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Matter of trust: How to include digital volunteers in crisis management

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Abstract

Digital volunteers are becoming more visible actors in crises. By collecting data, correcting misinformation, and organizing help, they are often a much-needed resource in crisis management. Despite this, authorities generally see spontaneous volunteers as a risk and a burden, thereby creating a paradox identified by Harris and colleagues. To extend the paradox to digital volunteers, this study aims to understand how Finnish emergency response organizations perceive spontaneous digital volunteers and how these could become a resource in crisis management. Eight informants representing six authorities/non-governmental organizations were interviewed in March 2019. The results show that authorities see potential in digital volunteers but only for strictly limited tasks as problems with trust and volunteers' lack of knowledge and training stand in the way of cooperation, thus confirming the paradox. The main contribution of this study is to show how the involvement/exclusion paradox exists in the relationship and may create barriers between authorities and digital volunteers.

KEYWORDS

digital volunteers, volunteer management

1 | INTRODUCTION

The development of technology and social networking platforms profoundly affect how authorities and citizens respond to and communicate in crises. Social networking platforms and web-based software offer the possibility for citizens to get involved in crisis management by creating, sharing, and collecting crisis data. Thus, authorities are required to manage the crisis both on-site and on the Internet. However, authorities may lack resources such as time, staff, and skills to process the data (Hornmoen et al., 2018). This can lead to ineffective crisis management as some needs might be left unseen, affecting the citizens' trust in authorities' management skills and thus, their reputation.

Simultaneously, the expanding information space makes way for new, emerging groups of citizens, who come to aid in crises both on-site and online. Increasingly, citizens use social media for self-coordination and helping those in need. Especially groups that gather online spontaneously to help, *digital volunteers* (Starbird & Palen, 2011), are becoming more visible actors in crises and catastrophes. They help by gathering and structuring online data about the crisis and discovering and answering surfacing needs.

Digital volunteers could aid in crises by providing a communication link between citizens and authorities or by working with other information-related tasks (Smith et al., 2021). However, authorities' perceptions of digital volunteers have received limited attention in the field (e.g., Hughes & Tapia, 2015), as research on crisis

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volunteerism to date mainly has focused on the relationship between authorities and informal, on-site volunteers (e.g., Nahkur et al., 2022; Nielsen, 2019). Such spontaneous volunteerism is often perceived by the authorities more as a risk than as a resource (Eriksson & Danielsson, 2022; Johansson et al., 2018), making them an unexploited asset. Recognizing this perception, Harris et al. (2017) developed an involvement/exclusion paradox theory which states that even though spontaneous volunteers could provide an extra capacity in crises, authorities are reluctant to involve them in crisis management. The paradox reflects the tension and potential trust issues between authorities and the spontaneous volunteers' self-organizing nature.

A similar paradox may apply to the relationship between authorities and digital volunteers. To address the research gap, this study investigates how Finnish emergency response organizations perceive and potentially could include digital volunteers in their crisis management. We conducted six semi-structured interviews with informants representing national public authorities/non-governmental organizations (NGOs)—the police, rescue services, central hospital, city communication services, regional state administrative agency, and Red Cross. Using the involvement/exclusion paradox (Harris et al., 2017) as a theoretical ground, this study aims to understand if and how the paradox takes form in public authorities' perceptions.

2 | LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 | Digitally enabled volunteering and crisis management

In recent decades, volunteering has undergone a shift from traditional long-term, membership-based volunteering to more episodic and spontaneous forms. This shift is influenced by changes in values, lifestyles, and the advancement of technology and Web 2.0 (Hustinx, 2003). Rather than committing long-term to a specific NGO as formal volunteers, individuals now tend to engage in specific projects or causes (referred to as emergent volunteers, spontaneous or informal volunteers). These volunteers spontaneously converge at crisis sites to offer help, regardless of their prior volunteering experience. Emergent volunteerism typically arises when citizens perceive poor coordination or unmet needs by authorities (Stallings & Quarantelli, 1985). These volunteers can engage in activities before, during, and/or after the crisis, either individually or in groups, and their level of involvement may vary in terms of time and effort (Whittaker et al., 2015).

