

Use of Communication Media by People with Different Lengths of Stay in Volcanic Disaster-Prone Areas¹⁾

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ABSTRACT

Although the incidence of volcanic disaster is recurrent, the signs and its effects vary, that is why knowledge of the disaster should be regularly updated. Information and communication technology has provided many opportunities to share knowledge. People's ability to utilize a wide range of information and communication technology will give them greater opportunities to access information related to the disaster. The purpose of this study is to analyze the behavior of residents in disaster-prone areas in the volcano who are utilizing communication media. The conclusion of this study is the longer people live in an area prone to volcanic disasters, the more they tend to not using communication media for accessing information.

Keywords: disaster, volcano, communication media, risk, age

INTRODUCTION

Indonesia is geographically located in the "Pacific Ring of Fire", marked by at least 83 active volcanoes which at times can be a life threat for residents in the surrounding areas. One of the most active volcanoes is Mount Merapi, which is located in Central Java and Yogyakarta. At least six eruptions have occurred within the year of 1994 and 2010, and the timing of the disaster to the next one varies within one to seven years. Of the six times of disasters, the volcanic eruption occurred in 2010 was the biggest incident, killing as many as 242 people in the region of Yogyakarta and 97 people in Central Java. Not less than 3,424 houses in the area of Yogyakarta and 3,705 houses in the region of Central Java were severely damaged (Bappenas BNPB 2011).

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Each catastrophe has different characteristics, such as the direction, the magnitude, and the damage. The results of the investigation show that the main reason why there are so many fatalities is that people feel that based on previous experience; the eruption is not as big as the eruption that occurred in 2010. Surono (2013) describes a volcano eruption has been changed in the characteristics of ash after the eruption of Mount Merapi in 2010, where ash eruption occurred in November 2013 tend to be preceded by signs.

Information technology has become an important option to help those who mutually dispersed in the countryside to stay connected to each other, no exception to the kids that have adapted to make IT part of their daily lives. (Kilpeläinen, Seppänen 2013). Skill of communication media is necessary for someone to be able to access information from stakeholders in a way that is most likely from a variety of media options available and in accordance with the type of information needed.

RESEARCH OBJECTIVES

Based on this background, this study aims to analyze the use of communication media by residents in volcanic disaster-prone areas. Specifically, the purpose of the study is (1) to analyze the utilization of communication media by residents in volcanic disaster-prone areas, and (2) to analyze the relationship between lengths of stay and use of communication media by residents in volcanic disaster-prone areas.

The usefulness of this study are (1) to provide an overview of the use of communication media by residents in areas prone to volcanic disasters, (2) to provide input to formulate a communication strategy in reducing the risk of volcanic catastrophe .

THEORY

Human activity can be observed directly or indirectly. Notoatmojo (2007) says human activity is called behavior. Solso et.al. (2007) says the behavior is formed to acquire, process, and store information in the brain, and how the process is displayed in a form that can be observed. Friends, family, and co-workers (Springston et al. 2009) can influence a person's behavior. Obtain Mustafa (2011) mentions instinctive behavior obtained from the offspring, can also be obtained from the experience of their lives. One objective of the learning process is to form automatism (Paren in Winkel, 2007)

Communication as human behavior is the process of sending and receiving messages. In a particular context, it has certain influence and distortion due to the interference (DeVito 2011). Communication materials that is disseminated to reduce disaster risk can be either physical hazard information. Rowan (2009) refers to these communications as risk communication. Kim and Kang (2010) go on to say communication is the integration of risk society organizations, local media, and interpersonal relationships. Quero (2012) translates as a network of inter- institutional communication.

Human beings are learning all the time (Wardaya 2010). Karus and Davis in Kiouis (1999) said that a person would use multiple channels of communication in

order to convince and complete the information. According Rafferti et al. (2013) trust is the key principal underlying readiness to face the changes. At the time, the role of institutions responsible for the disaster detection is getting bigger, because it has been using the technology and methods for detecting catastrophe (Earle and Cvetkovich 1995 in Renn 2009).

