WHAT'S IN AN APOLOGY? VIRALITY AND SOURCE EFFECTS ON EVALUATIONS OF
CRISIS RESPONSE STRATEGIES VIA FACEBOOK

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Advertising – Master of Arts

2013

ABSTRACT

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Social networking sites (SNSs) have become important tools for organizations and companies to

communicate with consumers and constituents during crisis situations. The current study

investigated the persuasive effects of message virality and source type on evaluations of apology

crisis responses posted on Facebook. The study employed a 2 (source type) x 2 (number of likes)

x 3 (repetition) mixed factorial experiment. Participants were exposed to three crisis scenarios,

each followed by an apology crisis responses posted on Facebook. Participants were exposed to

the crisis response posted either on the CEO Facebook page or the company's official Facebook

page. Additionally, participants either saw the status update accompanied by a low or high

number of likes. The study's findings were discussed in relation to crisis response strategies and

persuasion models. Practically, the study's result that participants' evaluation of perceived source

credibility varies with the interaction between source type and virality, trustworthiness has been

showed the influence on subjects' attitude. The results showed the insignificant difference of the

effects of source type or virality on attitude or intention. It also showed the significant

relationship between perceived source credibility and attitude.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

In 2012, about 66% of online users reported using social networking sites (SNSs), with Facebook on top with over a billion users and most traffic (Dugan, 2012). The popularity of SNSs, wide adoption by individuals, companies, and organizations has been mirrored by scholarly attention attempting to understand why, how, and with what effects individuals use SNSs, especially within the context of marketing, advertising, and public relations (Austin, et al., 2012; Dekay, 2012; Nelson-Field, Riebe & Sharp 2012; Vejacka, 2012; Yousif, 2012).

Commercial companies and non-profit organizations have been leveraging the popularity, power, and multi-modality affordances (i.e., text, audio, and video) of SNSs to deliver information, build online communities, and respond to crises (Dekay, 2012). Additionally, around 70% of respondents expressed that they expect organizations to use social media websites and services to update crisis information and respond to crises. The use of social media has been a key tactic in responding to recent crises like the 2010 British Petroleum (BP) Gulf of Mexico oil spill, Blackberry Network Outage in 2011, Sony PlayStation Network attack in 2011, and Amazon web service outage in 2011 (Hendrick, 2011).

Crisis managers are realizing the influence of social media. While we know about such practices, an understanding of the effectiveness of using social media to disseminate crisis responses is still understudied. To this end, the current study investigates the effects of crisis communication within the context of SNSs. More specifically, the study focuses on the effects of source type and message virality on evaluations of crisis response strategies. The experiment systematically varied the source (CEO or company page) and virality (number of likes) in apology crisis responses shared on Facebook for a fictitious organization.

LITERATURE REVIEW

This section reviews past research and theoretical frameworks in relation to crisis management and crisis communication. Second, the section conceptualizes apology as a prominent crisis response strategy. Third, the study provides a review of major trends in the use of social media and social networking sites (SNSs) in the practice of public relations. Fourth, reviewing major persuasion models provides the theoretical framework of the study. Fifth, the independent variables – virality and source type – are conceptualized, and the study's hypotheses are proposed.

Crisis Management and Communication

Crisis management has become a popular topic of inquiry. Researchers used various methods –from case studies to experimental studies – to classify crises, summarize crisis response types, develop crisis management strategies, and investigate the effectiveness of post-crisis management strategies (Coombs, 2007a; Lalonde, 2007; Grunig, 1992; Benoit & Drew, 1997). These studies have helped in building several theoretical frameworks for crisis communication that further guide companies or organizations in overcoming crisis situations. The following section provides a conceptual definition of a crisis and reviews different theoretical approaches to crisis response strategies.

Crises are defined as "major, unpredictable and unexpected events that threaten to harm the organization or its stakeholders" (Coombs, 1999, p. 3). Lalonde (2007) described four aspects that are important to consider when looking at a crisis situation: (1) its origin (whether it is a natural or human-made crisis); (2) consequences (the result brought by the crisis); (3) underlying cause (the reason causing the crisis); and (4) level of risk (the severity of damage). Post-crisis communication (i.e., crisis response) helps organizations and companies to avoid or diminish the

reputational damage resulting from a crisis (Coombs & Holladay, 2005).

Crisis communication and management are prominent public relations functions. Defined as the "management of communication between an organization and its publics"(Grunig & Hunt, 1984, p. 6), public relations deals with managing publics' opinions and perceptions about an organization, which ultimately influence an organization's future. While a nascent field of inquiry, public relations theory can be grouped into two main approaches: the excellence theory and the contingency theory. Grunig's (1992) excellence theory (ET) conceptualizes public relations as a strategic management function by which organizations manage internal and external communication. Its major premise lies in making public relations more effective for practitioners (Grunig, 1992). The excellence theory proposes four different public relation models that vary in communication symmetry and the entities involved in communication. First, the press/agentry/publicity model uses persuasion or manipulation to influence the audience to behave in the way the organization desires. Second, the public information model uses press releases or other one-way techniques to deliver information. Third, the two-way asymmetrical model uses persuasion and manipulation and disregards public's feeling. Finally, the fourth model, the two-way symmetrical communication model, focuses on negotiating and solving problems between organization and publics, and is deemed the best – or excellent – model for managing public relations efforts.

While the excellence theory favors the two-way symmetrical model of communication, the contingency theory argues otherwise (Cancel, Cameron, Sallot, &Mitrook, 1997). Cancel and colleagues (1997) argued that contingent factors affect organizations' strategies in dealing with publics. Contrary to excellence theory, the contingency theory posits that true excellence should instead facilitate public relations to pick the most appropriate strategies (Cancel et al., 1997).

These strategies range on a continuum from complete accommodation to complete advocacy, where the contingent factors affect the placement of an organization's stance on the accommodation-advocacy continuum. Accommodation refers to an organization's stance that yields to the needs and demands of the stakeholders, much like the two-way symmetrical model of the excellence theory, whereas advocacy stances are ones that primarily reflect an organization's position without any regard to stakeholders.

The difference between the two theoretical approaches does not lie in having different foci, but rather in conceptualizing what constitutes as best practices in communicating with the public. The contingency theory argues that based on situational and predispositional elements specific to the organization's internal and external factors, taking an advocacy stance could exemplify excellent communication. Both approaches are extremely relevant to managing and responding to crises as they emphasize that there cannot be a single way to communicate with publics. Responding to crises requires adequate understanding of the situation, the organization, and the environment. Both approaches explain the complex and dynamic process of managing relationships, crises, reputations, and competition at the organizational level. The current study primarily deals with crisis communication. Coombs' (2007a) situational crisis communication theory (SCCT) and Benoit's (1997) image repair theory are reviewed below.

Coombs (1995) argued that the process of crisis-response selection involves identification of the crisis type, gathering additional evidence, understanding the severity level, reviewing performance history (whether this issue happened many times in this field), and ends with an appropriate response to the crisis situation. Coombs (2007a) proposed SCCT as a framework to understand the nature of crises and various types of crisis responses. According to SCCT, crises are divided into three major types based on attributions of crisis responsibility: victim, accidental,

and intentional clusters. Crises in the victim cluster include crises where organizations are also

victims of the crisis. Examples of victim cluster crises include natural disasters and product

rumors that are outside the company's control. Second, accidental cluster crises are those where

companies or organizations have minimal contribution to the crisis, such as technical-error

accidents or product harm instances. Third, preventable cluster crises are when organizations

"knowingly place people at risk, took inappropriate actions or violated a law/regulation"

(Coombs, 2007a, p.168) and "where companies have strong attribution to the crisis responsibility"

(Coombs, 2007b, p.137). Examples of intentional crises would be human-error accidents or

product harm crises (see Table 1).

Table 1.

Crisis types by crisis cluster according to SCCT

Victim Cluster: an organization is also a victim of the crisis. *(Weak attribution of crisis responsibility = Mild reputational threat)*

Victim Cluster: an organization is also a victim of the crisis.
(Weak attribution of crisis responsibility = Mild reputational threat)
    <u>Natural disaster:</u> Acts of nature damage an organization such as an earthquake.
    <u>Rumor:</u> False and damaging information about an organization is being circulated
    <u>Workplace Violence:</u> Current or former employee attacks the current employees onsite.
    <u>Product Tampering/Malevolence:</u> External agent causes damage to an organization.

Accidental Cluster: organizational actions leading to the crisis were unintentional
(Minimal attribution of crisis responsibility)
    <u>Challenges:</u> Stakeholders claim an organization is operating in an inappropriate manner.
    <u>Technical-error accidents:</u> A technology or equipment failure causes an industrial accident.
    <u>Technical-error product harm:</u> A technology or equipment failure causes a product to be recalled.

Preventable Cluster: organization knowingly placed people at risk, took inappropriate actions or violated a law/regulation
(Strong attribution of crisis responsibility)
    <u>Human-error accidents</u>: Human error causes an industrial accident.
    <u>Human-error product harm</u>: Human error causes a product to be recalled.
    <u>Organizational misdeed with no injuries</u>: Stakeholders are deceived without injury.
    <u>Organizational misdeed management misconduct</u>: Laws or regulations are violated by management.
    <u>Organizational misdeed with injuries</u>: Stakeholders are placed at risk by management and injuries occur.

Source: Coombs (2007a, p.168, 2007b, p.137)

Based on the different crisis types, Coombs (2007a) suggested three major response

strategies that match crisis types respectively: denial, diminishing, and rebuilding strategies. Denial is when companies or organizations "attempt to remove connections between them and the crisis" (p. 171). In such cases, the crisis manager asserts that there is no crisis happening by attacking the accuser, simply denying the crisis, or scapegoating. In using diminish strategies, managers minimize the severity of a crisis and claim lack of control over crisis. They let people view the crisis less negatively and claim the severity of crisis is reduced. Examples of diminish strategies include finding excuse and justification. Finally, rebuild strategies "offer material and/or symbolic forms of aid to victims" (Coombs, 2007a, p.172). Crisis managers declaim to take full responsibility of the crisis by using rebuild strategy, such as compensation and apology.

Coombs's framework for understanding crisis response strategies rests upon Benoit's (1997) earlier conceptualization regarding the process of image repair. In image repair theory, Benoit argued that restoring a company/organization's image or reputation that has been hampered is an important organizational function. Image repair strategies are formed into a comprehensive model with five response options: denial (refuse to commit the act), evasion of responsibility (reduce the responsibility of act), minimization (reduce offensiveness of act), corrective action (offer to repair damages), and mortification (ask for forgiveness). Benoit explained that the key of image repair strategies is to "consider the nature of attacks or complaints that prompt such responses or instigate a corporate crisis" (Benoit, 1997, p. 178), which means strategies should match with situations.

Much of the research on crisis communication takes a case study, descriptive approach (Maenaka, 2007; Klikauer, 2012; Barker, 2011). The dynamic nature of crises, as well as the complex structure of organizations, makes it hard to predict which crisis response type is most effective in alleviating the reputation damage resulting from a crisis. Critical scholars concluded

that an effective response helps the company or organization diminish the negative effect of the crisis by salvaging the brand image and stock price, among other assets (Benoit & Drew, 1997; Coombs &Holloway, 2005). In cases where the organization is guilty, Kim, Avery and Lariscy (2009) argue that the ultimate resort is to apply rebuild strategies as the most effective way to rebuild the company/organization's reputation and image. For example, musician Dave Carroll wrote and performed a song titled 'United Breaks Guitars' and posted it on YouTube after his guitar was broken during a trip on United Airlines in 2008 (FOX news, 2011; CBC news, 2009). United Airlines initially refused to take responsibility because Carroll failed to report the incident within 24 hours (Cosh, n.d). After the YouTube video went viral, United Airlines issued a public statement of apology and engaged in corrective action, however, responding in a slow manner negatively affected the company's image. Some argue that if United Airlines had responded with an apology earlier, the crisis would have been avoided (Greenfield, 2009). Today, when online content can quickly get viral, companies also try to promptly respond to potential crises to minimize harm to a company's reputation.

Apology: 'Sorry seems to be the Hardest Word'

Apology is probably the most advocated crisis response strategy (Patel & Reinsch, 2003; Kim, Avery, &Lariscy, 2009; Claey, Cauberghe, & Vyncke, 2010; Bradford & Garrett, 1995, Dean, 2004). It is classified as a mortification strategy in Benoit's typology (1997), and as a rebuild strategy in Coombs' SCCT (2007a). Apology refers to situations when the organization confesses wrongdoing, accepts responsibility for the crisis, and begs for forgiveness (Benoit & Drew, 1997; Fuchs-Burnett, 2002). An apology includes expressions of remorse, acknowledgement of responsibility, offers of reparation, forgiveness request, and a promise of not repeating the offense (Buttny, 1993; Benoit & Drew, 1997; Patel & Reinsch, 2003;Fuchs-

Burnett, 2002). An effective apology acknowledges "that a moral norm or an understanding of a relationship was violated, explanation of why the offense was committed, and a communication that the actions were not intentional" (Lazare, 1995, p. 40).

Researchers have shown that apology is prevalent and has positive effects as a crisis response strategy. Patel and Reinsch (2003) analyzed crises between 1990 and 2000, and found that apology was the most common strategy. They also found that apology helped in "shaping corporate reputation, facilitating forgiveness or private settlement, evidence for the plaintiff (admission of guilt), and evidence for the accused (reduction of penalty)" (Patel & Reinsch, 2003, p. 16-19). Kim, Avery and Lariscy (2009) reached similar conclusions from their content analysis of crises between 1991 and 2009, where apology was evaluated as the most effective crisis responses strategy compared to others. They further suggested that even though, theoretically, strategies should match with situations, companies or organizations should review a crisis more comprehensively, rather than just applying a "best practice" approach. This is where experimentation is most useful. A number of studies have demonstrated that apology has the strongest positive effect on post-crisis perceptions of the organization (e.g., Bradford &Garrett, 1995; Dean, 2004). Another study about the impact of different crisis response strategies found that respondents have more positive attitudes toward apology responses compared to other strategies such as denial or no response (Claey, Cauberghe, & Vyncke, 2010).

Despite differences in crisis situations, there seems to be an agreement that apology might be the most effective response in a crisis. Past theorizing on public relations as an organizational function to manage crises and competition (Cancel, et al., 1997, Benoit, 1997; Coombs & Hollodays, 1996) argued that organizations move their stances according to the interplay of multiple situational and predispositional factors. It is plausible that Gruing's (1992)

excellence theory might hold up the test of time in the sense that apology is favored, if not

expected, from organizations. Based on the common usage and the effectiveness of apology

strategy, the current study focused on apology strategy in designing the experimental stimuli.

