



Improving Disaster Response in Indonesia Through Culturally Integrated Communication Strategy

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Abstract: This study aims to analyze the communication strategies employed by the Regional Disaster Management Agency (BPBD) in disaster risk reduction efforts in Sidoarjo. Effective communication is crucial in ensuring community preparedness and resilience against disasters. This research adopts a qualitative method with a case study approach, using in-depth interviews, documentation, and literature review as data collection techniques. The primary data were analyzed using thematic analysis to identify critical patterns and insights. The results reveal that BPBD employs various communication strategies, including social media, public campaigns, and collaboration with local leaders. These efforts are designed to increase public awareness, disseminate early warning information, and foster community participation in disaster preparedness programs. Challenges identified include limited access to remote areas, inadequate resources, and low public engagement due to cultural and socio-economic factors. The discussion emphasizes the importance of integrating local wisdom and community-based approaches to enhance the effectiveness of disaster communication. The study concludes that combining modern technology

and traditional communication methods is essential for comprehensive disaster risk reduction. Strengthening stakeholder collaboration and investing in capacity-building initiatives are also recommended for future improvements.

Keywords: Disaster Communication, BPBD Strategies, Risk Reduction, Community Participation, Local Wisdom

Introduction

Sidoarjo Regency is a district with a moderate disaster risk index but is often affected by hydrometeorological disasters. These disasters, which are caused by atmospheric activity, include floods, extreme waves, forest and land fires, droughts, and extreme weather ([BNPB, 2016](#)). Heavy rains and strong winds frequently occur in Sidoarjo, flooding several areas, damaging homes, and uprooting trees ([BPBD Sidoarjo, 2022](#)). Additionally, Sidoarjo is affected by disasters in neighboring regions due to its location in East Java, an area with several active volcanoes. This geographical situation makes Sidoarjo prone to small earthquakes (*lindu*) and ash rains resulting from volcanic activity ([Lestari et al., 2021](#)).

Natural disasters are phenomena or events caused by nature that can lead to significant damage and loss of human life ([Susanto et al., 2011](#)). The Sidoarjo Regency Regional Disaster Management Agency (BPBD) is tasked with handling disasters in the area, as mandated by Law No. 24 of 2017. Due to the unpredictable nature of disasters, BPBD

Sidoarjo conducts disaster communication to support mitigation and management efforts. Mitigation aims to reduce the impact of disasters by minimizing casualties and property losses ([Larama, 2020](#)). Disaster management requires both soft power and hard power. Softpower includes community preparedness through socialization, training, and disaster information dissemination, which can enhance knowledge and awareness. Meanwhile, hard power involves physical development, such as constructing embankments and concrete walls, which is essential for disaster mitigation ([Lestari, 2018](#)).

Disaster risk prevention and reduction require effective communication before, during, and after disasters. Disaster communication involves exchanging information to reduce disaster risk and increase community responsiveness ([Haddow & Haddow, 2011](#)). Communication efforts should be carefully planned, as errors in delivery can worsen the situation. Effective disaster communication must consider societal values such as beliefs, religion, and norms ([Pangkapi, 2018](#)). Leadership ensures clear and active communication during disaster management.

A communication strategy is essential to effective communication. A communication strategy combines planning and management to meet specific objectives. For example, BPBD Bangka Belitung implemented persuasive and informative communication techniques using various media, including WhatsApp and local newspapers, to socialize flood disaster preparedness ([Pangkapi, 2018](#)). SWOT analysis is often utilized in planning a communication strategy to identify strengths, weaknesses, opportunities, and threats. This framework helps organizations make strategic decisions aligned with their mission and goals ([Andika, 2020](#)).

The Sidoarjo Regency BPBD's disaster communication strategy can benefit from the SWOT matrix, which integrates internal and external factors to create effective and efficient plans. By leveraging its strengths and opportunities while addressing its weaknesses and threats, BPBD Sidoarjo can maximize its communication efforts to improve disaster preparedness and response ([Zahara, 2021](#)).