To determine the appropriate communication design in the risk communication it is necessary to conduct analysis of the recipients, the characteristics of the recipients, and the environment in which risk communication will be accepted (McLaughlin AC, CB Mayhorn 2012). Elsewhere it is said that with regard to age, cognitive changes in line with changes in a person's age. Communication materials must reach the level of risk that may be accepted, and then adopted by the recipients.

In fact, information resources are not sufficient to design an appropriate message in accordance with condition of the recipients whose abilities to access information are of highly diverse. Therefore, the ability to use a variety of communication media is required in order for the recipients to find more information to ensure that the information obtained can actually be understood.

Having regard to the purpose and background of the study, the observed variable is the lengths of stay in the volcanic disaster-prone areas and the use of communication media.

RESEARCH METHODS

This study was a cross sectional study using the method of survey on the population of residents in disaster-prone areas of Mount Merapi. This research was conducted in the districts of Magelang in Central Java and Yogyakarta Sleman district as affected disaster areas of Mount Merapi in 2010. Data were collected from 200 respondents with structured instruments. Data collection was conducted from July to August 2013. SPSS software is used to process the data and relationships between variables descriptive. Data were collected in the form of nominal and ordinal. For the purposes of data processing, ordinal data in the form of interval are transformed by the formula:

$$\text{score} = \frac{\text{acquisition score} - \text{score minimum}}{\text{maximum score} - \text{minimum score}} \times 100$$

RESULTS AND DISCUSSION

The lengths of stay in the volcanic disaster-prone areas can be identified with two variables, namely the respondent's age and experience of volcanic disasters exposure. Respondents of this study were old man or adults, so the new respondents living in disaster-prone areas are migrants. Respondents have lived in the volcano prone areas for between 2 years to 85 years, or an average of 36 years. Distribution of respondents based on the lengths of stay in the volcanic disaster-prone area can be seen in Table 1.

Table 1. Distribution of Number of Respondents Based on Age Group and Utilization of Media Communication Radio, TV, HT, HP, and the Internet in the Volcanic Disaster-Prone Areas

Length of stay (years)	n		Frequency of Use					Entertainment Information					Related Job Information					Disaster Information				
	Number	%	Radio	TV**	HT	HP**	Net**	Radio	TV**	HT	HP**	Net**	Radio	TV	HT	HP**	Net**	Radio**	TV**	HT	HP**	Net**
x ≤ 18	27	13,5	48,1	98,1	13,0	87,0	24,1	53,7	92,6	9,3	70,4	20,4	11,1	13,0	3,7	48,1	14,8	38,9	63,0	18,5	57,4	22,2
18 < x ≤ 34	74	37	61,5	88,5	9,5	91,2	31,8	61,5	89,2	6,1	67,6	27,0	14,9	13,5	3,4	58,1	22,3	54,1	66,2	20,3	62,8	25,7
34 < x ≤ 50	61	30,5	59,8	86,9	18,9	72,1	9,8	59,0	82,8	11,5	45,1	6,6	15,6	9,8	5,7	45,9	7,4	48,4	59,0	30,3	50,8	7,4
50 < x ≤ 66	23	11,5	56,5	76,1	4,3	32,6	0,0	54,3	78,3	4,3	30,4	0,0	10,9	8,7	0,0	19,6	0,0	30,4	52,2	10,9	21,7	0,0
66 < x	15	7,5	40,0	60,0	0,0	6,7	0,0	53,3	66,7	0,0	6,7	0,0	6,7	3,3	0,0	3,3	0,0	16,7	26,7	0,0	6,7	0,0

** Related significant at $\alpha = 0.01$

Radio

Radio is a mean of mass communication that can only present the information in the form of sound. Radio is still quite often used by residents to access information primarily entertainment, but not quite often do they access the disaster information.

There is no real relationship between the lengths of stay in an area prone to disasters with the utilization of communication media, except for the use of radio to access disaster information. There is a negative relationship between the lengths of stay in the volcanic prone area and the use the radio to access disaster information. That means the longer people live in disaster-prone areas tend to have less frequent radio harness to access disaster information.

