

Exploring communication practices that promote community participation and collective action for reducing disaster risks in New Zealand

Manomita Das  | Julia Becker | Emma E.H. Doyle

Joint Centre for Disaster Research, Massey University, New Zealand

Correspondence

Manomita Das, Joint Centre for Disaster Research, Massey University, Building T29, Mount Cook, Wellington, New Zealand.
Email: manomita.das.1@uni.massey.ac.nz

Funding information

Resilience to Nature's Challenges, New Zealand

Abstract

Emergency management agencies in New Zealand are increasingly engaging with communities to promote civic participation and collective action for reducing disaster risks. Utilising a mixed-methods approach, this paper explores the communication practices that support these efforts. The qualitative findings reveal that emergency management agencies, different government organisations, community-based groups, and local people play a key role in the process. Communicative actions supporting people's participation include scoping and relationship-building activities, awareness-raising events, advertisements and promotions, and community conversations. Based on these findings and guided by communication infrastructure theory, a conceptual map of the communication networks, resources, and processes adopted to promote people's participation and collective action is presented here. The survey results indicate that emergency management agencies are the main communicators promoting people's participation. Interpersonal influence and community conversations are most effective in terms of involving new people. Both the theoretical and practical implications of the study's findings are discussed in this paper.

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KEYWORDS

collective action, communication, communication infrastructure theory, community participation, disaster preparedness, disaster risk reduction

1 | INTRODUCTION

After a natural hazard, like an earthquake, it is the people in the local community that mobilise to search for survivors, provide first aid to the injured, and offer food and shelter to the affected, before specialised teams of emergency management personnel arrive. This is seen after most disasters, such as the 2011 Christchurch (New Zealand) earthquake (Potter et al., 2015) and the 2015 Nepal earthquake (Devkota, Doberstein, and Nepal, 2016).

This observation on the role of community in post-disaster settings and broadly in reducing disaster risks was made as early as the 1960s and 1970s in disaster research (Stallings and Quarantelli, 1985; Dynes, 1993; Quarantelli, 2003). Studies have demonstrated that community-based approaches that actively engage local communities and draw on their knowledge and resources are effective in reducing disaster risks (Blaikie et al., 2014; Pelling, 2007; Delica-Willison and Gaillard, 2012; Shaw, 2012; Gaillard and Mercer, 2013) and addressing broader developmental concerns (Chambers, 1994; Huesca, 2008; Colle, 2008). Consequently, it is common practice today for emergency management officials to work with community members before an event to identify individuals and elements at risk of hazards, promote protective and preventive measures, and upskill people, as well as to position resources strategically to ensure the public's safety and a quick response after an event (Kruger et al., 2018; Ministry of Civil Defence and Emergency Management, 2019).

The initial and widely employed approach towards engaging communities has centred on motivating people to adopt individual- or family-level actions that mitigate hazard risks. These include awareness of such dangers, identifying evacuation routes, adoption of protective behaviours, obtaining hazard insurances, maintaining emergency kits, and storing additional supplies for emergencies (Ning et al., 2021; Becker et al., 2013a); however, contemporary research recognises that individual- and family-level preparedness are not sufficient to reduce disaster risks significantly (Ireland and Thomalla, 2011). It is crucial for 'communities, and not simply individual households', to come together, mobilise resources, and engage with diverse stakeholders (Uscher-Pines, Chandra, and Acosta, 2013). Communities should participate in decision-making processes for disaster readiness and act collectively to develop capacities and capabilities (Valibeigi et al., 2019). While such civic participation and collective action may or may not directly benefit individuals, altogether, they decrease exposure (Sapkota et al., 2015), minimise vulnerability (Rivera, Kapucu, and Hawkins, 2015), and enhance capacity at the community level (Sapkota et al., 2015; Bera, 2019; Andrew, Bacot, and Craw, 2020; Garvey and Paavola, 2022).

This raises the following question: how do we encourage civic participation, and collective action, in disaster preparedness? Studies in different disciplines indicate that communication¹ has immense potential in this regard. Research in the fields of ecology and natural resource management identify trust, reciprocity, and cooperation, inter alia, as critical in supporting collective action, all of which are dependent on communication (Ostrom, 2010; Damtew et al., 2021). For example, Dietz et al. (2002) argue that collective action can be promoted through communication to resolve conflicts and form agreements to regulate behaviour and avoid issues related to governing commons. Scholars in the health domain have also extensively employed communication to engage with community members (Wilkin et al., 2011; Manoncourt, Obregon, and Chitnis, 2022). For instance, Dasgupta (2019) presents communication strategies employed to organise individuals at risk of HIV/AIDS (human immunodeficiency virus/ acquired immunodeficiency syndrome) and to encourage collective action to curb transmission of the disease. Within social movements (Obregon and Tufte, 2017; Klavina and van Zomeren, 2020) and development studies (Bessette, 2004; Huesca, 2008) as well, the role of communication in supporting community involvement and collective action is well documented, with Dagron (2009, p. 460) contending that 'participation is communication'. Within the disaster

context, communication helps in building risk knowledge, generates collective awareness (Ireland and Thomalla, 2011), and supports the sharing of actionable information and the mobilisation of resources to address the collective challenges faced by a group (Nah et al., 2021)—thus being instrumental in promoting civic participation and collective action.

We have found, though, that communication research within disaster studies primarily focuses on communication strategies to encourage individual preparedness, overlooking its role in promoting collective action. Little systematic knowledge exists on how different communication initiatives influence members' involvement in collective action for disaster preparedness, which communication approaches are beneficial, and what additional supports beyond communication may be required (Ryan et al., 2020). While there is potential for the use of communication to encourage civic participation and collective action, how communication can be utilised best remains less understood (Burnside-Lawry, Rogers, and Akama, 2013). Hence, this paper examines how communication is currently used to promote civic participation and collective action and explore how they can be improved.

2 | LITERATURE REVIEW

2.1 | Collective action and civic participation in disaster preparedness

Collective action, in the pre-disaster stage, refers to the act of people coming together to identify hazards, taking decisions as a group on the best way to address them, engaging with diverse stakeholders, mobilising resources, and building capacities and capabilities to withstand the effects of hazards with minimal disruption (Ireland and Thomalla, 2011; Bera, 2019). For example, landowners sharing a property boundary in a wildfire-prone area can collaborate to organise prescribed burns to reduce the risk (Sapkota et al., 2015; Charnley, Kelly, and Fischer, 2020).

The idea of collective action is also embedded in community resilience (Coles and Buckle, 2004; Kwok et al., 2016; Patel et al., 2017). The latter refers to the collective ability of communities to anticipate, respond to, and recover from disruptions caused by disasters while maintaining essential functions and preserving community well-being (Mayer, 2019). Community resilience emerges as community members acquire hazard awareness, critically reflect on their knowledge, constructively engage in group processes, and collaboratively solve problems through decision-making and collective action (Norris et al., 2008). Thus, collective action is a key element of community resilience, enabling people to address collectively disaster risks and empowering them to navigate and overcome adversity.