Authorities typically approach emergent volunteerism with caution, employing a command-and-control approach to crisis management to establish control over chaotic situations (Dynes, 1994). Ad hoc volunteer efforts are often viewed as counterproductive due to their improvised nature (Neal & Phillips, 1995). Challenges arise in verifying volunteers' backgrounds, training, and skills, which impacts authorities' trust in them. Additionally, managing informal volunteers involves costs for equipment,

training, and safety measures to avoid liability issues (Twiggs & Mosel, 2017). Consequently, authorities prefer to rely on professional responders and formal volunteers from nonprofit organizations. While civic activity is considered encouraging, authorities prefer it to be under the control of a third-sector organization (Raisio et al., 2019).

Digital media platforms and tools have enabled and fuelled the growth of digital volunteering, a relatively new mode of emergent volunteerism. Like informal on-site volunteers, digital volunteers recognize and fill emergent needs, but by using online tools like social media and mapping software. This 'digitally-enabled emergent volunteering' can take place either only online or online and on-site, in interaction. Digital volunteers can be from both affected and nonaffected areas. They work in open and flexible networks that promote collective helping and learning and have innovation and improvisation skills that help them crowdsource and use the resources available to modify their efforts from one crisis to another (Estellés-Arolas & González-Ladrón-de-Guevara, 2012; Park & Johnston, 2017). Digital volunteers can engage in a diversity of activities but most often work with information-related tasks such as gathering, processing, or analyzing large amounts of crisis data (Starbird & Palen, 2011).

Several case studies analyzing help efforts produced by citizens during natural disasters and other types of crises show that digital volunteers widely use social media for communicative and coordinative tasks (e.g., Demiroz & Akbas, 2022; Smith et al., 2021). During the European floods in 2013, Kaufhold and Reuter (2016) noted that Facebook was used to provide information but also to coordinate activities, identify demands of help, or organize donation collection points. Similarly, in the aftermath of the 2010 earthquake in Haiti, digital volunteers offered help through translation, map creation, and resource allocation (Harvard Humanitarian Initiative, 2011). Citizen-produced efforts on social media can also partly substitute for official response systems in refugee crisis responses (Simsa et al., 2019), or be adaptive and effective suppliers of citizen-to-citizen help when handling global pandemics (Carlsen et al., 2021).

Previous research on digital volunteerism has focused more on understanding their efforts and challenges encountered (e.g., Park & Johnston, 2017) while few studies have examined digital volunteerism from the perspective of crisis management (e.g., Hughes & Tapia, 2015). Spontaneous volunteer efforts often precede official emergency management, and as digital volunteers emerge online, authorities must be aware of their activities for situational awareness and crisis management. Previous studies show that when official crisis management has taken form, digital volunteers either operate alongside but separate from the official response (Kaufhold & Reuter, 2016) or are excluded from it (Starbird & Palen, 2011). In these studies, volunteers expressed frustration with authorities' lack of coordination and communication on social media, affecting their potential cooperation. Authorities are less enthusiastic to receive crowdsourced efforts like crisis mapping from the public due to resource limitations and a lack of social media utilization skills (Hornmoen et al., 2018; Reuter & Kaufhold, 2018). Furthermore, barriers such as data security, trust, and organizational compatibility hinder collaboration (Hughes & Tapia, 2015).

As the perception and management of digital volunteers by authorities has been overlooked, the current study aims to contribute to the growing knowledge base on digital volunteerism, by investigating the possibilities of digital volunteerism from the perspective of crisis management.

2.2 | The paradox

In a study of winter flood episodes in England, Harris et al. (2017) defined the tension between authorities and spontaneous volunteers as an involvement/exclusion paradox. They described this as a situation where 'people who want to be involved [...] can face numerous pressures for their exclusion, even when there is, objectively, a need for the help that they are offering and the resources they can contribute' (p. 364). They further argued that authorities' choices affect the appearance of the paradox at several stages in operating culture, management approach, task allocation, and the context of volunteering. Depending on, for instance, how much control the authorities wish to have over volunteers' efforts, and how flexible they are in delegating tasks to them, authorities either involve the volunteers in their management or exclude them from it.

