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The Importance of Managing the Communication Network on Social Media: Does a Big Brand Guarantee Promotion Success?

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ABSTRACT

Organizations are increasingly relying on social media to attract attention and build engagement with online communities. Effective promotional activity required more than using the big brand and huge followers. Although social media offers an effective form of two-way communication, not all organizations understand how to make marketing strategies on social media work effectively. Therefore, this study aimed to describe public-organization interactions in X using social network analysis. A quantitative descriptive method was adopted, and the unit analysis was the #promo-bri hashtag. Data were collected and processed using social network analysis with Netlytic and visualized using Gephi software. The results showed that in X, influential and well-known organization accounts were not necessarily effective in spreading promotional hashtags across the network. Hashtag diffusion was broader when actors engaged in conversation and acted as bridges that connected multiple communities. Based on the Strength of Weak Ties theory, social media promotion also needs to focus on the weak ties, which provided bridges that expand across communities and made the campaign more efficient. The result of this study showed the importance of organizations using influencers or actors who were credible and actively interacted with other communities, as well as managed the social network to enhance reach.

Keywords: *Social network analysis, Twitter, marketing communication, Strength of Weak Ties Theory, promotion.*

INTRODUCTION

The role of social media in the internet age is increasingly important, unraveling in the industrial sector (Bonsón et al., 2019). Social media is widely used as a two-way communication to interact with stakeholders (Daugherty & Hoffman, 2014) or as a promotional medium to gain benefits for organizations (Shen et al., 2016). Among various social media, X is a text-based social networking platform that is very popular with users (Prahasto & Setiawan, 2025).

Organizations must effectively convey messages in a way that ensures public understanding. This is because the public tends to respond favorably when information is accessible and easy to obtain. Although social media can increase web traffic, it does not guarantee a significant increase in sales. The effectiveness of social media marketing is varied and depends on various complex aspects, costs, and brand status (Dolega et al., 2021). Therefore, several studies have been conducted to examine social media marketing. These studies included, in contexts of e-WOM (Du Plessis, 2022), young online consumers (Cheung

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et al., 2020), on retail website traffic, orders, and sales (Dolega et al., 2021; Duffett, 2017). The results showed the importance of integration between social media marketing and communication elements to achieve a competitive advantage (Taecharungroj, 2017; Valos et al., 2017; Arrigo et al., 2021).

Social media provides different data compared to other traditional media. Data related to a network of interconnected objects can be in large quantities, increasing the complexity of management. This condition can be answered by social network analysis (Tabassum et al., 2018), which can be used to examine various issues in studies, including trade networks at the international level (Gönçer-Demiral & İnce-Yenilmez, 2022).

Social network analysis (SNA) is an analytical method used to examine the structure and relationships between actors (Durmaz & Hengirmen, 2022). In SNA, actors are referred to as nodes. Meanwhile, the relationships or networks that connect one node to another are referred to as edges or ties (Hernández-García et al., 2016). Social media analysis evolved through the integration of practices from various disciplines, including anthropology, sociology, mathematics, and physics, leading to an interdisciplinary field with diverse methods and applications (Quatman & Chelladurai, 2008). The analysis focuses on interactions and patterns from interactions in the network, such as nodes (actors) and bonds (relationships built between these members) (Kolli & Khajeheian, 2020).

This study focuses on X due to the advantages over other social media. X facilitates conversations through hashtags (#) that make it easier for users to search for relevant messages or themes. Interactions within this space occur through 'tweets', retweets, or reposts of other users' messages (Taecharungroj, 2017). Given the advantages of X and the trust established among users, the platform has increasingly been used by organizations to promote, disseminate information, and provide media-based services for consumers (North et al., 2017). However, there are still companies that only provide information or promote without facilitating dialogue with the public (Zhang et al., 2020).

Social networks have relational ties that affect the flow of messages and audiences. The impact included the formation of public opinion, marketing, satisfaction using the media, and changes in behavior due to the existence of the campaign (Liu et al., 2017). Organizations need to bind consumers by using certain themes of discussion to become communication materials in online communities (Kwon & Sung, 2011), including using influencers to distribute information to actors (Alves et al., 2016). The effort to form brand engagement can be measured from the comparison of likes, comments, and reposts (Lal et al., 2020).