To summarize, scholars have discussed crisis communication for decades. It has been

developed into different categories based on the variety of crisis situations and media

environment. It offers researchers the basis for further studies when facing complex issue or

environment. Especially in the social media era, post-crisis communication has to face

unexpected opportunities and challenges posed by social media. The following section focuses

on the use of social media services and SNSs as marketing, advertising, and public relations tools.

Social media: A PR Platform

Social media have changed the relationship between companies and their customers.

Managing relationships have changed in an environment of fast-paced, readily available

information. The change in audience structure and information receiving behaviors bring

opportunities for organizations or companies to communicate with the public.

Social media are defined as "a group of Internet-based applications, which allow the

creation and exchange of user generated content" (Kaplan & Haenlein, 2010, p. 67). The use of

social media for business, marketing, and public relations purposes has garnered increasing

attention by researchers. Social media help companies and organizations create and strengthen

relationships, connect people with similar interests, and build brand awareness (Knobel,

Lankshear, 2008). Barnes and Mattson (2008) also found that it takes less time for social media

to reach out to potential or existing customers compared to traditional media such as television or

radio. With less space and time limitations, social media deliver increasingly precise information

faster to target audiences. Naveed (2012) conducted a study in Pakistan to examine the effects of

social media on consumers' buying behavior and found a positive relationship between organizational communication and users on blogs. The author found that 73% of respondents agreed that blogs have been changing the way organizations communicate with customers. Social media are becoming essential platforms where companies and organizations practice public relations.

Different from research on the effects of mediated communication that focus primarily on message content rather than message channels, studies using social media amplify the importance of information form, particularly in a crisis situation (Austin, Liu, & Jin, 2012). Austin and colleagues (2012) applied the social mediated crisis communication model that focuses on the interaction between social media creators, followers and inactives. Creators are social media users who create information, followers are those who consume information, and inactives consume information indirectly through word-of-mouth channels from social media followers. Austin and colleagues (2012) found that participants mainly used social media during crises to get "insider information" as a practice of self-knowledge seeking and communicate with their family and friends to make sure they are safe and alright (p. 197). They also found that participants seek information through friends' Facebook pages and follow updates on Facebook fan pages more than traditional media during crises. While intriguing, these findings call for further investigation of factors that affect audiences' evaluations of crisis response strategies and the effects of information source and form in relation to yielding to arguments made in crisis responses.

SNSs: Potential Venue for Crisis Communication

Scholarship on social media has matured over the past few years. This scholarship maturation was matched by increased sophistication among industry professionals in

understanding the specificities of different genres of social media. Sterne (2010) classified social media sites and services into six categories: (1) social network sites (SNSs) like Facebook; (2) microblogging sites like Twitter; (3) media sharing sites like Flickr and YouTube; (4) blogs like WordPress; (5) forums and message boards like Craigslist; and, (6) review and opinion sites like eBay. The current study mainly focuses on SNSs as the context of delivering apology responses to a crisis situation.

boyd and Ellison (2007) defined SNSs as "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system"(p. 211). SNSs constitute a type of computer-mediated communication (CMC) technology that provides an online forum for people who share similar interests to exchange information, such as pictures, messages, or hyperlinks (Sledgianowski & Kulviwat, 2009). Facebook is the most popular SNS and social media site with one billion users, compared to Twitter's 550 million, Google plus's one million users, and LinkedIn's 150 million users (Dugan, 2012). Facebook receives 7.01 billion visitors every month (Dugan, 2012). According to the Pew Internet and American Life Project, about two-thirds of online adults and three-quarters of young adults aged 18 to 29 use SNSs (Lenhart, Purcell, Smith, & Zickuhr, 2010). Brenner (2013) recently reported that an extreme majority of young adults (92%) reported using SNSs, a percentage that grew from 9% in 2005. The majority of these SNS users (89%) report having a Facebook account.

A distinguishing characteristic of SNSs is the use of SNSs for hedonic purposes such as enjoyment and ease, rather than utilitarian purposes that focus on specific usage intentions (Sledgianowski & Kulviwat, 2009). Sledgianowski and Kulviwat (2009) expanded six aspects of

SNS usage intention: playfulness, development of critical mass, increased trust, yielding to normative pressures, perceived ease of use and perceived usefulness. These factors might be critical in attempting to use Facebook for marketing, advertising, and public relations purposes, as practitioners need to understand not only how users use SNSs, but also, why they are using them.

A number of scholars argued that Facebook, among other SNSs, has four potential benefits to marketers, advertisers, and public relations practitioners (Austin, et al., 2012; Dekay, 2012; Nelson-Field, Riebe & Sharp 2012; Vejacka, 2012; Yousif, 2012). First, it could help companies and organizations increase brand awareness, thus leading to potential higher sales and market share. Second, Facebook is used as a direct advertising platform. Third, Facebook could be used as an avenue to build and maintain fan-based platforms. Finally, and possibly most importantly, Facebook is used as a platform for companies and organizations to engage in direct two-way communication with existing or potential customers.

Nelson-Field and colleagues (2012) explored customer behaviors of Facebook users who are "fans" of brands. They found that the majority of a brand's fans on Facebook are also heavy buyers, thus suggesting that a Facebook fan base provides a good opportunity to listen and communicate with existing buyers that leverages a brand's social network and increases the number of brand advocates. Within the context of advertising, Yousif (2012) showed that participants thought advertising on Facebook not only was considered an effective promotional tactic, but it was also associated with the provision of trustworthy and reliable messages. Additionally, participants considered Facebook advertising appealing and exciting.

With 79% of Fortune 100 companies using social media to communicate with their customers or stakeholders, Dekay (2012) argued that the affordances of Facebook, specifically

the comments section, allows consumers to communicate directly with companies and brands.

This open-channel communication, however, is coupled with companies' willingness to censor or

ignore critical feedback instead of responding to negative comments (Dekay, 2012).

To summarize, most studies on business-to-consumer communication social media and SNSs

focuses on information owners' perspective, such as analyzing content on corporations' website

or asking industry professionals about how they use social media in their work. Contrary to such

approaches, the current study focuses on message receivers. More specifically, the current study

is set to investigate the effects of virality (low vs. high likes) and message sources (company vs.

CEO) on participants' attitudes and behavioral intentions in relation to a hypothetical crisis

situation. Ultimately, a crisis response aims at changing people's attitudes in relation to a crisis

situation. To address this, the following section conceptualizes the effects of crisis responses

using different persuasion models.

Theoretical Framework: Persuasion Theories

The effectiveness of a crisis response strategy is reflected by the formation of and change

in audiences' attitudes toward the company/organization following a crisis. In the current media

environment, audience attitudes and behaviors are shaped by many factors such as the motivation

to attend to a message, previous knowledge about the company/organization, and message

characteristics. All these factors, according to different persuasion models, affect whether

individuals accept the message's arguments, and in turn change their attitudes and behaviors

toward the object of persuasion. The current study argues that a crisis response is a form of

persuasive message that an organization publicizes during and/or after a crisis, where the

outcome of responding to a crisis is attitudinal and behavioral change. Additionally, the study

posits that two features of a crisis response shared on a popular SNS: the source of an apology

and the message's virality, are bound to affect individuals' attitudes and behavioral intentions in relation to the company/organization in crisis.

Most commonly, attitude is defined as an evaluative response that involves a knowledge function, such as beliefs, feelings, or past behavior (Fazio, 1990; Zanna & Rempel, 1988). Behavior intentions are indications of an individual's readiness and willingness to perform a given behavior and attain a goal (Ajzen, 1991).

The study of persuasion has been closely tied to theories of information processing like the elaboration likelihood model (ELM; Petty & Cacioppo, 1983; Petty, Brinõl & Priester, 2008; Petty & Wegener, 1999) and the heuristic-systematic model (HSM; Chaiken, 1980; Eagly & Chaiken, 1993). ELM assumes that certain message features, as well as the receiver's motivation and ability to process information, activate either the peripheral or central route, thus affecting the receiver's acceptance and yielding to a persuasive messages (Petty & Cacioppo, 1986). In peripheral route processing, individuals use simple heuristic cues or informational indicators, such as a model's attractiveness or the source's perceived credibility, to assess the believability of a message. Central route processing involves greater level of deliberation of the message's persuasive arguments, where users have utilitarian cues based on previous knowledge and experience and use those to evaluate the quality of the message's arguments to reach the persuasive outcome of attitude change. For example, Petty and Cacioppo (1990) reported an interaction between issue relevance and the strength of persuasive argument in a message. Individuals with higher issue-relevant cognitions were more receptive to stronger persuasive arguments compared to those with little issue-relevant cognitions (Petty & Cacioppo, 1990).

Similarly, HSM divided types of information processing into heuristic and systematic processing (Chaiken, 1980). In heuristic processing, individuals rely on cues associated with

14

memory or previous knowledge structures. On the other hand, systematic processing involves comprehensive, cognitive analysis of the message and its arguments (Chaiken, 1980). Systematic processing values perceived source credibility and message content regarding to persuasion effect, Chaiken (1980) indicated that perceived source credibility affects the effect of persuasion when readers are more under low-involvement, heuristic conditions, but not high, issue or response-involvement conditions.

Models like ELM and HSM inferred that changes in attitudes are sufficient in affecting an individual's behavioral intention toward the object of persuasion. As introduced above, behavioral intention is defined as individual's readiness and willingness to perform a given behavior and attain a goal (Ajzen, 1991). The theories of reasoned action (TRA; Ajzen & Fishbein, 1980) and planned behavior (TPB, Ajzen, 1991) argued that the relationship between attitudes and behaviors is not direct, and thus is mediated by an individual's intention to perform the behavior, or in other words, behavioral intentions. TRA combines attitude towards a given behavior with expectations of others to predict intentions with a given behavior (Sheppard, Hartwick & Warshaw, 1988), while TPB focuses on an individual's perceived behavioral control, defined as the perceived ability to perform a given behavior, as a precursor of performing the behavior (Ajzen, 1985).

TPB argued that performing the desired behavior advocated in a persuasive message is dependent on a number of factors: (1) attitude toward the behavior, which indicates people's willingness to perform the behavior; (2) the subjective norm, which indicates people's availability to perform the behavior; and (3) perceived behavior control, which refers to resources such as time, money or skills that helps to succeed in doing this behavior (Ajzen, 1991).

As discussed above, attitude and behavioral intention are the major outcomes of

persuasion. Within the context of SNSs, persuasion takes a different form. Different from traditional media, social media do not have "gatekeepers" to filter information before it is disseminated to audiences, thus leading to information overload and uncertainty (Metzger, Flanagin, &Medders, 2010). As a result, individuals can receive information from numerous sources or channels. Additionally, the nature of attitude and behavioral change might take a different direction. Instead of focusing on actual behaviors (e.g., purchase), online communication allows for online behaviors ranging from liking, sharing, to commenting on a message on a website like Facebook. The current study investigates the effects of source type and message virality on attitudes toward the company, as well as offline and online behavioral intentions related to that company. The following section focuses on the effect of sources within the boundaries of persuasion.

Sources of Crisis Communication

Past research argued that individuals have higher levels of trust for messages from a reliable source (Petty & Cacioppo, 1986, Dekay, 2012, Vejacka, 2012). With the growth in the business uses of SNSs, companies and organizations have multiple accounts that serve similar purposes. In addition to having an official page for a company, organization, or a brand, chief executive officers (CEOs), other executives, and employees have professional presence on SNSs like Facebook (Horton, 2009; Skeels, Grudin, 2009; Waters, Burnett, Lamm & Lucas, 2009). The current study sheds the light on the potential effect of sources within the context of persuasive messages shared on SNSs as a response to a crisis situation by exposing participants to crisis responses posted by a human versus organizational source. Source, in general, is defined as the entity to which information can be attributed. In other words, sources are originators of information. In the current study, we define human source as one where the originator of the

16

information – in this case the crisis response – is an individual human being, where it is manipulated as the CEO of the company in crisis. An organizational source refers to non-human originators of information, where information is provided by an entity that resembles the company in crisis.

Different types of sources have been showed different persuasive effects. A conversational human source was found to have a significant effect on improving relationships compared with an organizational source (Kelleher, 2009; Kelleher & Miller, 2006; Yang & Lim, 2009). It is prudent today to use conversational voice via social media when organizations try to communicate with their consumers and stakeholders. In this situation, conversational human source is described as "an engaging and natural style of organization and individuals in publics" (Kelleher, 2009, p. 177). Park and Lee (2012) conducted a study to test participants' perception regarding human or organization presence within two organization types (nonprofit and for profit), which used one nonprofit and one for-profit fictitious Twitter accounts. The authors found that conversational human source was greater for organizations' social network with a human presence compared with organizational presence, which was compared by the human profile pictures and name or organization logos and title in this study.

Source characteristics have been found to influence the effectiveness of persuasiveness messages (Wilson & Sherrel, 1993; McGuire, 1985). Sources can be distinguished as "internal" sources such as the communicator and messages or "external" sources such as medium channels (Weiss, 1957). Therefore, the current study conceptualizes a source in relation to value of information's origin and its natural characters. Scholars have emphasized that different dimensions of sources will influence the credibility of the communication message, such as the origin of message, the message delivery channel and the endorser (Barnes, 1978; Schweiger,

17

2000; Sundar & Nass, 2001). Hovland, Janis, and Kelley (1953) have found that individuals will express greater trust in information when it comes from a more reliable channel, or an originator with authority or expertise. Therefore, source characteristics, such as content and originator, will affect persuasion.

The study herein argues that varying the source type will result in varying degrees of perceived source credibility, and thus different persuasive effects. Perceived source credibility has been defined as "the extent to which a communicator is perceived to be a source of valid assertion" (Hovland, Janis, & Kelley, 1953, p. 21). Past research has found that the credibility of a corporation such as the message originator has both direct and indirect influence on audiences' attitude toward the message and brand (Goldberg & Hartwick, 1990; Lafferty, Goldsmith & Newell, 2002). Goldberg and Hartwick's (1990) experiment found that the reputation (expertise and trustworthiness) of a source had a significant effect on the subjects' attitude change. Ohanian (1990) added attractiveness into the scale to measure perceived source credibility. This factor is significantly important when assessing the effects of celebrity endorsement, where attractiveness plays an important role in people's evaluation of the message source. Today, the attractiveness of CEOs or founders of companies also play this role in a lot of companies today, famous company leaders such as the co-founder of Apple Inc., Steve Jobs or founder of Facebook, Mark Zuckberg, their personal symbols have become part of the company brands.

