# Disaster Communication Through Social Media as A Means of Information and Education for Bengkulu Communities

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#### Abstract

Bengkulu is an area that is prone to natural disasters in terms of its geographical condition. In addition, Bengkulu is currently facing non-natural disasters, one of which is the global COVID-19 pandemic. In dealing with disasters, it is necessary to have effective communication from the government to the community. With the current social restrictions, the use of media is one of the important things in communication. This study aims to analyze the communication carried out by the Bengkulu's Regional Disaster Relief Agency in an effort to provide disaster information and education to the community. This study observes and analyzes the content shared by the Bengkulu's Regional Disaster Relief Agency on its social media pages (Facebook and Instagram). The research findings that the content displayed on the agency's social media is generally the form of reporting. The information shared is information when a disaster occurs, such as the magnitude of the earthquake and the number of COVID-19 cases. This information is not followed by preand post-disaster information. The content produced also does not open up space for interactivity to the audience. Other content is in the form of ceremonial activities. This shows that the Bengkulu's Regional Disaster Relief Agency has not made disaster education efforts through social media. The media agenda that is prepared only aims to show the performance of the agency to the public.

**Keywords:** bengkulu, disasters communication, information and education, social media.

## INTRODUCTION

Bengkulu is an area that is prone to natural disasters, influenced by its geographical conditions. Natural disasters that have occurred in Bengkulu include earthquakes, tsunamis, floods, and landslides. The largest earthquake in historical records occurred in 2000 and 2007 with magnitudes of 7.3 SR and 7.9 SR. The two earthquakes caused a lot of damage, death and disruption of communication systems. According to the historical record of the tsunami, the city of Bengkulu has twice been hit by tsunami waves that occurred in 1797 and 1833. Until now Bengkulu has never been separated from the standby condition to anticipate the arrival of earthquakes and tsunamis (Gaffar (2007) in Adhrianti & Alfarabi, 2020).

Article 1 Paragraph 1 of Law No. 24 of 2017 states that a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused, both by natural factors and/or non-natural factors as well as human factors, resulting in human casualties, environmental damage, property loss, and psychological impact.

Local governments as stated in the Law of the Republic of Indonesia number 24 of 2007 concerning disaster management, require local governments to form work units. The Regional Work Unit that handles disasters in Bengkulu City is the Bengkulu's Regional Disaster Relief Agency (BPBD) which was formed through the stipulation of Bengkulu City Regional Regulation Number 03 of 2010 concerning the Bengkulu's Regional Disaster Relief Agency.

The formation of the local government work unit is a hope in disaster management efforts, especially in disaster-prone areas such as Bengkulu. Regional Disaster Relief Agency has the authority in handling disasters from the stage of prevention to recovery. Disasters that are of concern are not limited to natural disasters, non-natural disasters and other social disasters also need to be the attention of the Bengkulu's Regional Disaster Relief Agency. As with the global disaster that is also being faced by the people of the city of Bengkulu, namely Covid-19.

Bengkulu Province became the first Covid-19 distribution area since the Governor announced that there was a Tablig congregation patient who came from Lampung and died in Bengkulu due to Covid-19 positive on March 31, 2020. Bengkulu later became the 32nd red zone province in Indonesia (Supandi (2020) in Adhrianti & Alfarabi (2020)). The Covid-19 disaster not only has an impact on death but also bullying and hate speech against survivors. Initial data of people infected with the Covid-19 virus announced by the task force unit caused a commotion in the community (Adhrianti & Alfarabi, 2020). This shows that disaster management is not only at the level of providing information, but the community needs to be educated in responding to every disaster that occurs.

In Rudianto's study (2015, p. 52) there is a soft power approach in disaster management. This approach focuses on preparing the community to face disaster by providing information and socialization. This process is given to the community when the disaster has not yet occurred. The purpose of providing this information is to prepare the community to act when disaster strikes (Adhrianti & Alfarabi, 2020). In the context of disasters in general, the power of disaster management is based on the community's readiness to deal with potential disasters. This readiness needs to be built on an ongoing basis by the authorities.