Closely linked to collective action is civic participation. This refers to people's active involvement in the processes and activities of community life that improve community well-being (Arnstein, 1969). Six groups of activities are considered as forms of civic participation: association participation; giving behaviour; volunteering; environment-friendly pro-social behaviours; political and pro-social behaviours; and supporting/helping individuals (Cnaan and Park, 2016). In the context of disasters, people participating in community consultations (Mitchell et al., 2010), organising rallies and protests to demand hazard mitigation (Bera, 2019), and volunteering on disaster preparedness committees can be considered as forms of civic participation. It is obvious that without civic participation, there is no collective action.

2.2 | Communication and collective action

Communication refers to the social interaction among actors through symbols and message systems (Gerbner, 1966). Communication encompasses all formal (meetings, facsimiles, and official memos) and informal (casual conversations) processes occurring at various levels. Different flows of information (vertically up or down the hierarchy, horizontally between group members, or diagonally across levels and functions) facilitate information-sharing, defining and negotiating interests, shaping behaviours, and influencing actions (Mansell and Raboy, 2011).

2.2.1 | Preparedness communication

Early communication research in the area of disaster preparedness was guided by the information deficit model, which presumed that people are less prepared because of a lack of knowledge and ‘incorrect’ risk perceptions (Wood et al., 2012; Balog-Way, McComas, and Besley, 2020). The focus was on informing the public about hazard risks using better scientific and factual information to ‘correct’ the understanding of risk and promote ‘rational’ responses in the form of improved disaster preparedness behaviour (Bradford and O’Sullivan, 2011; Abunyewah et al., 2020). However, preparedness communication, now, has expanded to include persuasive and participatory approaches (Fischhoff, 1995, Balog-Way, McComas, and Besley, 2020).

The emphasis on persuasive approaches is not solely to provide clear intelligible risk information (normative), but also to influence the attitudes and behaviours of others regarding the hazard through the communication processes (Wardman, 2008). Researchers examined the processes that individuals undergo before engaging in preparedness actions, such as receiving hazard-related messages, interpreting their content, establishing intentions to act, and ultimately taking action. In addition, they investigated the socio-psychological factors influencing them, such as risk perception, efficacy beliefs, outcome expectations, social norms, and sense of community (Ajzen, 1985; Lindell and Perry, 2012), and analysed how altering different aspects of the communication process impacts on preparedness actions (Mileti and Sorensen, 1990). These aspects include message content (such as actionable information models; Wood et al., 2012), message framing strategies (such as normative theories and positive and negative frames; Solberg, Rossetto, and Joffe, 2010; Vinnell, Milfont, and McClure, 2019), delivery formats (such as games and augmented and virtual reality; Solinska-Nowak et al., 2018), channel characteristics (Sutton and Veil, 2017), and sender attributes (such as trust and credibility; Breakwell, 2000; Sharpe, 2021). For instance, studies assessed how messages invoking social norms influenced the adoption of preparedness behaviour (Solberg, Rossetto, and Joffe, 2010; Seyranian, Sinatra, and Polikoff, 2015; Vinnell, Milfont, and McClure, 2019).

While persuasive communication was somewhat successful, it was increasingly felt that participatory approaches to communication are essential to improve preparedness outcomes. Under participatory approaches, community members are involved in identifying and prioritising risks and determining the form and process via which they are to be communicated (Sellnow et al., 2008; Abunyewah et al., 2020). Participatory approaches can follow the normative path that focuses only on providing a better understanding of a hazard through dialogue (such as participatory risk mapping; Demeritt and Nobert, 2014) or, they can follow a persuasive path where risk communicators try to promote certain attitudes, behaviours, and actions through two-way interaction; in addition, how the desired end results will be attained is discursively negotiated (Wardman, 2008). An example of this might be using communication to engage with local communities, comprehend barriers to protective action, and negotiate options to reduce vulnerability to earthquakes (Musacchio et al., 2019). The change towards participatory approaches was accelerated by the spread of digital media, which led to the rise in ‘participatory culture’ where knowledge is generated, distributed, and evaluated in new ways (Delwiche and Henderson, 2012). To encourage people’s participation, conventional communication techniques like meetings, workshops, and storytelling (Ryan et al., 2020), as well as communication facilitated by digital media (through social networking platforms, citizen science approaches, and virtual reality tools), are used (Tran et al., 2009; Basak et al., 2020).

Involving the public in collective preparedness is challenging, however, because of the time-intensive and demanding nature of participatory communication and preparedness processes (Mitchell et al., 2010; Wu, Chang, and Tso, 2016). Meaningful interaction with the public through two-way risk communication processes and the establishment of trust and relations are necessary to foster citizen participation (Balog-Way, McComas, and Besley, 2020). The relational model of communication recognises this and aims to improve the quality of the relationship between communicators and leverages social networks, trusted relationships, interpersonal connections, and face-to-face conversation—the objective is to transform linear transmission of risk information into a dialogue between equal participants (Lejano et al., 2023). The model also suggests that narrative messages with vivid descriptions,

which are contextualised in terms of community experiences and are informed by local knowledge, are more likely to be effective (Lejano et al., 2018; Lejano, Haque, and Berkes, 2021).

Ryan et al. (2020), in their review of community engagement approaches, find that most communication strategies and techniques achieve some degree of success in promoting preparedness actions. In particular, participatory approaches and relational models of communication have the potential to support collective action in disaster preparedness. Yet, practitioners rely on a limited set of disaster communication approaches, primarily because of operational constraints such as resource intensiveness, costs, and scalability and sustainability issues. We lack a clear understanding of these constraints, their impacts on communicative processes, civic participation, and collective action, and how they can be overcome. Without this understanding, designing effective communication strategies to support collective actions becomes challenging, which often leads to a lack of focus on collective actions in disaster preparedness communication and an overemphasis on individual actions promoting personal protective actions, individual capacities, and networks. While such an individual focus is valuable, it is unlikely to influence 'community participation' and collective actions, which 'remain areas where specific targeting is required' (Becker, McBride, and Paton, 2013b, p. 14). A clearer understanding of the constraints, their influence on communication processes, and ways of addressing them is crucial for developing policies and programmes that enable communities, and not just individual households, to pool resources collectively and improve preparedness (Uscher-Pines, Chandra, and Acosta, 2013).

2.2.2 | Community resilience and communication

At about the same time as preparedness communication was evolving, owing to a burgeoning interest in community resilience from the early 2000s, research in community resilience communication also expanded. Although community resilience is closely related to disaster preparedness, the communication research trajectories of both rose separately. Reconciling communication research on community resilience with disaster preparedness research is important, as collective preparedness forms an integral component of community resilience.

