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Optimization of Communication of Weather Forecast Information for the Province of the Special Region of Yogyakarta Via the Instagram Account @Infobmkgyia

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Abstrak

Komunikasi yang efektif dalam menyampaikan informasi meteorologi menjadi aspek krusial bagi Badan Meteorologi, Klimatologi, dan Geofisika (BMKG) dalam meningkatkan kesiapsiagaan masyarakat terhadap potensi bencana alam. Dengan berkembangnya teknologi digital, media sosial seperti Instagram menjadi salah satu kanal utama dalam menyebarkan informasi cuaca, peringatan dini, dan kondisi iklim secara cepat dan luas. Penelitian ini bertujuan untuk mengoptimalkan strategi komunikasi BMKG Provinsi Daerah Istimewa Yogyakarta melalui media sosial, dengan fokus pada analisis efektivitas penyampaian informasi pada akun Instagram @infobmkgyia. Penelitian ini menggunakan pendekatan kualitatif dengan metode analisis konten dan interaksi pengguna. Data dikumpulkan dari unggahan akun Instagram @infobmkgyia yang mencakup visualisasi data cuaca, peringatan dini, serta informasi meteorologi lainnya. Analisis dilakukan untuk mengevaluasi jenis konten yang paling efektif, tingkat keterlibatan pengguna, serta faktor-faktor yang mendukung atau menghambat komunikasi BMKG di media sosial. Selain itu, penelitian ini menerapkan analisis statistik guna memperdalam pemahaman terhadap pola interaksi dan keterlibatan masyarakat terhadap konten yang disajikan. Hasil penelitian menunjukkan bahwa konten berbasis visual, seperti infografis dan video pendek, memiliki tingkat keterlibatan yang lebih tinggi dibandingkan dengan teks panjang. Faktor lain yang meningkatkan efektivitas komunikasi adalah penggunaan bahasa yang sederhana dan interaktif, serta pemanfaatan fitur Instagram seperti story dan live session untuk meningkatkan respons audiens. Namun, keterbatasan dalam manajemen respons terhadap komentar dan pertanyaan pengguna menjadi salah satu kendala dalam interaksi dua arah yang optimal. Implikasi dari penelitian ini memberikan rekomendasi strategis bagi BMKG dalam mengembangkan strategi komunikasi digital yang lebih efektif melalui media sosial. Dengan pengelolaan konten yang lebih interaktif dan responsif, BMKG dapat meningkatkan kesadaran serta kesiapsiagaan masyarakat dalam menghadapi bencana cuaca dan iklim.

***Kata kunci**: media sosial, komunikasi pemerintahan, optimasi*

Abstract

Effective communication in delivering meteorological information is a crucial aspect for the Meteorology, Climatology, and Geophysics Agency (BMKG) in enhancing public preparedness for potential natural disasters. With the advancement of digital technology, social media platforms such as Instagram have become key channels for disseminating weather forecasts, early warnings, and climate conditions quickly and widely. This study aims to optimize the communication strategies of BMKG in the Special Region of Yogyakarta through social media, focusing on analyzing the effectiveness of information dissemination on the Instagram account @Infobmkgyia. This research employs a qualitative approach using content analysis and user interaction analysis methods. Data were collected from posts on the Instagram account @Infobmkgyia, which include weather data visualizations, early warnings, and other meteorological information. The analysis was conducted to evaluate the most effective types of content, the level of user engagement, and the factors that support or hinder BMKG's communication on social media. Additionally, statistical analysis was applied to deepen the understanding of interaction patterns and audience engagement with the presented content. The findings indicate that visually based content, such as infographics and short videos, has a higher engagement rate compared to long-text posts. Other factors that enhance communication effectiveness include the use of simple and interactive language, as well as leveraging Instagram features such as stories and live sessions to increase audience response. However, limitations in managing responses to user comments and inquiries pose a challenge to optimal two-way interaction. The implications of this study provide strategic recommendations for BMKG in developing more effective digital communication strategies through social media. By managing content more interactively and responsively, BMKG can enhance public awareness and preparedness in facing weather and climate-related disasters.