In the current communication environment, companies have multiple facets of their online presence, facilitated by the affordances of social media. Companies and organizations are not only having official, generic company pages on popular social media sites, but also, CEOs are communicating directly to social media users on behalf of the company/organization. Park and Lee (2012) conducted a study to test the effects of presence and organization type on

participants' evaluations of the communication and organization. They exposed participants to Twitter messages posted with a human or organizational source posted on Twitter pages of nonprofit or for-profit organizations. They found that participants favored and felt more engaged upon exposure to tweets written with a conversational human source as opposed to an organizational source (Park & Lee, 2012). The current study argues that a CEO would be more credible than a generic company page. Past studies showed that perceived source credibility to positively affect persuasion (Bush, Moncriet, & Ziethami, 1987; Craig & McCann, 1978; Jin & Yeo, 2011). Presumably, high source expertise is one of compelling cues to enhance persuasion, whereas a weak compelling cue such as lack of expertise may induce an ambiguous attitude (Petty & Cacioppo, 1986).

Lafferty and colleagues (2002) proposed a dual-credibility model of endorser and corporate credibility to test the potential influence on people's attitude toward messages from different sources. Findings showed that endorser credibility has more direct effect on subjects' attitude towards test ad than corporate. While corporate credibility has more comprehensive effect on subjects' attitude, such as attitude towards ad, brand and purchase intention, rather than endorser celebrities mainly influenced attitude toward ads.

Based on this, the current study hypothesized:

H1: Participants would rate messages from human source (CEO) more favorably than those from organization source (company).

H2: Participants would express greater favorability toward the company in crisis upon exposure to messages from organization source (company) compared to those from human source (CEO).

H3: Participants would express greater viral behavioral intentions toward messages from

19

organization source (company) compared to those from human source (CEO).

The current study also manipulated one aspect of virality related to the number of likes a message has received. The number of likes, resembling a viral behavioral response, is expected to enhance persuasion by increasing the sense of consensus to a message's content. The following section conceptualizes virality and provides the rationale for the study's prediction in relation to the persuasive effects of virality within the context of crisis communication.

Virality as a Message Feature

Alhabash and colleagues (2013a) argued that past literature yielded three different approaches to defining virality. The first approach mainly focuses on access, and measures virality by looking at how many people viewed a piece of content online in a given time period (e.g., Bonchi, Castillo, and Ienco 2011; Guerini, Pepe, and Lepri 2011; Tucker 2011). The second approach looks at the process by which a piece of content becomes viral through the lens of electronic word-of-mouth (eWOM). eWOM is an extension of WOM, which refers to "oral, person-to-person communication between a receiver and a communicator whom the receiver perceives as non-commercial, regarding a brand, product, or service" (Arndt, 1967, p. 5). eWOM offers the possibility for audience members to exchange information swiftly, multiple times and anonymously, and further diminishes space and time limitations (Jasen, Zhang, Sobel, & Chowhdury, 2009). Within this context, virality refers to the act of sharing content online. The third approach defines virality as engagement and argues that users' behaviors, including accessing, liking/disliking, sharing, and commenting, collectively qualify engagement as a measure of online advertising effectiveness (Tucker 2011, as cited in Alhabash et al., 2013a).

Alhabash and colleagues (2013a, 2013b) take a behavioral approach to defining virality. Their definition takes a user-centered behavioral approach to identifying the "determinants of

20

user interactivity with a persuasive message disseminated and shared online" by looking at the message's affective evaluation, viral reach, and message deliberation, in addition to access (Alhabash, 2013b, p. 4). Affective evaluation refers to users' explicit emotional responses expressed as behavioral responses to online content (e.g., liking a message on Facebook). Viral reach deals with sharing of content online within a person's network of friends (e.g., posting a YouTube video on Facebook). Finally, message deliberation refers to users' comments on a piece of online content that could also entail affective evaluations of the content (e.g., posting a comment on a friend's Facebook status update).

Virality has become an essential metric to evaluating effective of online business-to-consumer communication. Companies do not make content popular. People popularize content. The relevance of virality stems from consumers' greater trust in information they see on their immediate social network (Duana, Gub, &Whinston, 2008). A report by BrightEdge.com shows that virality responses of liking and sharing messages online have become ever important. They showed that the top 1,000 websites have been liked and shared over 65 million times on Facebook. Additionally, the report showed that the "like" button is one of Facebook's most used features. ExactTarget (2009) reported that nearly half of respondents (45%) said they "like" a company account on Facebook at least per month, with an average of liking 14 companies.

The number of Facebook likes can be understood in terms of audiences' expectation. It reflects an evaluation by others that may influence readers' evaluations. The high number of likes shows a majority sharing opinion with readers, which is related with reader's expectation. Expectation is defined as a belief about the probabilities associated with one's future state of affairs (Olson, 1996). Wilson, Lisle, Kraft and Wetzel (1989) raised affective expectation model (AEM), which explained how affective expectations influence people's affective reaction.

Researchers have identified several factors that influence people's affective expectation (Jonas & McGillis, 1976, Hoschschild, 1979): people's previous personal experience, cultural norms and other's evaluation. Other's evaluation is also called category-based expectation. It means that if majorities of people evaluate one thing in a certain way, then other people may expect to experience it in the same way. In this case, to readers, high number of likes brings more compelling positive responses to messages than low number of likes.

Alhabash and colleagues (2013b) argued, using signaling theory (Krebs and Dawkins 1984), that the virality of online content could be a signal of the quality of the message, thus increasing its persuasiveness. They found that highly liked messages resulted in greater attitudes and viral behavioral intentions related to anti-cyberbullying messages shared on a Facebook page of a mock non-profit organization. The current study will manipulate the number of likes for an apology crisis response shared on Facebook. Participants will see the same message, yet half of them will see it with a larger number of likes and the other half with a low number of likes. In general, the study predicts that greater number of likes would result in greater persuasiveness of the apology response. The study predicts that crisis response messages on Facebook with a high number of likes will results in greater persuasive outcomes compared to those with low number of likes. Thus, the study hypothesizes:

> H4: Participants will express more favorable attitudes toward highly liked messages compared to lowly liked ones.

> H5: Participants will express more favorable attitudes toward the company in crisis upon exposure to highly liked messages compared to lowly liked messages.

> H6: Participants will express greater viral behavioral intentions toward highly liked messages compared to lowly liked messages.

The study herein will also explore the effect of the interaction between virality (number of likes) and source type (CEO vs. company page) on persuasiveness of the crisis response message posted on Facebook. Due to limited research on this topic, the study reverts to asking the following research questions:

RQ1: How would the interaction between the number of likes and source type affect participants' attitudes toward the message?

RQ2: How would the interaction between the number of likes and source type affect participants' attitudes toward the company in crisis?

RQ3: How would the interaction between the number of likes and source type affect participants' viral behavioral intentions?

Additionally, the current study investigated the effects of source type and virality on perceived credibility. The ELM model discussed above, argues that perceived source credibility is the sole outcome of persuasion. It also influences persuasive outcomes of attitude, behavioral intention or actual behavior, therefore, to consider the effect of perceived source credibility. In the current study, we explored the ways in which source type and virality affect the three facets of perceived source credibility (attractiveness, trustworthiness, and expertise). Additionally, we explored how each of these credibility types affects participants' attitudes and viral behavioral intentions. Thus, we raised the following three research questions:

RQ4: How do the three types of credibility predict participants' attitude towards status update?

RQ5: How do the three types of credibility predict participants' attitude towards company in crisis?

RQ6: How do the three types of credibility predict participants' viral behavior intention?

METHOD

Design and Participants

This study used a 2 (source type: CEO vs. company) x 2 (number of likes: low vs. high) x 3 (message repetition) mixed factorial design. All factors except repetition were manipulated as between-subjects. Participants ($N = 268$) for this experiment were recruited from large introductory courses at the College of Communication Arts and Sciences at Michigan State University and were rewarded with extra/course credit in exchange of participation. Nearly six in 10 participants were female (59.1%). The majority of participants reported they were white/Caucasian (70.1%), followed by Asian (16.0%), African American (10.1%), Hispanic or Latino (1.1%), others (2.7%). The age of respondents ranged from 19 to 27, with an average of 21 (M=21 SD=1.64).

Independent Variables

Source Type. Source type was manipulated between subjects. It was operationalized as the type of source appearing as the owner of the Facebook profile. Participants were randomly assigned to view messages posted a CEO's or a company's Facebook page. Profile pictures for CEOs were pretested on valence, arousal, and attractiveness with comparable pictures included in the stimuli construction. Company logos were designed and pretested specifically for this study.

Number of Likes. Message virality was manipulated between subjects. It is operationalized as the number of "likes" printed beneath the crisis response message. Participants were randomly assigned to one of two levels: low likes vs. high likes. A pilot study has been done to determine the number of likes. Five recent Facebook posts from top 20 most

"liked" companies (Felix, 2012) in 2012 were chosen as sample. After calculating the mean, maximum (19) and minimum number (118,296) of likes of each post, we decided to randomly pick a number from 10-30 as low likes, and a number from 110,000 to 130,000 as high likes.

        Repetition. Each of the four treatment levels was represented by three repetitions.

Dependent variable

        Attitude toward Crisis Response Message. Attitude toward crisis response message was measured using past measures of attitude toward message (Mackenzie, Lutz & Belch, 1986). Participants rated each crisis response message using three 7-point semantic differential scales: bad/good, negative/positive, unfavorable/favorable. Upon satisfactory factor and reliability analyses (see Table 2), items were aggregated into single variables corresponding with each message.

Table 2.

Factor analysis and reliability for attitude toward crisis response message.

Item	Crisis Case 1			Crisis Case 2			Crisis Case 3		
	Mean	*SD*	*Loading*	*Mean*	*SD*	*Loading*	*Mean*	*SD*	*Loading*
Positive/Negative	4.77	1.50	0.75	4.60	1.62	0.78	4.71	1.60	0.74
Bad/Good	4.68	1.53	0.87	4.57	1.63	0.93	4.79	1.51	0.88
Unfavorable/Favorable	4.74	1.52	0.91	4.55	1.59	0.90	4.70	1.55	0.90
Eigenvalues	2.14			2.27			2.13		
% Of Variance	71.47			75.63			71.13		
Reliability	0.88			0.90			0.88		

        Attitude toward Company in Crisis. Attitude toward the company were measured using past measures of attitude towards the brand (Mackenzie, et al, 1986). Participants rated each Facebook message using three 7-point semantic differential scales: bad/good, negative/positive, unfavorable/favorable. Upon satisfactory factor and reliability analyses (see Table 3), items were aggregated into single variables corresponding with each message.

Table 3.

Factor analysis and reliability for attitude toward company in crisis.

Item	Crisis Case 1			Crisis Case 2			Crisis Case 3		
	Mean	*SD*	*Loading*	*Mean*	*SD*	*Factor*	*Mean*	*SD*	*Loading*
Good/Bad	4.53	1.590	0.835	4.24	1.662	0.922	4.50	1.640	0.850
Negative/Positive	4.55	1.558	0.969	4.24	1.661	0.971	4.47	1.625	0.937
Unfavorable/Favorable	4.54	1.585	0.939	4.18	1.695	0.914	4.42	1.631	0.976
Eigenvalues	2.52			2.63			2.55		
% Of Variance	83.89			87.65			85.14		
Reliability	0.94			0.96			0.94		

Viral Behavioral Intentions (VBI). To measure viral behavioral intentions, the study

used items validated by Alhabash et al. (2013b). Participants rated their agreement/disagreement

to five statements using 7-point Likert type scales anchored by "Strongly Agree" and "Strongly

Disagree". Upon satisfactory factor and reliability analyses (see Table 3), items were aggregated

into single variables corresponding with each message.

Table 4.

Factor analysis and reliability for attitude toward viral behavior intention.

Item	Crisis Case 1			Crisis Case 2			Crisis Case 3		
	Mean	*SD*	*Loading*	*Mean*	*SD*	*Loading*	*Mean*	*SD*	*Loading*
The status update is worth sharing with others	2.83	1.73	0.75	2.82	1.70	0.78	2.89	1.81	0.80
I would recommend this status update to others	2.42	1.64	0.79	2.44	1.50	0.87	2.55	1.69	0.82
I would "like" this status update	2.74	1.84	0.68	2.68	1.77	0.65	2.62	1.75	0.74
I would "share" this status update	2.17	1.51	0.92	2.22	1.52	0.89	2.23	1.53	0.89
I would "comment" on this status update	1.93	1.33	0.65	2.01	1.29	0.67	2.07	1.51	0.72
Eigenvalues	2.92			3.01			3.16		
% Of Variance	58.40			60.18			63.28		
Reliability	0.87			0.87			0.89		

Perceived source credibility-attractiveness. To measure attractiveness, this study used

items validated by Ohanian (1990). Participants rated their agreement/disagreement to five

statements using 7- point Likert type scales anchored by "Strongly Agree" and "Strongly

26

Disagree". Upon satisfactory factor and reliability analyses (see Table 3), items were aggregated

into single variables corresponding with each message.

Table 5.

Factor analysis and reliability for attractiveness.

Item	Crisis Case 1			Crisis Case 2			Crisis Case 3		
	Mean	*SD*	*Loading*	*Mean*	*SD*	*Loading*	*Mean*	*SD*	*Loading*
Attractive/Unattractive	3.72	1.21	0.82	3.78	1.23	0.79	3.88	1.20	0.74
Classy/Not classy	4.31	1.36	0.57	4.16	1.39	0.58	4.40	1.40	0.58
Beautiful/Ugly	3.73	1.01	0.73	3.69	1.06	0.79	3.73	1.04	0.79
Elegant/Plain	3.55	1.41	0.53	3.56	1.42	0.55	3.68	1.37	0.63
Sexy/Not sexy	2.77	1.38	0.49	2.95	1.43	0.46	2.78	1.43	0.34
Eigenvalues	2.05			2.10			2.02		
% Of Variance	40.91			41.93			40.40		
Reliability	0.75			0.75			0.93		

Perceived source credibility-trustworthiness. To measure trustworthiness, this study

used items validated by Ohanian (1990). Participants rated their agreement/disagreement to five

statements using 7- point Likert type scales anchored by "strongly agree" and "strongly

disagree". Upon satisfactory factor and reliability analyses (see Table 3), items were aggregated

into single variables corresponding with each message.