Communication research on community resilience has mainly centred on (i) developing theoretical and conceptual linkages between communication and community resilience, and (ii) applied studies to examine how communicative actions by citizens lead to community resilience in the pre- and post-disaster stages. The first strand focuses on how communication is a core element of almost all community resilience models (Houston et al., 2015; Patel et al., 2017). For example, Norris et al. (2008) believe that community resilience emerges from four networked resources within a community: (i) economic development; (ii) social capital; (iii) information and communication; and (iv) community competence. These resources are interlinked and influence each other—that is, communication can influence the other networked resources, such as social capital. Social capital enables people to access and utilise resources embedded in one's social networks to gain information, material, and emotional support that enables them to cope with hazardous events (Meyer, 2018; Putnam, 2000). Meaningful communication allows people to build connections, maintain social interactions, and forge reciprocal relationships that are key to developing social capital (Norris et al., 2008). Thus, communication influences the way in which people collectivise to enhance their readiness for disasters by supporting and developing strengths within a community. It fosters proactive agency and self-organisation by nurturing the connections between individuals, bolstering social networks, providing avenues to share values, beliefs, knowledge, and learning, creating opportunities for collaborative governance, and enabling mobilisation and better utilisation of resources (Berkes and Ross, 2013). Communication for community resilience is not focused solely on sharing accurate information; it also aims to build a communication ecosystem that permits people to discuss their needs and views through connectedness among community members, establish strong communication networks, including with trusted sources of information, engage in trust-building processes, and maintain a communication infrastructure. Furthermore, it helps in constructing communal narratives that recognise local experiences, values, and practices (Norris et al., 2008; Chandra et al., 2011; Patel et al., 2017).

actors are well connected and the narratives shared within the community focus on similar neighbourhood concerns. The utility of CIT lies in its holistic perspective on communication, which considers the mass media, community organisations, interpersonal networks, neighbourhood communication resources, and the dynamic interactions among them. Its focus on civic participation and collective community action makes it particularly suitable for this study.

Guided by CIT, we wanted to explore the communication infrastructure that supports civic participation and collective action in disaster preparedness at the community level. First, we wanted to identify the actors that disseminate disaster preparedness information and promote everyday conversation around it within the community and explore how their interactions shape a community's perception of disaster as a shared concern, generate community interest, and encourage civic participation and collective preparedness in the community. Therefore, our first research question is:

RQ1. what community communication network (NSN) promotes civic participation and collective action for reducing disaster risks?

Second, according to CIT, the availability of and access to communication resources within a neighbourhood impact a community's ability to engage in and contribute to neighbourhood conversations and subsequently influence civic participation and collective action. The community context also has a bearing on this process. For example, in a wildfire-prone neighbourhood, community bulletin boards (communication resource) might be used to inform residents of the upcoming fire season and invite them to community centres (communication resource) for meetings to share information on fire hazards and plan collective prevention measures. Without such resources, organising neighbourhood conversations and collective actions on hazards become significantly more difficult. Therefore, our second research question, aimed at understanding what these communication resources are and how these resources and contexts influence disaster preparedness communication, civic participation, and collective action, is:

RQ2. what community contexts (CAC) support civic participation and collective action for reducing disaster risks?

Third, we were also interested in understanding the elements in the communication infrastructure that are most effective in supporting civic participation. Encouraging new people to participate in collective preparedness is often most difficult, as community members are busy and might not have the time, energy, resources, or interest to engage (Mitchell et al., 2010; Charnley, Kelly, and Fischer, 2020). So, we sought to comprehend the communicating actors and actions that are most effective in recruiting new members. This guided our third research question:

RQ3. what elements in the communication infrastructure are most effective in involving new members in civic participation and collective actions for reducing disaster risks?

3 | METHODOLOGY

A mixed-methods design was adopted for this study (Morse, 2010). Drawing on CIT, we wanted to understand how community communication infrastructure stimulates civic participation and collective action for disaster preparedness. A qualitative approach was utilised to understand the NSN and explore the mechanisms through which community communicators, neighbourhood conversations, and the communication context influence civic participation. A quantitative survey was administered to identify the influential actors and resources in the NSN.

Based on historical disaster data (from the Emergency Events Database (EM-DAT) and the Insurance Council of New Zealand), hazard profiles of each region, and discussions with civil defence emergency management (CDEM) officials, representatives of community-based agencies, community leaders, and academics, four community groups, one each from the Bay of Plenty (Edgecumbe community response team (CRT)), Wellington (Mt. Cook residents' association), Canterbury

(Arthur's Pass CRT, part of the broader Selwyn district response team), and Southland (Gore CRT), were selected for the study. These groups were chosen as they have varying hazard experiences and operate in areas that differ in terms of geographical and social characteristics, making them suitable for cross-case analysis (see Figure 1).

3.1 | Qualitative themes

The first author reached out to the groups to request an interview. Thirty-five interviews of about one hour in duration were conducted between February 2022 and September 2023, with officials from emergency management agencies, community organisation representatives, and community members and leaders (see Table 1). Guided by the research questions and CIT, the interview guide included open-ended questions exploring two key elements of the communication infrastructure: (i) the NSN; and (ii) the CAC. The questions examining the NSN focused on understanding the communicating actors, their connectedness, and integration of their communicative actions, including: who communicates about collective preparedness in your community?; what do they communicate?; how do they communicate?; how frequently do they communicate?; who do you communicate with about collective preparedness?; and how do local people at the neighbourhood level communicate about collective preparedness with others? To understand the CAC, the questions assessed aspects such as available resources and their role in supporting communicative actions and the facilitators and barriers influencing them, including: what support or resources do you rely on when communicating about collective preparedness?; how do these resources enable you to access information and communicate about collective preparedness?; and what contextual factors, structural elements, or systemic factors influence the availability

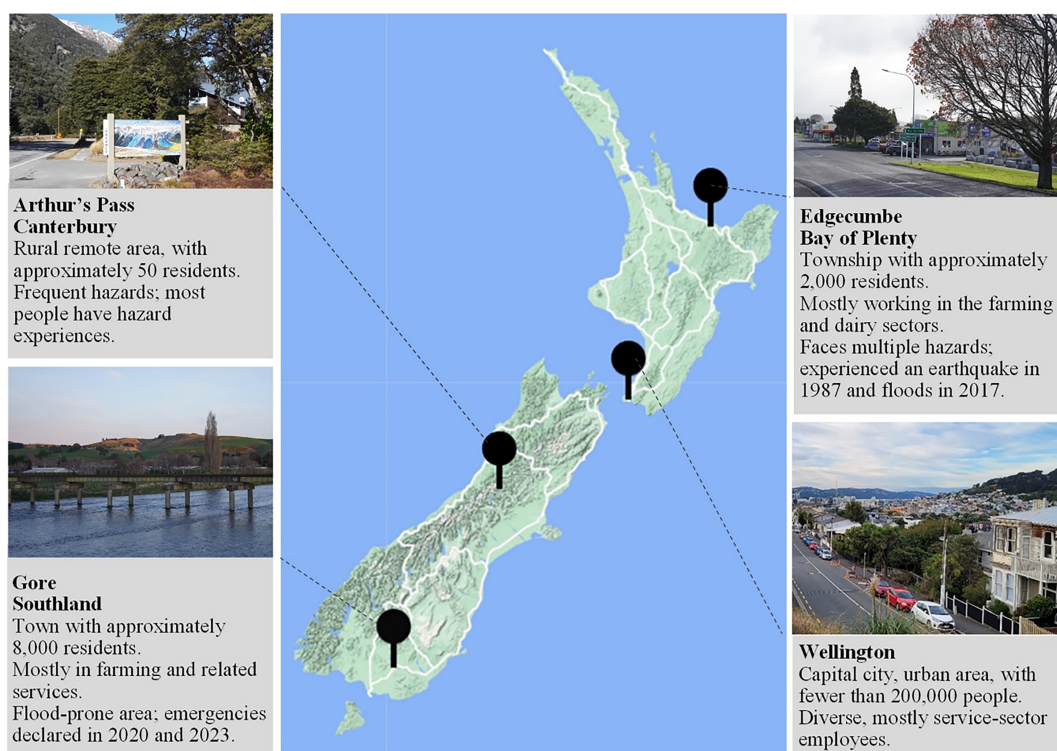


FIGURE 1 Map of the study areas. Source: authors. The map was generated using Snazzy Maps (<https://snazzymaps.com>).