This paradox might stand in the way of effective crisis management if authorities decide to reject rather than accept spontaneous volunteers' efforts. The paradox, or similar concepts investigating central issues such as trust between actors, have been studied by for instance Johansson et al. (2018). They concluded that organizational affiliation was the strongest cue for volunteer legitimacy, as nonaffiliated volunteers had to 'prove their worth' to be let in. However, Nielsen (2019) found that authorities' prior

experience of informal volunteers, as well as their ability to adapt to 'blurring' situational awareness and 'shepherding' leadership enabled the successful involvement of spontaneous volunteers in crisis management.

While the involvement/exclusion paradox and similar studies focus on spontaneous, on-ground volunteers, this article aims to investigate whether the paradox is prevalent in authorities' perceptions of spontaneous digital volunteers, and if so, how it is manifested (see Table 1). Concerns of risks and volunteers' backgrounds identified in previous studies may be relevant in the context of digital volunteers as well. However, the digital media landscape presents unique challenges for crisis managers, as for instance the partial anonymity of volunteers or the fast-paced collaborative potential of social media, can impact the paradox. Therefore, this study specifically investigates whether trust issues and related tensions affect authorities' viewpoint of digital volunteers. The study is guided by three research questions (RQs) focusing on the paradox and the more general experiences of collaboration between the two parties: (1) what experience do authorities have of digital volunteers, (2) how do authorities perceive digital volunteers and collaborating with them, and (3) what requirements do they have for realizing the collaboration?

3 | METHODS

This study investigates authorities' perceptions on digital volunteers in a Finnish context. In Finland, crisis management is a cooperation between authorities but also includes the second, third, and fourth sectors of the society (Ministry of the Interior, 2020). Especially the third sector, which includes NGOs such as the Red Cross and the

TABLE 1 A summary of the three elements from Harris et al.'s (2017) involvement/exclusion paradox of spontaneous volunteering that is investigated in this study.

Paradox element ^a	Definition	Authorities' choices/dilemmas	Study interview questions regarding the element
Authorities' operational culture	Authorities' initial responses to digital volunteers, including specific guidelines about how volunteers should be received and how authorities perceive them.	Official guideline: <i>Accept versus reject volunteers.</i> Authorities' attitude: <i>Volunteers welcome versus unwelcome.</i>	What experience do authorities have of digital volunteers? How do authorities perceive digital volunteers?
Authorities' management approach	How digital volunteers are involved in crisis management, including integration of volunteers, evaluation of added value, and style of management.	Integration: <i>Collaboration with volunteers versus arms-length involvement.</i> Evaluation of contribution value: <i>Monitoring volunteer activities versus no monitoring.</i> Style of management: <i>Empowering volunteers versus command and control.</i>	What requirements do authorities have for realizing the collaboration?
Authorities' task allocation	What tasks authorities are willing to delegate to digital volunteers, their tolerance for volunteer-related risks, and criteria used for task prioritization.	Risk tolerance: <i>Accept risk with volunteers versus zero risk.</i> Task prioritization: <i>Preset scheme for volunteers versus dynamic needs assessment.</i>	How do authorities perceive collaborating with digital volunteers? What tasks could be given to them?

^aHarris et al. (2017), adapted to the context of digital volunteers.

Voluntary Rescue Services (Vapepa), a network of over 50 volunteer organizations, plays an important role in supporting public authorities' security functions (Jalava et al., 2017). In Finland, most volunteers are affiliated with an organization, but spontaneous volunteering is encouraged and seen as a supportive resource for formal volunteers (Nahkur et al., 2022). Under Vapepa, there are currently no voluntary organizations that would work mainly digitally (A. Suomalainen, personal communication, May 8, 2023).

Authorities have their own crisis communication responsibilities, but they strive for common guidelines and support each other's management and communication throughout a crisis (Ministry of the Interior, 2020). Authorities inform citizens through both traditional and digital media, including selected social networking platforms. Finland has a high level of digital skills, excels in the availability of e-services, and offers widespread access to the Internet (European Commission, 2022). Up to 70% of citizens between 16 and 89 years are active on social media (Kohvakka & Saarenmaa, 2022), and 82% use the Internet daily, indicating that a wide public can be reached through digital media.