Bengkulu's Regional Disaster Relief Agency said that the strategic issue is the high risk of disaster. This is due to a problem that is not yet optimal early prevention and management of victims of natural disasters. In the release of the Performance Report of Government Agencies, among others, there are points that will be taken by Bengkulu's Regional Disaster Relief Agency in overcoming disaster risk problems. Among the points related to the improvement of facilities and infrastructure, which are the focus of this study are two points that target the community directly, namely:

- 1. Improving socialization and policies regarding early disaster prevention in disaster risk reduction in the regions.
- 2. Increasing public awareness in disaster response.

These problems show that disaster communication plays a role in efforts to overcome the problem of high disaster risk. Lestari (2018:16) states that disaster communication is the process of creating, sending, and receiving messages by one or more people, directly or through the media, in the context of a disaster during pre-disaster, during disaster, post-disaster and generates response or feedback. The purpose of Disaster Communication is to provide information and invite the public to be prepared to face disasters and reduce disaster risk.

The Bengkulu's Regional Disaster Relief Agency is aware of the role of the media in the disaster communication process, this is indicated by the existence of social media accounts belonging to the agency. The agency has media in providing information online including Facebook and Instagram.



Figure 1. Social Media belonging to the Bengkulu's Regional Disaster Relief Agency

In line with the Bengkulu's Regional Disaster Relief Agency's vision, which is to become a leading institution to make Bengkulu city disaster prepared, a community that is ready, responsive and resilient in dealing with disasters. This research is important to do because as an area that is vulnerable to disaster events, it is appropriate for relevant agencies to be responsible for community preparedness. Community preparedness can be started by fulfilling information about disaster events so as to reduce the risk or impact of disaster events. This study will observe and analyze how that agency communicates disaster information and education through social media. The current development of social media is not only used by personal users, but government agencies are also driven to create official accounts, one of their functions is to establish communication with a wide audience.

## **Disaster Communication**

The increase in the incidence of natural disasters at the world level over the last three decades has reached almost 350%, as reported by the Center for Research on the Epidemiology of Disasters (CRED 2009). The trend of disasters will increase due to: 1) increasing population, 2) increasing urbanization, 3) environmental degradation, 4)

poverty, and 5) the effects of global climate change. The incidence of world disasters is increasing and the largest or 76% are hydro meteorological disasters in the form of floods, landslides, tropical cyclones, droughts. Most of these disasters occur in poor and developing countries (Nugroho & Sulistyorini, 2019:76).

The increase in disaster incidence can be controlled by conducting appropriate disaster communication to the community. Increasing the information and knowledge possessed by the community will become the basis for community readiness when facing disasters. Efforts to prepare for possible disasters are efforts to reduce the risks or impacts that arise from disaster events.

Disaster communication that is carried out continuously in every phase from mitigation to rehabilitation will be an effective solution to solve problems caused by disasters. Frank Dance (in Littlejohn, 2006: 7) mentions that one of the important aspects in communication is the concept of uncertainty reduction. Communication itself arises because of the need to reduce uncertainty, in order to act effectively to protect or strengthen the ego concerned in interacting individually or in groups. In handling disasters, accurate information is needed by the community and private institutions that have concern for disaster victims (HH, 2012).

Lack of information and education can increase the risk in the event of a disaster. In addition, without accurate information, the control of post-disaster problems will also be neglected. Disaster issues are not limited to handling disaster victims but also infrastructure improvement and improvement of the social and psychological conditions of disaster victims. Therefore, communication becomes a bridge in resolving confusion that occurs in dealing with problems caused by disasters.