TABLE 1 Participant profiles.

Interviews				
Area	Profile	Number of participants	Gender*	Code
Bay of Plenty	Volunteer for collective preparedness	4	2 M, 2 F	BoP_V1 to BoP_V4
	Emergency management (CDEM) official	1	1 F	BoP_EM1
	Official from the district council	2	1 M, 1 F	BoP_EM2
	Non-governmental organisation personnel assisting with collective preparedness	2	2 F	BoP_N1 & BoP_N2
Wellington	Volunteer for collective preparedness	5	3 M, 2 F	W_V1 to W_V5
	Emergency management (CDEM) official	4	2 M, 2 F	W_EM1 to W_EM4
Canterbury	Volunteer for collective preparedness	8	3 M, 5 F	C_V1 to C_V8
	Emergency management (CDEM) official	1	1 F	C_EM1
	Official from the district council	1	1 F	C_EM2
Southland	Volunteer for collective preparedness	6	2 M, 4 F	S_V1 to S_V6
	Emergency management (CDEM) official	1	1 F	S_EM1
Total		35		

Note: * M = male; F = female; O = other identity.

Source: authors.

and accessibility of communication resources? The first author also participated as a non-participant observer³ in six community meetings related to emergency management, a community emergency hub training meeting, four group meetings, and an annual training night, and compiled field notes (Ostrower, 1998). Documents like pamphlets, newsletters, and posters were collected. The data obtained from these sources were used to triangulate the findings from the interview data (Creswell, 2007).

Thematic analysis was conducted (Braun and Clarke, 2012). The interviews were transcribed and loaded in NVivo software for analysis. First, structural coding was performed to organise the data and then concept codes and in-vivo codes were assigned to the data (Saldaña, 2016). Codes were subsequently condensed to identify the categories and potential themes. An iterative process followed during which the codes, categories, and themes were reviewed and revised to ensure the themes were coherent and answered the research questions (Bryman, 2016). We also compared the themes with the observation notes and documents for triangulation. Member checks were conducted with the participants to ensure that the findings are credible and relevant (Creswell and Poth, 2016).

3.2 | Survey results

The survey was conducted between August and November 2023. Questionnaires were distributed both in hardcopy and as an online link to the survey hosted on the Qualtrics platform. The participants included community members from the four study areas (Bay of Plenty, Wellington, Canterbury, and Southland) who engage in or volunteer for collective action to reduce disaster risks at the community level. A snowball sampling approach

was employed: the surveys were shared with emergency management officials, community-based agency representatives, and community members from the study areas, who were then asked to share it with other people engaging in collective action.

The survey contained two open-ended questions: 'How did you come to know about the emergency management and preparedness group for which you are currently volunteering?' (communicative action); and 'Who informed you about the emergency management and preparedness group for which you are currently volunteering?' (communicating actor). One should note that the initial questionnaire contained an additional eight closed-ended questions: who communicates about collective preparedness in the community? (actors); how do you receive collective preparedness messages? (communication resources); who do you share collective preparedness messages with? (actors); how do you share collective preparedness messages? (communication resources); where do you share collective preparedness messages? (communication resources); who are the most frequent communicators of collective preparedness in the community? (influential actors); how frequently do you engage in conversations on collective preparedness? (storytelling intensity); and what are the main challenges in communicating about collective preparedness? (communication context). However, the pilot survey administered to six participants did not return satisfactory data, with many 'don't know' responses. Additionally, participants struggled to differentiate between collective and individual preparedness. Hence the closed-ended questions were subsequently removed, and a survey with two open-ended questions was conducted.

In total, 80 participants completed the survey (see Table 2). The data entered by participants were reviewed and a coding framework was developed both inductively and deductively. Initial codes were mostly derived from the data (inductive coding); some were predetermined based on existing literature (deductive coding). Each response was reviewed and assigned a code. For example, the response 'Once moving here, the local team leader approached and asked if I wanted to join' to the communicating actor question was coded as 'Local people associated with civil defence'. The frequency of each code was calculated and reported. The data are presented in subsection 4.3. An integrated discussion drawing on the qualitative themes and the quantitative results are presented in section 5.

TABLE 2 Demographic profiles of the survey participants (n = 80).

<i>Gender</i>	
Male	41
Female	37
Undisclosed	2
<i>Age</i>	
18–30	3
31–45	9
46–60	27
60–75	37
75+	4
<i>Location</i>	
Bay of Plenty	3
Wellington	21
Canterbury	51
Southland	5

Source: authors.

3.3 | Ethical approval

Massey University's Code of Ethical Conduct was followed during this research. A low-risk ethics notification number of 4000024945 was obtained. Informed consent was secured from the participants. No potentially identifiable images or data are included in this study.

4 | UNDERSTANDING THE COMMUNICATION PRACTICES

4.1 | Community communication network (NSN)

Three main actors communicate in the pre-disaster stage: (i) emergency management (CDEM) agencies; (ii) emergency service agencies and organisations supported by the government, non-governmental entities, and community-based groups; and (iii) local people.

4.1.1 | Emergency management agencies

Local CDEM groups play a central role in promoting civic participation and collective action at the community level. Their active presence can be attributed to their mandate as the emergency management agency in the country (Ministry of Civil Defence and Emergency Management, 2002) as well as a general lack of interest in emergency management among local people and community organisations (Becker et al., 2012). With the support of different governmental agencies, community-based organisations (CBOs)/non-governmental organisations (NGOs), community leaders, and local people, emergency management agencies promote civic participation and collective action using three approaches: (i) scoping and relationship-building activities; (ii) awareness-raising events; and (iii) advertisements and promotions. Awareness-raising events are structured happenings held in-person or virtually in the form of meetings, workshops, and training nights. While they can be focused solely on collective preparedness, typically, they are combined with broader hazard awareness events that discuss individual preparedness, business continuity, and other related topics. The following excerpt explains how such events are organised in Selwyn:

We'd say, we're gonna come out to Leeston ... to do an emergency preparedness presentation about the Alpine fault ... we would put on supper and invite all the locals and tell them what we're doing, what the impacts of an Alpine fault rupture is likely to be on their community ... we'd tell them what they can do now to make their life more comfortable afterwards. ... And then we would tell them the way community response works and we're looking for more local people. Would anyone be interested? Please come and see us and we'll take questions. And just mill around; always put on supper and a cup of tea. People stay. They have the opportunity to chat. ... And now they've been presented with the facts of what might happen ... and how they can step up now and do something voluntarily to be involved ... it appeals to people (C_EM2).

