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Analysis of Communication Patterns and Social Networks in Digital Journalism on the Palestine-Israel Conflict

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Abstract: This study aims to analyze the patterns of communication and social networks accompanying digital journalism in relation to the conflict of Palestine-Israel. Using SNA and the analysis of narrative patterns, this research tries to find how social media has become the big site for public opinion production of the considered conflict. The findings highlight a polarized social media communication between the pro-Palestinian and pro-Israeli groups, while neutral actors serve as a kind of bridge trying to maintain the balance of information. In addition, in the narrative pattern analysis, five main topics dominate the conversation: physical conflict and its impact; religious responses and global solidarity; international context and human rights; media coverage and location focus; politics and regional dimensions. It also shows that while social media is a great avenue to get information out quickly, there are considerable drawbacks in terms of the biases and misinformation that may be taken as factual input in influencing international policies in strengthening social movements. This paper highlights the need to be aware of the power of narrative patterns in digital communication and the need for more critical and ethical use of social media as a tool for communication.

Keyword: Social Network Analysis (SNA), Latent Dirichlet Allocation (LDA), Palestine-Israel conflict, digital journalism, social media, narrative patterns, communication polarization

INTRODUCTION

Digital journalism has reconstituted the manner of communication regarding global conflicts such as the Palestine-Israel conflict. Through social media, information flows with speed and effectiveness (Zahoor & Sadiq, 2021).

Social media platforms like TikTok effectively disseminate pro-Palestinian content, as noted by (Windhi Tia Saputra, 2024), and allow for boundary-free interaction with others around the world, as noted by (Yarchi & Boxman-Shabtai, 2023). However, biased information, political pressures, and media censorship by Israel and its allies make conflict coverage less objective, according to (Grehenson & Tasya, 2024) and (Poerwadi, 2023).

Digital journalism, particularly via platforms like Twitter (now X), has become a key source of real-time news and public discourse (Mitchell et al., 2021). For journalists, it provides interactive engagement with audiences, accelerating news dissemination and challenging

traditional media’s gatekeeping role. Yet, credibility and accuracy remain a concern with social media, which, however, remains vital in shaping political and crisis-related discourse (Özkent, 2022).

The Palestine-Israel conflict, which escalated in 1948, has since involved wars, confrontations, and peace efforts. From October 7, 2023, to March 27, 2024, Israeli attacks caused 32,490 deaths and 74,889 injuries in Palestine, while 57 journalists, mostly Palestinians, were also killed. These figures are represented in Figure 1 (a) and Figure 1 (b), showing Palestinian casualties and journalist fatalities, respectively (Annur, 2023).



Figure 1. (a) Number of Palestinian Casualties Due to Israeli Attacks
 (b) Number of Journalists and Media Workers Killed by Israel
 Source: <https://databoks.katadata.co.id>

Hashtags such as #palestinenews, #aljazeera, and #FreePalestine expand information reach and mobilize digital support. It highlights the current influence of digital journalism on the setting of public opinion and international policy, while mapping the ways various actors use the new digital landscapes to attain their goals.

Existing studies often analyze content or sentiment but overlook the role of network structures in disseminating narratives during conflicts. Therefore, this study will show how social media functions as a tool to shape narratives, disseminate information, and influence public opinion in social and political conflicts, particularly in the case of Palestine-Israel.

METHOD

Research Type

This research consequently aims to trace the impact of digital communication through social media platforms-in particular, Twitter/X-on public discourse related to the Palestine-Israel conflict by following a mixed-method approach in which quantitative and qualitative methods are integrated. The study relies principally on SNA, which will enable the researcher to look at the structure of social interactions and the flow of information and dynamics of communication within online communities. It also integrates semantic analysis in the study of the sentiment and narrative patterns emanating from user interactions. The interaction among these methods will finally allow this study to reach a complete understanding of the way social media shapes public perceptions about the conflict.

Sample and Population

The sample includes publicly available Twitter/X posts on the Palestine-Israel conflict. Data collection is based on tweets connected with certain hashtags, such as #FreePalestine, #StandWithIsrael, #PalestinianRights, and other highly used hashtags during discussions concerning the conflict. These hashtags give a window toward the identification and

categorization of relevant tweets, according to themes or points of view on the issue. The population for this study are the Twitter users participating in the discussion of the conflict from individual users, organizational and activist groups contributing in their own way to the discourse online.

