



Analysing the influence of debris-flow events and disaster prevention propaganda on evacuation intent in Taiwan

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In the recent decade, Taiwan have been suffered catastrophic sediment hazard caused by typhoons or rainstorms. Among them, Typhoon Kalmaegi in 2008 and Typhoon Morakot in 2009 can be considered the most serious threat, of which the maximum 24-hour rainfall are approached 963 mm and 1,402 mm, respectively. The extreme rainfall induced by Typhoon has caused a total of 71 severe debris-flow disasters and resulted in the heaviest casualties in southern Taiwan (34 casualties during Typhoon Kalmaegi, and 665 casualties during Typhoon Morakot). Considering the impacts of large scale disaster, previous disaster experience, and hazard awareness may cause evacuation intent to differ. For understanding the correlation between evacuation intent and disaster impacts, this study applies the evacuation rate as the assessing index which is defined as actual evacuation actions rate after warning issued. Based on the data of evacuation history, warning issued records, propaganda of disaster prevention, and disaster events during 2006 to 2016, the results show that evacuation rate is highly related to the numbers of disaster triggered and disaster prevention propaganda. The evacuation rate is approaching 40-50% in the area where disasters were occurred, it is 1-1.5 times higher than those area where no disaster event. The same relative trend between disaster prevention propaganda is also observed that the evacuation rate is elevated about 10-50% with the increasing frequency of propaganda. Besides, the evacuation rate is also significantly increasing after catastrophe (i.e. Typhoon Kalmaegi and Typhoon Morakot) at hazard hotspots and active evacuation intent (the average evacuation rate > 80%) last about 4 years. However, the increment of evacuation rate is slight and temporary in the area where no disaster caused during typhoon events. By the aforementioned analysis results, we realize that past disaster experience, hazard threat, and risk perception have significant influence on evacuation intent of residents. The propaganda and education of disaster prevention can enhance hazard awareness and promote evacuation intent.