Keywords: social media, government communications, optimization

Introduction

According to Integrated Watershed Management, weather is a combination of current meteorological components, for example temperature, wind direction and speed, amount and type of rainfall, hours of sunshine, etc.(Li et al., 2022) Weather dictates short periods of time up to several days. Where weather conditions are regional weather over a certain period of time from one to several weeks.(Dostal et al., 2022) Weather conditions are a description of typical weather phenomena, such as a series of thunderstorms in summer, a foggy month in autumn, or other weather conditions typical for a particular region and season.(Mezősi, 2022) Weather has a very significant influence on human life. This is one of the backgrounds in providing information about the weather which is needed by the public. Apart from that, with the development of globalization, society not only needs information about the weather, but also needs education about the world of weather, (Brunet et al., 2023) where this education aims to provide not only weather information that is currently or will take place but also provides learning about weather phenomena that occur so that there is no information. unclear ones that are spread in society.

There are many weather phenomena that are believed by the Indonesian people,(Suarmika et al., 2022) which are associated with various myths that are spread, such as hot rain or what could be called a sunshower.(Blust, 2023) Hot rain is a meteorological phenomenon where rain falls when the sun is shining.(Livanov, 2023)

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This phenomenon occurs when gaps are found for sunlight to shine in an area resulting in the phenomenon of rain and hot weather simultaneously. This phenomenon often appears in the morning or evening when the angle of sunlight is not perpendicular, so this phenomenon very rarely occurs in the middle of the day when the sun is overhead.(Biswas, 2023) The phenomenon of hot rain will create a rainbow after the rain falls, this is because sunlight refracts through the falling raindrops.(Ben-Nun, n.d.)

BMKG Yogyakarta Special Region Province is a meteorological station in this province which carries out the authority and function of providing information and services through one of its media, namely social media Instagram @infobmkgyia. BMKG YIA provides various information related to weather where this information is shared in real time or every day.(Siswanto et al., 2024) This is also related to the vision of BMKG itself, namelyRealizing a reliable, responsive and capable BMKG in order to support community safety and the success of national development, and play an active role at the international level. This vision explains the provision of information services related to geophysics, meteorology and climatology who are professional both in presenting information, data and services related to the duties and authority of BMKG YIA as well as being responsive in analyzing what stakeholders need, both regarding data. information and services related to the main duties of BMKG YIA.

Information about weather does not only focus on weather predictions and education that discusses weather-related phenomena, more than that, people also need information and education about weather phenomena that will result in natural disasters.(Papagiannaki et al., 2024) This also contains information relating to potential future natural disasters, for example in the dry season what potential natural disasters will occur in the dry season. Education is carried out which aims to provide understanding to the public regarding natural disasters related to weather.(Cvetković & Grbić, 2021)

Methods

This research method uses a descriptive quantitative research approach. Quantitative descriptive research methods include data acquisition, data interpretation, as well as presentation and results of findings to produce an objective picture or description of a particular situation through the use of numbers. This research is quantitative research using descriptive observational research methodology. Quantitative research methods, as defined by Sugiyono, are methods used to characterize or analyze research results and are based on positivist philosophy. By describing, investigating, and explabpsining the subject matter as it is, quantitative descriptive research draws conclusions from phenomena that can be observed using numbers. By using a descriptive quantitative approach, we can examine the communication optimization carried out by the Yogyakarta Special Region BMKG in conveying information about weather forecasts via the @bmkgyia Instagram account based on the number of followers, interactions, number of likes and comments.

Documentation techniques are used to collect data in this research which includes notes, archives and other literature studies related to the phenomenon under study. Notes,

reports, letters, books, journals and other literary studies can be used as reference material. Research on documentation offers valuable perspectives on policies, events, historical background, and developments related to the issue under study (Creswell, 2014). In analyzing the optimization of communication of weather forecast information with the Yogyakarta Special Region locus carried out by the BMKG institution via the Instagram account @bmkgyia, researchers collected data and information using documentation techniques using various literature and written using a quantitative approach.

Result and Discussion

Results and Discussion use of social media Instagram in disseminating weather forecast information

The communication system that is developing in this era is entering the 4.0 era where the internet is an important thing in all human daily activities to meet their needs. Communication is one of the stages in disseminating information between the sender of information and the recipient of the information, where the sender of information can create information so that the sender and recipient of the information are connected to each other. Before the availability of information technology and digital technology, communication carried out by humans was not very effective and efficient, this was due to constraints in space, time and the technology available at that time. With the existence of technology and new media, one form is social media, which is very easy to access and simpler to use. In the current era, we use smartphones more to communicate via the internet than to communicate face to face, this is due to technology which makes us feel more effective and efficient in fulfilling our daily activities.