The use of media becomes effective when the message to be conveyed can be spread massively. Media is considered as a medium to convey communication messages. The media certainly influences the entire process when a disaster occurs, from pre-disaster to rehabilitation. Information related to disasters provided by the media, both mass media and social media which are officially managed by the government, will become a reference for information for the community. Therefore, the media needs to meet the information and education needs of the community, especially in disaster-prone areas.

#### Social Media

Communication is a means of achieving joint activities, connecting with one another and a means of sharing ideas. In groups, organizations and societies, communication is a means by which we can reconcile our own needs and goals with those of others. Within larger organizations, societies and world communities, communication provides a network of relationships that enable us to take collective action, form shared identities and build leadership (Ruben and Stewart 2013 in Rudianto 2015).

Massive communication requires the media as an intermediary in the dissemination of information. With the power to reach a wider audience so that communication will

become more efficient, the media has become one of the focuses in disaster communication. Previously, mass media was the only option for broad dissemination of information, now it is also known as social media. In contrast to the mass media which is sheltered by certain media business groups, social media allows each individual to become a producer and a consumer simultaneously. The power of social media in some conditions is able to beat conventional media. It is not surprising that currently government agencies also have the obligation to manage official social media.

Social media is the latest development product of internet-based technology, this technological development makes it easier for each individual to carry out the process of communication, participation, sharing and forming networks online so that individuals can disseminate their communication content (Astari, 2021).

Content that is distributed through social media managed by Bengkulu's Regional Disaster Relief Agency becomes an opportunity to provide information and knowledge widely to the public, one of which is related to policies. In addition to requiring media as an intermediary for messages, it is also necessary to pay attention to the packaging of the message itself. The foundation for effective disaster communication also needs to be supported by the creation of effective messages. There are at least three forms of messages that can be used in disaster communication, namely:

- 1. Informative, namely to provide information on facts and data and then the communicant draws his own conclusions and decisions in certain situations, informative messages are certainly more successful than persuasive.
- 2. Persuasive, containing persuasion, awakening human understanding and awareness that what we convey will give a changed attitude.
- 3. Coercive: conveying messages that are coercive by using sanctions. The well-known form of delivery is essentially agitation with an emphasis that fosters inner pressure and fear among the public (Widjaja (2000) in Lestari, 2018: 53-55)

## Agenda setting

The conventional media setting agenda has shifted slightly since new media began to be widely used such as online media and social media where the modern media landscape is inhabited by bloggers, citizen journalists, social media users, such as Facebook and Twitter, which are equivalent to mass media in general. Now, anyone can be a node in the production process of media (Juditha, 2019).

According to McCombs and Shaw (1993) agenda setting is a process that involves two things, namely what to think (what to think about) and how (how to think about it). At this point, the idea of agenda setting begins to relate to media framing. This is the second dimension of agenda setting—a set of attributes that represent how an event or issue is represented in the news in the media—very close to media framing. Agenda setting has three linear processes. First, priority issues are discussed in the media, or media agenda. Second, the media agenda interacts (influences) with what the audience thinks, or the public agenda. Finally, the public agenda influences (interacts) with policy makers, or political agendas (Kurniasari, 2015).

Now social media has a position that can lead to several actions that are closely related to agenda setting theory. Social media has connections between users and exchanges information. Social media is not one-way but on the contrary, two-way. So that the information submitted is then developed and has an active response so that the agenda that occurs can be seen realistically. Through social media, all users describe the messages received and follow up by using active responses such as commenting or sharing the information. This is related to the public agenda, social media brings an influence to the public, namely influencing awareness and also action (Juditha, 2019).

## **METHOD**

This research is a research conducted through a qualitative approach using descriptive methods. The techniques used in data collection are observation and interviews. Observations were made in the form of observations of official social media (Facebook and Instagram) belonging to the Bengkulu's Regional Disaster Relief Agency. Observations are made to find data which will then be analyzed using the Agenda Setting theory. In the study of Agenda Setting, the media has the ability to show the audience the things that are important for them to pay attention to. In this study, the media analyzed is part of government agencies so that this research does not only focus on the content displayed but looks at the agenda prepared behind the content. Interviews were conducted with Mr. Syamsudin, the Head of the division of Prevention and Preparedness on Bengkulu's Regional Disaster Relief Agency as a balance between the analysis carried out.