To understand authorities' perception of digital volunteers, this study is based on semi-structured interviews with eight informants representing six authorities with a variety of roles in crisis management. The data was collected in March 2019 in three different regions in Finland on local, regional, or national level. The regions were selected to represent variation in both city/region size and geographical location (see Table 2).

We reached out to communication or rescue/emergency managers to identify informants who were likely in contact with digital volunteers. They either agreed to participate or suggested another expert. A week before the interview, informants received a

description of digital volunteering and two articles from the field (Kaufhold & Reuter, 2016; Starbird & Palen, 2011). Two versions of a semi-structured guide were used in the interviews, tailored to the interviewees' experience with digital volunteers. The interviews covered three main themes: authorities' experiences with digital volunteers, their perceptions of digital volunteers and collaboration (regardless of their personal experience), and the requirements for successful collaboration. The interview questions were partly based on elements 1–3 of the conceptual model (see Table 1). Additionally, discussions regarding authorities' current crisis communication challenges were emphasized, particularly in interviews with informants who lacked experience with digital volunteers.

The interviews were conducted face-to-face by the first author and lasted between 24 and 83 min. They were recorded and transcribed verbatim. As the participants were aware of the possibility of being recognized due to the authority and position details, the transcripts were not anonymized. After several readings of the material, the interviews were coded based on the paradox concept or on inductive analysis, then organized into themes reflecting the paradox or other relevant aspects. The material was analyzed on a latent level with a realist approach (Boyatzis, 1998; Braun & Clarke, 2008).

4 | RESULTS AND DISCUSSION

Findings from the interviews are described and discussed in this section according to the three RQs: (1) authorities' experiences with digital volunteers, (2) perceptions regarding collaboration with digital volunteers, and (3) requirements for collaboration. Findings will also

TABLE 2 Overview of the authorities interviewed in the study, and their role in crises.

Authority/organization	City/region (population in 2020)	Role in overall crisis management	Role in crisis communication
Central Hospital	City: Vaasa (68,000)	Provide (emergency) care to citizens that are physically affected by the crisis.	Inform how the crisis affects hospital services; give situational updates about crisis management.
City of Turku	City: Turku (194,000)	Secure city services in cooperation with authorities.	Inform how the crisis affects city services; support authorities' crisis communication.
Finnish Red Cross	City: Helsinki (657,000)	Offer humanitarian help; support and complement authorities' work.	Guide affected citizens to helpful resources; support authorities' communication.
Police	Region: Southwest Finland (480,000)	Ensure public order and safety in for example, threatening or violent situations.	Give situational updates about the crisis management.
Rescue Services ^a	Region: Ostrobothnia (176,000)	Secure and rescue people, property, and the environment in for example, fires and accidents.	Give instructions and situational updates about the crisis.
Regional State Administrative Agency ^a	Region: Western and Inland Finland (1.2 million)	Coordinate and supervise authorities' crisis management in larger crises such as epidemics.	Help authorities create situational awareness and unify their communication.

^aTwo informants participated in interviews.

be connected to the first three elements of the conceptual model (Table 1; Harris et al., 2017).

4.1 | Experiences of digital volunteerism

The first RQ focused on authorities' experiences of digital volunteers and how they perceived their efforts. Since the Haiti earthquake in 2010, digital volunteers have become a more visible actor in both natural and social crises. They have for instance taken an active role in information distribution (Kaufhold & Reuter, 2016), resource management (Smith et al., 2021), and other information-related tasks (Starbird & Palen, 2011). Despite this, digital volunteers were an unfamiliar phenomenon for most informants at the time of the interviews, and only a few could identify actions similar to digital volunteerism.

During the European refugee crisis in 2015, the Finnish Red Cross (FRC) observed Finnish citizens mobilizing on social media. With over 1.25 million refugees, primarily from Syria, seeking asylum in the European Union, Finland received more than 32,000 refugees, almost 10 times the usual number in previous years (European Commission, 2016). However, contrary to the preinterview definitions of digital volunteerism, where volunteers act independently and self-coordinate their actions in the digital environment (Kaufhold & Reuter, 2016; Starbird & Palen, 2011), the spontaneous volunteers reached out to FRC for tasks. FRC could offer them training or on-site activities, such as working in refugee centres or collecting donations.