The development of new media (including social networks) can be demonstrated by the emergence of virtual communities or the formation of virtual worlds (virtual/cyber communities), according to Nurudin (2012: 41). With the increasingly rapid development of technology, people are becoming wiser in using technology today. Social media, especially Instagram, is a very appropriate place for people to carry out various activities that have a positive impact on them. The availability and freedom of social media forces us to fight in a fair, healthy and open style. Using social media we are encouraged to be more creative and innovative in using it to convey information and receive that information.

In reality, social media users who aim to educate are motivated by the use of social media, namely informational, educational and entertainment. The main reason for using social media as an educational medium is that it is an educational tool. users can be said to have an educational background so that individuals access social media in mensearching information needed to educate and improve oneself. The information obtained is used by users to make themselves better at socializing, changing the way they work and so on for the better.

The use of Instagram social media by BMKG YIA (@bmkgyia) in providing and providing information and education for the people of Yogyakarta, this is an implementation of the use of technological developments and Instagram social media.

With Instagram, it is easier to spread information about meteorology, climatology and geophysics among the public, this is because Instagram social media has been widely used by various levels of society. Apart from that, BMKG YIA provides information and education related to the weather in the form of interesting visual photos and videos so that it is hoped that it will become an attraction for the public to access and obtain interesting information provided by BMKG YIA. Bernard also said that there are four underlying reasons why people are interested in videos, namely objects that can be seen to obtain information, the sound element which has added value because it plays a role in converting information, the presence of body movements, and the presence of movements that attract the attention of the people who see it. (Sarasati & Dewi, 2022).

Application of Dimensional Models Social Media Based Real Time Collaborative Government

a) Definition of the Social Media Dimension Model Based on Real Time Collaborative Government

The Social Media Based Real Time Collaborative Government Dimension Model is an innovative approach to government communication administration that integrates social media as the main tool. The main focus of this model is to build real-time collaboration between government and society, with the aim of increasing engagement, transparency and rapid response in the delivery of information.

In this context, active involvement is key, enabling direct participation and two way interaction between BMKG and the community via social media platforms. This model encourages governments to not only convey information, but also respond to questions, feedback, and emerging issues in real-time. By involving the community directly, the government can create a more dynamic and inclusive communication environment.

Transparency is another principle of this model, realized through open publication of data, weather modeling and recent updates by BMKG. The goal is to provide a better understanding to the public and provide an opportunity to verify information. Thus, this model not only creates one-way communication, but also builds trust and deeper understanding between the government and society.

Fast response is a crucial aspect by utilizing real-time social media features. In this way, BMKG can provide fast information regarding sudden weather events or changes in climate conditions, minimizing delays in delivering information. Rapid response not only improves communication efficiency, but can also have a positive impact on society's safety and preparedness for extreme weather events.

Collaboration between government and society is the basis, with this model promoting active interaction on social media to build strong partnerships. This allows the government to utilize local knowledge and involve the community in the decision-making process regarding weather information. By involving the public as "partners" in the communication process, this model can create an environment where information is not only conveyed, but also received and better understood by the public. This model also leverages real-time technologies, such as instant notifications,

live broadcasts, and automatic updates, to provide information immediately. The application of this technology is a key element in ensuring fast and effective information updates. By detailing the application of technology, this journal can provide additional insight into how technology plays a role in achieving the goals of this model and its impact on communication effectiveness.

b) Relevance of the Model to the BMKG Context

The relevance of the Social Media Based Real Time Collaborative Government Dimension Model in the context of the Meteorology, Climatology and Geophysics Agency (BMKG) of Yogyakarta Special Region (DIY) Province creates a great opportunity to increase effectiveness in conveying weather and climate information to the public. The use of social media as the main platform for government communications offers various benefits that can be specifically implemented by BMKG.

