Inclusive Communication in Disaster Management: A Systematic Literature Study of BPBD's Strategy in Facing Floods

Muhammad Hilmy Aziz
Communications Science, Universitas Negeri Surabaya
muhammadaziz@unesa.ac.id

ABSTRACT

Floods are the most frequent natural disaster in Indonesia, having a significant impact on people's lives. In this context, effective communication strategies from local governments are crucial to enhancing preparedness and expediting disaster response. This study examines the communication strategies employed by the Regional Disaster Management Agency (BPBD) in flood mitigation and response efforts in Indonesia, utilizing a Systematic Literature Review (SLR) approach. Based on a review of six scientific articles that followed the PRISMA method, it was found that the BPBD's primary strategies for disseminating disaster information include the use of social media, online applications, and disaster management information systems. This strategy is multi-platform and interactive, enabling the rapid dissemination of information and fostering public participation. However, the effectiveness of this strategy is hampered by challenges such as low digital literacy, limited technological infrastructure, and limited public participation in disaster simulations. Therefore, this study recommends a more inclusive and adaptive communication strategy through the integration of digital and conventional media, increased disaster education, and cross-sector collaboration to build a resilient and sustainable disaster communication system.

Keywords: *BPBD, Communication Strategy, Digital Literacy, Disaster Mitigation, PRISMA*

INTRODUCTION

Indonesia's geological location lies at the confluence of three major tectonic plates: the Indo-Australian Plate, the Eurasian Plate, and the Pacific Plate (the Pacific Ring of Fire). The collision of these plates in Indonesia has formed a series of mountains, some of which are volcanoes, along the islands of Sumatra, Java, and Nusa Tenggara (Wulandari, 2021). The impact of this geological condition in Indonesia naturally gives rise to earthquakes. Earthquakes, tsunamis, and volcanic eruptions are examples of natural disasters in Indonesia. Natural disasters are events that no one can avoid. They are initially caused by events that occur in nature without human intervention, either slowly or drastically (Ammelia et al., 2022). Beyond natural factors, humans can also cause natural disasters, such as illegal logging, floods, and landslides.

According to the Indonesian Disaster Data Geoportal, the number of disasters in Indonesia between January 1 and June 3, 2025, shows that there were 1,211 natural disasters. Of these, flooding is the most frequent disaster, with a total of 800 incidents

(Esri, 2025). This data demonstrates that flooding is a frequent natural disaster in Indonesia.

Flooding is a phenomenon where water overflows on normally dry land. Flooding is typically caused by heavy rainfall, snowmelt, water retention, topography, drainage, or other issues that prevent water from being quickly absorbed by the soil or channeled through existing waterways (Dino, 2023). Citing the Indonesian Disaster Data Geoportal, flood-prone areas in Indonesia are East Java, Central Java, and West Java (January 1–June 3, 2025).

Flooding undoubtedly has several impacts, particularly on the local economy. It damages homes, damages farmers' crops and livestock, and disrupts traders' livelihoods. It causes traffic jams, damages public facilities, and disrupts other community activities (Rosyidah, 2022). In the context of flood disaster management, an appropriate and structured communication strategy from the Regional Disaster Management Agency (BPBD) plays a crucial role in mitigation efforts. By disseminating information quickly, accurately, and easily understood, BPBD can increase public preparedness, reduce the risk of loss of life, and minimize the impact of flood damage.

The government must be able to provide appropriate flood management, not only during an event but also during the pre-disaster and post-disaster phases. One successful government response is the Regional Disaster Management Agency (BPBD) of Pati Regency, which has successfully met several indicators of its flood mitigation strategy. This includes mapping and analyzing disaster risks, conducting community outreach, and coordinating between agencies. This mapping and risk analysis have been conducted comprehensively using data from geographic information systems (GIS) to identify flood-prone areas and have been strengthened by the establishment of Disaster Resilient Villages (Destana) and Disaster Resilient Communities (Mastana). Furthermore, the Regional Disaster Management Agency (BPBD) focuses on education and community outreach through the Communication, Information, and Education (KIE) and Disaster Safety Education Unit (SPAB) programs (Nisa, 2025).

Although communication strategies have been designed, not all BPBDs can implement them optimally. Three factors contribute to this: a lack of human resources, a lack of funding, and a lack of public awareness of the dangers of flooding. In flood disaster management efforts, the communication strategy of the Regional Disaster Management Agency (BPBD) is key to the mitigation phase. By providing timely, accurate, and easily understood information, BPBDs can increase community preparedness and minimize the risk of casualties and damage (Trisatio, 2022).

