“CAN YOU HEAR ME NOW?” EXPERIMENTAL RESEARCH ON THE EFFICACY OF PRE-CRISIS MESSAGES IN A SEVERE WEATHER CONTEXT

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In memory of Dr. Paul Skalski,

Who taught me not only to be fearless, but to enjoy the ride.

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ABSTRACT

This study examined the effects of channel richness, source credibility and organizational reputation on both the perceived efficacy of pre-crisis messages, as well as participants’ intent to comply with prescribed behavior in a severe weather context. Using the Crisis and Emergency Risk Communication model as a foundation, channel richness, source credibility and organizational reputation were examined, as were the potential effects of prior experiences with severe weather, and the perceived severity of said experiences. An experimental design was run with 100 participants, and several factors emerged. The findings suggest that media richness has no effect, with organizational reputation and source credibility instead predicting message efficacy, and competence emerging as the most important factor in source credibility. The implications on both future crisis research and crisis management are discussed.

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CHAPTER I

INTRODUCTION

The warnings were supposed to be clear. In somewhere between ten and twenty minutes, what looked like an innocuous thunderstorm would likely billow and expand into a funnel cloud and tear through the city, leaving a wake of destruction and loss. Anyone still in its path when that happened would be at risk of death; yet despite clear warnings on how to avoid this disaster, at the end of the day, not everyone would heed the call.

"For whatever reasons," says Robert laPlante, a meteorologist at the National Weather Service (hereafter NWS), "a lot of people just ignore our warnings." His voice is heavy with a weary tone often reserved for medical doctors, calmly delivering bad news to a patient's family; it's clear that the death tolls bother him, and equally clear that he's used to keeping sentiment out of the equation.

According to LaPlante, effectively communicating risk to the public is

"one of the greatest challenges" that governmental institutions like the NWS face when dealing with a crisis situation. "At this point, severe weather like thunderstorms, tornadoes, and ice storms can be predicted with a fair bit of skill. But when we tell people what we've found, for whatever reason, they don't always respond." After a brief moment, he offers a clarification. "Or they don't respond in time."

In crisis communication, an effective message can literally be the difference between life and death (Sellnow & Seeger, 2013). With this in mind, pre-crisis hazard messages warrant study. Indeed, if strategic communication is defined as "The organization, defined in its broadest sense, communicating purposefully to advance its mission" (Hallahan, Holtzhausen, van Ruler, Veri, & Sriramesh, 2007, p4), and given the harm-preventing, life-saving nature of pre-crisis communication, it logically follows that decision makers involved in such important work should make use of every available resource to enhance said communication. Unfortunately, while there is a great deal of research on the aftermath of a disaster, and while meteorological prediction has become increasingly sophisticated, very little research has been done on the communication component inherent in pre-crisis management, and even less has focused on the actual messages employed.

Consider the fields of Risk and Crisis Communication. Prior research has consisted primarily of case studies, using a grounded theoretical approach (Seeger, 2006), resulting in recommendations or preventive measures regarding further crisis. And while great strides have been taken in distinguishing the largely

preventative field of risk communication (Witte, 1995) from the largely reactionary field of crisis communication (Benoit, 1995; Coombs, 1999; 2011), empirical research on actual messages has been, in a word, scarce. In addition, interviews with experts in the field have indicated a lack of robust guidelines regarding message content as regards message-crafting and efficacy, which is of special consideration given the evolving media landscape in which these messages are received (Edwards et. al, 2004).

In essence, while there's a great deal of literature discussing crises and their effects, the primary means by which we attempt to avert the negative issues of a crisis – specifically, pre-crisis messages – have received less scholarly attention than the other components of crisis communication.

In response to this gap in our understanding, this study employs Media Richness theory (Daft & Lengel, 1986) to examine the impact that richer media channels may have on behavioral intent and the perceived efficacy of a pre-crisis message. Therefore, this study investigates the relative advantages and disadvantages of various media channels on the impact of the message, and the effect of the chosen medium upon a given message (McLuhan & Fiore, 1967); as such, media channel richness (Whitbred, Skalski, Bracken & Lieberman, 2010) was examined as a potentially influential factor in message efficacy, along with the credibility of the source (McCroskey & Teven, 1999) and the reputation of the organization (Coombs & Holladay, 1996). Further, the potential effects of prior experience with severe weather conditions was also explored. In the end, the goal of this study is to discover what factors increase an individual's likelihood of

performing the desired behavior prescribed by a crisis message in a crisis situation.

After all, the best instructions in the world are moot if not followed.

CHAPTER II

LITERATURE REVIEW

2.1 What is Crisis?

To define crisis communication, we must first establish what is meant by the word crisis. Within the field of crisis study, there is a lack of a clear consensus as to what constitutes a crisis in the first place (Brecher, 1997; Hermann, 1967; Lerbinger, 1997; Coombs 2011; Sellnow & Seeger, 2013), though there are several common elements that appear throughout the extant literature. Hermann (1967) proposed that in foreign policy, a state of crisis had several defining factors:

> "A crisis is a situation that (1) threatens high-priority goals of the decision-making unit, (2) restricts the amount of time available for response before the decision is transformed, and (3) surprises the members of the decision-making unit by its occurrence.... Underlying the proposed definition is the hypothesis that if all three traits are present then the decision process will be substantially different than if only one or two of the characteristics appear."

Building upon Hermann's foundation, Brecher (1997) defined a foreign policy crisis as having three necessary and sufficient conditions as perceived by the highest-level

decision makers of the state in question: a threat to one or more basic values, awareness of finite time to respond, and a heightened probability of involvement in military hostilities. While certain aspects of this are less generalizable to a broader definition of crisis, particularly the probability of armed conflict, the foundational principles remain widely applicable. Brecher refined the definition in several key areas; namely refuting the necessity of surprise as a condition, and focusing the object of threat from "high-priority goals" to "basic values." While tailored to a particular type of crisis, foreign policy, Brecher's definition refines the concept of a limited response time by including awareness of that limit, and broadening the scope of what is under threat to include an organization's values, as well as its goals. Coombs (2011) further broadens this by including threats to the image and reputation of an organization. Coombs also expounds upon Hermann's foundation, defining an organizational crisis as:

> A specific, *unexpected* and *nonroutine* event or series of events that create high levels of *uncertainty* and simultaneously present an organization with both *opportunities* for and *threats to* its *high-priority goals.* (2011, pp. 7, emphasis in original)

In this, we see surprise clarified into unexpectedness and nonroutineness, and the introduction of uncertainty as a primary effect of a crisis situation. Of additional note is the concept that crises contain opportunities for organizational growth, or the development of additional strategic advantages (Witt & Morgan, 2002; Ulmer, Sellnow, & Seeger, 2010).

To further understand crisis, let us consider the policies of organizations designed to effectively manage crises such as natural disasters. The Federal Emergency

Management Agency (hereafter, FEMA) uses an array of subjective criteria to determine whether or not a situation qualifies as a disaster (see Table I), and is therefore eligible for aid under federal disaster law (United States, 2013).

These same laws prohibit the use of arithmetical formulas or other objective standards as the sole basis for determining the need for federal intervention; as such, their definitions will be both somewhat nebulous by design, as well as highly important in a very practical sense. Thus, it is unsurprising to note that criteria such as amount and type of damage, and imminent threats to public health and safety feature in this decision-making process. Implicit in these are the pillars of threat and limited local resources for response; though again, the focus is somewhat specific.

Table I. FEMA disaster declaration criteria.

Amount and type of damage (number of homes destroyed or with major damage);
Impact on the infrastructure of affected areas or critical facilities;
Imminent threats to public health and safety;
Impacts to essential government services and functions;
Unique capability of Federal government;
Dispersion or concentration of damage;
Level of insurance coverage in place for homeowners and public facilities;
Available assistance from other sources (Federal, State, local, voluntary organizations);
State and local resource commitments from previous, undeclared events
Frequency of disaster events over recent time period.

Source: FEMA (2013).

Immediate participants in a crisis situation typically see said crises as entirely novel event, a one-in-a-million experience that has no sensible order or pattern (Sellnow & Seeger, 2013), and create such a severe disruption of order and sense of a normal life

that an ordinary person cannot reasonably predict what will happen. In fact, normal sense-making processes can even prove counterproductive in such extreme circumstances (Sellnow, Seeger, & Ulmer, 2002), which Karl Weick describes as cosmology episodes:

> Basically, a cosmology episode happens when people suddenly feel that the universe is no longer a rational, orderly system. What makes such an episode so shattering is that people suffer from the event and, at the same time, lose the means to recover from it. In this sense, a cosmology episode is the opposite of a déjà vu experience. In moments of déjà vu, everything suddenly feels familiar, recognizable. By contrast, in a cosmology episode, everything seems strange. A person feels like he has never been here before, has no idea of where he is, and has no idea who can help him [*sic*] and the individual becomes more and more anxious until he finds it almost impossible to make sense of what is happening to him. (Weick, quoted in Coutu, 2003, pp.88)

Since they interfere with normal sensemaking capabilities, cosmology episodes can prove particularly destructive during a crisis; as a complex, event-based social phenomena, developing crises often have a clear developmental structure, and might manifest in identifiable – if not predictable – patterns (Sellnow & Seeger, 2013). With this in mind, the nature of a crisis as experienced by an individual is likely to be different – though similar in many ways – than a crisis as experienced by an organization. Therefore, for the purposes of this study, crisis will be defined as:

> A specific, unexpected and nonroutine event or series of events that create high levels of uncertainty, introduce a time restriction on the ability to respond, and simultaneously present an individual with both opportunities for and threats to their high-priority goals.

2.2 Theories of Crisis Communication

Continuing to build upon the extant literature, Sellnow & Seeger (2013) defined crisis communication as:

> The ongoing process of creating shared meaning among and between groups, communities, individuals and agencies, within the ecological context of a crisis, for the purpose of preparing for and reducing, limiting and responding to threats and harm

which incorporates the creation of shared meaning, a common theme in communication definitions (Dance & Larson, 1976; Broome, 1991; Littlejohn & Foss, 2008).

It also incorporates the perspective of constructive empiricism, which posits that phenomena exist not in some universal human truth, but in individual perspectives, constructed and shared in both material and semiotic fashion (Van Fraassen, 1980; Churchland & Hooker, 1985; Anderson, 1996). This definition draws attention to the function of creating shared meaning while communicating in crisis, both through drawing attention to salient details, and in establishing a narrative frame for the crisis in question.

2.3 Crisis and Emergency Risk Communication

After the events of 9/11, and the subsequent intentional anthrax contamination of letters within the U.S. postal service, the Centers for Disease Control and Prevention (CDC) undertook a comprehensive effort to create a crisis communication structure within the public health apparatus (Reynolds, Galdo & Sokler, L, 2004). This involved adapting numerous resources, as well as creating several new resources whole-cloth for the context of public health. Among said resources was a five-stage model incorporating established public health methodologies for risk communication, as well as principles of crisis communication. The end result of this fusion was the Crisis and Emergency Risk Communication model (CERC).

This model provides a comprehensive and integrated approach to crisis, risk and emergency response communication (Reynolds & Seeger, 2005); given its emphasis on

providing tools for public health and safety professionals, CERC is firmly rooted in an applied orientation (Sellnow & Seeger, 2013). The model breaks down the process of a crisis into five stages: (1) pre-crisis; (2) initial event; (3) maintenance; (4) resolution; and (5) evaluation.

As with the many crisis communication models, the pre-crisis period is an incubation stage for the potential crisis, in which the communication messages focus on risk messages, warnings and preparations. Risk communication messages in this stage are typified by communication and education campaigns targeted toward both the public, and the response community. This stage is pivotal in informing and persuading message recipients in how to best prepare for the upcoming crisis.

The initial event stage occurs when a "trigger event" sets the crisis into motion, and change begins to occur. The communication messages focus on uncertainty reduction, by providing the public with strategies to increase self-efficacy and provide reassurance.

The third or maintenance stage is characterized by ongoing uncertainty reduction and reassurance messages, with special focus on self-efficacy by informing the public what they should do. This stage also introduces additional opportunities to educate the audience about risks.

In the fourth, or resolution stage, messages focus on updates regarding the resolution of the crisis, engaging in candid, forthright discussion of the crisis' cause, and gaining better understanding of both new and existing risks. These unavoidable dialogs (Sellnow & Seeger, 2013) often include elements of image repair (Benoit, 1995; 2000) and produces new initiatives to avoid like crises in the future.

Finally, the evaluation stage focuses on thorough inspection and discussions of

the adequacy and efficacy of the response, consensus-building regarding the lessons learned and new understandings of relevant risks. Communication is often oriented toward agencies and response communities to evaluate the effectiveness of their responses, determine specific actions to improve both crisis communication and response capabilities, and to create links to future pre-crisis activities.

2.4 Theoretical fit of the CERC model

The communication orientation of the CERC model makes it appropriate for the study of crisis from a communication perspective; given that source credibility, organizational reputation. and media richness are inexorably tied to the field of communication, and that crisis messages are fundamentally a communication phenomenon. The explicit focus on communication provides a robust framework upon which to build our understanding of crisis messaging, and the focus on describing likely outcomes is well-suited to the applied nature of the research.

Of course, the CERC is not without its limitations. Its prescriptive nature makes several assumptions; perhaps most notably is its optimistic stance with regard as to how a crisis can be expected to unfold and ultimately be resolved (Sellnow & Seeger, 2013). The model says very little regarding what might happen should the crisis evolve into an extended crisis phase, such as radioactive fallout, or other toxic contamination in a community, where treatment might continue for years or decades. Additionally, the strong emphasis on public health may limit applicability in certain lines of research.

