

Media Redundancy and Crisis Communication Resilience in Rural Communities: Community Radio Practices in Cisewu, Indonesia

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Abstract. Communication networks and systems in rural areas often experience obstacles, especially during times of crisis due to disasters due to infrastructure damage and other disruptions that result in limited communication and information channels. This study aims to reveal how community radio contributes to the communication resilience system in facing crises in rural areas. The community radio referred to in this study is the RaSi FM Community Radio in Cisewu Village, Garut Regency, West Java, Indonesia. This research is a qualitative study using a case study approach. Researchers obtained data through in-depth interviews involving community radio managers and local residents and participant observation. The data analyzed included interview results, broadcast content, and other data deemed relevant to the study. The research findings indicate that community radio can function as an alternative communication channel that can replace other communication tools that experience obstacles and disruptions such as internet connections, telecommunication network interruptions, especially during crises such as natural disasters. Community radio provides verifiable information about the current conditions for both the surrounding community and those still within the limited service coverage area. In addition to the information provided, the presence of community radio encourages social coordination within the community and produces a collective response to various potential risks that may arise. These findings suggest that redundancy through community media can strengthen communication resilience in rural crisis systems.

Keywords: Redundancy, Communication Resilience, Community Radio, Rural Crisis Communication, Indonesia.

1 Introduction

The development of information technology has shaped the flow and form of global communication through platformization, datafication, and algorithm-based governance through digital communication transformation [1]. Currently, digital communi-

cation transformation has centered on digital platforms that regulate the flow of information, often considered the primary medium for obtaining information in public communication, forming opinions, and coordinating in emergencies [2].

However, digital media cannot always be used as the primary means of disseminating information during a crisis, particularly in areas vulnerable to communication disruptions due to damage to physical infrastructure, such as power outages, telecommunications network disruptions, and internet access. This can also disrupt the flow of information, which is considered crucial in emergency situations [3], [4]. Therefore, to maintain the flow of information, alternative media that is accessible to all groups, especially in areas affected by crises and disasters, is urgently needed.

In this situation, the concept of communication resilience is relevant for exploring and understanding how communication systems can continue to function and adapt under disrupted conditions [4], [5], [6]. Communication resilience is not only related to technical aspects but also encompasses various social dimensions such as trust, participation, and collective community capacity [4]. Building communication resilience during a crisis can utilize various existing media and communication channels to complement or replace each other as sources of information when the communication system experiences problems. This concept of complementarity or substitution of media functions is known as media redundancy, where various existing communication channels can complement or replace each other [7]. Media redundancy is often associated with the integration of various digital platforms, such as social media and internet-based applications, which enable faster and broader information distribution [3], [8], [9], [10], [11]. The concept of redundancy, which involves digital media, cannot be implemented effectively in areas with limited access to technology, such as rural areas [3], [11], [12].

In rural communities, especially those experiencing difficulties and limited internet access, digital media cannot be considered the primary medium. However, community media, such as community radio, can be a strategic medium for delivering information, especially when telecommunications and internet networks are disrupted due to disasters. Community radio has unique characteristics, including being locally based, participatory, and oriented towards the information needs of local communities [13], [14], [15], [16].

Unlike mainstream media, community radio functions not only as a channel for information distribution but also as a space for social interaction that strengthens community cohesion. The social interaction created by community radio is a result of closeness and a sense of belonging that transcends its informational value. In crisis situations, this function becomes crucial because it enables more effective and rapid social coordination and collective response [17], [18], [19], [20], [21], [22].

Several previous studies have shown that the presence of community radio in crisis and emergency situations can serve as an alternative communication media infrastructure, particularly when other media are disrupted [23], [24]. However, these studies are still descriptive in nature and have not directly explored and linked the role of community radio to the concepts of media redundancy and communication resilience within an integrated theoretical framework. To understand how communication systems can continue to function adaptively during a crisis, it is necessary to integrate the

concepts of media redundancy and communication resilience. However, there is still a gap in the literature regarding how community-based media redundancy mechanisms operate, particularly in rural areas, as previous studies have focused on urban areas and high-tech communication systems.