Methods

This study employs qualitative research methods to analyze BPBD Sidoarjo's disaster communication strategies. The key instruments include observations, interviews, and documentation, as researchers aim to produce descriptive data ([Gunawan, 2013](#)). Non-participant observation allowed researchers to observe without being directly involved in BPBD activities. In-depth interviews were conducted with five employees who had worked for at least three years at BPBD Sidoarjo ([Moleong, 2018](#)). Documentation sources included

BPBD strategic planning documents, disaster communication books, and academic literature ([Sugiyono, 2009](#)).

Primary data collected through interviews and observations provide insight into BPBD Sidoarjo's disaster communication strategies. Secondary data, such as company profiles, journal articles, and theses, validated and supported the findings ([Moleong, 2018](#)). Data analysis was performed using SWOT analysis to evaluate the agency's internal and external factors, offering a comprehensive understanding of its disaster communication strategies ([Choirunnisa, 2018](#)).

Result and Discussion

A. Disaster Communication

As defined by Cherry in Fiske, communication involves using symbols to achieve shared meaning or convey information about an object ([Fiske, 1990](#)). Communication is vital in ensuring public safety in disasters, a key responsibility of the Sidoarjo Regency Regional Disaster Management Agency (BPBD Sidoarjo). Dance ([Susanto et al., 2011](#)) posits that one primary function of communication is reducing uncertainty, which becomes particularly relevant in disaster scenarios. Similarly, [Haddow and Haddow \(2018\)](#) emphasize that disaster communication aims to mitigate risks and enhance community responsiveness. Effective disaster communication informs the public about risks, provides timely updates, and reduces disaster-related impacts on lives and properties.

Annual hydrometeorological disasters and fires are recurring threats in Sidoarjo, necessitating robust disaster communication strategies. [Haddow and Haddow \(2018\)](#) identify five fundamental principles for effective disaster communication: customer focus, leadership commitment, integration of communication into planning and operations, situational awareness, and media partnership. These principles form the foundation for the communication strategies employed by BPBD Sidoarjo.

B. Customer Focus

BPBD Sidoarjo prioritizes providing comprehensive disaster information to all community members through social media platforms such as Instagram and the agency's official website. This information includes weather forecasts, disaster occurrences, and agency activities. Educational outreach is conducted via village socialization programs attended by local officials. Accurate, precise, and contextually appropriate information is emphasized to align with scientific data and local community conditions ([Lestari, 2018](#)). However, BPBD Sidoarjo has yet to fully tailor its communication strategies to the distinct cultural values of individual communities within the district.

C. Leadership Commitment

The leadership of BPBD Sidoarjo is dedicated to fulfilling the community's need for disaster-related education and preparedness. This commitment is evident in its regular training programs for field teams and administrative staff, which aim to improve disaster management competencies. However, the agency faces limitations in infrastructure and facilities, which constrain its capacity to respond effectively. Additionally, there is a noticeable gap in community engagement, as most socialization efforts primarily involve local government representatives rather than the general public ([Zahara, 2021](#)).

D. Integration of Communication into Planning and Operations

Although BPBD Sidoarjo operates through well-defined sectoral divisions, communication specialists are not involved in disaster planning and operations. Inter-departmental coordination is maintained to monitor progress, but the absence of specialized communication expertise hinders the overall effectiveness of disaster communication ([Tamitiadini et al., 2019](#)).

E. Situational Awareness

BPBD Sidoarjo employs a systematic approach to situational awareness, gathering data through community reports, field observations, and team assessments. This data is analyzed to understand disaster chronology, impacts, and associated losses, which are reported to the executive leadership and disseminated to the public ([BNPB, 2016](#)).

F. Media Partnership

Despite limited collaboration with external media, BPBD Sidoarjo manages to disseminate disaster information independently via its website and social media platforms. However, external media often approach the agency for disaster-related news, creating an informal partnership to inform the public ([Pangkapi, 2018](#)).

G. SWOT Analysis

The Sidoarjo District Disaster Management Agency's communication strategies were analyzed based on internal strengths and weaknesses as well as external opportunities and threats.