However, the model's communication orientation, emphasis on audiences throughout the development of a crisis, and inherent assumption that the audiences and

their needs might change over time, all recommend the CERC for this line of research. Also, the model both draws clear distinctions between informational messages and persuasive messages, while still incorporating both, forming a closer link between crisis and risk communication.

For the purposes of this study, our focus will be firmly on the first and second, or pre-crisis and crisis stages. In these stages, a successful handling of the crisis in question is highly dependent upon the efficacy of the communication taking place. More specifically, if the message portion of pre-crisis and crisis communication is ineffective, then any attempts to mitigate the negative effects of, and eventually resolve the crisis in question will be severely impaired. Pre-crisis communication differs from risk communication insofar as it is less concerned with a learning model – educating publics about salient risks – and more with creating a call to action, an emotional stirring leading to a behavioral change (Reynolds & Seeger, 2005; Sellnow & Seeger, 2013).

To this effect, the study investigates factors that may influence both the *perceived efficacy* of a given crisis message, as well as the participant's *intent to perform the prescribed behavior* in said message. These two factors form the dependent variables of the study, and the main focus of our investigation.

Given that the messages in pre-crisis and crisis communication take such a wide variety of forms – from basic text messages to sophisticated interactive media solutions (National Weather Service, 2011a) – it seems prudent to examine the relationship between media channels used to communicate severe weather messages to the general public, as one such predictive factor. With this in mind, this study focuses on two of the

most widely used channels; text and voice-over.

2.5 Media Richness Theory

Given the wide range of message channels employed in crisis and risk communication, there is a need to better understand the influence that a given medium has upon the messages it carries. To divert somewhat from McLuhan's (1967) perspective, while the medium may not be the message itself, it certainly has the potential to strongly influence it (Daft & Lengel, 1984). When conveying information, the richness of the medium or media used exerts a potentially profound impact. Daft & Lengel (1986) define information richness as "the ability of information to change understanding within a time interval."

Media richness theory proposes that media with certain characteristics are more effective for communicating complex messages (Daft & Lengel, 1984; Daft & Lengel 1986; Trevino, Lengel & Daft, 1987; Lengel & Daft, 1988; Whitbred, Skalski, Bracken & Lieberman, 2010). Specifically, communication channels that: (1) allow immediate feedback; (2) facilitate the use of multiple communication cues such as verbal and nonverbal; (3) facilitate the use of natural language; and (4) are able to convey a personal focus (Trevino et al., 1987) have greater richness. Richness theorists suggest that channels may be placed on a richest-to poorest continuum, based on their incorporation of these four characteristics (Daft & Lengel, 1986; Rice & Gattiker, 2001), with face-to-face communication considered the richest channel, followed by video and audio conferencing, and impersonal correspondence such as text messages, bulletin board postings or numerical data considered poorest. As Williams, Caplan & Xiong (2007)

posited, if the spectrum of richness and cues indeed moves from text to voice to video to face-to-face, then moving along that spectrum introduces more cues, and subsequently more richness.

Communicators exhibit effectiveness when they select a channel that is appropriate to the equivocality or ambiguity of a specify problem or context, with richer channels often proving more effective for complex messages and situations. Although rich media are more effective at reducing ambiguity, they are often costlier than "lean" media, and are thus considered inefficient for low-ambiguity tasks (Schmitz & Fulk, 1991). However, it is also worth noting that an increase in message richness does not always equate to an increase in recollection of, involvement with, or evaluations of the importance of a statement (Jones, 2008; Whitbred, Skalski, Bracken & Lieberman, 2010). Furthermore, the Limited Capacity of Motivated Media Messages Processing (LC4MP) (Lang, 2006) posits that the multiple channels of information present in media such as television, with their continuously changing audio and visual information, can distract message recipients from the actual content of the message itself. However, media richness theory suggests that the more cues that a medium supports, the better it fosters relationships (Daft & Lengel, 1984).

Discussion as to the nature of media richness often touches on whether richness is increased by offering additional options, by reinforcing existing points, or some combination of the two. In light of this, Walther's (1999) suggestion therefore sounds particularly apt if we alter the singular ''medium'' to the plural ''media'' to allow for mixed media use:

> The greater the number of cue systems (along with a nonspecific concurrency with natural language potential, immediate feedback, and personalization potential, resulting in ‘‘richer’’ media), the more beneficial the medium is [media are] when the topic is complex (p. 1).

With this in mind, this study will use the following definition of a rich medium:

Media providing the message recipient with increased ability to handle multiple information cues simultaneously, facilitate rapid feedback, establish a personal focus, and which employ natural language, increasing the ability of information to change understanding within a time interval.

This study investigates pre-crisis messages as the primary tactic in averting disasters and tests if they can be better made to increase compliance with pre-crisis messages. In other words, we know what needs to be done; now how do we get people to do it? Directly observing behavior is possible in some research designs, but challenging in most experimental designs. In such designs, creating an actual crisis situation and observing the response is problematic both in terms of psychological trauma for the participants and in maintaining a credible scenario throughout the experiment.

Azjen and Fishbein discussed the merit of measuring intent to perform a particular behavior, in lieu of measuring the behavior itself (1977; 1980; Azjen, 1991). With this in mind, the author has elected to focus on behaviorial intent, defined for our purposes as an individual's intent to comply with the recommended actions prescribed by the message in question. While certainly no substitute to measuring the behavior itself, behavioral intent has historically proved a reliable metric for evaluating future action (Ajzen & Fishbein, 1977; Azjen 1991). Additionally, the efficacy of the message – as

perceived by respondents – is a useful tool in better deciphering the overall impact of a crisis message.

Messages informing the public about severe weather are complex by their nature, including things such as the nature of the upcoming event, how severe it will be, specific things that may occur, and steps that should be taken. Consistent with media richness theory, richer media channels should be more appropriate for these complex messages. Thus:

H1: Participants experiencing higher levels of channel richness will be more likely to intend to comply with the recommended behavior.

H2: Participants experiencing higher levels of channel richness will be more likely to perceive the message as effective

While channel richness is a traditionally a powerful factor in how messages are received, it is far from the only determinate. With this in mind, perceptions of the message's source may play a large factor in determining its relative success.

2.6 Credibility

2.61 Source Credibility

Andersen and Clevenger (1963) define source credibility as "the image held of a communicator at a given time by a receiver; either one person or a group" (p. 59); when a source is perceived as credible, its message tends to be more persuasive than a source comparatively lacking in credibility (Cole & McCroskey, 2003; Haigh & Brubaker, 2009; Haiman, 1949; Hovland & Weiss, 1951).

In creating their Measure of Source Credibility, McCroskey & Teven (1999)

singled out three dimensions of source credibility: competence, goodwill, and trustworthiness. Goodwill has been conceptualized as the intent-toward-receiver (McCroskey & Young, 1981), and perceived caring (McCroskey, 1992; Teven & McCroskey, 1997). Competence is defined as expertise and intelligence, while trustworthiness refers to qualities such as honesty and character (McCroskey & Teven, 1999).

Built on the premise that we like and believe people that we deem credible, empirical verification has revealed that each of these three dimensions is independently related to believability and likability; though the strongest relationships were discovered when the three dimensions were collapsed into a unidimensional measure (Cole & McCroskey, 2003; McCroskey & Teven. 1999; Paulsel, Richmond, McCroskey & Cayanus, 2005).

Prior research has shown that high source credibility can lead to higher levels of agreement (Jones, Sinclair, & Courneya, 2003); even when the recipients are negatively predisposed to the communication issue (Sternthal, Dholakia, & Leavitt, 1978), and that institutions themselves can be the sources of persuasive messages, and the credibility of organizational sources can be an important factor in influencing attitudes and behaviors (Gass & Seiter, 1999). Source credibility has been found to elicit significant and long-lasting effects on both attitudes and behavioral intent (Lyon, & Cameron, 2004), and increase the likelihood of message-relevant thinking (Heesacker, Petty, & Cacioppo, 1983).

This leads us to the following hypotheses:

H3: Participants who assign higher levels of credibility to the message source will be more likely to intend to comply with the recommended behavior

H4: Participants who assign high levels of credibility to the message source will be more likely to perceive the message as more effective

2.62 Organizational Credibility

Building upon the work of McCroskey, Coombs & Holladay (1996) adapted existing source credibility measures – most notably, McCroskey's (1966) Character Subscale – to focus on organizations instead of individuals, resulting in the Organizational Reputation Scale. Basing their measure on the concept of character, which is conceptualized as "the trustworthiness and goodwill of the source, that is, an assessment of the degree to which the source is concerned with the interests of others." (Coombs & Holladay, 2002, p. 174). As Coombs and Holladay themselves acknowledged, character is an imperfect stand-in for reputation; however, they also found significant positive correlations between ORS responses and behavioral intent (2004). Additionally, Lyon & Cameron (2004) found support for the notion that reputation is a powerful force in judgments about a company, and was significantly related to attitudes and behavioral intentions in a crisis situation. In terms of direct effects, organizational credibility has been found to directly influence consumers' attitudes toward a brand, as well as their behavioral intentions (Goldsmith, 2000; Lafferty & Goldsmith, 1999).

Overall, many similarities exist between source credibility and organizational reputation; as Gass and Seiter (1999) suggest, although the same primary dimensions of source credibility might apply to organizations, the secondary dimensions will likely vary.

This leads us to the following hypotheses:

H5: Participants who assign higher levels of credibility to the organization will be more likely to intend to comply with the recommended behavior.

H6: Participants who assign higher levels of credibility to the organization will be more likely to perceive the message as effective.

2.7 Prior Experience

As Smith, Coffelt, Rives & Sollitto (2012) point out, an individual's existing expectations can powerfully influence their perception of a given crisis. Communication can influence sensemaking of past events, as well as influencing feelings of positivity (Janoff-Bulman & Frantz, 1997); though in much of the research, past experiences influence severe weather responses in a strongly negative fashion (Lachlan & Spence, 2007; Seeger, Sellnow, & Ulmer, 2003). Additionally, prior experiences can strongly influence expectations of a given crisis situation, which in turn, can influence evaluation of the situation at hand (Kim, 2014). It also stands to reason that if cosmology episodes – the overwhelming sense that the current events have never happened before – are disruptive to normal sensemaking (Coutu, 2003; Sellnow, Seeger, & Ulmer, 2002), then drawing on prior experience may strengthen sensemaking capabilities, affecting behavioral intent, and perceived message efficacy.

Given the inconclusive nature of the extant literature, we posit the following research questions:

RQ1: What is the relationship between prior experience and behavioral intent?

RQ2: What is the relationship between prior experience and perceived message

efficacy?

In the literature, there can be a great discrepancy between qualitative evaluations of past crisis experiences. While a full content analysis is beyond the scope of this study, a cursory examination finds that individuals who describe a severe weather experience in terms such as ‘‘definitely like an adventure,’’ “a thrill,’’ and ‘‘a good time’’ tended to view their experience in a less severe light than those who evaluated their crisis experience in more negative terms (Lachlan & Spence, 2007; Seeger, Sellnow, & Ulmer, 2003; Smith, Coffelt, Rives & Sollitto, 2012). Furthermore, research has shown that individuals who possess prior experience with a given crisis show greater consistency in attitude and behavior than those without (Regan & Fazio, 1977). Also, in a review of disaster studies, Withey (1962, p118) concluded that the anxiety individuals experience in crisis situations leads to "a narrowing of the perceptual field and a limitation of the information that can or will be received" and that a more persistent threat may lead to even "greater constriction of cognition, rigidity of response, and primitive forms of reaction."

Given the discrepancies between evaluations of crisis experiences in different studies, it seems prudent to include the *severity of a given experience* as a measure when discussion prior experience. This, combined with the extant literature, leads us to our next hypotheses:

H7: Participants who indicate high levels of severity with prior experiences will be more likely to intend to comply with the recommended behavior.

H8: Participants who indicate high levels of severity with prior experiences will

be more likely to perceive the message as effective.

2.8 Severe Weather

In any experimental study, it is best to choose a stimuli for the manipulation that seems believable to the participants, so as not to overly strain credibility (Berger, 2013; Creswell, 2013). For the purpose of this study, severe weather provides many advantages over other types of crisis and/or risk event; firstly, severe weather is relatively common in the Midwest where the study takes place (Changnon & Kunkel, 2006). Secondly, severe storms have potentially large impacts on human health and safety, with an average of 190 deaths due to tornadoes, lightning, winter storms, and floods each year. Additionally, property losses caused by severe storms average $2.462 billion per year in the Midwest alone (Changnon & Kunkel, 2006).

The National Weather Service's (NWS) definition of severe weather states that a severe thunderstorm is any storm that produces one or more of the following elements: (1) a tornado, (2) damaging winds, or winds measured 50 knots (approx. 58 MPH) or more, or (3), hail 1 inch in diameter or larger (National Weather Service, 2006; Novy et. al, 2013). Other forms of dangerous weather include heavy rain, which could result in flash flooding, excessive heat and cold, tropical cyclones, and winter storms. Although forecasting these other types of dangerous weather is primarily the responsibility of other branches of the National Centers for Environmental Protection, and of local NWS offices, the Storm Prediction Center (SPC) also issues 1-6 hour short-term forecasts, or mesoscale discussions of certain heavy rain, heavy snow, freezing rain, and blizzard events in portions of states (National Weather Service, 2006; Novy et. al, 2013). Tornadoes are

destructive, but tend to cluster in specific regions; despite this, there is strong evidence supporting the plausibility of a tornado occurring at any location in the continental United States (Concannon, Brooks, & Doswell III, 2000).