Convenience sampling will be used in this paper, focused on tweets emanating from active discussions of the conflict. The sampling will be relevance-oriented to ensure the tweets collected are from a cross-section of voices in the discourse. The tweets would be analyzed by the perspective they represent-whether pro-Palestinian, pro-Israeli, or neutral-to help unveil patterns and offer insight into general public opinion and the formation of narratives.

Instruments

The research will be based on the Python programming language, using Tweepy to access the Twitter API. This tool will let the researcher collect tweets according to predefined search terms, hashtags, and user profiles. The collected tweets include text, metadata, and any associated media such as images or videos, thus providing a rich dataset for analysis.

The SNA will be done with the use of tools such as NetworkX, which shall be helpful in visualizing and interpreting the relationship among users, hashtags, and information diffusion. Such tools will be helpful in mapping the structure of online communities, identifying key influencers, and uncovering how information flows across the network.

Natural Language Processing tools, like TextBlob or VADER, are also applied to conduct semantic analysis of the collected tweets, extracting sentiment and tone, even with regard to certain narrative patterns in which users set up the conflict or their feeling behind communication.

Research Techniques

The main research approaches proposed for this paper are SNA, sentiment analysis, and narrative analysis. The SNA would be utilized for understanding the topology of user interaction and the diffusion of information within that network; influential users would have to be key nodes, and communities or groups would represent clustering. This would facilitate insight into information circulation and patterns in the virtual space and tell which users shape up discourse.

Sentiment analysis by the NLP tool shall, therefore, classify the emotional content in the tweets: positive, negative, and neutral sentiments. Such a methodology suits best for getting a feel of the sentiment that the public has about the conflict and hence presents the emotional dimensions of online discussion.

Finally, the dominant themes, frames, and stories of the tweets will be identified by using narrative analysis. Here, the interest lies in the construction, articulation, and sedimentation of the different narratives on the conflict that shape public opinion.

RESULTS AND DISCUSSION

This section details the analysis done based on findings from the study in addressing the research questions by way of data presentation and interpretation. Results are organized in such a way as to help the reader understand conflict dynamics within a social media discourse on communication patterns, network structures, and narrative framing of the Palestine-Israel conflict.

Unlike previous research focusing on sentiment analysis, this study reveals how network centrality shapes narrative diffusion across polarized groups. Besides, SNA shows that the structure of the social network created in the Palestine-Israel conflict is highly dynamic and polarized, comprising pro-Palestinian groups, pro-Israeli groups, and neutral communities serving as connectors between the two polarized sides.

Implementation of Social Network Analysis (SNA)

The first step of this analysis was the construction of a network using the data crawled from X. Figure 2: Using the NetworkX library, a directed graph has been created where nodes represent user accounts and edges represent interactions between accounts. The resulting network contains 9,671 nodes and 11,198 edges.

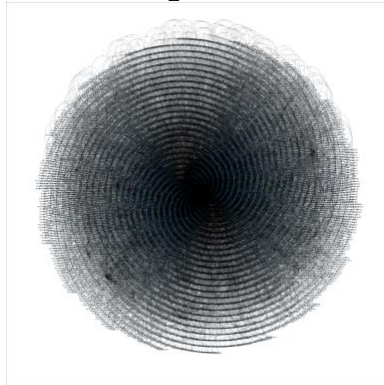


Figure 2. Overall Network Visualization
Source: Research data

For a deeper understanding of the network structure, community detection was done using the Leiden algorithm. This is a method of network division into clusters according to the principle of modularity maximization, which reflects the strength of internal connections within a community. The result of the detection showed that the network was divided into 213 different communities, which exhibited a wide range of interaction patterns. Figure 3 shows sample of detected communities to give a good overview of the network.

