

Cyber Public Relations Strategies for Enhancing Public Engagement: A Case Study of Koja Hospital Instagram

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Abstract. The rapid development of information technology that triggers transformation in the field of public relations has driven hospitals to implement cyber public relations in their organizational communication activities. This research analyzes the management of cyber public relations in one of Jakarta's regional general hospitals or health houses, namely the Koja Hospital. This study aims to explore Koja Hospital's efforts in interacting with the public through Instagram social media. Data mining will focus on two aspects: first, what messages Koja Hospital conveys through Instagram, and second, how the public reacts to messages from Koja Hospital. The research method used is a mixed, qualitative, and quantitative method. The quantitative method is used to mine data related to the messages conveyed by Koja Hospital through Instagram, while the qualitative method is used to explore how Koja Hospital manages dialogues with the public on its Instagram account. This research is conducted by analyzing Koja Hospital's Instagram account from January-February 2023. The research findings conclude that Koja Hospital uses Instagram as a cyber public relations platform to convey messages with categories including Health Education, Service Promotion, Hospital Social Programs, Employee Activities, Events, Health Technology Innovations, and Awards and Certifications through photos and videos. However, engagement with users is still not optimized. In conclusion, cyber public relations should utilize all features provided by social media platforms, produce messages optimally, and engage with users interactively.

Keywords: cyber public relations, Jakarta general regional hospital, Instagram, public engagement, communication strategy

1 Introduction

Cyber public relations (Cyber-PR) is a new concept used in corporate reputation management. Cyber-PR practices are one part of public relations activities adapted from the use of information and communication technology for companies. Every company or government feels the importance of digital information dissemination, and awareness to meet the information needs on such media is necessary for proper implementation.

It is possible for Cyber-PR to develop rapidly, considering the growth of internet users in Indonesia, which according to the survey conducted by the Indonesian Internet Service Providers Association (APJII) in 2017, had reached 143.26 million people, increasing from the previous year, which was around 132.7 million people in 2016, and 110.2 million people two years prior in 2015. The survey also mentions that information searches for purchasing purposes are among the top three internet user behaviors in the economic sector, amounting to 37.82%. Furthermore, it explains that social media utilization ranks first at 87.13% for lifestyle-related internet user behavior [1].

Data collected from 2,500 PR professionals, primarily serving as managers and directors of PR in eight countries, stated that their involvement in using Cyber-PR is relatively high [2]. Another study by Mynewsdesk on Cyber-PR explains that half of the PR practitioners feel the impact of technology use in corporate communications can continue to increase the possibility of companies reaching stakeholders by 89%. This condition allows PR practitioners to focus more on personalization than mass communication, amounting to 83%, then giving PR more control and supervision over messages by 82%. Further research describes the role of Cyber-PR for PR practitioners, including its use as a tool for analysis by 71.4%, email marketing services by 63.2%, social media solution management by 61.8%, creative video and image usage by 57.4%, and media monitoring

by 53.4% among others (2016: 4-6). Various organizations, including non-profit organizations, also utilize Cyber-PR in their activities [3].

Cyber-PR is also utilized by many hospitals, considering that the progress of information and communication technology has shifted many face-to-face activities to utilizing the internet medium, eroding space, distance, and time. High-quality service in hospitals is crucially needed, especially for government hospitals, as it is also related to the public interest. Cyber-PR can inform through websites related to the hospital's profile, facilities, services provided, doctors' profiles, news, and public information. Now, patient registration is also done digitally. In addition to websites, social media is often used. Cyber-PR utilizes social media, which can also be done through Facebook, YouTube, Instagram, TikTok, or Twitter to interact with the public.

A number of studies related to Cyber-PR in hospitals have been carried out, including discussing the management of digital public relations at the Yogyakarta 'JIH' Hospital [4]; implementation of cyber public relations at RSUD Arifin Achmad Riau Province [5]; Instagram social media management strategy in improving the image of RSUD Dr. Moewardi [6]; Medistra hospital's cyber public relations strategy in forming a service image during a pandemic [7]; Health promotion as a means of education through Instagram [8]; Instagram as a media for health promotion related to COVID-19 which is effective for the young age segmentation [9].

In this study, the use of social media that will be analyzed at Koja Hospital is Instagram. Several reasons why the choice of social media is: first, referring to the Global Review We Are Social research in January 2023, the second favorite social media platform is Instagram. The data is in the following figure.

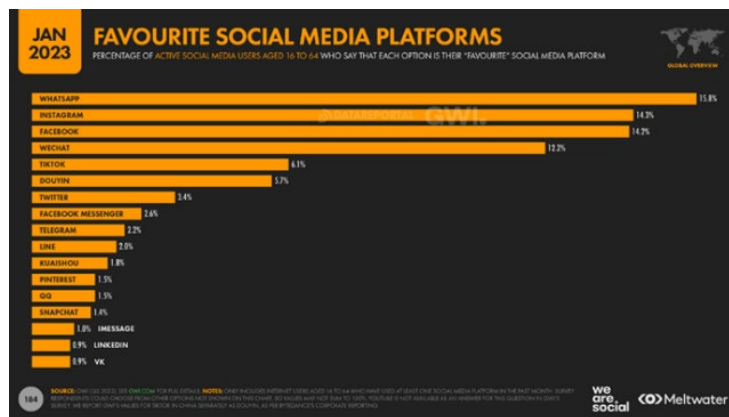


Figure 1. Favourite Social Media Platform

Given that WhatsApp is individual, it also tends to be in the form of group messages, so group members who have entered the group can interact. Meanwhile, Instagram is a photo and video-sharing application among users, with two billion active users worldwide.

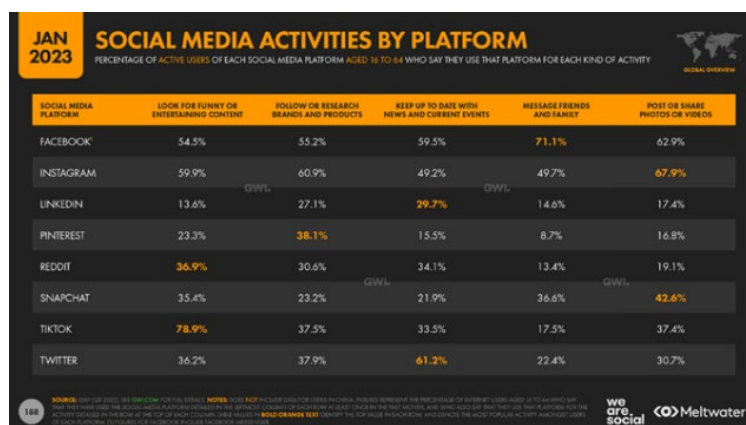


Figure 2. Social Media Activities by Platform

Other data related to social media activity, Instagram is still in demand because they get entertainment, can get information and events, and can share photos and videos [10].

