Disentangling social media influence in crises: Testing a four-factor model of social media influence with large data

Xinyan Zhao[a,*], Mengqi Zhan[b], Brooke F. Liu[c]

[a] *Hong Kong Baptist University, Hong Kong*
[b] *University of Texas at Arlington, United States*
[c] *University of Maryland, United States*

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ABSTRACT

Social media empower publics by providing a platform for their voices during crises. Digital-enabled platforms allow individuals to become influentials by sharing their insights and expertise with others. Confronted with the fast-paced and complex dynamics of crises, we lack a systematic conceptualization and a valid measure of social media influence in the crisis context. By integrating diverse perspectives on influence, we propose a new framework that theorizes different dimensions of social media influence based on publics' communicative behaviors during crises. This integrated framework offers a refined conceptualization and measurement of social media influence in crises by incorporating the network perspective. We tested the framework with large-scale Twitter data from four crises. Results from multigroup CFA on Twitter influencers suggest that social media influence is composed of four factors: output, reactive outtake, proactive outtake, and network positioning. Each factor is associated with a distinct set of users' behavioral indicators (e.g., retweet). Implications for crisis communication and public relations are discussed.

1. Theoretical framework

Social media have reshaped how public relationspractitioners and researchers understand publics, especially during organizational crises. Today's media landscape includes the continued decline of media as gatekeepers, the waning of organizations' dominance in their crisis response discourse, and the empowerment of publics online during crises (e.g., Frandsen & Johansen, 2016). Digital media platforms like Twitter, Instagram, and Snapchat allow individuals to establish their roles as influentials by "sharing opinions, insights, experiences and perspectives with others" (Marken, 2007, p. 10). Social media platforms have emerged as integral communities for publics to voice their opinions toward organizations in crises.

Paralleling the surge of social media in crises, there has been a growing body of research examining influence on social media (e.g., Freberg, Graham, McGaughey, & Freberg, 2011; Jin & Liu, 2010; Sommerfeldt & Kent, 2015), particularly engagement (e.g., Men & Tsai, 2013; Smith & Taylor, 2017). For example, crisis communication theories such as the social-mediated crisis communication theory (SMCC) discuss the influencers' attributes of involvement and motivation (e.g., Jin & Liu, 2010). This growing body of literature has provided valuable insights to our understanding of social media influence. Yet, we know much less about how social media influence unfolds in an ever-changing and decentralized environment such as crises on social media. The field would benefit greatly from a systematic conceptualization and valid measurement of social media influence in the crisis communication context.

* Corresponding author at: School of Communication, Hong Kong Baptist University, Hong Kong.
  E-mail address: zhaoxy@terpmail.umd.edu (X. Zhao).

The fast-paced and complex dynamics of social media crises call for a new model of social media influence. By integrating diverse perspectives on influence, we propose a new framework that conceptualizes different dimensions of social media influence during crises (i.e., output, reactive outtake, proactive outtake, and network positioning). This framework is based on publics' communicative behaviors on social media (e.g., liking a post). Namely, influentials are assumed to generate more output, receive more communicative responses from their followers, and occupy more central positions in a network than non-influentials.

Our study features three contributions. First, setting a common ground for crisis communication theory building, we offer an integrated framework of social media influence based on literature on social psychology, mass communication, crisis communication, and public relations. By examining different dimensions of social media influence, we delineate a more refined conceptual picture of influence on social media in crises. Second, existing theories on social media influence in crises emphasize characteristics of information source, such as knowledge and involvement (e.g., Jin & Liu, 2010; Hallahan, 2000). However, stakeholders interact with each other and form communicative networks on social media in crises (e.g., Zhao, Zhan, & Wong, 2018). As such, the network perspective provides a complementary view to the literature by considering the role of social media influence in shaping networks (Yang & Taylor, 2014). Third, our model is more applicable than prior research to the real-time and short-term social media environment because we tested our model with complete Twitter datasets on crisis events. A multitude of influencers exists on social media (Li, 2016; McCorkindale & DiStaso, 2014). But it is still unknown whether and how these influencers share certain characteristics giving rise to influence on social media during crises. Unobtrusive real crisis data from social media can capture the immediate behavioral indicators of social media influence and thus provide more valid and reliable measures.