Previous studies have been conducted to examine promotion in X. Atnan et al. (2024) examined the need for the Bandung City Government to increase engagement to ensure public response and interaction. Laradi et al. (2024) showed that social media had the ability to improve brand performance through appropriate and relevant content that promoted interaction with consumers. Meanwhile, Alamsyah et al. (2021) examined Telkomsel's promotion in X, and the results showed that accounts with larger followers bear greater responsibility to stimulate interaction that could increase promotion. Other studies (Bonsón et al., 2019; Read et al., 2019; McShane et al., 2021) examined brand behavior or consumer engagement. Although the focus of these investigations was on the importance of promoting engagement with the public, studies on how communication networks support engagement remain limited. Therefore, this study aimed to address how the public -organization interactions in X using social network analysis. This study contributes to the development of communication marketing by describing networks between actors and influential actors in

online networks, including strategies to increase the strength and distribution of promotion in online networks.

LITERATURE REVIEW OR STUDY BACKGROUND

a. Strength of Weak Ties Theory (SWT)

Social networks emanated from the study of sociology, a formulation of Mark Granovetter (Kim & Fernandez, 2023). Granovetter (1973) published an article titled "The Strength of Weak Ties" in the American Journal of Sociology, which was very popular and became a reference for thousands of studies in sociology and other disciplines. An important argument is that the strength of ties comes from "the combination of the amount of time, the emotional intensity, the intimacy (mutual coding), and the reciprocal services which characterize the tie".

Granovetter (1983) showed that weak ties played an important role as bridges in disseminating information and resources across a wider social network. Meanwhile, strong ties played a role in providing intensive support due to emotional closeness and easier accessibility. SWT describes two important assumptions for examining a network. The first is that weak ties tend to arise due to interactions with individuals who are not very familiar with each other. The second strong ties refer to close interactions among individuals through frequent interaction or family bonds (Weng et al., 2018; Aral, 2016). According to Granovetter (1983), some weak ties tend to have different values. In the process of information diffusion and collective mobilization, valuable weak ties are those that can become bridges between networks. Granovetter further explained that dynamic analysis can facilitate the exploration of how networks evolve and change in social processes.

The assumption of the SWT theory is increasingly popular, specifically with the rise of social media platforms, and has received attention from various academics. Doerfel & Moore (2016) suggested that SWT needs to be explored by considering the strong spontaneous ties due to shared interests in a topic and strengthened by intense interaction in digital space. Sundararajan (2020) explained that SWT portrays the dynamics of social networks and is also enriched by examining the cultural reasoning that gives meaning to the relationship formed. Therefore, the strength of ties on social media is focused on both the network and the cultural structure. According to Liu et al. (2017), in a fast-paced information environment, weak ties can provide novelty because the individual in the network has diverse characteristics compared to the strong ties. The role of weak ties was significant, as these connections were not structurally independent but were shaped by how individuals activated social relationships to sustain the ties (Kim & Fernandez, 2023).

b. Social Network Analysis

Online social networks can be viewed as an alternative to improve existing relationships by providing an internet-based communication to build various networks (Merchant, 2012; Dolega et al., 2021). In a study using SNA, the existing ontological aspect, namely the network perspective, motivated individuals to see the social world through a unique view, specifically the relational nature that exists between entities. The epistemological aspect is that the analysis of social networks can provide information about the social world by taking the interrelated components of a phenomenon into important consideration (Quatman & Chelladurai, 2008).

SNA can produce basic descriptive statistical analysis that shows network interactions between actors. The difference with statistical analysis is that SNA focuses on the quality of the network (edges) between actors (nodes), shown from statistical centrality. This difference shows the information on the responsibilities of actors in the network (Gönçer-Demiral & İnce-Yenilmez, 2022). A network consists of nodes (people, companies, concepts, media objects, etc.) that are interconnected with each other. Nodes connected in a specific direction formed relationships referred to as edges. (Bruns & Snee, 2022). The rapidly growing SNA could serve as an important tool for study and strategy development, as social networks provide primary information sources for users due to the ease of searching and sharing information (Pamungkas & Chiril, 2025). Based on the purpose of this study, the research question was: How do organization and the public interact, and what network patterns emerge within the communication network?