From a communication strategy perspective, research in Lepo-Lepo Village, Kendari, shows that environmental communication through information exchange and education has not fully increased public awareness and participation. Many residents have not implemented the information provided, and local wisdom regarding environmental protection has begun to fade due to cultural mixing and a lack of inherited cultural heritage. Soft power approaches, including outreach and education,

have proven ineffective in altering public attitudes. In contrast, hard power approaches, such as constructing reservoirs and drainage systems, have had a positive impact. Furthermore, the diversity of ethnicities and cultures presents a challenge in disaster mitigation communication. The information conveyed is not always received or understood equally, thus hampering public awareness and preparedness for flooding (Ode Ahmad et al., 2024). Furthermore, research in Serang Regency indicates that the availability of evacuation equipment, print media, and online media are important factors in flood risk reduction communication. However, limited tools and media can hinder effective message delivery, especially in remote areas or areas with limited technological access (Laras Kristanti, 2018).

Floods, as the most frequent natural disaster in Indonesia, require not only technical but also strategic communication, particularly inclusive communication. The Regional Disaster Management Agency (BPBD) plays a central role in disseminating information, raising public awareness, and coordinating mitigation measures for all levels of society, including vulnerable groups such as the elderly, people with disabilities, women, and children. However, in practice, the communication strategies implemented still face various obstacles, ranging from limited resources, cultural differences, low public participation, and unequal access to information in flood-prone areas. This situation raises important questions: what form the BPBD implements inclusive communication strategies in response to flood disasters in Indonesia, what challenges are faced in their implementation, and to what extent these strategies can increase public awareness and preparedness for the threat of flooding.

Based on these issues, this study aims to systematically review the literature related to inclusive communication strategies implemented by BPBDs in response to flood disasters in Indonesia. The specific objectives of this study include identifying the forms and practices of inclusive communication strategies used by the Regional Disaster Management Agency (BPBD), analyzing the obstacles encountered in their implementation, and evaluating the effectiveness of these strategies in increasing public awareness and preparedness, particularly among vulnerable groups. The study's findings are expected to provide a comprehensive understanding that serves as a basis for strengthening inclusive disaster communication policies and practices at the regional level.

THEORICAL FRAMEWORK

John Dewey's Inclusive Communication

John Dewey viewed communication as a participatory social process in which every individual has equal rights and opportunities to engage in the exchange of information to achieve shared understanding (Jannah et al., 2025). Within the framework of inclusive communication theory, inspired by Dewey's thinking, communication is not merely viewed as a one-way message delivery, but also as a mechanism for building connectedness and collective awareness among community members (Andamisari & Ronda, 2024; Grunig, 2023). In the context of flooding, this approach requires that

every citizen, including vulnerable groups such as the elderly, people with disabilities, women, children, and those with limited literacy, have equal access to early warning information, evacuation procedures, and safety guidance. Its implementation requires a diversification of communication channels, ranging from digital media, local radio broadcasts, loudspeakers in places of worship, to information visualizations in the form of simple maps or infographics. Thus, Dewey's inclusive communication ensures that disaster messages are not only conveyed but also understood and responded to appropriately by all levels of society, thus strengthening collective capacity in flood risk mitigation.

W. Timothy Coombs' Situational Crisis Communication Theory (SCCT)

The Situational Crisis Communication Theory (SCCT), developed by W. Timothy Coombs, emphasizes that crisis communication strategies must be tailored to the characteristics of the crisis and public perceptions of organizational responsibility (Coombs, 2017; Coombs, 2022). Within this theoretical framework, floods fall into the victim cluster category, meaning crises caused by external factors beyond the organization's control, resulting in relatively low attribution of blame to institutions such as the Regional Disaster Management Agency (BPBD). However, Coombs emphasized that even though direct responsibility for a disaster is minimal, the speed and accuracy of information dissemination remain key factors in shaping public perceptions of an institution's performance (Coombs & Tachkova, 2023; Kronewald & Rademacher, 2022). In the context of flooding, the Regional Disaster Management Agency (BPBD) is required to respond quickly by providing early warnings, field situation updates, and clear evacuation instructions. Delays or inaccuracies in information can shift public perception from empathy to distrust, ultimately undermining the institution's legitimacy. Therefore, implementing SCCT in flood management requires the BPBD to establish a responsive, transparent, and consistent communication system to maintain public trust while minimizing the negative impacts of disasters.

Everett M. Rogers' Diffusion of Innovation Theory

Everett M. Rogers' Diffusion of Innovation Theory explains how new ideas, technologies, or practices spread and are adopted by individuals or groups within a social system (Sandoval-Almazán & Valle-Cruz, 2016). Rogers divides the innovation adoption process into five stages: knowledge, persuasion, decision, implementation, and confirmation, which are influenced by factors such as the innovation's characteristics, communication channels, time, and the community's social structure (Saidah et al., 2022; Sutisna et al., 2022). In the context of flood mitigation, the use of information technology, social media, and early warning applications is a crucial innovation for disaster-prone areas. The successful adoption of these technologies depends on ease of access, perceived benefits, and compatibility with local needs. In flood-prone areas, the diffusion process can be accelerated through the role of change agents such as the Regional Disaster Management Agency (BPBD), community leaders, and volunteers who actively promote the use of early warning applications and guide

the community in their operation. Social media can serve as an effective communication channel for disseminating information quickly, while early warning applications provide real-time data that enables residents to take mitigation measures earlier. Referring to Rogers' theory, accelerating the adoption of these technologies not only improves individual preparedness but also creates a more adaptive and collaborative disaster response ecosystem at the community level.