Despite the growing literature on crisis communication and community resilience, there remains a critical need to examine how communication systems operate in contexts characterized by limited infrastructure and digital inequality. Rural areas like Cisewu represent environments where communication disruptions can be recurring rather than exceptional, particularly during natural disasters.

Conceptually, this study identifies three key gaps: (1) the dominance of urban and digital-centric perspectives in crisis communication studies; (2) a limited understanding of media redundancy as a social practice; and (3) a lack of integration between communication resilience, redundancy, and community-based media. This study aims to fill these gaps by examining community radio practices in building crisis communication resilience in rural areas. Specifically, this research focuses on RaSi FM Community Radio in Cisewu Village, Garut Regency, West Java, Indonesia. This area was chosen due to its relatively remote geographical characteristics and vulnerability to communication infrastructure disruptions, making it relevant for exploring the role of alternative media in crisis situations.

Based on this background, this study asks the main question: how does community radio function as a form of media redundancy in building crisis communication resilience in rural communities? To answer this question, this study also develops several derivative questions, namely: (1) what communication practices does community radio engage in in crisis situations; (2) how does community radio interact with other communication systems; and (3) what role does community radio play in facilitating social coordination and collective community response.

2 Research Methods

This research uses a qualitative approach with a case study design to deeply understand how community radio plays a role in building crisis communication resilience in rural areas. This approach was chosen because it allows for the exploration of phenomena in a real-world context, particularly when the boundaries between the phenomenon and its social environment cannot be clearly separated [25]. The study focused on RaSi FM Community Radio in Cisewu Village, Garut Regency, West Java, which was selected purposively due to its relatively remote nature and vulnerability to communication infrastructure disruptions. This approach also aligns with the tradition of community-based communication research, which emphasizes a contextual understanding of local social and media practices [26].

Data collection was conducted in three stages. First, in-depth interviews were conducted with radio managers (n=3), broadcasters (n=2), and community members (n=5), selected using purposive sampling. Each interview lasted 45–90 minutes and was audio-recorded and transcribed. Second, participant observation was conducted over four weeks, involving direct involvement in broadcasting activities and commu-

nity interactions. Third, document analysis included broadcast recordings and program notes to gain a comprehensive understanding and enable triangulation of data sources [26].

The collected data were then analyzed using Braun & Clarke's thematic approach: identification, coding, theme development, review, and interpretation [27]. To maintain the validity of the findings, this study employed triangulation and confirmation with informants, and adhered to ethical research principles such as participant consent and data confidentiality. Although a case study, the findings of this study are expected to provide analytical contributions to the development of studies on crisis communication and communication resilience in rural contexts.

3 Results and Discussion

3.1 Community Radio as an Alternative Communication Infrastructure in Crisis Situations

The findings of this study demonstrate that in a rural context like Cisewu, community radio serves more than just a medium for conveying information, but has transformed into an alternative communication infrastructure that plays a crucial role in maintaining the continuity of information flow, especially when formal communication systems experience disruptions. The hilly and relatively remote geographical conditions, coupled with limited access to telecommunications networks, leave communities vulnerable to communication disruptions, especially during crises such as natural disasters. In situations like this, RaSi FM Community Radio serves not only as a supplement but also as the community's primary source of information.

The empirical experience of radio operators shows that disruptions to digital communication networks are a recurring phenomenon and have become part of the community's daily reality. When heavy rains occur or landslides block road access and damage networks, digital connectivity becomes unreliable. One informant described the situation quite clearly:

“If it rains heavily for days, the signal usually disappears immediately. The internet also becomes completely unusable. But the radio can still broadcast, as long as we have backup power or use a generator.” (Informant 1, Radio Manager)

This quote demonstrates that community radio has technical characteristics that are more adaptable to crisis conditions than digital-based media. Its relatively low dependence on complex infrastructure makes it more resilient to external disruptions. In practice, broadcast continuity depends not only on the main electricity system but also on local initiatives such as the use of alternative power sources. This reflects a form of resilience that is not solely technological but also based on the adaptive capacity of the community itself.