In the We Are Social 2023 data, it appears that Facebook still ranks significantly on social media, but the highest score from FB is when messages are sent regarding issues of friends and family. Fahriza & Pujiyanto's research regarding social media in hospitals to create a global brand image, using the digging method in scientific

articles for the 2016-2020 period, concluded that the most frequently used types of platforms were Facebook, then Twitter, and Instagram [11]. This means that until 2020, Facebook still ranks first, but Instagram is also one of the areas of interest to hospitals.

The second reason this research focuses on Instagram is considering the number of hospitals owned by DKI Jakarta Province which has increased five times since 2012-2018 [12] thus causing intense competition in the sustainability of the organization. Various strategic efforts including a communication approach were carried out, including the management of digital PR. Koja Hospital has a number of social media platforms including Facebook, TikTok, Youtube, Instagram, and Twitter. Koja Hospital started using Facebook on March 27, 2017, and the number of friends is around 2,100 people. The last message delivery on Facebook is December 26, 2022 (<https://www.facebook.com/rsud.koja.33>). Koja Hospital joined Twitter in June 2016, with 781 tweets, and 603 followers. The last message was on February 15, 2023, and most messages refer to posts on Instagram (https://twitter.com/Koja_RSUD). Koja Hospital has an account on Tiktok. The first video submission on Tiktok was on December 24, 2021, and the last Tiktok message was on February 6, 2023. The total number of messages since 2021 is 16 videos (<https://www.tiktok.com/@rsud.koja>, March 27, 2023). Koja Hospital has a Youtube account. Starting March 23, 2019, a total of 89 videos were uploaded. During 2023, five videos were uploaded (<https://www.youtube.com/@rsudkoja>, data taken on March 27, 2023). Koja Hospital does not have an account on LinkedIn. Furthermore, the hospital has an Instagram account with the following data.



Figure 3. Instagram Account of Koja Hospital

Activity on social media Instagram started in March 2017, and until March 27, 2023, there have been 1608 messages sent, with photos and/or videos.

Another consideration that is also quite significant is by referring to the List of Hospitals in DKI Jakarta, General Hospitals owned by the Regional Government of DKI Jakarta with class B, are in the North Jakarta, West Jakarta, South Jakarta, and East Jakarta areas. The Central Jakarta and Thousand Islands areas do not have Class B Hospitals (https://id.wikipedia.org/wiki/Daftar_rumah_sakit_di_DKI_Jakarta). From the table below it can be seen that regarding the activity of posting messages, Koja Hospital is superior to other Class B Hospitals in DKI Jakarta, namely 1619 posts.

Koja Hospital's Instagram Social Media Data compared to other Type B Hospitals in the DKI Jakarta Region in Table 1.

Table 1. List of DKI Jakarta Class B General Hospitals

Class B General Hospital	Area	Start owning Instagram	Number of Posts
Koja Hospital	North Jakarta	March 2017	1,619
Cengkareng Hospital	West Jakarta	July 2017	806
Pasar Minggu Hospital	South Jakarta	May 2016	928
Pasar Rebo Hospital	East Jakarta	August 2019	624
Budhi Asih Hospital	East Jakarta	January 2015	977

Note: in Central Jakarta and the Thousand Islands there are no class B general hospitals

Data taken on April 16, 2023

Based on various considerations of activeness on social media, the researcher chose to analyze Koja Hospital's Instagram as the focus of the research.

Thus, this study aimed to explore Koja Hospital's efforts to interact with the public through Instagram social media. Data mining will focus on two things: first, what messages Koja Hospital conveys through Instagram, second, how the public reacts to messages from Koja Hospital.

The choice of the Koja Regional General Hospital or Healthy Home for Jakarta – Koja Hospital is considering that the type B hospital belongs to the provincial government of DKI Jakarta which is in Tanjung Priok so that it can become a reference and role model for similar institutions.

1.1 Cyber Public Relations

Public relations are a combination of art and science as a management function that supports, maintains, and fosters organizational relations with the public to build, maintain, and protect the organization's reputation [13]. Public relations are needed because they can support management in achieving organizational goals, fostering harmonious relations with the corporate public internally and externally, and creating two-way communication. However, compared to the past, today's Public Relations activities are more concerned with two-way communication. They are open to receiving suggestions and input, and actively inviting discussions to achieve an optimal understanding of an issue. According to Kent & Lane, criticism of the normative bias that exists in public relations challenges the narrative of two-way symmetrical dialogue [14].

The very significant development of the digital world has made public relations practitioners utilize digital platforms to interact with their stakeholders with the aim of having a stronger impact on society [15]. For this reason, it is known as cyber public relations or other terms such as digital public relations, electronic public relations (e-PR), online public relations, and Public Relations 2.0. Cyber public relations describe the use of social media by companies, organizations, government agencies, politicians, and celebrities for their success considering that media is everywhere in current societal events [16]. In a study comparing public relations and marketing functions in the digital era, Tong & Chan concluded that media relations are interpreted more as a PR function [17]. Content marketing and influencer marketing through digital communication channels help improve the convergence of PR and marketing functions in a more integrated manner.

Public relations utilize the media in conveying and disseminating information including print media (journals, magazines, newspapers (newspapers); electronic media (radio, television); direct meeting media (face-to-face) such as presentations, panel discussions, seminars, and exhibitions; media outdoor such as banners, billboards, banners, posters, etc. Along with the development of information and communication technology, the media used in cyber public relations include company websites, publicity search sites (Google/Yahoo), online press releases, autoresponders on e-mail, electronic business cards in e-mail, e-newsletters, mailing lists (forums on company websites) and forums (Facebook, Twitter, Instagram, etc.) [18].

Lozano & Roao's research on social media in Spain and Portugal concludes that social media has positively contributed to implementing public relations strategies [19]. Social media also plays a key role in nonprofit communications by lobbying for social causes, creating alliances, raising money, mobilizing volunteers, engaging traditional media and public relations, or advocating for policy reform. However, there is no single model for developing this campaign, for this reason, research in various contexts can enrich the body of knowledge related to cyber public relations.

Cyber public relations that utilize social media, allow for interaction or engagement. Interactivity is influenced by messages and other elements that can encourage the exchange of messages and increase understanding. Media users can interact with each other reciprocally [20]. This engagement is beneficial, for that, message producers need to find creative ways to produce messages that encourage interaction. The inability to invest that results in customer engagement can also mean a reduction in potential value for the company and customers [21].

