounts. In fact, none of the actors with most interactions come from authorized parties such as Arema Official Account, PSSI

(The Football Association of Indonesia), etc. From the absence of the authorized parties, it can be concluded that in the sixth and seventh day after the tragedy, the authorized parties remained silent and had not released any official statements or latest updates regarding the Kanjuruhan Stadium tragedy on Twitter. As the authorized parties remained silent, those who were aware of the tragedy were triggered and conducted a digital movement of opinion through the hashtags to ask for certainty.

Another thing to point out is the data from figure 4 which shows the top ten accounts posting tweets regarding the hashtags of the Kanjuruhan Stadium tragedy. Of all the posters, an account named @Jakartaboxy has the highest number of tweets, 90 in total. It indicates that @Jakartaboxy is actively reaching out and connecting with other accounts in the network. In other words, the account is an active and highly influential user in the network despite the fact that the account is considered a small account as it merely has 200 followers and following. It indeed strengthens the notion that in digital movement of opinion can be created by any individual without intervention of (well-known) leaders or brick-and-mortar organizations (Bennett & Segerberg, 2012; Wang & Zhou, 2021).

CONCLUSION

In conclusion, this study has provided evidence that the Digital Movement of Opinion (DMO) surrounding the Kanjuruhan tragedy, as expressed through the use of hashtags such as #KanjuruhanDisaster, #UsutTuntas, #PrayforKanjuruhan, and #Aremania is characterized by a high number of neutral sentiments. This suggests that netizens are primarily in a phase of mourning and using neutral language to express sarcasm towards the authorities. Furthermore, network properties such as the lack of feedback and explanation from the authorities, contribute to the tension and dissatisfaction among netizens. The low centralization rate between actors involved in this DMO highlights that digital activism is taking place organically, without the control of a particular actor or organization. Overall, this research provides valuable insights into the dynamics of DMOs and the role of social media in shaping public opinion in the context of social tragedy, as well as the importance of communication and feedback from authorities to reduce tensions among netizens.

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