Cohen and Uphoff's Community Participation Theory

The Community Participation Theory, developed by Cohen and Uphoff, views participation as the active involvement of citizens in all stages of a development program or public problem-solving effort, from decision-making and implementation to utilization of results and evaluation (Anindia et al., 2023; Sapitri et al., 2024). This participation can take the form of contributions of ideas, workforce, resources, or involvement in social networks that support the program's success (Kusmayadi et al., 2024; Siregar et al., 2017). In the context of flood mitigation, active community involvement not only improves technical knowledge and skills but also strengthens a sense of ownership of the mitigation efforts. Communities that are routinely involved in mitigation planning, evacuation simulations, and the dissemination of disaster information will have a higher level of preparedness and the ability to respond quickly to evacuation instructions. Cohen and Uphoff emphasize that successful participation is also influenced by a reciprocal relationship of mutual trust between the community, government, and relevant institutions (Hemmer, 2015). Therefore, applying this theory in the context of flooding encourages solid collaboration, where residents are not merely recipients of information but also active participants in determining disaster preparedness and response strategies in their area.

Peter M. Sandman's Risk Communication Theory

Peter M. Sandman's Risk Communication Theory emphasizes that risk is not only an objective hazard, but also a subjective public outrage (Sandman, 2017; Sandman, 2020). According to Sandman, the effectiveness of risk communication lies in the ability to convey information transparently and in a manner accessible to all parties, so that the public can understand the level of threat and take appropriate action (Weinstein et al., 2020; Mulder & Van Rijswoud, 2020). In the context of flooding, applying this theory means that the Regional Disaster Management Agency (BPBD) and related parties must provide early warning information, maps of affected areas, and evacuation procedures in accurate yet straightforward language, using communication channels relevant to the local community. Transparency is key to avoiding public distrust, while accessibility ensures that all levels of society, including vulnerable groups, receive the same messages. By reducing the information gap, the Sandman theory helps reduce community vulnerability to flooding because citizens can make quick and informed decisions based on credible and easily accessible information.

METHODS

The author's research method employed literature review as the primary approach in collecting, analyzing, and synthesizing various previous studies relevant to the topic of local government communication strategies in flood mitigation and response. This literature review was chosen because it provides a comprehensive understanding of the development of existing theories, concepts, and empirical findings, thereby strengthening the conceptual and analytical foundations of this study. A literature review is a scientific research method that involves searching, reviewing, and analyzing credible scientific reference sources relevant to the research topic (Kurniati & Jailani, 2023). This activity aims to trace previous studies or research to understand the development of current and reliable scientific knowledge and paradigms (Agung & Zarah, 2016). Data for this study were obtained through a search of various scientific sources, such as national and international journals, articles in proceedings, books, and other academic publications accessible online through databases like Google Scholar.

This study employed a systematic literature review (SLR). A literature review (SLR) is a type of literature review that collects and critically analyzes various research studies or papers through a systematic process and aims to provide a comprehensive summary of the available literature relevant to the research question (Cruz-Benito, 2016). The SLR literature review procedure here uses the PRISMA model (review analysis or meta-analysis). The author has also established several inclusion and exclusion criteria. Both criteria are listed in Table 1 below.

Table 1.1 Article Criteria and Description

Criterion	Description
Inclusion	1. The articles used must be published in 2025. 2. They must be published in scientific journals and sourced from the Google Scholar database. 3. They must contain relevant keywords, including communication strategies, floods, disaster mitigation, and BPBD (at least three keywords). 4. The articles must be from reliable sources.
Exclusion	1. Articles published before 2025 will not be used. 2. Articles in the form of books and final assignments (thesis, dissertation, or other). 3. Articles containing only one keyword. 4. Articles from unreliable sources.

The PRISMA model has four stages: identification, screening, eligibility, and conclusion drawing analysis (Martin et al., 2024). Further explanation is provided in the systematic literature review diagram in Figure 1.

