

Social Network Analysis of 17th Jogja-NETPAC Asian Film Festival (JAFF) in Disseminating Films on Twitter

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Abstract. Jogja-NETPAC Asian Film Festival (JAFF) is a prestigious festival in Indonesia that is a place for filmmakers to distribute their films. Film festivals are held once a year, between October and December. As of 2022, the film festival turns 17. Smart Society utilise social media as reference for making decisions. Hashtags #JAFF17 organizers use to promote events on social media, particularly Twitter. The virtual community enlivened #JAFF17 hashtags with various motivations, such as promoting films shown by JAFF or promoting the JAFF event itself. This study describes the communication dynamics of Twitter account users in interacting and communicating motivation, conducts analysis based on the typology of uploaded content, correlates it with user-generated content, and explains the process of analyzing data using third-party software for crowdsourcing and collecting data from Twitter. This study used social network analysis to analyze participants' observations based on certain keywords or trending topics, such as the use of hashtags from movie-promotion-themed Twitter accounts known as #JAFF17 hashtags. These results can be used to classify the actors involved, including the official accounts of organizers, filmmakers, audiences, and influencers. Their motivation for using #JAFF17 hashtag is to promote their own films, recommend films that are shown, and promote festival programs.

1 Introduction

Social media is an information technology product that is so fast without borders that it facilitates the community in the dissemination of information [1]. Twitter is a social media that has succeeded in building interactions, friendships, information exchange both writing, photos, and videos in the user [2]. Through thread and trending features, Twitter becomes a

social media that is used as a place to voice opinions [3]. Through the advantages of tweets or tweets, everyone has the same right to express their opinions [4].

The emergence of Big Data is caused by the rapid growth of social media use. Big Data trends can manage the event to improve services to their audiences. Data analysis of the dissemination of communication information that occurs in the public can be used by stakeholders in making policies [5]. Big Data can store people's conversations on social media which can later become communication research material. One of the managing events who uses social media to communicate with the audience is the Yogyakarta Cinema Foundation through the management of Jogja-NETPAC Asian Film Festival (JAFF).



Fig 1. JAFF's Logo [6]

JAFF is a film festival in Indonesia held in Yogyakarta since 2006. This activity is also one of the first and largest film festivals in Asia, so it not only introduces cinema in Asia premiere to the people in Indonesia, but also to provide space for various sectors such as tourism, culture, and art. JAFF collaborates with Network for the Promotion of Asian Cinema (NETPAC), a film and cultural organization in Asia involving filmmakers, festival curators, critics, organizers, distributors, exhibitors, and academics [7]. The involvement of many actors from NETPAC has made the organization considered a leading film authority at the Asian level [6].

As a film festival, JAFF is handled specifically by local organizers who provide audiences with the opportunity to watch films that would never appear in mainstream screening venues. In general, festivals also screen special themes that focus on documentaries, science fiction, fantasy, or children's films, as well as themes of ethnic identity, religion, politics, feminism, and gender issues. On the other hand, film festivals can also provide filmmakers with opportunities to meet investors and promote and sell their films [7].

JAFF is held every year with different themes and goals, until at the age of 17 in 2022 this festival raises 'Blossom' as its annual theme. 'Blossom' is closely related to age which is synonymous with the number of growing up, so the theme symbolizes a renewal in new modes of production, artistry, and talents in the cinema landscape in Asia [6]. This theme offers new dreams and hopes with challenges in the form of new vulnerabilities, risks, and uncertainties in facing the post-Covid-19 pandemic. The 17th JAFF celebration from November 26 to December 3, 2022 was able to bring 16,000 viewers, receive 3,548 films from various countries, 146 offline screenings, and 2,941 online screenings. The antuacism of the 17th JAFF celebration is the result of efforts made by the Yogyakarta Cinema Foundation in promoting this festival to the audience through social media networks.