In interviews with employees of the NWS, one challenge that consistently arose was addressing the lack of action taken in response to events that begin as nascent storms, and evolve into more dangerous, severe storms, such as tornadoes, blizzards or hailstorms, all of which require a fairly rapid response time for preventative actions to retain their efficacy (Changnon & Kunkel, 2006. Also, severe winter storms are a fairly common phenomenon, the frequency of which has steadily increased in recent years (Price & Rind, 1994; Dessens, 1995; Rosenzweig et. al., 2001; Brooks, Lee & Craven, 2003; Trapp, et. al, 2007). Additionally, during preparation for this study, the American Midwest experienced some of the most severe winter weather conditions in some time, costing the region lives, lost time, and more than $5 billion in damages (Associated Press, 2014; BBC News, 2014; Fox News, 2014).

With this in mind, given the location of the study, the recency of the U.S. polar vortex, and based upon interviews with representatives of the NWS, this study utilizes severe winter storms as the object of study. Winter storms are a particularly suitable choice for several reasons; they can escalate into flash floods or tornadoes (Edwards, 2013; Kemp, 1987; National Weather Service, 2006; Novy et. al, 2013), they are relatively widespread, (Zeitler & Bunkers, 2005), and according to interviews, present a unique communication challenge due to their evolving nature, and the potential issue of being dismissed as non-problematic until it becomes too late to take action (Seeger,

Sellnow & Ulmer, 2003; Sorensen, 2000).

2.9 Summary

The message is the thing. In better understanding what determines the effectiveness of pre-crisis messages, decision-makers can be better equipped for dealing with crisis situations when they arise. The CERC is useful as a framework for several reasons: it distinguishes between preventative messages – discussing what preparations should be made just in case – and pre-crisis messages, which provide actionable steps in anticipation of an immediate crisis event. Media richness theory talks about *how* we send these messages and the way that impacts how they are received, while the credibility of the message's source, and the reputation of the organization responsible both play a large role in determining the message's impact.

And while the role that an individual's prior experience with similar situations plays is still unclear, the existing crisis literature suggests that the degree to which individuals regard the experience as traumatic or severe is likely to influence how they react to similar situations in the future.

Armed with this knowledge, the next step was to conduct original research.

CHAPTER III

METHODOLOGY

3.1 Preface

The study was primarily concerned with the interaction of several factors.

Firstly, the impact that a richer channel – here defined as media that provides a participant with increased ability to handle multiple information cues simultaneously, or more simply, *information redundancy* – has on how a pre-crisis message is received. Secondly, how message recipients' perception of the credibility of said message's source, and the reputation of the responsible organization influence the message's effectiveness. Thirdly, the impact of the message recipients' breadth and depth of experience with similar crisis situations on how the message was received.

To better understand exactly how these factors influence the effectiveness of a pre-crisis message, the study examined the effects of the above on both the perceived efficacy of the messages, as well as participants' intentions to perform the recommended behavior.

3.2 Experimental Model and Procedures

The experiment took place at a large mid-western U.S. university, located in an urban environment. The experimental design was implemented as an online survey that was administered in-person at a computer lab on the campus of the university. Upon signing in, participants were randomly assigned to a workstation, where they would complete a brief pre-test survey, including questions on social media, smartphone, and internet use. (See Appendix A)

Upon completion, respondents watched one of two videos; both of which began with a brief clip of Olympic figure skating from 2012. This video was interrupted by the message appropriate to the experimental condition which they had been assigned to; in the text condition, an image filled the screen for three minutes and thirty-one seconds, containing the text of the experimental message (See Appendix B), whereas in the voice-over condition, the same image appeared onscreen for the same duration, this time accompanied by a voice actor reading the text aloud. After this interruption, the figure skating clip concluded. Aside from the richness of the media channel, specifically, the inclusion of voice or not, there was no difference in content between conditions. Previous research suggests that compared to text alone, the richer mix of text and voice leads to increased levels of liking and trust (Williams, Caplan & Xiong, 2007),

Respondents then completed a questionnaire, measuring perceived message efficacy, intent to perform the recommended behavior, the reputation of the NWS, and the perceived credibility of the message source. Finally, they were asked open-ended questions about the message they had just received, qualitatively measuring their

recollection of the message.

3.3 Participants

The participants who made up the groups (N = 100) were 56.1% male, averaged 23.3 years of age, and were students in various communication courses at an urban, Midwestern college. They were approximately evenly distributed by class rank, with 25.3% freshman, 28% sophomore, 24% junior, and 20% senior, with an additional 2% enrolled in graduate programs. In terms of ethnicity, the sample was 58% Caucasian and 26% African-American, with the remainder fairly evenly spread amongst other ethnic backgrounds, the largest such being Arab-American, with 7%. The students were offered extra credit for their participation in the experiment (which took roughly 15-20 minutes to complete).

3.4 Variables

What follows is a brief description of the variables that featured in the study; descriptives can be found in table II.

Table II
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Behavioral Intent	99	1	5	3.87	0.78
Perceived Message Efficacy	99	1	5	3.92	0.75
Organizational Credibility	95	2.7	5	3.89	0.52
Source Credibility	94	2.72	5	3.69	0.47
Source Cred: Competence	97	2.33	5	3.84	0.57
Source Cred: Goodwill	98	2.33	5	3.51	0.58
Source Cred: Trustworthiness	98	2.83	5	3.72	0.54
Prior Experience	99	6	12	9.13	1.17
Blizzard Severity	87	1.25	4.75	3.18	0.80
Valid N (listwise)	74				

3.5 Dependent Variables

3.51 Behavioral Intent

The participants' intent to perform the actions recommended in the message was measured with a 5-point Likert-type scale (wherein 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5= Strongly Agree), consisting of the following three measures: "I would follow the instructions prescribed in the message," "I think the instructions presented are reasonable," and "I would recommend the instructions presented to others." The measure tested well for reliability, with a Cronbach's alpha of .910.

3.52 Perceived Message Efficacy

How effective participants considered the message to be was measured similarly, with a 5-point Likert-type scale (wherein 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5= Strongly Agree), consisting of the following three measures: "The message provided clear, concise instructions," "The message was well thought-out," and "The message would be effective." This measure also tested well for reliability, with a Cronbach's alpha of .886.

3.6 Independent Variables

3.61 Media Channel

The richness of the media channel was measured by dummy coding participants' experimental condition into a new variable, where 0 = the text-only condition, and 1 = the voiceover condition. There were 49 participants in the text-only condition, and 51 in the

voiceover condition.

3.62 Source Credibility

Source credibility was measured with McCroskey & Teven's (1999) measure of source credibility, which is comprised of 18 items representing the three subscales of competence, goodwill and trustworthiness, and was administered via a 5-point Likert-type scale (wherein 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5= Strongly Agree). The scale had a mean of 3.69, a standard deviation of .468, and tested well for reliability, with a Cronbach's alpha of .871.

3.62a Competence

The first subscale, competence, consisted of six items; examples include "This Source was Unintelligent," This Source was Trained," and "This source was Competent." The scale had a mean of 3.84 and a standard deviation of .570. The measure proved to be internally consistent, with a Cronbach's alpha of .767.

3.62b Goodwill

The second subscale, goodwill, also consisted of six items; examples include "This Source Cares about me," This Source was Self-Centered," and "This source was Insensitive." The scale had a mean of 3.50 and a standard deviation of .584. The measure also proved to be internally consistent, with a Cronbach's alpha of .704.

3.62c Trustworthiness

The third subscale, trustworthiness, also consisted of six items; examples include "This Source was Honest," This Source was Honorable," and "This source was

Unethical." The scale had a mean of 3.72 and a standard deviation of .536. The measure also proved to be internally consistent, with a Cronbach's alpha of .816.

3.63 Organizational Reputation

Organizational reputation was measured with Coombs & Holladay's 10-item Organizational Reputation Scale (1996), which was administered via a 5-point Likert-type scale (wherein 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5= Strongly Agree). Examples of Organizational Reputation Scale items include: "This organization is basically honest," "Under most circumstances, I would NOT believe what the organization says," and "The Organization is concerned with the well-being of its publics." The scale had a mean of 3.88, a standard deviation of .515, and had a Cronbach's alpha of .898.

3.64 Previous Experience with Severe Weather

3.64a Prior Weather Experience

Participants' prior experiences with severe weather was measured by having them identify which of the following weather events they had previously experienced: earthquakes (n = 22), blizzards (n = 87), severe thunderstorms (n = 90), tornados (n = 22), hurricanes (n = 7) and ice storms (n = 61). These were summed to create a measure of prior experience with severe weather.

3.64b Severity

Participants who had experienced a given circumstance were given an additional measurement regarding their experience; each individual severity construct was measured

with this 4-item scale, based on existing crisis language. The measure was administered via a 5-point Likert-type scale (wherein 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5= Strongly Agree), which consisted of four items: “I was concerned for my safety,” “It was unimportant,” “It had an impact on my life,” and “It was distressing.”

In the individual severity measure, blizzards, had a mean of 3.18, a standard deviation of 0.80, and a Cronbach’s alpha of .748.

CHAPTER IV

ANALYSIS

4.1 Hypotheses 1 & 2

Hypotheses 1 and 2 predicted that participants experiencing higher levels of channel richness would be more likely to comply with the recommended behavior, and positively evaluate the message. These were examined via two t-tests with media channel as the grouping factor, and behavioral intent and perceived message efficacy as the two dependent variables; table III summarizes these results.

Table III

Paired T-tests comparing effect of Text versus Text with Voiceover conditions

Dependent Variable	Descriptives	Standard Error	df	t	Sig.
Behavioral Intent	Text Condition: Mean, 3.85; sd =.12 Voiceover Condition: Mean, 3.88; sd = .67	.13 .09	97	-.18	.17
Perceived Message Efficacy	Text Condition: Mean, 3.90; sd =.78 Voiceover Condition: Mean, 3.93; sd = .71	.11 .10	97	-.23	.72

4.2 Hypotheses 3 & 4

Hypotheses 3 & 4 predicted that participants who perceived the message source as more credible would be more likely to engage in the suggested behavior, and to positively evaluate the message. These were tested with zero order correlations. Since the credibility measure has three dimensions – competence, goodwill and trustworthiness – a total of eight correlations were run. Specifically, each dependent variable was correlated with the combined credibility score and the three dimensions. Table IV provides these results.

Table IV

Zero-Order Correlations between Source Credibility, Behavioral Intent, and Perceived Message Efficacy

	Behavioral Intent	Message Efficacy	Source Credibility	Competence	Goodwill	Trust
Behavioral Intent	1	.69**	.42**	.38**	.29**	.34**
Message Efficacy	.69**	1	.58**	.54**	.45**	.51**
Source Credibility	.42**	.58**	1	.81**	.81**	.89**
Competence	.38**	.54**	.81**	1	.40**	.62**
Goodwill	.29**	.45**	.81**	.40**	1	.62**
Trust	.34**	.51**	.89**	.62**	.62**	1

* Correlation is significant at the 0.05 level
** Correlation is significant at the 0.01 level

4.3 Hypotheses 5 & 6

Hypotheses 5 & 6 predicted that participants who assigned higher levels of credibility to the organization would be more likely to engage in the suggested behavior, and to perceive the message as effective. These hypotheses were tested with zero order

correlations; table V provides these results.

Table V

Zero-Order Correlations between Organizational Reputation, Behavioral Intent, and Perceived Message Efficacy

	Behavioral Intent	Message Efficacy	Organizational Reputation
Behavioral Intent	1	.69**	.42**
Message Efficacy	.69**	1	.58**
Organizational Reputation	.54**	.58**	1

* Correlation is significant at the 0.05 level
** Correlation is significant at the 0.01 level

4.4 Research Question 1 & 2

Research question 1 asked: what is the relationship between prior experience and behavioral intent? Research question 2 likewise inquired to the relationship between prior experience and perceived message efficacy. Preliminary analysis examined the zero-order correlations between these factors; table VI summarizes these results.

Table VI

Zero-Order Correlations between Prior Experience, Behavioral Intent, and Perceived Message Efficacy

	Behavioral Intent	Message Efficacy	Prior Experience
Behavioral Intent	1	.69**	.06
Message Efficacy	.69**	1	.58**
Prior Experience	.06	.58**	1

* Correlation is significant at the 0.05 level
** Correlation is significant at the 0.01 level

4.5 Hypotheses 7 & 8

Hypotheses 7 & 8 predicted that participants who experienced high levels of severity with relevant prior experiences would be more likely to engage in the suggested behavior, and to perceive the message as effective. These hypotheses were also tested with zero order correlations; table VII provides these results.

Table VII

Zero-Order Correlations between Blizzard Severity, Behavioral Intent, and Perceived Message Efficacy

	Behavioral Intent	Message Efficacy	Blizzard Severity
Behavioral Intent	1	.69**	-.05
Message Efficacy	.69**	1	.58**
Blizzard Severity	-.05	.58**	1

* Correlation is significant at the 0.05 level
** Correlation is significant at the 0.01 level

4.6 Regression Analysis

In order to assess the simultaneous influence of these variables, a series of multiple regressions were run for each dependent variable. For hypotheses 1, 3, 5, 7 and RQ1, behavioral intent was regressed on the independent variables of media channel, prior experience, perceived severity of blizzards, source credibility and its subscales of competence, goodwill and trustworthiness, and organizational reputation. Due to multicollinearity issues between the credibility and organizational reputation variables, the same analyses dealing with multicolinearity between the source credibility and organizational reputation variables was performed that systematically included or

excluded these variables. The specific models are described below in the discussion of results; in this model, the medium variable was dummy coded. These are provided in table VIII.