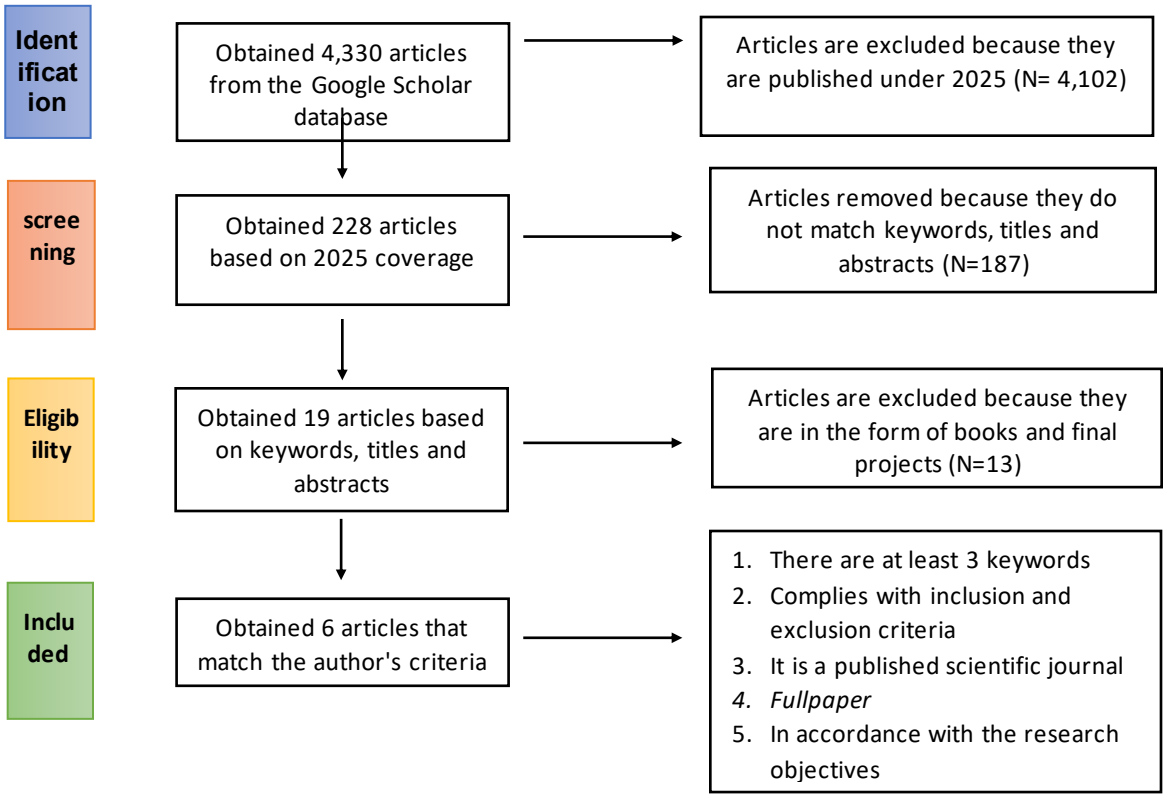

Figure 1.1 Systematic Literature Review Diagram with PRISMA Model
(Source: Researcher Data Processing)

RESULT AND DISCUSSION

Based on the PRISMA model, the authors identified six relevant articles that can be used as references. The primary focus of the discussion covers the communication forms and approaches used, the challenges faced in their implementation, and the extent to which these strategies have been able to increase public awareness and preparedness for disasters. By integrating findings from various geographic contexts and diverse technological approaches, this discussion aims to provide a comprehensive understanding of the effectiveness of disaster communication in Indonesia and evaluate aspects that need to be strengthened to create a more responsive and inclusive disaster management system. The following table lists the six journals used as references:

Table 1.2 Article Search Results

NO.	Title	Method	Result of Research
1	Lubis et al., 2025	Qualitative	BNPB effectively leverages Instagram as the primary platform for disaster education and mitigation, by quickly disseminating information through visual content such as photos, videos, and infographics, as

NO.	Title	Method	Result of Research
			well as leveraging interactive features such as Stories, Live, comment columns, and polls that encourage active community engagement. Hashtag-based campaigns such as #SiapBencana have succeeded in expanding the reach of information while increasing public participation in disaster mitigation efforts. However, the challenges of digital literacy and limited internet access in remote areas are still obstacles that need to be overcome through digital training and collaboration with internet service providers. With its visual superiority and high level of interactivity, Instagram has proven to be an effective means of accelerating information delivery and building people's collective preparedness in the face of disasters.
2	Nursanti et al., 2025	Qualitative	Research shows that BNPB's communication strategy during earthquake disasters in Sulawesi, particularly through mobile applications such as Disaster Map and Disaster Preparedness, has proven to be effective in disseminating information quickly and accurately, with more than 70% of respondents admitting to receiving important information through the application. However, limited internet access in remote areas hinders the reach of information to the entire community, so alternative communication channels such as radio or live announcements are needed. The speed of information delivery is proving crucial in improving preparedness and reducing the risk of casualties, while confusion due to misinformation from various sources is a challenge that must be overcome through official and trusted channels. Overall, although BNPB has made significant efforts in crisis communication, there is still a need to develop a more inclusive and sustainable strategy so that all levels of society can access important information and be optimally protected from future catastrophic impacts.
3	Lahi & Surdani, 2025	Qualitative	This research shows that the Makassar City Government has made various efforts to improve disaster resilience through effective disaster risk communication, especially in dealing with floods. These efforts include the dissemination of information in real-time through digital media such as social media and the official website of BPBD, the use