In the academic landscape, previous research related to JAFF found that the sustainability of this film festival is the result of the synergy of the three main actors of the film festival,

namely festival organizers, filmmakers, and festival goers. Setiawati (2019) in her research concluded that JAFF system can encourage the growth of various film production, distribution, and exhibition activities in Yogyakarta. This development has caused the DIY Provincial government to provide support through the Special Fund since 2014 [8].

Another research examines more specifically, the relationship between actors who play a role in JAFF celebrations, especially organizers and audiences. Suwanto (2017) explores the demographics, behavior, information needed by media audiences in film festivals such as JAFF. The findings showed that most of the festival participants were teenagers and young people studying at universities [9]. JAFF's audience is more heterogeneous than other festivals, so repeat visits are relatively low. The most influential sources of information are friend recommendations, websites and social media. Most festivalgoers choose the festival program carefully based on website information and catalog messages.

In this study, the author analyses that the JAFF event does not only involve actors in the world of film, but there is encouragement from social media networks, especially Twitter. This social media is a platform that has a more intense level of actuality than other social media [10] [11]. In seeing the success of the JAFF 2022 event promotion, it is necessary to know how the interaction is on Twitter social media. Through the Social Network Analysis (SNA) approach, this study aims to find out who are the actors who have an important role and how they disseminate information about JAFF 2022 on Twitter. This is important not only for the continuity of the JAFF film festival, but also for the benefit of the event's promotion strategy in the future. Then, the event organizer can carry out a promotion by interacting with the actors so that the promotion carried out is more directed and on target. Therefore, the SNA approach in this research method can contribute to the novelty and significance for the gap in similar studies, this is considering that JAFF still has little space in academic research.

2 Literature Review

The organization of film festivals demands promotion. Promotion is one part of a mixed marketing concept consisting of 4Ps, namely product, place, price, and promotion [10]. Therefore, promotional activities are important to be applied not only to the company sector, but any sector that involves a promotion process [12]. Film as a product, requires publication and distribution to be able to reach an audience. To facilitate the interaction and dissemination of information on the film produced, an effective marketing communication strategy is needed. Marketing activities are one of the elements supporting the success of a film. Through marketing and distribution design, as well as the availability of marketing costs, the appeal of the film can be widely conveyed to the audience. In promoting a creative and targeted strategy, a creative and targeted strategy is needed [12].

In today's era of technology and the Internet, information about film festivals can be easily obtained. In recent years, more and more film festivals (Melbourne, Toronto, Sundance, and other major film festivals) are using various apps, social media, and online platforms to engage audiences and expand events [7] [13]. Twitter is one of the social media that has specifications used as a conversation for users. Conversations on Twitter are valuable in the promotion of film festivals. JAFF also uses Twitter as one of the festival's publishing media [14]. As a social media, Twitter involves a network that involves actors, relationships, and types of relationships. Actors in social media networks are social media accounts, relationships are relationships between accounts such as mentions, replies, or retweets, while types of relationships are relationships between actors who are associated with issues or topics of conversation on social media [15].

Twitter is related to social networks which are defined as the relationship of one point to another or the relationship of all points to the center point and so on. The complex social

networks that people create and manage are dynamic, multi-modal, and increasingly mediated by social and digital media [16]. Network science has evolved along with the development of social and digital media, computers, and other information systems. The components in social networks consist of a collection of objects or events that act as terminals. The minimum number of objects in the social network is three objects. Points that have relationships with other points are depicted with a line that ultimately forms a network. In addition, the social network pattern also describes the existence of channels or paths that connect each point outside the network [17].

The social network owned by Twitter will be closely related to SNA's approach in conducting a study. SNA is a science that utilizes graph theory to study relationships between entity units [18]. Basically, SNA has long been used to map and describe a social network in society before the era of social media emerged Sembiring [19]. In graph theory, a social network is formed from a node that symbolizes actors in the network, both individuals and organizations (companies) connected by lines that describe the relationship between actors. SNA can visualize invisible flows in the network by identifying the type of interaction, correlation, and role among users in the network [20]. The SNA approach can describe relationships between individuals in detail, even the smallest network relationships carried out by only two individuals. In addition, SNA can describe the communities and actors who have the most influence within the network.

