Potentials and Pitfalls of Crowdsourcing in Disaster Risk Communication

Dennis John Sumaylo
University of the Philippines Mindanao / RMIT University, Melbourne, Australia
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

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

2018 Disaster Risk Governance Academic Seminar
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

Potential 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
THANK YOU