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Firestorms on Social Media: Effects of Social Information Characteristics on Customer Responses

Research-in-Progress

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Abstract

Firestorms on social media have become one of the biggest challenges for organizations engaging with such online platforms. Handling a firestorm on social media has not been easy because customers' responses towards the incident is influenced by not only the original content, but also others' responses towards the firestorm on the platform. Drawing on social impact theory and the dual-process model of social influences, this study develops a conceptual framework and explores the effects of social information characteristics (i.e., strength, number, and immediacy) on the customers' perceptions of social influences (i.e., social proof and social pressure), and then their immediate and distal responses towards the organization. The conceptual framework will be tested with social media users using a focus group study and an experiment. This study is expected to contribute to the growing body of knowledge of firestorms on social media and provide organizations with insights into tackling such firestorm.

Keywords: Online firestorm, customer backlash, social impact theory, social information, social influence, social media

Introduction

Social media are rapidly evolving and dramatically changing business practices among organizations. Social media, while offering organizations an effective channel to promote their products and services, may expose them to unexpected crises. In recent years, there have been numerous cases in which a sudden burst of customer outrages charging an organization with inappropriate practices. For instance, Tesco, the UK's largest retailer, has recently received thousands of complaints from angry customers on social media regarding the revamp of its Clubcard reward scheme (Smithers 2018). This phenomenon is termed online firestorm (also known as customer backlash), referring to “*a sudden discharge of large quantities of messages containing negative WOM [word-of-mouth] and complaint behavior against a person, company, or group in social media networks (Pfeffer et al. 2014, p. 118)*”. Negative impacts, such damage to brand reputation, drop in sales volume, and switching intention among loyalty customers, are unavoidable to organizations that have experienced firestorms on social media.

Handling firestorms on social media are challenging than ever before (Pfeffer et al. 2014). Social media exposes customers to not only the original firestorm post, but also reactions of and opinion shared by other social media users, such as their friends, friends-of-friends or other angry customers who have responded to the incident (Kim and Hollingshead 2015). These expansive and multiplexed sources of social information breeds various degrees of social influence on customers (Mochalova and Nanopoulos 2014). In this study, social information refers to information surrounding a social environment, representing someone's self and position. This subsumes information reflecting others' opinions and positions towards the incident, typically expressed via status updates, photos, emojis, and conversations. The exposure to and consumption of these social information has been found to affect one's beliefs, attitudes and behaviors on social media (Lee and Jang 2010; Walther et al. 2010). Consequently, such exposure alters customers' responses towards the firestorm far beyond their initial evaluation of the firestorm. These influences could be superficial on a verbal level that diminishes shortly. However, they could also integrate into the customers' value system and manifest in a wide range of situations, leading to permanent changes in attitudes and behaviors, such as switching to other brands.

A review of the prior literature suggested that most of the existing research focused on examining the formation and detection of firestorms on social media (e.g., Hauser et al. 2017; Salek 2016). There remains limited study exploring the effects of social information characteristics on customers' responses towards an organization under such backfire. Understanding the effects of the characteristics of social information and social influences have important implications. Only if organizations know the impacts of different of social information on customers can they prioritize resources to tackle firestorms on social media. Strategically, an organization should focus on contents that lead to the most devastating impacts, such as those leading to boycotting and switching behaviors. Drawing on social impact theory (Latané 1981) and dual-process model of social influences (Deutsch and Gerard 1955), this present work aspires to explore the effects of the characteristics of social information on customers' perception of social influences, which subsequently determine their responses towards the organization. By doing so, this study is expected to contribute to the growing body of knowledge of firestorms on social media and provide organizations with insights into tackling this issue.

The paper is structured as follows. In the next section, the literature on firestorms on social media and theoretical foundations are reviewed. Then, a conceptual model and propositions that explain customers responses to firestorms on social media is explained. After that, the research methodology is outlined. Finally, a discussion of the expected contribution to research and practice is provided.