Network structure shows the relationship of centrality and performance at the individual level and group level [21] [22]. The more groups become central in this network of influence, the more individuals and groups within the network's organization find it innovative [23] [24]. Nodes (actors) in a central position can facilitate or hinder communication because they are able to mediate others' access to information [25] [26]. There are several measurement values to determine the role and influence of nodes in the network or what is often called the centrality value [27] [28].

First, degree centrality, which is the number of interactions carried out by an actor (node). A node that has a high degree of centrality value can mean that the actor has a lot of interaction with other users. The node with the highest degree of centrality on a network is an actor on that network. Second, betweenness centrality shows how often a node connects interactions that occur between nodes with one another. The higher the value of betweenness centrality can mean that the actor has a high ability to convey information both between actors who are connected directly or indirectly. Finally, closeness centrality shows the average distance between a node and all other nodes in the network. This measure expresses the proximity of a node to other nodes as well as the range of information that an actor can spread. So, the higher the closeness centrality value, the easier it is for these actors to disseminate information in a network [17].

3 Methods

This study used a quantitative-qualitative descriptive mixed method with SNA approach. The data used is in the form of all user uploads on Twitter social media through hashtags in the form of 'JAFF2022' and 'JAFF17' from various *mentions*, *retweets*, *replies*. These two keywords show the essence of JAFF which will be held in 2022 and the age of the film festival which has turned 17 years old. These keywords are believed to be able to collect conversations and uploads of Twitter user content related to JAFF that year. The use of these keywords was found on Twitter from January to December 2022.

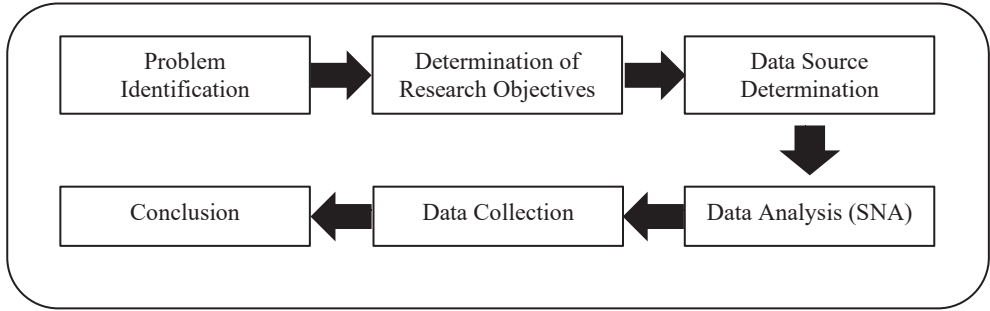


Fig 2. Research Stage Map

After determining the keywords, the author uses Python software for data retrieval on Twitter because it is object-oriented, so that the processed data is composed of small objects that have their own characteristics. Furthermore, SNA and image visualization used in this study is Gephi software type 0.10.0. The method used in the software is a graph with a direct type. Basically, tweets about JAFF's activities on Twitter have started since the first quarter of 2022, but they are just an introduction that JAFF will be held that year. Then, starting from the second quarter of 2022, tweets have resurfaced regarding the opening of film submissions at JAFF 2022. Then, the JAFF17 tweet reached a massive peak in October to December 2022. SNA data analysis to see centrality through degree centrality, betweenness centrality, and closeness centrality on the use of the hashtags 'JAFF17' and 'JAFF2022'. Finally, the data is elaborated with related theories, so that the author can conclude the results of the JAFF17 study in 2022.

4 Result and Discussion

At the 17th JAFF celebration, there was a drastic increase in the number of registrants compared to 2021, which increased by 700% to more than 3000 films participating in the competition in 2022. JAFF awards various awards to filmmakers from different countries with different cultural backgrounds and production levels. JAFF announced six award categories, namely, Main Competition, NETPAC Award, JAFF-Indonesian Screen Awards, Geber Award, *Blencong* Award, and Students Award. This shows that JAFF provides equal opportunities for all filmmakers in Asia to be creative and consistent in producing quality films.