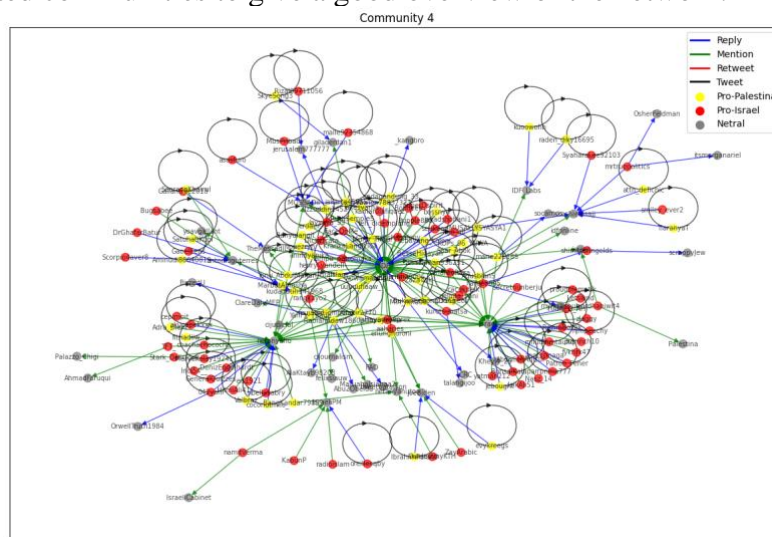


Figure 3. Sample of Community-Level Network Visualization
Source: Research data

The community analysis indicated that all of them had different affinities, such as pro-Palestine, pro-Israel, and neutral. Even with the strong interactions internal to the communities, none of them were exclusively uniplex. It follows that there is a very regular interaction between entities, both pro-Palestine, pro-Israel, and neutral ones; these are mostly connectors for the dissemination of information within the networks.

In centrality measurement, closeness centrality will help in locating key actors within the network. The measure refers to how close a node is to other nodes in a network; hence, centrality to the information dissemination process is determined. Two different approaches have been used in order to locate the key actors:

Key Actors by Community

In addition to analyzing key actors across the entire network, influential actors were identified for each detected community by using a community-specific approach. This provides further insight into the internal dynamics of each community regarding who holds sway over the conversations within specific clusters. These actors are important to identify in order to understand how the narratives are being propagated and shaped at the microlevel. Table 2 identifies some of the important actors who obtained the highest value of closeness centrality within the analyzed communities.

Table 1. Top Key Actors by Community

<i>Username</i>	<i>Closeness Centrality</i>	<i>Community</i>	<i>Affinity</i>
Cop29News	1	23	Netral
Uz_Khawaja	1	48	Netral
markleebase	1	77	Pro-Palestina
NCTDreamINA	1	79	Pro-Palestina
mindaart	1	156	Pro-Israel
Narasi_winda	0.666666	33	Pro-Israel
...

Source: Research data

From Table 2, one can easily note that the key actors in any community are usually neutral in affinity. For instance, “*Cop29News*” in Community 23 and “*Uz_Khawaja*” in Community 48 had a closeness centrality value of 1.0 each, indicating the high connectivity of these actors within their respective communities. Such actors have an important role in connecting polarized factions and thus help in information flow across the network.

Another similar argument can be viewed in the directional patterns of the network. The pro-Palestine and pro-Israel actors have repeatedly targeted, through replies and mentions, their interactions toward neutral users, possibly to attempt to change their opinions. Then neutral actors assume central nodes that mediate the discussions and information diffusion across factions.

The importance of neutral actors goes beyond structural roles in the network to take on a significant meaning for digital journalism. Neutral actors are bridges to balanced information dissemination, just as mainstream media outlets have been seen to play a role in reporting on conflicts. It is by not taking sides that they prevent further polarization and ensure that diverse perspectives are represented in the discourse.

This dynamic corresponds to the principles of digital journalism that call for equilibrated reporting and inclusive debate. The neutrality of such actors allows multiple narratives in one network—all open and accessible to different sides. Their role is similar to that of media organizations that strive for credibility by avoiding obvious bias in reporting on such complex conflicts as the issue of Palestine and Israel.

These results show that the strategic relevance in this network rests above all on neutral actors, as while both the pro-Palestine and pro-Israel camps push their narrative forward, neutral actors connect the camps together to keep the flow of dialogue and balance of information going. These are the insights that reveal the value of social network analysis in bringing to the surface the interplay of communication strategies within digital space, yielding instructive indications of how online discourse is used effectively in the context of contemporary conflicts.

Narrative Pattern Analysis

The Latent Dirichlet Allocation (LDA) method identifies five key topics in social media discussions of the Palestine-Israel conflict. These topics highlight the diverse viewpoints and emotional influences that shape public opinion, offering insight into how various narratives and factors contribute to the ongoing discourse surrounding the conflict.

a) Topic 1: Physical Conflict and Its Impact

This topic presents the military conflicts, the displacement of civilians, and the suffering of the people in the area of conflict. The framing of physical violence is made by using emotive terms, such as "*soldiers*," "*attacks*," and "*suffering*," to describe the human cost.

