Tweets Matter: Quantifying the Spatio-Temporal Relationship Between Social Media Activism and Physical Protest

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Abstract

Throughout history, social movements have often been catalysts for radical societal change. In the past two decades, hashtag activism, the use of social media platforms for internet activism, has become a driving force behind the development of social movements across the world. In the field of social movements science, a large body of research has studied the role of hashtag activism for the formation of social movements, but less efforts have been allocated towards the study of the spatio-temporal relationship that exists between hashtag activism and political mobilization processes. In this study, a large geo-located social media dataset pertaining to the #JusticeForGeorgeFloyd social movement is used to quantify the spatio-temporal relationship between hashtag activism and physical protest activity. Results of this study indicate that at the national, state, and county scale, hashtag activism bears a strong positive temporal relationship with physical protest activity. Through the statistical modeling of this relationship, it is possible to predict the intensity of national, state, and county level protest activity on a given day based on the intensity of state and county level social movement related tweet counts the day before. At smaller scales (i.e. county), however, this research finds that the strength of this relationship is more variable, and it appears to be strongly dependent on population density. As such, this study reveals the existence of a critical population density threshold of 200 people/km2 , at which an increase in the number of social movement related tweets is likely to spark with an increase in the number of physical protests. These results represent novel insights that further contribute to our understanding of the complex spatio-temporal political mobilization processes that occur during social movements.

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