## **RESULT AND DISCUSSION**

Technological developments also have an impact on running a digital-based government system that we know as e-government. This makes the use of digital media an important part in carrying out the duties and functions of these government agencies. In addition to the use of websites, social media is also a major concern in running e-government. Almost all government agencies currently have official social media accounts. Of course, each government agency has different goals and targets for using official social media accounts.

Differences in attention to the management of social media accounts also affect the success in their use. The use of government-owned official social media is an advantage for agencies that have a direct function in public service. The use of social media can be a forum for distributing information as a form of service from government agencies. Especially in the era of information disruption, official information submitted by the government is a certainty that the public will refer to.

Regional Disaster Relief Agency as a government task force authorized in disaster management at the regional level. As regulated in Article 20 of Law No. 24 of 2017 states that agencies have functions including: a. formulating and stipulating disaster management policies and handling refugees by acting quickly and appropriately, effectively and efficiently; b. coordinating the implementation of disaster management activities in a planned, integrated, and comprehensive manner.

Referring to this function, social media owned by BPBD is also expected to play a role in helping carry out this function. In disaster management, communication made by the government to the community is one indicator of success in preparing and healing the community. Disaster communication plays a role in influencing public understanding of disasters so as to minimize uncertainty in responding to disaster events. Especially in areas that are categorized as disaster-prone, such as Bengkulu, the role of Regional Disaster Relief Agency is certainly highly expected. This study found that there were problems in the use of social media belonging to the Bengkulu's Regional Disaster Relief Agency related to efforts to provide disaster information and education to the public. That agency has official social media accounts on Facebook and Instagram with the Facebook account name "BPBD Kota Bengkulu" and Instagram account "bpbdkotabenngkulu" as shown in figure 2.

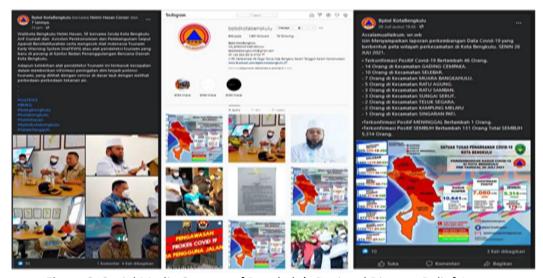


Figure 2. Social Media Content of Bengkulu's Regional Disaster Relief Agency

As part of a government agency, the Bengkulu's Regional Disaster Relief Agency social media account certainly has an agenda in every uploaded content. This study seeks to show the media agenda carried out by the agency, especially in the function of disaster information and education. The uploads in the official social media accounts of government agencies can be said to represent the relevant government agenda.

The Bengkulu's Regional Disaster Relief Agency 's official social media account is run under the auspices of the Disaster Management Operations Control Center (Pusdalops PB). As of August 2021, those who follow the "BPBD Kota Bengkulu" Facebook account are 1,407 users and the Instagram account "bpbdkotabenngkulu" are 1,822 followers. From the content uploaded by the two official social media accounts, the researchers found that there was a selection of issues that were carried out on certain problems. Researchers grouped the uploads as follows:

## Information of Bengkulu's Regional Disaster Relief Agency's activities

The two official accounts regularly upload content that shows the activities of the agency. The ceremonial activities that were uploaded ranged from routine activities such as morning ceremonies, activities as a Covid-19 task force team to the activities of the Bengkulu city government. Uploads are in the form of a series of photos and often in the form of videos, accompanied by captions that contain elements of "what, where, who, and when" but rarely complete with "why and how" elements. This can be seen in figure 3.