First of all, in the BMKG context, where weather information has a direct impact on people's daily lives, the application of the Social Media Based Real Time Collaborative Government Dimension Model can strengthen community involvement. Through social media, BMKG can open more active two-way communication channels, enabling direct participation and quick responses to community questions and concerns. This not only creates more efficient information transmission but also strengthens people's sense of ownership and awareness of weather issues. Then, the existence of this model is very relevant to the dynamics of weather information which can change quickly. With the ability to provide real-time updates, BMKG can provide more accurate and timely information to the public. This fast response not only optimizes public safety against sudden weather changes but also creates greater trust in BMKG as a reliable source of information. Furthermore, this model supports increasing information accessibility. BMKG can convey weather information to various levels of society, including those who may not have easy access to traditional sources of information. The use of social media ensures even distribution of information, accommodating various levels of public needs and knowledge regarding weather issues.

It is also Important to note that this model not only creates a one-way relationship between BMKG and the community, but also builds a close partnership. Through active interaction on social media, BMKG can utilize local knowledge and support community participation in the decision-making process regarding weather information. This creates a more dynamic and inclusive communication environment. Not only that, the application of this model can improve BMKG's responsiveness to community needs and concerns regarding weather and climate. Direct interaction on social media allows BMKG to respond to questions, provide clarification and provide solutions in real-time. This can increase the level of public satisfaction and build a positive image regarding weather information services. Finally, this model has the potential to improve community preparedness for extreme weather events.

By providing accurate and fast information, BMKG can help the community to take necessary precautions, reduce risks related to unexpected weather changes, and strengthen the community's adaptive capacity to weather situations that may change suddenly. Overall, the integration of the Social Media Based Real Time Collaborative Government Dimension Model in BMKG operations can create a significant positive impact in efforts to deliver weather and climate information that is more effective, interactive and responsive to the needs of the people in the Special Region of Yogyakarta.

c) Utilization of Real-Time Features

Utilization of real-time features has become an important element in optimizing communication of weather forecast information in the Special Region of Yogyakarta Province via the Instagram account @infobmkgyia. The real-time feature not only allows for fast delivery of information, but also creates more active involvement between the Meteorology, Climatology and Geophysics Agency (BMKG) and the public. In this discussion, we will explore various aspects of utilizing real-time features, involving in-depth analysis of instant notifications, live broadcasts, automatic updates, and their impact and benefits.

The use of real-time features has brought significant changes in the way BMKG communicates with the public via the Instagram account @infobmkgyia. Instant notifications are the main means of conveying the latest information regarding sudden weather changes or changing climate conditions. The instant notification process includes selecting the notification type based on the level of urgency and quick response to user questions. In this way, BMKG can provide updates effectively and increase community preparedness for weather changes.

Live broadcasts are a tool that allows direct interaction between BMKG and users. Through live broadcasts, BMKG can explain weather topics in more depth, respond to direct questions from users, and build closer relationships with the community. Themes and topics of live broadcasts, as well as immediate responses to user questions and feedback, are determining factors in the success of utilizing this feature in creating a more engaged communication experience.

Automatic updates are a pillar of efficiency in delivering weather information. With automation, BMKG can ensure speed and consistency in updating information. The automation process includes the use of technology and algorithms to support automatic updates, which provide efficiency and consistency benefits in the delivery of weather information. Technology reliability and data protection are key factors in maintaining the quality of automatic updates. The impact and benefits of using real-time features are very visible in user response and public safety. Instant notifications improve user response to weather changes, while live broadcasts provide better understanding and more immediate responses. Case studies regarding community preparedness can provide concrete evidence of how the use of real-time features has a positive impact on community decisions and actions in dealing with changing weather conditions. In the technical aspect, implementing real-time features cannot

be separated from evaluating security and reliability. Data protection, risk management and mitigation strategies are becoming an integral part of implementing real-time technology. By considering information security, BMKG can ensure that users feel safe and can trust the information conveyed through real-time features. In comparing with previous models, the utilization of real-time features shows superiority in user response and engagement. Challenges faced during implementation, as well as future development strategies, were an important part of the discussion. Evaluating an organization's effectiveness and readiness to deal with technological change is a crucial topic in understanding the role of real-time features in weather communications.

