



Social media, vulnerability, and risk perception: three main points for geological disaster management

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Social media have the potential to significantly influence the disaster risk understanding of natural events of climatic and geological origin, e.g., earthquakes, volcanic eruptions and landslides. Given their considerable diffusion, nowadays they represent a valid support during emergency management processes thanks to their multiple uses in all the different phases of the disaster cycle. The presented results have been achieved carrying out a literature review in the framework of the European H2020 project LINKS ('Strengthening links between technologies and society for European disaster resilience') which aims to strengthen the link between technology and society to improve resilience in four European countries associated with five different risk scenarios. The aim of this research was to investigate how social media influence and impact vulnerability and risk perception and how the increased use of social media as a communication tool during a disaster is shaped by the way the two concepts interact and are conceptualised. The main results are that through social media, it is possible to raise people's awareness of the disaster, also by working on each individual's trust in those who provide information, but also to disseminate useful information and alerts to the population to keep abreast of real-time events, to connect citizens with each other in order to reduce distances and provide psychological support, and to create a social network for those in need. Additionally, social media can be used to manage an emergency and coordinate volunteer actions. The concepts of vulnerability and risk perception are extremely important to be considered when talking about geological hazards and disasters. They are two interconnected concepts that need to be pursued hand in hand in emergency management. The main challenges and factors impacting the use of social media concern access, quality and reliability of information, trust, and awareness of the news being provided, but also personal experience and geographical, social and demographic factors that may influence the way information is perceived and understood. The perception of geological risks directly influences people's preparedness and the way they act, helping anyone to understand the scope of the event and the potential risks that could occur, in order to make informed decisions on how to react. Furthermore, a real understanding of vulnerability influences the resilience of local communities in relation to disasters and can in turn be influenced using social media. Social media can also amplify public fear and concern about the disaster, especially if there is a lot of misinformation or sensationalism about the event. This can lead to an overestimation of risks and an increased

sense of vulnerability among the population. These results could be helpful in identifying possible methods and approaches to study these issues in the future.