NO.	Title	Method	Result of Research
			of technology such as GIS for flood prediction, and education and socialization of disaster mitigation to the public. The Early Warning System is also used through SMS and sirens to speed up the delivery of information in the affected areas. In addition, collaboration between systems such as BPBD, Diskominfo, and BMKG strengthens the coordination of information delivery. However, challenges such as limited access to technology in remote areas and fragmentation of information remain obstacles that slow community response and preparedness. This approach is in line with risk communication theory which emphasizes the importance of credible, timely and able information to influence people's behavior to be better prepared to face disasters.
4	Siaga et al., 2025	Qualitative	This study uses a postpositivistic qualitative approach with an interpretive method, focusing on the understanding and meaning of data obtained through an open questionnaire to 35 respondents in Rawas Ulu District. The results showed that most communities (88%) are aware of flood vulnerability in their area and have a great need for disaster mitigation training, especially information technology-based ones. However, the level of community involvement in training or simulation is still low (35%), with the main obstacles being limited internet access (44%) and lack of digital knowledge (41%). As many as 62% of respondents have used online applications to obtain weather information, and 72% are actively sharing flood information on social media, indicating the great potential of using technology to improve preparedness. However, digital literacy is still a challenge, where only 17% of respondents are able to distinguish true information from hoaxes. Overall, these findings underscore the importance of information technology training, digital infrastructure improvement, and the implementation of comprehensive mitigation strategies to strengthen community preparedness for floods.
5	Ramadan et al., 2025	Descriptive Qualitative	The Karawang Regency Regional Disaster Management Agency (BPBD) implements a flood management strategy in Karangligar Village through a comprehensive approach that includes the pre-disaster, during the disaster, and post-disaster stages.

NO.	Title	Method	Result of Research
			In the pre-disaster stage, BPBD conducted socialization, training, and the installation of an early warning system, although its effectiveness was still limited. When floods occur, BPBD acts as the main coordinator of evacuation, establishes evacuation posts, and distributes aid with the support of the TNI, Polri, and volunteers. In the post-disaster stage, the focus is directed to infrastructure rehabilitation and the recovery of community conditions through cooperation with related agencies. Long-term efforts such as dam construction and river normalization are also being implemented as permanent solutions, although the results have not been fully effective. Routine evaluations continue to be carried out to improve strategies, but geographical challenges and low active community participation remain the main obstacles in realizing an effective and sustainable flood management system.
6	Mareta et al., 2025	Qualitative	The disaster management information system implemented by the Padang City BPBD shows significant progress in increasing the effectiveness of disaster management through the use of digital technology, especially social media and official websites. Social media such as Instagram is used to disseminate information quickly and widely to the public, while the BPBD website provides data, vulnerability maps, evacuation guides, complaint services, and emergency hotlines that help people in critical situations. The Operational Control Center (Pusdalops) plays an important role in coordinating various disaster responses so that they run in a structured and efficient manner. Information system management is carried out by trained officers who not only convey information accurately but also master various digital platforms to present data in an attractive and easy-to-understand manner. However, challenges such as extreme weather, difficult terrain, and communication signal interference often hinder the real-time distribution of information, which can reduce the effectiveness of responses. Therefore,

NO.	Title	Method	Result of Research
			integration with alternative technologies such as radio and satellite communication is an important solution to ensure that information is delivered quickly and on target.

(Source: Researcher Data Processing)

BPBD's communication strategy in handling floods in Indonesia reflects the real application *of the Innovation Diffusion Theory* from Everett Rogers. The use of various digital platforms, such as Instagram, WhatsApp, TikTok, YouTube, as well as the Disaster Maps and Disaster Alerts applications, is a form of innovation that is disseminated to the broader community. The stages of the diffusion process are clear: starting from *knowledge* through the dissemination of digital information, *persuasion* through educational and interactive content, to *decision* and *implementation* when people start using applications for real-time reporting. The role of BPBD and BNPB as *change agents* accelerates adoption by guiding the community, primarily through Pusdalops and the Disaster Management Information System. Ease of access, immediate benefits, and compatibility of this technology with the needs of flood-prone areas are factors for the success of its adoption. As seen in Padang and Makassar, social media and digital sirens facilitate two-way communication and increased preparedness. This is in line with the *confirmation* stage in Rogers' theory, when technology is not only used, but also trusted and part of the community's disaster response system.

However, in its implementation, this communication strategy faced various structural and social challenges. The most striking challenge is limited access to technology and communications infrastructure in remote areas, which leads to information inequality among communities. Several studies have shown that while people in urban areas can quickly access information through digital media, those in rural areas often struggle to receive timely information due to limited internet connections and low digital literacy skills. Furthermore, low participation in disaster training or simulations, as revealed in research in Rawas Ulu District, indicates that the presence of technology does not automatically guarantee community preparedness. Information fragmentation, lack of coordination between agencies, and the dominance of information from unofficial sources exacerbate the situation, creating confusion among communities facing disasters. Therefore, a communication strategy that is not only technology-based but also capable of reaching the community inclusively and comprehensively is still needed.