A case study of the use of real-time features in the Special Region of Yogyakarta Province is the basis for evaluating the results and lessons learned. The conclusion can summarize the main findings from the analysis of the use of real-time features in optimizing weather forecast information communication. Recommendations for further development and improvement of service quality can be explained to help support the growth and success of implementing real-time features in the future.

d) Implementation on @infobmkgyia Account

Implementation of the Social Media Based Real Time Collaborative Government Dimension Model on the Instagram account @infobmkgyia is a strategic step in optimizing communication from the Meteorology, Climatology and Geophysics Agency (BMKG) of Yogyakarta Special Region (DIY) via social media. In practice, this implementation involves a series of strategies designed to achieve the main goals of the model.

BMKG focuses its efforts on stimulating active community involvement through this Instagram account. The approach used includes creating content that supports two-way interaction, such as regular question and answer sessions or polls regarding preferences for weather information. This account is the main channel for delivering real-time updates regarding weather and climate conditions in DIY. These updates are delivered clearly and informatively through posts or live broadcasts. This ensures that the information conveyed is accurate and accessible to followers immediately. BMKG also innovates in creating interactive and interesting content. Utilizing features such as IGTV, Stories, or poll features is part of the strategy to present weather information in a more interesting way and in line with followers' preferences. The transparency approach is one of the important points in implementation. BMKG not only presents weather data, but also introduces the team or experts behind the weather information. This provides a deeper understanding of the decision-making process and increases public confidence. Prompt responses to follower questions and comments became an integral part of this implementation. Through the @infobmkgyia account, BMKG creates a positive and responsive interaction experience, ensuring that every question or feedback from the public is responded to efficiently. Apart from that, this account is also a forum for weather awareness and preparedness campaigns. BMKG can present a series of content designed to increase public understanding of actions that

can be taken in the face of extreme weather conditions. This implementation also involves regular performance analysis to measure the impact and effectiveness of each strategy implemented. The results of this analysis provide valuable input for adjusting and developing future communication strategies.

Thus, the implementation of the Social Media Based Real Time Collaborative Government Dimension Model on the Instagram account @infobmkgyia creates a platform that is dynamic, informative, and interacts directly with the people of DIY, strengthening BMKG's communication with its follower base.

e) Evaluation of Model Success

Evaluation of the success of implementing the Social Media Based Real Time Collaborative Government Dimension Model on the Instagram account @infobmkgyia is a process that involves an in-depth assessment of various aspects in order to evaluate its impact and effectiveness in carrying out its communicative function with the community.

In this evaluation, the focus is on measuring the impact of community involvement. By analyzing the level of participation in interactive activities, such as question and answer sessions and polls, it can be measured to what extent the community is involved in the content delivered. The successful implementation of this model can be identified from the increase in interactions that occur and the positive engagement that results. In the evaluation process, an aspect that is no less important is measuring the effectiveness of the real-time updates delivered. The updates provided need to be evaluated to see to what extent the information can be delivered in a timely, accurate and relevant manner to the needs of the community. In this case, BMKG's active presence in providing real-time updates is an important key in increasing positive responses from followers of the @infobmkgyia account.

Evaluation also involves observing the interactions between BMKG and followers as well as the responses given to questions or feedback from the public. The high level of responsiveness reflects BMKG's proactive attitude in establishing interactions and paying attention to the needs and concerns expressed by the community. In addition, in evaluating the success of implementing this model, it is important to analyze the quality of the interactive content presented. The extent to which the content can arouse follower interest, increase engagement levels, and create positive experiences is something that needs to be assessed to understand the effectiveness of the model in conveying information in an engaging way.

Another aspect that is of concern in the evaluation is the growth of public awareness and preparedness regarding weather issues.(Khatibi et al., 2021) Engagement in awareness campaigns and responses to related content reflect the extent to which society has become more aware of and prepared to deal with extreme weather conditions.(De Meyer et al., 2021) Furthermore, routine performance analysis requires measuring various metrics, such as engagement rates, follower growth, and user feedback. User feedback, both positive and constructive, is a valuable source of information that can be used to develop strategies and improve content in the future.

Evaluation results can be compared with the objectives and initial performance indicators that have been set. This comparison process can provide a clearer picture of the extent to which the model is successful in achieving its stated objectives and also identify areas that require further improvement or adjustment. Overall, evaluating the success of this model does not only include the final results, but also describes a continuous learning process. The results of this evaluation provide very valuable insight into developing social media-based communication strategies in the future and improving BMKG weather information services to the people of DIY.