b) Topic 2: Religious Responses and Global Solidarity

This topic describes religious feelings, such as appeals for unity using terms like "*Allah*," "*Ameen*," and "*#FreePalestine*." It connects spiritual support with political activism, thus identifying the role that digital activism may play in fostering collective action. This is in line with (Zahoor & Sadiq, 2021) work on the ways in which religiously loaded narratives in the digital space spur collective activism.

c) Topic 3: International Context and Human Rights

This storyline about the subject would remain framed, primarily through global bodies such as the UN and the International Criminal Court, the conflict as an international human rights violation that demands action on the international front. As framing theory goes, to link local problems to wider, more general global standards is a call for action from the entire world; such would this narrative's version of an invite into this matter (Batrinca & Treleaven, 2015).

d) Topic 4: Media Coverage and Location Focus

This topic is about media narratives on specific locations, such as Gaza and Rafah. The language used really underlines the crisis in those areas, emphasizing terms like "*genocide*" and "*under attack*." Media's role in shaping perceptions of suffering and injustice through these localized frames enhances global attention and response, in line with (McQuail, 2011) concept of digital public space.

e) Topic 5: Politics and Regional Dimensions

Another dimension developed on the topic is geopolitical: the regional powers-their discourses-Iran, Pakistan, and India. Nevertheless, the expression "*boycott Israel*" does make it rather intersectional with the political, economic, and diplomatic dimensions. Expressions like this are close in context to the framework given for digital activism to mobilize for politics by (Fauzi et al., 2023).

Discussion of Findings

Data analysis in this paper encodes in-depth knowledge of the dynamics of communication on social media about the Palestine-Israel conflict, connecting these findings to relevant theories. This shall then reveal how patterns of communication are created on Social Media Platform X and how the resulting narratives take shape to influence Global Public Opinion. It integrates the theory of new media communication, digital journalism, Goffman's narrative pattern theory, and digital activism theory that fits well within the study of the dynamic of conflict in a virtual space.

Analysis identifies actors who have high influence on the basis of centrality. Actors with high degree centrality serve as hubs of information, while actors with high indegree or out-degree centrality prove to be more effective in receipt or dissemination of information. These findings confirm the theory of new media communication, emphasizing that social media is not just a platform for information dissemination but also for more fluid and strategic interactions among actors, as stated by (McQuail, 2011) in the concept of the digital public sphere.

This also brings into view the importance of interrelatedness among actors, as discussed by (Wellman, 2001) in his theory of "*cyberplace*," underlining the contribution of digital spaces to the creation of inclusive communication. Direct, speedy, and cross-affiliation interactions make the flow of information very fast, hence reaffirming the role of social media as a vibrant

space for wider discussion. In comparison with the previous study of sentiment analysis on Twitter by (Siapera et al., 2015). 2015, this one goes further by mapping relationships among the actors using SNA, hence allowing the detection of complex narratives within social networks.

The dominant themes in conversations over the Palestine-Israel conflict, as identified by the LDA analysis of the narrative patterns, are five in number. The first is on physical conflict and its impact. It highlights civilian suffering in military attack and being made to flee their home. This is supported by (Goffman, 1979) frame analysis theory, in which conflict is framed within the human suffering context as a way to evoke audience sympathy. This storytelling pattern plays an important role in public perception of humanitarian urgency. The second theme demonstrates the global solidarity which is laced with religious overtones, developing a close affective connection with the audience towards the situation. The evidence supports (Zahoor & Sadiq, 2021) digital activism theory where social media demonstrate the capacity for collective actions that build on global solidarities.

The third theme relates to human rights violations and the conflict to international attention, touting terms like "UN" and "intlcrimcourt." This theme basically narrates about making the local issues globally important; thus, reinforcing (Batrinca & Treleaven, 2015) theory that social media provides a platform in pursuing the raising of awareness about human rights violations around the world. The fourth theme is media coverage, with focal locations including Gaza and Rafah. Social media speeds up the reaction of the world to the affected areas and fortifies (McQuail, 2011) idea of how social media mobilizes audiences in support of major local issues that assume international importance. The fifth theme places the conflict in a wider geopolitical context involving countries like Iran, Pakistan, and India. This narrative, therefore, supports the theory of (Fauzi et al., 2023) on digital activism, where social media is used in mobilizing political and economic activities such as a boycott in reaction to the war.

