

SOCIAL MEDIA IN DISASTER RISK MANAGEMENT for MOUNT MERAPI YOGYAKARTA (INDONESIA)

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Abstract

In the 21st century, emergency management has a new challenge, namely the application of social media, communication and public information challenges. Meanwhile, public information is an important aspect of 21st century emergency management. This research will explain the use of social media by Balai Penyelidikan dan Pengembangan Teknologi Kebencanaan Geologi (BPPTKG) Yogyakarta for disaster risk management of Mount Merapi Yogyakarta case. The use of social media will be seen from the strategies in emergency management: 1) Information dissemination, 2) Data monitoring, and 3) Collaboration between organizations and citizens. This study uses in-depth interview techniques on BPPTKG media center team and community of Merapi. The results showed that there were differences in social media strategies used by the media center team in providing information related to disaster. Furthermore, social media turned out not to be the main vehicle in 21st century emergency management because the conventional media such as handy talky radio was still very effective to use.

Keywords: *disaster risk management, social media, strategy, Mount Merapi Yogyakarta*

The internet is a new medium that unknowingly changes the linear paradigm (one-way) in media. The two-way or reciprocal communication process is created between the sender and receiver. The completion of space, distance, and time issues in communicating characterizes the presence of the new media. The community can access any information and argue freely against a thing. The cost of access is relatively cheap allowing the recipient to get a variety of benefits.

In Indonesia, internet was growing so fast. It also affects public consumption of the media. The result of research from Indonesia Internet Service Provider Association (APJII), the Internet use of Indonesian society continues to increase. In 2016, internet users reached 132.7 million, while in 2017 it increased

to 143, 26 million. Meanwhile, the most accessed service is chat (89.35%) which consists of social media, search engines, viewing images / photos, viewing videos, and downloading videos.

The advantage of social media also has an effect on disaster mitigation. Disaster mitigation itself, according to Law No. 24 of 2007 concerning Disaster Management, is a series of efforts to reduce disaster risks, both through physical development and awareness raising and capacity to face the threat of disaster. Crowe (2012, p. 9) states that social media is a type of utilization of internet access, communication systems, and social networks that instantly facilitates conversations in a transparent and cost effective manner. Crowe said that social media is a means to manage the emergencies of modern disasters. Wayne Blancard of the Federal Emergency Management Agency's (FEMA) states that there are eight principles of modern emergency management namely, 1) Comprehensive, 2) Progressive, 3) Risk Driven, 4) Integrated (Integrated) , 5) Collaborative, 6) Coordinated, 7) Flexible (Creative and Innovative in Disaster Problem Solving), and 8) Professional (Use of Technology and Science).

Emergency management has new challenges namely the application of social media, communication, and the challenges of public information. Meanwhile, public information is an important aspect in 21st century emergency management. Crowe (2012, p.7) states that before getting to know social media, public information about disaster is still carried out with standard management namely television monitoring, press conferences, and web publications.

Social media plays an important role in delivering real time disaster information. Social media also helps broad dissemination of information, and can reach parties related to disasters. Real time information about disasters is needed in handling disasters so that they can anticipate early action. Moreover, when it is associated with modern disaster emergency management, social media cannot be separated from its role in the dissemination of information.

This research aim to look at social media strategies carried out by the Yogyakarta Geological Disaster Investigation and Development Center (BPPTKG) in mitigating the Mount Merapi disaster. BPPTKG is a technical implementing unit in disaster whose duty is to recommend implementers to issue disaster-related policies. BPPTKG has a function in the implementation of disaster mitigation and preparation of information plans related to Mount Merapi.

The social media strategy in this study will be seen in three ways. According to Wukich (2015, pp. 285-291), there are three things regarding social media strategy in emergency management. First, information dissemination related to the process of information dissemination. Information disseminated includes disaster alertness, provision of resources, education, administrative news, and messages relating to emotions and opinions. Second, monitoring data for disaster awareness. This data monitoring relates to the delivery of current information which includes the impact of hazards, community needs, and community reactions. Third, collaboration of organizations and citizens in conversation to reduce disaster risk. This relates to the efforts of content providers

to provide facilities for interaction between organizations / institutions and citizens.