Literature Review and Theoretical Foundation

Firestorms on social media: definition and prior research

A firestorm refers to a situation where a person, group, or institution suddenly receives a large amount of negative attention (Pfeffer et al. 2014). In this study, a firestorm on social media refers to the situation where sudden negative attention is given by social media users in response to an action or statement of an organization. It arises spontaneously and is viral in nature, characterized by a high message volume, indignant tonality, and negative opinion climate (Johnen et al. 2017; Lamba et al. 2015). The consequences of firestorms on social media are often undesirable, bring potentially unforeseen and uncontrollable impacts on an organization (Mochalova and Nanopoulos 2014).

The research on firestorms on social media is in its infancy, characterized by a limited number of published scholarly works in peer-reviewed journals and conference proceedings. Table 1 summarizes the prior research on online firestorms. The study of online firestorms can be broadly categorized into two level: macro and micro. Macro-level studies explored how social media characteristics foster the initiation and spread of a firestorm (Pfeffer et al. 2014), detection of online firestorms (Drasch et al. 2015) and the effectiveness of collaborating conflict management style on resolving conflict (Hauser et al. 2017). For instance, Pfeffer et al. (2014) proposed seven social media characteristics that foster firestorms on social media, including speed and volume of communication, binary choices, network clusters, unrestrained information flow, lack of diversity, cross-media dynamics, network-triggered decision processes, based on the review of firestorm incidents and literature on social and economic science. Micro-level studies examined factors that motivate individuals to participate in a firestorm

event (Rost et al. 2016) and their behavioral tendency to participate (Lim 2017). For instance, Johnen et al. (2017) explored factors affecting individual participation in an online firestorm through the moral panic perspective and found that participants who perceive higher moral arousal are more likely to engage in an online firestorm. At present, there remains limited study exploring the complexity of social information and impacts of social influences. There is a need to further examine how an exposure to and consumption of social information influence customers' responses towards the organization under a firestorm on social media.

Table 1. Summary of Prior Research on Online Firestorms

Study	Objective	Theoretical Foundation	Factors related to online firestorm
Drasch et al. (2015)	To design and test the effectiveness of an online firestorm detector	Information diffusion	N/A
Hauser et al. (2017)	To understand how organizations can manage public conflict and firestorms in social media spheres	Information diffusion theory; Social conflict theory	N/A
Johnen et al. (2017)	To examine why people join online firestorm	Moral panics	Moral arousal, Perceived similarity of participants, Number of previous participants, Perceived public opinion, Willingness to participate, Compliance with the prevalent opinion, Indignant tonality in a comment
Lamba et al. (2015)	To examine the relationship between social ties and firestorm participation	Did not specify	Social ties
Lim (2017)	To study how social norms and visual mockery evokes negative affect and subsequent boycotting behaviors	Cognitive appraisal theory	Social norm, Visual mockery, Negative climate of opinion, Negative affect, Perceived crisis, Boycotting behavior
Mochalova and Nanopoulos (2014)	To explore the application of social network analysis on restricting the spread of online firestorm	Local centrality	N/A
Pfeffer et al. (2014)	To explore factors that form the basis for proliferation of customer backlash on social media	Did not specify	Speed and volume of communication, Binary choices, Network clusters, Unrestrained information flow, Lack of diversity, Cross-media dynamics, Network-triggered decision processes
Rost et al. (2016)	To understand online firestorm in a social-political online setting	Social norm theory	Communication medium, Selective incentive, Anonymity, Intrinsic motivation
Salek (2016)	To study the how the presentation of salacious allegations against Allen influence online firestorm on Twitter	Did not specify	Presentation of salacious allegations against allen