For hypotheses 2, 4, 6, 8 and RQ2, perceived message efficacy was regressed upon the above independent variables; these results are provided in table IX.

Table VIII Regression Matrix: Behavioral Intent

	MODEL A		MODEL B		MODEL C	
Independent Variables	*B*	Beta	*B*	Beta	*B*	Beta
(Constant)	-0.74 (0.93)	-	0.75 -0.93	-	0.82 -0.91	-
Condition (Dummy Coded)	-0.01 (0.14)	-0.01	0.01 -0.15	0.01	0.03 -0.14	0.02
Prior Experience	0.11 (0.07)	0.15	0.11 -0.07	0.16	0.1 -0.07	0.14
Severity: Blizzard	-0.01 (0.09)	-0.01	-0.38 -0.09	-0.04	-0.04 -0.09	-0.04
Source Credibility	0.24 (0.16)	0.17	0.62 -0.15	0.44 **	-	-
Source Credibility: Competence	-	-	-	-	0.39 -0.17	0.33 *
Source Credibility: Goodwill	-	-	-	-	-0.08 -0.16	-0.07
Source Credibility: Trust	-	-	-	-	0.3 -0.2	0.25
Organizational Reputation	0.72 (0.17)	0.48 **	-	-	-	-
	Model A R2 = .37**		Model B R2 = .21**		Model C R2 = .26**	

Notes:

Standard error in parentheses

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

MODEL D		MODEL E		MODEL F		MODEL G	
B	Beta	*B*	Beta	*B*	Beta	*B*	Beta
-0.35	-	-0.42	-	3.48 **	-	-0.63	-
-0.87		(0.93)		(0.85)		(0.95)	
-0.03	-0.02	0.02	0.02	0.01	0.01	-0.02	0.14
-0.13		(0.14)		(0.17)		(0.14)	
0.1	0.14	0.07	0.09	0.06	0.08	0.1	0.14
-0.07		(0.07)		(0.85)		(0.07)	
-0.01	-0.01	0.01	0	-0.04	-0.04	-0.02	-0.21
-0.08		(0.09)		(0.10)		(0.09)	
-	-	-	-	-	-	-	-
0.23	0.19	-	-	-	-	0.22	0.18
-0.14						(0.16)	
-	-	-	-	-	-	0.06	0.05
						(0.15)	
-	-	-	-	-	-	-0.03	-0.02
						(0.21)	
0.66	0.45 **	0.94	0.6**	-	-	0.71	0.47**
-0.17		(0.15)				(0.19)	
Model D R2 = .36**		Model E R2 = .33**		Model F R2 = .01		Model G R2 = .38**	

Table IX Regression Matrix: Perceived Message Efficacy

	MODEL A		MODEL B		MODEL C	
Independent Variables	*B*	Beta	*B*	Beta	*B*	Beta
(Constant)	-0.67 (0.79)	-	0.04 (0.74)	-	0.18 (0.72)	-
Condition (Dummy Coded)	0.14 (0.12)	0.11	0.16 (0.12)	0.12	0.16 (0.12)	0.12
Prior Experience	0.08 (0.06)	0.12	0.08 (0.06)	0.13	0.07 (0.06)	0.1
Severity: Blizzard	-0.07 (0.07)	-0.08	-0.08 (0.07)	-0.1	-0.1 (0.07)	-0.12
Source Credibility	0.75 (0.14)	0.54**	0.9 (0.12)	0.67 **	-	-
Source Credibility: Competence	-	-	-	-	0.57 (0.13)	0.50 **
Source Credibility: Goodwill	-	-	-	-	0.08 (0.12)	0.07
Source Credibility: Trust	-	-	-	-	0.24 (0.16)	0.21
Organizational Reputation	0.33 (0.14)	.23*	-	-	-	-
	Model A R2 = .49**		Model B R2 = .45**		Model C R2 = .50**	

Notes:

Standard error in parentheses

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

MODEL D		MODEL E		MODEL F		MODEL G	
B	Beta	*B*	Beta	*B*	Beta	*B*	Beta
-0.38 (0.75)	-	0.32 (0.85)	-	3.66 ** (0.76)	-	-0.38 (0.79)	-
0.08 (0.11)	0.06	0.06 (0.13)	0.04	0.06 (0.15)	0.05	0.13 (0.12)	0.1
0.05 (0.06)	0.07	0.07 (0.07)	0.1	0.04 (0.75)	0.07	0.07 (0.06)	0.09
-0.06 (0.07)	-0.08	-0.01 (0.08)	-0.01	-0.04 (0.09)	-0.05	-0.09 (0.07)	-0.11
- 0.63 (0.12)	- .55**	- -	- -	- -	- -	- 0.52 (0.14)	- .45**
-	-	-	-	-	-	0.13 (0.13)	0.11
-	-	-	-	-	-	0.15 (0.17)	0.13
0.32 (0.14)	.22*	0.78 (0.13)	0.56**	-	-	0.25 (0.16)	0.18

Model D R2 = .49**	Model E R2 = .32**	Model F R2 = .01	Model G R2 = .52**

CHAPTER V

RESULTS

5.1 Results

Hypotheses 1 and 2 posited that participants who received the message via a richer channel would be more likely to comply with the intended behavior, and perceive the message as more effective. Neither t-test nor multiple regressions revealed any significant correlation between message channel and either dependent variable; thus, hypotheses 1 and 2 were not supported.

Hypothesis 3 predicted that participants who assigned higher levels of credibility to the message source would be more likely to intend to comply with the recommended behavior. Preliminary analysis of hypothesis 3 examined the zero-order correlations between source credibility and behavioral intent (see table IV), and found a significant relationship: $r(98) = .42$, $p < .01$. This provided preliminary support for hypothesis 3.

To further analyze hypothesis 3, behavioral intent was regressed on the 5 independent variables: channel richness, prior experience, perceived severity (blizzards), source credibility and organizational reputation (see table X, MODEL A).

The initial model found no significant relationship between source credibility and behavioral intent, though organizational reputation did significantly predict behavioral intent, $b = .48$, $t(74) = 4.26$, $p < .01$. Given the significant correlation between source credibility and organizational reputation [$r(88) = .53$, $p < .01$.], additional regressions

were performed to address potential multicolinearity issues between the two variables. When removing organizational reputation from the equation (see table X, MODEL B), source credibility significantly predicted behavioral intent, b = .44, t(78) = 4.26, p < .01. The model also explained a significant proportion of variance in behavioral intent; R2 = .21, F(1, 78) = 4.99, p < .01.

Table X
Intent on Reputation and Source Credibility

	MODEL A		MODEL B	
	B	Beta	*B*	Beta
Severity: Blizzard	-0.01	-0.01	-0.38	-0.04
Source Credibility	0.24	0.17	0.62	0.44 **
Org. Reputation	0.72	0.48**	-	-

Notes:
** Correlation is significant at the 0.01 level

Given this, the three subscales that make up the source credibility measure replaced source credibility in the model, which behavioral intent was then regressed upon (see table XI, MODEL C); out of the three measures, only the competence measure of source credibility significantly predicted behavioral intent, b = .33, t(78) = 2.34, p < .05, and the model also explained a significant proportion of variance in behavioral intent; R2 = .26, F(1, 78) = 4.27, p ≤ .01.

With this relationship in mind, the original model was again regressed on behavioral intent, this time with competence taking the place of the overall source credibility measure (see table XI, MODEL D). In this model, the strong relationship between organizational reputation and behavioral intent remains, and while source credibility does not significantly predict behavioral intent, the relationship is approaching significance; b = .19, t(77) = 1.68, p = .10.

Table XI
Credibility Substitutions

	MODEL C		MODEL D	
	B	Beta	*B*	Beta
Competence	0.39	0.33*	0.23	0.19
Goodwill	-0.08	-0.07	-	-
Trustworthiness	0.3	0.25	-	-
Org. Reputation	-	-	0.66	0.45**

Notes:

* Correlation is significant at the 0.05 level
** Correlation is significant at the 0.01 level

Taken together, results suggest that participants who perceive the source of the message to be credible were more likely to follow the intended behavior, but this relationship became nonsignificant when organizational reputation was added in the model (likely due to multicollinearity). Furthermore, when examining the different subscales that constitute source credibility, the dimension of competence emerged as a strong predictor. Thus, we find support for hypothesis 3, while recognizing this effect is weakened when the reputation variable is also included in the model.

Hypothesis 4 predicted that participants who assigned higher levels of credibility to the message source would be more likely to perceive the message as effective. Preliminary analysis of hypothesis 4 examined the zero-order correlations between source credibility and perceived message efficacy (see table IV), and uncovered a significant relationship: $r(92) = .58$, $p < .01$. This provided preliminary support for hypothesis 4.

To further analyze hypothesis 4, perceived message efficacy was regressed on the 5 independent variables: channel richness, prior experience, perceived severity (blizzards), source credibility and organizational reputation (see table XII, MODEL A). In this model, source credibility significantly predicted behavioral intent; $b = .54$, $t(74) = 5.36$, $p < .01$. The model also explained a significant proportion of variance in behavioral

intent; R2 = .49, F(1, 74) = 13.32, p < .01.

Given the relationships discovered when testing hypothesis 3, similar tests were run to determine if the relationship between the credibility subscale measures held true when regressing the variables on perceived message efficacy as well. Hence, source credibility was replaced in the model by the three subscales – competence, goodwill and trustworthiness – which was then regressed on message efficacy (see table XII, MODEL C). Again, out of the three measures, competence alone significantly predicted behavioral intent, b = .50, t(78) = 4.38, p < .01, and the model also explained a significant proportion of variance in behavioral intent; R2 = .50, F(1, 78) = 12.25, p ≤ .01.

Table XII
Efficacy Models

	MODEL A		MODEL C		MODEL D	
Independent Variables	*B*	Beta	*B*	Beta	*B*	Beta
Source Credibility	0.75	0.54**	-	-	-	-
Source Credibility: Competence	-	-	0.57	0.50 **	0.63	0.55**
Source Credibility: Goodwill	-	-	0.08	0.07	-	-
Source Credibility: Trust	-	-	0.24	0.21	-	-
Organizational Reputation	0.33	.23*	-	-	0.32	.22*

Notes:
* Correlation is significant at the 0.05 level
** Correlation is significant at the 0.01 level

Following the same pattern, message efficacy was again regressed on the original model, this time with competence taking the place of the overall source credibility measure (see table XII, MODEL D). In this model, the strong relationship between source credibility and behavioral intent remains; b = .55, t(77) = 5.41, p < .01, and the model also explained a significant proportion of variance in message efficacy; R2 = .49, F(1, 77) = 14.08, p < .01. Thus, we find robust support for hypothesis 4.

Hypothesis 5 predicted that participants who assigned higher levels of credibility to the organization would be more likely to intend to comply with the recommended behavior. Preliminary analysis of hypothesis 5 examined the zero-order correlations between organizational reputation and behavioral intent (see table IV), and found a significant relationship: $r(94) = .54$, $p < .01$. This provided preliminary support for hypothesis 5.

To further analyze hypothesis 5, behavioral intent was regressed on the 5 independent variables: channel richness, prior experience, perceived severity (blizzards), source credibility and organizational reputation (see table X, MODEL A). In this model, organizational reputation significantly predicted behavioral intent; $b = .49$, $t(74) = 4.26$, $p < .01$. The model also explained a significant proportion of variance in behavioral intent; $R2 = .49$, $F(1, 74) = 13.32$, $p < .001$. Additionally, organizational reputation remained a significant predictor of behavioral intent across every regression model it appeared in (see table VIII).

Thus, we find robust support for hypothesis 5.

Hypothesis 6 predicted that participants who assigned higher levels of credibility to the organization would be more likely to perceive the message as effective. Preliminary analysis of hypothesis 5 examined the zero-order correlations between organizational reputation and perceived message efficacy (see table IV), and found a significant relationship: $r(98) = .69$, $p < .01$. This provided preliminary support for hypothesis 6.

To further analyze the hypothesis, perceived message efficacy was regressed on

the 5 independent variables: channel richness, prior experience, perceived severity (blizzards), source credibility and organizational reputation (see table XII, MODEL A). In this model, organizational reputation significantly predicted behavioral intent; $b = .23$, $t(74) = 2.30$, $p < .05$. The model also explained a significant proportion of variance in behavioral intent; $R2 = .49$, $F(1, 74) = 13.32$, $p < .01$.

Thus, we find robust support for hypothesis 6.

Research question 1 asked: what is the relationship between prior experience and behavioral intent? Preliminary analysis examined the zero-order correlations between prior experience and behavioral intent (see table IV), and found no significant relationship between the two. Additionally, prior experience was, along with other variables, regressed on behavioral intent (see table VIII), and at no point did a significant relationship emerge. Thus, we can answer research question 1 by stating that there is no apparent relationship between prior experience and behavioral intent.