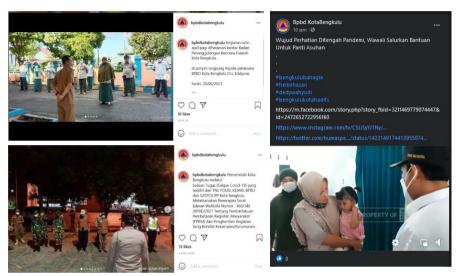


Figure 3. Uploads of Bengkulu's Regional Disaster Relief Agency activities

Interviews conducted with the head of the Prevention and Preparedness Division of Bengkulu's Regional Disaster Relief Agency, showed that the creation of social media accounts was indeed intended to provide information and support the city government's programs, "So that the public gets information related to disasters in Bengkulu city and supports Bengkulu city government programs".

This shows that in carrying out the media agenda, issues related to the publication of the agency activities and city government activities are a priority in uploading official social media accounts. This media agenda is also inseparable from efforts to build a public agenda, what the public thinks about the positioning of the Bengkulu's Regional Disaster Relief Agency. Uploading these activities is a manifestation of the real work of the agency in carrying out their duties and functions. Some of the uploads that show government programs or activities are certainly also related to political agendas. Of course the government in every activity carried out expects public support because it affects the policy agenda carried out by the government.

## Information on the occurrence of a disaster

The research finds that the content displayed on the Bengkulu's Regional Disaster Relief agency's social media is generally the form of reporting. The information shared is information when a disaster occurs, such as the magnitude of the earthquake and the

number of COVID-19 cases. Ideally, disaster communication is not only carried out when a disaster occurs, information before a disaster occurs is also important in building community preparedness and information after a disaster is no less important so that the affected community does not lose direction in facing the days after the disaster. Post-disaster information also needs to include government policies in solving the problems faced.

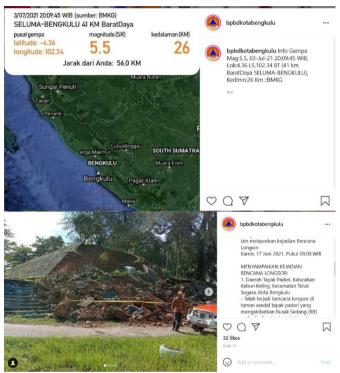


Figure 4. Uploads during a disaster

The screenshot above shows what the upload looks like when an earthquake occurs. To find information when an earthquake occurred in an area, in the past, people would wait for breaking news in the mainstream media. But not in the era of digital development as it is today. The public will generally immediately look for information on social media and sources from the government's official Instagram account are credible sources in reporting this information.

When a disaster occurs, especially an earthquake, what people are curious about is clarity about whether the disaster actually occurred, how strong the earthquake was, whether there is a potential for aftershocks, and what the community should do. Unfortunately uploads related to disaster information are not informative enough. As seen in Figure 4, the upload only fulfills the "what, when, where" element, even though the public should also need information, one of which is related to the "how" element. Disaster communication mentions that reducing information uncertainty is also related to reducing

the impact of a disaster. Therefore, providing information should also be accompanied by an educational element related to how to respond to a disaster.

An interview conducted with the head of the Prevention and Preparedness of Bengkulu's Regional Disaster Relief Agency, stated that "the focus in creating content on social media is information related to disasters, including non-natural disasters now, namely Covid-19". In line with its function as part of the COVID-19 task force, the agency through its social media accounts can be said to routinely provide updates on the spread of COVID-19. As shown in Figure 2, although it is good at packaging messages using graphics, it is only limited to reporting data to show an overview of the spread of covid-19 in Bengkulu. more than that, in its function to provide disaster mitigation, BPBD should provide information or appeal to the public to break the chain of the spread of covid. Therefore, informative and educational content is needed by the community. The agency needs to pay more attention to the captions that are shared. In fact, the Bengkulu's Regional Disaster Relief Agency is still not aware of educating the public not only to the point where the information is known but also the community has a direction in determining attitudes towards a disaster.