Implementation Level on the BMKG YIA Instagram Account

The Instagram account @infobmkgyia has succeeded in reaching level 3 of open participation in optimizing communication of weather forecast information in the Special Region of Yogyakarta Province. This success can be seen in a number of factors that illustrate the active interaction and strong engagement between this account and its followers, as well as creating a close relationship between the account manager and the community. This account builds and maintains active interaction with its followers. Quick responses to questions, comments, and feedback create a participatory atmosphere where people feel involved in the communication process. There is a positive dynamic in receiving feedback from citizens, strengthening the bond between information providers and information consumers. Public discussion spaces are well created, involving various parties, from ordinary citizens to local government representatives. This initiative provides an opportunity for the public to share views, information and experiences related to weather information. Enabling voting or opinion polls demonstrates transparency and provides an opportunity for the public to participate in decision-making regarding weather and policy issues. Not only is this account a source of information, it is also active in increasing public education and awareness regarding weather and disaster preparedness. This effort strengthens the account's function as a caller for public awareness. By enriching content through the use of infographics, videos and other visual media, this account has succeeded in making information more interesting and easy to understand. This approach triggers higher engagement from followers. A proactive attitude in carrying out regular monitorin and evaluation shows seriousness I assessing th effectiveness of the communication strategy implamented. This process confirms the commitment to continue to improve community interaction and participation. With the combination of all these elements, the Instagram account @infobmkgyia has succeeded in creating a communication environment that is not only informative but also inclusive and responsive to community needs. At level 3 open participation, this account is an example in providing a communication platform that involves and empowers the community regarding weather forecast information in the Special Region of Yogyakarta Province.

Challenges faced in implementing BMKG YIA government communications

Implementing BMKG Yogyakarta government communication faces several challenges. This includes using ICT, collaborating with various parties, and achieving zero disaster victims. To increase the use of information and communication technology

(ICT), the Meteorology, Climatology and Geophysics Agency (BMKG) is collaborating with the Ministry of Communication and Information. In addition, BMKG collaborates with higher education institutions, such as Gadjah Mada University, to support programs such as "Freedom to Learn-Free Campus" and produce weather, climate and earth experts. Apart from that, BMKG is also concentrating on strategies to achieve zero disaster victims. This strategy includes providing information about the potential threat of earthquakes and tsunamis and working with various parties to achieve zero casualties. Through the use of information and communication technology (ICT), cross-sector collaboration, and disaster mitigation efforts.

Several problems were encountered when implementing BMKG Yogyakarta government communication. Some of these problems include:

1. Limited Resources: BMKG must overcome a lack of human and technical resources to provide accurate and timely information.
2. Cross-sector collaboration: To achieve zero disaster victims, government, academia, the private sector, society and the media must work together with each other.
3. Communication Infrastructure Development: To ensure information is sent quickly and precisely, it is essential to build a communication infrastructure, which includes communication networks and early warning systems.
4. Human Resources Development: The creation of applied scientists in meteorology, climatology, and geophysics requires programs such as internships and collaboration with universities. Collaboration between BMKG, government, universities and other related parties is very important to overcome this problem. In facing this challenge, cooperation between BMKG, government, universities and other related parties is key in efforts to improve the quality of government communication regarding natural disasters and their mitigation.

Indicators of Success of the BMKG YIA Instagram Account

The monitoring and evaluation aspect of social media management is part of strategic efforts to maximize impact on society. Another name for social media monitoring issocial listening. This activity is a process of listening to all audience interactions on various social media platforms which aims to identify and evaluate the audience's perception of the institution. Monitoring is carried out to track and evaluate changes in attitudes, beliefs and public perceptions of institutions. To enable government agencies to track increasing or decreasing trends in public perceptions, views and attitudes towards those agencies, these measurements and analyzes are carried out continuously andreal time.