1. Strength

- a. Focus on serving and providing information according to the wants and needs of the community.

The Sidoarjo District Disaster Management Agency provides information according to the community's needs, namely about disasters. The information provided is in the

form of education about disaster prevention and handling to the community, information about potential disasters, information on bad weather, information on the occurrence of disasters, and others.

b. Provide accurate and precise information.

The Sidoarjo District Disaster Management Agency ensures the accuracy of information by adjusting data and knowledge about disasters. It provides information on the situation in Sidoarjo. In this case, the Sidoarjo District Disaster Management Agency provides disaster information that often occurs in Sidoarjo so that it is appropriate for the people of Sidoarjo.

c. Developing employee performance and training to the community on disaster management.

The Sidoarjo District Disaster Management Agency conducts annual training to improve the quality of services and disaster management. In addition, the Agency can increase speed and accuracy in disaster management. Disasters can occur at any time, so speed and accuracy are needed.

d. Sensitive to the situation

The Sidoarjo District Disaster Management Agency quickly brought a field team to the location to understand and collect data on the disaster. After that, the data is analyzed chronologically. Then, the data that has been studied is conveyed to the public through the website and other social media.

2. Weakness

a. The disaster communication process does not adjust to the societal values in each region

The Sidoarjo District Disaster Management Agency conducts disaster communication by adjusting the social values of the Sidoarjo community. There is no difference in the communication process in each area of Sidoarjo.

b. Lack of disaster support facilities

The facilities owned by the Sidoarjo District Disaster Management Agency are based on disasters often occurring in Sidoarjo, namely hydrometeorological disasters and fires. Disaster support facilities at the Sidoarjo District Disaster Management Agency are still limited, including those for fires. The number of fire posts is also limited.

c. Lack of building togetherness with the community

The Sidoarjo District Disaster Management Agency is not well known by the people of Sidoarjo. The Sidoarjo District Disaster Management Agency Sidoarjo activities are monotonous and do not include the community as a participant's activities.

d. Does not involve communication specialists

The Sidoarjo District Disaster Management Agency does not have a communications specialist. Each field implements work programs in the Sidoarjo District Disaster Management Agency. So, the disaster communication process is less effective.

3. Opportunity

a. Rapid development of the internet and social media

The Sidoarjo District Disaster Management Agency utilizes the rapid development of the internet and social media to deliver disaster information to the community in Sidoarjo. The Sidoarjo community can receive information through the Sidoarjo District Disaster Management Agency's website or Instagram. The Sidoarjo District Disaster Management Agency also stores data on plans, programs, performance progress, and others on the website.

b. Other media help disseminate information to the public

Other media also helped the Sidoarjo District Disaster Management Agency convey information about disaster events. The mass media approached the Sidoarjo District Disaster Management Agency to cover the disaster.

c. Support from government agencies

The government provides support through a budget that can be used for the Sidoarjo District Disaster Management Agency program. The Sidoarjo district government held a webinar to broaden the knowledge of Sidoarjo District Disaster Management Agency employees. The Public Works Office also assists the Sidoarjo District Disaster Management Agency regulate drainage flow to prevent flooding.

4. Threat

a. Different values in the Sidoarjo community.

Values in Sidoarjo society vary from region to region, and this difference is a problem that must be considered. To communicate well, the Sidoarjo District Disaster Management Agency must adjust to the values of the people in each region.

b. Potential for annual hydrometeorological disasters and fires.

The potential for disasters that occur every year is a threat to the Sidoarjo Regency Regional Disaster Management Agency to always be ready in any condition. Disasters that cannot be predicted require the Sidoarjo District Disaster Management Agency to plan for prevention, handling during disasters, and post-disaster recovery.

c. Lack of community knowledge and participation.