The increase in quantity is a sign that the 17th JAFF can optimize strategies in promoting the film festival. Based on the search results, JAFF uses various social media platforms to be able to reach audiences from various walks of life. Basically, each social media has different characteristics and attributes, so there is the possibility of certain segmentation in reaching the audience on each social media. Twitter as a social media with a high level of topicality can reach audiences quickly. JAFF in promoting the festival's activities was able to reach four types of actors who play a role in the Twitter network related to JAFF in 2022, namely, JAFF's official account, filmmakers, influencers, and audiences. Based on the results of data analysis, it was found that the 17th JAFF was not discussed enough by many actors on Twitter. Therefore, the analysis data that appears appears small in quantity. The author found that there were ten top actors (nodes) who enlivened the conversation about the 17th JAFF event on Twitter. These actors are the ten most influential people in building interactions with other actors based on the value of centrality. The degree centrality shows the quantity of actors reached out and reached out to discuss the 17th JAFF through content uploads on Twitter.

Table 1. Degree Centrality #JAFF2022 and #JAFF17 on Twitter

ID	Degree	In-Degree	Out-Degree
WatchmenID	239	239	0
JAFFJogja	193	146	47
alexandermatius	29	24	5
Timobros	23	23	0
Kkfauzi	19	19	0
TarizSolis	17	17	0
komik ksiana	12	9	3
sinekdos	12	11	1
Venusions	10	9	1
Edvangelion	8	7	1

The top ten actors are actively involved in providing content relevant to the 17th JAFF. Not only from JAFF's official account, but filmmakers, influencers, and audiences are quite active in reaching out to other accounts to discuss this film festival. WatchmenID as an influencer account turns out to be able to compete with the official JAFF account based on degree centrality scores. This indicates that influencer accounts are more active in disseminating information compared to JAFF's own official accounts. Then, if we look further at the in-degree and out-degree numbers, the ten actors have a significant difference in numbers.

A high in-degree score means that the actor is popular because he is often accessed and contacted by Twitter users on communication networks (Rakhman et al., 2021). WatchmenID's in-degree value is 239, meaning there are 239 accounts that reach out and form 239 conversations with other actors. On the other hand, the WatchmenID out-degree value is 0 which indicates that this account is not reaching back actors in the communication network structure on Twitter. This value indicates that WatchmenID only disseminates information without engaging in the discussion process with netizens who have reached out to the account's upload. The significant difference in in-degree and out-degree values indicates that the communication process created between the official WatchmenID accounts is one-way and the influencer's account is only used as a reference source in the 17th JAFF event.

On JAFFJogja's official account, the in-degree score is 146, meaning that there are 146 accounts that reach out and form 146 conversations with other actors. On the other hand, JAFFJogja's out-degree score is 47 which indicates that this official account at least reached back or contacted netizens involved in conversations on Twitter as much as 24%. This value indicates that JAFFJogja disseminates information and is little involved in the discussion process with netizens. This significant number comparison also applies equally to the other eight actors included in the top centrality degree in the communication network on Twitter.

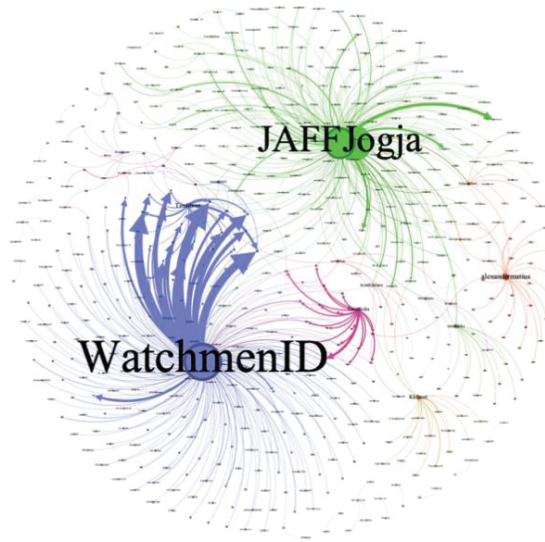


Fig 3. Visualization of #JAFF2022 and #JAFF17 Communication Network Centrality on Twitter