The following are five categories of evaluation of success indicators according to the PAN & RB Ministerial

Regulation:

Jangkauan	Frekuensi dan Lalu-Lintas	Pengaruh	Percakapan & Keberhasilan	Keberlanjutan
Seberapa jauh jangkauan pesan • Jumlah tautan yang merujuk ke pesan yang disampaikan • Jumlah *tweet* dan *retweet* tentang pesan yang dimuat • Jumlah orang yang membicarakan pesan • Jumlah hubungan baru yang berbentuk	Faktor kuantitas: • Jumlah kunjungan • Jumlah pengunjung • Jumlah pengunjung yang kembali	Seberapa jauh jangkauan percakapan yang dilakukan? • Pembahasan mengenai pesan/isi • Komentar tentang pesan/isi • *Retweet* • Jumlah *sharing* dan pesan yang dikirimkan	Tindakan yang diharapkan dan tingkat keberhasilannya : • Jumlah pesan yang diklik khalayak • Jumlah pesan yang diunduh khalayak • Jumlah pesan yang diadopsi	Hanya sekali tindakan atau khalayak menjadi *client* dan *ambassador?* • Keberlanjutan anggota komunitas • Loyalitas • Khalayak yang sering berkunjung kembali

Source: Regulation of the Minister of State Apparatus Empowerment and Bureaucratic Reform of the Republic of Indonesia Number 83 of 2012 concerning Guidelines for the Use of Social Media for Government Agencies.

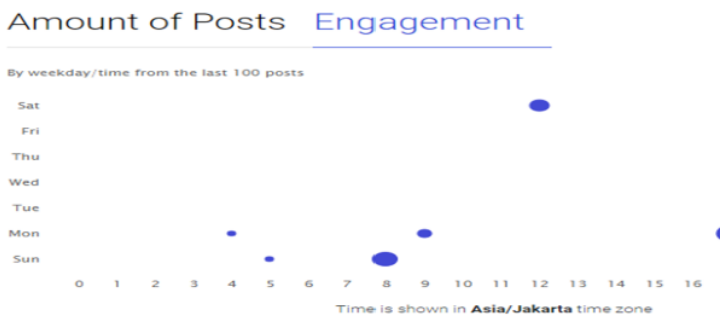
a. Reach

BMKG DIY is an institution that has the status of a Non-Departmental Government Institution (LPND) at the regional level, whose locus is in the Yogyakarta Special Region Province. In communicating information regarding weather forecasts, one of the social media used is Instagram with the account name @infobmkgyia which has 7,794 followers. Reach is used as a measure of the extent of content shared by the government with the public, but as a percentage the number of Instagram followers is 0.19% of the total population of the Special Region of Yogyakarta, namely 4,073,907 people (BPS D.I.Yogyakarta: 2023).

With a percentage of 0.19%, this provides evidence that only under 1% of the people of the Special Region of Yogyakarta know the information provided by weather forecasts provided by BMKG DIY via their Instagram account.

b. Frequency and Traffic

Frequency and traffic are determined through quantity factors which include the number of visits, number of visitors, and number of returning visitors. In analyzing the number of people's interactions with the Instagram account @infobmkgyia, it can be seen based on the information below:



Source: https://inflact.com/tools/profil e-analyzer/?profile=infobmkg yia

Based on the help tools from the inflact website in analyzing, people's visits to the Instagram account @infobmkgyia are very rare, and interactions are only carried out at certain times.

c. Influence

BMKG plays a crucial role in conveying weather forecast information to the public, and one of the current media used is Instagram. BMKG hopes that delivering weather information more efficiently and quickly via social media can build connections with the public.

Every upload on the official BMKG DIY Instagram account, @infobmkgyia, contains information on natural phenomena, climate change and natural disasters as well as daily weather forecasts. However, because every post has the same facts in the same format and monotonous graphic representation, people are less enthusiastic. Minimum number*like* and comments on every post on the Instagram account @infobmkgyia indicate a lack of enthusiasm from the public.

d. Conversation and Success

The social media account of a government agency should be an interesting gathering place for people in the environmentonline dynamic. Each upload not only clarifies the content but also becomes a stimulus for dialogue between the government and the public. According to the communication model in perspective good governance, participation means community involvement in providing information when policies are taken and when social control is implemented. Community participation can be done by replying to stories on Instagram, using the question and answer section, and leaving comments on available posts. However, there is very little public discussion on the @infobmkgyia Instagram account so it does not meet the success matrix.

e. Continuity

The ability of government agencies to enforce and increase the success of social media use on an ongoing basis is part of the indicators of success. In a time of digital revolution and exponentially growing information flows, sustainability is more than just resisting change, it also requires continuous adaptation and development to remain effective and relevant.

