Harnessing Social Media and Emotion for Disaster Resilience: Insights from the 2010 Haiti Earthquake

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Abstract

The 2010 Haiti earthquake elicited an unprecedented amount of responses and shared personal accounts on social media platforms. Despite growing research in the disaster discourse regarding the potential of social media on resilience, a gap remains in understanding the role of emotion within these platforms and its influence on shaping community disaster resilience. This research article addresses this gap by contextualising the potential of social media through Social Representation Theory, and further embedding within the theoretical framework of emotional geographies to provide a nuanced understanding of how emotion can empower communities to build resilience through such virtual spaces. Findings indicate that the emotional process of expressing and sharing narratives can empower communities and construct a new collective identity rooted in unity. This is shown to serve as a catalyst in creating tangible initiatives, ultimately building community disaster resilience.

1. Introduction

On 12th January 2010 a Mw 7.3 earthquake hit the Republic of Haiti, resulting in approximately 220,000 deaths and a 120% loss of the country's GDP (Llorente Marron *et al.*, 2021). The disaster is considered one of the worst in recorded history, yet studies underscore the resilience of Haitians during this crisis (Rahill *et al.*, 2016; Pallardy, 2023). Disaster resilience refers to "the ability to adapt to and recover from hazards [...] without compromising long-term prospects for development" (Combaz, 2015: 1). Within this article, I use the term resilience broadly, aligning with both Combaz's definition and Maguire and Hagan's (2007: 16) social definition as "the capacity of communities to 'bounce-back' or respond positively to adversity".

Disaster resilience research recognises social media as crucial in supporting resilience, response, and recovery (Alexander, 2014; Ogie *et al.*, 2019). Through its decentralised and community-driven networking abilities, social media provides a voice for community members and builds social capital, a fundamental mechanism for community disaster resilience (Dufty, 2012; Keim and Noji, 2011; Xie *et al.*, 2022). Emotion is inseparable from social media and the phenomenon is gaining particular interest in the social sciences for its ability to catalyse emotional contagion, which alters society's emotional climate (Dols, 2019; Steinhart, 2020). Despite acknowledgement that disasters heighten the amount of emotional expression across social media (Li *et al.*, 2020), recent literature reveals limited research into the role of social media and emotion together in shaping disaster resilience.

Emotions are integral to the construction of human lived experience, being performed and embodied through the connection between the psyche and subjectivity of the individual together with their social environment (Anderson and Smith, 2001; Pease, 2012). Bondi (2005) highlights the emotional turn within geographic discourse, deconstructing the idea of emotions as objectively embodied and, instead, as situated within specific spaces (Sharp, 2009). An emotional approach "facilitates an exploration into the subjective dimensions of knowing" (Rushton *et al.*, 2021: 794) which is essential in understanding life-changing experiences, such as disasters, where emotions are often intensely localised. Adopting a lens of emotional geographies offers nuance into how shared experiences and emotions encountered during adversity can contribute to the reconstruction of collective identity (Hopkins *et al.*, 2016). This perspective underscores that social media mediates a space where collective identity, emerging throughout disasters, is constructed through mutual support and collaborative efforts (Yang, 2024), thus reinforcing resilience during and after the earthquake.

To convey the potential of shared social media narratives, I position this article within Moscovici's (1961) Social Representation Theory (SRT). Social representation (SR) bridges two realities: the subjective reality, connected to imagination and feelings, and the external reality, embedded in collectivity and shared experiences within society (Moscovici, 1988: 220). With Moscovici's emphasis on a collective and feelings-based process of meaning-making, SR is understood as a multi-modal phenomenon manifested as a network of communication (Moscovici, 2000; Bauer and Gaskell, 2008). This nonlinearity results in common cognitions that create social bonds (Höijer, 2011). Therefore, SRT proves effective in understanding how communication unites societies during unexpected events, such as disasters (Sarrica *et al.*, 2018). Social media holds a unique position by allowing the expression and sharing of both subjective and external realities present within SRT (ibid.). Through engagement and sharing

posts, social media mediates SR and collectively contributes to meanings related to a disaster (ibid.). I extend this understanding of SRT through emotional geography, positing that Moscovici's (1988, 2000) focus on a reality shaped by feelings suggests this theory perceives collective communication as ultimately imbued with care, thereby deepening our understanding of social bonds as rooted not only through common cognitions, but also in shared emotional engagements.

This research aims to extend the disaster resilience discourse through a perspective rooted in emotional geographies and focused on social media narratives. Throughout this article, my argument is twofold. First, I assert that social media mediates a space for collective emotional expression; pivotal in building disaster resilience by empowering communities and catalysing community-driven approaches. Second, I emphasise the importance of addressing the academic gap identified above through further scholarly inquiry within emotional geography, to enable the exploration of alternative conceptualisations within the disaster discourse.