The Sidoarjo community did not receive disaster knowledge from the Sidoarjo District Disaster Management Agency. Representatives of village government officials

attended the socialization conducted by the Sidoarjo District Disaster Management Agency. So that ordinary people do not participate directly and actively, the SWOT matrix was used to design the Agency's disaster communication strategy Sidoarjo Regency Regional Disaster Management by combining strength and weakness components with external opportunities and threats. From the SWOT matrix above, the disaster communication strategy is as follows:

SO strategy

- 1) Perform services and provide information through Internet media, social media, and other mass media accurately and precisely

The Sidoarjo Regency Regional Disaster Management Agency can provide services and information utilizing the internet and social media. The internet connection in Sidoarjo is fast and stable enough for the community to use. The Sidoarjo District Disaster Management Agency provides information about disasters through social media such as Instagram and the website. As a particular disaster agency, the Sidoarjo District Disaster Management Agency reports on activities or programs carried out, weather forecasts, potential disasters, and others.

- 2) Organize training for employees and the Sidoarjo community regularly. Responsiveness and speed in disasters are needed. Therefore, it is necessary to prepare for disasters for the Sidoarjo District Disaster Management Agency employees and the Sidoarjo community. The Sidoarjo District Disaster Management Agency conducts regular training for employees and volunteers to increase disaster management capacity. In addition, the Sidoarjo District Disaster Management Agency has a socialization, communication, information, and education program for the community that local village officials attend. Sidoarjo District Disaster Management Agency.

WO Strategy

- 1) Use social media or other internet media to learn about the values of the people in each region of Sidoarjo (survey) and plan the communication process with specialist communication knowledge.

Social media is one of the media that helps provide disaster information. Community values can organize disaster communication planning in various regions in Sidoarjo. Surveys through social media are an easy way to find out about community values in different areas. In Sidoarjo. The community can receive the communication process by paying attention to community values in various regions of Sidoarjo.

- 2) Making the best use of existing facilities with assistance from government agencies
The equipment at the Sidoarjo Regency Regional Disaster Management Agency is still limited, so it must be utilized as much as possible. The Sidoarjo District Disaster Management Agency can also ask for help from other government agencies to smooth disaster programs. Limited fire stations must also be appropriately utilized to reach fire locations quickly.
- 3) Conduct socialization, education, and introduction of the Disaster Management Agency
Sidoarjo Regency, by cooperating with other media, The Sidoarjo District Disaster Management Agency conducted an interview on a radio station for radio-based socialization.

ST Strategy

- 1) Focus on serving and providing accurate and precise disaster information according to the values of the people of each Sidoarjo region.
Before providing information, the Regional Disaster Management Agency Sidoarjo District must adapt the communication process to the people's values in various areas of Sidoarjo. Adjusting the disaster communication process to community values can help people pay more attention and make the information more accessible for them to understand.
- 2) Improve employee performance and train the community to be able to respond to annual disasters and fires
Training for employees and communities is essential to reduce the impact and casualties of disasters. Improved employee performance can accelerate the effectiveness of the disaster management process both pre-disaster, during disaster, and post-disaster. Community participation is also constructive in the disaster management process. Therefore, training is needed for Sidoarjo District Disaster Management Agency employees and the Sidoarjo community.
- 3) Increasing community sensitization on disaster
Communities need knowledge about disasters because they can occur at any time. Increasing community sensitivity can be done by providing information on disaster-prone areas in Sidoarjo, signs of wind, signs of flooding, and others. In addition, the Sidoarjo District Disaster Management Agency can invite the community to prevent disasters caused by humans. Community sensitivity to disasters will help reduce disaster risk.

WT Strategy

- 1) Plan the communication process by adjusting the values of people in different areas of Sidoarjo

The disaster communication process must be delivered accurately and precisely. To produce effective disaster communication, planning according to community values is necessary. Adjusting to community values can help the disaster communication process be effective and information better received by the local community.

- 2) Maximizing disaster facilities and equipment to prevent or mitigate hydrometeorological and fire disasters

Hydrometeorological disasters occur every year in Sidoarjo, and fire is one of the disasters that must be anticipated. The Sidoarjo District Disaster Management Agency uses existing facilities to prevent disasters. The fire brigade also uses facilities such as fire trucks and transport cars as well as possible to reach the location of the fire.