Research question 2 asked: what is the relationship between prior experience and perceived message efficacy? Preliminary analysis examined the zero-order correlations between prior experience and behavioral intent (see table IV), and, as was the case in RQ1, found no significant relationship between the two. Additionally, prior experience was, along with other variables, regressed on perceived message efficacy (see table XI), and at no point did a significant relationship emerge. Thus, we can answer research question 2 by stating that there is no apparent relationship between prior experience and perceived message efficacy.

Hypothesis 7 predicted that participants who experienced high levels of severity

with relevant prior experiences would be more likely to intend to comply with the recommended behavior. Preliminary analysis of hypothesis 7 examined the zero-order correlations between blizzard severity and behavioral intent (see table IV), and failed to find any significant relationships. Additionally, blizzard severity was regressed on perceived message efficacy along with other variables, (see table VIII), and at no point did a significant relationship emerge.

Thus, hypothesis 7 was not supported.

In a similar vein, hypothesis 8 predicted that participants who experienced high levels of severity with relevant prior experiences would be more likely to intend to comply with the recommended behavior. Preliminary analysis of hypothesis 8 examined the zero-order correlations between blizzard severity and behavioral intent (see table IV), and failed to find any significant relationships. Additionally, blizzard severity was regressed, alongside several other independent variables, on perceived message efficacy (see table IX), and at no point did a significant relationship emerge.

Thus, hypothesis 8 was not supported.

5.2 Discussion

This study attempted to address an age-old question: why do some people follow crisis instructions, when others do not? The CERC model of crisis communication – which breaks down the process of a crisis into the five stages of: (1) pre-crisis; (2) initial event; (3) maintenance; (4) resolution; and (5) evaluation – was employed to provide the conceptual scaffolding upon which our study was built.

Specifically, the possible effects of media richness, source credibility,

organizational reputation, prior experience, and the perceived severity of said experiences on the effectiveness of pre-crisis messages were explored in an experimental setting. The two criteria used to determine the effectiveness of a given pre-crisis message were participants' intentions to comply with the prescribed behavior, and how effective the message seemed to them.

Results suggest that unlike similar types of communication, pre-crisis messages do not benefit from increased channel richness, and neither the frequency nor the severity of participants' prior experiences with severe weather had much impact. Furthermore, the study suggests that the credibility of the message's source – as well as the reputation of the organization delivering said message – are massively impactful in determining behavioral intent and perceived message efficacy. Additionally, the findings suggest that in pre-crisis messages, the message source's competence is the primary area of concern for message recipients.

Contrary to the trends of existing media richness literature, hypotheses 1 and 2 found no support in this study. This might be due to the comparatively small difference in richness between the two channels; however, it could also be indicative that in pre-crisis messages, that the *content of the message itself* is more important than the way that said messages are communicated.

This could be for several reasons. One possible answer lies in the type of manipulation used, focusing solely on an information-redundancy manipulation and offering relatively few opportunities for feedback or other types of interactivity.

Other perspectives on media richness might prove useful for this purpose. One

example is Dennis & Valacich's (1999) theory of media synchronicity, which focuses on five distinct media characteristics affecting communication: [1] immediacy of feedback, [2] symbol variety, [3] parallelism, [4] rehearsability and [5] reproccessability. By differentiating between the various factors contributing to richness, a more thorough examination of the concept could occur. Focusing on the other aspects of richness, and observing the effects across a larger variety of channels may yield different results. Future research may benefit from studying these distinctions.

Hypotheses 3 and 4 predicted that participants who assigned high levels of credibility to the message's source would show greater intent to comply with the recommended behavior, and perceive the message as more effective. Both dependent variables were significantly correlated with credibility at the $p < .01$ level; this was true for each of the individual credibility measures (competence, goodwill, and trustworthiness) as well.

Multiple regression analysis showed that credibility had a less straightforward relationship with behavioral intent, experiencing multicolinearity with organizational reputation, and highlighting that among the subscale items, it was competence that significantly contributed to the model. Hypothesis 3 was supported, with the caveat that the effect was weakened by the presence of organizational reputation, and hypothesis 4 received robust support. Multiple regression analysis also showed that source credibility was a strong predictor of perceived message efficacy across models ($p < .01$), regardless of the presence of organizational reputation; and again, competence emerged as the lone significant contributor among the subscale items.

Conceptually, this makes sense on multiple levels; in a crisis situation, when vital information is being communicated, it's important that the message source is a credible one; and to be somewhat blunt, it's important that they know what they're talking about. As one respondent put it, "I don't care if the NWS cares about my feelings, or if they're good people or whatever; do they know what they're talking about?", or as another respondent put it, "if they care about me while I'm freezing to death because of bad instructions, that doesn't really help me, does it?" Future research could greatly benefit by studying what factors significantly contribute to source credibility; this could lead to genuinely useful, actionable steps.

Hypotheses 5 and 6 were structured similarly to 3 and 4, insofar as they claimed that participants who assigned high levels of credibility to the organization would be more likely to intend to perform the recommended behavior, and likewise perceive the message as being more effective. Given the conceptual similarities between the two constructs, it seemed logical that organizational credibility would exhibit similar effects to source credibility, and this proved to be the case: both relationships were significantly correlated at the $p < .01$ level. Multiple regression analysis revealed that organizational reputation remained significant at the $p < .01$ level for behavioral intent across models, and the $p < .05$ level for perceived message efficacy; $p < .01$ when source credibility was excluded from the model. So, hypotheses 5 and 6 also received strong support.

Again, the conceptual fit is strong here; organizations with strong positive reputations stand the best chance of being listened to in a crisis; therefore, future research might benefit from studying what affects organizational reputation, and building on the

robust body of work in public relations that studies this phenomena, leveraging it for the greater good.

This study posed a pair of research questions; specifically, what, if any, relationship exists between prior experience, and either behavioral intent or perceived efficacy? Statistical analysis found that neither a wide breadth of prior experience with severe weather conditions – nor indeed, the severity of said conditions – was significantly correlated with behavioral intent or perceived message efficacy in t-tests or any regression models. As such, the study found no significant relationship between the variables; answers to the research questions remain inconclusive.

Severity, whether as a unified measure, or as examples of individual conditions, was a logical extension from the research questions, as well as an area worth exploring based on the extant literature. Hypotheses 7 and 8 predicted that participants who indicated high levels of severity in prior experiences would be more likely to perform the desired behavior, and to regard the message as effective. However, severity – whether as a total scale, the specific condition of blizzards, or in any other single measure – had no significant relationship with either. Thus, hypotheses 7 and 8 failed to find any support.

Conceptually, the effects of prior experience on crisis behavior would seem likely to exert some manner of effect. However, the relatively small sample size (n = 100) of the experiment made studying this particular phenomenon difficult; many of the measures were of a relatively low n (see table X), which limited their viability as behavioral predictors. Future research may wish to focus on specific types of experiences – for example, is there a meaningful conceptual difference between a severe blizzard compared

to a severe earthquake?

Additionally, the weather situation in the message – constructed to maximize

Table XIII:
Individual Severity Measures

	Mean	Std. Deviation	Cronbach's @	N
Severity: Earthquake	2.55	1.01	0.832	22
Severity: Blizzard	3.18	0.80	0.748	87
Severity: Thunderstorm	3.14	0.81	0.764	90
Severity: Tornado	4.07	0.59	0.692	22
Severity: Hurricane	3.79	0.76	0.847	7
Severity: IceStorm	3.36	0.78	0.797	61

ecological validity, using data from the recently-concluded 2014 polar vortex – was not necessarily severe enough for prior experiences to significantly interact with the situation at hand. Future research might focus on the severity of the message itself, and explore the nuances of prior experience to better understand what, if any, effect it has on pre-crisis messages.

From a practical standpoint, the findings are still somewhat inconclusive. The credibility behind the message source is a strong predictor of how it is received; a stronger focus on fostering goodwill with relevant publics may prove useful. Still, rather than provide a strong answer to what makes for an effective pre-crisis message, this study has instead provided more, and hopefully better, questions. Do local weather forecasters have more cache than official sources? Are new media such as social networking and mobile applications a better avenue for delivering pre-crisis messages, and if so, is that

true across demographics? Better understanding the different factors at work will be extremely important when applying the findings in a practical sense.

5.3 Strengths, Limitations and Direction for Future Research

This study was a first step in systematically investigating, from both a theoretical and practical perspective, the current strategies being utilized in communicating about weather related crises. The possibilities in this under-served field of crisis research are incredibly exciting, and the potential exists to not only advance scientific understanding of crisis messages, but to meaningfully impact many lives in a tangible fashion.

The emergence of competence as the primary factor in source credibility is a potentially important discovery; future research may wish to draw on the collective knowledge of the fields of public relations, business and organizational communication to better understand how to increase a given source's perceived competence in the eyes of relevant publics. In general, future research might investigate what factors successfully predict high levels of organizational reputation and source credibility; of particular interest is successfully predicting high levels of competency in a given source.

In terms of limitations of the study, the primary manipulation – text versus text and voice – is a relatively small sampling of the media used in crisis communication, and did not explore the impact of high-richness channels such as video, or face-to-face communications. The NWS utilizes 17 different communication channels (National Weather Service, 2011b) to communicate weather-related crisis messages. Since the prevalence of mobile devices and social media usage has led the NWS and similar government agencies to employ social media, SMS text messaging, apps, webchat and

other forms of new media, with a stated intent to further explore such channels in the future (National Weather Service, 2011b), a full study of the 17 different communication channels employed by the NWS could be very beneficial.

New media such as blogs, social networking and mobile apps provide another avenue of study that may yield useful results; prior research has found social networking sites (such as Facebook) to be richer than traditional websites, or blog posts (Kaplan & Haenlein, 2010). Future studies may wish to build upon this, examining the many channels currently used to convey pre-crisis messages, as well as other unused or under-utilized channels.

Additionally, the manipulation and the message itself were both constructed with ecological validity in mind; thus, they attempted to closely model extant message types, with large amounts of information, and the voice condition delivered in a calm, methodical fashion. Future research may wish to explore different types of delivery, such as video, interactive chat or multimedia notifications, as well as the potential impact of microtargeted messages (Hess & Doe, 2013) to contrast with the broadly applicable content that dominates current messages.

A key tenant of media richness theory involves matching the equivocality of the message and the needs of the situation to the richness of the medium (Lengel & Daft, 1988); future crisis research could benefit from further investigating the different challenges presented by various crises, and what mediums best suit them. Additionally, since different demographic groups have different media usage habits, uses and gratifications theory (Katz, Blumler & Gurevitch 1974; Blumler, 1979) could prove

particularly useful in understanding how the intended message recipients see and interact with the suggested mediums (Ruggiero, 2000, Raacke & Bonds-Raacke, 2008). Additionally, with budgetary constraints a constant concern, moving toward a more consumer-oriented approach to communicating pre-crisis information may become increasingly attractive.

On the topic of source credibility, the opportunities for additional research are many. Specifically, in creating a channel manipulation, examining the difference between national sources such as weather.com, the weather channel and local sources such as network-affiliated television weather forecasters.

Table XIV. Crises criteria by various authors

Lerbinger (1997)	Ulmer, Sellnow & Seeger (2010)	Coombs (2011)
Natural Disasters	Natural Disasters	Natural Disasters
Malevolence	Public Perception	Malevolence
Technological Crises	Product or service crisis	Technical breakdowns
Terrorist Attacks	Terrorist Attack	Human breakdowns
Organizational misdeeds	Economic Crisis	Organizational Misdeeds
Workplace violence	Human resource crises	Workplace Violence
Rumors	Industrial crisis	Rumors
Confrontation	Spills (oil, chemical)	Megadamage
Man-made disasters	Transportation disasters	Challenges
	Crises from environmental factors	

Sources: Lerbinger (1997), Ulmer, Sellnow & Seeger (2010), Coombs (2011), Sellnow & Seeger (2013)

The analysis experienced problems with multicollinearity between the credibility and reputation measures. On one hand, intercorrelation between the measures shows that they are reliably measuring the same thing. On the other hand, these intercorrelations might mean that the items are "overly redundant and the construct measured too specific" (Briggs & Cheek, 1986, p. 114). In this case, the high internal consistency may work

against the measure's content validity, indicating that only a portion of the construct has been measured, though measured repeatedly. As noted by Clark and Watson (1995), "maximizing internal consistency almost invariably produces a scale that is quite narrow in content; if the scale is narrower than the target construct, its validity is compromised" (p. 316).

Given that the extant literature casts such a wide net, that opinions differ on how best to define what is meant by a crisis and what decision-making criteria ought to be used (see Table XIV), it seems likely that further discussions on crisis communication could benefit from a distinct and clearly defined typology of crises. Though this is beyond the scope of the current study, future research could benefit from additional clarity in this area.

This study chose to examine the effectiveness of a message as two conceptually distinct variables: behavioral intent and perceived message efficacy. Given the strong conceptual link between perceived efficacy and source credibility, and the establishment of both source credibility and organizational reputation as significant predictors in this study, the findings of this study provide theoretical groundwork for more sophisticated models in future research. A revised model for future research (see figure I) might focus on the effects of credibility on perceived message efficacy, and see efficacy as a predictor of behavior.