2. Methods

Primary data collection was conducted using #haitiearthquake and #haiti as a search keyword in X (formerly Twitter); specifically chosen due to X's historical precedent in disaster discourse (Pourebrahim et al., 2019; Karimiziarani and Moradkani, 2023). As a comprehensive analysis of all X posts was beyond the scope of this research, approximately 100 posts were sampled and a subset of 11 posts were selected for qualitative analysis. Posts were gathered within the search parameters of the 12th January - 14th January 2010. This decision was driven by logical considerations of the project and the need to capture the emotional response in the immediate crisis period.

Qualitative thematic analysis rooted in interpretive inquiry was used to analyse the posts and choose those most relevant. Emotions, as consistent with Bondi (2005) and Anderson and Smith's (2001) conceptualisation, were interpreted as subjective experiences that are expressed and performed within social and spatial contexts. While this subjectivity of emotional interpretation was an acknowledged limitation, posts were iteratively examined and categorised by their narrative content, tone and emotive language to mitigate this bias. No translation was necessary as all tweets included were in English.

It is also important to consider that the use of digital data may not fully represent the experiences of all affected individuals, and exclude certain demographic voices such as those from impoverished backgrounds. Recognising this, additional materials of secondary data reports provided aggregated X posts to supplement

primary data. The tweets analysed were from public accounts; hence, users would have consented to content being publicly accessible in accordance with X's terms and condition (Zimmer 2010; Moreno et al., 2013)

3. Results and Discussion

In analysing the emotional responses of the 2010 earthquake, key themes of safety concerns; solidarity and faith; grief and mourning; and proactive community action emerged from the data. The disaster caused a 48-hour cellular outage, elevating the internet to the primary communication method (Bojarski *et al.*, 2020). Over 2000 social media posts provided pragmatic information on real-time warnings and crisis alerts (Tran, 2020). For instance, "*there is a tsunami alert ! everyone stay safe !! fires seem to also be burning in downtown PAP*" (@RAMHaiti) disseminates critical information of emerging threats, encouraging the public to monitor the situation and take necessary precautions (Alexander, 2014). Another tweet, "*Just about all the lights are out in Port au Prince.. people still screaming but the noise is dying as darkness sets*" (@RAMHaiti), offered a vivid narrative of the immediate situation, evoking a collective response and shared understanding amongst the community.

Real-time logistical and situational updates of critical infrastructure damage is apparent by: "*The road from Port-au-prince to jacmel is cut and there's no way to pass...*" (@yatalley) and "*It looks like anything taller than 1 story high is on the floor in delams...*" (@fredodupoux). Updates based upon situational awareness are imperative to maintain connectivity and support within the affected community, while enabling emergency responders to be directed to vulnerable areas. As observed by Hughes and Palen (2012), social media's collaborative nature dichotomises traditional hierarchical models of emergency management, facilitating decentralised and responsive exchange of information. For instance, @douglaspail's tweet "*8-yr-old alive under the rubble...Time crucial*", underscores social media's responsive role in enabling the rapid mobilisation of rescue operations.

The functionality of social media during disasters is further understood as a space to "express solidarity and work through emotions" (David *et al.*, 2016: 15). When analysing the emotionality of the tweets, it is important to distinguish the factors that determine a strong emotional response. This categorisation was evaluated by linguistic cues of emotionally charged and hyperbolic words, punctuation, and psychological tone of the response. Accounts such as "*dead bodies are everywhere...*" (@fredodupoux) deliver vivid and emotionally charged imagery of the widespread casualties. Others capture a shared emotional journey in duality through emotive expression and a call-for-action. This is understood by the strong emotional responses evoked in the tweets: "*It's really ugly, just like in a bad dream. people need help, get out and help ! #haiti*" (@eq) and "*Please PRAY people, PRAY as much as you*

can, and if you can, JUST GO OUT THERE and HELP!!!! CAUSE ITS VEERRY SCARY AND
…..well… :(" (@mikaben). Expressions of distress and anxiety are evident, while the
collective sense of mourning invokes an urgent sentiment of shared responsibility
and plea for collaborative efforts in disaster response. Communal acts of solidarity
are presented within the tweet, "*people in large numbers are singing prayers
downtown*" (@carelpedre). Such expressions of unity and culture hold an
undercurrent of empowerment, as the community's social cohesion and emotional
resilience are vividly depicted in their collective response to this shared trauma.

