CAN MOBILE PHONES IMPROVE DISASTER PREPAREDNESS?

A survey–based analysis on the impact of AtmaGo

Executive summary

Indonesia faces a serious risk from natural disasters. However, a growing body of research details how Information Communication Technology (ICT), social media, and mobile apps can all be important tools in reducing damage as well as decreasing morbidity and mortality from floods and other disasters.

The goal of this study is to understand the potential benefits and drawbacks of using ICT system to communicate emergency reports and disaster risk reduction (DRR) information. We focus on a particular application, AtmaGo, which was launched in Indonesia in 2015. Developed with the concept of crowd-sourcing, AtmaGo enables their users to share r eal-time disaster-related information such as reports of fires and floods, as well as to spread DRR information such as how to prepare for and prevent disaster. Particularly in Jakarta area, AtmaGo also provides alerts from government sources directly to users via mobile app.

This research aims to better estimate the potential impact of AtmaGo in improving disaster preparedness and response in Indonesia. We surveyed users and non-users of AtmaGo in five neighborhoods in the Greater Jakarta area: Penjaringan, Halim, Bekasi, Bojong Gede and Kampung Melayu. Specifically, this research seeks to improve our understanding of: 1) how people get emergency warnings and DRR information, 2) whether AtmaGo can provide these warnings in an actionable way, and 3) the potential benefits of successful warning systems in terms of avoided damages as well as prevention of mortality and morbidity.

This research resulted in **nine main findings**:

1. There is a growing usage of **social media platforms** like AtmaGo as a source of disaster information and alert.
2. Emergency alerts and related DRR information can help users **take effective preventive actions**: 30% of AtmaGo users who receive warnings take preventative action such as moving valuables, warning neighbors or evacuating.
3. Based on our survey, AtmaGo emergency alerts can reduce property damage caused by floods and other disasters by **$324 per household per year** for residents of the Jakarta region, assuming that effective action can reduce damages by about 50%.
4. If AtmaGo reaches a scale of 5% to 10% of households in the Jakarta area, this would equate to an avoided damage benefit of **$53 million to $106 million per year** assuming that 30% of users take effective action that reduces damages by about 50%.
5. By improving community response to floods and other emergencies, AtmaGo can also reduce healthcare cost by an average of **$14 per household per year** for residents of the Jakarta region.
6. If AtmaGo reaches a scale equivalent to 5% to 10% percent of Jakarta's population, then we estimate that this could reduce healthcare spending by **$2.3 million to $4.6 million** per year assuming that 30% of users take effective action that reduces damages by about 50%.
7. AtmaGo can also reduce morbidity and mortality caused by floods and other disasters by **643 years of healthy life lost per 100,000 population** as measured using Disability Adjusted Life Years (DALYs) and assuming that effective action can reduce impacts by about 50%.
8. AtmaGo also contributes to the improvement of social cohesion, which has been linked to an improved community response to disasters. According to our survey, **79% of users found AtmaGo helpful or very helpful in connecting them with the community**. Additionally, 67% of respondents found AtmaGo **helpful or very helpful** in assisting them to prepare for disasters.
9. Although we know that not all people who receive an alert will take action, **68% of users reported sharing information from AtmaGo** and 13% of those who shared information, shared disaster reports. Each user, on average, **shared AtmaGo posts with over 28 other people**.