METHODOLOGY

This study used a quantitative descriptive approach with Social Network Analysis (SNA). Data was collected in the form of a text that was freely available and freely accessible on X (formerly Twitter) through Netlytic.org. The data used a unit of study, providing important information in network analysis (Jack, 2005) despite not being representative of the entire population. Therefore, the validity of SNA depended on determining network boundary specifications, which could provide representative results (Quatman & Chelladurai, 2008). The specification of the data extracted was only for those who used the Indonesian language. In addition, when pulling data, no tweets were processed or filtered beforehand. Tweet data included information such as sender, date, time, tweet, mentions, hashtags, number of replies, list of users mentioned, and others.

A descriptive quantitative study was carried out with the objects were communication networks and actors who influenced #promo_bri hashtags on X. BRI was chosen since it is one of the biggest banks in Indonesia. Data was collected using the Netlytic.org website application on February 22, 2023. A sample of 346 actors and 338 relations was obtained, with a total data set of 684. This method follows (Lemes Alarcão & Sacomano Neto, 2016; Priyanto & Farida, 2021) , who applied SNA as a quantitative tool to describe actor interactions though numerical metrics.

The data obtained from Netlytic were diameter, density, reciprocity, centralization, and modularity. The analysis was carried out with Gephi because it could map the network structure and identify bridging ties in the network as formulated by the SWT theory. Gephi could draw centrality values on data degree, closeness, betweenness, eigenvector, and network structure. Meanwhile, Gephi 0.10.1 was an open-source network analysis application that could be used to uncover complex relationships.

RESULTS AND DISCUSSION

a. Results

This section presents the results of the SNA conducted to examine the interaction pattern between the organization and the public within the hashtag network. In addition to the network structure, this analysis also considered the description from the SWT. When SNA provides an overview of the behavior, network and dynamics of its users on social media networks (Achfandhy et al., 2024), studies with theory can deepen the findings of the

communication network. The network structure describes how the organization and public were interacted and how the communication flows among them.

Table 1: Network structure

Analysis	Data
Diameter	4
Density	0.003003
Reciprocity	0.000000
Centralization	0.438400
Modularity	0.138200

Source: the result of data processing with Netlytic.org (2023)

Table 1 shows a diameter value of 4, representing the greatest distance between actors in the network and reflecting the overall network size. Diameter 4 shows a description that the distances between actors in the network using #promo_bri were close, facilitated an easy interaction between these actors.

Density describes the proximity of actors in the network. The number 0.003003 was relatively close to 0, showing that there were very few actors connected to the network. This result showed that the actors who used #promo_bri only made one-way mentions, replies, or retweets to actors in this network. Actors who seemed to have a lot of relationships did not mention or reply. Therefore, #bri_promo showed a marketing process carried out by BRI to promote its products to other parties. Low-density values were also found in the study conducted by Ramadhan et al. (2021), showing that X user interactions using the hashtag #Permendikbud30 were limited to one-way mentions, retweets, or replies to certain accounts.

Reciprocity showed the proportion of bidirectional communication bonds in a network. A value of 0.000000 suggested that there was a one-way promo-related conversation using #promo_bri. The hashtag generated minimal mutual responses and follow-up conversations, consistent with the very low density value, showing that information flow within the social network moved in a single direction.

Centralization is defined as the average level of centrality of all actors in the network. A value of 0.438400 on the #promo_bri network was very high because it was close to the number 1. This result suggested that interactions with the hashtag were only carried out centrally by a few actors who dominated the flow of information. The modularity data was shown with a value of 0.138200, suggesting a low modularity.

The Most Influential Actors in the Network

In social media analysis, there are several indicators and measurements used to identify the main actors are the roles in a network. Social Network Analysis, conducted through Gephi, could provide an overview of actors who distributed information with #promo_bri on X. Data related to centrality were needed to determine the position of the actor. Centrality was a measure of an actor's position in a social network and was calculated using several metrics, often using degree, betweenness, closeness, and eigenvector centrality (Tabassum et al., 2018). Figure 1 described the highest time when #promo_bri appeared on the social network X. It could be seen that February 18, 2023, to February 19, 2023, was the peak time for message distribution on this network, and decreased from February 20, 2023.