Academia underscores the role of shared emotional subjectivities in enhancing long-
term emotional resilience (Börner, 2023). As discussed in Section 1, emotional
geographies conceptually frames emotion as inherently situated within specific
spaces. Contextually, Moscovici's understanding of social representations gains
particular significance, as these representations are relationally connected to and
situated within both digital (i.e., social media) and physical spaces (i.e., Haiti). The
intersection of these two spaces enables a potent emotional dialogue, and as the
tweets evidence above, an emotional connection which revives their sense of shared
belief and belonging (Garcia and Rime, 2019). Building upon Garcia and Rime's
(ibid: 618) argument that noise arising from a 'collective emotional event' cultivates
a social resilience process, it seems explicit that dual-space noise and interaction
(i.e., digital and physical noise), holds significant potential to enhance this process.
As these spaces mediate a collective emotional environment, hope and solidarity are
continuously constructed and embodied as a dynamic agora of shared experience
(Sarrica *et al*., 2018).

Stieglitz and Dang-Xuan's (2014) contention that the tweeting process is a key
mechanism in cultivating high levels of emotions amongst users, extends this
understanding. Through emotional engagement, it exposes others to this expression
and induces more interaction through discussions and conversations, thus fostering
a collective emotional space. Retweets, a form of SR, harness a "power of collective
intelligence" in their ability to rapidly create a shared emotional experience (Son *et
al*., 2019: 59). According to Pew Research Centre (2010), 59% of Haiti earthquake-
related tweets were retweets. I argue that this highlights its influential role in
amplifying and spreading emotional narratives, ultimately contributing to an
empowered sense of collective resilience.

Whilst sharing narratives builds resilience by "reconstruct(ing) a positive and
healing culture" (Kargillis and Kako, 2014: 25), this narrative practice can also
influence organisations to create tangible change (Gurman and Ellenberger, 2015).
During the Haiti earthquake, social media became a facilitator for local organisations
and the public to effectuate change. For example: "*If U Need To get in Touch With
Friends & Family in Haiti. Send me a Private Message with names and Phone Numbers.*

I'll get Back to U!" (@carelpedre) and "*We've created a safe list for those impacted by the Haiti quake. Survivors can reach out to loved ones.*" (@thepbg). Such interactions demonstrate proactive efforts to establish support systems for family reconnection, thereby, facilitating the broader reconstruction of community resilience.

These community-driven aid efforts align with Sarrica et al.'s. (2018) argument to shift from traditional top-down communication approaches to participatory communication in disaster research. Hashtags such as #relativesinhaiti and #rescuemehaiti, were pivotal in this process through expediting rescue attempts and facilitating connections between relatives (Palmer, 2010). In embracing bottom up communication through social media, information-flow quickens, and a digital community culture is created where voices can be empowered. The 2010 earthquake marked the first formal integration of social media into the US Government's disaster response (Goggins *et al.*, 2012), leading to the Haiti Social Media Disaster Monitoring initiative (HSMDM), which monitored up to 60 platforms to inform US Government Agencies about Haiti's conditions (Slagh, 2010).

The Disaster Emergency Committee's (DEC) Chief Executive further emphasised social media's effectiveness in empowering communities to "develop their own initiative, not just [relying on] centrally driven activities" (DEC, 2010). The Ushahidi Haiti Project(UHP), a community-driven crisis map formed within hours of the earthquake, provided real-time situational awareness and visualisation of the disaster's evolution (Morrow *et al.*, 2011). This project emerged as a social media strategy (ibid.) through X and Facebook, and involved over 1300 volunteers to collaboratively build resilience to the disaster, ultimately saving hundreds of lives (Norheim-Hagtun and Meier, 2010).

4. Conclusion

In situating this research within the framework of emotional geographies and Social Representation Theory, the study underscores social media's critical role in disaster resilience. Emotional geographies provide a lens through which the situated nature of emotions can be comprehensively understood within specific spatial contexts. The pragmatic use of social media during crises is encouraged to ensure responsive communication (Gurman and Ellenburger, 2015). However, by centering an analysis within emotional geographies, we can consider the duality of social media encompassing both emotional and informational capacities.

The findings of this study demonstrate that social media's capacity to integrate emotional engagement with crisis communication significantly contributes to enhancing community disaster resilience. This investigation signifies that social media aids the reconstruction and empowerment of collective identities, to support

and sustain community resilience. Community empowerment "instils in all its members the desire and capability to protect each other from future risk" (Kumar, 2008: 3), and is considered the first step in building disaster-resilient communities (Pandey and Okazaki, 2005). This linkage reveals how the dual-capacity of social media can accelerate tangible change and bottom-up relief efforts, as observed in Haiti's HSMDM and UHP . Based on these findings, new research questions emerge focusing on the long-term emotional impact of disaster-related social media interactions for affected communities, outside the bounds of 4-days. Similarly, as further disaster responses are navigated, encouraging an emotional perspective with various forms and mediators of SR, such as social media, one can initiate this process of empowerment for affected communities. Through this holistic approach, disaster resilience is enhanced through immediate crisis communication, and emotionally empowered communities.

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Cite as: Angus, J. 2025. Harnessing Social Media and Emotion for Disaster Resilience: Insights from the 2010 Haiti Earthquake. *Routes*, 4(3): 178-189.