The specific challenges faced by PR professionals in implementing Cyber-PR strategies include managing and responding to a large volume of online interactions, dealing with negative comments and criticism, ensuring consistent messaging across multiple digital platforms, and keeping up with rapidly evolving technology and social media trends. However, there are also opportunities in terms of reaching a wider audience, engaging directly with stakeholders, monitoring and analyzing online conversations, and adapting strategies based on real-time feedback [22],[23]. Key factors that contribute to the success of Cyber-PR in reaching stakeholders and achieving communication objectives include developing a clear and consistent brand voice, creating engaging and shareable content, actively listening and responding to the audience, leveraging data and analytics to inform strategies, collaborating with influencers and partners, and staying updated on digital trends and best practices [24],[25].

The use of Cyber-PR impacts the role and responsibilities of PR practitioners by requiring them to have a deep understanding of digital platforms and technologies, strong communication and writing skills for online channels, the ability to monitor and analyze data, agility in adapting strategies based on real-time feedback, and skills in managing online reputation and crises in the digital space [26],[27].

Cyber-PR has implications for traditional mass communication approaches in public relations by shifting the focus from one-way communication to interactive and participatory communication. It allows for direct engagement with stakeholders, real-time feedback, personalized messaging, and the ability to target specific audience segments. Traditional mass communication approaches may still have a role in reaching broader audiences, but they need to be complemented with digital strategies to effectively engage with stakeholders in the

online space [28],[29]. Non-profit organizations leverage Cyber-PR to enhance their outreach and engagement with stakeholders by leveraging social media platforms, creating compelling content that resonates with their target audience, encouraging user-generated content and advocacy, leveraging online fundraising and donation platforms, and collaborating with influencers and partners to amplify their message [30],[31].

The unique challenges in managing cyber public relations during a pandemic, especially for hospitals, include dealing with misinformation and rumors, addressing public concerns and fears, providing timely and accurate updates, managing the influx of online inquiries and requests, adapting communication strategies to changing circumstances, and balancing transparency with patient privacy and confidentiality. The opportunities lie in leveraging digital platforms to disseminate important health information, providing support and resources to the community, showcasing frontline healthcare workers, and addressing public concerns proactively [32],[33]. The main considerations for hospitals in implementing Cyber-PR strategies include ensuring patient privacy and confidentiality, maintaining a professional and trustworthy image, managing and responding to online reviews and feedback, providing accurate and reliable health information, leveraging storytelling and personal narratives to create emotional connections, and engaging with the community to build trust and support [34],[35].

The utilization of Cyber-PR may vary across different industries and sectors. Some industries, such as fashion, beauty, and travel, have been early adopters of Cyber-PR strategies due to the visual nature of their products and the highly engaged online communities surrounding them. These industries often leverage social media platforms like Instagram to showcase their products, collaborate with influencers, and engage directly with their target audience [36],[37].

1.2 Utilization of Instagram in the Health Sector

Cyber public relations in hospitals are increasingly being used. Specifically, Instagram social media occupies a strategic position that is accepted in society, including among companies in offering their products or services as well as enhancing the company's image among the public. Instagram has the main function: a place to upload video content, upload videos, Instagram stories, and many others. Instagram is developing because of its nature as a product of social construction that will evolve to respond to the development needs of the community where it is used [38].

The utilization of social media platforms like Instagram in Cyber-PR impacts hospitals' communication with the public by providing a direct and interactive channel for sharing information, engaging with patients and the community, showcasing services and achievements, addressing concerns and inquiries, and humanizing the hospital's brand by sharing stories and experiences [39],[40].

Instagram can be an effective medium for health promotion and education, particularly among younger age segments. Its visual nature and popularity among younger audiences make it a suitable platform for sharing visually appealing and engaging content related to health and wellness. However, it is important to ensure the accuracy and reliability of the information shared and to use evidence-based approaches in health education campaigns on Instagram [41],[42].

Research from Apparesya provides an overview of the use of Facebook and Instagram social media at the Jabodetabek Regional Hospital in 2021. As a result, of the 455 hospitals, the majority have Facebook (86.3% with an active level of 75.2%). Hospitals in Greater Jakarta also use Instagram (91.4% or 416 hospitals), with an active level of 94% [43]. Vionita & Prayoga's research on using social media during the Covid-19 Pandemic for hospitals in Tangerang, concluded that social media was often used as a medium for health promotion. The website ranks the most used, the second is Instagram, the third is E-mail, and the fourth is Facebook. Even St. Carolus Summarecon Serpong posts the most on Instagram. This study also confirms that the use of Instagram is indeed more in hospitals [44]. In other parts of the world, namely Saudi Arabia, the use of social media on Instagram related to health awareness among health promotion educators and students is as much as 71% [45].

Yulianti related the use of Instagram social media at Grha Kedoya Hospital when the Covid-19 pandemic occurred as an effort to increase public health awareness, concluded that the hospital uploaded with the following criteria: information about services (40.2%), information about maintaining health (24.39%), information about public health conditions (13.41%), information related to achieving quality control indicators of hospital quality (8.53%), doctor-patient interaction (6.09%), doctor-patient interaction Physician (3.65%), Patient-Patient Interaction (2.43%), Disease Surveillance (1%) [46]. This overview displays the variety of information selected by the hospital in communicating with its public. Research by Casmira, Widjanarko, and Margawati concluded that one of the media is more effective in dealing with the public is Instagram, considering that creatively packaged photos can attract attention and influence interest [8].

Research related to Instagram social media management strategies in improving the image of RSUD Dr. Moewardi [6] utilizes the approach developed by Luttrell namely the circular model of SOME in planning communications [47]. SOME stands for Share, Optimize, Manage, Engage. Through this SOME model, institutions/institutions/ companies will share information with the public, then institutions will try to optimize

the messages they create, then try to manage communications that occur on social media and use various efforts to engage the public. Efforts to use Instagram were also carried out by Medistra Hospital to form a service image during the pandemic [7].

In contrast to research that uses Instagram, other studies show that Instagram is not a priority. Wright & Hinson tend to suggest WhatsApp is one of the most popular among young smartphone users while fulfilling organizational goals, such as connecting, sharing and updating information, or monitoring the environment [48].

2 Methodology

This study uses a quantitative and qualitative descriptive approach. The sample refers to primary data from Instagram social media at Koja Hospital. The selected data collection technique is from the content of Instagram posts inputted by Koja Hospital. The researcher also analyzed the contents of the dialogue from the public and the reactions of the Koja Hospital. As an inspiration, research from Retna Eni Dwi Yulianti on the use of Instagram social media at Grha Kedoya Hospital during the Covid-19 Pandemic also uses an approach quite close to this research data collection technique [46]. The significant difference is that this study also analyzes the response from the institution. The data collected are all Instagram posts from Koja Hospital in January and February 2023. Content analysis in quantitative research is used to analyze the content of messages or information in a medium, including social media such as Instagram.