Television (TV)

Television is a means of communication that is often used by residents in volcanic disaster-prone areas to access a variety of information, especially entertainment. There is a negative relationship between the lengths of stay with the use of the TV. That means, the longer a person stays in the disaster prone area, the less frequent the residents use TV to access a variety of information. Rød, Botan ,Holen (2011) says the visualization in the image will be an impact on the viewer than just writing or numbers , so the TV can be moving rapidly past the radio (Biagi 2010).

Handy Talky (HT)

HT is a medium of communication that is rarely used to access a variety of information. Most HT users are people who have been living in disaster-prone areas for between 34 to 50 years (18.9), and young people living in disaster-prone areas up to 18 years, while people who have lived for more than 66 years have not utilized HT to access the information .

There was no relationship between the lengths of stay in the disaster-prone areas and the use of HT for information access. This means residents who use HT have relatively uniform behavior, which is in the category of very rare.

Hand Phone (HP)

HP is a medium of communication that is very often used to access information,

especially by people living in disaster-prone areas in the volcano under 34 years old. As a medium of communication that is growing very fast and has various features, HP can be used to access information from both print and electronic media. HP, besides for interpersonal communication, is also quite often used to access personal information and mobile entertainment. The nature of HP is also quite often used to access work-related information and disaster information.

Residents who have lived in the volcano prone area for between 50 years to 66 years rarely use HP for information access, while the people who have lived more than 66 years in the volcano prone area very rarely use HP to access information.

Internet

The Internet has become the homes for many people around the world by which they can actively interact to unhindered space and time. The Internet is also a source of information that is almost without limit. The information can be presented in the form of text, images, sounds, and movies. The information can also be presented live such as the streaming radio, television streaming, and chatting. The Internet also enables interpersonal communication that not only displays the text, but also sounds and image. Another advantage is the process of information retrieval can be performed quickly and relatively easily.

Although the internet has many advantages over other media, the people in the volcanic disaster-prone areas rarely use the medium. More Internet users use the medium as a medium for entertainment and information disaster. Many groups who use the Internet are people living in disaster-prone areas for between 18 to 34 years with an average score of 26.7. There is a negative relationship between the lengths of stay with the use of the Internet at $\alpha = 0.01$. That means the longer people live in disaster-prone areas, the less frequent they use the Internet to access information.

Baker et al (2013) says the Internet has become an essential component for connection to a larger community, but it should be considered when about to involve adults in social networking, it is important to be aware to pay attention to the characteristics of the population. The Internet has a role in information sharing activities and ideas that led to the Internet become information factory (Prichard 2011).

General discussion

In general, the most active residents taking advantage of the communication media have been living in volcanic disaster-prone areas for between 18 to 34 years. The most active use of various communication media to access information with an average score of 43.8 and a group of residents who have been living in the area volcanic hazard is less than 18 years with an average score of 40.37. It gives an overview of the citizen groups tend to dominate most potential as information and resources for residents in the vicinity.

The results also showed a group of citizens who have lived more than 66 years is a group of people who access the information least frequently. Therefore, the citizen group has the greatest risk of exposure to the disaster due to lack of information.

This research was conducted at the time of Mount Merapi in normal status. In

these conditions, the most widely used media to access disaster information is TV, while TV medium often displays information disaster that occurred in Indonesia and in other countries.

The ability to use a variety of communication media becomes a requirement in disaster information exchange among stakeholders to reduce disaster risk. By mastering a wide range of information and communication technology allows one to stay connected with stakeholders if certain media does not work in disaster conditions.

CONCLUSIONS AND RECOMMENDATIONS

The longer people live in disaster-prone areas, the less frequent they use communication media. The most medium widely used for accessing disaster information is TV, followed by HP, and Radio.

Based on the conclusion above, the stakeholders can use the media as a means of information dissemination in order to reduce the risk of disaster. To attract attention from the age group of recipients the art of information exposure and communication media should be thoroughly designed.

To reduce the risk of disaster, the role of young people needs to be enhanced, especially those living in disaster-prone areas for less than 34 years, so that the information gap between the new and old residents does not occur.

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