



Public perception assessment on climate change and natural disaster influence using social media big-data: A case study of USA

SungKu Heo¹, Pouya Ifaei¹, Mohammad Moosazadeh¹, and ChangKyoo Yoo^{1,2}

¹Integrated engineering major, Department of Environmental Science and Engineering, Kyung Hee University, Yongin 446-701, Korea

²Corresponding author, Tel: +82-31-201-3824; fax: +82-31-202-8854; email: ckyoo@khu.ac.kr

Climate change is a global crisis to the world which influences the human race and society's development. Threatens of climate change have become increasingly recognized to the public and government in both environments, society, and economy across the globe; because the consequence of climate change is not only shown up as the increasing of global temperature, also expressed in an intensive natural hazard, such as floods, droughts, wildfires, and hurricanes. For the sustainability development in the globe, it is crucial to provide a response to mitigating climate change through the government's policy and decision-making; however, the public's engagement in the actions towards the critical environmental crisis still needs to be largely promoted. Analyzing the relationship between the public awareness of climate change and natural disasters is an essential aspect in climate change mitigation and policymaking. In this study, based on the abundance of the text message in social media, especially Twitter, the public understanding and discussions upon climate change from the surrounding environment was recognized and analyzed through the human as the sensor which receiving information of climate change. Twitter content analysis and filed data impact analysis were conducted; text mining algorithms are implemented in the Twitter big-data information to find the similarity based on a cosine similarity score (CSS) between the climate change corpus and the natural events corpora. Then, the factors of nature disaster influence were predicted utilizing a multiple linear regression model and climate change tweets dataset. This research shows that the public is more pretend to link the natural events with climate change when they tweeting when serious natural disasters happened. The developed regression model indicated that natural events caused by the consequence of climate change influenced the people's social media activity through messages on Twitter with having the awareness of climate change. From this study, the results indicated that the public experience of natural events including intensive disasters can lead them to link the climate change with the natural events easily; when compared with the people who rarely experience natural events.

Acknowledgment

This research was supported by the project (NRF-2021R1A2C2007838) through the National Research Foundation of Korea (NRF) and the Korea Ministry of Environment (MOE) as Graduate school specialized in Climate Change.