3 Results and Discussion

3.1 Koja Hospital

Koja Regional General Hospital, also known as the Healthy Home for Jakarta - Koja Hospital, is owned by the Provincial Government of the Special Capital Region of Jakarta. Established in 1952, it was initially a Medical Center and Maternity Hospital before being classified as a Class B general hospital. A Class B general hospital is defined as a hospital with facilities and capabilities for medical services provided by at least 4 (four) basic specialists, 4 (four) medical support specialists, 8 (eight) other specialists besides basic specialists, and 2 (two) basic subspecialists. Koja Hospital's motto is "SERVE WITH HEART AND LOVE" (<https://rsudkoja.jakarta.go.id/v2/>).

3.2 Koja Hospital Activities through Instagram

Koja Hospital has actively utilized Instagram as a social media platform since March 2017. As of April 14, 2023, the hospital has made a total of 1,617 posts on Instagram and accumulated 16.6K followers is 16.6K while following 33 accounts. The hospital's Instagram account, 'rsudkoja', features three main categories: Online list, Doctor's schedule, and Complaints. This research focuses on the two-months period of January and February 2023, during which the hospital uploaded a total of 57 posts. The information for the past two months regarding the Koja Hospital Instagram is in Table 2.

Table 2: Instagram Activities of Koja Hospital

Post Categories	Number of Posts	Pics/Videos
Health Education	9	6 Pics, 3 Videos
Service Promotion	5	1 Pic, 4 Videos
Hospital Social Programs	2	2 Pics
Employee Activities	23	22 Pics, 1 Video
Events	13	13 Pics
Health Technology Innovation	2	1 Pic, 1 Video
Awards and Certifications	3	3 Pics
Total Information	57	48 Pics, 9 Videos

Of the 57 posts made during the two-month period, 9 were videos and 48 were photos. Each post category has a distinctive message content, which can be mapped as shown in Figure 3. The seven categories of Instagram posts at Koja Hospital are discussed below.



Figure 3. Instagram Posting Categories of Koja Hospital

Health Education. This category consists of nine posts covering various educational topics such as Ciki Ngebul, Measles Prevention Education program, Leprosy awareness, treatment services provided by the Jakarta Health Insurance Management Unit, PMI blood services; health insurance coverage, and the role of Jakarta Health Insurance Management Unit in managing health insurance funds.

Services Promotion. Under this category, Koja Hospital made five posts promoting services related to Drug-resistant tuberculosis, the availability of outpatient, inpatient, and emergency services during the collective leave, free PMI blood management services, dan health check-up services.

Hospital Social Programs. This category comprises two posts highlighting the celebration of one year of inpatient care for a homeless patient from the Social Service Department and the provision of milk and egg assistance to patients by the North Jakarta Metro Police Chief.

Employee Activities. This category includes twenty-three posts showcasing activities involving hospital employees such as training sessions, health exercises including Zumba dance, yoga, pound fit, and the healthy living community movement.

Events. Under this category, Koja Hospital made thirteen posts related to significant events and occasions. These include the launching of Drug-Resistant Tuberculosis and Chemotherapy Services, the promotion of The Healthy Living Community Movement in conjunction with the Opening (kick-off) of ASEAN Indonesia 2023 Chairmanship, the visit of the Governor and Provincial Health Office of DKI Jakarta Province for the launch of TBRO and Chemotherapy services, benchmarking conducted by other hospitals at Koja Hospital, Stunting Counseling activity, an inauguration of DKI Jakarta Provincial Secretary officials, the commemoration of National Nutrition Day 2023, World Children's Cancer Day, World Cancer Day, and World Leprosy Day, the commemoration of religious events: Isra Miraj Islamic, Chinese New Year 2023, the Hindu's Galungan and Kuningan Day.

Health Technology Innovation. This category consists of two posts highlighting information on the availability of the JakSehat application and online registration for healthcare facilities using the JakSehat application.

Awards and Certifications. This category consists of three entries. These include the Full accreditation received as Paripurna Hospital, the Award honoring the Retirement of the Director of Koja Hospital, and the Award recognizing the Achievements of Koja Hospital in 2022.

At Koja Hospital, the activities on Instagram social media are primarily focused on employee activities (23 posts) rather than internal hospital activities (13 posts). This is followed by health education (9 posts). Other types of posts, such as health promotion, awards and certifications, social programs, and health technology innovations, are relatively less frequent. This can be attributed to the scale and non-routine nature of these activities.

In the months of January and February 2023, the Instagram posts by RSUD Koja predominantly feature pictures rather than videos.

3.3 User Interactivity

To measure user interactivity, the researcher collected data from the Instagram of Koja Hospital on the number of likes and comments for each post during the two-month period to carry out a quantitative analysis which obtain the result in Table 3.

Table 3. Data & Statistics of Koja Hospital Instagram

Attribute	Value
Number of posts	57
Number of likes	6,838
Number of comments	69
The highest number of likes	682
The lowest number of likes	13
The highest number of comments	23
The lowest number of comments	0
The average number of likes per post	119.96
The average number of comments per post	1.2
The median number of likes per post	92
Standard deviation number of likes per post	128.66
For the period of January – February 2023	

From the table, we can see that the average number of likes per post is 119.96 with a median of 92, while the highest number of likes is 682 and the lowest number of likes is 13. This shows that the data on the number of likes has many different values, so the median is more accurate in representing all data. The median value shows that half of the number of posts has a value below 92. This indicates that there are posts that users are less interested in or less successful in getting their attention. Unfortunately, this research could not find reasons why posts were less desirable, especially considering that there were restrictions on responses from netizens. Graphically, the number of likes and the median can be seen in Figure 4.