Some informants were aware of instances where citizens spontaneously provided help online in response to everyday challenges. Rescue services mentioned Facebook groups dedicated to assisting in finding lost pets or stolen items. The police mentioned similar Facebook groups used for searching for missing individuals, where the police led the mission but utilized social media to disseminate information and mobilize people to participate in the search, thereby aiding the operation. Other authorities had observed citizens reacting to social media posts, informing others about changes in traffic conditions following a police operation, or correcting misinformation and rumours.

Even though informants had little or no experience of digital volunteers, they saw potential in the new mode of volunteerism. Their general attitude towards digital volunteers was welcoming and they had relevant thoughts on how the cooperation could be organized. Thus, when focusing on the element of operating culture in the paradox (Harris et al., 2017), authorities lean towards the involvement of digital volunteers in their crisis management.

4.2 | Potential and pitfalls with collaboration

The second RQ focused more in detail on what potential the informants saw in collaborating with digital volunteers and what tasks they could be given. These questions were intertwined with the benefits and challenges of collaboration and are related to the

management approach and task allocation in the conceptual model (Table 1; Harris et al., 2017).

4.2.1 | Collaboration potential: Information-related tasks

Information dissemination

Informants were mainly interested in collaborating with digital volunteers with information distribution tasks, especially those that support their crisis communication. They saw several benefits in digital volunteers distributing crisis information from authority websites to citizens on social media. Information was regarded as powerful, and the more authority crisis messages are spread, the more people they will reach, creating situational awareness and trust for authorities' crisis management. Rapid information sharing decreases time pressure and aids crisis communication control and reaching diverse citizen groups, including young people using nonauthority social media. These were mentioned as some of the current challenges in crisis communication. As the informant at FRC said:

If our crisis message is seen by more people, and especially by people that we can't reach but the volunteers could, it shows that we are here for them, and it will maintain their trust for our message.

Digital volunteers could also correct misinformation and rumours, especially in crises affecting the authorities' reputation. The central hospital had had a reputational crisis after confusing information in mass media about changes in their emergency services, which caused concern among citizens.

At the time, we were only two at the office and had no extra resources to fix the misunderstanding. It would have been extremely valuable to have some volunteers systematically correct the misinformation online.

These are tasks previous research has recognized as some of digital volunteers' strengths, and volunteers have been described as 'retweeters' (Kaufhold & Reuter, 2016) and 'disaster knowledge workers' (Smith et al., 2021) for their information-related skills. Other possible tasks digital volunteers could provide, such as sending or receiving requests for help (Starbird & Palen, 2011), were not mentioned.

Information collection

Digital volunteers can use social media and mapping software for the systematic collection and processing of crisis data to create situational awareness (Park & Johnston, 2017). Some informants were interested in utilizing these skills and having volunteers collect information about the crisis. Digital volunteers could create situational awareness based on information on social media, and

authorities could compare volunteer-collected information to their own. However, previous research has identified authorities' cautiousness towards volunteer-collected information (Hughes & Tapia, 2015) and this was confirmed by our findings. This alternative was seen less attractive as the volunteer-reported information should be confirmed by the authorities themselves before use, thereby increasing their workload. The informant at the central hospital saw it as a last resort:

If we wouldn't get information in any other way then we could try to get information from witnesses on-site who could help.

Informants were interested in using digital volunteers' power as a group to detect silent signals, either in closed groups or otherwise on social media, about, for example, symptoms of transmittable diseases, polarization, antipathy, or unannounced plans on demonstrations. If such signals were detected and reported by volunteers, authorities could prepare for the possibly developing crisis, thus supporting situational awareness.