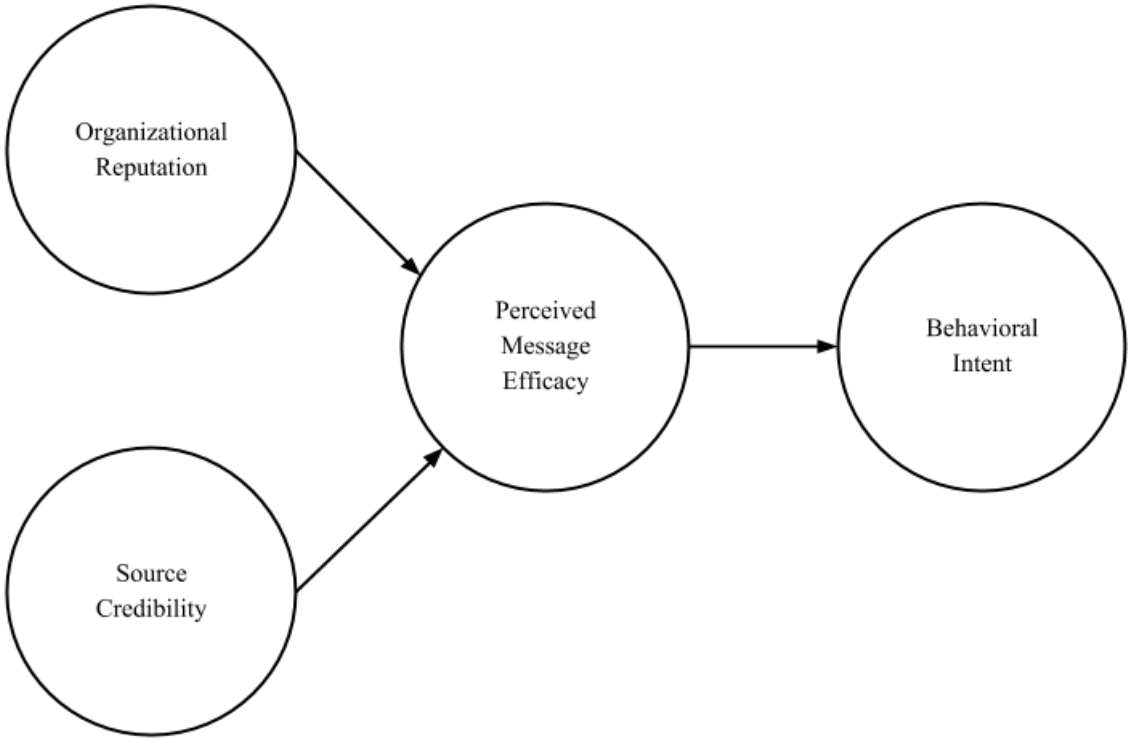

Figure I. Proposed model for future research. This model shows a possible model of directionality for future pre-crisis message research

In conclusion, the findings of this study, while limited in their scope, provide the necessary foundation for future research on the topic of pre-crisis messages. Theoretically, the implications of a message-centric, as opposed to medium-centric model of pre-crisis communication are potentially impactful, and likely warrant additional research. Also, the impact of source credibility on how messages are received offers opportunities for meaningful research; perhaps most notably in studying what affects the source credibility of relevant organizations and crisis message sources. From a practical standpoint, the implications are potentially impactful in a tangible, real sense.

After all, the best instructions in the world are moot if not followed.

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APPENDIX A

SURVEY INSTRUMENT

Consent form

Dear Participant,

We are studying individual's responses to a message. In this study, you will be presented with a message, and then asked to answer some questions about your reaction to this message, and your attitudes regarding some related issues. The entire study will last no longer than 30 minutes.

The risks associated with participation in this study are deemed to be no greater than that occurring during the course of everyday living. There always exists the possibility of the risk of breach of confidentiality; however, this risk is minimized since your name will not be connected to your responses. Only the combined responses of all the participants will be analyzed and reported.

There are no known risks to your participation beyond the risk of daily living, nor are there specific benefits to you from your participation. However, some participants may receive extra credit from their instructor. Your participation is completely voluntary, and you may refuse to answer any question, or terminate the questionnaire prior to completion. You may withdraw at any time without penalty.

For further information regarding this research, please contact Jonathan D. Herzberger at (216) 832-6898, email: j.d.herzberger@csuohio.edu, or Dr. Robert Whitbred at (216) 687-5053, email: r.whitbread@csuohio.edu

If you have questions about your rights as a research subject, you can contact the CSU Institutional Review Board at (216) 687-3630.

Thank you for your time and effort.

Please indicate your agreement to participate by signing below.

1. I hereby agree to participate in the above-described research. I understand my participation is voluntary and that I may withdraw at any time without penalty.

◯ I **agree** to participate in this research

◯ I **disagree** to participate in this research

Page 1

Media usage

Now, we will ask a few questions about your media habits.

2. In the past 7 days, which of the following have you done online or on a smartphone? (Select all that apply.)

- [ ] Followed, liked, or became a fan of something or someone
- [ ] Looked up the weather forecast
- [ ] Made personal or business travel plans (e.g. lodging, air travel)
- [ ] Uploaded video or photos to a website
- [ ] Watched videos
- [ ] Obtained medical information
- [ ] Streamed video content (e.g. movies, television, news)
- [ ] Wrote an online blog
- [ ] Read an online blog
- [ ] Logged into a social networking website (e.g. Facebook, Myspace, etc.)
- [ ] Listened to music
- [ ] Checked email
- [ ] Streamed audio content (e.g. music, news, podcasts)
- [ ] Checked the temperature outside
- [ ] Obtained news/sports information
- [ ] Played video games online
- [ ] None of the above
- [ ] Other (please specify)

3. In a typical day, how many minutes do you spend:

On social media, such as Facebook?

On a smartphone or tablet?

Browsing the internet?

Next Stage

Thank you for your participation thus far. Please inform the researcher that you are ready for the next part of the study.

4. Please do not click "Next" until you have finished the part assigned to you by the researcher

◯ Yes, I have completed the assignment given to me by the researcher

Page 3

Experiences

Now, we'll discuss some events that you may or may not have experienced.

5. Have you ever experienced an earthquake?

- ◯ Yes
- ◯ No

6. How would you describe your experience with earthquakes? Please indicate your level of agreement with the following statements

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I was concerned for my safety	◯	◯	◯	◯	◯
It was unimportant	◯	◯	◯	◯	◯
It had an impact on my life	◯	◯	◯	◯	◯
It was distressing	◯	◯	◯	◯	◯

Experiences, continued.

7. Have you ever experienced a blizzard?

- ◯ Yes
- ◯ No

8. How would you describe your experience with blizzards? Please indicate your level of agreement with the following statements

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I was concerned for my safety	◯	◯	◯	◯	◯
It was unimportant	◯	◯	◯	◯	◯
It had an impact on my life	◯	◯	◯	◯	◯
It was distressing	◯	◯	◯	◯	◯

Experiences, continued.

9. Have you ever experienced a severe thunderstorm?

- ◯ Yes
- ◯ No

Experiences, continued.

10. How would you describe your experience with severe thunderstorms? Please indicate your level of agreement with the following statements

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I was concerned for my safety	◯	◯	◯	◯	◯
It was unimportant	◯	◯	◯	◯	◯
It had an impact on my life	◯	◯	◯	◯	◯
It was distressing	◯	◯	◯	◯	◯

Experiences, continued.

11. Have you ever experienced a tornado?

- ◯ Yes
- ◯ No

Experiences, continued.

12. How would you describe your experience with tornadoes? Please indicate your level of agreement with the following statements

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I was concerned for my safety	◯	◯	◯	◯	◯
It was unimportant	◯	◯	◯	◯	◯
It had an impact on my life	◯	◯	◯	◯	◯
It was distressing	◯	◯	◯	◯	◯

Experiences, continued.

13. Have you ever experienced a hurricane?

- ◯ Yes
- ◯ No

14. How would you describe your experience with hurricanes? Please indicate your level of agreement with the following statements

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I was concerned for my safety	◯	◯	◯	◯	◯
It was unimportant	◯	◯	◯	◯	◯
It had an impact on my life	◯	◯	◯	◯	◯
It was distressing	◯	◯	◯	◯	◯

Experiences, continued.

15. Have you ever experienced an ice storm?

◯ Yes

◯ No

16. How would you describe your experience with ice storms? Please indicate your level of agreement with the following statements

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I was concerned for my safety	◯	◯	◯	◯	◯
It was unimportant	◯	◯	◯	◯	◯
It had an impact on my life	◯	◯	◯	◯	◯
It was distressing	◯	◯	◯	◯	◯

Message Source

Now, we will ask you some questions about the source of the message.

17. Please indicate your impressions of the source of the message by indicating your level of agreement with the following statements.

This source was:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Unintelligent	◯	◯	◯	◯	◯
Trained	◯	◯	◯	◯	◯
Expert	◯	◯	◯	◯	◯
Uninformed	◯	◯	◯	◯	◯
Competent	◯	◯	◯	◯	◯
Stupid	◯	◯	◯	◯	◯

18. Please indicate your impressions of this source:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Cares about me	◯	◯	◯	◯	◯
Has my interests at heart	◯	◯	◯	◯	◯
Self-centered	◯	◯	◯	◯	◯
Concerned with me	◯	◯	◯	◯	◯
Insensitive	◯	◯	◯	◯	◯
Not understanding	◯	◯	◯	◯	◯

19. This source was:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Honest	◯	◯	◯	◯	◯
Untrustworthy	◯	◯	◯	◯	◯
Honorable	◯	◯	◯	◯	◯
Moral	◯	◯	◯	◯	◯
Unethical	◯	◯	◯	◯	◯
Phoney	◯	◯	◯	◯	◯

Organization

Now, we will ask you some questions about the organization in question.

20. The following questions ask about the National Weather service, and how you feel about them. The items below concern your impression of the organization, and the crisis. Choose one response for each of the questions.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
This organization is basically honest	◯	◯	◯	◯	◯
The organization is concerned with the well-being of its publics	◯	◯	◯	◯	◯
I do trust the organization to tell the truth about the incident	◯	◯	◯	◯	◯
I would prefer to have NOTHING to do with this organization	◯	◯	◯	◯	◯
Under most circumstances, I WOULD NOT be likely to believe what the organization says	◯	◯	◯	◯	◯
The organization is basically DISHONEST	◯	◯	◯	◯	◯
I do NOT trust the organization to tell the truth about the incident	◯	◯	◯	◯	◯
Under most circumstances, I would be likely to believe what the organization says	◯	◯	◯	◯	◯
I would buy a product or service from this organization	◯	◯	◯	◯	◯
The organization is NOT concerned with	◯	◯	◯	◯	◯

the well-being of its
publics

Message instructions

Now, we will ask a few questions about the instructions provided in the message.

21. Consider the message that you just received. If it had really been occurring, how do you think you would act? Please answer as honestly as you can.

Please rate your level of agreement with the following statements

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would follow the instructions prescribed in the message	◯	◯	◯	◯	◯
I think the instructions presented are reasonable	◯	◯	◯	◯	◯
I would recommend the instructions presented to others	◯	◯	◯	◯	◯

22. Please rate your level of agreement with the following statements:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The message provided clear, concise instructions	◯	◯	◯	◯	◯
The message was well thought-out	◯	◯	◯	◯	◯
The message would be effective	◯	◯	◯	◯	◯

Demographics

Finally, some questions about you.

23. Are you male or female?

- ◯ Male
- ◯ Female

24. What is your class rank?

- ◯ Freshman
- ◯ Sophomore
- ◯ Junior
- ◯ Senior
- ◯ Graduate/Doctoral Student

25. In what ZIP code is your home located? (enter 5-digit ZIP code; for example, 44115 or 90210)

U.S. Zip Code

My home is not in the U.S./other (please explain)

26. What is your ethnicity? (Please select all that apply.)

- ☐ American Indian or Alaskan Native
- ☐ Asian or Pacific Islander
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ White / Caucasian
- ☐ Prefer not to answer
- ☐ Other (please specify)

27. How old were you on your last birthday? (indicate in years, such as 18, 24, 31)

Student Information

That concludes our survey. Thank you so much for participating!

Please indicate your student ID and course number so that you may receive the credit or extra credit offered by your instructor. This information will be separated from the rest of the data immediately upon download of the data in order to assure confidentiality.

28. Please indicate your CSU student ID number.

29. Please indicate the course number for which you wish to receive credit/extra credit (as offered by your instructor).

APPENDIX B

EXPERIMENTAL MESSAGE

A WINTER STORM WATCH REMAINS IN EFFECT FROM 9:00 A.M. THIS MORNING THROUGH 11:00 P.M. TONIGHT.

THE NATIONAL WEATHER SERVICE IN CLEVELAND HAS ISSUED A WINTER STORM ADVISORY FOR PEOPLE IN THE FOLLOWING COUNTIES IN OHIO:

ASHLAND, ASHTABULA, CRAWFORD, CUYAHOGA, ERIE, GEAUGA, HANCOCK., HOLMES, HURON, KNOX, LAKE, LORAIN, LUCAS, MAHONING, MARION, MEDINA, MORROW, OTTAWA, PORTAGE, RICHLAND, SANDUSKY, SENECA, STARK, SUMMIT, TRUMBULL, WAYNE, WOOD AND WYANDOT COUNTIES, AND THE ADJACENT WATERS OF LAKE ERIE.