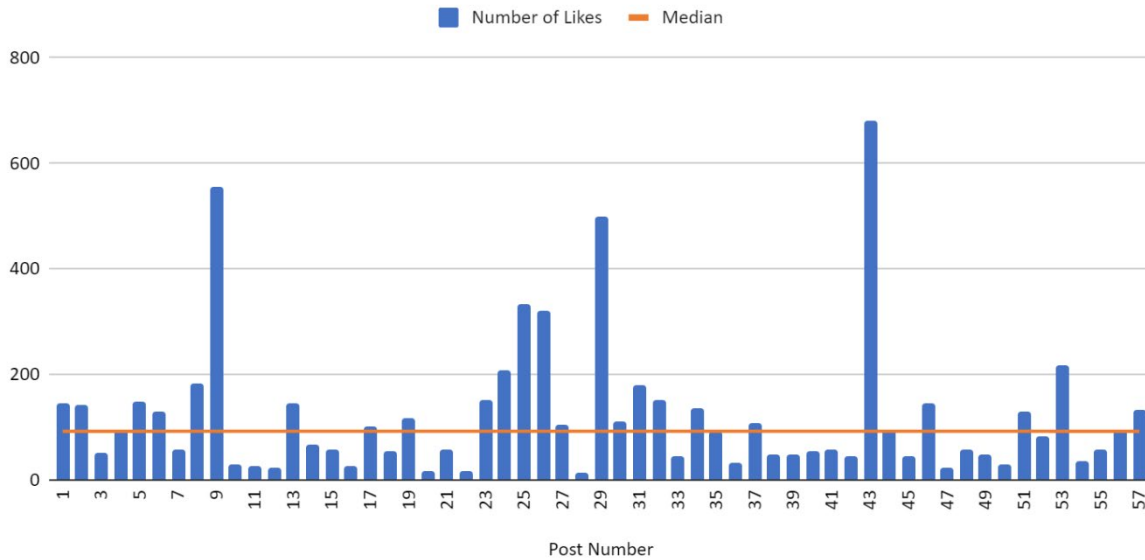


Figure 4. Graph of Number of Likes and the Median

Then the standard deviation value for the number of likes per post is around 128.66, which shows that most posts have several likes that are very far from the average, the range is 128 likes above or below the average. This shows that users' interest in these posts varies greatly and tends to be inconsistent, meaning that there are posts that are highly liked and those that tend to be disliked.

The average number of comments per post is 1.2, while the highest number of comments is 23 and the lowest number of comments is 0. These values are very small due to restrictions on user comments on Instagram Koja Hospital.

3.4 Engagement and Response Rate Analysis

To assess the engagement and response rate, the researchers used the same data collected during the two-month period. The engagement rate per post was calculated by summing the total likes and comments and dividing it by the number of followers. The response rate per post was determined by dividing the total comments by the number of followers [49]. Table 4 shows some values of the engagement rate.

Table 4. Engagement Rate of Koja Hospital Instagram

Attribute	Value
The highest engagement rate per post	4.25%
The lowest engagement rate per post	0.08%
The average engagement rate per post	0.73%
Overall engagement rate of posts	41.61%

When it comes to measuring engagement rates on Instagram, anything below 1% indicates a low level of engagement. An engagement rate between 1% and 3.5% falls within the average to good range, reflecting a satisfactory level of audience interaction. If the engagement rate falls between 3.5% and 6%, it signifies a high level of engagement, indicating that the audience is actively responding to the content. Finally, an engagement rate above 6% represents an exceptional level of audience engagement, suggesting that the content is resonating exceptionally well with the audience [49].

The highest engagement rate per post is 4.25%, this value is significantly high according to the above guidelines. While the lowest engagement rate per post is 0.08%, it is very low. The average engagement rate per post is 0.73%, indicating that overall, the account is doing quite well in attracting user attention and engagement. The overall engagement rate of posts of 41.61% indicates that the content posted on the account is quite successful in attracting the attention of users.

With the above information, it can be concluded that Koja Hospital has a wide range of engagement levels on its Instagram accounts. While there are posts that achieve high engagement rates, there are also those that achieve low engagement rates.

The engagement rate and response rate in each post category can be seen in Table 5 below.

Table 5: Engagement Metrics Per Post Category

Post Categories	Number of Likes	Number of Comments	Average Engagement Rate	Average Response Rate
Health Education	532	4	0.359%	0.003%
Service Promotion	600	3	0.727%	0.004%
Hospital Social Programs	899	23	2.777%	0.069%
Employee Activities	2323	14	0.612%	0.004%
Events	1206	4	0.561%	0.002%
Health Technology Innovation	79	0	0.238%	0.000%
Awards and Certifications	1199	21	2.450%	0.042%

Looking at the table, we can see how engagement and response compare between post categories. The "Hospital Social Programs" and "Awards and Certifications" categories show higher engagement rates at 2,777% and 2,450% respectively, while the "Health Technology Innovation" categories had the lowest engagement rates. This may indicate that content about hospital social programs and awards/certifications received a more positive response from users, whereas content about health technology innovation may be less attractive to users.

We also can see a comparison of the number of "likes" and comments for each post category. For example, the "Employee Activities" category has a high number of "likes" (2323), but a relatively low number of comments (14). This could indicate that the post may be successful in terms of getting attention and appreciation, but may not encourage interaction through comments due to restrictions on user comments.

The "Hospital Social Programs" category had the highest response rate (0.069%), indicating that the user was highly responsive to the content of this category.

Overall, this table provides an overview of the different content categories and how they perform in terms of user engagement and response. This analysis can help in developing a more effective content strategy on social media by paying attention to the categories that attract the most interest and interaction from the audience.

3.3 Discussion

Cyber public relations for hospitals will run more optimally when utilizing social media to carry out their activities. Tools from cyber public relations, especially Instagram, are a unit that is difficult to separate in the era of advances in information and communication technology, especially in reaching out to the public in the digital world. Aside from being an information medium, the use of social media can be useful in promoting health services [44] and strengthening the brand image carried out by many hospitals [50] with varied and creative messages [7].

Social media is an important tool for spreading knowledge, raising awareness, and improving health habits [45], positively impacting increasing knowledge, patient satisfaction, publications, and hospital development and marketing [51].

Instagram social media is used quite actively by Koja Hospital which has an online list feature menu, doctor's schedule, and complaints. In addition, the number of Instagram followers at Koja Hospital since its inception has been more than 16 thousand netizens. Upload activities are carried out continuously, at least twice a week posting.

However, when compared with the results of a study of a government hospital in Kuwait [52] which was conducted over a seven-month period, with a total of 3,439 posts, meaning that the average in one month was nearly 500 posts, indicating that posting carried out at the Koja Hospital is still in low numbers, namely 57 postings in two months.

Content uploaded on Instagram adjusts to the Koja Hospital agenda, such as health education activities, services promotions, employee activities, events, etc. This program is in line with research related to Instagram at RSUD Dr. Moewardi who is serious about scheduling from yearly to daily [6]. Messages on Instagram of 'JIH' Yogyakarta Hospital, which was originally brief, spontaneous, and eventual, have become more thematic and arranged based on a medical calendar [4]. Research at Grha Kedoya Hospital conducted by Yulianti also mapped the use of social media Instagram as having types of posts that tend to be related to hospital services, health, doctor-patient interactions, doctors-doctors, and patients [46]. What is different from the Koja Hospital Instagram is the significant activity of employees at the Koja Hospital. While at Hasan Sadikin Hospital Bandung, content on Instagram is divided into four categories: announcements, health promotion, events, and health day commemoration [53].