To summarize, an eventual collaboration between authorities and digital volunteers would consist of mainly disseminating crisis messages and correcting misinformation, and in some cases information reporting from social media to the authorities. When looking at task allocation in the paradox, authorities lean towards excluding digital volunteers from their crisis management (Harris et al., 2017), as the tasks do not actualize volunteers' skills such as crowdsourcing and improvising with resources available (Park & Johnston, 2017). Instead, the tasks are either easy, zero-risk tasks requiring little monitoring or worst-case scenario—alternatives where digital volunteers are authorities' last hope. This can be because spontaneous volunteering is seen as a supportive resource to formal volunteerism in Finland, where tasks with higher risks are delegated to organized volunteers (Nahkur et al., 2022). It also reflects the cautiousness toward informal volunteers identified in previous studies (e.g., Johansson et al., 2018).

4.2.2 | Collaboration pitfalls: Risks with reputation, trust, and data privacy

Risks to reputation and trust

Previous studies identified risks with authority reputation and trust as some of the bigger challenges in including spontaneous volunteers in crisis management (e.g., Hughes & Tapia, 2015; Raisio et al., 2019). This was confirmed by our findings, and the matter of trust was considered the biggest challenge with including digital volunteers in crisis management. The anonymity and spontaneity of digital volunteers and the unawareness of their skills and training were seen as risks for authorities' crisis management. Authorities questioned how they could trust digital volunteers' motives. As the informant representing the city of Turku put it:

Whoever can create an account and start harassing if they have bad intentions. Trust works in both ways: if

we trust them to do something for us, the information must be used correctly, and their will to help must be genuine and not cause harm.

However, the police also acknowledged the risk of not trusting:

We can't suspect everyone; we have to be able to trust people on a general level. Someone can give us the correct information and if we say that we don't believe it, it will erode their trust towards us.

In other words, trusting digital volunteers comes with two costs: the cost of risks with volunteers potentially having bad intentions and the risk of not trusting and thus not empowering citizens to help.

Another dimension related to trust was the risk that a decision to use digital volunteers could turn against authorities by decreasing citizens' trust in them. To have digital volunteers work for the authority could encourage people to believe that the authorities do not have control over crisis management—and if the volunteer's intentions proved to be bad, it could harm the authority's reputation:

I wonder—if a spontaneous group without any connection to the authorities would emerge to help in a crisis, would this create an image that the authorities can't handle the situation, that the citizens themselves have to start volunteering?

If the city wants help from its citizens, it's good for our reputation, but if something goes wrong, media will pick it up and see it as the city giving a mandate to bad people.

If authorities were to trust digital volunteers to help citizens, according to the informants, it would be equally important that citizens can trust the volunteers, the information they spread, and the help they give. Establishing the legitimacy of digital volunteers was considered important, particularly in terms of their mandate to act on social media. One approach suggested was to connect the crisis message to the authority's communication, displaying their logo for increased trustworthiness.

The issue with trusting digital volunteers' intentions and abilities, and how authorities relying on digital volunteers in crisis management could be perceived by citizens, pushed the informants towards excluding digital volunteers from deeper involvement in both the management approach and task allocation of the paradox (Harris et al., 2017). Although many informants were aware of the benefits of including volunteers in crisis management, and a more allowing perspective was noticed among informants who act on a local level, the risks with trust seemed to outweigh the benefits of collaboration. This reflects the Finnish context and previous literature on the relationship between authorities and spontaneous volunteering, where authorities' trust in emergent groups is affected by the difficulties of checking their backgrounds, training, and skills (Twigg & Mosel, 2017).

Data privacy and altered messages

Informants were concerned that if digital volunteers would share authorities' crisis information but altered the message, tweaking it into a joke, or spread misinformation, it could affect both authorities' and citizens' situational awareness, and even complicate crisis communication if journalists treat such messages as confirmed information. Another problem was the volunteers' unawareness of data privacy and security issues. Several informants remarked that private information about the affected must be protected. Volunteers publishing information-sensitive photos from the crisis site, including car registration plates or recognizable faces, could create more challenges for crisis management—especially if there is an established link between the volunteer and the authority.

In both cases, authorities would need to use resources to correct misinformation and monitor digital volunteers' work instead of managing the crisis. Monitoring and managing informal volunteers and preventing eventual risks with information issues require additional resources, which are already scarce in a crisis (Hornmoen et al., 2018). This makes entrusting digital volunteers a less attractive alternative.