In line with the upload of information of Bengkulu's Regional Disaster Relief Agency activities, information related to disaster events is also inseparable from the public agenda to the policy agenda. Unfortunately, social media, which allows space for direct interaction to see community feedback, has not been utilized by the agency. This is influenced by the caption that is not interactive with the audience.

Broadly speaking, this shows that the Bengkulu's Regional Disaster Relief Agency has not made disaster education efforts through social media. Attention to disaster education through social media has not been a priority issue on the Bengkulu city BPBD agenda.

## **DISCUSSION**

Studies related to disasters are carried out by exact science researchers who study specifically the process of a natural disaster event. It can also be studied in the perspective of the physical resilience of a building to the possibility of a disaster. But no less important social studies related to how the community responds to a disaster event. The readiness of the community and the general knowledge it has will affect the magnitude of the impact of disaster events. Therefore, the role of communication studies in disasters is important. Houston in Sari et al. (2021) mentioned that the function of disaster communication is to improve the preparedness of individuals and communities in the face of disasters, improve the resilience of individuals and communities, reduce misery and errors in acting, promote and improve health, increase public awareness about events during disasters, and reconnect communities.

In order to deal with environmental degradation due to *global warming* where Indonesia is also a disaster-prone country, it is necessary to strengthen communication and education systems in the face of natural disasters in the community. It is important to achieve *human security* in sustainable development so as to minimize the impact of fatalities and materials (Asteria, 2016). As part of areas that have the potential to experience natural disasters,

people need to have the readiness to deal with it. Public preparedness needs to be communicated through information and education, especially by agencies that are obliged by state rules. The more people have knowledge, the more prepared the community is to face the possibilities in every disaster event.

Information as an early warning is needed so that people can move safely and have information to prepare for activities in the face of disasters (Asteria, 2016). As an obligated government agency, the regional disaster management agency should prepare adequate information to the community. Of course, the information will be effective if it is delivered consistently and continuously before disaster events in order to build awareness to the community. Utilizing the development of the media is currently one of the strategies to facilitate the mass distribution of information.

McLuhan defines that humans have a pattern of close interaction with technology, especially in the use of communication media. So that the interaction sees that humans create technology, then the technology shapes human life (Syafuddin, 2019). The development of technology in its implications for the development of mass media and social media, forming a habit for people to actively seek the information they need. But on the one hand, the availability of information from competent parties is also important.

In an effort to minimize disaster risk, the media has a role to actively contribute to anticipating, preventing risky activities carried out by the community, and encouraging policy changes so that the situation becomes safe from disasters. News about rehabilitation and post-disaster reconstruction is needed for community building, learning to be more resistant and stronger in the face of disasters (Gelgel, 2020). Post-disaster information is no less important. After the disaster event some of the information shared also subsided, even though the impact of the disaster event was still ongoing. Disasters that occur can destabilize a person's life from the economic and psychological side. Therefore, people still need information and education to determine actions and decisions related to changes in the order of life after becoming victims of disasters.

#### CONCLUSION

The research findings that the content displayed on the agency's social media is generally the form of reporting. The information shared is information when a disaster occurs, such as the magnitude of the earthquake and the number of COVID-19 cases. This information is not followed by pre- and post-disaster information. The content produced also does not open up space for interactivity to the audience. Other content is in the form of ceremonial activities. This shows that the Bengkulu's Regional Disaster Relief Agency has not made disaster education efforts through social media. The media agenda that is prepared only aims to show the performance of the agency to the public.