Based on the degree of centrality above, the visualization that appears in the JAFFJogja communication network on Twitter is like Figure 3 above. WatchmenID has a greater reach compared to the official JAFFJogja account, although it only engages in a one-way communication process. This is because WatchmenID has a much larger number of followers than JAFFJogja, which is a ratio between 608.6K to 14.3K. In addition, JAFFJogja's upload on Twitter still uses Indonesian which makes this less optimal in reaching JAFF enthusiast figures from various other countries. Then, the author further observed that the content uploaded by JAFFJogja on Twitter is like a template, so it is less effective for creating the impression of affection in a more massive two-way communication process.



Fig 4. Some of JAFFJogja's Content Uploads on Twitter

Furthermore, the betweenness of centrality within communication networks on the use of #JAFF2022 and #JAFF17 hashtags on Twitter is listed in Table 2 below. JAFFJogja's official account has the highest number compared to other actors. This is of course because betweenness centrality shows how often an actor connects interactions that occur between actors with one another. As an official account, JAFFJogja becomes the main actor

connecting interactions with other actors such as influencers, filmmakers, and audiences. The existence of an actor with a high betweenness of centrality indicates that its position is very important in communication networks because it will be one of the determinants of how information is received by other actors.

Table 2. Betweenness Centrality #JAFF2022 and #JAFF17 on Twitter

ID	Betweenness
JAFFJogja	9643.0
alexandermatius	1248.0
Edvangelion_	832.5
rrestuadi	587.5
sinekdocs	524.5
komik ksiana	391.0
faiz_fajer_	199.0
ivalfull	199.0
Bront_palarae	197.0
SeringanAwan	100.0

Then, the second position, that is, alexandermatius has a high betweenness centrality value compared to other actors below. As Program Director of JAFF 2022, alexandermatius is actively involved and has a high betweenness of centrality. This indicates that Alexander has a high ability to convey JAFF 2022 information between actors who are connected directly or indirectly in the communication network on Twitter. Other actors such as Edvangelion_, rrestuadi, faiz_fajer_, ivalfull, and SeringanAwan are audience categories that contribute quite high in managing JAFF 2022 information on Twitter.

Next, closeness centrality. In the communication network #JAFF2022 and #JAFF17 on Twitter, the author found that there are many actors who have a closeness centrality value of 1.0. This value indicates that actors involved in #JAFF2022 and #JAFF17 communication networks on Twitter are connected to share information in organizing the JAFF 2022 film festival. Closeness centrality shows that actors act as intermediaries, mediators, or facilitators in the communication network [29]. Simply put, these actors have closeness with other actors to be involved in the communication process on Twitter [15].

Table 3. Closeness Centrality #JAFF2022 dan #JAFF17 di Twitter

ID	Closeness
kincirdotcom	1.0
IDNPictures	1.0
alexandermatius	1.0
WatchmenID	1.0
palarifilms	1.0
sinekdocs	1.0
nontoners	1.0
nakfilm	1.0
TarizSolis	1.0
Timorobos	1.0

Although the official JAFFJogja account did not reach a value of 1.0 at this closeness centrality, there are intermediary actors who help as popular actors to disseminate the latest information about JAFF 2022 more efficiently, quickly, and easily (Rakhman et al., 2021). The closeness between actors makes the dissemination of information more actual, so that the JAFF 2022 event can be known by many parties. Some actors who have a closeness centrality value with a value of 1.0 are in Table 3 above.