The communication strategy developed by Indonesia's Regional Disaster Management Agency (BPBD) in response to flood disasters demonstrates a considerable shift toward technological adaptation and community engagement. Based on multiple empirical findings, digital-based initiatives such as the #SiapBencana campaign have succeeded in increasing public disaster awareness, with 72% of residents in Rawas Ulu actively disseminating flood information via social media. From the perspective of Rogers' *Diffusion of Innovation*, this indicates that the public has reached the stages of

knowledge, persuasion, and initial decision in adopting new technologies. However, the transition to the implementation and confirmation stages remains limited, as evidenced by the fact that only 17% of respondents can distinguish between accurate information and misinformation. Thus, a digital preparedness culture is emerging but still lacks critical information literacy.

In addition to diffusion theory, this evolution illustrates that disaster communication cannot rely solely on technological tools without inclusivity. John Dewey's concept of inclusive communication emphasizes participation, equality of access, and mutual understanding among members of society. Although BPBD employs multiple digital platforms, this strategy risks excluding vulnerable groups such as the elderly, people with disabilities, and residents with low digital literacy. Therefore, the integration of digital media with conventional channels such as mosque loudspeakers, local radio, and visual infographics is a fundamental prerequisite for ensuring equitable access to disaster warnings. A Deweyan approach views communication not just as information transfer, but as a shared process of building collective resilience.

From a crisis management standpoint, BPBD's role can also be interpreted using Coombs' *Situational Crisis Communication Theory* (SCCT). Floods fall into the "victim cluster," meaning the organization is not directly blamed for the crisis origins. Nonetheless, SCCT posits that response speed, transparency, and accuracy of information strongly influence public trust. The use of real-time alerts, Pusdalops dashboards, and mobile-based early warning systems demonstrates BPBD's responsiveness, which in many cases has mitigated risk perceptions. Failure to provide consistent and accurate updates, however, may shift public views from empathy to distrust, thereby weakening the organization's legitimacy.

Furthermore, the active participation of residents in spreading flood-related data aligns with *Participation Theory* by Cohen and Uphoff, which advocates for community involvement across planning, implementation, and evaluation phases. Empirical evidence from Karawang, where community training and river normalization are executed through collaboration between BPBD and local stakeholders, indicates that citizens increasingly function not only as receivers of instructions but also as agents of collective mitigation. Nevertheless, community involvement remains primarily in the implementation phase rather than in decision-making processes, suggesting that participatory mechanisms need to be expanded upstream in the policy cycle to enhance a sense of ownership and sustainability.

Finally, using Peter Sandman's *Risk Communication Theory*, the BPBD's approach reflects advancement in communicating both the hazard and emotional components of risk (hazard + outrage). While the hazard aspects (e.g., flood alerts and impact zones) are communicated effectively, the outrage component public fear, uncertainty, and misinformation requires more structured interventions. This includes comprehensive digital literacy programs, simplified messaging, and culturally sensitive information design. Without lowering the outrage component, the reception of risk

messages remains uneven, especially among populations unfamiliar with disaster terminology.

Collectively, these theoretical perspectives suggest that BPBD's communication strategy has evolved toward a more adaptive, collaborative, and technology-based model. However, bridging the digital divide and enhancing inclusive, participatory, and educational communication remain essential for building systemic community resilience. Future strategies must incorporate hybrid communication models, digital literacy enhancement, and community co-production of disaster knowledge to establish a sustainable and inclusive flood risk management system in Indonesia.

However, the implementation of this communication strategy is not yet entirely equitable. Key challenges include limited access to technology in remote areas, low digital literacy, minimal public participation in disaster simulations, and fragmented information. Therefore, a more inclusive and adaptive communication strategy is needed. BPBD needs to strengthen disaster education, especially in areas with limited access to technology, through conventional media such as radio, loudspeakers, and face-to-face meetings. Digital literacy training is also crucial so that the public not only receives information but also can assess and disseminate it responsibly. Collaboration between local governments, local communities, educational institutions, and the media also needs to be strengthened to build a more resilient, participatory, and sustainable disaster communication system. With a holistic and responsive approach, the BPBD's future communication strategy is expected to increase public awareness, preparedness, and resilience in facing flood disasters in Indonesia.

CONCLUSION

The communication strategy carried out by the Regional Disaster Management Agency (BPBD) in dealing with flood disasters in Indonesia shows significant developments, especially in the use of digital technology and data integration through disaster management information systems. Various approaches, such as the dissemination of information through social media, mobile applications, and early warning systems, have increased the reach and speed of information delivery to the public. Some areas, such as Padang City and Makassar, have shown the effectiveness of using this technology in responding to disasters quickly and efficiently.