Social influence on social media and social information characteristics

Social influence has been recognized as an important driver of individuals' attitudes and behaviors in a computer-mediated environment. A number of theories, such as social identity theory (Tajfel and Turner 1986) and the social identity model of deindividuation effects (Lea and Spears 1991; Postmes and Spears 1998), suggest that individuals tend to engage in depersonalization in the online environment, shifting their attention from self to the group (Lee 2006). They perceive themselves as a member of a virtually salient group rather than an independent individual (Postmes et al. 2001). As such, they are more susceptible to social influences in online contexts. Drawing on the dual-process model of social influences (Deutsch and Gerard 1955), this study proposes two social influences that are salient during firestorms on social media:

- *Informational influence*: the situation which an individual accepts information obtained from another as evidence about reality (i.e., social proof);
- *Normative influence*: the situation which an individual conforms to maintain the positive expectation of others (i.e., social pressure).

In the study of social influence, Latané (1981) developed social impact theory to systematically examine how social influence takes place in a social situation. There are three types of social forces embedded in a social situation that induce social influences:

- *Strength*: the importance or social position of the influencing source;
- *Immediacy*: the time or closeness between influencing source and target;
- *Number*: the quantity of influencing sources.

Considering social media as a social environment where individuals contribute and consume information in the digital era, each episode of interaction on the platform could be viewed as a social situation, where people discuss their experiences, interests, and opinions. Accordingly, this study argues that social information with the above characteristics are potential social forces that embedded in online firestorms, exerting social influences on customers and influencing their responses.

Towards a Conceptual Framework of Customer Responses to Firestorms on Social Media

This study draws on social impact theory and dual-process model of social influences to derive a conceptual framework that explains the effects of the characteristics of social information (i.e., strength, number, and immediacy) on customers' perceptions of social influence (i.e., social proof and social pressure), and their responses (i.e., immediate and distal) towards an organization. Figure 1 depicts the conceptual framework and propositions.

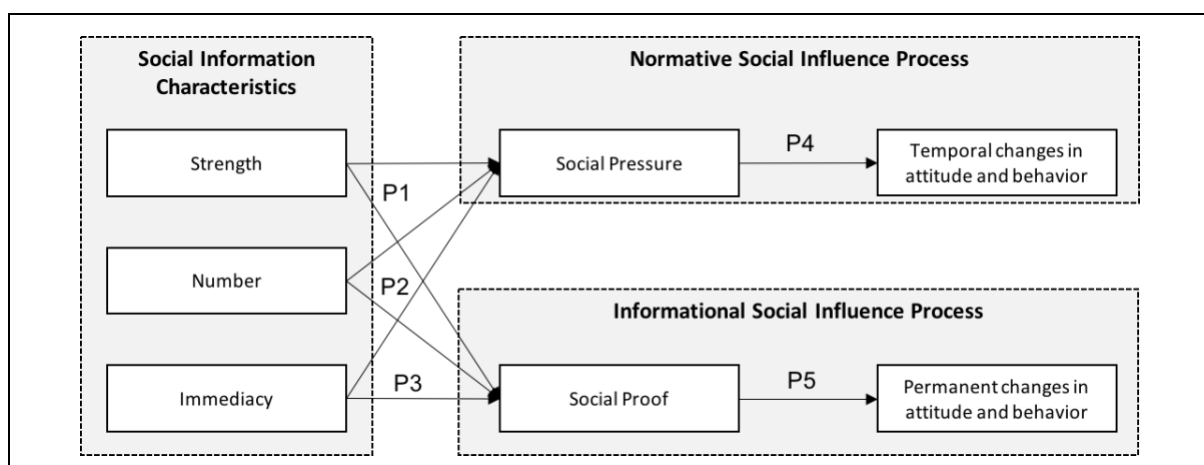


Figure 1. A Conceptual Framework of Customer Responses to Firestorms on Social Media

Social information characteristics: strength, immediacy, number

During a firestorm on social media, customers will expose to social information regarding the firestorm from multiple sources. Different social information characteristics, in terms of strength, immediacy, and number, are expected to induce social influences on the customers (i.e., the perception of social proof and social pressure).