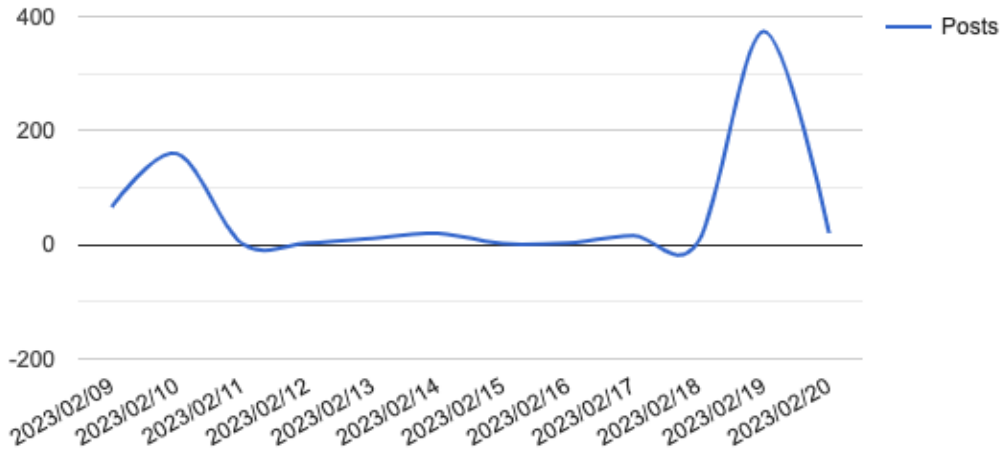

Figure 1: Movement #promo_bri pada 09 – 20 February 2023
Source: The result of data processing with Netlytic.org (2023)

Table 2 described degree centrality, which represented the number of interconnections. This was generally associated with how influential nodes were in the network, with higher degree values corresponding to the more influential nodes (Valeri & Baggio, 2020).

The dominant actor in Table 2 was the @promo_bri account that had the highest degree and indegree scores. This result showed that the actor was most often mentioned, retweeted, or replied to when tweeting in a #promo_bri network and had the most intensive communication with other X users. Meanwhile, the highest number of outdegree values was owned by the @ki**_r* account with a value of 4. This result showed that the account was an actor who actively used X, either mentioning, replying, or retweeting the uploads of other actors.

Table 2: Actor degree calculation

No	Actor	Degree	Indegree	Outdegree
1	Promo_bri	294	294	0
2	Bankbri_id	23	22	1
3	kontakbri	8	8	0
4	Den***_a*	3	3	0
5	Gir***	2	2	0
6	Buk***s*	2	2	0
7	Sis***58	2	2	0
8	Men***s*	3	1	2
9	Ki**_r*	4	0	4
10	Ma*_p*	3	0	3

Source: Results of data processing with Gephi Software (2023)

In addition to degree centrality, another metric that needed to be examined was closeness centrality. This metric measured the average distance between actors in a social network (Valeri & Baggio, 2020) and an actor with a high closeness centrality facilitated the spread of information to others (Liu et al., 2017). Table 3 shows the proximity data of actors in the #promo_bri communication network. Closeness centrality data described the closeness between actors that was used to convey messages. The closer to the number 1, the easier it was for the actor to convey the message.

Table 3: Highest closeness centrality actor

No	Actor Number	Value
1	325	1
2	1	0.833333

Source: Results of data processing with Gephi Software (2023)

The next metric in Table 4 was betweenness centrality, which referred to the nodes connecting other groups, acting as a "bridge" (Hernández-García et al., 2016). In the analysis of social networks owned by promo_bri, this matrix could be used to identify the actor who spread information using #promo_bri to others. A value of 1 showed that the actor in the communication network had a high influence. Similarly, a lower value of 0 showed that the actor was weaker in influencing the distribution of information.

Gephi's statistical analysis showed that only one actor had a betweenness centrality value distant from 1, namely the @mer***s* account, while others had a value of 0. This result showed that @mer***s* served as the sole mediator in disseminating messages related to BRI promotion within the communication network and played a key role in organizing and managing promotional information. The measurement of betweenness centrality for #promo_bri, as visualized in the Gephi-generated image, also showed that the majority accounts did not function as bridges for message dissemination.