Furthermore, community radio's advantage is also evident in its high level of accessibility. Amidst the still-significant digital divide in rural areas, radio remains the

most accessible medium for the community. Nearly every household owns a radio, either in a conventional form or integrated into a simple device like a non-smartphone mobile phone. This situation makes radio a non-exclusive medium capable of reaching community groups that have previously been underserved by digital communication systems. One resident explained:

"If there's no signal, we listen to it on the radio. From there, we can find out what's happening in other villages, which are safe and which to avoid." (Informant 5, Resident)

This statement emphasizes that community radio not only provides information but also helps communities build situational awareness, which is crucial in times of crisis. The information conveyed via radio forms the basis for community decision-making, both individual and collective. In this context, radio functions not only as a medium, but also as a mechanism that enables communities to stay connected to the realities around them.

Furthermore, the local character of community radio provides significant added value in the context of crisis communications. Unlike mainstream media or digital platforms, which are often general and not locally specific, community radio provides information that is highly contextual and relevant to the needs of local communities. The information broadcast typically originates from the surrounding environment and is delivered in a language and style familiar to listeners. One broadcaster explained:

"We broadcast information that is close to the community, such as road conditions, weather, or information from the villages. So people feel it's really for them." (Informant 3, Broadcaster)

This contextuality not only increases the relevance of the information but also strengthens the public's level of trust in the media. In crisis situations, trust is a crucial factor in determining the effectiveness of communication. Information that is not trusted, no matter how accurate, will not generate the desired response. In this regard, the social closeness between radio operators and the community is a crucial asset that many other media outlets lack.

Conceptually, these findings broaden the perspective on communications infrastructure. Until now, infrastructure has often been understood in terms of modern technology, synonymous with digital networks and large-scale telecommunications systems. However, the reality on the ground shows that communication infrastructure can also take the form of simple media with high adaptability to local contexts. Community radio, in this case, can be understood as a resilient communication infrastructure that not only survives crises but is also able to function effectively when other systems fail.

Furthermore, the existence of community radio also demonstrates that communication resilience is not solely determined by technological sophistication, but rather by the alignment between technology, the social context, and community needs. In the Cisewu context, community radio exemplifies how simple media can play a strategic

role in crisis communication systems, precisely because of its closeness to local realities and its ability to adapt to uncertain conditions.

Thus, these findings not only confirm the importance of community radio in crisis situations but also challenge the dominant assumption that digital media is the sole solution for modern communication. In rural contexts with limited infrastructure, a more contextual and community-based approach has proven more effective in building communication resilience.

3.2 Media Redundancy as a Communication Resilience Strategy

The findings of this study indicate that communication resilience in rural areas like Cisewu is not solely supported by the presence of a single dominant medium, but rather by redundant practices that develop naturally in the community's daily lives. Redundancy, in this context, does not emerge as a formally designed technical concept, but rather as a result of the community's collective experience in dealing with infrastructure limitations and recurring communication disruptions, particularly during crises. Under normal circumstances, communities utilize multiple communication channels simultaneously from face-to-face communication to mobile phones and social media. However, this configuration changes significantly when disruptions occur to one or more of these channels.

Community radio, in this regard, occupies a unique position, as a medium that is consistently "available" when other channels are no longer reliable. The transition from digital media to radio did not occur through a planned mechanism, but rather as a spontaneous response that has become internalized in the community's daily practices. One informant, also a radio broadcaster, described this pattern simply but very representatively:

"Under normal conditions, people use cell phones, WhatsApp, or social media. But when the signal is lost, they automatically go back to the radio. It's like a habit." (Informant 3, Broadcaster)

This statement demonstrates that media redundancy in Cisewu does not simply mean the existence of alternatives, but also reflects a pattern of adaptation that has been formed and understood collectively by the community. Community radio is not merely a backup, but an integral part of the communication system, actively used under certain conditions. In this context, redundancy is not static but dynamic, adapting to changing situations and the community's communication needs.

Furthermore, the findings of this study demonstrate that redundancy occurs not only at the level of media as a technology, but also at the level of social practices in the production and distribution of information. Community radio functions as a node connecting various sources of information originating from the community itself. Information obtained from residents is not broadcast directly, but rather goes through a selection and verification process carried out by radio management. One informant explained:

“Usually, when we receive a report from a resident, we don't broadcast it immediately. We first check with other people or village officials to avoid any confusion.” (Informant 2, Radio Manager)

This process demonstrates that redundancy also serves as a mechanism to strengthen information quality. Having more than one source and verification channel makes the information conveyed to the public more accurate and reliable. In crisis situations, where uncertainty and the potential for disinformation tend to increase, such mechanisms become crucial for maintaining social stability.