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#### REFERENCES

- Adhrianti, Lisa. Alfarabi. (2020). Komunikasi Pengurangan Resiko Bencana Berbasis Keluarga (Studi Komunikasi Keluarga Tanggap Bencana di Daerah Rawan Gempa Provinsi Bengkulu). Hlm: 71-78. Book Chapter: Adaptasi dan Mitigasi Bencana. Pusat Studi Ilmu Lingkungan Fikom UNPAD. Unpad Press: Bandung. ISBN: 978-602-439-752-4.
- Adhrianti, Lisa. Alfarabi. (2020). Peran Kredibilitas Komunikator dalam Upaya Proteksi dari Perundungan dan Ujaran Kebencian terhadap Pasien Penderita COVID-19: Studi Komunikasi Bencana Penanganan Kasus COVID-19 oleh Gugus Tugas di Provinsi Bengkulu. Hlm: 231-244. Kolaborasi Lawan (Hoaks) Covid-19: Kampanye, Riset dan Pengalaman Japelidi di Tengan Pandemi. Program Studi Magister Ilmu Komunikasi UGM: Yogyakarta. ISBN (PDF) 978-623-95452-5-3.
- Astari, Nabila. (2021). Sosial Media Sebagai Media Baru Pendukung Media Massa untuk Komunikasi Politik dalam Pengaplikasian Teori Agenda Setting: Tinjauan Ilmiah pada Lima Studi Kasus dari Berbagai Negara. Jurnal Teknologi dan Informasi Bisnis. Vol. 3 No. 1.
- Asteria, Donna. (2016). Optimalisasi Komunikasi Bencana Di Media Massa Sebagai Pendukung Manajemen Bencana. Jurnal Komunikasi. 01 (2016) 1-11.
- Gelgel, N. M. R. A. (2020). Media Sosial Dan Literasi Kebencanaan Di Bali. Interaksi: Jurnal Ilmu Komunikasi. Vol. 9, No. 1, Juni 2020 pp.19 30.
- HH, Setio Budi. (2012). Komunikasi Bencana: Aspek Sistem (Koordinasi, Informasi dan Kerjasama). Jurnal Komunikasi, Volume 1, Nomor 4, Januari 2012
- Juditha, Christiany. (2014). Etika Jurnalisme Bencana dalam Berita Televisi (Bencana Gunung Berapi Sinabung di TVOne). Jurnal Komunikasi Universitas Tarumanagara, VI/01/2014
- Kurniasari, Netty Dyah. Agenda Setting Function (Studi Kasus Krisis Ekonomi Amerika dan Global). Jurnal Komunikasi, Vol. IX, No. 1, Maret 2015.
- Laporan Kinerja Instansi Pemerintah (LKJIP) Tahun 2019. Badan Penanggulangan Bencana Daerah (BPBD) Kota Bengkulu Tahun 2020.
- Lestari, Puji. (2018). Komunikasi Bencana: Aspek Penting Pengurangan Resiko Bencana. Penerbit PT Kanisius: Yogyakarta.
- Nugroho, S. P. Sulistyorini, D. (2019). *Komunikasi Bencana: Membedah Relasi BNPB dengan Media*. Diterbitkan oleh: Pusat Data, Informasi dan Hubungan Masyarakat Badan Nasional Penanggulangan Bencana: Jakarta.
- Rudianto. (2015). *Komunikasi dalam Penanggulangan Bencana*. Jurnal simbolika Vol 1 No 1 April 2015.
- Sari, M. M., Kusumasari, B., Hadi, M. P. (2021). *Twitter* untuk Komunikasi Tanggap Darurat Erupsi Gunung Agung 2017. Jurnal Ilmu Komunikasi. Vol 18, No 2, Desember 2021: 201-218.
- Syafuddin, Khairul. (2019). Strategi Manajemen Komunikasi Bencana Dalam Penyebaran Informasi Erupsi Merapi. Prosiding Seminar Nasional Geotik 2019. ISSN: 2580-8796.

UNDANG-UNDANG REPUBLIK INDONESIA NOMOR 24 TAHUN 2007 TENTANG PENANGGULANGAN BENCANA