



Potentials and Pitfalls of Crowdsourcing in Disaster Risk Communication

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Introduction

- Disaster Communication Literature can be classified into structural (governance), instrumental (platform studies), and cultural (people)
- FOCUS: Instrumental – has the potential to bridge structural and cultural traditions
- OBJECTIVE: This literature review seeks to know how crowdsourcing is utilised in the pre-disaster phase (disaster preparedness stage)

Method

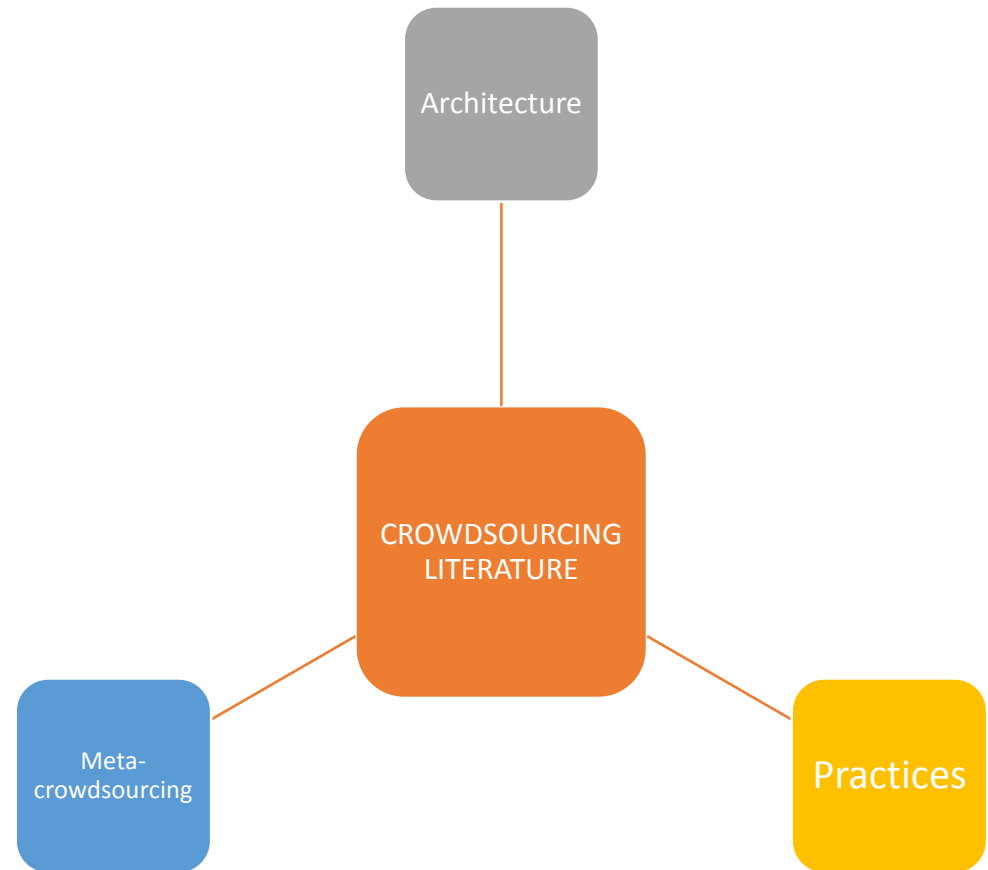
- Scoping process – (1) identifying RQ, (2) identifying relevant studies, (3) selection of articles, (4) charting of data gathered, & (5) collating, summarising, and synthesising data.
- Only peer reviewed journals were considered
- PERIOD COVERED – 2010 to 2018
- Inclusion-Exclusion Criteria – (1) does the paper focuses on natural disasters as defined by EM-DAT:CRED International Disaster Database, & (2) does the paper cover crowdsourcing as main or one of the models used for disaster risk information transfer.

SCOPING RESULT

Keywords used	Scopus	ProQuest Central	Web of Science	Total
Crowdsourcing AND Disaster Preparedness	7	53	13	73
Total number of articles after removal of duplicates, non- peer-reviewed journals and those without access to full articles	5	50	6	61
Total number of articles after applying inclusion- exclusion criteria	4	10	1	15

Review Results

- Architecture – development and improvement of current crowdsourcing practice and technology
- Practices – highlights examples of crowdsourcing tools used during and post-disaster events
- Meta-crowdsourcing – discussed the framework, its potentials and pitfalls in DRRM use



Crowdsourcing Architecture

Potentials

- Crowdsourcing framework is a way to break away from top-down framework
- Use locals as sensors through volunteered geographic information (VGI)
- Scoring volunteers to address issue on participant selection and veracity of data

Pitfalls

- Accuracy of VGI and its integration with spatial data infrastructure (SDI)
- Lack of interoperability between agencies involved in DRRM
- Redefining PREPAREDNESS in practice vis-à-vis in DRRM plans → Warning Stage

Crowdsourcing Practices

Potentials

- Social media data provides users' attitudes, behaviours, and reactions towards certain issues and disaster events
- Social media data can be used by first responders for coordination
- Social media data measures people's sentiments towards various political and social issues
- Social media is an information rich platform
- Social media is used in both one-way and two-way sharing of information providing situational awareness, rumour control, reconnection, and decision-making
- Twitter is KING in social media for DRRM

Pitfalls

- Uptake capacity of developing countries due to social inequalities resulting to digital inequalities
- Infrastructure stability
- Two-way function of social media is seen to be at superficial level since it is limited to comments resulting to inadequate conversations

Meta-crowdsourcing

- Majority of available literature on crowdsourcing is focused on improving its architecture for disaster response and recovery
- Suggests to look at the users of technology (i.e. social media) and promote a culture of co-production
- Co-production increases awareness of people about the technology and about the disaster; Enhances shared responsibility
- Documenting interaction between people and its environment can improve technologies being proposed today
- Crowdsourcing (i.e. social media) should only be complementary to existing methods of information dissemination since infrastructure problems are common during and post-disaster events
- Social inequalities results to varying uptake of technology

Conclusion

Potentials

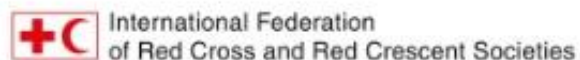
- With developments in technology, communication will be bottom-up
- Understand the people using crowdsourcing platforms
- Crowdsourcing is fast and cost-effective
- Disaster communication is going towards multimodality

Pitfalls

- Issues on reliability of information
- Crowdsourcing relies heavily on infrastructure
- Crowdsourcing is still understudied for its use in mitigation and preparedness stages
- More studies focused on people's information sharing behaviour
- More studies on perspective of end-users since crowdsourcing demands a lot from them i.e. participant's motivation to take part in the problem-solving

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