Interestingly, the practice of redundancy that developed in Cisewu was not driven by external intervention or formal policy, but rather by the community's collective awareness of the importance of having more than one communication channel. This awareness was shaped by the experience of dealing with previous crises, where reliance on a single medium proved insufficient to ensure continuity of information. One resident explained:

“We already know from experience that we can't rely solely on one communication method. If one doesn't work, there must be another.” (Informant 6, Resident)

This statement emphasizes that redundancy in this context is not simply a technical strategy, but also a reflection of ongoing social learning at the community level. In other words, redundancy is part of the community's communication culture, formed through experiences facing risk.

From a more conceptual perspective, these findings provide new insights into the importance of redundancy in crisis communication, which does not always have to be designed within a complex technological system. Instead, redundancy can emerge from simple practices based on social interaction and the utilization of local resources. In this context, community radio plays a key role in connecting various forms of communication, both traditional and modern.

Furthermore, media redundancy also contributes to increasing the adaptive capacity of communities in responding to crises. Having more than one communication channel provides communities with flexibility in accessing and disseminating information. This reduces the risk of communication breakdowns that can slow down emergency responses. In practice, when one system fails, another can quickly take over without requiring complex coordination.

However, what is interesting about these findings is that the effectiveness of redundancy is determined not only by the number of available media, but also by how these media are connected to each other within a cohesive communication ecosystem. Community radio, in this case, serves as a meeting point that integrates various information streams, both from the community and from other relevant sources. Thus, redundancy not only increases information availability but also strengthens integration and coordination within the overall communications system.

These findings demonstrate that communication resilience in rural areas depends not only on the development of new infrastructure but also on the community's ability to manage and optimize existing communication resources. Community radio, as part

of this redundant system, demonstrates that local media has significant potential to contribute to building a more resilient and sustainable communications system.

3.3 Social Coordination and Collective Response through Community Radio

The findings of this study indicate that the role of community radio in Cisewu extends beyond its function of disseminating information, but has evolved further as a medium that facilitates social coordination and encourages collective community responses in the face of crises. In this context, community radio is no longer understood as a one-way communication channel, but rather as a space for social interaction that enables a dynamic exchange of information between radio operators and the community.

In practice, the community is not merely a recipient of messages but also an active participant in the information production process. Information about conditions in various areas often originates from residents, which is then relayed to radio operators for rebroadcast. This pattern creates a participatory communication flow and strengthens connectedness among community members. One informant described this practice as follows:

"If something happens in the village, we usually report it directly to the radio. The radio then relays it so that other residents know the conditions here." (Informant 6, Resident)

This quote demonstrates that community radio functions as a communication node that connects various local information into collective knowledge that is accessible to the entire community. This process not only accelerates the distribution of information but also creates a sense of shared involvement in facing the crisis. In this context, communication serves not only as a means of conveying messages but also as a mechanism for building social solidarity.

Furthermore, community radio also plays a role in coordinating collective action that emerges in response to the information it conveys. Broadcast information doesn't stop at the cognitive level, but is often followed by concrete action on the ground. In some cases, radio broadcasts trigger community action, whether through evacuations, aid distribution, or community service activities. One informant explained:

"When there's a landslide, the radio announces which roads are still passable. After that, residents immediately take action; some help clear the roads, others assist with evacuations." (Informant 4, Resident)

This phenomenon demonstrates that community radio functions not only as an information provider but also as a catalyst for social action. Information conveyed via radio has a strong impetus for community mobilization, particularly because it is perceived as relevant and comes from a trusted source. In this context, the effectiveness

of crisis communication is determined not only by the clarity of the message, but also by the medium's ability to build a connection between information and action.