In sum, our study aims to examine different dimensions of social media influence in crises and reveal new opportunities for theory building. To disentangle the dimensions, we conducted a multigroup confirmatory factor analysis on Twitter influencers in four crises. These influencers were retrieved from an automation program for processing large-scale Twitter data. The four studied crises consist of two corporation-related crises and two government-related crises for higher generalizability. Our theory-grounding measurement of social media influence with Twitter data offers a comprehensive picture of influence on social media, thereby informing how public relations practitioners can identify and interact with influential publics during crises.

1.1. Different perspectives to influence on social media

Social impact is conceptualized as any influence on individual attitude, behavior, and feelings that occur as a result of the real, implied, or imagined actions of others (Latané, 1981; Nowak, Szamrej, & Latané, 1990). In social psychologist Latané's seminal work (1981), he argued that an important characteristic of social influence was salience of influencers. Specifically, the number, strength, and immediacy of a source contribute positively to the amount of its influence. Relatedly, the structural theory of social influence prescribed that influence was established by receivers' repeated responses (e.g., comments) to the influential source (Friedkin, 1998). Based on Cialdini and Goldstein's (2004) review, to obtain social influence, a source needs to activate targets' three central motivations: to be accurate, to affiliate, and to maintain a positive self-concept. Namely, social influence entails sources providing accurate descriptions of social situations, offer opportunities to maintain meaningful social relationships with their publics, and enhance publics' positive self-concept. Moreover, influence can be considered as a product of information cascade (Bikhchandani, Hirshleifer, & Welch, 1992), which occurs when individuals follow their peers' behaviors without considering their own information.

The concept of influencer originated from mass communication (i.e., opinion leadership; Lazarsfeld, Berelson, & Gaudet, 1944; Rogers & Cartano, 1962) and has been extensively developed in various communication areas (e.g., Jin & Liu, 2010; Jiang, Luo, & Kulemeka, 2016; Sommerfeldt & Kent, 2015). Investigating the diffusion of news messages within communities, Lazarsfeld et al. (1944) identified a group of individuals called opinion leaders. The opinion leaders give heed to an issue, discuss the issue frequently, and consider themselves highly convincing to persuade others on issue-related matters. According to the two step-flow of information model, opinion leaders pass on the information from mass media to general publics (Katz & Lazarsfeld, 1955). More recently, Huffaker (2010) considered opinion leaders as those who diffuse information and potentially shape public opinions by joining discussions in various online forums (e.g., Google group). These opinion leaders "trigger feedback, spark conversations within the community, or even shape the way that other members of a group 'talk' about a topic" (Huffaker, 2010, p. 594).

In the realm of crisis communication and public relations, the concept of social influence and influencers also occupies a central position. Echoing the opinion leadership literature, crisis communication scholars conceptualize influence based on the individuals' characteristics, such as self-involvement (e.g., Jin & Liu, 2010). Distinct from previous studies, public relations scholars conceptualize influence from the perspectives of engagement (e.g., Jiang et al., 2016) and network (e.g., Sommerfeldt & Kent, 2015). Below we synthesize three streams of crisis communication and public relations research highlighting specific aspects of influence in the social media context.

1.1.1. Influence and social-mediated crises

Identifying influential social media users in crises is an essential step for effective organizational crisis communication. Yet, how to measure organizational crisis communication effectiveness via social media remains an open area for research (Cheng & Cameron, 2017). Social media can serve as effective crisis communication tools, due to their real-time and engaging nature (Fraustino, Liu, & Jin, 2017). Communication through social media resulted in higher organizational reputation and less secondary crisis reactions such as boycotting (Schultz, Utz, & Göritz, 2011; Utz, Schultz, & Glocka, 2013).

Furthermore, successful identification of powerful influentials on social media help organizations prioritize their use of limited resources (e.g., personnel, time, money) to prevent and mitigate organizational crisis, and subsequent potential reputation damage (Jin & Liu, 2010). If organizations use social media effectively, they also can efficiently reach and connect with enormous numbers of