Scoping and relationship-building activities, meanwhile, rely on in-person informal approaches like cold calling, shoulder tapping,⁴ maintaining a presence at social events, and drop-in sessions. They aim to identify key stakeholders and interested members within a community and establish trust and collaborative relationships with them. Local leaders and community influencers often are the first point of contact for emergency management officials trying to form or strengthen relationships with a community. In the words of one study participant:

It's a lot of informal and formal talks with our team and the local community leaders and then of course, leveraging off those community leaders. They are members of ... the local schools ... they share the news

through those channels. ... Local sports coaches and the residents' association. ... And then it was about coordinating and bringing those different residents together. ... The most effective has always been going to meeting with community leaders and influencers and really meeting the right people (W_EM2).

Additionally, to connect with interested community members, emergency managers organise 'drop-in sessions' or erect a 'stall at a community event', allowing 'community members [to] come up' to discuss 'something that's on their mind already'; these events provide 'an entrance way' and 'sometimes develop into a group' around preparedness (C_EM1).

Promotional activities rely on impersonal communication techniques over print (community newsletters and advertisements distributed via letterbox drops) and digital media (website and social media). They encourage collective preparedness activities like creating community emergency plans, staying connected with neighbours, hosting neighbours' days, and volunteering with organisations focused on disaster preparedness (National Emergency Management Agency, 2025; Selwyn District Council, 2025; Wellington Region Emergency Management Office, 2025). Promotional activities supplement in-person approaches to increase reach and visibility. With the rise of social media, officials are using the technology to 'inform the community that they're invited to *huis* (meetings) or projects that are happening' (BoP_EM2) or engage in 'discussions online so our team are able to jump online and answer questions' (W_EM2).

Depending on a region's approach to collective preparedness, the structure and purpose of events, their frequency, the facilitation process, and the extent to which informal processes are incorporated varies. Yet, most officials found informal interpersonal approaches to be more effective than other techniques in generating interest and finding volunteers; hence the preference to use personal connections over mass communication. Highlighting the importance of the informal in-person approaches, one official stated:

[Community engagement] can be a real varied approach ... especially during COVID [coronavirus disease] it was quite challenging ... a lot of the engagement that would normally happen face to face was done over Zoom or via e-mail. And I think that really stunted the start of me forming community connections. ... So I would say a solid 85 to 90 per cent of the engagement or relationship-building I do is face to face over a cup of coffee ... the odd phone call and e-mail [are] scattered in there, but ... I ... very much like to be out and about and see people face to face (W_EM4).

The communications processes are also highly dependent on the community engagement facilitators' (also known as community resilience advisers and community resilience co-ordinators) skills, knowledge, and relationships within the community and their approach to community engagement. For example, one official highlighted how such approaches rely majorly on their relationships within a community and underlined that she 'drew on my own personal networks across the disability spaces ... and just anyone I knew pretty much' (W_EM3). Another official added: 'I'm still ... figuring out how I can build relationships with some of the underrepresented communities or communities I just don't necessarily have relationships with' (W_EM4).

4.1.2 | Emergency service agencies and organisations supported by the government, non-governmental entities, and community-based groups

Emergency service agencies (like Fire and Emergency New Zealand (FENZ), Hato Hone St John, and New Zealand Police), government departments (like the Public Health Agency and primary industries) and community-based non-profit organisations (like residents' associations, the Salvation Army, Neighbourhood Support New Zealand, Federated Farmers of New Zealand, and the Rural Support Trust) support emergency management agencies through their communication activities. They spread preparedness messages within their networks, connect interested people with

emergency management officials, and amplify the visibility and reach of disaster and risk communication. For instance, one representative from Neighbourhood Support New Zealand emphasised that when posting on the NGO's social media page about neighbourhood events, they also include messages on preparedness:

We have a Neighbourhood Support Facebook page ... we can get to 5,000 views with my weekly crime reports. ... So, when I do my weekly crime report ... that have happened in the last week ... I'll put in it ... emergency management preparedness or FENZ fire tips as well (BoP_N1).

These organisations also point out preparedness issues within their neighbourhoods to responsible agencies and work towards resolving them.

Emergency management officials collaborate with these organisations to identify new volunteers. It is common to partner with 'FENZ and Police and St John' and 'encourage their volunteers to come along [to meetings organised by emergency management agencies] because a majority of them are very interested in what we do and how we [can] work together' (S_EM1). As existing community volunteers have rich local knowledge, community connections, and an interest in community concerns, they are often the first points of contact when forming new volunteer teams. One volunteer from FENZ noted:

When we first started forming it ... it was myself, and two of our station officers here. ... It was originally set up by [a person from the district council] ... we were pulled in from a fire and emergency point of view (BoP_V2).

Leveraging existing organisations and networks is particularly important for engaging with hard-to-reach communities. Describing their experience, one participant said that in 'new migrant communities or culturally- and linguistically-diverse communities, identifying either that person in the local council ... or ... another social agency that holds the relationship and working through them and with them' is important (C_EM1).

4.1.3 | Local people

Local leaders and community influencers often are the first point of contact for officials looking to identify potential volunteers. The process to establish contacts can extend over a long time and suffer when connections cannot be established and maintained.

Local people disseminate information and knowledge about collective preparedness gained from the above communication streams through informal conversations with family, friends, neighbours, and the broader community. They 'spread the word' about awareness events organised by emergency management agencies, create interest, and 'bring along friends'. During these events, they participate in discussions with officials, share their viewpoints, influence conversations and their outcomes, and then share acquired knowledge with their social circles, thereby maintaining a discourse on preparedness. Such community conversations play a crucial role in influencing people's participation in collective preparedness. For example, participants from Wellington mentioned that their emergency preparedness activities started as 'a realisation ... as simple as two people talking ... you know we've got some water or we haven't got anything ready and it probably just grew from that' (W_V4) and that 'discussions about them [disaster preparedness activities] came and went, [and] people added other ideas ... [and it] just snowballed really' (W_V2).

As a core team of residents interested in forms of collective preparedness, they have become advocates of such action in their communities, promoting conversations on preparedness through 'word of mouth' and encouraging others to get involved. A volunteer, now in charge of the local CRT team, shared how, when she moved to a new area, her neighbour, who was already part of the team, visited her and, during a casual conversation, asked if she

would like to join the group. Another volunteer shared how they believe that they 'have a lot of resources around here' in the community and encourage other residents to engage more and 'spring into action' (W_V1). Describing how local people assume leadership, one official said:

[It is] somebody who takes on that leadership ... they might be the Facebook community page driving all that, be the person that organises the coffee group for the new mums. They're just community-minded people who are quite active and like to help organise and support things in their community (C_EM1).