METHOD

This research uses descriptive qualitative type. The method used in this research is a case study. Case studies are used to find the depth of explanation of the cases studied, used for specific cases (unique to the scientific context, history, physical environment, economic, political, social, aesthetic context), limited by time, and in the process of collecting data using a lot various sources (Rianto, 2008, p. 82). The research period was the 2010 Merapi disaster until 2018. The year 2010 was chosen because it was the beginning of the use of social media used by BPPTKG in the Merapi disaster.

The subjects in this study consisted of the media center team of the Yogyakarta Geological Disaster Investigation and Development Center (BPPTKG), Nur Cholik, and the Head of the BPPTKG, Hanik Hamida, and members of the Merapi community, represented by the Chair of the Indonesian Community Radio Network (JRKI), Sinam, which utilizes social media BPPTKG. The object of research in this study are all social media used by BPPTKG in disseminating information, including 1) *Website* (www.merapi.blg.esdm.go.id), 2) *Twitter* (@bpptkg), 3) *FB Page* (info BPPTKG), 4) *Youtube channel* (BPPTKG Channel), 5) *Instagram* (@BPPTKG), 6) *Whatsapp*, and 7) *Line* (@BPPTKG).

Meanwhile, primary data sources were obtained by conducting in-depth interviews and observations. Secondary data were obtained from books, journals, and other internet sources.

RESULTS

Social media has benefits in disseminating disaster information. In relation to disaster mitigation, social media plays an important role. The existence of social media used by BPPTKG makes information dissemination easier, faster, unlimited, and can reach many people (both interested parties and not). This is consistent with the statement from Velev, D. & Zlateva (2015, p. 44) states that the use of social media in natural disasters has the following functions,

- a. Prepare for natural disasters, even though natural disasters cannot be predicted. Social media such as e-mail and text messages can help people prepare for emergencies. This was also recognized by BPPTKG, where Merapi's development report, which is distributed every week, is able to make people aware of disasters. Unlike when radio was still the main communication tool for disseminating disaster information. Information becomes obstructed and residents do not have any initial vigilance on disasters.
- b. Give a response as soon as possible during the disaster. An immediate response can be seen from the initial mitigation process that is the response in social media when Merapi information was provided. This happens in the process of interaction on social media owned by

BPPTKG, such as Twitter and IG, where many people ask questions related to the information provided.

- c. Restoring nature by communicating through social media. Some information distributed by BPPTKG is related to how to become Merapi's nature. This knowledge is addressed by anyone so that the nature of Merapi is still well preserved.

In accordance with Mauroner's & Heudorfer's statement (2016, pp. 208-209), the purpose of using social media in BPPTKG disaster management, including:

- a. Dialogical communication: social media facilitates dialogic communication where it is not owned by other channels. Dialogic communication is proven by feedback from interested parties or not through social media owned by BPPTKG
- b. Informing related the early warning system and disaster preparation. The Infographics, photos, and others are very important to be informed directly.

The Strategic of Social Media in Disaster Case

Based on the results of the study, BPPTKG implemented 3 strategies in running social media for disaster mitigation. In this study, BPPTKG is a technical implementing unit of the Center for Volcanology and Geological Disaster Mitigation (PVMBG). Based on its function, BPPTKG has carried out its function of implementing the Mount Merapi disaster mitigation and providing

recommendations for determining the level of activity, as well as technical recommendations for Mount Merapi mitigation.

There are three strategy on social media which held by BPPTKG.

- a. Disseminating information to the public: the process of disseminating information that includes a) Disaster alert, warning ---- describing the impact of risks to the public, suggesting actions to the public such as preventive and evacuation activities, and informing the closest facilities or transportation, b) Provision of resources ---- information messages containing suggestions regarding the distribution of resources among the community or with other institutions, 3) education — information contains educational messages to the public about community development, disaster prevention, and the impact of disaster risk, 4) Messages relating to emotions and opinions-- Messages messages relating to emotions and opinions to express condolences, and other comments to a wide audience
- b. Monitoring open source data to accrue situational awareness--- delivery of the latest information includes information on the impact of hazards, community needs, and community reactions
- c. Engaging organizations and citizens directly in conversations or the coordination of actions to reduce risk.--content provider efforts to provide facilities for interaction between organizations and citizens.

Here are the social media that used by BPPTKG in disaster management.