Table 4: Highest betweenness centrality actor

No	Actor	Value
1	Mer***s*	0.000008

Source: Results of data processing with Gephi Software (2023)

Table 5 showed the eigenvector centrality values used to identify influential actors within the network. Eigenvector centrality describes actor popularity in a communication network. In this study, an actor was considered significant when connected to other highly popular actors (Oliveira & Gama, 2012). These actors could function as primary information sources, initiators of network formation, and key agents in information dissemination. The eigenvector value ranged from 0 to 1, with 1 representing the highest level of popularity. The actor with the highest eigenvector centrality value closest to 1 was the @promo_bri. This value showed that @promo_bri account had relationships with other important actors in the network and played a key role in spreading promotion through #promo_bri.

Table 5: Eigenvector centraliy actor highest

No	Actor	Value
1	promo_bri	1
2	bankbri_id	0.10473
3	kontakbri	0.027211
4	den**_a*	0.011349
5	gir***	0.007948
6	buk***s*	0.006803
7	sis***58	0.006803

Source: Results of data processing with Gephi Software (2023)

Figure 2 shows a visualization of social media networks using Gephi's ForceAtlas 2. The picture showed that there was a network that had a strong star topology formed by posts from @promo_bri account, and therefore, the control was very centralized. All the network actors in this visualization were interconnected with the central point but the actors were not

interconnected, they were just gathered in a vortex from the main center of gravity that circled the @promo-bri account. The @promo_bri account was the Super Hub with the highest degree centrality. In the context of network density, this promo content looked to attract attention because of the number of accounts that provided both organic and paid comments.

The shape of the gravitational vortex formed by the @promo_bri account shows a unidirectional communication pattern. Information from @promo_bri flowed from the center to the periphery, therefore it did not lead to the formation of organic communities through the interaction of users. This was a weakness of the campaign carried out by @promo_bri. In other vortices, there were @bankbri_id and @kontakbri accounts that made up a small center of gravity. Both accounts were the main bank accounts that had the responsibility of handling customer service and providing official information, while @promo_bri was the child accounts that made posts based on the promotional program that was being implemented. The high gap between those two main accounts and the @promo_bri account illustrated that the main accounts had limited visibility and engagement within the observed interaction network.