Trust is a key factor underlying the success of this function. Community radio, managed by community members themselves, offers a social closeness that other media, especially mainstream media or digital platforms, lack. This closeness creates a high level of credibility, making the information conveyed more easily accepted and responded to by the community. One informant stated:

"If it's from this radio station, we trust it more, because the broadcasters are local and know the real situation." (Informant 7, Resident)

This trust is not formed instantly, but through repeated and consistent interactions between the radio station and the community. Over the long term, this relationship forms what can be understood as social capital, which is crucial in crisis situations. This social capital allows information not only to be received but also to be internalized and responded to collectively.

In addition to encouraging immediate responses to crises, community radio also plays a role in building collective awareness of risks. Through continuous broadcasts, communities not only receive information about current conditions but also an understanding of potential future risks. This information is often delivered in the form of advisories, past experiences, or lighthearted discussions relevant to people's daily lives. One broadcaster explained:

"We don't just report on events, but also remind residents, for example, during the rainy season to be wary of landslides, or to avoid certain routes." (Informant 3, Broadcaster)

This practice demonstrates that community radio has an educational function that contributes to increasing community preparedness. Thus, radio's role is not merely reactive in responding to the current crisis, but also proactive in building community capacity to face potential future crises.

More broadly, these findings demonstrate that social coordination in rural contexts relies heavily on the existence of media capable of bridging relationships between individuals and groups within the community. Community radio, with its local, participatory, and trust-based characteristics, is able to fulfill this function effectively. In this case, radio is not only a communication medium but also a social institution that plays a role in maintaining community cohesion and solidarity.

Furthermore, these findings also demonstrate that effective crisis communication cannot rely entirely on a one-way, top-down communication model. Instead, an approach based on community participation and involvement is more capable of producing a rapid and appropriate response. Community radio, in this case, exemplifies how a simple yet inclusive communication system can have a significant impact on building community resilience.

3.4 Discussion

The findings of this study indicate that community radio in Cisewu functions as an adaptive communication infrastructure during crisis situations, a finding that both confirms and expands existing crisis communication literature. Within the framework of Situational Crisis Communication Theory (SCCT), the effectiveness of crisis communication is often associated with the speed, consistency, and credibility of the message [28]. Field findings indicate that these three aspects are important, but they are insufficient to explain communication dynamics in rural contexts with limited infrastructure. In the case of Cisewu, sustainable access to media is a more fundamental factor than the speed of information distribution itself.

This demonstrates a gap between theoretical assumptions often developed in the context of digitally connected societies and the reality of rural areas. Previous studies have tended to emphasize the role of digital and social media as the backbone of modern crisis communication [8], [29], [30]. However, the findings of this study demonstrate that in conditions of fragile infrastructure, high-tech media is not always the most effective solution. In this case, community radio, as a simpler medium, actually exhibits a higher level of resilience because it does not rely on complex networks. Thus, this research broadens the understanding of crisis communication by emphasizing the importance of technology's suitability to the social and geographic context.

These findings align with the theory of communication resilience [6], particularly in terms of adaptability and continuity. The research findings are considered to expand the concept by showing that resilience is materially embedded in media that are easily accessible to rural communities such as community radio. The research results also show that redundancy emerges organically as a social practice rather than as a formal technical system.

Furthermore, the findings regarding media redundancy significantly contribute to the development of the concept of redundancy in communication systems. In the information and communication systems literature, redundancy is generally understood as a technical strategy to ensure system continuity in the event of failure. However, in the Cisewu context, redundancy was not formally designed but emerged as a social practice that developed from the community's collective experiences. This aligns with the view that resilience is not only structural but also social and cultural [5].

These findings complement previous studies that examined redundancy in the context of crisis communication as part of system design, demonstrating that redundancy can also form organically through community interactions. In this case, community radio serves not only as an alternative channel but also as a node that integrates various information sources within a single communication ecosystem. Thus, this study offers a new perspective that redundancy not only improves technical reliability but also strengthens social cohesion and trust within the communication system.

Furthermore, community radio's role in facilitating social coordination and collective response reinforces findings in the literature that emphasize the importance of trust in crisis communication [30], [31], [32]. However, this study demonstrates that trust is built not only through the credibility of formal institutions but also through

social proximity between communicators and audiences. This contrasts with many studies that focus on crisis communication in the context of large organizations or governments, where the relationship between communicators and the public tends to be impersonal.