Despite digital volunteers' strengths and abilities to gather and process crisis data, authorities would rather assign predetermined tasks to minimize possible risks and problems. The volunteers would be managed through a command-and-control approach and integrated at an arms-length for more simple tasks to avoid additional costs and use of authority resources that monitoring volunteers might require. In the paradox model's task allocation and management approach (Harris et al., 2017), authorities lean on choices that exclude digital volunteers from crisis management.

4.3 | Requirements for collaboration

The third RQ asked what informants thought a potential collaboration with digital volunteers would require to become more relevant. To avoid the pitfalls described, informants suggested different levels of organization and training to provide the volunteers with relevant skills, information, and useful contacts.

Two informants believed that organizing volunteers precrisis under an established organization like the Vapepa network would address trust issues and facilitate finding and reaching out to digital volunteers when required. This organizational approach would foster communication between authorities and volunteers, potentially enabling the appointment of a designated contact person or mediator for digital volunteers. Another suggestion involved creating a platform precrisis where volunteers could interact with professionals, receive support, and undergo training.

Some informants thought that volunteers should be flexible and loosely organized, allowing volunteers to complete the task in a preferred way, especially if trust was established between the authority and volunteers. The police were positive about engaging digital volunteers in information dissemination without any prior contact:

If we notice a group like this supporting our operative work, we could send a private message and tell them that you're doing good work. This could encourage them to keep going.

In between the two views were the informants who thought that some form of contact should be established precrisis, either on a forum or through a contact person who would coordinate tasks within the group. This might not resolve all issues but would make cooperation easier and create a relationship between the actors.

All informants recognized the importance of training digital volunteers to establish trust and mitigate risks of them acting against authority rules. Some informants emphasized the need for official training and simulation sessions, allowing authorities to understand volunteers' skills and assign appropriate tasks during crises. This training could also educate volunteers on crisis management and ensure adherence to organizational guidelines. Another suggestion was a guidebook outlining communication and crisis management rules. FRC alone acknowledged that some situations do not require organization or training of volunteers but instead require staff who can quickly evaluate spontaneous volunteers' skills and coordinate suitable tasks.

These requirements are related to the element of management approach and task allocation in the paradox (Harris et al., 2017). Organized and trained in the preferred way, authorities would be more willing to involve volunteers in their crisis management. It would also allow for more dynamic needs assessment for task allocation during crises when the volunteers' skills and training would be known. However, the requirements might suffocate volunteers' spontaneity and flexibility, which have been identified as key characteristics of digital volunteering (Park & Johnston, 2017). In the worst case, requirements might hinder them from activating altogether, forcing them to become more like formal volunteers, even if acting online.

5 | CONCLUSIONS

In general, authorities in Finland have a good trust relationship with citizens and few are willing to risk it. Help usually comes quickly and citizens trust the authorities' abilities to manage a crisis. However, there is a need for more resources to help with current challenges with crisis communication. Although informants were interested in the opportunities spontaneous digital volunteers could offer, they leaned towards excluding them from authorities' crisis management. That said, the involvement/exclusion paradox (Harris et al., 2017) is prevalent in authorities' attitudes toward digital volunteers.

The main conclusion from this study is that in the context of digital volunteering, the involvement/exclusion paradox seems to be guided by authorities' issues with trust and fear of reputational harm. If authorities could develop trust towards digital volunteers, their attitude could shift towards a more collaborative approach, empowering volunteers and involving them on a deeper level in crisis

management. But as long as they experience not being able to trust the volunteers, they would rather involve them at arms-length for predetermined tasks with low risk—and exclude them from more requiring tasks. Smaller area authorities, like the police, displayed slightly more positive attitudes compared to authorities in larger areas, but the overall attitude was unanimous. The choices and barriers to collaboration between authorities and digital volunteers identified in this study are summarized within the paradox framework in Table 3.