Koja Hospital uses Instagram to connect, share, and update information. Wright & Hinson added that social media in digital public relations practices also monitors environments [48]. Koja Hospital also uses Instagram as

a medium to educate the public. This is in line with the results of Kurniawan's research which concluded that Instagram is used to provide information and education (Kurniawan, 2020); research by Casmira, Widjanarko, and Margawati which concluded that the functions of Instagram include discussion, education, and media that influence policy [8].

In Lozano & Ruaos's research, social media can be used in a more complex approach such as for lobbying for social causes, creating alliances, raising money, mobilizing volunteers, engaging traditional media and community relations, or advocating for policy reform [54]. The Instagram of Koja Hospital especially in the two months period (January-February 2023) did not strongly focus on those approaches.

Furthermore, involvement or interactivity is a significant issue in digital public relations. In fact, the 2018-2020 Marketing Science Institute (MSI) makes use of artificial intelligence for better engagement and also as a key performance indicator (KPI) in companies [21], to build customer engagement which turned out to sales' increase [55]. Some companies have considered activating interactive activities, however, failure to invest in customer engagement activities can reduce the potential value [21].

Tafesse & Wood's research concluded that the number of followers and the volume of content are negatively related to follower engagement, while the number of followers is positively related to follower engagement [56]. However, in the case of Koja Hospital Instagram, the increase in the number of followers is not directly related to engagement, because the comment feature is very limited. The involvement and interactivity built with users will benefit Koja Hospital because it can develop loyalty, even research from the University of Nebraska [20], concluded that users could act as co-creators who are able to provide credibility to the content of the message.

Inside Instagram, an insight feature can be utilized as social media analytics to help companies that own Instagram accounts improve service effectiveness. There is a possibility that Koja Hospital is not making enough use of social media analytics, considering that the performance level of engagement is quite low. Even though referring to research by Alfajri, et al., these features play an important role in increasing interaction effectiveness, evaluating follower activities, managing good relationships, ease of interaction, building trust for sharing services and directing user-owned content in a creative and specific direction, such as the dissemination of culture, education, etc. [57].

Koja Hospital effectively utilizes Instagram as a cyber public relations platform in terms of message conveyance and user engagement. The hospital's Instagram account covers a diverse range of content categories, including health education, service promotion, social programs, employee activities, events, health technology innovations, and awards. The engagement and response rates indicate that the audience is interested and engaged with the hospital's content, demonstrating the effectiveness of their Instagram strategy.

4 Conclusions

Koja Hospital has used Instagram as cyber public relations in conveying messages in the category of educational posts on Health Education, Services Promotion, Hospital Social Programs, Employee Activities, Events, Health Technology Innovations, and Awards and Certifications through pictures and videos. The engagement and response rates indicate that the audience is interested and engaged with the hospital's content, demonstrating the effectiveness of their Instagram strategy. However, engagement with users still tends to be under-optimized.

The public relations coordinator should pay attention to the quality of posted images because the results of Li & Xie's research conclude that high-quality and professionally shot pictures consistently lead to higher engagement on both platforms for both product categories [58]. Besides that, the public relations coordinator should take advantage of user involvement or interactivity. The like and share features and the comments or responses column allow user involvement to exchange messages, loyalty, and even involvement as a co-creator.

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References

- [1] APJII, "Infografis: Penetrasi & Perilaku Pengguna Internet Indonesia 2017," 2017.
- [2] "New Study Reveals The Impact of Technology in Revolutionising PR Roles," *Mynewsdesk.com*, Dec. 15, 2016. <https://www.mynewsdesk.com/mynewsdesk/pressreleases/new-study-reveals-the-impact-of-technology-in-revolutionising-pr-roles-1690110> (accessed Mar. 17, 2023).
- [3] A. G. Widyaningrum, "Implementasi Strategi Cyber Public Relations Website www.tangandiatas.com dalam Mengembangkan Informasi UMKM Melalui Komunitas," *Jurnal Ilmu Ekonomi dan Sosial*, vol. 11, no. 1, pp. 113–120, 2022, doi: 10.12244/jies.2021.5.1.001.
- [4] Y. E. Nasution and T. H. Nur, "Pengelolaan Digital Public Relations Rumah Sakit 'JIH' Yogyakarta," *Channel Jurnal Komunikasi*, vol. 6, no. 2, pp. 205–216, 2018.