In the Cisewu context, community radio, managed by the community itself, enjoys a high level of trust due to social proximity and shared experiences. These findings align with the concept of social capital, which emphasizes the importance of social networks and trust in supporting collective action. However, this study goes further by demonstrating how this social capital is mediated and activated through community media in crisis situations.

Furthermore, the active involvement of communities in the information production process demonstrates that a participatory model of crisis communication has advantages over a top-down model. Previous studies have shown that public participation can enhance the effectiveness of crisis communication [12], but this study provides empirical evidence of how such participation occurs in a rural context with simple media support. In this case, community radio functions as a horizontal communication space that enables the reciprocal exchange of information, ultimately strengthening the community's collective response.

From a broader perspective, these findings can also be linked to the issue of digital inequality, which remains a challenge in global crisis communication [8], [31]. Overreliance on digital media has the potential to exclude groups of people who lack access or the ability to use these technologies. In this context, community radio plays a more inclusive role and can bridge this gap. Thus, this research contributes not only to the study of crisis communication but also to broader discussions about equitable access to information in society.

Overall, the results of this study demonstrate that communication resilience in the context of rural crises cannot be understood solely through a technological approach, but must be seen as the result of the interaction between technology, social practices, and local contexts. Community radio, as a simple yet adaptive medium, demonstrates that crisis communication solutions do not always have to be based on high-tech innovations but can instead stem from optimizing existing local resources. In this regard, this research offers a conceptual contribution by positioning redundancy as a community-based social practice and community radio as a key element in building resilient communication systems.

4 Conclusion

This research demonstrates that community radio plays a strategic role in building crisis communication resilience in rural areas, particularly in the context of limited infrastructure, such as in Cisewu, Garut Regency. Community radio functions not only as an alternative medium but also as a communications infrastructure capable of maintaining the continuity of information flow when formal communication systems are disrupted. In crisis situations, the presence of radio is crucial in reducing uncer-

tainty, providing relevant information, and helping communities develop the situational understanding necessary for decision-making.

Furthermore, this research found that communication resilience is determined not only by technological sophistication but also by the existence of media redundancy practices that develop organically within the community. Redundancy in this context is not simply interpreted as technical duplication, but rather as the community's ability to utilize various communication channels adaptively according to the circumstances. Community radio is a crucial part of this redundancy system, enabling communication continuity while strengthening the quality and credibility of information through trust-based social mechanisms.

Furthermore, community radio also plays a role in facilitating social coordination and encouraging collective community responses. Through participatory, socially connected communication, radio not only conveys information but also activates social networks that enable collective action in crisis response. In this regard, trust and community involvement are key elements that strengthen communication effectiveness, demonstrating that community-based crisis communication has significant potential for building social resilience.

Theoretically, this research contributes to broadening the study of crisis communication by emphasizing the importance of integrating technological, social, and contextual dimensions in understanding communication resilience. The concept of redundancy, which has traditionally been understood technically, is positioned in this research as a community-based social practice that plays a role in maintaining communication continuity. Furthermore, this research positions community radio as part of a resilient communication infrastructure, whose relevance is increasingly evident in the context of regions with limited access to digital technology.

Practically, the findings of this study indicate that the development of crisis communication systems, particularly in rural areas, cannot focus solely on digitalization but also needs to consider strengthening existing community media. Integrating community radio into crisis communication strategies can be a crucial step in ensuring more inclusive and sustainable access to information. Therefore, policy support is needed to strengthen the capacity of community radio, both technically and institutionally, as well as in terms of communication networks with other actors in the crisis management system.

While this research makes a significant contribution, there are limitations that need to be considered, particularly related to the case study's focus on a single location. Therefore, future research is recommended to examine broader contexts or conduct cross-regional comparisons to strengthen the generalizability of the findings. Furthermore, further exploration of the integration of community media and digital technology in crisis communication systems is also an important research agenda for future development.