Strength, social proof, and social pressure

Strength refers to the social information characteristic that indicates the importance or social position of the influencing source (Latané 1981). During a firestorm on social media, a large volume of content related to the incident spreads across social media. However, not all of these contents will attract the attention of customers. The social identification approach (Tajfel and Turner 1979) suggests that one pays more attentions to the information that is annotated by their in-group members rather than out-group members. Hence, this study posits that the strength of the social information will have positive impacts on the perceptions of social proof and social pressure. Specifically, if customers found that criticisms have been made by many of their close friends (i.e., high in strength), they are more likely to adopt such position. This is because information stemmed from in-group members is often recognized as more informative and trustworthy than those from out-groups. Customers will also be more likely to adopt information through observational learning, when the information is annotated by in-group members (Polansky et al. 1950). They tend to believe that they should agree on or even mimic the reactions of the in-group members, even in the absence of direct solicitation (Kwon et al. 2014). Thus:

P1a: The strength of social information will positively lead to a perception of social proof.

P1b: The strength of social information will positively lead to a perception of social pressure.

Number, social proof, and social pressure

Number refers to the social information characteristic that indicates the quantity of the influencing sources (Latané 1981). During a firestorm on social media, customers will find a vast number of deliberate aggregate user representations (AURs) used by other customers to represent their reactions towards the firestorm and the organization (e.g., a lot of “Angry”). Deliberate AURs is a prominent feature of social media that induces social influences (Winter et al. 2015). Although they are less specific when compared with textual user-generated contents, they indicate the reactions of the majority of the people who are aware of the incident, and thereby a possibly more valid impression about the “correct” response of the firestorm (Neubaum et al. 2016). In addition, these AURs also induce the bandwagon heuristic (Sundar 2008), leading customers to adopt the opinions and behaviors of the crowd using the mental shortcut “*if many others think that this is good, I should think so as well.*” Thus:

P2a: The number of social information will positively lead to a perception of social proof.

P2b: The number of social information will positively lead to a perception of social pressure.

Immediacy of social information, social proof, and social pressure

Immediacy refers to the social information characteristic that indicates the proximity of the influencing source to a target (Latané 1981). Incidental AURs, such as posting time, represent the “proximity” of others and their opinions. These sources could be temporally close (e.g., posted a few seconds ago) or far away (e.g., posted a few days ago). During a firestorm on social media, customers will find on-going conversations arose from other customers circulating on the platform, wherein old comments are quickly replaced by new criticisms. The huge volume of information accumulated on the platform could cause a piece of information lose its value rapidly as time goes by. Prior research has indicated that the timeliness of information affects ones’ perception of its credibility and usefulness (Madu and Madu 2002). Hence, it is reasonable to assume that contents that are temporal proximal are more persuasive, and customers tend to consider up-to-date information as more trustworthy than those left a few days ago. In addition, the temporal proximity of the social information also induces the feeling of crowding, an experiential state in which a person perceives constraints/pressured due to the presence of others

(Stokols 1972). The feeling of crowding cultivates the presence of others and enhances the accessibility to observe one's behaviors (Kraut 1982), putting customers under social pressure. Thus:

P3a: The immediacy of social information will positively lead to the perception of social proof.

P3b: The immediacy of social information will positively lead to the perception of social pressure.

Social influences: social pressure and social proof

During a firestorm on social media, customers who are subjected to social influences (i.e., the perception of social proof and social pressure) will produce responses towards the organization (Lim 2017). These include an intention to participate in the firestorm, boycotting, switching behavior and so forth, which could be broadly classified as temporal or permanent changes in attitude and behavioral responses towards the organization.