HAZARD TYPES:

- HEAVY SNOW. SNOW MAY MIX WITH RAIN OR SLEET FOR AREAS SOUTH AND EAST OF THE CAPITAL REGION DURING THE DAY.
- ACCUMULATIONS: SNOW ACCUMULATION OF GREATER THAN 9 INCHES IN A 24 HOUR PERIOD IS POSSIBLE.
- MAXIMUM SNOWFALL RATES: ONE TO TWO INCHES PER HOUR POSSIBLE THIS AFTERNOON THROUGH LATE EVENING.
- TIMING: SNOW WILL BEGIN EARLY IN THE DAY. THE SNOW MAY MIX WITH OR BRIEFLY CHANGE TO RAIN OR SLEET FOR AREAS SOUTH AND EAST OF THE CAPITAL REGION DURING
  THE DAY. ALL AREAS WILL SEE SNOW. HEAVY IN INTENSITY AT TIMES....LATE IN THE DAY INTO THE NIGHT BEFORE TAPERING OFF BY TOMORROW MORNING.
- IMPACTS: SNOW COVERED ROADS AND LOW VISIBILITY WILL MAKE FOR POTENTIALLY DANGEROUS TRAVEL.
- WINDS: NORTH 10 TO 20 MPH WITH GUSTS UP TO 35 MPH.
- TEMPERATURES: IN THE MID 20S TO MID 30S FALLING INTO THE SINGLE DIGITS TO TEENS TONIGHT INTO TOMORROW MORNING.

PRECAUTIONARY/PREPAREDNESS ACTIONS:

A WINTER STORM WATCH MEANS THERE IS A POTENTIAL FOR SIGNIFICANT SNOW, SLEET OR ICE ACCUMULATIONS THAT MAY IMPACT TRAVEL.
CONTINUE TO MONITOR THE LATEST FORECASTS.

IF CAUGHT IN THE STORM OUTSIDE:

- FIND SHELTER: TRY TO STAY DRY, COVER ALL EXPOSED BODY PARTS
- IF SHELTER IS UNAVAILABLE: BUILD A LEANTO, WINDBREAK OR SNOW CAVE FOR PROTECTION FROM THE WIND. BUILD A FIRE FOR HEAT AND TO ATTRACT ATTENTION, AND PLACE ROCKS AROUND THE FIRE TO ABSORB AND REFLECT HEAT
- MELT SNOW FOR DRINKING WATER: EATING SNOW WILL LOWER YOUR BODY TEMPERATURE.

IF CAUGHT IN THE STORM IN A VEHICLE:

- STAY IN VEHICLE: YOU WILL BECOME QUICKLY DISORIENTED IN WINDDRIVEN SNOW AND COLD. RUN THE MOTOR ABOUT 10 MINUTES EACH HOUR FOR HEAT. OPEN THE WINDOW A LITTLE FOR FRESH AIR TO AVOID CARBON MONOXIED POISONING. MAKE SURE THE EXHAUST PIPE IS NOT BLOCKED.
- BE VISIBLE TO RESCUERS: TURN ON THE DOME LIGHT AT NIGHT WHEN RUNNING THE ENGINE. TIE A COLORED CLOTH, PREFERABLY RED, TO YOUR ANTENNA OR DOOR. AFTER SNOW STOPS FALLING, RAISE THE HOOD TO INDICATE YOU NEED HELP.
- EXERCISE: FROM TIME TO TIME, MOVE ARMS, LEGS, FINGERS AND TOES VIGOROUSLY TO KEEP BLOOD CIRCULATING AND TO KEEP WARM.

FOR THE LATEST UPDATES...PLEASE VISIT OUR WEBPAGE AT WWW.WEATHER.GOV/CLEVELAND

APPENDIX C

METHODOLOGICAL OUTPUT

Reliability of Scales

Intended Behavior

Case Processing Summary

		N	%
Cases	Valid	99	99.0
	Excluded[a]	1	1.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.910	3

Message Efficacy

Case Processing Summary

		N	%
Cases	Valid	99	99.0
	Excluded[a]	1	1.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.886	3

Credibility-Combined

Case Processing Summary

		N	%
Cases	Valid	94	94.0
	Excluded[a]	6	6.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.871	18

Credibility-Competence

Case Processing Summary

		N	%
Cases	Valid	97	97.0
	Excluded[a]	3	3.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.767	6

Credibility-Goodwill

Case Processing Summary

		N	%
Cases	Valid	98	98.0
	Excluded[a]	2	2.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.704	6

Credibility-Trustworthiness

Case Processing Summary

		N	%
Cases	Valid	98	98.0
	Excluded[a]	2	2.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.816	6

Organizational Reputation

Case Processing Summary

		N	%
Cases	Valid	95	95.0
	Excluded[a]	5	5.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.898	10

Severity of Blizzard Experience

Case Processing Summary

		N	%
Cases	Valid	87	87.0
	Excluded[a]	13	13.0
	Total	100	100.0

Reliability Statistics

Cronbach's Alpha	N of Items
.748	4

Correlations

		Prior_Experience	Severity_Blizzard	Source_Credibility_Competence
Prior_Experience	Pearson Correlation	1	-.109	-.003
	Sig. (2-tailed)		.318	.976
	N	99	86	96
Severity_Blizzard	Pearson Correlation	-.109	1	.109
	Sig. (2-tailed)	.318		.324
	N	86	87	84
Source_Credibility_Competence	Pearson Correlation	-.003	.109	1
	Sig. (2-tailed)	.976	.324	
	N	96	84	97
Source_Credibility_Goodwill	Pearson Correlation	-.113	.073	.400**
	Sig. (2-tailed)	.272	.508	.000
	N	97	85	96
Source_Credibility_Trustworthiness	Pearson Correlation	-.014	-.056	.617**
	Sig. (2-tailed)	.890	.613	.000
	N	97	85	95
Source_Credibility	Pearson Correlation	-.051	.052	.805**
	Sig. (2-tailed)	.625	.645	.000
	N	93	81	94
Organizational_Credibility	Pearson Correlation	.013	-.049	.540**
	Sig. (2-tailed)	.902	.661	.000
	N	94	82	93

Behavioral_Intent	Pearson Correlation	.055	-.049	.389**
	Sig. (2-tailed)	.591	.653	.000
	N	98	86	96
Percieved_Message_Efficacy	Pearson Correlation	.007	-.058	.543**
	Sig. (2-tailed)	.948	.596	.000
	N	98	86	96

Correlations

		Source_Credibility_Goodwill	Source_Credibility_Trustworthiness	Source_Credibility
Prior_Experience	Pearson Correlation	-.113	-.014	-.051
	Sig. (2-tailed)	.272	.890	.625
	N	97	97	93
Severity_Blizzard	Pearson Correlation	.073	-.056	.052
	Sig. (2-tailed)	.508	.613	.645
	N	85	85	81
Source_Credibility_Competence	Pearson Correlation	.400	.617	.805
	Sig. (2-tailed)	.000	.000	.000
	N	96	95	94
Source_Credibility_Goodwill	Pearson Correlation	1	.612	.804**
	Sig. (2-tailed)		.000	.000
	N	98	96	94
Source_Credibility_Trustworthiness	Pearson Correlation	.612	1	.889**
	Sig. (2-tailed)	.000		.000
	N	96	98	94

	Pearson Correlation	.804	.889	1**
Source_Credibility	Sig. (2-tailed)	.000	.000	
	N	94	94	94
	Pearson Correlation	.298	.545	.529**
Organizational_Credibility	Sig. (2-tailed)	.004	.000	.000
	N	93	93	90
	Pearson Correlation	.295	.399	.421**
Behavioral_Intent	Sig. (2-tailed)	.003	.000	.000
	N	97	97	93
	Pearson Correlation	.450	.506	.583**
Percieved_Message_Efficacy	Sig. (2-tailed)	.000	.000	.000
	N	97	97	93

Correlations

		Organizational_Credibility	Behavioral_Intent	Percieved_Message_Efficacy
	Pearson Correlation	.013	.055	.007
Prior_Experience	Sig. (2-tailed)	.902	.591	.948
	N	94	98	98
	Pearson Correlation	-.049	-.049	-.058
Severity_Blizzard	Sig. (2-tailed)	.661	.653	.596
	N	82	86	86
Source_Credibility_Competence	Pearson Correlation	.540	.389	.543
	Sig. (2-tailed)	.000	.000	.000

	N	93	96	96
	Pearson Correlation	.298	.295	.450**
Source_Credibility_Goodwill	Sig. (2-tailed)	.004	.003	.000
	N	93	97	97
	Pearson Correlation	.545	.399	.506**
Source_Credibility_Trustworthiness	Sig. (2-tailed)	.000	.000	.000
	N	93	97	97
	Pearson Correlation	.529	.421	.583**
Source_Credibility	Sig. (2-tailed)	.000	.000	.000
	N	90	93	93
	Pearson Correlation	1	.543	.579**
Organizational_Credibility	Sig. (2-tailed)		.000	.000
	N	95	94	94
	Pearson Correlation	.543	1	.686**
Behavioral_Intent	Sig. (2-tailed)	.000		.000
	N	94	99	98
	Pearson Correlation	.579	.686	1**
Percieved_Message_Efficacy	Sig. (2-tailed)	.000	.000	
	N	94	98	99

**. Correlation is significant at the 0.01 level (2-tailed).

Frequencies of Each Type of Weather Experienced

Statistics

		Severity_Earthquake	Severity_Blizzard	Severity_Thunderstorm	Severity_Tornado	Severity_Hurricane
N	Valid	22	87	90	22	7
	Missing	78	13	10	78	93
Mean		2.5455	3.1782	3.1389	4.0682	3.7857

Statistics

		Severity_IceStorm
N	Valid	61
	Missing	39
Mean		3.3648

Oneway ANOVAS-Hypotheses 1 and 2

ANOVA

		Sum of Squares	df	Mean Square	F
Behavioral_Intent	Between Groups	.020	1	.020	.032
	Within Groups	59.718	97	.616	
	Total	59.737	98		
Percieved_Message_Efficacy	Between Groups	.031	1	.031	.055
	Within Groups	54.490	97	.562	
	Total	54.521	98		

ANOVA

		Sig.
Behavioral_Intent	Between Groups	.859
	Within Groups	
	Total	
Percieved_Message_Efficacy	Between Groups	.815
	Within Groups	
	Total	

Regressions—Hypothesis 1, 3, 5, 7, research question 1

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Organizational_ Credibility, Prior_Experienc e, Severity_Blizzar d, Source_Credibili ty[b]	.	Enter

a. Dependent Variable: Behavioral_Intent

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.608[a]	.369	.333	.57136

a. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, Source_Credibility

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.370	4	3.343	10.239	.000[b]
	Residual	22.852	70	.326		
	Total	36.222	74			

a. Dependent Variable: Behavioral_Intent

b. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, Source_Credibility

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.749	.910		-.823	.413
	Prior_Experience	.110	.069	.152	1.599	.114
	Severity_Blizzard	-.006	.084	-.007	-.077	.939
	Source_Credibility	.246	.161	.170	1.524	.132
	Organizational_Credibility	.723	.168	.479	4.294	.000

a. Dependent Variable: Behavioral_Intent

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Organizational_ Credibility, Prior_Experienc e, Severity_Blizzar d, 0 = no voiceover. 1 = voiceover., Source_Credibili ty[b]	.	Enter

a. Dependent Variable: Behavioral_Intent

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.608[a]	.369	.323	.57545

a. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover., Source_Credibility

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.373	5	2.675	8.077	.000[b]
	Residual	22.849	69	.331		
	Total	36.222	74			

a. Dependent Variable: Behavioral_Intent

b. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover., Source_Credibility

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.736	.926		-.795	.429
	0 = no voiceover. 1 = voiceover.	-.013	.137	-.010	-.097	.923
	Prior_Experience	.110	.070	.151	1.566	.122
	Severity_Blizzard	-.005	.086	-.005	-.055	.956
	Source_Credibility	.245	.163	.169	1.501	.138
	Organizational_Credibility	.723	.170	.479	4.264	.000

a. Dependent Variable: Behavioral_Intent

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Source_Credibility_Trustworthiness, Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover., Source_Credibility_Goodwill, Source_Credibility_Competence[b]	.	Enter

a. Dependent Variable: Behavioral_Intent

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.512[a]	.263	.201	.61826

a. Predictors: (Constant), Source_Credibility_Trustworthiness, Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover., Source_Credibility_Goodwill, Source_Credibility_Competence

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.800	6	1.633	4.273	.001[b]
	Residual	27.522	72	.382		
	Total	37.322	78			

a. Dependent Variable: Behavioral_Intent

b. Predictors: (Constant), Source_Credibility_Trustworthiness, Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover., Source_Credibility_Goodwill, Source_Credibility_Competence

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.821	.914		.899	.372
	0 = no voiceover. 1 = voiceover.	.029	.144	.021	.201	.841
	Prior_Experience	.098	.071	.142	1.375	.173
	Severity_Blizzard	-.038	.092	-.043	-.410	.683
	Source_Credibility_Competence	.391	.167	.330	2.344	.022
	Source_Credibility_Goodwill	-.085	.155	-.071	-.547	.586
	Source_Credibility_Trustworthiness	.304	.198	.250	1.533	.130

a. Dependent Variable: Behavioral_Intent

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover., Source_Credibility_Competence[b]	.	Enter

a. Dependent Variable: Behavioral_Intent

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.600[a]	.360	.316	.56797

a. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover., Source_Credibility_Competence

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.075	5	2.615	8.107	.000[b]
	Residual	23.227	72	.323		
	Total	36.302	77			

a. Dependent Variable: Behavioral_Intent

b. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover., Source_Credibility_Competence

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.349	.867		-.403	.688
	0 = no voiceover. 1 = voiceover.	-.026	.131	-.019	-.200	.842
	Prior_Experience	.098	.068	.137	1.443	.153
	Severity_Blizzard	-.007	.082	-.008	-.082	.935