It is noteworthy that officials from emergency management, government entities, and CBOs/NGOs are also members of their local community. They champion preparedness conversations within their personal networks, even when not in their official role.

Digital platforms like 'community Facebook pages' are also used to generate awareness by posting that the local CRT is seeking volunteers. The tacit and experiential knowledge of local volunteers helps them in suitably adapting their messages and communication techniques to the local context. For instance, one volunteer recalled that their initial plan was to share the community response plan at a local event, such as Christmas in the park, by setting up a stall to talk with residents directly, but 'COVID kept making it really hard' and 'we just decided we're gonna put [it] in the mailbox' (BoP_V1).

Even people who are not associated with collective preparedness, share, in their interpersonal conversations or at social events, information on the preparedness groups and connect interested people. For example, one volunteer came to know about the preparedness groups through 'word of mouth' and then by 'meeting existing members from the civil defence effort', while another 'talked to people and got asked to join because of my skills and training'.

Figure 2 maps the communication network, the actors, and the communicative actions. The upper part shows the organisations communicating about collective preparedness at the community level and the communicative actions they adopt. The lower part shows a hypothetical community with each point representing a person with existing networks, denoted by lines (like the network of a community leader), and groups, shown in a circle (like a resident's association and sports groups). As organisations engage in collective preparedness communication within a community, they establish connections with interested community members (like a community leader, a sports group, and a resident's association). These connections serve as a bridge between official agencies and communities, triggering ongoing conversations on disaster risk reduction. The process helps to enhance disaster knowledge and foster relationships between community members and organisations that can help with securing support during an emergency. Yet, it is noteworthy that not everyone is connected to the community communication networks (see the bigger black dots in the figure) and they might struggle to participate in conversations or access resources shared through these networks. Eventually, community emergency response teams might form within a community to lead disaster preparedness efforts. These teams work closely with official agencies, undergoing training and communicating regularly with them.

4.2 | Resources and community contexts (CAC)

Social infrastructure plays a crucial role in promoting community interactions essential to fostering civic participation. Public facilities with meeting spaces like community centres, memorial halls, schools, and religious establishments enable community members to come together, discuss issues, conduct activities, and engage in collective decision-making. Emphasising the significance of physical spaces for bringing people together, one volunteer said:

I think shoulder tapping probably has occurred, but it generally occurs because somebody stopped to listen to the conversation ... because they stand next to you, you can tap them on the shoulder and say, 'would you like to do something?' (W_V4).

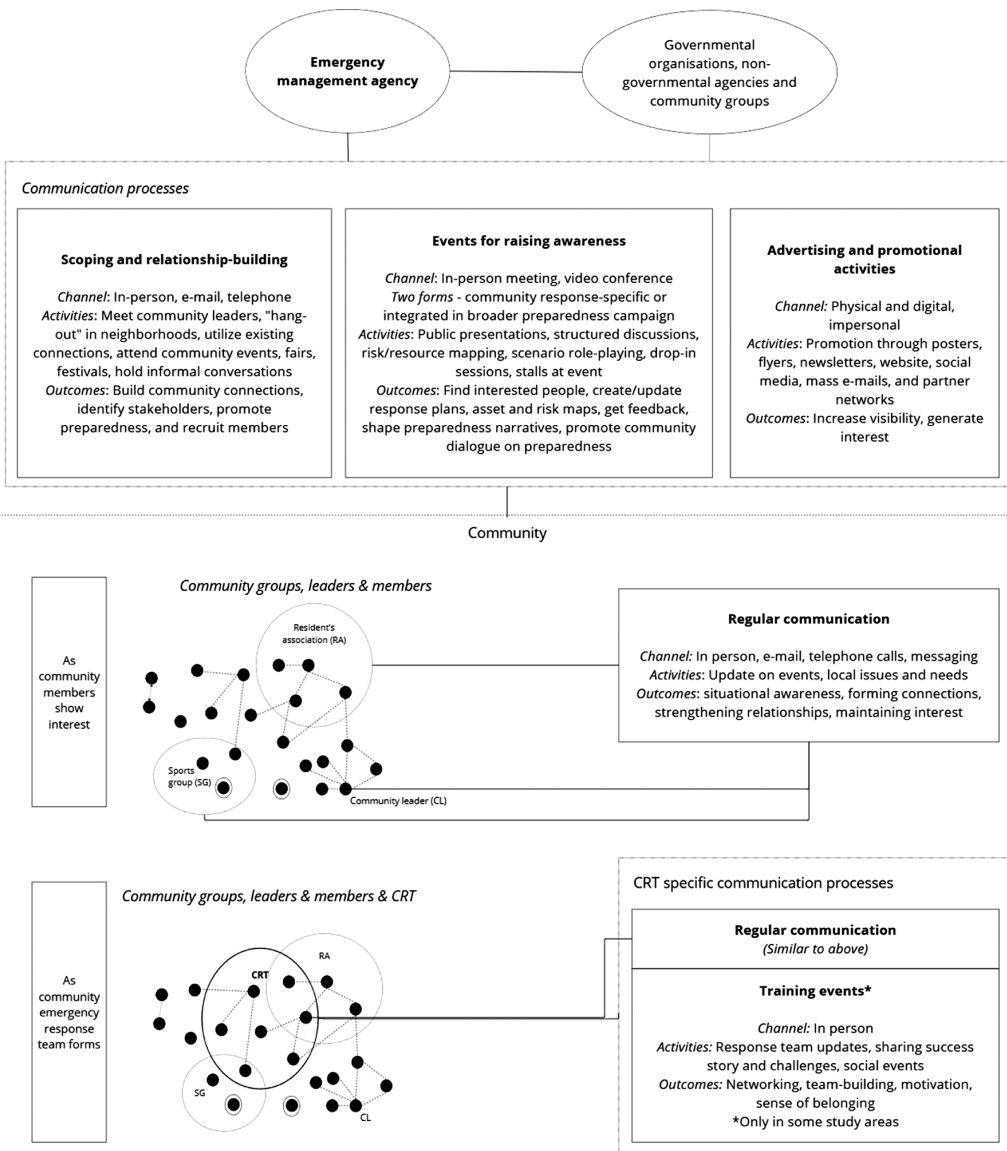


FIGURE 2 Representative schematic of the community communication network, showing the communicating actors and communicative actions promoting civic participation and collective action to reduce disaster risks. **Source:** authors. Created using the Miro tool.

Local cafes, public libraries, supermarket noticeboards, and digital media (websites and social media pages) are used to inform about collective preparedness activities, upcoming events, and how people can engage in them. Yet, a lack of such features in a neighbourhood can constrain people from forming connections. For example, one volunteer highlighted how urban neighbourhood structures are challenging for engaging with people:

We've tried to meet people in the apartments and get apartments more involved. It is difficult. You can't go in and put up notices in an apartment block because the doors are locked ... we need someone from inside who is part of your group (W_V1).