Table 6.

Factor analysis and reliability for trustworthiness.

Item	Crisis Case 1			Crisis Case 2			Crisis Case 3		
	Mean	*SD*	*Loading*	*Mean*	*SD*	*Loading*	*Mean*	*SD*	*Loading*
Dependable/Not dependable	4.54	1.415	0.814	4.46	1.484	0.786	4.55	1.386	0.826
Honest/Dishonest	4.93	1.467	0.859	4.88	1.458	0.782	5.02	1.375	0.738
Reliable/Unreliable	4.55	1.476	0.867	4.53	1.505	0.836	4.69	1.432	0.845
Sincere/Insincere	4.85	1.574	0.852	4.67	1.496	0.811	4.87	1.460	0.860
Trustworthy/Untrustworthy	4.66	1.397	0.865	4.54	1.433	0.869	4.73	1.440	0.868
Eigenvalues	3.63			3.34			3.44		
% Of Variance	72.51			66.82			68.72		
Reliability	0.929			0.909			0.916		

Perceived source credibility-expertise. To measure expertise, this study used items validated by Ohanian (1990). Participants rated their agreement/disagreement to 5 statements using 7- point Likert type scales anchored by "strongly agree" and "strongly disagree". Upon satisfactory factor and reliability analyses (see Table 3), items were aggregated into single variables corresponding with each message.

Table 7.

Factor analysis and reliability for expertise.

Item	Crisis Case 1			Crisis Case 2			Crisis Case 3		
	Mean	*SD*	*Loading*	*Mean*	*SD*	*Loading*	*Mean*	*SD*	*Loading*
Expert/Not expert	4.53	1.38	0.83	4.41	1.37	0.83	4.56	1.33	0.83
Experienced/Inexperienced	4.70	1.40	0.87	4.54	1.40	0.84	4.69	1.36	0.87
Knowledgeable/Unknowledgeable	4.88	1.33	0.86	4.52	1.42	0.89	4.77	1.29	0.85
Qualified/Not qualified	4.77	1.38	0.88	4.55	1.44	0.89	4.81	1.34	0.89
Skilled/Unskilled	4.56	1.38	0.85	4.39	1.34	0.86	4.60	1.33	0.89
Eigenvalues	3.77			3.73			3.75		
% Of Variance	75.39			74.65			75.09		
Reliability	0.94			0.94			0.94		

Stimuli and Pretest

In the main test, participants were exposed to a total of three crisis scenarios, followed by a screen shot for a crisis response. Crisis scenarios and the content of the apology crisis response were identical across all conditions. Participants were randomly assigned to one of the following four conditions: CEO post with high likes, CEO post with low likes, company post with high likes, and company post with low likes. All materials were constructed specifically for this experiment and were pretested with a smaller sample of participants, other than those of the main experiment.

To construct the stimuli, the study pretested the following elements: the crisis scenario and the profile picture for CEO or company logo. First, the three crisis scenarios used in the

main experiment were selected from a pool of 12 different scenarios for crises faced by fictitious companies of similar trade orientation. Participants *(N = 20)* rated each of the 12 scenarios using 7-point scales for the scenario's level of arousal, positivity, negativity, and crisis severity. We selected three cases with comparable arousal, positivity, negativity, and crisis severity ratings (see Table 5). The ANOVA results showed that there was no significant difference among these cases (Arousal: $F(1, 20)=0.02$, *ns*; Positivity: $F(1, 20)=0.56$, *ns*; Negativity: $F(1, 20)=0.00$, *ns;* Severity: $F(1, 20)=0.35$, *ns*).

Table 8.

Descriptive statistics of pre-selected crisis cases.

Case No.	Arousal		Positivity		Negativity		Severity	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
6	4.65	1.53	2.50	1.00	5.50	0.83	5.60	0.88
8	4.90	1.12	2.45	1.23	5.70	0.98	5.40	1.23
11	4.70	1.56	2.30	1.03	5.50	1.10	5.45	1.23

Second, to select the profile pictures that accompany the Facebook posts, we pretested the images of CEO and images of company logo. The three CEO pictures were selected from a pool of 12 pictures of male CEOs that was pretested using 7-point scales for attractiveness, trustworthiness and expertise. According to a CEO survey conducted by Inc.com website, 68% of CEOs of fortune 500 companies fell into age 35-55, 90% are male, and 79% are Caucasian (Inc. 2012). Therefore, in this study, CEO images were limited to middle-aged, Caucasian male. The three logo pictures were also selected from a pool of 12 pictures of logo that was pretested using 7-point scales for attractiveness, trustworthiness and expertise. We chose 3 logos and 3 CEO images that attractiveness, trustworthiness and expertise which were in median level in this test, and the ANOVA results showed there was no significant difference among these logos (Attractiveness: $F(1, 20)=0.05$, *ns*; Trustworthiness: $F(1, 20)=0.02$, *ns*; Expertise: $F(1, 20)=0.23$,

ns), and CEO images (Attractiveness: $F(1, 20)=4.17$, *ns*; Trustworthiness: $F(1, 20)=0.03$, *ns*;

Expertise: $F(1, 20)=0.35$, *ns*). Hence, the manipulation on CEO images or company logos was

verified.

Table 9.

Descriptive statistics of pre-test selected CEO images and company logos.

Item	Attractiveness		Trustworthiness		Expertise	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*
CEO image 1	3.19	1.08	4.76	1.41	5.10	1.09
CEO image 2	3.86	1.28	4.05	1.47	4.90	0.94
CEO image 3	3.86	1.42	4.81	0.81	4.95	0.67
F value	4.17		0.03		0.35	
Company logo 1	4.00	1.79	4.00	1.58	4.10	1.55
Company logo 2	3.95	1.12	3.81	1.25	3.95	1.50
Company logo 3	3.90	1.58	4.05	1.32	3.90	1.45
F value	0.05		0.02		0.23	

Upon completion of the pretest, comparable scenarios, CEO and Logo images were

selected for the construction of the three sets of stimuli. The crisis scenarios were presented to

participants as text descriptions. Each scenario was matched with the same standard crisis

response. The same crisis response was also matched with a picture of a CEO or a company

logo. Additionally, both CEO and company posts crossed with low and high number of likes

with 3 repetitive cases (see Figure 1 to Figure 12).

Main Study Procedure

The researcher recruited participants from two channels: parts of student participants took

this survey via College Arts and Sciences experiment management system (SONA). Parts of

student participants were recruited from introductory classes at the College of Communication

Arts and Sciences. These two parts of data does not have significant difference between each

other.[1] Students received a recruit email with this survey link in it, and they were randomly

assigned to the four treatment conditions: (1) CEO post with high likes, (2) CEO post with low

likes, (3) company post with high likes, and (4) company post with low likes. Participants completed the study online using the Qualtrics online survey software. Upon receiving the experiment link, participants were asked to carefully read and electronically sign an informed consent form. Upon providing consent, the online system randomly assigned participants to one of the four treatment conditions. Participants, then, were given instructions about the experiment. Participants answered a few questions about their Facebook uses and motivations. Afterwards, they were exposed to the three crisis scenarios (order counterbalanced). Each crisis scenario was followed by the matching crisis response, followed by questions about attitudes and behavioral intentions. Participants reported their demographic information (age, gender, ethnicity, educational level, and income level). Finally, participants were asked to indicate their names and course name or 4 digits generated from SONA system if they wish to acquire extra/course credit.

Manipulation Check

Because the images of CEO or logos of companies are easy to identify for participants, manipulation check was only conducted for the number of likes. Participants, after exposure to each message, were asked: "How do you consider this Facebook status update as low likes/high likes" (see Table 8). The Chi-square analysis for each message shows that the majority of participants identified status updates with low number of likes and high number of likes accurately per manipulation. Hence, the manipulation was verified in this study.

Table 10.

Manipulation check on number of likes

Case	Number of likes	% Low likes	% High likes	df	χ^2	Sig. (p)
Case 1	High like condition	28.2%	74.1%	1	54.44	<0.01
	Low like condition	71.8%	25.9%			
Case 2	High like condition	27.2%	80.3%	1	72.73	<0.01
	Low like condition	72.8%	19.7%			
Case 3	High like condition	26.0%	80.2%	1	75.67	<0.01
	Low like condition	74.0%	19.8%			

Data Reduction and Analysis

Items for attitudes toward crisis response, attitudes toward the company, and viral behavioral intentions were submitted to confirmatory factor analyses and reliability analyses for each crisis scenario. Upon satisfactory factor and reliability analyses, items per construct were aggregated per scenario. To test H1, H2, and H3, data for attitudes toward the crisis response, attitudes toward the company, and viral behavioral intentions, respectively, were submitted to 2 (source type) x 3 (repetition) repeated measures analysis of variance (ANOVA). To test H4, H5, and H6, data for attitudes toward the crisis response, attitudes toward the company, and viral behavioral intentions, respectively, were submitted to 2 (number of likes) x 3 (repetition) repeated measures analysis of variance (ANOVA). To answer RQ1, RQ2, and RQ3, data for attitudes toward the crisis response, attitudes toward the company, and viral behavioral intentions, respectively, were submitted to 2 (source type) x 2 (number of likes) x 3 (repetition) repeated measures analysis of variance (ANOVA). Finally, to answer R4, R5 and R6 we ran linear regression models with the following predictors: attractiveness, trustworthiness and expertise, with attitude towards status update, company in crisis and viral behavior intention as criterion variables.

32

RESULTS

This study investigated the effects of message virality and source type on the persuasiveness of crisis response messages of fictitious companies on Facebook. Some descriptive results are reported before reporting the results of our hypothesis and research questions,

Descriptive Results

The majority of participants reported that they have a Facebook account (97.8%). On average, participants reported having 754 Facebook friends ($M = 754.82$, $SD = 517.87$). They also reported that they, on average, daily use Facebook for over two hours ($M = 122.53$ minutes, $SD = 289.96$). Respondents also reported average 27 commercial companies or brands they interact with ($M = 26.76$, $SD=44.50$),

In the following section, we test the hypothesis and answer research questions by reporting results related to the effects of virality and source type on persuasiveness of online crisis responses on Facebook. To ensure ease of results presentation, results are grouped as a function of dependent variable. The first set corresponds with H1, H4, and RQ1, deals with the main effects of source type and the number of likes, and the interaction between them on attitudes toward the status update. Next, we report main and interaction effects on attitudes toward the company (H2, H5, and RQ2). Finally, we report main and interaction effects on viral behavioral intentions (H3, H6, and RQ3).

Attitude toward Status Update

H1 predicted that participants would rate messages from human source more favorably than those from organization source. H4 predicted that participants would express more favorable attitudes toward highly liked messages compared to lowly liked ones. The first research question addressed the interaction effects of source type and virality on attitude towards

the status update. To test H1 and H4, and answer RQ1, data for attitudes toward the status update were submitted to a 2 (affective evaluation: low likes vs. high likes) x 2 (source type: CEO vs. Company) x 3 (message repetition) repeated measures analysis of variance (ANOVA), with repeated measures on the last factor. Results illustrated the main effects of source type ($F(1, 233)$ = 0.05, *ns*) and the number of likes ($F(1, 233)$ = 0.048, *ns*) on attitudes toward status updates were not significant. Additionally, the effect of the interaction between source type and virality on subjects' attitude toward status update was not significant ($F(1, 233)$ = 0.19, *ns*) (see Tables 11 and 12).

Table 11.

Tests of between-subject effects on attitude towards status update

Variables	F	df	Sig.	η^2_p
Source	0.53	1	0.82	0.00
Like	0.48	1	0.83	0.00
Source X Likes	0.19	1	0.66	0.00

Table 12.

Mean for attitudes towards status update

Variables	Low likes		High likes	
	Mean	*SD*	*Mean*	*SD*
CEO	4.74	0.14	4.64	0.14
Company	4.64	0.14	4.67	0.20

Attitude toward Company in Crisis

H2 predicted that participants would express more favorable attitudes toward the company in crisis when the status update is posted by human source than organization source. H5 predicted that participants would express more favorable attitudes toward the company in crisis upon exposure to highly liked messages compared to lowly liked messages. The second research question addressed that the interaction effects of source type and virality on attitude

towards the crisis company. To test H2, H5, and RQ2, data were submitted to a 2 (affective

evaluation: low likes vs. high likes) x 2 (source type: CEO vs. Company) x 3 (message repetition)

repeated measures analysis of variance (ANOVA), with repeated measures on the last factor.

Results, illustrated that the main effect of source type ($F(1, 233) = 0.084$, ns) and number of likes

($F(1, 233) = 0.23$, ns), and the interaction between source type and the number of likes ($F(1, 233)$

$= 1.08$, ns) on attitudes toward the company were not significant (see Tables 13 and 14).

Table 13.

Tests of between-subject effects on attitude towards company in crisis

Variables	F	df	Sig.	η^2_p
Source	0.08	1	0.77	0.00
Like	0.23	1	0.63	0.00
Source X Likes	1.08	1	0.30	0.00

Table 14.

Mean for attitudes towards company in crisis

Variables	Low likes		High likes	
	Mean	*SD*	*Mean*	*SD*
CEO	4.46	0.15	4.36	0.15
Company	4.64	0.14	4.67	0.20

Viral Behavior Intentions

H3 predicted that participants would express greater viral behavioral intentions toward

messages from human source compared to those from organization source. H6 predicted that

participants would express greater viral behavioral intentions toward highly liked messages

compared to lowly liked messages. The third research question addressed that the interaction

effects of source type and virality on attitude towards viral behavior intention. To test H3, H6,

and RQ3, data were submitted to a 2 (affective evaluation: low likes vs. high likes) x 2 (source

type: CEO vs. Company) x 3 (message repetition) repeated measures analysis of variance

(ANOVA), with repeated measures on the last factor. Results illustrated that the main effects of source type ($F(1, 232) = 0.519$, *ns*) and number of likes ($F(1, 232) = 0.62$, *ns*), as well as the effect of interaction between source type and the number of likes ($F(1, 232) < .01$, *ns*) on viral behavioral intentions was not significant (see Tables 15 and 16).

Table 15.

Tests of between-subject effects on viral behavior intention

Variables	F	df	Sig.	η^2_p
Source	0.52	1	0.47	0.00
Like	0.52	1	0.43	0.00
Source X Like	0.04	1	0.95	0.00

Table 16.