	Source_Credibility_Competence	.230	.136	.194	1.685	.096
	Organizational_Credibility	.658	.167	.448	3.941	.000

a. Dependent Variable: Behavioral_Intent

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Source_Credibility, 0 = no voiceover. 1 = voiceover., Prior_Experience, Severity_Blizzard[b]	.	Enter

a. Dependent Variable: Behavioral_Intent

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.461[a]	.213	.170	.63017

a. Predictors: (Constant), Source_Credibility, 0 = no voiceover. 1 = voiceover., Prior_Experience, Severity_Blizzard

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.935	4	1.984	4.995	.001[b]
	Residual	29.387	74	.397		
	Total	37.322	78			

a. Dependent Variable: Behavioral_Intent

b. Predictors: (Constant), Source_Credibility, 0 = no voiceover. 1 = voiceover., Prior_Experience, Severity_Blizzard

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.747	.926		.806	.423
	0 = no voiceover. 1 = voiceover.	.011	.146	.008	.073	.942
	Prior_Experience	.110	.072	.161	1.538	.128
	Severity_Blizzard	-.038	.092	-.043	-.410	.683
	Source_Credibility	.625	.147	.442	4.262	.000

a. Dependent Variable: Behavioral_Intent

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Organizational_ Credibility, Prior_Experienc e, Severity_Blizzar d, 0 = no voiceover. 1 = voiceover.[b]	.	Enter

a. Dependent Variable: Behavioral_Intent

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.604[a]	.365	.331	.62415

a. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.777	4	4.194	10.766	.000[b]
	Residual	29.218	75	.390		
	Total	45.994	79			

a. Dependent Variable: Behavioral_Intent

b. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.417	.933		-.447	.656
	0 = no voiceover. 1 = voiceover.	.023	.143	.015	.160	.873
	Prior_Experience	.075	.074	.094	1.014	.314
	Severity_Blizzard	.004	.088	.004	.047	.962
	Organizational_Credibility	.936	.145	.596	6.461	.000

a. Dependent Variable: Behavioral_Intent

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover.[b]	.	Enter

a. Dependent Variable: Behavioral_Intent

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.093[a]	.009	-.028	.75901

a. Predictors: (Constant), Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover.

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	.408	3	.136	.236	.871[b]
	Residual	46.664	81	.576		
	Total	47.072	84			

a. Dependent Variable: Behavioral_Intent

b. Predictors: (Constant), Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.479	.854		4.072	.000
	0 = no voiceover. 1 = voiceover.	.007	.168	.005	.043	.966
	Prior_Experience	.060	.084	.081	.721	.473
	Severity_Blizzard	-.037	.104	-.040	-.358	.721

a. Dependent Variable: Behavioral_Intent

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Organizational_Credibility, Prior_Experience, Severity_Blizzard, Source_Credibility_Goodwill, 0 = no voiceover. 1 = voiceover., Source_Credibility_Competence, Source_Credibility_Trustworthiness[b]	.	Enter

a. Dependent Variable: Behavioral_Intent

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.614[a]	.377	.312	.58046

a. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, Source_Credibility_Goodwill, 0 = no voiceover. 1 = voiceover., Source_Credibility_Competence, Source_Credibility_Trustworthiness

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.647	7	1.950	5.786	.000[b]
	Residual	22.575	67	.337		
	Total	36.222	74			

a. Dependent Variable: Behavioral_Intent

b. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, Source_Credibility_Goodwill, 0 = no voiceover. 1 = voiceover., Source_Credibility_Competence, Source_Credibility_Trustworthiness

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.625	.952		-.657	.514
	0 = no voiceover. 1 = voiceover.	-.023	.140	-.017	-.166	.869
	Prior_Experience	.100	.071	.138	1.408	.164
	Severity_Blizzard	-.018	.089	-.021	-.208	.836
	Source_Credibility_Competence	.220	.164	.183	1.343	.184
	Source_Credibility_Goodwill	.065	.154	.054	.424	.673
	Source_Credibility_Trustworthiness	-.028	.209	-.022	-.132	.896
	Organizational_Credibility	.710	.193	.470	3.682	.000

a. Dependent Variable: Behavioral_Intent

Regression—hypotheses 2, 4, 6, 8, and research question 2

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Organizational_ Credibility, Prior_Experienc e, Severity_Blizzar d, 0 = no voiceover. 1 = voiceover., Source_Credibili ty[b]	.	Enter

a. Dependent Variable: Percieved_Message_Efficacy

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.701[a]	.491	.454	.49135

a. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover., Source_Credibility

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	16.083	5	3.217	13.323	.000[b]
	Residual	16.658	69	.241		
	Total	32.741	74			

a. Dependent Variable: Percieved_Message_Efficacy

b. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover., Source_Credibility

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	-.673	.793		-.849
	0 = no voiceover. 1 = voiceover.	.143	.118	.108	1.208
	Prior_Experience	.081	.060	.117	1.345
	Severity_Blizzard	-.071	.074	-.084	-.955
	Source_Credibility	.748	.140	.543	5.357
	Organizational_Credibility	.334	.145	.233	2.305

Coefficients[a]

Model		Sig.
1	(Constant)	.399
	0 = no voiceover. 1 = voiceover.	.231
	Prior_Experience	.183

	Severity_Blizzard	.343
	Source_Credibility	.000
	Organizational_Credibility	.024

a. Dependent Variable: Percieved_Message_Efficacy

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Source_Credibility_Trustworthiness, Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover., Source_Credibility_Goodwill, Source_Credibility_Competence[b]	.	Enter

a. Dependent Variable: Percieved_Message_Efficacy

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.711[a]	.505	.464	.48458

a. Predictors: (Constant), Source_Credibility_Trustworthiness, Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover., Source_Credibility_Goodwill, Source_Credibility_Competence

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.257	6	2.876	12.248	.000[b]
	Residual	16.907	72	.235		
	Total	34.163	78			

a. Dependent Variable: Percieved_Message_Efficacy

b. Predictors: (Constant), Source_Credibility_Trustworthiness, Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover., Source_Credibility_Goodwill, Source_Credibility_Competence

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.177	.719		.246	.807
	0 = no voiceover. 1 = voiceover.	.158	.113	.120	1.398	.166
	Prior_Experience	.068	.056	.103	1.214	.229
	Severity_Blizzard	-.098	.072	-.118	-1.357	.179
	Source_Credibility_Competence	.574	.131	.505	4.384	.000
	Source_Credibility_Goodwill	.084	.121	.074	.692	.491
	Source_Credibility_Trustworthiness	.242	.156	.208	1.557	.124

a. Dependent Variable: Percieved_Message_Efficacy

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover., Source_Credibility_Competence[b]	.	Enter

a. Dependent Variable: Percieved_Message_Efficacy

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.703[a]	.494	.459	.48767

a. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover., Source_Credibility_Competence

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.747	5	3.349	14.084	.000[b]
	Residual	17.123	72	.238		
	Total	33.870	77			

a. Dependent Variable: Percieved_Message_Efficacy

b. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover., Source_Credibility_Competence

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.038	.746		-.051	.959
	0 = no voiceover. 1 = voiceover.	.083	.113	.063	.733	.466
	Prior_Experience	.053	.059	.077	.906	.368
	Severity_Blizzard	-.065	.071	-.079	-.913	.364
	Source_Credibility_Competence	.633	.117	.553	5.412	.000
	Organizational_Credibility	.317	.143	.224	2.212	.030

a. Dependent Variable: Percieved_Message_Efficacy

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Source_Credibility, Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover.[b]	.	Enter

a. Dependent Variable: Percieved_Message_Efficacy

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.673[a]	.453	.423	.50274

a. Predictors: (Constant), Source_Credibility, Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.460	4	3.865	15.292	.000[b]
	Residual	18.703	74	.253		
	Total	34.163	78			

a. Dependent Variable: Percieved_Message_Efficacy

b. Predictors: (Constant), Source_Credibility, Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.041	.742		.056	.956
	0 = no voiceover. 1 = voiceover.	.162	.117	.123	1.386	.170
	Prior_Experience	.085	.057	.129	1.475	.144
	Severity_Blizzard	-.083	.073	-.100	-1.135	.260
	Source_Credibility	.903	.117	.667	7.709	.000

a. Dependent Variable: Percieved_Message_Efficacy

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover.[b]	.	Enter

a. Dependent Variable: Percieved_Message_Efficacy

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.570[a]	.324	.288	.56851

a. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.636	4	2.909	9.000	.000[b]
	Residual	24.241	75	.323		
	Total	35.876	79			

a. Dependent Variable: Percieved_Message_Efficacy

b. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, 0 = no voiceover. 1 = voiceover.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.317	.852		.372	.711
	0 = no voiceover. 1 = voiceover.	.057	.131	.042	.435	.665
	Prior_Experience	.067	.067	.096	.997	.322
	Severity_Blizzard	-.006	.081	-.008	-.080	.936
	Organizational_Credibility	.779	.132	.561	5.898	.000

a. Dependent Variable: Percieved_Message_Efficacy

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover.[b]	.	Enter

a. Dependent Variable: Percieved_Message_Efficacy

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.092[a]	.008	-.028	.67637

a. Predictors: (Constant), Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.316	3	.105	.231	.875[b]
	Residual	37.056	81	.457		
	Total	37.373	84			

a. Dependent Variable: Perceived Message Efficacy

b. Predictors: (Constant), Severity_Blizzard, Prior_Experience, 0 = no voiceover. 1 = voiceover.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.657	.763		4.791	.000
	0 = no voiceover. 1 = voiceover.	.065	.150	.049	.432	.667
	Prior_Experience	.044	.075	.066	.586	.559
	Severity_Blizzard	-.044	.093	-.053	-.471	.639

a. Dependent Variable: Perceived Message Efficacy

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Organizational_Credibility, Prior_Experience, Severity_Blizzard, Source_Credibility_Goodwill, 0 = no voiceover. 1 = voiceover., Source_Credibility_Competence, Source_Credibility_Trustworthiness[b]	.	Enter

a. Dependent Variable: Perceived Message Efficacy

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.725[a]	.525	.476	.48168

a. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, Source_Credibility_Goodwill, 0 = no voiceover. 1 = voiceover., Source_Credibility_Competence, Source_Credibility_Trustworthiness

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.196	7	2.457	10.588	.000[b]
	Residual	15.545	67	.232		
	Total	32.741	74			

a. Dependent Variable: Percieved_Message_Efficacy

b. Predictors: (Constant), Organizational_Credibility, Prior_Experience, Severity_Blizzard, Source_Credibility_Goodwill, 0 = no voiceover. 1 = voiceover., Source_Credibility_Competence, Source_Credibility_Trustworthiness

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.379	.793		-.479	.634
	0 = no voiceover. 1 = voiceover.	.133	.117	.101	1.140	.258

	Prior_Experience	.066	.059	.095	1.104	.273
	Severity_Blizzard	-.094	.074	-.112	-1.270	.209
	Source_Credibility_Competence	.519	.136	.453	3.816	.000
	Source_Credibility_Goodwill	.126	.127	.111	.994	.324
	Source_Credibility_Trustworthiness	.149	.174	.126	.860	.393
	Organizational_Credibility	.253	.160	.176	1.581	.119

a. Dependent Variable: Perceived Message Efficacy

T-Test—hypothesis 1 and 2

Group Statistics

	0 = no voiceover. 1 = voiceover.	N	Mean	Std. Deviation	Std. Error Mean
Behavioral_Intent	.00	48	3.8542	.89100	.12860
	1.00	51	3.8824	.66941	.09374

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Behavioral_Intent	Equal variances assumed	1.905	.171	-.179	97
	Equal variances not assumed			-.177	87.096

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
Behavioral_Intent	Equal variances assumed	.859	-.02819	.15779
	Equal variances not assumed	.860	-.02819	.15914

Independent Samples Test

	t-test for Equality of Means	
	95% Confidence Interval of the Difference	
	Lower	Upper

Behavioral_Intent	Equal variances assumed	-.34135	.28498
	Equal variances not assumed	-.34449	.28812

Group Statistics

	0 = no voiceover. 1 = voiceover.	N	Mean	Std. Deviation
Perceived Message Efficacy	.00	49	3.8980	.78529
	1.00	50	3.9333	.71270

Group Statistics

	0 = no voiceover. 1 = voiceover.	Std. Error Mean
Perceived Message Efficacy	.00	.11218
	1.00	.10079

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means
		F	Sig.	t
Perceived Message Efficacy	Equal variances assumed	.125	.724	-.235
	Equal variances not assumed			-.235

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
Perceived Message Efficacy	Equal variances assumed	97	.815	-.03537
	Equal variances not assumed	95.690	.815	-.03537

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Percieved_Message_Efficacy	Equal variances assumed	.15066	-.33440	.26365
	Equal variances not assumed	.15081	-.33475	.26400

Descriptives

Descriptive Statistics

	Mean	Std. Deviation	N
Prior_Experience	9.1313	1.16625	99
Severity_Blizzard	3.1782	.79781	87
Source_Credibility_Competence	3.8419	.56997	97
Source_Credibility_Goodwill	3.5068	.58421	98
Source_Credibility_Trustworthiness	3.7177	.53642	98
Behavioral_Intent	3.8687	.78075	99
Percieved_Message_Efficacy	3.9158	.74588	99
Source_Credibility	3.6885	.46782	94
Organizational_Credibility	3.8853	.51508	95