Digital journalism, therefore, has to play a very important role in shaping the narratives on social media—for instance, those involving Palestine-Israel. Social media acts not only as a channel for information dissemination but also as a strategic space for forming, controlling, and effectively spreading narratives. Neutral actors, basically, are guardians of informational balance, ensuring that various perspectives are voiced. These findings also corroborate the arguments of (McQuail, 2011) that a pluralistic digital public sphere enables public opinion to take shape inclusively. The present study has gone a step further in establishing more general narrative dynamics, both through social network analysis and through narrative framing, than the study by (Yarchi & Boxman-Shabtai, 2023) on image warfare on TikTok. It enhances our understanding of the role that digital journalism plays in shaping global discourse in the context of contemporary conflicts.

CONCLUSION

This study, from the perspective of Social Network Analysis, explored the patterns of communication and social networks about the Palestine-Israel conflict on Twitter/X. The focus was to a great degree on the social relationship between the actors within the conflict, an angle that is not usually identified in the literature up until this point. Literature up until this point had tended to adopt a content or sentiment analysis approach that investigated the phenomenon but did not explore the relationships between the actors of the conflict and how they construct larger social network configurations.

Key instances, such as #GazaUnderAttack (Siapera et al., 2015) and "The Image War Moves to TikTok" (Yarchi & Boxman-Shabtai, 2023), showed the importance of social media for the public opinion of the conflict but failed to show exactly how interpersonal relationships and group affiliations are established within larger social network configurations. The SNA approach followed here fills this gap by highlighting how actors representing the different

sides-pro-Palestinian, pro-Israeli, and media-interact with the help of social media in building public perception.

Furthermore, research shows that communication about the conflict on social media is complex, created by factors of political identity, ideological affiliations, and strategies of communication. It has been viewed by researchers as polarized; basically, it strengthens both pro-Palestinian and pro-Israeli factions in their narratives and solidifies their positions in the content they publish on social media. What was more important in this research, however, was the indication of the contribution by neutral actors-private persons, international organizations, or independent media-narrowing the gaps between them. These neutral actors play a great role in encouraging discourse and relaxing tensions; hence, they contribute to more inclusive communication. This finding evidences that though the function of social media platforms seems to propagate polarization, there is still some room for balanced conversation driven by entities that are not necessarily parties to the conflict.

Indeed, as this study identified, the narrative patterns emanating from social media denote a very important role in forming global public opinion. Moreover, the narratives constructed through the help of social media are not exclusively a potential instrument for strengthening intra-group cohesion; they can also mobilize broader international support for the conflict parties. Social media sites like Twitter/X have become theaters where each side builds its narratives and looks for the support of the whole world, driving some international policies in a particular direction. Consequently, the implications of such narratives will go a long way toward constructing solidarity for conflicting groups and shaping mass perception and political policy across different nations.

One essential result of this study is that although social media opens wide opportunities for diversified voices, the structural feature of the resultant social network is usually not symmetric. It finds power imbalance within the social network, where the more influential actors are mostly taking a leading position to develop '*narrative*' and public perception. Confirming similar studies on actors using TikTok, such as Brigade Hassan Bin Tsabit (Saputra, 2024), the article has also drawn attention to a far greater area by comparing different platforms and actors.

It therefore contrasts its findings against research such as Digital Public Sphere and Palestine-Israel Conflict by Zahoor & Sadiq, 2021, which were limited to social and traditional media relations in a theoretical setting. The current study responds to the need for deeper detail in the manner in which digital communication shapes public opinion and takes a more applied approach to explore the dynamics of interactions among actors in social networks and their bearing on global public perception and discourse.

Areas this study highlights as needing to be challenged include bias and misinformation in social media regarding digital journalism. As much as social media is a channel through which information is passed to the public faster, so is it a medium through which biased, untrue, or even politically mobilized information is disseminated. This kind of information not only influences public perception but also causes international policy to change and further ignites and solidifies social movements based on an issue. As such, leverage in the handling of information is called for so that the inbuilt narrative is true and not biased, lest they are distorted by myopic political interests.

In all, this research also creates routes for further investigation into the dynamics of digital communication in other international conflicts. These findings underline the importance of realizing the role of narrative patterns in digital communication and how neutral actors have a great role in maintaining balance and cross-affinity dialogue. Furthermore, what follows from the implications of the present study is that social media is not a simple means of information dissemination but a very strong means of shaping world public perception. Conversely, for avoiding the possible dissemination of one-sided and partial information, users and

policymakers have to be more critical and ethical in the use of social media as a means of communication. In this perspective, digital journalism still has an important role to play in fostering a discursive space from which greater changes may well be activated and urged toward more knowledgeable actions around the world.

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