Mean results for viral behavior intention

Variables	Low likes		High likes	
	Mean	*SD*	*Mean*	*SD*
CEO	2.48	0.15	2.36	0.15
Company	2.61	0.15	2.47	0.21

Predicting Attitudes and VBI from Perceived Source Credibility

The last set of research questions (RQ4-RQ6) asked about the ways in which the three types of perceived source credibility (attractiveness, trustworthiness, and expertise) predicted attitudes toward status update, attitudes toward the company, and viral behavioral intentions, as a function of source type, virality, and the interaction between them. To answer these research questions, a set of linear regression models were run: (1) with all the data and without considering effects of the treatment conditions (source type and number of likes); (2) by splitting the data set by source type; (3) by splitting the data set by the number of likes; and (4) by splitting the data set by source type and number of likes (interaction).

Perceived source credibility and Attitude toward Status Update

RQ4 addressed how the three types of credibility would predict participants' attitudes towards status update. To answer RQ4, a set of linear regression models was run with the following predictors: attractiveness, trustworthiness, and expertise, and with attitudes toward status update as a criterion variable. First, the model was run with all of the data regardless of conditions. Results indicated that the regression models was statistically significant ($R = 0.67$, *adjusted* $R^2 = 0.44$, $F(3, 265) = 70.44$, $p < .01$). Results showed that trustworthiness was the strongest predictor of participants' attitudes towards status update ($\beta = 0.49$, $t(265) = 5.32$, $p < .01$). Source expertise was marginally significant in predicting attitudes toward status updates ($\beta = 0.18$, $t(265) = 1.89$, $p = .06$). Attractiveness was not a significant predictor of attitudes toward status updates ($\beta = 0.26$, $t(265) = 0.46$, *ns*).

Table 17.

Summary of linear regression analysis for attitude towards status update (overall data)

Predictors	B	SE	β	t	Sig. (p)
Attractiveness	0.04	0.09	0.26	0.46	0.65
Trustworthiness	0.54	0.10	0.49	5.32	0.00
Expertise	0.21	0.11	0.18	1.89	0.06
Model Statistics	$R = 0.67$, *adjusted* $R^2 = 0.44$, $F(3, 265) = 70.44$, $p < .01$				

Second, the same regression model was run by splitting data by source type. Results indicated that the regression model was significant for both the CEO condition ($R = 0.72$, *adjusted* $R^2 = 0.51$, $F(3, 131) = 46.49$, $p < .01$) and the organization condition ($R = 0.62$, *adjusted* $R^2 = 0.37$, $F(3, 130) = 26.97$, $p < .01$). Trustworthiness was the strongest predictor of participants' attitude towards status update in both CEO condition ($\beta = 0.45$, $t(131) = 3.00$, $p < .01$) and organization group ($\beta = 0.49$, $t(131) = 4.16$, $p < .01$). In both conditions, as shown in

Table 18, neither attractiveness nor expertise were significant predictors of attitudes toward

status updates.

Table 18.

Summary of linear regression analysis for attitude towards status update (spilt file by "source")

Source	Predictors	B	SE	β	t	Sig. (p)
CEO	Attractiveness	0.18	0.12	0.11	1.48	0.14
	Trustworthiness	0.46	0.15	0.45	3.00	0.00
	Expertise	0.22	0.16	0.21	1.35	0.17
Model Statistics	$R = 0.72$, *adjusted* $R^2 = 0.51$, $F(3, 131) = 46.49$, $p < .01$					
Organization	Attractiveness	-0.07	0.13	-0.05	-0.57	0.57
	Trustworthiness	0.59	0.14	0.49	4.16	0.00
	Expertise	0.23	0.16	0.18	1.46	0.15
Model Statistics	$R = 0.62$, *adjusted* $R^2 = 0.37$, $F(3, 130) = 26.97$, $p < .01$					

Third, the same model was run by splitting data by number of likes. Results indicated that

the regression model was significant for both high likes condition ($R = 0.61$, *adjusted* $R^2 = 0.36$,

$F(3, 131) = 25.84$, $p < .01$) and low likes condition ($R = 0.74$, *adjusted* $R^2 = 0.54$, $F(3, 130) =$

52.60, $p < .01$). Based on the result, expertise was a significant predictor in high likes group ($β =$

0.42, $t(131) = 2.91$, $p < .01$), and trustworthiness was a significant predictor low likes group ($β =$

0.76, $t(131) = 6.47$, $p < .01$). None of the other credibility types were significant predictors of

attitudes toward status updates.

Table 19.

Summary of linear regression analysis for attitude towards status update (spilt file by "likes")

Likes	Predictors	B	SE	β	t	Sig. (p)
High	Attractiveness	0.11	0.13	0.07	0.86	0.39
	Trustworthiness	0.20	0.16	0.17	1.22	0.22
	Expertise	0.50	0.17	0.42	2.91	0.00
Model Statistics	$R = 0.61$, *adjusted* $R^2 = 0.36$, $F(3, 131) = 25.84$, *p*< .01					
Low	Attractiveness	-0.04	0.11	-0.03	-0.38	0.70
	Trustworthiness	0.83	0.13	0.76	6.47	0.00
	Expertise	-0.01	0.14	-0.01	-0.05	0.96
Model Statistics	$R = 0.74$, *adjusted* $R^2 = 0.54$, $F(3, 130) = 52.60$, *p*< .01					

Lastly, the same regression model was run by splitting data by source type and number of likes (interaction). Results showed that the regression model was significant for CEO and high likes ($R = 0.61$, *adjusted* $R^2 = 0.35$, $F(3, 64) = 12.89$, $p < .01$), CEO and low likes group ($R = 0.81$, *adjusted* $R^2 = 0.64$, $F(3, 63) = 39.48$, $p < .01$), organization and high likes ($R = 0.62$, *adjusted* $R^2 = 0.36$, $F(3, 63) = 13.17$, $p < .01$), and organization and low likes ($R = 0.69$, *adjusted* $R^2 = 0.46$, $F(3, 63) = 19.33$, $p < .01$), With regards to status updates posted by a CEO and had a low number of likes, trustworthiness significantly predicted attitudes toward status updates ($\beta = 0.62$, $t(64) = 3.16$, $p < .01$), while none of the credibility types predicted attitudes toward status updates when the CEO post had a high number of likes. With regards to the status updates posted by an organization, expertise was a significant predictor when the update had high likes ($\beta = 0.57$, $t(63) = 2.86$, $p = .01$), while trustworthiness was a significant predictor when the status update had low likes ($\beta = 0.79$, $t(63) = 5.35$, $p < .01$).

Table 20.

Summary of linear regression analysis for attitudes toward status update (spilt file by "likes" and "source")

Source	Likes	Predictors	B	SE	β	t	Sig. (p)
		Attractiveness	0.17	0.21	0.10	0.83	0.41
CEO	High	Trustworthiness	0.34	0.24	0.33	1.42	0.16
		Expertise	0.27	0.25	0.24	1.07	0.29
Model Statistics		$R = 0.61$, *adjusted* $R^2 = 0.35$, $F(3, 64) = 12.89$, $p < .01$					
		Attractiveness	0.16	0.15	0.11	1.05	0.30
CEO	Low	Trustworthiness	0.63	0.20	0.62	3.16	0.00
		Expertise	0.12	0.21	0.12	0.57	0.57
Model Statistics		$R = 0.81$, *adjusted* $R^2 = 0.64$, $F(3, 63) = 39.48$, $p < .01$					
		Attractiveness	0.01	0.18	0.01	0.07	0.95
Organization	High	Trustworthiness	0.06	0.24	0.05	0.27	0.79
		Expertise	0.77	0.27	0.57	2.86	0.01
Model Statistics		$R = 0.62$, *adjusted* $R^2 = 0.36$, $F(3, 63) = 13.17$, $p < .01$					
		Attractiveness	-0.24	0.17	-0.16	-1.39	0.17
Organization	Low	Trustworthiness	0.93	0.17	0.79	5.35	0.00
		Expertise	-0.03	0.19	-0.03	-0.17	0.87
Model Statistics		$R = 0.69$, *adjusted* $R^2 = 0.46$, $F(3, 63) = 19.33$, $p < .01$					

Perceived source credibility and attitude toward Company in Crisis

RQ5 addressed that how the three types of credibility would predict participants' attitude towards company in crisis. To answer RQ5, a set of linear regression models were run with following predictors: attractiveness, trustworthiness, and expertise, and with attitude toward status update as a criterion variable. First, model was run with all of the data regardless conditions. The regression model was significant ($R = 0.68$, *adjusted* $R^2 = 0.46$, $F(3, 265) = 76.13$, $p < .01$). Trustworthiness was the strongest and only significant predictor of attitudes towards status update ($\beta = 0.52$, $t(265) = 5.75$, $p < .01$).

Table 21.

Summary of linear regression analysis for attitude towards company in crisis (overall data)

Predictors	B	SE	β	t	Sig. (p)
Attractiveness	0.16	0.10	0.09	1.68	0.09
Trustworthiness	0.63	0.11	0.52	5.75	0.00
Expertise	0.15	0.12	0.12	1.28	0.20
Model Statistics	$R = 0.68$, *adjusted* $R^2 = 0.46$, $F(3, 265) = 76.13$, $p < .01$				

Second, model was run by splitting data by source type. The regression mode was significant for CEO condition ($R = 0.73$, *adjusted* $R^2 = 0.53$, $F(3, 131) = 42.84$, $p < .01$) and organization condition ($R = 0.64$, *adjusted* $R^2 = 0.39$, $F(3, 130) = 29.14$, $p < .01$). When the status update was posted by a CEO, attitudes toward the company was significantly predicted by trustworthiness ($\beta = 0.73$, $t(131) = 4.97$, $p < .01$) and attractiveness ($\beta = 0.18$, $t(131) = 2.35$, $p < .05$). When the update was posted by the organization, trustworthiness ($\beta = 0.39$, $t(131) = 3.34$, $p < .01$) and expertise ($\beta = 0.28$, $t(131) = 2.24$, $p < .05$) significantly predicted attitudes toward the company.

Table 22.

Summary of linear regression analysis for attitude towards company in crisis (spilt file by "source")

Source	Predictors	B	SE	β	t	Sig. (p)
	Attractiveness	0.32	0.14	0.18	2.35	0.02
CEO	Trustworthiness	0.85	0.17	0.73	4.97	0.00
	Expertise	-0.14	0.18	-0.12	-0.80	0.42
Model Statistics	$R = 0.73$, *adjusted* $R^2 = 0.53$, $F(3, 131)= 42.84$, $p < .01$					
	Attractiveness	0.02	0.13	0.01	0.12	0.91
Organization	Trustworthiness	0.50	0.15	0.39	3.34	0.00
	Expertise	0.37	0.17	0.28	2.24	0.02
Model Statistics	$R=0.64$, *adjusted* $R^2 = 0.39$, $F(3, 130) = 29.14$, $p < .01$					

Third, the same regression model was run by splitting data by number of likes. The regression model was significant for high likes ($R = 0.61$, *adjusted R^2* = 0.36, $F(3, 131) = 25.84$, $p < .01$) and low likes ($R = 0.74$, *adjusted R^2* = 0.54, $F(3, 130) = 52.60$, $p < .01$). When the status update had high likes, expertise ($\beta = 0.33$, $t(131) = 2.25$, $p < .05$) was a significant predictor of attitudes toward the company, and marginally by trustworthiness ($\beta = 0.25$, $t(131) = 1.77$, $p = .08$). Conversely, then status updates had low likes, trustworthiness was the strongest and only predictor of attitudes toward the company ($\beta = 0.76$, $t(131) = 6.77$, $p < .01$).

Table 23.

Summary of linear regression analysis for attitude towards company in crisis (spilt file by "likes")

Likes	Predictors	B	SE	β	t	Sig. (p)
High	Attractiveness	0.14	0.15	0.07	0.92	0.36
	Trustworthiness	0.32	0.18	0.25	1.77	0.08
	Expertise	0.44	0.20	0.33	2.25	0.03
Model Statistics	$R = 0.60$, *adjusted R^2* = 0.34, $F(3, 131) = 24.27$, $p < .01$					
Low	Attractiveness	0.17	0.12	0.11	1.43	0.16
	Trustworthiness	0.88	0.13	0.76	6.77	0.00
	Expertise	-0.7	0.14	-0.06	-0.50	0.62
Model Statistics	$R = 0.77$, *adjusted R^2* = 0.59, $F(3, 130) = 63.70$, $p < .01$					

Lastly, the same regression model was run by splitting data by source type and number of likes (interaction). Results showed that the regression model was significant for CEO and high likes ($R = 0.62$, *adjusted R^2* = 0.35, $F(3, 64) = 13.20$, $p < .01$), CEO and low likes group ($R = 0.86$, *adjusted R^2* = 0.72, $F(3, 63) = 58.82$, $p < .01$), organization and high likes ($R = 0.60$, *adjusted R^2* = 0.32, $F(3, 63) = 11.50$, $p < .01$), and organization and low likes ($R = 0.70$, *adjusted R^2* = 0.47, $F(3, 63) = 20.47$, $p < .01$), With regards to status updates posted by a CEO and had a

low number of likes, trustworthiness significantly predicted attitudes toward company in crisis (β = 0.79, $t(63)$ = 5.35, $p < .01$), followed by attractiveness (β = 0.22, $t(63)$ = 2.49, $p < 0.05$) and expertise (β = -0.46, $t(63)$ = -2.55, $p = .01$). With regards to the status updates posted by an organization, expertise was a significant predictor when the update had high likes (β = 0.53, $t(64)$ = 2.58, $p = .01$), while trustworthiness was a significant predictor when the status update had low likes (β =0.59, $t(63)$ =4.08, $p<.01$).

Table 24.