- 3) Conducting socialization, education, and training with the general public as participants in the Sidoarjo District Disaster Management Agency's programs.

The Sidoarjo District Disaster Management Agency conducted socialization based on communication, information, and education about each village's disaster-prone areas and disaster management methods. The Sidoarjo District Disaster Management Agency also created disaster-resilient villages. Disaster-resilient villages are established for villages whose communities can cope with disasters independently.

Conclusion

Disaster communication has five main foundations that support communication effectiveness: customer focus, leadership commitment, inclusion of communication in planning and operation, situation awareness, and media partnership. The Sidoarjo District Disaster Management Agency has not fulfilled these five main foundations. Disaster communication by the Sidoarjo Regional Disaster Management Agency is as follows:

a. Customer focus

The Sidoarjo District Disaster Management Agency provides disaster information to the community without distinction. However, it does not adjust community values in each region.

b. Leadership commitment

The Sidoarjo District Disaster Management Agency is highly committed to serving and meeting the community's needs. It provides employees with training to develop themselves. In addition, the Agency has facilities to support disaster management. However, the facilities are still limited. The Agency also lacks togetherness with the Sidoarjo community.

c. Inclusion of communication in planning and operation

The Sidoarjo District Disaster Management Agency does not involve communication specialists in planning or operations.

d. Situational awareness

The Sidoarjo District Disaster Management Agency is always on standby to deal with emergencies. The Sidoarjo District Disaster Management Agency collects data through community reports, observations, and field team reports. After obtaining the data, the disaster analysis field analyzes the disaster chronology, impact, losses, and finances. The data that has been analyzed is reported to the chief executive of the Sidoarjo Regency Regional Disaster Management Agency and conveyed to the community.

e. Media partnership

The Sidoarjo District Disaster Management Agency does not work together with other media. Media came to the Regional Disaster Management Agency Sidoarjo Regency to find information related to disasters.

Based on the five main foundations of disaster communication, the Disaster Management Agency Sidoarjo Regency Regional Disaster has not fulfilled the Requirements for communication in planning, operation, and media partnerships. Disaster Management Agency Sidoarjo District does not involve communication specialists. Each Sidoarjo District Disaster Management Agency field plans and carries out programs. In addition, the Sidoarjo District Disaster Management Agency does not cooperate with other media. Disaster communication carried out by the Sidoarjo District Disaster Management Agency is less effective because it has not fulfilled two of the five main elements of disaster communication.

SWOT analysis determines disaster communication strategies to determine strengths, weaknesses, opportunities, and threats. The strengths of the Sidoarjo Regency Regional Disaster Management Agency are its focus on serving and providing accurate and precise information, developing employee performance, and being sensitive to the situation. The weaknesses of the Sidoarjo District Disaster Management Agency are that it does not involve communication specialists, the communication process does not equalize the background of the intended village, it lacks facilities, and it lacks togetherness with the

community. Opportunities for the Sidoarjo District Disaster Management Agency include the internet and advanced social media, support from other government agencies, and other media that help disseminate information. Meanwhile, the threats faced by the Sidoarjo District Disaster Management Agency are the potential for hydrometeorological disasters and fires that often occur, different community values, and people who lack knowledge about disasters.

Based on the results of the SWOT analysis above, it can be concluded that the disaster communication strategy of the Sidoarjo Regency Regional Disaster Management Agency is as follows:

- a. The Sidoarjo District Disaster Management Agency provides services and information through the Internet, social media, and other mass media accurately and precisely;
- b. Conduct training for staff and the Sidoarjo community regularly;
- c. Find out about community values in each Sidoarjo area using social media or other internet media (survey) and plan the communication process according to community values in each Sidoarjo area;
- d. Focus on serving and providing accurate and precise disaster information according to the community values of each Sidoarjo region;
- e. Maximize disaster facilities and equipment to prevent or mitigate hydrometeorological and fire disasters;
- f. Conducting socialization, education, and training with the general public of Sidoarjo as program participants.

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