Social pressure and temporal changes in attitude and behavior

During a firestorm on social media, customers under the social pressure follow other customers for the sake of developing and maintaining positive expectations with them. This social influence process stems from the human identity as a social being, with a need for companionship and association (Aronson et al. 2010). Under such influence, the customers will publicly comply with the prevailing norms. However, they may not necessarily internalize the opinions and positions (Kelman 1958). As a result, the changes in attitude and behavior are temporal. Thus:

P4: Social pressure will positively lead to temporal changes in attitude and behavioral responses towards the organization.

Social proof and permanent changes in attitude and behavior

Conversely, customers developed the perception of social proof accepts information obtained from other customers as evidence about the firestorm and the organization. This process is termed internalization (Cialdini and Goldstein 2004). This is particularly true when a vast amount of information is ambiguous and novel to the customers during a firestorm on social media (Kim and Hollingshead 2015). Consequently, customers who have internalized the opinions and criticisms through informational social influence will have more persistent changes in attitude and behaviors (Kelman 1958). Thus:

P5: Social proof will positively lead to permanent changes in attitude and behavioral responses towards the organization.

Research Methodology

Due to the exploratory nature of this research, this study opts for a mixed-method research approach to explore online firestorms on social media. The mixed-method research combines both qualitative and quantitative approach in the same research inquiry, which is well-suited in developing rich insights into a novel phenomenon of interest (Tashakkori and Teddlie 2003).

Research design

Two studies, involving both qualitative and quantitative approaches, will be conducted. Study 1 will explore firestorms on social media through a focus group study. The focus group will consist of a mixture of open- and closed-ended questions. In general, the study will identify specific factors relating to the social information characteristics and attitude and behavioral responses towards the firestorm and organization. After analyzing the data collected in Study 1 which will help to refine the theoretical model and hypotheses, Study 2 will empirically test the proposed model using an experiment. The experiment will adopt a 2 [Strength: High vs. Low] x 2 [Immediacy: High vs. Low] x 2 [Number: High vs. Low] factorial design. A fictitious social media platform (simulating the interface of Facebook.com) will be created. At the beginning of the study, participants will be asked to perform specific tasks that are not directly related to the purpose of the study on the fictitious social media platform, such as

browsing information. After that, a manipulated online firestorm incident (according to the experimental conditions) will be shown to the participants. In addition to asking the participants to fill out an online questionnaire at the end of the study, their interactions with the experimental interface will also be logged. Upon completion of the study, they will be debriefed in the form of a handout.

Research sample and collection

The sampling criterion for participation in Study 1 is a social media user who has experience of a firestorm, whereas the sample criterion for Study 2 is a social media user. A marketing research firm will be employed for sending participation invitations to members of a nationwide (the UK) panel of social media users. Participants will be rewarded with points that could be accumulated and exchanged for gifts. We aim at recruiting 50 and 400 respondents for Study 1 and 2, respectively.

Data analysis

In analyzing the result of Study 1, a thematic mapping exercise will be conducted with two independent coders who will not be familiar with the research context. A data matrix consisted of the proposed variables, and description will be served as the basis for analyzing the responses. Each coder will map the responses in accordance with the proposed categories, and elicited responses that could not be properly classified into the proposed matrix. At the end of the mapping exercise, Cohen's kappa (a measure of the inter-rater reliability) will be used to compare between two coding solutions between the coders and identify variables to test in Study 2. In analyzing the result for Study 2, ANOVA tests will be conducted to examine the effects of the characteristics of social information on the customer perception of social pressure and social proof, after conducting the manipulation checks. The research model will then be estimated using the partial least squares (PLS).

Expected Contributions

In this research-in-progress paper, we developed a conceptual framework explaining the effects of social information on customers' responses towards the organization in the context of firestorms on social media. This study will provide important implications for research and practice. On the theoretical side, it will advance the IS literature by addressing an underexplored research area, namely firestorms on social media. The validated conceptual framework is expected to provide a solid foundation for future studies that aim at studying the complexity and dynamics of social influence in such context. On the practical side, this study will provide organizations with insights into prioritizing resources to tackle such firestorms online.

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