It is also important to have comfortable, familiar, and safe spaces in the neighbourhood that facilitate interactions and informal conversations among community members. The study found that it is particularly crucial to form connections between different groups in a neighbourhood. One volunteer underlined:

[We have] people who are a bit too frightened to turn up to public meetings ... there's a person ... he's very nervous on the phone but he rings nonetheless. So, they've really only come from personal one-on-one conversations. I think both [names another volunteer] and myself have met him on the street now and then, and we just stop and say 'g'day, how are you?, how's it going?' ... it all starts with face to face (W_V2).

Neighbourhoods with diverse groups such as young people, migrants, ethnic minorities, and underrepresented individuals were identified as more challenging to connect with; however, the findings suggest that the problem stems primarily from challenges in establishing connections with and between them and gaining their interest. For instance, one official stated:

There have been areas where communities have been identified as a quite key priority community to engage with, but it hasn't been possible as of yet to either find the right community leaders or to generate their interest. In a way that's almost a precondition you need (W_EM2).

Most participants believed that the approach to address this again involves leveraging community interests and existing networks and connections, some of which might not be evident without maintaining a long-term 'community presence'. One official highlighted that 'we probably never reached the most vulnerable through more traditional means of engagement' and how 'food banks can become a conduit for information' here. 'It's through those types of networks that we can actually have reach' (C_EM1).

While a communication infrastructure consisting of relational ties is important to promote civic participation, linking it with resource access and institutionalising are essential to translate intentions into collective actions (Kim and Ball-Rokeach, 2006). For instance, the lack of formal recognition of a community-driven initiative sometimes limits the ability to access resources quickly when needed. One participant pointed out that while having relationships is important, it is vital to formalise them: 'getting those relationships ... written up ... before the event', so the community can quickly obtain what it needs during an emergency, instead of 'sitting here with pallets of water and a storage cupboard [that] we have to swap out every year' (BoP_V2).

4.3 | Integrating new members

Seven main actors are effective in connecting new members: (i) authorities responsible for emergency management (the council and/or CDEM); (ii) another group with which they were volunteering; (iii) personal connection (friend, spouse, or neighbour); (iv) local people; (v) local people associated with emergency management; (vi) journalists (regional and local media); and (vii) people in the workplace (see Table 3). The findings highlight that authorities responsible for emergency management are the key actor communicating about civic participation, followed by existing volunteer groups, personal connections, and local people.

New members are recruited through interpersonal influence (shoulder tapped/invited by someone I know), community conversations (discussions happening in the community and word of mouth), personal conversation (with friends, a partner, or a neighbour), social media (such as a community Facebook page), public events (meetings and information sessions), newspapers, internet search (such as on Google), newsletter, mass media, and leaflet drop in letterbox (see Table 4). In some cases, the participants received information about the groups through multiple channels (district council-run programme across multiple channels, internet search, community conversations, and/or local events booklet) before deciding to volunteer. The results highlight that the effective ways to engage with people are

TABLE 3 Survey findings on communicating actors.

Communicating actor	Number of responses
Authority responsible for emergency management (the council and/or CDEM)	24
Another group with which they were volunteering	11
Personal connection (friend, spouse, or neighbour)	7
Local people	6
Local people associated with emergency management	5
People in the workplace	5
Journalists (regional and local media)	4
Multiple sources: workplace/local people/authority responsible for emergency management (council/CDEM)	2
Do not remember	16
Total	80

Source: authors.

TABLE 4 Survey findings on communicative actions.

Communicative action	Number of responses
Interpersonal influence (shoulder tapped/invited by someone I know)	23
Community conversations (discussions happening in the community and word of mouth)	19
Personal conversation (with friends, a partner, or a neighbour)	6
Social media (such as a community Facebook page)	5
Public events (meetings and information sessions)	4
Newspapers	4
Internet search (such as on Google)	3
Newsletter	2
Mass media	2
Leaflet drop in letterbox	1
Multiple channels (district council run programme across multiple channels, internet search, community conversations, local events booklet)	5
Do not remember or unclear response	6
Total	80

Source: authors.

through interpersonal influence, where people are shoulder tapped/invited to join the group, or when collective preparedness is discussed as part of community conversations.

5 | DISCUSSION

This paper describes the communication practices adopted to promote civic participation and collective action for reducing disaster risks at the community level. Drawing on qualitative data, we outlined the community

communication network in subsection 4.1 (RQ1) and resources and contextual influences in subsection 4.2 (RQ2). Based on survey responses, we highlighted effective approaches to integrating new members in subsection 4.3 (RQ3).

The data show that emergency management agencies are the main communicators of collective preparedness. This might be because of the lingering command-and-control perception of emergency management that views it as central authority-led actions with citizens positioned as passive recipients of support (Dynes, 2006). Or, it may reflect a general lack of public interest in engaging with preparedness efforts or proactively seeking out relevant information (Becker et al., 2012). To encourage broader involvement, the promotion of a collaborative model of emergency management that emphasises the role that different organisations and citizens can play in reducing disaster risks would be beneficial. Additionally, leveraging existing networks, resources, and community interests becomes essential (Balog-Way, McComas, and Besley, 2020; Oktavianus and Lin, 2022).

Aligning with previous studies, we found limited involvement of mass media in promoting civic participation at the community level (Kim and Ball-Rokeach, 2006). Yet, contradicting CIT, we also found limited involvement of geo-ethnic media⁵ in collective preparedness communication. Future communication practices can target more engagement with geo-ethnic media as well as closer work with journalists and science communicators to promote mass media involvement. Based on the survey data, communication through workplace communities is another avenue that needs further exploration.

Local people, regardless of their involvement in emergency management, play an important role in the communication network by engaging in conversations about hazards and preparedness in their communities (Kim and Ball-Rokeach, 2006). Therefore, it is important to create opportunities for local people to connect and engage in community conversations. This involves not only promoting initiatives that encourage community connections, like 'know your neighbour' (Wellington Region Emergency Management Office, 2024), but also ensuring support for communication resources, either physical (such as community halls, gardens, and recreation centres) or digital (Facebook community groups), that are safe, inclusive, accessible, and enjoyable. The findings (subsection 4.2) underline the criticality of such resources in promoting neighbourhood conversations and civic participation.

The findings also highlight the value of community engagement facilitators and their relationships with the community—in the absence of these relationships, official communication efforts suffer (Sharpe, 2021; Garvey and Paavola, 2022). Formally recognising and institutionalising these relationships would help to preserve and maintain them, even when facilitators move, thereby reducing dependency and pressure on specific individuals. Furthermore, while utilising existing community networks and volunteers is valuable, it is vital to prevent overburdening the same group of people with multiple community roles, to avoid burnout. To support volunteers in effectively fulfilling their responsibilities, it is important to provide institutional support and ensure the availability of necessary resources.