The findings are applicable to countries with a command-and-control approach to crises, or that have well-established systems of organized volunteerism, similar to Finland with its broad network of organized volunteering (Vapepa). Authorities struggle to see the potential in informal volunteering, including digital volunteers: the comforts provided by organized volunteerism, such as knowledge of their skills, identity, and prior experience, affect authorities' willingness to accept informal digital volunteers' unforeseeable and improvised way of working. In addition to this, especially the volunteers' anonymity, afforded by social media, was seen as a risk. However, excluding digital volunteers from crisis management can harm community resilience, and trust in authorities, and lead to volunteer improvisation with associated risks. Thus, planning for the convergence of digital volunteers is crucial to mitigate these negative consequences. By being aware of the paradox and the issue with trust highlighted in this study, authorities can try to find ways to involve digital volunteers in their crisis management.

Prior experience of spontaneous volunteering can shape authorities' attitudes, with positive views potentially stemming from past engagement and negative perceptions rooted in prejudice (Nielsen, 2019; Raisio et al., 2019). Recent examples, such as digital volunteering during the COVID-19 pandemic, can have shifted authorities' views. A study on authority communication during the

pandemic highlighted the significance of engaging information citizen ambassadors or volunteers who possess knowledge of local or cultural contexts (Backholm & Nordberg, 2023). This collaboration could aid authorities in reaching diverse audiences, such as vulnerable language minorities, and fostering trust among citizens. Therefore, the postpandemic era perhaps shows that resolving the issue with digital volunteers has become even more important.

The study has certain limitations. The sample size, although aimed at being representative, is narrow since most informants had no experience with digital volunteers and relied on general experiences from prior crises or crisis management training sessions to consider collaboration. Furthermore, the informants' perception of digital volunteers, despite the information provided beforehand, was limited, as they primarily viewed them as individuals rather than larger groups acting independently in crises. This restricted their ability to recognize the potential in, for instance, crowdsourcing (Estellés-Arolas & González-Ladrón-de-Guevara, 2012). Therefore, the study's results should be primarily used as guidance for understanding the paradox and the barriers to involving digital volunteers in crisis management. Future research could focus on how digital volunteers themselves perceive collaboration with authorities, as this study did not address the *community and volunteering context* within the paradox, which primarily focuses on the volunteers' perspective. Also, the trust issue, which seems to be one of the key factors affecting collaboration, requires more research to understand how it could be solved. As authorities in this study struggled to understand certain aspects of the digital volunteering concept, future research could also strive to develop a more concise definition of how digital volunteer groups form and act, and on the fundamental differences between on-site and digital volunteers. This could contribute to diminishing trust issues between actors.

TABLE 3 A summary of study results about authorities' perception of spontaneous digital volunteers and barriers to collaboration, and how they relate to the involvement/exclusion paradox (Harris et al., 2017).

Paradox element ^a	The choices authorities make regarding potential work with digital volunteers (choice underlined)	Authorities' barriers to collaboration with digital volunteers
Authorities' operational culture	Authorities' attitude: <u>Volunteers welcome</u> versus <i>unwelcome</i> . ^b	Lacking trust towards digital volunteers' identity and skills. Potential risk for reputation damage if collaborating.
Authorities' management approach	Integration: <i>Collaboration with volunteers</i> versus <u>arms-length involvement</u> . Evaluation of contribution value: <u>Monitoring volunteer activities</u> versus <i>no monitoring</i> . Style of management: <i>Empowering volunteers</i> versus <u>command and control</u> .	Requirements for organization and training if collaborating with volunteers. Potential risk for trust damage if collaborating.
Authorities' task allocation	Risk tolerance: <i>Accept risk with volunteers</i> versus <u>zero risk</u> . Task prioritization: <u>Preset scheme for volunteers</u> versus <i>dynamic needs assessment</i> .	Data privacy issues if collaborating. Potential risk for trust and reputation damage. Requirements for organization and training of digital volunteers. Additional costs for authorities.

^aHarris et al. (2017), adapted to the context of digital volunteers.

^bThe paradox element regarding 'official guideline' (see Table 1) is excluded from this table, as authorities had not applied such guidelines.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study and the interview guides used in this study are available from the corresponding author, [Heini Ruohonen], upon request. The data are not publicly available due to privacy or ethical restrictions.

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