Summary of linear regression analysis for attitudes toward company in crisis (spilt file by "likes" and "source")

Source	Like	Predictors	B	SE	β	t	Sig. (p)
		Attractiveness	0.30	0.25	0.14	1.20	0.24
CEO	High	Trustworthiness	0.54	0.29	0.44	1.88	0.07
		Expertise	0.15	0.30	0.11	0.49	0.63
Model Statistics		$R = 0.62$, *adjusted* $R^2 = 0.35$, $F(3, 64) = 13.20$, $p < .01$					
		Attractiveness	0.35	0.14	0.22	2.49	0.02
CEO	Low	Trustworthiness	1.24	0.19	1.12	6.51	0.00
		Expertise	-0.51	0.20	-0.46	-2.55	0.01
Model Statistics		$R = 0.86$, *adjusted* $R^2 = 0.72$, $F(3, 63) = 58.82$, $p < .01$					
		Attractiveness	-0.03	0.19	-0.02	-0.13	0.90
Organization	High	Trustworthiness	0.11	0.26	0.08	0.44	0.66
		Expertise	0.75	0.29	0.53	2.58	0.01
Model Statistics		$R = 0.60$, *adjusted* $R^2 = 0.32$, $F(3, 63) = 11.50$, $p < .01$					
		Attractiveness	-0.01	0.18	-0.01	-0.05	0.96
Organization	Low	Trustworthiness	0.74	0.18	0.59	4.08	0.00
		Expertise	0.18	0.20	0.14	0.89	0.38
Model Statistics		$R = 0.70$, *adjusted* $R^2 = 0.47$, $F(3, 63) = 20.47$, $p < .01$					

Perceived source credibility and Viral Behavior Intention

RQ6 addressed that how the three types of credibility would predict viral behavior intention. To answer RQ6, a set of linear regression models was conducted with the following predictors: attractiveness, trustworthiness, and expertise, and with attitude toward status update

as a criterion variable. First, model was run with all of the data regardless conditions. The regression model was not significant (R=0.15, Adjusted R^2=0.01, $F(3, 265)$=1.98, *ns*).

Table 25.

Summary of linear regression analysis for viral behavior intention (overall data)

Predictors	B	SE	β	t	Sig. (p)
Attractiveness	0.23	0.12	0.14	1.90	0.06
Trustworthiness	0.01	0.14	0.01	0.06	0.95
Expertise	0.01	0.15	0.00	0.02	0.98
Model Statistics	$R = 0.15$, *adjusted* $R^2 = 0.01$, $F(3, 265) = 1.98$, *p* = .12				

Second, the same model was run by splitting data by source type. The regression was neither significant for the CEO group (R=0.16, *adjusted* R^2=0.00, $F(3, 131)$= 1.07, *ns*) or the organization group (R=0.18, *adjusted* R^2=0.01, $F(3, 130)$=1.56, *ns*).

Table 26.

Summary of linear regression analysis for viral behavior intention (spilt file by "source")

Source	Predictors	B	SE	β	t	Sig. (p)
	Attractiveness	0.26	0.18	0.16	1.44	0.15
CEO	Trustworthiness	0.19	0.23	0.18	0.84	0.40
	Expertise	-0.24	0.24	-0.22	-1.02	0.31
Model Statistics	$R = 0.16$, *adjusted* $R^2 = 0.00$, $F(3, 131) = 1.07$, *p* = .36					
	Attractiveness	0.18	0.16	0.11	1.09	0.28
Organization	Trustworthiness	-0.09	0.19	-0.07	-0.46	0.65
	Expertise	0.10	0.20	0.15	0.92	0.36
Model Statistics	$R = 0.18$, *adjusted* $R^2 = 0.01$, $F(3, 130) = 1.56$, *p* = .20					

Third, model was run by splitting data by number of likes. The result indicated there were no significant predictor in either high likes group (R=0.14, *adjusted* R^2=-0.00, $F(3, 131)$=0.92, *ns*) or low likes group (R=0.16, *adjusted* R^2=0.00, $F(3, 130)$=1.11, *ns*).

Table 27.

Summary of linear regression analysis for viral behavior intention (spilt file by "likes")

Likes	Predictors	B	SE	β	t	Sig. (p)
High	Attractiveness	0.27	0.17	0.15	1.54	0.13
	Trustworthiness	0.07	0.21	0.06	0.33	0.74
	Expertise	0.44	0.23	-0.08	-0.47	0.64
Model Statistics	$R = 0.14$, *adjusted* $R^2 = 0.00$, $F(3, 131) = 0.92$, $p = .44$					
Low	Attractiveness	0.17	0.17	0.12	1.02	0.31
	Trustworthiness	-0.03	0.19	-0.03	-0.14	0.89
	Expertise	0.09	0.20	0.08	0.43	0.67
Model Statistics	$R = 0.16$, *adjusted* $R^2 = 0.00$, $F(3, 130) = 1.11$, $p = .35$					

Lastly, the model was run by splitting data by source type and number of likes (interaction). The result indicated there were no significant predictor in either CEO and high likes group ($R = 0.20$, *adjusted* $R^2 = 0.00$, $F(3, 64) = 0.92$, *ns*), CEO and low likes group ($R=0.18$, *adjusted* $R^2 =-0.02$, $F(3, 63)=0.67$, *ns*), organization and high likes group ($R = 0.22$, *adjusted* $R^2=0.00$, $F(3, 63)=1.02$, *ns*) or organization and low likes group ($R = 0.25$, *adjusted* $R^2 = 0.02$, $F(3, 63) =1.43$, *ns*).

Table 28.

Summary of linear regression analysis for viral behavior intention (spilt file by "likes" and "source")

Source	Like	Predictors	B	SE	β	t	Sig. (p)
CEO	High	Attractiveness	0.11	0.27	0.06	0.42	0.67
		Trustworthiness	0.46	0.31	0.42	1.46	0.15
		Expertise	-0.41	0.32	-0.36	-1.28	0.21
Model Statistics		$R = 0.20$, *adjusted* $R^2 = -0.00$, $F(3, 64) = 0.92$, $p = .44$					
CEO	Low	Attractiveness	0.36	0.26	0.24	1.40	0.17
		Trustworthiness	-0.05	0.34	-0.05	-0.14	0.89
		Expertise	-0.10	0.36	-0.09	-0.27	0.79
Model Statistics		$R = 0.18$, *adjusted* $R^2 = -0.02$, $F(3, 63) = 0.67$, $p = .58$					
Organization	High	Attractiveness	0.30	0.24	1.86	1.27	0.21
		Trustworthiness	-0.31	0.31	-0.23	-1.01	0.32
		Expertise	0.21	0.35	0.15	0.60	0.55
Model Statistics		$R = 0.22$, *adjusted* $R^2 = 0.00$, $F(3, 63) = 1.02$, $p = .39$					
Organization	Low	Attractiveness	0.02	0.23	0.01	0.09	0.93
		Trustworthiness	0.05	0.23	0.05	0.22	0.82
		Expertise	0.25	0.25	0.21	1.00	0.32
Model Statistics		$R = 0.25$, *adjusted* $R^2 = 0.02$, $F(3, 63) = 1.43$, $p = .24$					

DISCUSSION

This study tested the effects of apology crisis responses on attitudes and behavioral intentions, as a function of source type and virality. This study examined a series of persuasion effects of source type and virality. The results of this study did not confirm the hypotheses proposed, but it explored numerous of interesting findings on perceived source credibility.

Findings showed that the main effects of source type and the number of likes and the interaction between them on attitudes toward the status update, attitudes toward the company, and viral behavioral intentions, were not significant. There are a number of plausible explanations for this trend. First, it is possible that the lack of significance was largely influenced by the choice of crisis response strategy; apology. Past studies (Patel & Reinsch, 2003; Kim, Avery, &Lariscy, 2009; Claey, Cauberghe, & Vyncke, 2010) have shown that apology strategy receives the most positive response from participants, which shows the effectiveness of apology compared with other strategies. It is possible that in this study, apology worked equally well with different conditions. Future studies should compare different crisis response strategies to see whether strategy type has influence on subject's decision-making process in relation to source type and virality. Second, it is possible that the crisis scenarios, which were crafted to represent fictitious companies and scenarios, seemed unrealistic for participants, and thus led to the responses reported in the results section. Future studies could use real life scenarios to increase the external validity of the study. Additionally, past studies showed weak effects of the exposure to social media messages and attitudes and viral behavioral intentions (Alhabash, et al., 2013), which suggests that college students might be cautious in how their evaluations and behavioral intentions are expressed to social media messages related to companies. It is possible that participants valued the interpersonal communication with their friends rather than with

commercial companies. Moreover, this study was conducted online, subjects may not pay enough attention during this study, and future study can conduct in a computer lab instead.

The second set of findings related to the effect of perceived source credibility on attitudes and viral behavioral intentions offers interesting insights to the dynamics of public relations on social media. First, trustworthiness was the strongest predictor of attitudes toward both the status update and company in crisis, which was also qualified by similar trends as a function of source type and number of likes. This means that regardless of the source type or number of likes, the greater the perceptions of trustworthiness the more effective the crisis response on social media. This result can also be supported by a lot of studies. Miller and Baseheart (1969)'s study also showed that message was more persuasive when trustworthiness was high. Another study (McGinnies et al., 1980) confirmed this finding by comparing trustworthiness and expertise, they found that messages with trustworthiness always received persuasive effect, while messages from experts might not.

Another finding showed that the relationship between trustworthiness and attitudes toward status updates and company was stronger when the CEO or organization status updates had low number of likes, compared to those with high number of likes. The influence of trustworthiness in this condition might be driven by lack of peer evaluation, study found that individual's performance outcome is effected by peer evaluation (Saavedra & Kwun, 1993), in this study, when readers receive less validation from others (i.e., they do not have confirmation of the information), the trustworthiness of source will influence their evaluation of the message.

This study also had some small findings, for example, expertise has been found as significantly strong predictor to attitude towards status update and company in crisis. It shows that when participants received messages from an organization with high number of likes,

expertise positively predicted people's evaluation of messages or companies. The authors speculate that the quality of the brand images (i,e., company' logos) stimulated readers' cognitive perception of brand attributions in situations where trustworthiness had been established by peers (high likes). Even though this study did not use real brands to mitigate previous bias, the design of company logo can also function as a brand image to persuade message receivers. Also, in the test about attitude toward the company in crisis, attractiveness has been shown as a strong predictor when message from CEO with low number of likes. As expertise is related to organization messages, attractiveness of CEO serves as a factor in persuasion. As discussed in the literature review, attractiveness is more likely from personal influence, such as celebrities.

THEORTICAL AND PRACTIAL IMPLICATION

This study investigated attitudes and viral behavioral intention toward companies undergoing crises. The study provided a reconceptualization of crisis response strategies using models of persuasion applicable to the new media environment. More specifically, the study explored the effectiveness of crisis responses shared on popular SNSs as a function of two message features: source type and virality. The results showed that there were no significant effects of these two message features. Participants did not feel the difference between message from the CEO and message from organizations, or other people's evaluation of the message. The reasons might be when readers try to evaluate crisis response message with their own cognition and analysis, such as the response strategy, rather than influence from source type or others' opinion. This study furthered our understanding of the effects of apology crisis responses within the context of persuasion. Future studies should explore cognitive effort in relations to other characteristics of crisis messages. This study has shown that message features has few influences

49

on reader's attitude, while the vital factor is whether the source readers received is credible or not. Therefore, this study also helped to lie out the relationship between perceived source credibility and attitude reaction. Future study can further and build up the framework within perceived source credibility and other online message features.

On the practical level, this study offered companies and crisis managers with evidence-based tactics to be used in responding to crisis situations. Additionally, the study provided practitioners with the knowledge pertaining to the effectiveness of social media during crisis situations, such as the importance of trustworthiness in message delivery, which also implies the effectiveness of apology strategy in crisis communication.

LIMITATION AND FUTURE STUDY

This study has several limitations, which also inspire future studies. First, this study does not consider the severity of crisis, even though the pretest eliminated the severity difference between repetition cases, the result might vary when the crisis severity changes. In the future, researchers can manipulate the severity of crises with high, medium, low, to explore whether severity can be another factor influence audiences' perspective. Second, this study only manipulated the number of likes. It is possible that subjects did not recognize the different between messages from CEO and organizations. In the future study, we will check both source type and number of likes. In the future, researchers should investigate the influence of different Facebook functions. Third, the subjects of this study were college students, which limits the generalizability of the results. It is also possible that the issues we chose were not highly relevant to subjects, which resulted in insignificant result. Future studies should recruit a representative sample of participants from to enhance external validity. Moreover, this study only applied one type of crisis response strategy. Future studies should test whether there is a persuasion effect

50

difference between different crisis response strategies. Finally, the crisis scenarios and responses were all fabricated, which might have harmed the study's external validity. Future studies should refine the stimuli construction by selecting real life scenarios and actual responses.

CONCLUSION

This study has discovered reader's perception when they receive crisis response message on Facebook. The result showed that message features, such as source type or virality have little influence on participants' attitude when they read apology messages. However, this study found that perceived source credibility (mainly trustworthiness) plays an important role in crisis communication persuasion. This study emphasizes the importance of credible messages on social network websites, and provides the foundation of establishing credibility of social media accounts.

APPENDICES

Appendix 1. Facebook status update stimuli

Figure 1. CEO response with high likes (case 1)
For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this thesis.

Figure 2. CEO responses with high likes (case 2)

Figure 3. CEO response with high likes (case 3)

Figure 4. CEO response with low likes (case 1)

Figure 5. CEO response with low likes (case 2)

Figure 6. CEO response with low likes (case 3)

Figure 7. Organization response with high likes (case 1)

Figure 8. Organization response with high likes (case 2)

Figure 9. Organization response with high likes (case 3)

Figure 10. Organization response with low likes (case 1)

Figure 11. Organization response with low likes (case 2)

Figure 12. Organization response with low likes (case 3)

Appendix 2. Pre-test Questionnaire

Please read the following form carefully before you start with the experiment. Once you have read the form and still want to participate, provide consent and continue.

You are invited to participate in a pretest part of a larger study for a Master's Thesis. When you are invited to participate in research, you have the right to be informed about the study procedures so that you can decide whether you want to consent to participation. Please ask the researcher to explain any words or information that you do not understand.

Your participation in this study is voluntary. You may choose not to participate at all, or you may refuse to participate in certain procedures or answer certain questions or discontinue your participation at any time without consequence (e.g., it will not affect treatment you will receive, will not affect your grade or evaluation, etc.).

Description. This study deals with pretesting experimental stimuli that will be later used in a larger study. You will be asked to evaluate a number of crisis scenarios, Facebook status updates, and picture. Finally, you will be asked to report some demographic information.

Risks. Your participation in this study is not expected to cause you any risk greater than those encountered in everyday life. Your answers will not harm you in any way, nor will they influence your grades in this course. If you feel any discomfort in answering any question, you can withdraw from the study without any consequences.

Confidentiality. Your identity, participation, and any information you provide will remain confidential. This information will not be shared with anyone, and will only be used for the purpose of the research.

Incentives for Participation. You will receive extra-credit for your participation in this study as per agreement with your professor/instructor. If you decline to participate in the research study, you will be given the opportunity to complete a research paper on the role of social media in society. IN ORDER TO GET CREDIT, MAKE SURE TO ENTER YOUR NAME AND THE CLASS TO WHICH THE CREDIT WILL COUNT AT THE END OF THE ONLINE QUESTIONNAIRE. Your name and identity will not be linked in any way to your answers. This is only to ensure that you get extra or course credit for your participation.