However, the implementation of this communication strategy is not completely evenly distributed. The main challenges faced include limited access to technology in remote areas, low digital literacy, a lack of community participation in disaster simulations, and the fragmentation of circulating information. For this reason, a more inclusive and adaptive communication strategy is needed. BPBD needs to strengthen disaster education, especially in areas with limited access to technology, through conventional media such as radio, loudspeakers, and face-to-face. Digital literacy training is also important so that people not only receive information but also be able to assess and disseminate it responsibly. Collaboration between local governments, local communities, educational institutions, and the media also needs to be improved to build a more resilient, participatory, and sustainable disaster communication system.

With a holistic and responsive approach, BPBD's communication strategy in the future is expected to increase public awareness, preparedness, and resilience in dealing with flood disasters in Indonesia.

REFERENCES

Agung, W. K., & Zarah, P. (2016). *Metode Penelitian Kuantitatif*. Yogyakarta: Pandiva Buku.

Ammelia, I., Lestari, D. S., Al Ghazy, G. T., & Wibowo, Y. A. (2022). Integrasi Materi Kebencanaan Pada Jenjang Sekolah Dasar Di Kecamatan Ngargoyoso, Jawa Tengah. *Indonesian Journal of Environment and Disaster*, 1(1), 60–72.

Andamisari, D., & Ronda, M. (2024). Interpersonal Communication Between Teachers and Parents in Experience-Based Education at Elementary School. *International Journal of Environmental, Sustainability, and Social Science*, *5*(6), 2003-2008.

Anindia, R., Warsono, H., & Santoso, R. S. (2023). Partisipasi Masyarakat Dalam Kepemilikan Kartu Identitas Anak (KIA) Studi Kasus Kecamatan Boja Kabupaten Kendal. *Journal of Public Policy and Management Review*, *12*(4), 246-263.

Coombs, W. T. (2017). Revising situational crisis communication theory: The influences of social media on crisis communication theory and practice. In *social media and crisis communication* (pp. 21-37). Routledge.

Coombs, W. T. (2022). Situational crisis communication theory (SCCT) refining and clarifying a cognitive-based theory of crisis communication. *The handbook of crisis communication*, 193-204.

Coombs, W. T., & Tachkova, E. R. (2023). Integrating moral outrage in situational crisis communication theory: A triadic appraisal model for crises. *Management Communication Quarterly*, *37*(4), 798-820.

Cruz-Benito, J. (2016). *Systematic literature review & mapping*.

Dino. (2023, October 13). *Banjir: Pengertian, Penyebab, dan Dampaknya*. BPDB Jawa Timur.

Esri. (2025). *Geoportal Data Bencana Indonesia*.

Grunig, J. E. (2023). Public relations, social inclusion, and social exclusion. *Journalism & Communication Monographs*, *25*(2), 90-108.

Hemmer, H. R. (2015). A Participatory Approach. *Währung und wirtschaftliche Entwicklung*, *505*, 331.

Jannah, A. R., Riyadi, A. R., & Maulidah, N. (2025). Membangun Hubungan Sekolah-Rumah Terhadap Keterampilan Berbicara Siswa Sekolah Dasar: Kajian Literatur. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, *10*(2), 406-417.

Kronewald, E., & Rademacher, L. (2022). Protecting organization reputations during a crisis: the development and application of situational crisis communication theory: von W. Timothy Coombs (2007). In *Schlüsselwerke: Theorien (in) der Kommunikationswissenschaft* (pp. 251-265). Wiesbaden: Springer Fachmedien Wiesbaden.

Kurniati, D., & Jailani, M. S. (2023). Kajian Literatur: Referensi Kunci, State of Art, Keterbaruan Penelitian (Novelty). *QOSIM: Jurnal Pendidikan, Sosial & Humaniora*, 1(1), 1–6.

Kusmayadi, R. C. R., Weni, I. M., & Jatmikowati, S. H. (2024). Community Participation in Village Development: Social Reality Study in the Village Development Process in Wandanpuro Village, Bululawang District, Malang Regency. *International Journal of Research in Social Science and Humanities (IJRSS) ISSN: 2582-6220, DOI: 10.47505/IJRSS*, *5*(6), 124-145.

Lahi, B., & Surdani, M. (2025). Komunikasi Risiko Bencana: Mendukung Ketahanan Bencana Banjir di Kota Makassar. *Jurnal Ilmu Komunikasi UHO*, 10(1).

Laras Kristanti, L. (2018). Komunikasi Pengurangan Risiko Bencana Banjir di Kabupaten Serang. http://jurnal.untirta.ac.id/index.php/JRKom

Lubis, Z. N. S., Rahmawati, S., & Faisal, F. Hh. (2025). Peran Media Sosial dalam Edukasi dan Mitigasi Bencana di Era Digital. *Warta Dharmawangsa*, 19(1), 23–33. https://doi.org/10.46576/wdw.v19i1.5683

Mareta, D., Amanda, A., Hakim, A., & Hanoselina, Y. (2025). Analisis Bentuk Komunikasi Digital di bidang Kedaruratan dan Logistik Badan Penanggulangan Bencana Daerah Kota Padang. *JIIC*, 2(5).

