## Online Community Responses to Volcanic Disaster: A Study of Yahoo! News Comments on the 2018 Mt. Kusatsu-Shirane eruption

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This work aims to summarize public real-time reaction to the publication of the news of volcanic disasters by applying a content analysis. On January 23, 2018, there was an unexpected deadly eruption of Mt. Kusatsu-Shirane, located in the Japanese central area. In order to undertake a content analysis of user-generated comments to media coverage related to this volcanic disaster, this work used 'Netnography' which means "a technique for the socio-cultural analysis of social media and online community data" (Kozinets et al. 2014:Netnographic Analysis: Understanding Culture Through Social Media Data, in The SAGE Handbook of Qualitative Data Analysis).

Online social spaces become increasingly acknowledged as important fields for quantitative and qualitative social scientific investigation because of the openness and richness of its multifarious socio-cultural sites. There are approximately 34.1 million active monthly users on Yahoo in 2016 (https://www.netratings.co.jp/news\_release/2016/12/Newsrelease20161220.html). Yahoo! News is a news website and one of the most popular news aggregators in Japan. It has received about 4000 articles offered by more than 300 media companies per a day and selectively published socially-minded news from among them. In the case of Mt. Kusatsu-Shirane disaster, a large number of stories were placed on the top page with the highest priority. Therefore, Yahoo! News readers had chances to express their voice about various topics related to the volcanic disaster by posting comments. In Japan, Yahoo! News would play a huge role in shaping online opinion.

A content analysis of reader comments posted in response to twenty-two articles on Yahoo! News site, published in January 2018, was carried out. Then, about 1000 comments are randomly sampled from 4200 comments. Comments that are critical of the measures for the volcanic eruption prediction are most frequently found. A lot of commenters were commenting with experts and the Japan Meteorological Agency in mind. There is a view among commenters that experts and the Japan Meteorological Agency did not work well for the volcanic disaster. This links to the wondering whether the area around the eruption points is really safe. Approximately 10% of comments assert the belief that such accidents would be beyond human control and humans should obey the nature's activities. Moreover, in comments on whether the eruption prediction is possible, a number of comments supporting and opposing the eruption prediction research are almost equal within the error bar. The relationship between citizens and the government/experts can be severely impaired if the crisis communication is mishandled. Conclusively, the result of this study suggests an aspect of examining the public representation of the volcanic disaster. This study reveals that these comments provide any information about the volcanic risk after the Mt. Kusatsu-Shirane eruption and proposes that netnography may prove useful for building effective volcanic risk communication strategies.

Keywords: Netnography, Mitigation of volcanic disasters, content analysis