Questions, Concerns and Complaints. If you have any questions about the research, please contact Shupei Yuan by email: yuanshup@msu.edu or phone: (517) 974-4355.

If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 5173552180, Fax 5174324503, or email irb@msu.edu or regular mail at 207 Olds Hall, MSU, East Lansing, MI 48824.

I have read this consent form and my questions have been answered. BY CLICKING ON THE "NEXT" BUTTON BELOW, I give my consent to participate in this study:

███████████████████████████████████████

In this section, you will be exposed to a number of scenarios for crises that faced fictitious companies that will be later used in a larger study. You can spend as much time as you'd like in reading each scenario. After reading the scenario, you will be asked to respond to a number of questions that are briefly described below.

First, we ask you to rate how AROUSED you felt on a 7-point scale, where…
      1 = not at all aroused, not at all excited, not at all awake, and
      7 = extremely aroused, excited, awake.

Next, we will ask you to rate both how negative and how positive you felt while viewing each picture. Sometimes the negative rating scale will come first, and sometimes the positive scale will come first. We want you to rate how negative and positive you felt separately. So you can feel both negative and positive or just negative or just positive.

You will rate how POSITIVE you felt on a 7-point scale, where…
      1 = not at all positive, not at all happy, not at all pleased, and
      7 = extremely positive, happy, pleased.

You will also rate how NEGATIVE you felt on a 7-point scale, where…
      1 = not at all negative, not at all unhappy, not at all annoyed, and
      7 = extremely negative, unhappy, annoyed.

Additionally, we would like you to evaluate the severity of the crisis situation using a 7-point scale, where…
          1 = not at all severe
          7 = extremely severe

Case 1:
A plasticizer has been found in the containers of a women's nutrition supplement named *Perfect*, which is produced by company X. The plasticizer is a carcinogenic compound, which has a high rate of migration into the product. Naturally, this means that pregnant women have been ingesting a carcinogenic compound for over a year. After the news about this crisis broke, *Company X* released an immediate official response. In a press conference, the company's CEO, John Smith stated that the company takes full responsibility for this crisis and announced an immediate recall of all the products from the market.

Does this remind you of a similar crisis case?

☐ Yes
☐ No

Please rate the scenario… (THIS WILL BE REPEATED AFTER EACH SCENARIO)

Not at all AROUSED	1	2	3	4	5	6	7	Extremely AROUSED
Not at all NEGATIVE	1	2	3	4	5	6	7	Extremely NEGATIVE
Not at all POSITIVE	1	2	3	4	5	6	7	Extremely POSITIVE
Not at all SEVERE	1	2	3	4	5	6	7	Extremely SEVERE

Case 2:

Company X is a pharmaceutical company that provides high cost treatments for a crippling neurological disorder named "Capsleter." Recently, a customer called the hotline to report that the labeling looked slightly different than usual. Lab tests determined that the pills were counterfeit. The Food and Drug Administration (FDA) investigatedthecase and found a large quantity of counterfeit Capsleter products in the market. Company X, in a press conference headed by its CEO Steve MacAlisster, claimed full responsibility for this crisis, and issued an immediate recall for all the products.

Does this remind you of a similar crisis case?

☐ Yes
☐ No

Please rate the scenario.

Not at all AROUSED	1	2	3	4	5	6	7	Extremely AROUSED
Not at all NEGATIVE	1	2	3	4	5	6	7	Extremely NEGATIVE
Not at all POSITIVE	1	2	3	4	5	6	7	Extremely POSITIVE
Not at all SEVERE	1	2	3	4	5	6	7	Extremely SEVERE

Case 3:

Company X is a soft drink company that manufactures *Mango Mania.* The company has been advertising that *Mango Mania* is produced from 100% mango juice with addedcarbonated water. It waslater found that the juice is actually composed of many synthetic chemicals thatare far cheaper thanfreshly-squeezed mangos. After the news broke, the CEO, Donalad MacDougal, announced that Company X has immediately fired the person responsible for sourcing the ingredients and apologized to consumers on major media.

Does this remind you of a similar crisis case?

☐ Yes
☐ No

Please rate the scenario.

Not at all AROUSED	1	2	3	4	5	6	7	Extremely AROUSED
Not at all NEGATIVE	1	2	3	4	5	6	7	Extremely NEGATIVE
Not at all POSITIVE	1	2	3	4	5	6	7	Extremely POSITIVE
Not at all SEVERE	1	2	3	4	5	6	7	Extremely SEVERE

Case 4:

Company X is a household appliances company that produces a hairdryer model called *Silkynism*. Recently, several women have reported fires resulting from the hair dryers on hot settings. It was determined that the fire resulted from the wiring in the power cord, but it was uncertain whether it was an engineering failure or a failure by a supplier company. Company X, in a press conference by CEO Joe Taylor responded to the public immediately that took full responsibility for the crisis.

Does this remind you of a similar crisis case?

☐ Yes
☐ No

Please rate the scenario.

Not at all AROUSED	1	2	3	4	5	6	7	Extremely AROUSED
Not at all NEGATIVE	1	2	3	4	5	6	7	Extremely NEGATIVE
Not at all POSITIVE	1	2	3	4	5	6	7	Extremely POSITIVE
Not at all SEVERE	1	2	3	4	5	6	7	Extremely SEVERE

Case 5:

Company X is a wholesale beef and pork supplier to stores around the United States. A number of Company X's consumers have been recently hospitalized within days of eating meat supplied by this company. Doctors have said that many of the food poisoning victims also showed signs of toxoplasmosis, which indicates exposure to unclean slaughterhouse. In a press conference held by CEO Mike Fett, Company X took full responsibility for this crisis, apologized for consumers, andissued an immediate recall on all products.

Does this remind you of a similar crisis case?

☐ Yes
☐ No

Please rate the scenario.

Not at all AROUSED	1	2	3	4	5	6	7	Extremely AROUSED
Not at all NEGATIVE	1	2	3	4	5	6	7	Extremely NEGATIVE
Not at all POSITIVE	1	2	3	4	5	6	7	Extremely POSITIVE
Not at all SEVERE	1	2	3	4	5	6	7	Extremely SEVERE

Case 6:

A beverage manufacturer Company X makes several "healthy living" products. The Coconut Water line operates a few hours after the Almond Milk line, the downtime being mainly reserved for cleaning the equipment. A newspaper reported that several customers with nut allergies were hospitalized. Investigation showed that this crisis emerged because a new trainee forgot to clean the equipment during downtime and ran the Coconut Water line.In a press conference held by its CEO Thomas Clark, Company X apologized for the crisis, fired the employee and took full responsibility for the crisis.

Does this remind you of a similar crisis case?

☐ Yes
☐ No

Please rate the scenario.

Not at all AROUSED	1	2	3	4	5	6	7	Extremely AROUSED
Not at all NEGATIVE	1	2	3	4	5	6	7	Extremely NEGATIVE
Not at all POSITIVE	1	2	3	4	5	6	7	Extremely POSITIVE
Not at all SEVERE	1	2	3	4	5	6	7	Extremely SEVERE

Case 7:

Company X is a cosmetic manufacturer of ShinyNail, a well-known nail polish brand. Recently, several female customers complained that they suffered injuries as a result of using ShinyNail. It has been found that the damage to the glass vials in unpressurized airplane chambers has caused shards of glass to be mixed in with the nail polish.In a press conference held by its CEO Jeff Wilson, Company X apologized and took full responsibility for the crisis, and issued an immediate recall for ShinyNail.

Does this remind you of a similar crisis case?

☐ Yes
☐ No

Please rate the scenario.

Not at all AROUSED	1	2	3	4	5	6	7	Extremely AROUSED
Not at all NEGATIVE	1	2	3	4	5	6	7	Extremely NEGATIVE
Not at all POSITIVE	1	2	3	4	5	6	7	Extremely POSITIVE
Not at all SEVERE	1	2	3	4	5	6	7	Extremely SEVERE

Case 8

Company X is liquor manufacture that mainly produces whiskey. Recently, the company received many complaints about an "off flavor," which, upon further investigation, was the result of methanol contamination of the product. It was unknown how long methanol had been filled into the bottles instead of ethanol.In a press conference held by Robert Murphy, Company X apologize for the crisis and took full responsibility. Additionally, the company issued an immediate product recall.

Does this remind you of a similar crisis case?

☐ Yes
☐ No

Please rate the scenario.

Not at all AROUSED	1	2	3	4	5	6	7	Extremely AROUSED
Not at all NEGATIVE	1	2	3	4	5	6	7	Extremely NEGATIVE
Not at all POSITIVE	1	2	3	4	5	6	7	Extremely POSITIVE
Not at all SEVERE	1	2	3	4	5	6	7	Extremely SEVERE

Case 9

Company X has released its first line of full-sized trucks in the United States. After a successful initial launch, many customers have complained about running out of gas while driving the automobile. All of the complaints have stemmed from the fuel level being incorrectly reported on the fuel gauge, leading to mid-drive breakdowns. In a press conference held by its CEO Levine Bulter, Company X apologized and took full responsibility for this crisis, and issues an immediate product recall.

Does this remind you of a similar crisis case?

☐ Yes
☐ No

Please rate the scenario… (THIS WILL BE REPEATED AFTER EACH SCENARIO)

Not at all AROUSED	1	2	3	4	5	6	7	Extremely AROUSED
Not at all NEGATIVE	1	2	3	4	5	6	7	Extremely NEGATIVE
Not at all POSITIVE	1	2	3	4	5	6	7	Extremely POSITIVE
Not at all SEVERE	1	2	3	4	5	6	7	Extremely SEVERE

Case 10

Company X is a diaper manufacturer that recently released a new diaper for young infants. The innovative new absorbent pad in the bottom has been tested to absorb 0.5 L of urine without leaking. Recently, several mothers complained about large rashes developing after wearing the diaper. After investigation, it was shown that baby powder has a chemical reaction with the patented pad. In a press conference held by CEO Robert Morrison, Company X apologized and took full responsibility for this crisis, and issued an immediate product recall.

Does this remind you of a similar crisis case?

☐ Yes
☐ No

Please rate the scenario.

Not at all AROUSED	1	2	3	4	5	6	7	Extremely AROUSED
Not at all NEGATIVE	1	2	3	4	5	6	7	Extremely NEGATIVE
Not at all POSITIVE	1	2	3	4	5	6	7	Extremely POSITIVE
Not at all SEVERE	1	2	3	4	5	6	7	Extremely SEVERE

Case 11

Company X is a manufacturer of batteries. After several years of making car batteries, they decided to producethe AA and AAA battery models. Shortly after the launch, it has been reported that batteries in several expensive appliances are leaking fluid and causing hazards in homes across the United States. In a press conference held by its CEO, George Hughes, Company X apologized and took full responsibility for the crisis, and issued an immediate recall.

Does this remind you of a similar crisis case?

☐ Yes
☐ No

Please rate the scenario.

Not at all AROUSED	1	2	3	4	5	6	7	Extremely AROUSED
Not at all NEGATIVE	1	2	3	4	5	6	7	Extremely NEGATIVE
Not at all POSITIVE	1	2	3	4	5	6	7	Extremely POSITIVE
Not at all SEVERE	1	2	3	4	5	6	7	Extremely SEVERE

Case 12

Company X is a video game console manufacturer that released a new console. Recently, a large number of customers complained that, after a couple months, the product simply stops working. The causes of this malfunction are yet to be determined by an internal investigation. As of yet, the only possible fix is to send the gaming console back to Company X to troubleshoot the root-cause analysis.In a press conference held by Derek Sanders, Company X apologized and took full responsibility for this crisis, and encouraged consumers to send their consoles for troubleshooting.

Does this remind you of a similar crisis case?

☐ Yes
☐ No

Please rate the scenario.

Not at all AROUSED	1	2	3	4	5	6	7	Extremely AROUSED
Not at all NEGATIVE	1	2	3	4	5	6	7	Extremely NEGATIVE
Not at all POSITIVE	1	2	3	4	5	6	7	Extremely POSITIVE
Not at all SEVERE	1	2	3	4	5	6	7	Extremely SEVERE

Next, you are going to rate different pictures. We'd like you to rate each picture using the following scales:

ATTRACTIVENESS
      1 = not at all attractive
      7 = extremely attractive
TRUSTWORTHNESS
      1 = not at all trustworthy
      7 = extremely trustworthy
EXPERTISE
      1 = not at all experienced
      2 = extremely experienced

Please rate the picture… (THIS WILL BE REPEATED AFTER EACH PICTURE)

Not at all ATTRACTIVE	1	2	3	4	5	6	7	Extremely ATTRACTIVE
Not at all TRUSTWORTHY	1	2	3	4	5	6	7	Extremely TRUSTWORTHY
Not at all EXPERIENCED	1	2	3	4	5	6	7	Extremely EXPERIENCED

Figure 13. CEO Images used in study

67

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Next, you are going to rate different company logos. We'd like you to rate each picture using the following scales:

ATTRACTIVENESS
       1 = not at all attractive
       7 = extremely attractive
TRUSTWORTHNESS
       1 = not at all trustful
       7 = extremely trustful
EXPERTISE
       1 = not at all experienced
       2 = extremely experienced

Please rate the logo… (THIS WILL BE REPEATED AFTER EACH LOGO)

Not at all ATTRACTIVE	1	2	3	4	5	6	7	Extremely ATTRACTIVE
Not at all TRUSTWORTHY	1	2	3	4	5	6	7	Extremely TRUSTWORTHY
Not at all EXPERIENCED	1	2	3	4	5	6	7	Extremely EXPERIENCED

No. 1	No.2	No.3	No.4
Joshua Evans	Ernest Garcia	Russell Simmons	Henry Reed
No.5	No.6	No.7	No.8
DONALD MOORE	PATRICK COLLINS	Kenneth Sanchez	Randy Griffin
No.9	No.10	No.11	No.12
EUEGENEPOWELL	Steven Adams	HAROLD STEWART	Michael Brown

Figure 14. Company Logos

What is your gender?

☐ Female
☐ Male
☐ Transgender

In what year were you born? [drop-down menu]

Which of the following best describes your current relationship situation?

☐ Single
☐ Dating, but it's not committed
☐ Dating and it's a committed relationship
☐ Living with someone in a romantic relationship
☐ Engaged but not living together

☐ Engaged and living together
☐ Married
☐ Other, please specify: _____

What is your current class standing?