- [5] A. Kurniawan, "Implementasi Cyber Public Relations RSUD Arifin Achmad Provinsi Riau Untuk Meningkatkan Pelayanan Kepada Pasien," Universitas Islam Negeri Sultan Syarif Kasim, Riau, 2020.
- [6] K. R. Putri and A. N. Rahmanto, "Strategi Pengelolaan Media Sosial Instagram dalam Meningkatkan Citra RSUD Dr. Moewardi (Studi Deskriptif tentang Strategi Pengelolaan Media Sosial Instagram Rumah Sakit Umum Daerah Dr. Moewardi melalui @rsud.moewardi untuk Meningkatkan Citra)," *Jurnal Komunikasi Massa*, vol. 1, Jan. 2021, Accessed: Feb. 27, 2023. [Online]. Available: <https://jurnalkommas.com/index.php?target=isi&jurnal=STRATEGI+PENGELOLAAN+MEDIA+SOSIAL+INSTAGRAM+DALAM+MENINGKATKAN+CITRA+RSUD+Dr.+MOEWARDI>
- [7] N. D. Ramadhanty, "Strategi Cyber Public Relations Dalam Proses Pembentukan Citra Pelayanan Rumah Sakit di Masa Pandemi (Studi Kasus pada Instagram @medistra.hospital)," Universitas Bakrie, 2021. Accessed: Feb. 27, 2023. [Online]. Available: <https://repository.bakrie.ac.id/5963/>
- [8] O. J. Casmira, B. Widjanarko, and A. Margawati, "Promosi Kesehatan Melalui Media Sosial Instagram Sebagai Sarana Edukasi," *Husada Mahakam: Jurnal Kesehatan*, vol. 12, no. 2, pp. 114–124, 2022, doi: <http://dx.doi.org/10.35963/hmjk.v12i2.323>.
- [9] L. N. Hanifah, "The Effectiveness of Hospital Instagram Accounts in Serang Regency in COVID-19 Health Promotion," *Media Gizi Kemas*, vol. 11, no. 2, pp. 437–444, 2022, doi: <https://doi.org/10.20473/mgk.v11i2.2022.437-444>.
- [10] A. D. Riyanto, "Hootsuite (We are Social): Indonesian Digital Report 2023," 2023. Accessed: Mar. 27, 2023. [Online]. Available: <https://andi.link/hootsuite-we-are-social-indonesian-digital-report-2023/>
- [11] M. Fahriza and Pujiyanto, "Efektivitas Penggunaan Media Sosial dalam Pemasaran Rumah Sakit: Systematic Review," *Jurnal Ilmiah Kesehatan Masyarakat*, vol. 13, no. 2, 2021, doi: <https://doi.org/10.52022/jikm.v13i2.149>.
- [12] L. Trisnantoro and E. Listyani, "Jumlah RS di Indonesia Pertumbuhan RS Publik," *Perhimpunan Rumah Sakit Indonesia*, 2018. <https://www.persi.or.id/images/2017/litbang/rsindonesia418.pdf> (accessed Mar. 28, 2023).
- [13] F. Jefkins, *Public Relations: Made Simple*. Elsevier Science, 2016.
- [14] M. L. Kent and A. Lane, "Two-way communication, symmetry, negative spaces, and dialogue," *Public Relat Rev*, vol. 47, no. 2, p. 102014, 2021, doi: <https://doi.org/10.1016/j.pubrev.2021.102014>.
- [15] N. Puspitasari and D. A. Purwani, *Cyber Public Relations: Berubah atau Terlibas*. Yogyakarta: Adipura Books, 2022.
- [16] A. L. Hutchins and N. T. J. Tindall, *Public Relations and Online Engagement: Audiences, Fandom and Influencers*, 1st ed. London: Routledge, 2021. doi: 10.4324/9780429327094.
- [17] S. C. Tong and F. F. Y. Chan, "Revisiting public relations function in the digital era: a study on public relations and marketing practitioners in Hong Kong," *Asia Pacific Journal of Marketing and Logistics*, vol. ahead-of-print, no. ahead-of-print, Jan. 2022, doi: 10.1108/APJML-02-2022-0150.
- [18] B. J. Onggo, *Cyber Public Relations*. Jakarta: Elex Media Komputindo, 2004. Accessed: Feb. 26, 2023. [Online]. Available: <https://lib.ui.ac.id/detail.jsp?id=20151857>
- [19] E. Lozano, S. Balonas, and T. Ruão, "Public relations strategies in social media: analysis of campaigns for social change in the education sector in Spain and Portugal," *Comunicação e Sociedade*, vol. spe2020, pp. 175–196, Jul. 2020, doi: 10.17231/comsoc.0(2020).2746.
- [20] O. Adegbola, S. Gearhart, and J. Skarda-Mitchell, "Using Instagram to Engage with (Potential) Consumers: A Study of Forbes Most Valuable Brands' Use of Instagram," 2018.
- [21] S. C. Ng, J. C. Sweeney, and C. Plewa, "Customer engagement: A systematic review and future research priorities," *Australasian Marketing Journal (AMJ)*, vol. 28, no. 4, pp. 235–252, 2020, doi: <https://doi.org/10.1016/j.ausmj.2020.05.004>.
- [22] N. Santoso, E. D. H. Arviani, and Z. Achmad, "Public Relations Professionals' Communication Strategies in Responding to the COVID-19 Pandemic Based on Gender," *Plaridel*, vol. 18, pp. 295–315, Jun. 2021, doi: 10.52518/2021.18.1-08saderac.
- [23] G.-I. Farte and R. Obadã, "Reactive Public Relations Strategies for Managing Fake News in the Online Environment," *Postmodern Openings*, vol. Volume 9, Jul. 2018, doi: 10.18662/po/16.
- [24] "14 Key Metrics For Measuring A PR Campaign's Effectiveness," *Forbes Communications Council*, 2021. <https://www.forbes.com/sites/forbescommunicationscouncil/2021/09/14/14-key-metrics-for-measuring-a-pr-campaigns-effectiveness/?sh=3fa175d23b5a> (accessed Mar. 02, 2023).
- [25] "10 key principles of stakeholder engagement," *Association for Project Manager*. <https://www.apm.org.uk/resources/find-a-resource/stakeholder-engagement/key-principles/> (accessed Mar. 02, 2023).
- [26] "The 22 Responsibilities of PR and What They Entail," *Onclusive*, 2021. <https://onclusive.com/resources/blog/20-pr-responsibilities/> (accessed Mar. 02, 2023).
- [27] J. Cheng, "Social media and Public Relations," May 2019.