References

- [1] J.-C. Plantin, C. Lagoze, P. N. Edwards, and C. Sandvig, "Infrastructure studies meet platform studies in the age of Google and Facebook," *New Media Soc.*, vol. 20, no. 1, pp. 293–310, Jan. 2018, doi: 10.1177/1461444816661553.
- [2] S. R. Veil, T. Buehner, and M. J. Palenchar, "A Work-In-Process Literature Review: Incorporating Social Media in Risk and Crisis Communication," *J. Contingencies Cris. Manag.*, vol. 19, no. 2, pp. 110–122, Jun. 2011, doi: 10.1111/j.1468-5973.2011.00639.x.
- [3] F. H. Norris, S. P. Stevens, B. Pfefferbaum, K. F. Wyche, and R. L. Pfefferbaum, "Community Resilience as a Metaphor, Theory, Set of Capacities, and Strategy for Disaster Readiness," *Am. J. Community Psychol.*, vol. 41, no. 1–2, pp. 127–150, Mar. 2008, doi: 10.1007/s10464-007-9156-6.
- [4] D. P. Aldrich and M. A. Meyer, "Social Capital and Community Resilience," *Am. Behav. Sci.*, vol. 59, no. 2, pp. 254–269, Feb. 2015, doi: 10.1177/0002764214550299.
- [5] B. Backhaus, K. Foxwell-Norton, and A. Leitch, "Listening for the local: Australian community radio and climate change communication," *Media Int. Aust.*, vol. 196, no. 1, pp. 18–29, Aug. 2025, doi: 10.1177/1329878X231193182.
- [6] P. M. Buzzanell, "Resilience: Talking, Resisting, and Imagining New Normalcies Into Being," *J. Commun.*, vol. 60, no. 1, pp. 1–14, Mar. 2010, doi: 10.1111/j.1460-2466.2009.01469.x.
- [7] K. K. Stephens, A. K. Barrett, and M. J. Mahometa, "Organizational Communication in Emergencies: Using Multiple Channels and Sources to Combat Noise and Capture Attention," *Hum. Commun. Res.*, vol. 39, no. 2, pp. 230–251, Apr. 2013, doi: 10.1111/hcre.12002.
- [8] J. B. Houston, M. L. Spialek, J. Cox, M. M. Greenwood, and J. First, "The Centrality of Communication and Media in Fostering Community Resilience," *Am. Behav. Sci.*, vol. 59, no. 2, pp. 270–283, Feb. 2015, doi: 10.1177/0002764214548563.
- [9] J. B. Houston, "Community resilience and communication: dynamic interconnections between and among individuals, families, and organizations," *J. Appl. Commun. Res.*, vol. 46, no. 1, pp. 19–22, Jan. 2018, doi: 10.1080/00909882.2018.1426704.
- [10] J. Hay, "Functions of humor in the conversations of men and women," 2000. [Online]. Available: www.elsevier.nl/locate/pragma
- [11] V. Taneja, "Community Radio in India: A Model of Participatory Communication in India," *Glob. Res. J.*, vol. 2, no. 2, Mar. 2023, doi: 10.57259/GRJ7402.
- [12] R. Fayjaloun, P. Gehl, S. Auclair, F. Boulahya, S. Guérin-Marthe, and A. Roullé, "Integrating strong-motion recordings and twitter data for a rapid shakemap of macroseismic intensity," *Int. J. Disaster Risk Reduct.*, vol. 52, p. 101927, Jan. 2021, doi: 10.1016/j.ijdr.2020.101927.
- [13] H. Irianto, H. Haryono, D. Amartana, J. A. Hartanto, and R. H. S. Aisyah, "The Role of Community Radio in Medium, Small and Micro Enterprises