☐ Freshman
☐ Sophomore
☐ Junior
☐ Senior
☐ MA
☐ Ph.D.
☐ Other, please specify

Which of the following best describes your ethnicity?

☐ American Indian or Alaska Native
☐ Asian
☐ Black or African American
☐ Hispanic or Latino
☐ Native Hawaiian or Other Pacific Islander
☐ White
☐ Other, please specify

What is your total annual family income?
☐ Less than $10,000
☐ $10,000 to $24,999
☐ $25,000 to $49,999
☐ $50,000 to $74,999
☐ $75,000 to $99,999
☐ $100,000 to $124,999
☐ $125,000 to $149,999
☐ $150,000 or more

Appendix 3. Main test questionnaire

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Please read the following form carefully before you start with the experiment. Once you have read the form and still want to participate, provide consent and continue.

You are invited to participate in an experiment for a Master's Thesis. When you are invited to participate in research, you have the right to be informed about the study procedures so that you can decide whether you want to consent to participation. Please ask the researcher to explain any words or information that you do not understand.

Your participation in this study is voluntary. You may choose not to participate at all, or you may refuse to participate in certain procedures or answer certain questions or discontinue your participation at any time without consequence (e.g., it will not affect treatment you will receive, will not affect your grade or evaluation, etc.).

Description. This study deals evaluating crisis situations and responses. First, you will answer a few questions about your media and Facebook use. Second, you will read three crisis scenarios followed by crisis responses posted on Facebook, where you will be asked to evaluate them. Finally, you will be asked to report some demographic information.

Risks. Your participation in this study is not expected to cause you any risk greater than those encountered in everyday life. Your answers will not harm you in any way, nor will they influence your grades in this course. If you feel any discomfort in answering any question, you can withdraw from the study without any consequences.

Confidentiality. Your identity, participation, and any information you provide will remain confidential. This information will not be shared with anyone, and will only be used for the purpose of the research.

Incentives for Participation. You will receive extra-credit for your participation in this study as per agreement with your professor/instructor. If you decline to participate in the research study, you will be given the opportunity to complete a research paper on the role of social media in society. IN ORDER TO GET CREDIT, MAKE SURE TO ENTER YOUR NAME AND THE CLASS TO WHICH THE CREDIT WILL COUNT AT THE END OF THE ONLINE QUESTIONNAIRE. Your name and identity will not be linked in any way to your answers. This is only to ensure that you get extra or course credit for your participation.

Questions, Concerns and Complaints. If you have any questions about the research, please contact Shupei Yuan by email: yuanshup@msu.edu or phone: (517) 974-4355.

If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 5173552180, Fax 5174324503, or email irb@msu.edu or regular mail at

207 Olds Hall, MSU, East Lansing, MI 48824.

I have read this consent form and my questions have been answered. BY CLICKING ON THE "NEXT" BUTTON BELOW, I give my consent to participate in this study:

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A crisis is any expected that might lead to, an unstable and dangerous situation affecting an individual or, group, community or whole society. After crisis happened, as a company or organization, there are many different ways to respond, such as deny this crisis, find a scapegoat, show compensation or apologize. You will be asked a series of question about your understanding of crisis response and your online behavior.

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Do you have a Facebook account?

☐ YES
☐ NO

When did you join Facebook?[drop-down menu]

In the past week, on average, approximately how many minutes PER DAY have you spent actively using Facebook?[drop-down menu]

Approximately, how many commercial companies and brands do you interact with on Facebook (i.e., liked their Fan page, added the company/brand as a friend, etc.)[drop-down menu]

The following statements deal with how you feel about Facebook. Indicate your agreement/disagreement with each of the statements using the scale from 1=Strongly Disagree to 7=Strongly Agree.

	Strongly Disagree					Strongly Agree	
	1	2	3	4	5	6	7
Facebook is part of my everyday activity	☐	☐	☐	☐	☐	☐	☐
I am proud to tell people I'm on Facebook	☐	☐	☐	☐	☐	☐	☐
Facebook has become part of my daily routine	☐	☐	☐	☐	☐	☐	☐
I feel out of touch when I haven't logged onto Facebook for a while	☐	☐	☐	☐	☐	☐	☐
I feel I am part of the Facebook community	☐	☐	☐	☐	☐	☐	☐
I would be sorry if Facebook shut down	☐	☐	☐	☐	☐	☐	☐

The following statements deal with specific features the people usually use on Facebook. Indicate your agreement/disagreement with each of the statements using the scale from 1=Strongly Disagree to 7=Strongly Agree.

	Strongly Disagree					Strongly Agree	
	1	2	3	4	5	6	7
I update my status on Facebook often	☐	☐	☐	☐	☐	☐	☐
I use the comments feature on Facebook often.	☐	☐	☐	☐	☐	☐	☐
I write Wall posts on my friends' pages often.	☐	☐	☐	☐	☐	☐	☐
I use private messages feature on Facebook often.	☐	☐	☐	☐	☐	☐	☐
I use Facebook chat often.	☐	☐	☐	☐	☐	☐	☐
I use Facebook Groups often.	☐	☐	☐	☐	☐	☐	☐
I use applications often.	☐	☐	☐	☐	☐	☐	☐
I use the 'Causes' feature often.	☐	☐	☐	☐	☐	☐	☐
I play games on Facebook often.	☐	☐	☐	☐	☐	☐	☐

The following statements specifically deal with how you interact with commercial companies and/or brands on Facebook. Indicate your agreement/disagreement with each of the statements using the scale from 1=Strongly Disagree to 9=Strongly Agree.

	Strongly Disagree					Strongly Agree	
	1	2	3	4	5	6	7
I join Facebook groups for companies/brands often.	☐	☐	☐	☐	☐	☐	☐
I "like" fan pages of companies/brands often.	☐	☐	☐	☐	☐	☐	☐
I add employees of companies/brands as friends on Facebook often.	☐	☐	☐	☐	☐	☐	☐
I write Wall posts on company/brand's pages often.	☐	☐	☐	☐	☐	☐	☐
I "like" status updates posted by companies/brands often.	☐	☐	☐	☐	☐	☐	☐
I "share" status updates posted by companies/brands often.	☐	☐	☐	☐	☐	☐	☐
I "comment" on status updates posted by companies/brands often.	☐	☐	☐	☐	☐	☐	☐
I "like" pictures posted by companies/brands often.	☐	☐	☐	☐	☐	☐	☐
I "share" pictures posted by companies/brands often.	☐	☐	☐	☐	☐	☐	☐
I "comment" on pictures posted by companies/brands often.	☐	☐	☐	☐	☐	☐	☐
I "like" videos posted by companies/brands often.	☐	☐	☐	☐	☐	☐	☐
I "share" videos posted by companies/brands often.	☐	☐	☐	☐	☐	☐	☐

I "comment" on videos posted by companies/brands often.	☐	☐	☐	☐	☐	☐	☐

The following section deals with the reasons you have for using Facebook. Indicate your agreement or disagreement with each statement using the following 9-point scale: 1=Strongly Disagree, and 9=Strongly Agree.

	Strongly Disagree						Strongly Agree
	1	2	3	4	5	6	7
I use Facebook to share information.	☐	☐	☐	☐	☐	☐	☐
I use Facebook to share information useful to people.	☐	☐	☐	☐	☐	☐	☐
I use Facebook to present information on my interests.	☐	☐	☐	☐	☐	☐	☐
I use Facebook to record what I do in life.	☐	☐	☐	☐	☐	☐	☐
I use Facebook to record what I have learned.	☐	☐	☐	☐	☐	☐	☐
I use Facebook to record where I have been.	☐	☐	☐	☐	☐	☐	☐
I use Facebook to connect with people who share some of my values.	☐	☐	☐	☐	☐	☐	☐
I use Facebook to connect with people who are similar to me.	☐	☐	☐	☐	☐	☐	☐
I use Facebook to meet new people.	☐	☐	☐	☐	☐	☐	☐
I use Facebook because it is enjoyable.	☐	☐	☐	☐	☐	☐	☐
I use Facebook because it entertains me.	☐	☐	☐	☐	☐	☐	☐
I use Facebook because it helps me pass the time.	☐	☐	☐	☐	☐	☐	☐
I use Facebook because I have nothing better to do.	☐	☐	☐	☐	☐	☐	☐
I use Facebook because it relaxes me.	☐	☐	☐	☐	☐	☐	☐
I use Facebook to show my personality.	☐	☐	☐	☐	☐	☐	☐
I use Facebook to tell others about myself.	☐	☐	☐	☐	☐	☐	☐
I use Facebook because I like that I can post things I want to say immediately.	☐	☐	☐	☐	☐	☐	☐
I use Facebook because it is easy to use.	☐	☐	☐	☐	☐	☐	☐
I use Facebook because it is convenient.	☐	☐	☐	☐	☐	☐	☐

Patrick Collins Inc. is a manufacturer of batteries. After several years of making car batteries, they decided to produce the AA and AAA battery models. Shortly after the launch, it has been reported that batteries in several expensive appliances are leaking fluid and causing hazards in homes across the United States. In a press conference held by its CEO, George Hughes, the company apologized and took full responsibility for the crisis, and issued an immediate product recall.

Figure 15. Facebook Status Test Material Example

Other stimuli cases:

A beverage manufacturer Steven Adams makes several "healthy living" products. The Coconut Water line operates a few hours after the Almond Milk line, the downtime being mainly reserved for cleaning the equipment. A newspaper reported that several customers with nut allergies were hospitalized. Investigation showed that this crisis emerged because a new trainee forgot to clean the equipment during downtime and ran the Coconut Water line. In a press conference held by its CEO Thomas Clark, the company apologized for the crisis, fired the employee and took full responsibility for the crisis.

Henry Reed L.L.C is liquor manufacture that mainly produces whiskey. Recently, the company received many complaints about an "off flavor", which, upon further investigation, was the result of methanol contamination of the product. It was unknown how long methanol had been filled into the bottles instead of ethanol. In a press conference held by its CEO, Robert Murphy, the company apologized for the crisis and took full responsibility. Additionally, the company issued an immediate product recall.

Next, you will see the screenshot of the company's response on Facebook:

[QUESTIONS TO BE ASKED AFTER EACH CASE]

Please evaluate the specific Facebook crisis response message.

POSITIVE	☐	☐	☐	☐	☐	☐	☐	NEGATIVE
BAD	☐	☐	☐	☐	☐	☐	☐	GOOD
UNFAVORABLE	☐	☐	☐	☐	☐	☐	☐	FAVORABLE

Please evaluate the company "Patrick Collines"

POSITIVE	☐	☐	☐	☐	☐	☐	☐	NEGATIVE
BAD	☐	☐	☐	☐	☐	☐	☐	GOOD
UNFAVORABLE	☐	☐	☐	☐	☐	☐	☐	FAVORABLE

Even if you don't have a Facebook account, please indicate whether you would pass the message along or not.

	Strongly Disagree					Strongly Agree	
	1	2	3	4	5	6	7
This response message is worth sharing with others	☐	☐	☐	☐	☐	☐	☐
I would recommend this response message to others	☐	☐	☐	☐	☐	☐	☐
I would "Like" this response message	☐	☐	☐	☐	☐	☐	☐
I would "Share" this response message	☐	☐	☐	☐	☐	☐	☐
I would "Comment" on the response message	☐	☐	☐	☐	☐	☐	☐
I would ignore this response message	☐	☐	☐	☐	☐	☐	☐

How do you evaluate this company?

Dependable	☐	☐	☐	☐	☐	☐	☐	Not Dependable
Honest	☐	☐	☐	☐	☐	☐	☐	Dishonest
Reliable	☐	☐	☐	☐	☐	☐	☐	Unreliable
Sincere	☐	☐	☐	☐	☐	☐	☐	Insincere
Trustworthy	☐	☐	☐	☐	☐	☐	☐	Untrustworthy
Expert	☐	☐	☐	☐	☐	☐	☐	Not Expert
Experienced	☐	☐	☐	☐	☐	☐	☐	Inexperienced
Knowledgeable	☐	☐	☐	☐	☐	☐	☐	Unknowledgeable
Qualified	☐	☐	☐	☐	☐	☐	☐	Not qualified
Skilled	☐	☐	☐	☐	☐	☐	☐	Unskilled

Attractive	☐	☐	☐	☐	☐	☐	☐	Unattractive
Classy	☐	☐	☐	☐	☐	☐	☐	Not classy
Beautiful	☐	☐	☐	☐	☐	☐	☐	Ugly
Elegant	☐	☐	☐	☐	☐	☐	☐	Plain
Sexy	☐	☐	☐	☐	☐	☐	☐	Not sexy

Do you remember the number of likes in the message screenshot you just saw?

☐ High likes
☐ Low likes

██

What is your gender?

☐ Female
☐ Male
☐ Transgender

In what year were you born? [drop-down menu]

Which of the following best describes your current relationship situation?

☐ Single
☐ Dating, but it's not committed
☐ Dating and it's a committed relationship
☐ Living with someone in a romantic relationship
☐ Engaged but not living together
☐ Engaged and living together
☐ Married
☐ Other, please specify: _____

What is your current class standing?

☐ Freshman
☐ Sophomore
☐ Junior
☐ Senior
☐ MA
☐ Ph.D.
☐ Other, please specify

Which of the following best describes your ethnicity?

☐ American Indian or Alaska Native
☐ Asian

77

- [ ] Black or African American
- [ ] Hispanic or Latino
- [ ] Native Hawaiian or Other Pacific Islander
- [ ] White
- [ ] Other, please specify

What is your total annual family income?
- [ ] Less than $10,000
- [ ] $10,000 to $24,999
- [ ] $25,000 to $49,999
- [ ] $50,000 to $74,999
- [ ] $75,000 to $99,999
- [ ] $100,000 to $124,999
- [ ] $125,000 to $149,999
- [ ] $150,000 or more

FOOTNOTE

[1] The subjects recruited from SONA system had 51% female (Mean = 1.51, SD = 0.50), subjects recruited from classes had 69% female (Mean = 1.69, SD = 0.49); subjects' average age from SONA system is 21 (Mean = 20.86, SD = 1.70), subjects' average age from classes recruiting is 22 (Mean = 21.87, SD = 1.40); the majority of subjects from SONA system were Caucasian (60.99%), followed by Asian (19.15%), African American (14.18%) and others (5.67%), the majority of subjects from classes recruiting is Caucasian as well (79.69%), followed by Asian (12.50), African American (5.47%), and others (2.30%).

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