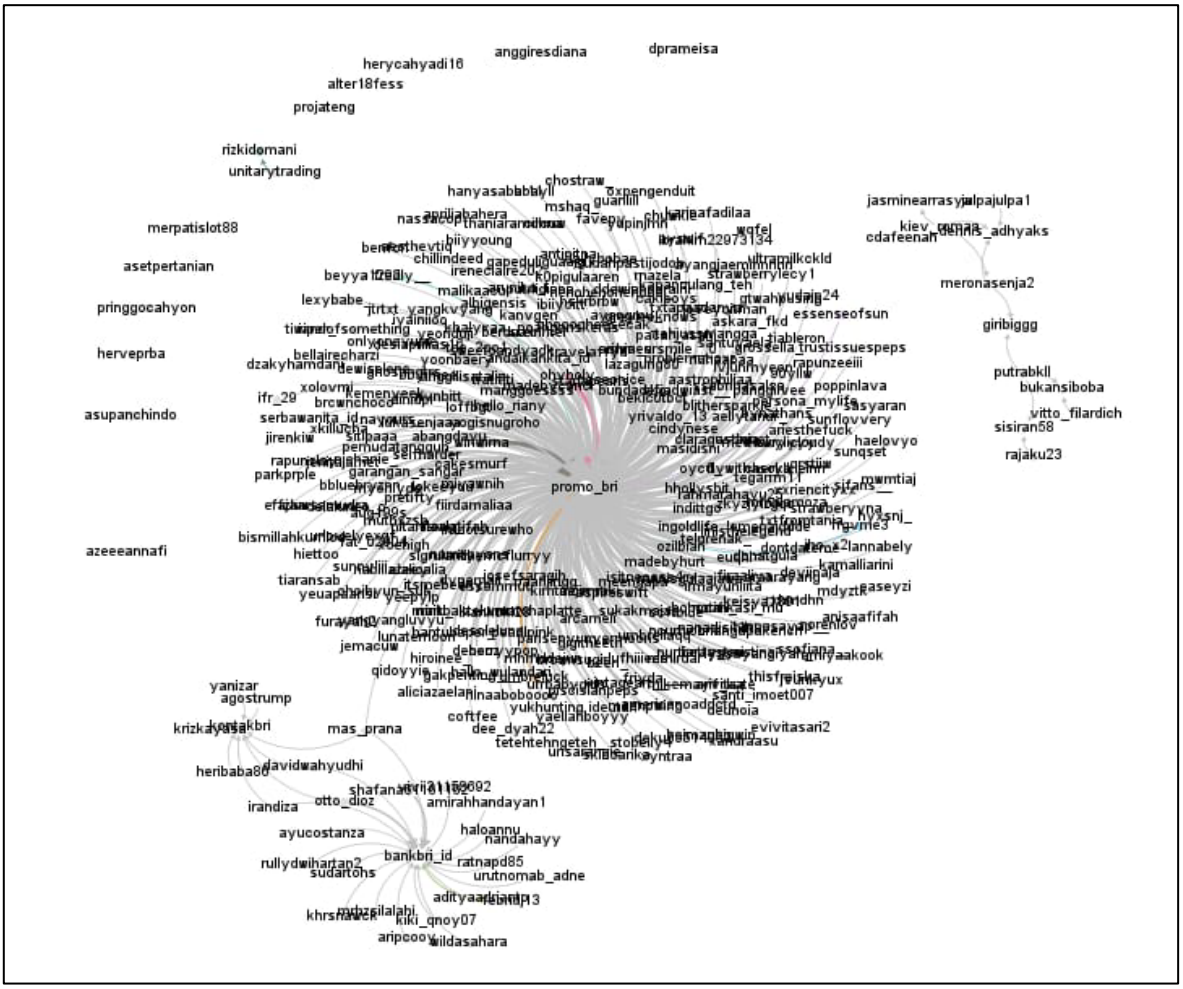

Figure 2: Network analytic
Source: Result of data processing with Gephi Software

b. Discussion

The results of the SNA show that the main actors who do #promo_bri promotion has an outdegree value of 0. Therefore, the account that manages promotion with hashtags needs to be more active in interacting with other actors. This result confirmed a previous report that successful marketers interact with followers in a matter of hours through a reply to consumers (Taecharungroj, 2017) and actively create interesting content (Li, 2021).

In this study, organizations used the strategy of placing the social media accounts in a central position. This is a common strategy that facilitates the sharing of messages or becoming a mediator. This method was particularly important for promoting an organization's brand. However, effective promotion required support from accounts with high closeness centrality, which represented the diffusion of information. Since the number of actors with closeness centrality in this study was considerable, organizations could benefit by identifying accounts with strong potential for disseminating and receiving promotional messages. Actors occupying central positions held greater advantages compared to those positioned in the outer areas of the network (Quatman & Chelladurai, 2008).

Low engagement behavior was evident in the number of actors and networks. The results showed the need to increase the number of actors and networks. Furthermore, from the low-density data on promotion using #promo_bri, it can be increased by promoting or facilitating two-way communication between actors in the network through the use of the hashtag. The low modularity data occurs because promotional movement carried out by BRI with #promo_bri has not been able to achieve communication conversation engagement on X.

In social media, messages needed to be supported and developed into conversations among actors to enable rapid and widespread dissemination within the social network. According to Bonsón et al. (2019), different types of content and media generate varying levels of engagement, and a large number of followers does not necessarily determine the potential to attract audience interaction. Therefore, instead of focusing on increasing followers, organizations could improve the management of the social networks. Organizations can also use tweets that show proximity and entertainment, accompanied by the speed of the posting process, to improve the distribution of message flows. However, certain types of organizations, such as banks that rarely post entertaining tweets, could rely on credibility and building closeness with audiences (Manzanaro et al., 2018). Based on this description, excellence can be achieved by focusing on the advantages of the product over competitors, such as showcasing the organization's trusted services and programs. While brand popularity can add value on X (Read et al., 2019), building engagement on social media requires a strategic method and cannot rely solely on brand strength.