Martin, R. A., Noviekayati, I. G. A. A., & Muhid, A. (2024). Meningkatkan Resiliensi Remaja Penyintas Bencana Alam Melalui Konseling Kelompok: Kajian Literatur Sistematis. *Jurnal Bimbingan dan Konseling Ar-Rahman*, 10(2), 307. https://doi.org/10.31602/jbkr.v10i2.16960

Mulder, H., & van Rijswoud, E. (2020). Risk communication. In *Science Communication: An Introduction* (pp. 145-173).

Nisa, K. (2025). Strategi Mitigasi Bencana Oleh Badan Penanggulangan Bencana Daerah (BPBD) dalam Upaya Menanggulangi Banjir di Kabupaten Pati. *Journal of Politics and Government Studies*, 14(2), 1437–1452.

Nursanti, S., Yuhdi, N., & Kayanti, E. (2025). Studi Efektivitas Komunikasi Krisis dalam Penanggulangan Bencana Alam di Indonesia. *Jurnal Penelitian Komunikasi Dan Sosialisasi*, 1(1).

Ode Ahmad, L., Larisu, Z., Jaya, A., Halu Oleo Kampus Hijau Bumi Tridharma Anduonohu, U., Hea Mokodompit, J., Kambu, K., & Kendari, K. (2024). Strategi Komunikasi Lingkungan dalam Mitigasi Risiko Banjir: Studi Kasus di Sungai Wanggu, Kendari. *Jurnal Ilmu Komunikasi Dan Media*, 1(2), 209–2017.

Ramadan, A., Royhatin, T., & Yamardi. (2025). Strategi Badan Penganggulangan Bencana Daerah dalam Penanggulangan Banjir di Desa Karangligar Kecamatan Telukjambe Barat Kabupaten Karawang. *Jurnal Praxis Idealis*, 2(1).

Rosyidah, E. A. (2022). Dampak; Banjir; Perekonomian Mas Dampak dari Banjir Terhadap Ekonomi dan Aktivitas Masyarakat Kota Surabaya (studi kasus Kelurahan Ketintang, Kota Surabaya). *Journal Economics and Strategy*, 3(1), 93–102. https://doi.org/10.36490/jes.v2i2.304

Saidah, M., Trianutami, H., & Amani, F. S. (2022). Difusi Inovasi Program Digital Payment di Desa Kanekes Baduy. *Communicology: Jurnal Ilmu Komunikasi*, *10*(2), 138-153.

Sandman, P. M. (2017). *Environmental risk and the press*. Routledge.

Sandman, P. M. (2020). COMMENTARY: Public health's share of the blame: US COVID-19 risk communication failures. *Center for Infectious Disease and Research Policy News and Perspective.* University of Minnesota.

Sandoval-Almazán, R., & Valle-Cruz, D. (2016). Social Media in Local Governments in Mexico: A Diffusion Innovation Trend and Lessons. In *Social Media and Local Governments: Theory and Practice* (pp. 95-112). Cham: Springer International Publishing.

Sapitri, E., Isabella, I., & Febriyanti, D. (2024). Partisipasi Siswa Dalam Pelaksanaan Program Adiwiyata Dalam Membentuk Karakter Siswa Green School Islamic. *J-CEKI: Jurnal Cendekia Ilmiah*, *3*(6), 8630-8644.

Siaga, D., Berbasis, B., Sebagai, M., Dalam, U., Bencana, M., Kecamatan, D., Ulu, R., Musirawas, K., Fenny Purwani, U., Nopriani, F., & Yudiani, E. (2025). Desa Siaga Banjir Berbasis Masyarakat Sebagai Upaya Dalam *Mitigasi Bencanadi Kecamatan Rawas Ulu Kabupaten Musirawas Utara* (Vol. 6, Issue 1).

Siregar, H. D., Nasution, M. A., & Kusmanto, H. (2017, December). The Effects of Making Decision and Implementation to Community Participation in The Use Village Fund Allocation in Deli Serdang District. In *2nd International Conference on Social and Political Development (ICOSOP 2017)* (pp. 249-258). Atlantis Press.

Sutisna, N., Muhaemin, M., & Ramadhan, A. (2022). Difusi inovasi aplikasi siputeri dalam meningkatkan pelayanan informasi publik di pemerintah Kabupaten Pandeglang. *Jurnal Ilmu Politik dan Pemerintahan*, *8*(2).

Trisatio, C. (2022). *Peran Badan Penanggulangan Bencana pada Tahap Pra Bencana Banjir di Kabupaten Aceh Barat Provinsi Aceh*. Asdaf Kabupaten Aceh Barat.

Weinstein, N. D., Sandman, P. M., & Blalock, S. J. (2020). The precaution adoption process model. *The Wiley encyclopedia of health psychology*, 495-506.

Wulandari, T. (2021, August 4). *Kondisi Geologis Indonesia: Pengertian, Penjelasan, dan Dampaknya*. Detik.Com.