Social Media	Name	Strategic in Disaster
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		Management
Website	www.merapi.bgl.esdm.go.id	<ol style="list-style-type: none"> 1. Disseminating information to the public 2. Monitoring open source data to accrue situational awareness
Twitter	@BPPTKG	<ol style="list-style-type: none"> 1. Disseminating information to the public 2. Monitoring open source data to accrue situational awareness 3. Engaging organizations and citizens directly in conversations or the coordination of actions to reduce risk
FB Page	Info BPPTKG	<ol style="list-style-type: none"> 1. Disseminating information to the public 2. Monitoring open source data to accrue situational awareness 3. Engaging organizations and citizens directly in conversations or the coordination of actions to reduce risk
BBM	-	<ol style="list-style-type: none"> 1. Disseminating information to the public 2. Monitoring open source data to accrue situational awareness
Youtube Channel	BPPTKG Channel	<ol style="list-style-type: none"> 1. Disseminating information to the public
Instagram	@BPPTKG	<ol style="list-style-type: none"> 1. Disseminating information to the public 2. Monitoring open source data to accrue

		situational awareness 3. Engaging organizations and citizens directly in conversations or the coordination of actions to reduce risk
Whatsapp Group	+62 812 8005 0740	1. Disseminating information to the public
Line	@BPPTKG	1. Disseminating information to the public

Although social media used by BPPTKG in disaster management, the result of research found that radio still effectively used by citizens in around Merapi Mount. Radio is tools to filter the hoax and fake news. Meanwhile through radio, the people in Merapi see the facts about the mount condition directly. Radio is usually used by Merapi communities to strengthen information and education about Merapi.

Radio in Disaster Risk Management on Merapi Mount

Radio as a type of mass communication is still effectively used in the mitigation of the Mount Merapi disaster to date. It is the community radio around Merapi that currently has a role in spreading information about Merapi. Chairperson of the Indonesian Community Radio Network (JRKI), Sinam M. Sutarno stated that community radio is still used by Merapi residents in updating the latest information. The language on the radio, he said, was more understood by the public compared to other media. Apart from the fact that radio is a

communication tool that has been around for a long time (1982), almost all residents on the slopes of Merapi access it, so that people are familiar with the media.

To be a bridge for residents and BPPTKG in providing Merapi information. No doubt information on social media is often prone to hoaks. Therefore, community radio is assigned as a human censor who will confirm information or reporting about Merapi.

The community radio strengthening information and communication systems within the community. This is very helpful for residents in conducting preventive efforts in facing the Merapi disaster. It is undeniable that people often panic when reading information from other media that have an impact on the spread of hoax news.

CONCLUSION

Social media plays an important role in disaster mitigation. The presence of social media has a positive impact on BPPTKG institutions, whose function is to provide recommendations for determining activity levels, as well as technical recommendations for mitigation of Mount Merapi. Social media accelerates the dissemination of information about the development of Merapi indefinitely in time, user targets and location. Social media creates dialogical communication between BPPTKG and other parties with an interest in mutual interaction. Social media is also able to inform early warning and disaster preparedness through infographics, photos and videos.

Researchers also suggest further research to look at the effectiveness of using social media on audiences. This is useful for BPPTKG institutions to optimize the use of social media in disaster mitigation.

REFERENCES

- Risk, D. (2017, February 02). Terminology. *UNISDR.org*.
<<https://www.unisdr.org/we/inform/terminology>>
- Rianto, P. (2008). Metodologi riset komunikasi. Yogyakarta: BPPI dan PKMBP
- Mahaswari, M. 2012. Jalin Merapi: Penggunaan Media Baru dan Gerakan Sosial Penanggulangan Bencana. *Jurnal Komunikasi Indonesia*, 1(2), 67-76.
<https://doi.org/10.7454/jki.v1i2.7821>
- Crowe, A. (2012). *“Disaster 2.0” The Application of Social Media Systems for Modern Emergency Management*. London, NY: Taylor&Francis Group.
- Velev, D. & Zlateva, P. (2012) *Use of Social Media in Natural Disaster Management*. Conference paper. 2nd IFIP Conference on Information Technology in Disaster Risk Reduction (ITDRR 2017).p 41-45
- Wukich, C. (2017). Social Media Use in Emergency Management. *Journal of Emergency Management*, 13(4), 281-294