Organization promotion strategies that focus on positive aspects tend to be perceived by the public as less authentic (Hernandez-Bocanegra et al., 2020). This was also confirmed in the present study, where promotion resonates less on social networks when carried out dominantly by the organization's official account. This study also reinforced the recommendation from Adeola et al. (2019) that messages take the right people to do electronic word of mouth (e-WOM) to spread successfully in virtual communities. Three groups were important to be the guardians of e-WOM messages, namely, people trusted by the public, social centers, and salespeople. The presence of these three groups can change promotional messages to be faster and more widely discussed among individuals or communities.

The digital ecosystem carried out through the BRI promo program seems to be trapped in a one-way communication. The use of social media that offers two-way communication has not been utilized to the fullest because it is only seen to send promotional messages, not to build engagement with the public. The success of a promotion in social media is also determined by how the public discusses the promo, freely exchanges information with other users or the unpaid Word of Mouth. In this study, the promotion network model is vulnerable to risk because a disrupted Super Hub can cause a failure in disseminating information. In the context of social media where users are instant and spontaneous, the organization's official account should be able to build a large center of gravity and make the network resilience between users strong.

In the digital era, public figures have the potential to shape public opinion (Haryanti, 2025). This condition can be addressed by choosing the right influencer. In social media, an influencer does not have to be a celebrity or public figure who is already known to the public. However, influencers are active and can mobilize actors in a social network to communicate the messages of the organization. Influencers have the power to drive engagement, and organizations need to ensure that the promotion is consistent with the intended goals (Campbell & Farrell, 2020).

The results of the study conducted by Fitriyah & Nurhaeni (2021) showed that the consistent use of #SobatParekraf community hashtags by various popular actors were effective in broadening the users' engagement. These actors were able to connect various cross-communities. Strong and weak ties function optimally to create engagement in X. Compared to this study, the hashtags echoed by organizations are less connected to achieve the maximum percentage between cross-communities. Therefore, the promotion tends to revolve around the community of the organization.

Based on the perspective of SWT, influencers have a dual function. For an unfamiliar audience, influencers act as weak ties that expand message reach. Within the organization, cooperation through strong ties enables broader promotion across social media networks. The lack of widespread echoes of promotion in X (Table 5) can be explained by the dominance of various organization internal strong ties accounts. However, the betweenness centrality (Table 4) shows that the actor who regulates the flow of information is another account. Deliberate measures can ensure information messages circulate within appropriate channels, minimizing potential harm to the organization, particularly given the context of the banking industry.

Accounts with weak ties were not close and tend to have different experiences and access to information (Zhao et al., 2010). This characteristic can be used by organizations to build engagement on X. When organizations generate new issues that attract interest and become sources of posts, weak bonds may respond with questions, comments, criticisms, or praise for issues echoed by the organization. Therefore, focusing on weak ties can be developed and maintained through specific accounts managed by the organization or independently, as these accounts typically have low social influence and exhibit passive interactions in the media.

CONCLUSION

In conclusion, this study has implications for organizations that need to promote X. First, organizations need to build engagement in X by also focusing on the weak ties that can be the bridges among accounts. The account does not have to be large but can belong to an

influencer or to individuals who actively participate in various communities or across topics, thereby expanding the reach of the promotion in X. Second, organizations should manage social networks appropriately, including diffusion of innovation, ties and bridges identification, and also network measurement. Only relying on hashtags to trend and maintain visibility for a long time is difficult. An important consideration arises that although the organization has a big and well-known brand in the market, it does not guarantee the successful engagement of the users on the very dynamic social media. By applying social network analysis to marketing communication strategies, such as mapping actor roles, bridging ties, and diffusion information, this study contributes to the development of many fields, including network analysis, communication, and marketing. Moreover, the engagement with the stakeholders also contributes to the sustainability of the organization, especially when facing a crisis.

This study used a single hashtag and a limited dataset so the results may not reflect the overall network patterns and dynamics of deep interactions. In addition, the analysis was restricted to data collected within a short time period and using automated tools which may not capture the overall meaning of the online communication and engagement. Future study is recommended to compare the effectiveness of organizational promotion strategies that use weak and strong ties in social media. This comparison is important to provide recommendations related to the use of influencers as a strategy to strengthen engagement. Furthermore, the comparison will support the development of a promotion strategy in the digital era based on the perspective of SWT.

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