Furthermore, in this series of JAFF 2022 activities, the author found several content issues of actors discussed on Twitter. The author groups issues based on three types, namely, JAFF programs, film promotion, and film recommendations. Based on the results of the analysis, the author found that the JAFF program is the most massively discussed issue in the film festival's communication network on Twitter. Most of these issues are raised by the official JAFFJogja account itself.



Fig 5. JAFF 2022 Program Content by JAFFJogja

The second issue that is widely discussed is film promotion which is usually raised by filmmakers and influencers. Finally, the issue that is often raised by the audience is sharing film recommendations.



Fig 6. Film Promotion Content by Influencers



Fig 7. Film Promotional Content by Filmmakers



Fig 8. Film Promotion Content by Audience

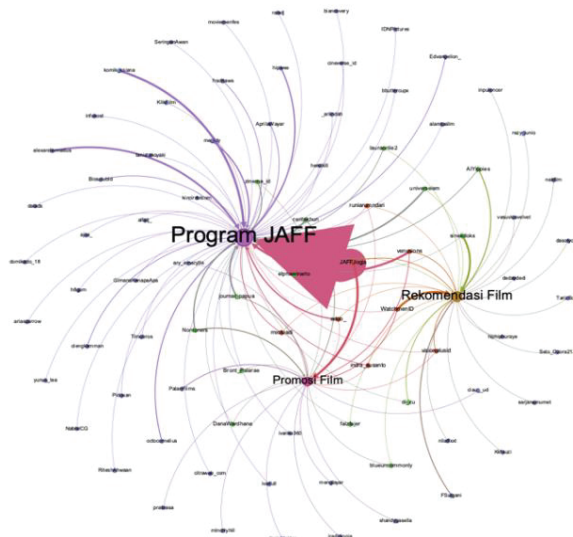


Fig 9. Visualization of Content Issues in #JAFF2022 and #JAFF17 Communication Networks on Twitter

Visualization of content issues in the #JAFF2022 and #JAFF17 communication networks on Twitter is shown in Figure 9. The JAFF program has more relations compared to Film Promotion and Film Recommendations because the official JAFF account uploads quite a lot of content about the film festival program itself. These three content issues became popular themes in actor conversations on Twitter in the use of the hashtags #JAFF2022 and #JAFF17. This is supported by the background of each of these actors in updating this theme. First, the official JAFFJogja account tends to upload content about JAFF programs such as themes, film submissions, film screening schedules, judges, awards, activity documentation. As the main figure in this JAFF activity, the official account raised information about the program to reach the participation of other actors in film festivals and communication networks on Twitter. Second, filmmakers and influencers tend to promote films to be able to reach audiences to watch the film. Therefore, the content narrative that appears is about the synopsis, reviews of the film actors, and moral messages in the film. Third, audiences tend

to recommend films based on the results of their references and interests, so that the narrative of the content that appears is admiration for the film's storyline, good acting of film players, even criticism and suggestions for a film. Thus, each actor has individual and group reasons for participating using the hashtag #JAFF2022 and #JAFF17 on Twitter.

5 Conclusion

The 17th JAFF event in 2022 is a privilege for Yogyakarta because it can cross not only the film industry, but art, culture, and tourism. JAFF 2022 promotes this activity through various networking platforms and social media to be able to reach film actors in Indonesia and even countries in Asia. Through this research, JAFF 2022 conducted a series of promotional activities on Twitter involving filmmakers, influencers, and audiences. The actors, including JAFF's official account, contributed to disseminating information in the form of programs, film promotions, and film recommendations. However, the author concludes that Twitter is only used as a means of documenting JAFF 2022, so the goal of reaching other actors does not seem optimal.

Research on quantitative-qualitative descriptive mixed methods with the SNA approach is ultimately able to analyze how the communication process, content dissemination, and efforts to reach actors. Conversation issues on Twitter should not just be templates for realizing interactive value in the social media network. Thus, the JAFFJogja Twitter account should be able to disseminate information that is able to reach the affections of other actors, so that the communication process will be established in two directions and restore Twitter as a social media that is synonymous with actual value.

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