The findings support previous research that asserts that promoting conversations among community members on hazards and disaster risks positively influences collective action (Kim and Ball-Rokeach, 2006; Lejano et al., 2022). It also suggests that regular exchanges among community members and connectedness to each other in everyday life play an important part in fostering civic outcomes, even in the domain of disaster preparedness (Houston et al., 2015; Spialek and Houston, 2018). Subsection 4.3 shows that the interpersonal influence of trusted communicators was highly effective in promoting community participation (Sharpe, 2021). Overall, the data indicate that a relational approach to disaster and risk communication is effective and is more common in promoting community participation and collective action than conventional communication practices that rely on mass communication and public education approaches (Balog-Way, McComas, and Besley, 2020; Lejano, Haque, and Berkes, 2021). Current communication practices also provide an example of how a relational approach can be integrated into conventional disaster and risk communication practices. The findings also suggest, however, that a relational communication approach in itself will not be effective unless resource and institutional support mechanisms are in place. Integrating CIT into collective action theories like resource mobilisation theory would help with identifying better ways to support collective efforts.

Furthermore, a communication infrastructure perspective would be valuable to explore communication inequities within different groups, even in the same neighbourhoods (Matheson and Jones, 2016), by understanding their access to communicating actors, resources, and contexts. It would also help with identifying and prioritising groups that require more attention to strengthen community relationships and connections with authorities. Future research examining the reasons behind unequal access to communication resources, investigating how power dynamics are reproduced within these networks, how disparities emerge in the relational networks, and which perspectives gain dominance, and pinpointing methods to address these inequalities, would be beneficial.

Initially, we attempted to map the communication infrastructure using survey-based social network analysis (Wasserman and Faust, 1994); however, the pilot surveys did not return satisfactory data, so we opted to outline the network using qualitative data. Nevertheless, a quantitative analysis would provide more generalisable findings. We also intended to identify the messages and conversations that were most effective in recruiting new members. It was observed, though, that in community communication networks, information and messages are often shared through conversations and narratives. These are critical in influencing the interpretation of events, shaping understanding of the world, beliefs, and attitudes, and can play an important role in influencing community participation and collective action (Fisher, 1985; Kim and Ball-Rokeach, 2006, Dawson, 2020). Future research could profit from a critical analysis of the narratives shared within these networks to understand how they foster civic participation, assess their impacts, identify potential issues, and explore areas for improvement.

Social media is increasingly being adopted in collective preparedness communication, despite concerns about it (Hughes and Palen, 2009; Endsley, Wu, and Reep, 2014; Plotnick et al., 2015; Knuth et al., 2016). Future research can benefit from focused studies on social media. Additionally, although innovative communication techniques, such as games, virtual reality simulations, and citizen science applications, are being experimented with, we did not find their adoption in the routine practices of collective preparedness communication. Future research can analyse why emerging technologies are still underutilised by scrutinising their effectiveness and the challenges to their adoption.

6 | CONCLUSION

This paper aimed to explore the communication practices that promote civic participation and collective action at the community level for reducing disaster risks. Guided by CIT, we gathered data from four regions of New Zealand. The findings suggest that there are three main actors in the collective preparedness communication network: (i) emergency management agencies (the primary communicator); (ii) emergency service agencies and organisations supported by the government, non-governmental entities, and community-based groups; and (iii) local people. Scoping and relationship-building activities, awareness-raising events, and advertisements and promotions are used to engage with community members. Government entities and CBOs promote disaster and risk reduction activities within their networks and connect interested people with emergency management officials. Local people engage with the communication streams, often resharing them with their connections. This process helps to enhance hazard knowledge, generate a shared interest in hazards and preparedness actions, and often triggers community conversations that lead to community participation. A conceptual map of this communication infrastructure is presented. Moreover, the paper also highlights the importance of interpersonal influence, community conversations, the presence of safe and accessible social infrastructure, skilled facilitators, existing community organisations with networks and relationships, and supporting institutional and resourcing mechanisms in promoting people's participation in collective preparedness actions.

Based on the findings, we suggest the following four key considerations concerning communication practice. First, when designing communication strategies to promote civic participation and collective action, it is essential to understand the structure of community communication networks. This includes identifying key actors, existing connections, and informal ties to achieve wider reach. As geographic communities are not homogenous and consist of multiple overlapping social networks, emergency management agencies must engage with a diverse range of

stakeholders to connect with underrepresented groups (such as culturally- and linguistically-diverse groups, such as young people), even within the same neighbourhood. This involves pinpointing those excluded from existing communication networks, understanding their preferred communication channels, and developing tailored strategies to reach them. For example, younger individuals might be more effectively reached through universities.

Second, the availability of and access to safe, comfortable, and inclusive communication spaces should be ensured to promote community conversations; existing social infrastructure (such as community centres, cafes, and public libraries) can be utilised for that purpose.

Third, the findings show that emergency management agencies are still the main communicator of community action for reducing disaster risks. Future communication strategies need to focus on involving other actors within the community to generate broader interest and participation. In areas with low interest in disaster risk reduction, leveraging existing community initiatives, networks, and ties would be particularly beneficial. For instance, integrating disaster awareness activities into existing community events such as festivals or community fairs can lead to more engagement by community members. Similarly, tapping into people's interest in areas like environmental protection or climate change and highlighting the interlinkages of disasters with these fields can be helpful in gaining public interest.

Fourth, the data show that mass media plays a limited role in communicating about disaster risk reduction and community actions. Given its importance as a communicator, collaboration with journalists, science communicators, and other stakeholders is necessary to address this gap. Furthermore, targeted efforts should be made to engage community media, including geo-ethnic media, neighbourhood social media pages, and similar platforms, and to reach diverse audiences effectively.

We hope that these findings will contribute to communication research and practice supporting community actions on disaster risks and help in advancing the broader fields of disaster and risk communication, climate change and environmental communication.

ACKNOWLEDGEMENTS

We want to extend our gratitude to all participants who generously contributed their time and support to this study. We are also grateful to Dr Sara McBride for her valuable guidance throughout the research. Our sincere thanks go to Resilience to Nature's Challenges, New Zealand, for funding this work, and to the Joint Centre for Disaster Research at Massey University for providing a supportive environment for the study to take place.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest.

FUNDING

The research was funded by Resilience to Nature's Challenges, New Zealand.

DATA AVAILABILITY STATEMENT

Research data are not shared.

ORCID

Manomita Das  <https://orcid.org/0000-0001-9611-8625>

ENDNOTES

¹ Defined in subsection 2.2.

² Meaning the various ways in which individuals engage in communication within a societal or civic context, such as attending community meetings.

- ³ Non-participant observation involves studying a situation or group without actively participating in the activities being observed (Patton, 2014).
- ⁴ Shoulder tapping is a means of reaching out and inviting individuals to participate in a volunteer initiative. It involves directly approaching and engaging with people, either in-person or through communication channels like e-mail or social media.
- ⁵ Local media that target specific population groups, like immigrant minorities (see Kim and Ball-Rokeach, 2006).

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How to cite this article: Das, M., Becker, J., & Doyle, E. E.H. (2025). Exploring communication practices that promote community participation and collective action for reducing disaster risks in New Zealand. *Disasters*, 49(4), e12690. <https://doi.org/10.1111/disa.12690>