The continued use of social media by government agencies is largely based on consistently delivering relevant and meaningful material.(Kington et al., 2021) At this time it is very important to continue to spread knowledge that can benefit society in new ways. By providing educational, informative, and up-to-date content, government organizations can improve public relations with the government, foster trust, and ensure that social media is a reliable source of information.

Additionally, sustainability requires a steady increase in the number of followers. Gaining more followers is not only a sign of popularity but also success in reaching and developing an active community.

Via the Instagram account @infobmkgyia you can applycore values in carrying out government communications to ensure sustainability (Prime Minister's Office Helsinki 2023 Finland):

1) Openness

   Transparency in the exchange of information between government institutions is reflected in openness. Openness is shown on the Instagram account @infobmkgyia by providing information clearly and not in a closed way, thereby fostering public trust.

2) Impartiality

   The government agencies involved demonstrate impartiality by providing information fairly and without taking sides. All parties are provided with balanced information and made to feel valued when an impartial approach is taken.

3) Interactive

   The key to sustainability is active participation in interactions. By guaranteeing quick responses to people's messages, comments and questions, @infobmkgyia fosters an interactive atmosphere and encourages high levels of public participation. Not only that, BMKG YIA can encourage the public by uploading Instagram stories related to weather forecasts provided by BMKG YIA in their respective areas, then reposting them on the Instagram account @infobmkgyia.

4) Reliability

   The reliability of information is a solid foundation. The account consistently offers verified and correct information, making it a reliable source of knowledge. Because the public is aware of the accuracy of the information presented, sustainability is supported by that reliability.

5) Clarity

   It is believed that the information provided clearly is an effort to ensure that the message is easily understood by various groups. Information becomes easier to learn and absorb through straightforward language and engaging visuals on @infobmkgyia, which encourages public engagement and understanding.

6) Service Communication

   A key component of sustainability is the service mentality embedded in every post and response. When government agencies pay attention to community needs, provide relevant information, and offer support when needed, sustainability will be maintained.

Government agencies can build a strong foundation for sustainability by ensuring openness, impartiality, interactiveness, reliability, clarity and communication of services when using Instagram @infobmkgyia. The public is engaged, information is presented in an engaging and straightforward manner, and the services offered foster an environment that encourages continued participation.

Conclusion

Optimization in the context of delivering weather forecast information via the Instagram account @infobmkgyia refers to systematic efforts to increase the effectiveness and efficiency of delivering weather information to the public in the Special Region of Yogyakarta Province. In this case, optimization includes a series of strategies designed to maximize positive impact, increase user engagement, and ensure weather messages are delivered clearly and relevantly.

After concluding a comprehensive study regarding strategies for using social media, with special emphasis on the Instagram account @infobmkgyia which is operated by the Meteorology, Climatology and Geophysics Agency (BMKG) for the Special Region of Yogyakarta (DIY), it can be said that it is not yet optimal, there are a number of crucial aspects related to media use social. The lack of optimal management of this account can be seen as follows:First, minimal number of followers. Even though it has started digital services, BMKG DIY's main obstacle is gathering followers who have not yet reached their maximum potential. For this account to become a superior source of weather information, it is important to determine a stronger community development strategy and involve various segments of society considering the small number of followers of the account.Second, lack of interaction in the comments section. Columns containing minimal comments indicate that neither the community nor its followers are actively involved. The causes of these challenges need to be investigated further, perhaps related to a lack of response to questions or a lack of initiative in encouraging interaction. Potential solutions include improving responses to questions or holding scheduled Q&A sessions.Third, monotonous visual posts. Monotonous visualization in posts is an important aspect that needs to be considered. To attract the attention of more followers, diversifying visual formats such as infographics, animated images, or interactive content can be a solution to explore to provide a fresh and interesting impressionFourth, lack of enthusiasm and community interaction. The lack of enthusiasm and public interaction can be interpreted as a need to increase the attractiveness of the content and the relevance of the information presented. A thorough understanding of people's needs and preferences can open up opportunities to present more targeted information and attract the interest of potential followers.

Overall, these conclusions are the basis for developing strategic recommendations to optimize the use of social media by BMKG DIY. A comprehensive and adaptive approach is needed to improve these aspects. By combining increased content quality, more active interaction, and community growth strategies, BMKG DIY can design steps that guarantee long-term sustainability and success in providing weather forecast information via social media platforms, especially the Instagram account @infobmkgyia.

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