- [28] B. Hyland-Wood, J. Gardner, J. Leask, and U. K. H. Ecker, "Toward effective government communication strategies in the era of COVID-19," *Humanit Soc Sci Commun*, vol. 8, no. 1, p. 30, 2021, doi: 10.1057/s41599-020-00701-w.
- [29] S. Fürst, P. Schönhagen, and S. Bosshart, "Mass Communication Is More Than A One-Way Street: On the Persistent Function and Relevance of Journalism," *Javnost - The Public*, vol. 22, no. 4, pp. 328–344, Oct. 2015, doi: 10.1080/13183222.2015.1091621.
- [30] "15 Social Media Tips To Reach Both Stakeholders And The Public," *Forbes Communications Council*, 2021. <https://www.forbes.com/sites/forbescommunicationscouncil/2021/05/11/15-social-media-tips-to-reach-both-stakeholders-and-the-public/?sh=3f12fb057e6b> (accessed Mar. 02, 2023).
- [31] J. Tabas, "How Nonprofits Can Use Social Media To Increase Donations And Boost Visibility," *Forbes*, 2021. <https://www.forbes.com/sites/allbusiness/2021/03/06/how-nonprofits-can-use-social-media-to-increase-donations-and-boost-visibility/?sh=3543011a2bb7> (accessed Mar. 02, 2023).
- [32] J. Yan, "The evolution and governance of online rumors during the public health emergency: taking COVID-19 pandemic related rumors as an example," *International Journal of Management Science and Engineering Management*, vol. 17, no. 1, pp. 1–9, Jan. 2022, doi: 10.1080/17509653.2021.1972353.
- [33] E. Gabarron, S. O. Oyeyemi, and R. Wynn, "Covid-19-related misinformation on social media: A systematic review," *Bulletin of the World Health Organization*, vol. 99, no. 6. World Health Organization, pp. 455-463A, Jun. 01, 2021, doi: 10.2471/BLT.20.276782.
- [34] N. S. Almaghrabi and B. A. Bugis, "Patient Confidentiality of Electronic Health Records: A Recent Review of the Saudi Literature," *Dr. Sulaiman Al Habib Medical Journal*, vol. 4, no. 3, pp. 126–135, 2022, doi: 10.1007/s44229-022-00016-9.
- [35] S. T. Argaw *et al.*, "Cybersecurity of Hospitals: discussing the challenges and working towards mitigating the risks," *BMC Med Inform Decis Mak*, vol. 20, no. 1, p. 146, 2020, doi: 10.1186/s12911-020-01161-7.
- [36] Z. Sanders and M. Strauss, "Here's what it takes to attract early adopters in 2022," 2021.
- [37] "Organizational cyber maturity: A survey of industries," *McKinsey & Company*, 2021. <https://www.mckinsey.com/capabilities/risk-and-resilience/our-insights/organizational-cyber-maturity-a-survey-of-industries> (accessed Apr. 02, 2023).
- [38] M. R. Arifuddin and Irwansyah, "Dari Foto dan Video ke Toko: Perkembangan Instagram dalam Perspektif Konstruksi Sosial," *Jurnal Komunikasi dan Kajian Media*, vol. 3, no. 1, pp. 37–55, 2019, doi: <https://doi.org/10.31002/jkkm.v3i1.1256>.
- [39] O. F. W. Mukti and N. K. Putri, "Social Media Analytics: Instagram Utilization for Delivering Health Education Messages to Young Adult in Indonesia," *Jurnal Promkes: The Indonesian Journal of Health Promotion and Health Education*, vol. 9, no. 1, pp. 36–43, Mar. 2021, doi: 10.20473/jpk.V9.I1.2021.36-43.
- [40] S. C. Heuss, C. Zachlod, and B. T. Miller, "'Social' media? How Swiss hospitals used social media platforms during the early months of the COVID-19 pandemic crisis," *Public Health*, vol. 219, pp. 53–60, 2023, doi: <https://doi.org/10.1016/j.puhe.2023.03.019>.
- [41] "Instagram Marketing: The Ultimate Guide," *HubSpot*. <https://www.hubspot.com/instagram-marketing> (accessed May 02, 2023).
- [42] J. Zote, "The complete guide to finding your Instagram target audience," *Sprout Social*, 2023. <https://sproutsocial.com/insights/instagram-target-audience/> (accessed May 22, 2023).
- [43] N. A. Apparesya, "Gambaran Penggunaan Media Sosial di Rumah Sakit Wilayah Jabodetabek Tahun 2021," Universitas Islam Negeri Syarif Hidayatullah, Jakarta, 2022. Accessed: Feb. 26, 2023. [Online]. Available: <https://repository.uinjkt.ac.id/dspace/handle/123456789/64444>
- [44] L. Vionita and D. Prayoga, "Penggunaan Media Sosial selama Pandemi Covid-19 dalam Promosi Kesehatan di Rumah Sakit Kabupaten Tangerang," *Media Kesehatan Masyarakat Indonesia*, vol. 20, no. 2, pp. 126–133, 2021, doi: 10.14710/mkmi.20.2.126-133.
- [45] W. Mohammed, T. Alanzi, F. Alanezi, H. Alhodaib, and M. AlShammari, "Usage of social media for health awareness purposes among health educators and students in Saudi Arabia," *Inform Med Unlocked*, vol. 23, p. 100553, 2021, doi: <https://doi.org/10.1016/j.imu.2021.100553>.
- [46] R. E. D. Yulianti, "Penggunaan Media Sosial Instagram Rumah Sakit Grha Kedoya Saat Pandemi Covid 19 Untuk Meningkatkan Kesadaran Terhadap Kesehatan Masyarakat," Universitas Paramadina, Jakarta, 2022.
- [47] R. Luttrell, *Social media: How to engage, share, and connect*, 4th ed. Rowman & Littlefield, 2018. Accessed: Feb. 26, 2023. [Online]. Available: <https://rowman.com/ISBN/9781538154427/Social-Media-How-to-Engage-Share-and-Connect-Fourth-Edition>
- [48] D. K. Wright and M. D. Hinson, "Tracking How Social and Other Digital Media are Being Used in Public Relations Practice: A Twelve-Year Study," *Public Relations Journal*, vol. 11, 2017.

- [49] “What is a good Instagram engagement rate?,” *Find Your Influencer*, 2019. <https://www.findyourinfluencer.co.uk/blog/2019/4/4/what-is-a-good-instagram-engagement-rate> (accessed Mar. 02, 2023).
- [50] L. Burhan and W. Sulistiadi, “Optimalisasi Strategi Digital Marketing Bagi Rumah Sakit,” *Branding: Jurnal Manajemen dan Bisnis Jurusan Manajemen FEBI UIN Sunan Gunung Djati Bandung*, vol. 1, no. 1, pp. 17–23, 2022, doi: <https://doi.org/10.15575/jb.v1i1.17202>.
- [51] A. T. Wijayati, A. Drea, Arinahaq, F. Kusumasari, R. Selvia, and Rovels, “The Use Of Social Media in Hospital : A Systematic Review,” *Jurnal ARSI*, vol. 6, no. 3, pp. 130–139, 2020.
- [52] A. F. AlHussainan, Z. A. Jasem, and D. Alhuwail, “Evaluating the Presence of Hospitals on Social Media,” *International Journal of Healthcare Information Systems and Informatics*, vol. 17, no. 2, pp. 1–17, Aug. 2022, doi: 10.4018/IJHISI.299954.
- [53] Yustikasari, R. Anisa, R. Dewi, and F. Ananda, “Utilization Of Instagram Social Media In Health Promotion Activities At Hasan Sadikin Hospital Bandung,” *Jurnal Proteksi Kesehatan*, vol. 11, no. 2, pp. 113–125, 2022, doi: <https://doi.org/10.36929/jpk.v11i2.531>.
- [54] E. Lozano, S. Balonas, and T. Ruão, “Public relations strategies in social media: analysis of campaigns for social change in the education sector in Spain and Portugal,” *Comunicação e Sociedade*, vol. spe2020, pp. 175–196, Jul. 2020, doi: 10.17231/comsoc.0(2020).2746.
- [55] S. Rohadian and M. T. Amir, “Upaya Membangun Customer Enggagement Melalui Media Sosial Instagram,” *Journal of Entrepreneurship, Management and Industry (JEMI)*, vol. 2, Dec. 2019, doi: 10.36782/jemi.v2i4.1925.
- [56] W. Tafesse and B. P. Wood, “Followers’ engagement with instagram influencers: The role of influencers’ content and engagement strategy,” *Journal of Retailing and Consumer Services*, vol. 58, p. 102303, 2021, doi: <https://doi.org/10.1016/j.jretconser.2020.102303>.
- [57] M. F. Alfajri, V. Adhiazni, and Q. Aini, “Pemanfaatan Social Media Analytics Pada Instagram dalam Peningkatan Efektivitas Pemasaran,” *Jurnal Ilmu Komunikasi*, vol. 8, no. 2, pp. 1–11, 2019.
- [58] Y. Li and Y. Xie, “Is a Picture Worth a Thousand Words? An Empirical Study of Image Content and Social Media Engagement,” *Journal of Marketing Research*, vol. 57, p. 0022243719881111, Nov. 2019, doi: 10.1177/0022243719881113.