- (MSMEs) in Rural Indonesia,” *Public Adm. Res.*, vol. 8, no. 1, p. 30, Apr. 2019, doi: 10.5539/par.v8n1p30.
- [14] N. Gaynor and A. O’Brien, “Community radio, democratic participation and the public sphere,” *Irish J. Sociol.*, vol. 25, no. 1, pp. 29–47, Apr. 2017, doi: 10.7227/IJS.0002.
 - [15] D. W. Sjuchro, N. A. Sjafirah, S. Perbawasari, R. K. Anwar, and P. A. Andung, “The Role of Community Radio in Participation of Development of Various Fields in Rural Communities,” *J. Posit. Sch. Psychol.*, vol. 6, no. 4, pp. 7505–7513, 2022, [Online]. Available: https://scholar.google.com/citations?view_op=view_citation&hl=en&user=7LrflBwAAAAJ&pagesize=100&citation_for_view=7LrflBwAAAAJ:kRWSkSYxWN8C
 - [16] T. B. Hart, “Community Radio : The Beat that Develops the Soul of the People ?,” 2011.
 - [17] B. Backhaus, “Community Radio as Amplification of Rural Knowledge Sharing,” *Asia Pacific Media Educ.*, vol. 29, no. 2, 2019, doi: 10.1177/1326365X19864476.
 - [18] V. Pavarala and K. K. Malik, *Other voices: The struggle for community radio in India*. London: Sage Publications, 2007.
 - [19] B. McKay, “Using Community Radio in Ghana to Facilitate Community Participation in Natural Resource Management,” *Ecquid Novi African Journal. Stud.*, vol. 30, no. 1, pp. 73–93, Jan. 2009, doi: 10.1080/02560054.2009.9653393.
 - [20] W. Siemering, “Radio, Democracy and Development: Evolving Models of Community Radio,” *J. Radio Stud.*, vol. 7, no. 2, pp. 373–378, 2000, doi: <https://doi.org/10.5281/zenodo.4155168>.
 - [21] D. W. Sjuchro, T. B. Prasetya, B. S. Rintyarna, W. Prasastiningtyas, and S. R. I. Rezeki, “Adaptation of Community Radio in the New Media Age,” *Int. J. Sci. Soc.*, vol. 6, no. 2, pp. 492–506, May 2024, doi: 10.54783/ijssoc.v6i2.1168.
 - [22] T. J. O’Shea and N. West, “Radio Machine Learning Dataset Generation with GNU Radio,” *6th GNU Radio Conf.*, pp. 1–6, 2016.
 - [23] C. Fraser and S. Restrepo-Estrada, “Community Radio for Change and Development,” *Development*, vol. 45, no. 4, pp. 69–73, Dec. 2002, doi: 10.1057/palgrave.development.1110408.
 - [24] H. Anderson and C. Rodríguez, “Is community radio in crisis in the Global North?: Lessons from Australia and the United States,” *J. Altern. Community Media*, vol. 4, no. 4, pp. 51–65, Dec. 2019, doi: 10.1386/joacm_00066_1.
 - [25] R. K. Yin, *Case Study Research and Applications Design and Methods*, SIXTH. USA: SAGE Publications Inc., 2017.
 - [26] Denzin and Lincoln, *Handbook of Qualitative Research*. Yogyakarta: Pustaka Pelajar, 2009.
 - [27] V. Braun and V. Clarke, “Using thematic analysis in psychology,” *Qual. Res. Psychol.*, vol. 3, no. 2, pp. 77–101, Jan. 2006, doi: 10.1191/1478088706qp063oa.
 - [28] W. T. Coombs, “Protecting Organization Reputations During a Crisis: The Development and Application of Situational Crisis Communication Theory,”

- Corp. Reput. Rev.*, vol. 10, no. 3, pp. 163–176, Sep. 2007, doi: 10.1057/palgrave.crr.1550049.
- [29] L. D. Russell and A. S. Babrow, “Risk in the Making: Narrative, Problematic Integration, and the Social Construction of Risk,” *Commun. Theory*, vol. 21, no. 3, pp. 239–260, Aug. 2011, doi: 10.1111/j.1468-2885.2011.01386.x.
- [30] B. F. Liu, L. Austin, and Y. Jin, “How publics respond to crisis communication strategies: The interplay of information form and source,” *Public Relat. Rev.*, vol. 37, no. 4, pp. 345–353, Nov. 2011, doi: 10.1016/j.pubrev.2011.08.004.
- [31] L. Austin, B. Fisher Liu, and Y. Jin, “How Audiences Seek Out Crisis Information: Exploring the Social-Mediated Crisis Communication Model,” *J. Appl. Commun. Res.*, vol. 40, no. 2, pp. 188–207, May 2012, doi: 10.1080/00909882.2012.654498.
- [32] D. Zulli, M. Liu, and R. Gehl, “Rethinking the ‘social’ in ‘social media’: Insights into topology, abstraction, and scale on the Mastodon social network,” *New Media Soc.*, vol. 22, no. 7, pp. 1188–1205, Jul. 2020, doi: 10.1177/1461444820912533.